Glan Llyn, Newport

Phase 4G

Chemical Validation Report

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Chemical Validation Report

for

Revantage Real Estate

August 2025

Rev: P01

18669-RLL-25-XX-RP-O-0768

Document Reference & Control

Project Name:	**Phase 4G, Glan Llyn, Newport**
Project Reference:	**P18-669**
Report Title:	**Chemical Validation Report**
Client:	**Revantage Real Estate**
Document Reference:	**18669-RLL-25-XX-RP-O-0768**
Report Status:	**S2 - Information**

Approval Status	Name & Position
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Revision Status	Date	Summary of Revision
P01	August 2025	First Issue

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1.0 Introduction

1.1 Terms of Reference

Rodgers Leask Ltd (RLL) has been commissioned by Revantage Real Estate (RRE) Ltd to prepare a Chemical Validation Report following the remediation of Phase 4G of the Glan Llyn development in Newport (hereafter referred to as the 'Site'). The Site is situated within the Glan Llyn development on the site of the former Llanwern Steelworks. The Site location is shown on RLL drawing 18669-RLL-22-XX-DR-O-0388 (**Appendix A**).

In July 2024 the Client, St Modwen Developments was rebranded to be called Revantage Real Estate. Any reference to the previous company name in this report should be referred to accordingly.

This report should be read in conjunction with the Glan Llyn Remediation Strategy (Ref. 18669-RLL-21-XX-RP-O-0157), the Phase 4G Remediation Strategy (18669-RLL-25-XX-RP-O-0757-P01), the Glan Llyn: Soils Validation Strategy for Protection of Controlled Waters (Ref. 30937 R2) and the Phase 4G4E Earthworks Specification (Ref. 18669-RLL-23-XX-DR-O-0446-P01). The relevant earthworks performance criteria have been included in this validation report for ease of reference.

1.2 Objectives

In accordance with the requirements of Planning Condition 28 of Outline Planning Permission Reference 06/0471, this report has been prepared to verify that the Phase 4G remediation works undertaken by ACS Construction Group Ltd between September 2023 and November 2024, were completed in general accordance with the RLL Earthworks Specification, the Glan Llyn: Soils Validation Strategy for Protection of Controlled Waters, the RLL Remediation Strategy and the Phase 4G Remediation Strategy.

1.3 Proposed Development

It is understood that the Site is proposed to be redeveloped for a residential end use. An illustrative masterplan (ref. 8111-08-A011, dated April 2019) is available in **Appendix A**. Phase 4G will form part of the wider Glan Llyn development.

1.4 Purpose

This report has been prepared pursuant to the partial discharge (P1 - pre-construction stage) of Planning Condition 28 of the Outline Planning Permission Reference 06/0471 for the proposed development of residential development Phase 4G as part of a wider mixed-use development at Llanwern, Newport.

Planning Condition 28 states the following:

Prior to the commencement of each phase of development as defined by Condition 03 (that is any development excluding that required as part of the remediation

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

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

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

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

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

1.5 References

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

- Phase 4G Desk Study & Phase 2 Geo-Environmental Report, ref. 18669-RLL-25-XX-RP-O-0753-P01, dated July 2025 (**Ref. 1**)
- Glan Llyn Llanwern (Sitewide) Detailed Quantitative Controlled Waters Risk Assessment (CWDQRA) 2017, Atkins, 5111373-LLA-OUT-0257 Rev. 3.0, February 2017 (**Ref. 2**)
- Glan Llyn Phase 4G Earthworks Specification, RLL, ref. 18669-RLL-23-XX-DR-O-0446-P01, dated June 2023 (**Ref. 3**)
- Phase 4G Remediation Strategy, RLL, Ref. 18669-RLL-25-XX-RP-O-0757-P01, dated July 2025 (**Ref. 4**)

- Phase 4G Geotechnical Assessment & Validation Report, RLL, Ref. 18699-RLL-23-XX-RP-O-0782-P01, dated 2025 (**Ref. 5**)
- Former Llanwern Steelworks Site Assessment of Asbestos Contamination, The Institute of Occupational Medicine (IOM), 610-34464, March 2014 (**Ref. 6**)
- Glan Llyn Remediation Strategy Addendum Information, RLL, ref. 18669-RLL-22-XX-RP-O-0192, dated January 2022 (**Ref. 7**)
- Glan Llyn: Soils Validation Strategy for Protection of Controlled Waters Hannah Fraser Consulting Ref. 30937 R2, dated December 2024 (**Ref. 8**)
- Glan Llyn CWDQRA (2019 update), RLL ref. 18669-RLL-19-XX-RP-O-0006_Rev A, dated June 2022 (**Ref. 9**)

1.6 Limitations and Confidentiality

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

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

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

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

2.0 Site Characteristics

2.1 Site Location and Description

The Site is located within the Glan Llyn development at the former Llanwern Steelworks, approximately 5.3km to the east of Newport City Centre at approximate National Grid Reference 336106E, 186676N. The Site location and boundary is shown on Drawing 18669-RLL-22-XX-DR-O-0388 in **Appendix A**.

The Site is irregular in shape, covers an area of approximately 4.70ha, and is located in the approximate centre of the wider Glan Llyn development. The Site historically housed part of a sinter plant along with associated infrastructure and various conveyors and pipelines, in addition to roads and an open space area. Following closure of the steelworks and prior to the completion of remedial earthworks, the Site comprised an area used for the stockpiling of materials from the wider Glan Llyn development.

Drain 3 (a former concrete culvert) was present on the western side of the Site until late 2021 when it was decommissioned and infilled as part of the earthworks phase of development for the wider site. Numerous other surface water features are recorded within 500m of the Site boundary, mostly comprising reens and drains, with the nearest surface water feature is located 192m north on the Site and refers to a drain that is orientated approximately east to west.

2.2 Site History Summary

Historically, the Site comprised part of five open fields, segregated by reens and trees, until 1967 when the Site formed part of the Llanwern Steelworks and comprised a wetland area with drains, marshland and a small pond. A conveyor was located on the western side of the Site and access tracks were positioned to the east of the conveyor, open space occupied the eastern side of the Site. As the steelworks expanded a sinter plant was constructed on the site alongside associated structures, conveyors, tracks and a chimney. The Site was partially demolished by 2004 and fully demolished by 2021 (**Ref. 1**).

2.3 Ground Conditions and Contamination Summary

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

- Made Ground at thicknesses of 1.50m to 3.30m, generally comprising gravelly SANDS, sandy clayey GRAVELS and clayey gravelly CLAYS with occasional to frequent cobbles and boulders. Cobbles and gravels consisted of concrete, brick, iron ore, slag, mudstone, coke, tarmac, siltstone, steel slag and furnace slag.
- Tidal Flat Deposits from a minimum of 1.50m; the base of the formation was not encountered, but the strata was recorded to depths of up to 3.40m. It generally comprised firm to locally soft silty CLAY or soft brown PEAT.
- The bedrock of Mercia Mudstone Group was not encountered during the intrusive investigation.

Nine locations refused or terminated within the Made Ground at depths ranging from 0.43m to 2.80m. Refusals were generally due to fused slag and hard ground or concrete obstructions.

Buried obstructions were encountered in fourteen locations within the Made Ground strata from depths ranging from 0.15m and 1.95m, and generally comprised concrete, slag, concrete/ rebar pillar, metal sheet, solid steel bar, blast furnace slag, bundle of wires, hard steel slag and iron ore aggregate/ pellets.

Isolated sheens or hydrocarbon odours were encountered in two locations in the Made Ground on Site from depths ranging from a minimum depth of 1.15m to a maximum depth of 1.55m.

Chemical analysis of 140 samples taken during the previous ground investigation identified exceedances of the approved reuse criteria for arsenic, mercury, nickel, vanadium, TPHs and PAHs across the Site. Asbestos was identified in eight of the sixty samples analysed, six of which comprised chrysotile (white) asbestos, one comprised amosite (brown) asbestos and one comprised both chrysotile and amosite asbestos.

Perched groundwater was encountered in thirty-seven locations, typically within the Made Ground or at the Made Ground – Tidal Flat Deposits boundary at depth from 0.85m to 2.30m.

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

3.0 Enabling Works

3.1 Earthworks Summary

During previous intrusive ground investigations on Phase 4G, the Made Ground was found to contain numerous buried obstructions including structures and buried fused slag, as well as exceedances of heavy metals, TPHs, PAHs and asbestos. As such, remedial earthworks were required.

Remedial earthworks were undertaken by ACS Contractors Ltd between September 2023 and November 2024.

The works included an approximate area of 47800m^2 and was completed in accordance with the RLL Phase 4G4E Earthworks Specification (**Ref. 3**) and the RLL Phase 4G Remediation Strategy (**Ref. 4**). The earthworks generally comprised:

- Site clearance
- Excavation of Made Ground to natural underlying Tidal Flat Deposits,
- Removal of Made Ground from site with evidence of gross visual and olfactory contamination;
- Removal of below ground obstructions;
- Cropping of piles to the level of the underlying Tidal Flat Deposits;
- Re-engineering of Made Ground;
- In situ geotechnical testing;
- Soft spot excavation/ removal; and
- Monitoring for compliance with relevant specifications.

The purpose of the remedial earthworks was to remove material assessed as unsuitable following the chemical testing on a 25m grid, and turnover the remaining Made Ground to expose the underlying natural clay. The turnover allowed for the removal of additional unsuitable material with evidence of visual and olfactory contamination, as well as removal of material assessed as unsuitable for reuse following a 25m trial pitting exercise.

Material assessed as unsuitable for re-use in a residential scenario during the fill operation on Phase 4G was re-located, where suitable, to the commercial area for use as an engineering fill at depth in accordance with the wider site Material Management Plan. Material suitable for reuse in the commercial area will be recorded as part of the validation reports for that area.

Drawing 18669-RLL-25-XX-DR-O-0773-P01 (**Appendix A**) shows the sources of material and material movement within the phase, the primary sources being the excavated Made Ground from within the phase and the Made Ground stockpiles from Phase 4G.

The natural Tidal Flat Deposits were chemically validated during the 2018 ground investigation trial pitting exercise, locations shown in RLL Drawing 18669-RLL-25-XX-DR-O-0769-P01 (**Appendix A**).

The turnover of approximately 94,334m^3 of Made Ground allowed for the surveying at the base of excavation, as shown on the ACS Drawing ‘Base of Excavation Phase

4G' (**Appendix A**). Retained supporting piles and exceptional obstructions are shown on ACS Drawing Phase 4G + 4E Constraints LAYOUT, also presented in **Appendix A**.

Approximately 16,222m^3 stockpiled site won suitable material was brought to site from the wider development to achieve the formation levels. Chemical testing of the material is presented in Section 4.

The reengineering of the material to create a low permeability layer of Made Ground is in accordance with the Remediation Strategy (**Ref. 4**). The works also enabled existing obstructions to be uncovered and, where possible, removed.

In accordance with the RLL Earthworks Specification (**Ref. 3**) material excavated from Phase 4G and material located within stockpiles on the wider Glan Llyn development was used as fill within the Site to achieve the formation level of between approximately 5.75mAOD and 6.50mAOD. The material was reengineered to achieve 95% compaction and <10% air voids. The Site is >600mm below the proposed final levels, to allow for placement clean cover.

The completed earthworks topographical survey is shown on the ACS Drawing 'As-Built Levels Phase 4G', both in **Appendix A**. Photographs of the earthworks operation are presented in **Appendix B**.

3.2 Geotechnical Assessment

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

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

Table 3.1 summarises the relevant performance criteria for material compaction set out in the earthworks specification and the in-situ test results recording compliance in accordance with the earthworks specification.

Table 3.1. Relevant Earthworks Performance Criteria & Validation Results

Test	Required Limits		In-situ Results **	
	Min	Max	Min	Max
Moisture Content (%)	9.50*	16.00*	1.93	20.00
Maximum Dry Density (Mg/m^3)	1.93*	2.50*	1.77	3.34
Degree of Compaction	Target 95% [minimum 90%] (Maximum Dry Density)		80%	123%
CBR Tests	Target 5%, Minimum 2.5%		5%	49%

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

432 of the 630 EDG tests achieved 95% or greater relative compaction and a further 130 tests achieved the minimum 90% or greater relative compaction. 44 samples achieved a relative compaction of less than 90%, with a minimum result of 80%. It is considered that these failures can be due to the significant variability of the Made Ground and the associated difficulty with assigning target compliance values.

It was considered that in accordance with BS6031:2009 an acceptance envelope should be developed. The acceptance envelope provides a range where suitable results could fall to show sufficient compaction. Following the development of the envelope some results sat outside of compliance range, however this is thought to be a minor proportion of the testing and the majority of the engineered fill meets requirements of the Earthworks Specification.

624 in situ BS1377-2 moisture content tests were undertaken during the material placement, with a recorded moisture content range of 1.93% to 20.00%.

The equivalent California Bearing Ratio (CBR) values for all 372 tests were in excess of the minimum 2.5% value.

3.2.1 Discussion

The results show that the appropriate compaction has been achieved and that the earthworks have been undertaken in accordance with the Earthworks Specification(s). The validation information for the earthworks was reviewed and approved as being in accordance with the earthworks specification. More information is available in the Geotechnical Assessment & Validation Report (**Ref. 5**).

4.0 Chemical Validation of Soils

4.1 General

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

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

Fill material was sampled prior to placement by RLL and Atkins between October 2018 and May 2024 during the various intrusive investigations undertaken across the Site. Chemical testing was undertaken by Eurofins Chemtest Ltd and ALS Global Ltd.

Clay validation samples were taken during the initial Atkins trial pitting exercise to confirm the Tidal Flat Deposits had not been impacted by contamination.

Surface validation sampling of the re-engineered formation surface was undertaken by RLL on a 50m grid at 100mm below the formation surface between March to November 2024. The formation surface validation sample locations are shown on RLL Drawing 18669-RLL-23-XX-DR-O-0519-P01 (**Appendix A**).

4.2 Tidal Flat Deposits

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

The samples were assessed against the S4UL Generic Assessment Criteria Residential End Use with Homegrown Produce screening criteria in accordance with the Remediation Strategy (**Ref. 4**).

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

Table 4.1 summarises the exceedances of the S4UL Generic Assessment Criteria Residential End Use with Homegrown Produce criteria.

Table 4.1 Summary of exceedances of S4UL Generic Assessment Criteria Residential End Use with Homegrown Produce for the natural Tidal Flat Deposits.			
Contaminant	**No. of samples exceeding**	**S4UL Residential with plant uptake value (mg/kg)**	**Exceedances Concentration Range (mg/kg)**
Arsenic	1 of 45 (2.22%)	37.00	141.00
Benzene	31 of 45 (68.9%)	87	<90

One sample was shown to exceed the screening criteria for Arsenic from a sample of the natural deposits. The sample was obtained by Atkins from a trial pit during the pre-classification exercise and it is considered they may have picked up some of the overlying Made Ground in the sample. The natural deposits are not considered to have been impacted by the overlying Made Ground on the site (this has also been confirmed on the wider development) and it is considered an anomalous result.

31 of the 45 samples were shown to exceed the screening criteria for benzene. It should be noted that no samples had concentrations greater than the detection limit for benzene. The detection limit for 31 of the 45 samples tested for benzene samples was listed by the laboratory as 90µg/kg (0.009mg/kg), this is greater than the screening value of 87ug/kg (0.087mg/kg) and causes a significant skew to the results. Where samples are reported at the detection limit, for screening purposes, it has been conservatively assumed that the value is 90µg/kg (0.009mg/kg). The true concentration is likely to be significantly lower than this value.

4.3 Fill Material

A combined volume of approximately 110,000m^3 of Made Ground makes up Phase 4G. In Accordance with the Remediation Strategy, a total of 189 soil samples were collected between October 2018 and August 2023 for contamination testing, taken from material used within Phase 4G as fill material. Fill material was sourced from Phase 4G and the wider Glan Llyn site, comprising the in-situ or stockpiles site won Made Ground. Samples were tested for heavy metals, polycyclic aromatic hydrocarbons (PAH), total petroleum hydrocarbon (TPH), BTEX, pH, soil organic matter (SOM), ammoniacal nitrogen, cyanide, phenols and select samples were also tested for asbestos. The provenance of material reused is tracked by the sample name.

The samples were screened against the S4UL Generic Assessment Criteria Residential End Use with Homegrown Produce in accordance with the Remediation Strategy (**Ref. 4**). A summary of the laboratory chemical results is presented in **Appendix C**. Laboratory certificates are presented in **Appendix D**.

Table 4.2 summarises the exceedances of the S4UL Generic Assessment Criteria Residential End Use with Homegrown Produce criteria.

Table 4.2 Summary of exceedances of S4UL Generic Assessment Criteria Residential End Use with Homegrown Produce for the Fill Material.			
Contaminant	**No. of samples exceeding**	**S4UL Residential with plant uptake value (mg/kg)**	**Exceedances Concentration Range (mg/kg)**
Arsenic	2 of 189 (1.06%)	37.00	38.00 – 41.00
Chromium	3 of 189 (1.59%)	910.00	914.00 – 1170.00
Mercury	2 of 189 (1.06%)	1.2	34400 - 49400
Nickel	3 of 189 (1.59%)	130.00	141.00 – 496.00
Lead	9 of 189 (4.76%)	200.00	210.00 – 791.00
Vanadium	23 of 189 (12.17%)	410.00	416.00 – 1890.00
Aliphatic TPH >C8-C10	1 of 189 (0.53%)	27	46.70
Aromatic TPH >C10-C12	1 of 189 (0.53%)	74.00	112.00
Aromatic TPH >C12-C16	1 of 189 (0.53%)	140.00	177.00
Aromatic TPH >C16-C21	3 of 189 (1.59%)	260.00	350.00 – 411.00
Aromatic TPH >C21-C35	1 of 189 (0.53%)	1100.00	1120.00
Benzene	136 of 189 (71.96%)	0.087	<0.090 - <1.800
Naphthalene	3 of 189 (1.59%)	15.00	16.00 – 38.30
Phenanthrene	2 of 189 (1.06%)	95.00	140.00 – 379.00

Table 4.2 Summary of exceedances of S4UL Generic Assessment Criteria Residential End Use with Homegrown Produce for the Fill Material.			
Contaminant	**No. of samples exceeding**	**S4UL Residential with plant uptake value (mg/kg)**	**Exceedances Concentration Range (mg/kg)**
Fluoranthene	1 of 189 (0.53%)	280.00	374.00
Benzo[a]anthracene	9 of 189 (4.76%)	7.20	7.94 – 206.00
Chrysene	6 of 189 (3.17%)	15.00	25.80 – 166.00
Benzo(b)fluoranthene	47 of 189 (24.87%)	2.60	2.61 – 212.00
Benzo(k)fluoranthene	1 of 189 (0.53%)	77.00	81.50
Benzo(a)pyrene	36 of 189 (19.05%)	2.20	2.21 – 147.00
Indeno(1,2,3-c,d)Pyrene	3 of 189 (1.59%)	27.00	51.00 – 80.50
Dibenz(a,h)Anthracene	53 of 189 (28.04%)	0.24	0.26 – 24.10

136 of the 189 samples were shown to exceed the screening criteria for benzene. It should be noted that no samples had concentrations greater than the detection limit which exceeded the screening criteria for benzene. The detection limit for 136 of the 189 samples tested for benzene samples was listed by the laboratory as 90µg/kg (0.009mg/kg), 180µg/kg (0.180mg/kg) or 1800 µg/kg (1.800mg/kg), this is greater than the screening value of 87ug/kg (0.087mg/kg) and causes a significant skew to the results. Where samples are reported at the detection limit, for screening purposes, it has been conservatively assumed that the value is 90µg/kg (0.009mg/kg), 180µg/kg (0.018mg/kg) or 1800 µg/kg (1.800mg/kg). The true concentration is likely to be significantly lower than this value.

Asbestos was identified in 8 samples from the 93 analysed, these samples were then quantified. Results are summarised in the table below.

Table 4.3 - Summary of Asbestos Results for the Fill Material		
Location	**Asbestos Type**	**Quantification (%w/w)**
4C-K2 (0.50m)	Amosite (Brown) Asbestos	<0.0010

Table 4.3 - Summary of Asbestos Results for the Fill Material		
Location	**Asbestos Type**	**Quantification (%w/w)**
4E-D2 (1.00m)	Chrysotile (White) Asbestos	<0.0010
4E-B4 (0.50m)	Chrysotile (White) Asbestos	<0.0010
4E-E6 (0.25m)	Chrysotile (White) & Amosite (Brown) Asbestos	0.0191
4E-E7 (0.30m)	Chrysotile (White) Asbestos	<0.0010
4E-A8 (1.00m)	Chrysotile (White) Asbestos	<0.0010
4G-B8 (0.80m)	Chrysotile (White) Asbestos	0.0028
4G-B4 (0.30m)	Chrysotile (White) Asbestos	0.0047

The Institute of Occupational Medicine (IOM) risk assessment report for the reuse of soils containing asbestos at Llanwern (**Ref. 6**) states that Made Ground is suitable for reuse in residential areas if concentrations are less than 0.02% (200PPM) and 600mm of clean cover (soils with asbestos content <0.001%) is provided. The Made Ground material will be a minimum of 600mm below finished levels based on the proposed formation levels.

4.4 Formation Surface

Following consultation with the Senior Scientific Officer at Newport City Council (NCC) additional chemical sampling of formation surface was proposed as an addendum to the Remediation Strategy (**Ref 7**). The additional sampling was undertaken in accordance with the Remediation Strategy and, in addition to the pre-remediation testing, validation samples were collected to assess the contamination status of the formation surface.

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

The locations of the surface validation samples are shown on RLL Drawing reference 18669-RLL-25-XX-DR-O-0770-P01, in **Appendix A**.

The samples were screened against the S4UL Generic Assessment Criteria for Residential End Use with Homegrown Produce screening values in accordance with the Remediation Strategy (**Ref. 4**). The following table summarises the exceedances.

Table 4.4 Summary of exceedances of S4UL Generic Assessment Criteria Residential End Use with Homegrown Produce for the Surface Validation Samples (750mm Below Final Ground Level)			
Contaminant	**No. of samples exceeding**	**Critical Value (mg/kg)**	**Exceedances Concentration Range (mg/kg)**
Arsenic	1 of 20 (5.00%)	37.00	41.00
Lead	2 of 20 (10.00%)	200.00	230.00 – 270.00
Vanadium	2 of 20 (10.00%)	410.00	430.00 – 470.00
Benzo(b)fluoranthene	9 of 20 (45.00%)	2.60	2.70 – 7.00
Benzo(a)pyrene	8 of 20 (40.00%)	2.20	2.30 – 4.60
Dibenz(a,h)Anthracene	12 of 20 (60.00%)	0.24	0.27 – 0.76

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

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

Table 4.5 - Summary of Asbestos Results for the Fill Material		
Location	**Asbestos Type**	**Quantification (%w/w)**
4G-SV9	Chrysotile (White) Asbestos	0.011
4G-SV5	Chrysotile (White) Asbestos	0.001
4G-SV21	Chrysotile (White) Asbestos	<0.001

The locations of recorded exceedances in surface validation samples are presented on RLL Drawing 18669-RLL-25-XX-DR-O-0770-P01, in **Appendix A**.

4.5 Soils Contamination Summary

One exceedance in arsenic and thirty-one exceedances of benzene were recorded within the underlying Tidal Flat Deposits.

Exceedances of arsenic, chromium, mercury, nickel, lead, vanadium, aliphatic TPH >C8-C10, aromatic TPH >C10-C12, aromatic TPH >C12-C16, aromatic TPH >C16-C21, aromatic TPH >C35-C44, benzene, naphthalene, phenanthrene, fluoranthene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-c,d)pyrene and dibenz(g,h,i)perylene were encountered in a limited number of samples taken from the fill material when compared to the S4UL Generic Assessment Criteria Residential End Use with Homegrown Produce.

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

Asbestos was identified within 10 of the 87 fill material soil samples tested at concentrations of between <0.001% to 0.0191%. As the concentrations are less than 0.02% (200PPM), the material is considered suitable for reuse in residential areas beneath suitable inert clean cover, as per the IOM risk assessment report (**Ref. 6**).

An assessment on the risk to controlled waters will be validated in a separate validation report in accordance with the Hannah Fraser Consulting Soils Verification methodology (**Ref 8**).

5.0 Ground Gas Assessment

5.1 Gas Monitoring

Gas monitoring was undertaken in eight monitoring wells on phase 4G (4G-WS01 to 4G-WS08) between February 2024 and July 2025 by RLL. The location of the monitoring wells are shown on RLL Drawing 18669-RLL-25-XX-DR-O-0771-P01 (**Appendix A**), and the monitoring results are available in **Appendix E**.

Six rounds of gas monitoring have been undertaken at locations 4G-WS01 – 4G-WS04 installed in March 2024 and three to four rounds of gas monitoring have been undertaken at locations 4G-WS05 to 4G-WS08 installed in June 2025. A maximum methane concentration of 6.60% was recorded, and a maximum concentration of 0.1% for carbon dioxide was recorded. Low oxygen concentrations (minimum of 0.0%) were occasionally encountered in boreholes during the monitoring period.

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

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

Table 5.1 - Gas Monitoring Results Summary

Hole ID	Barometric Pressure (mb)	Peak Methane (%)	Peak Carbon Dioxide (%)	Min Oxygen (%)	Maximum Flow Rate (l/hr)
4G-WS01	976 - 1020	0.0 – 1.4	0.0 - 0.1	6.4 – 18.0	0.0 – 1.3
4G-WS02	976 - 1020	0.0 – 0.9	0.0 - 0.1	0.2 – 16.7	0.0 – 2.4
4G-WS03	976 - 1020	0.0 – 0.5	0.0 - 0.1	15.0 – 22.3	0.0 – 1.3
4G-WS04	977 - 1019	3.5 – 6.6	0.0 - 0.1	0.0 – 7.0	-0.1 - 0.0
4G-WS05	998 - 1019	0.0 – 2.0	0.0	9.3 – 20.1	0.0 – 0.4
4G-WS06	1015 - 1019	0.0	0.0 - 0.2	15.1 – 19.9	0.0
4G-WS07	1010 - 1018	0.0	0.0	17.6 – 20.3	0.0
4G-WS08	1010 - 1019	0.0 – 4.2	0.0	1.4 – 19.9	0.0

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

Table 5.2 - Gas Screening Values						
Hole ID	**Max. CO_2 conc. (%)***	**Max. CH_4 conc. (%)***	**Steady. Flow Rate (l/hr)****	**CO_2 GSV**	**CH_4 GSV**	**Borehole Characterisation**
4G-WS01	0.1	1.4	1.3	0.0013	0.0182	CS2
4G-WS02	0.1	0.9	2.4	0.0024	0.0216	CS1
4G-WS03	0.1	0.5	1.3	0.0013	0.0065	CS1
4G-WS04	0.1	6.6	0.3	0.0003	0.0198	CS2
4G-WS05	0.1	2.0	0.4	0.0004	0.0080	CS2
4G-WS06	0.2	0.1	0.3	0.0006	0.0003	CS1
4G-WS07	0.1	0.1	0.3	0.0003	0.0003	CS1
4G-WS08	0.1	4.2	0.3	0.0003	0.0126	CS2

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

In accordance with BS 8485+A1-2019 and based on the gas monitoring completed to date half of Phase 4G would fall within Characteristic Situation 1 (CS1) classification; with the area of 4GWS01, 4G-WS04, 4G-WS05 and 4G-WS08 falling within Characteristic Situation 2 (CS2) classification due to elevated peak methane concentrations of 1.4% to 6.6%.

If a worst case scenario GSV for methane and flow is considered for the site, 0.1584 is calculated, equating to CS2 gas protection requirements.

5.2 Proposed Gas Protection

In accordance with BS8485+A1:2019, a classification of CS2 would require a score of 3.5 based on the units being preliminary classed as Type A structures.

For all areas (Type A) we propose the following:

Item	Feature	Score
1	Passive sub floor dispersal layer of very good performance.	2.5
2	Independently inspected and validated gas resistant membrane.	2.0
	Total Score	**4.5**

The above proposed design meets the required scored for Type A structures for CS2 gas protection. Based on the available information, the protection suggested in the table is considered suitably protective of the proposed residential building.

5.3 Radon

Information presented on the Public Health England 'UK Maps of Radon' website indicates that the Site is within a radon affected area, with 1-3% of properties being above the Action Level. As such, the site is in a radon effected area but no radon protection measures are likely to be required in the construction of the new development.

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

6.0 Permeability Assessment

6.1 Introduction

The Glan Llyn Soils Validation Strategy for Protection of Controlled Waters (**Ref. 8**) assumes a hydraulic conductivity of 1 x 10-6 m/s or less for the engineered fill and also presents a rationale for the assessment of permeability.

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

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

6.2 Formation Falling Head Tests

Formation falling head tests were undertaken in three locations across the Site. The tests were undertaken in three locations (4G-INF01, 4G-INF01 and 4G-INF03) in July 2025.

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

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

Both pipes were filled with approximately 275mm to 310mm of clean water and measurements were taken to the top of water from the top of the inner pipe to measure the permeability of the underlying soils. The test is non-standard but is intended to be consistently repeatable to provide site specific data as a line of evidence to support the assumption that reengineering the near surface Made Ground has reduced the permeability.

Formation falling head tests were conducted for a minimum of 310 minutes, at the end of the testing period it was found that infiltration rates (measured in increments) had substantially stabilised and the calculated rate is considered more representative of the ground conditions.

The location of the formation falling head tests are shown on RLL Drawing 18669-RLL-25-XX-DR-O-0779-P01 (**Appendix A**), and the raw data is available in **Appendix F**.

Table 6.1 - Infiltration Test Results Summary						
Test ID	**Date**	**Initial Water Level (mm)**	**Duration of Test (mins)**	**Final Water Level (mm)**	**Total Fall in Water Level (mm)**	**Permeability (m/s)**
4G-INF01	11/07/25	310	380	295	15	$6.58E^{-07}$
4G-INF02	29/07/25	274	420	258	16	$6.35E^{-07}$
4G-INF03	30/07/25	290	310	273	17	$9.14E^{-07}$

6.3 Falling Head Tests

Falling head tests were undertaken on four occasions within 4G at boreholes 4G-WS01, 4G-WS03, 4G-WS05 and 4G-WS06 in July 2025. Boreholes, installed within the Made Ground, were filled to near surface level with clean water and intermittently measured as water returned to equilibrium levels. Tests were conducted for a minimum of 1440 minutes.

The location of the falling head tests are shown on RLL Drawing 18669-RLL-25-XX-DR-O-0778-P01 (**Appendix A**).

Table 6.2 – Falling Head Test Results Summary			
Test ID	**Duration of Test (mins)**	**Total Fall in Water Level (mm)**	**Permeability (m/s)**
4G-WS01	1460	86	$9.82E^{-07}$
4G-WS03	1560	93	$9.94E^{-07}$
4G-WS05	1400	65	$7.74E^{-07}$
4GWS06	1480	79	$8.90E^{-07}$

The falling head tests indicated the permeability of the underlying soils to be very low, with a range of 7.74E-07m/s to 9.94E-07Em/s.

Based on the formation falling head test results the ground is considered to have poor drainage characteristics consistent with the modelling discussed within the Soils Validation Strategy for Protection of Controlled Waters (**Ref. 8**).

6.4 Rising Head Tests

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

7.0 Conclusions

During previous intrusive ground investigations on Phase 4G, the Made Ground was found to contain numerous buried obstructions as well as exceedances of heavy metals, benzene, TPH, PAHs and asbestos. As such, remediation and earthworks were required to provide a suitable site for development.

The remediation works were undertaken by ACS Contractors Ltd September 2023 and November 2024. The works comprised site clearance, removal of obstructions, removal of unsuitable material, excavation and turnover of the suitable for reuse Made Ground to the underlying Tidal Flat Deposits and re-engineering to a formation level >600mm below the proposed final ground level to facilitate the provision of clean cover requirements.

During the removal of the Made Ground, numerous buried obstructions were encountered including piles and fused slag. The buried obstructions were removed in their entirety, or in the case of the deep piles, cropped to the top of the underlying Tidal Flat Deposits. Following the 25m grid sampling exercise an approximate total of 94,334m^3 of Made Ground was assessed as suitable for reuse following turnover and placement. A total of approximately 16,222m^3 of pre validated stockpiled site won material was utilised to achieve the formation level.

Throughout the removal and re-engineering of the Made Ground, the Site was assessed by an RLL engineer for visual and olfactory evidence of contamination. Validation of the remedial earthworks relevant to Phase 4G comprised validation soil sampling, permeability testing, and gas monitoring. The fill material used to re-engineer Phase 4G was predominantly granular, comprising sandy gravel with variable quantities of clay, silt and cobbles.

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

Forty-five soil samples were collected from the Tidal Flat Deposits exposed during the initial Atkins intrusive ground investigation and sent for contamination testing. A single S4UL generic assessment criteria for residential end-use with homegrown produce exceedance was recorded for arsenic.

Exceedances of arsenic, chromium, mercury, nickel, lead, vanadium, aliphatic TPH >C8-C10, aromatic TPH >C10-C12, aromatic TPH >C12-C16, aromatic TPH >C16-C21, aromatic TPH >C21-C35, benzene, naphthalene, phenanthrene, fluoranthene, benzo(a)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, ideno(1,2,3-c,d)pyrene and dibenz(a,h)anthracene were encountered in a limited number of samples taken from the fill material and the surface validation samples when compared to the S4UL generic assessment criteria for residential end-use with homegrown produce screening values.

Asbestos was identified within 8 of the 93 fill material soil samples tested at concentrations of between <0.0010% to 0.0191%. Asbestos was identified in three

samples from the nineteen surface validation samples analysed at concentrations of between <0.001% to 0.011%. As the concentrations are less than 0.02% (200PPM), the material is considered suitable for reuse in residential areas beneath suitable inert clean cover, as per the IOM risk assessment report.

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

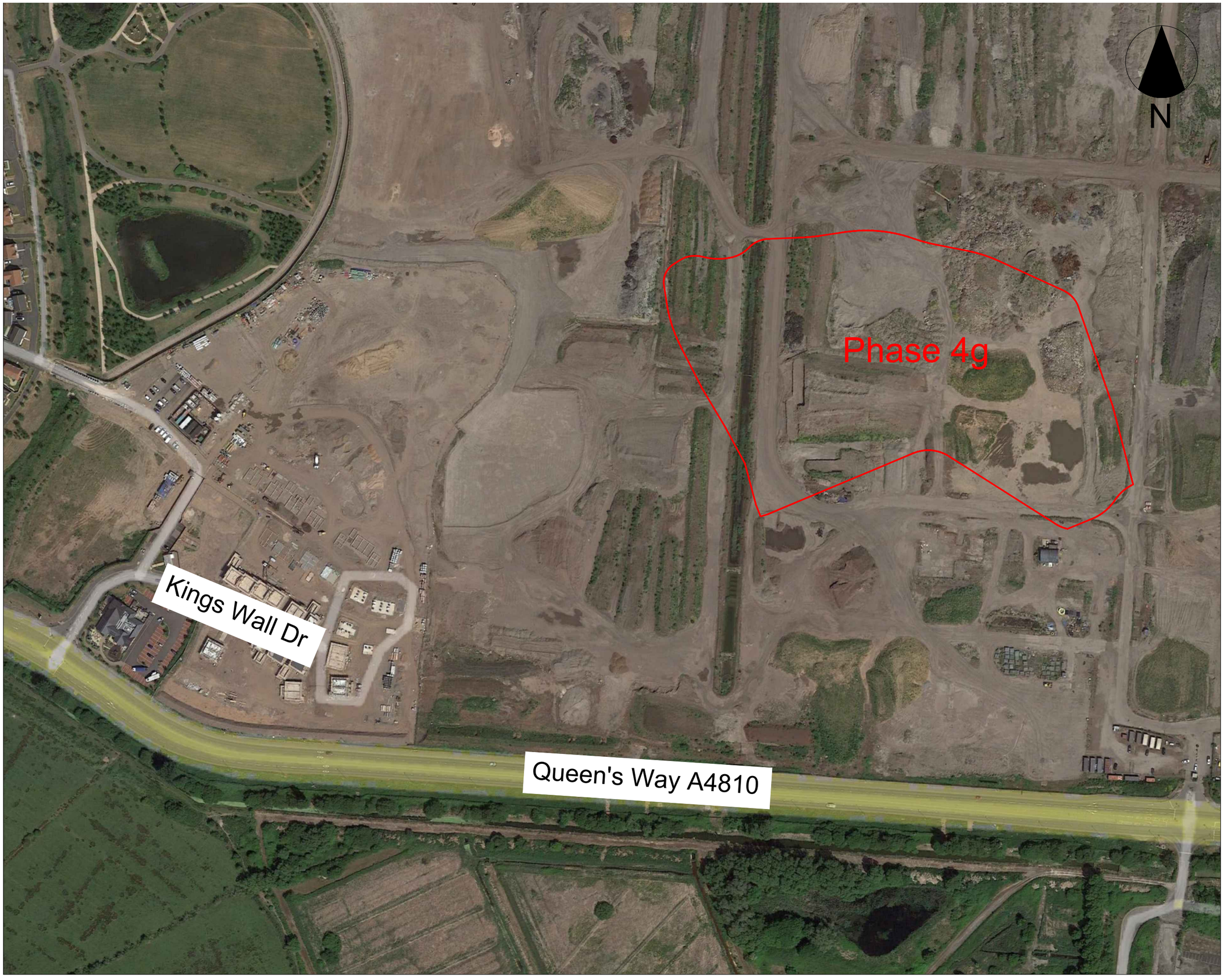
In accordance with BS 8485+A1-2019, based on the completed gas monitoring, Phase 4G would fall under Characteristic Situation 2 (CS2) classification. The Site is located within an area where less than 1-3% of properties being above the Action Level. As such, the site is in a radon effected area but no radon protection measures are likely to be required in the construction of the new development.

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

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

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

Appendix A: Drawings



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KEY:

Approximate Site Boundary

Rev	Date	Amendments	By	Chk

Client

St Modwen Developments

Project

P18-669 Llanwern Reclamation

Drawing Title

Phase 4G

Site Location Plan

INFORMATION

	Drawn	Checked	Date
1:1250 @ A1	SR	CW	20.12.22

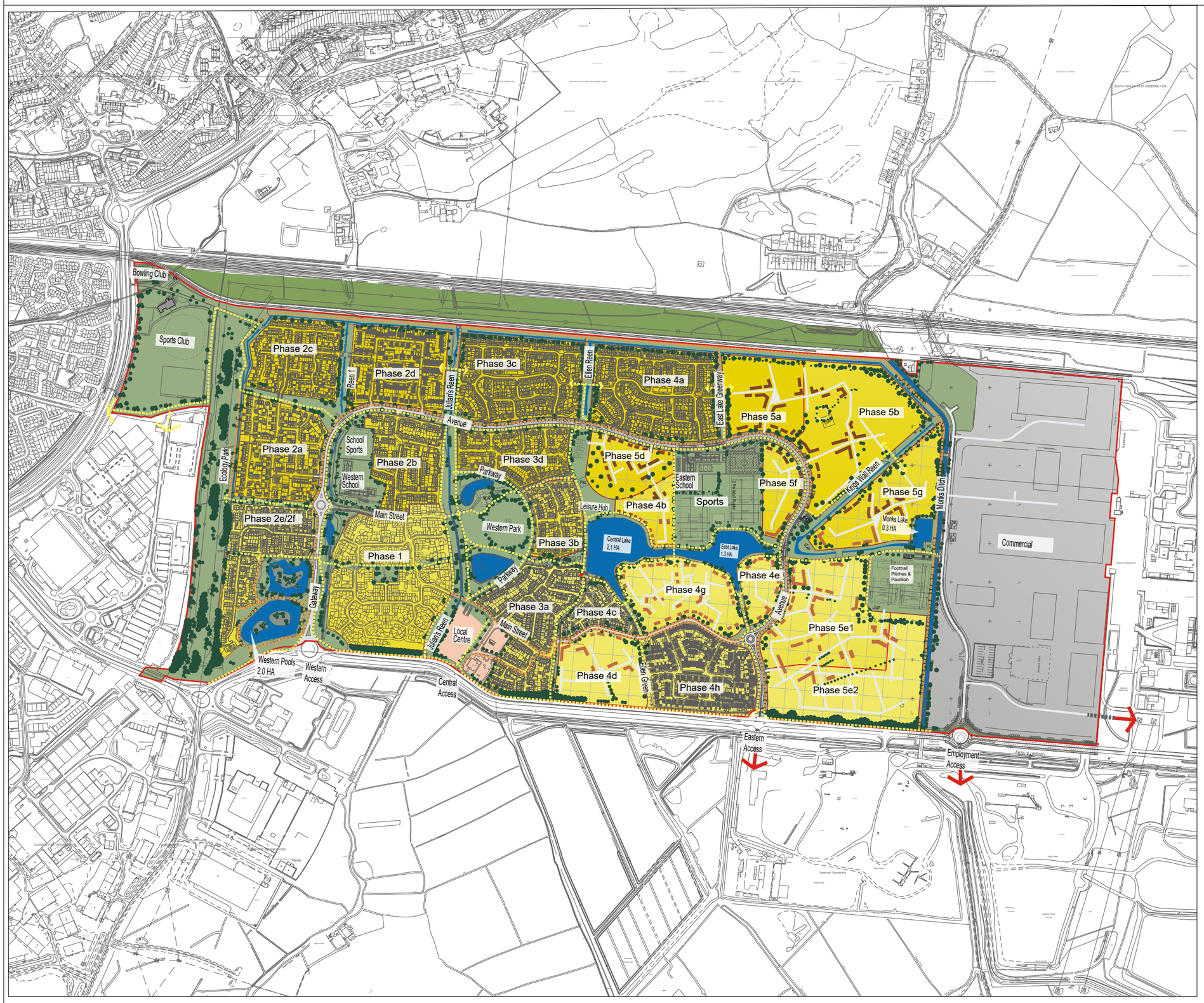
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Glan Llyn -ESAMP Indicative Masterplan



SGP
Architects + Masterplanners

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SGP File Ref:	8111-08-A011	**Drawing No:**	8111-08-A012
Project No:	8111-08	**Rev:**	**Rev P19**
Drawn By:	NV	**Scale:**	1:5000 @A1
Date:	10/04/2019		

Notes:
Residential areas quoted are approximate gross site areas and include Leaps, Laps and on plot road infrastructure

Notes:
Residential areas quoted are approximate gross site areas and include Leaps, Laps and on plot road infrastructlayture

0 50 100 200 250 300 400 500
Metres at scale 1:5000

ST.MODWEN

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NOTES

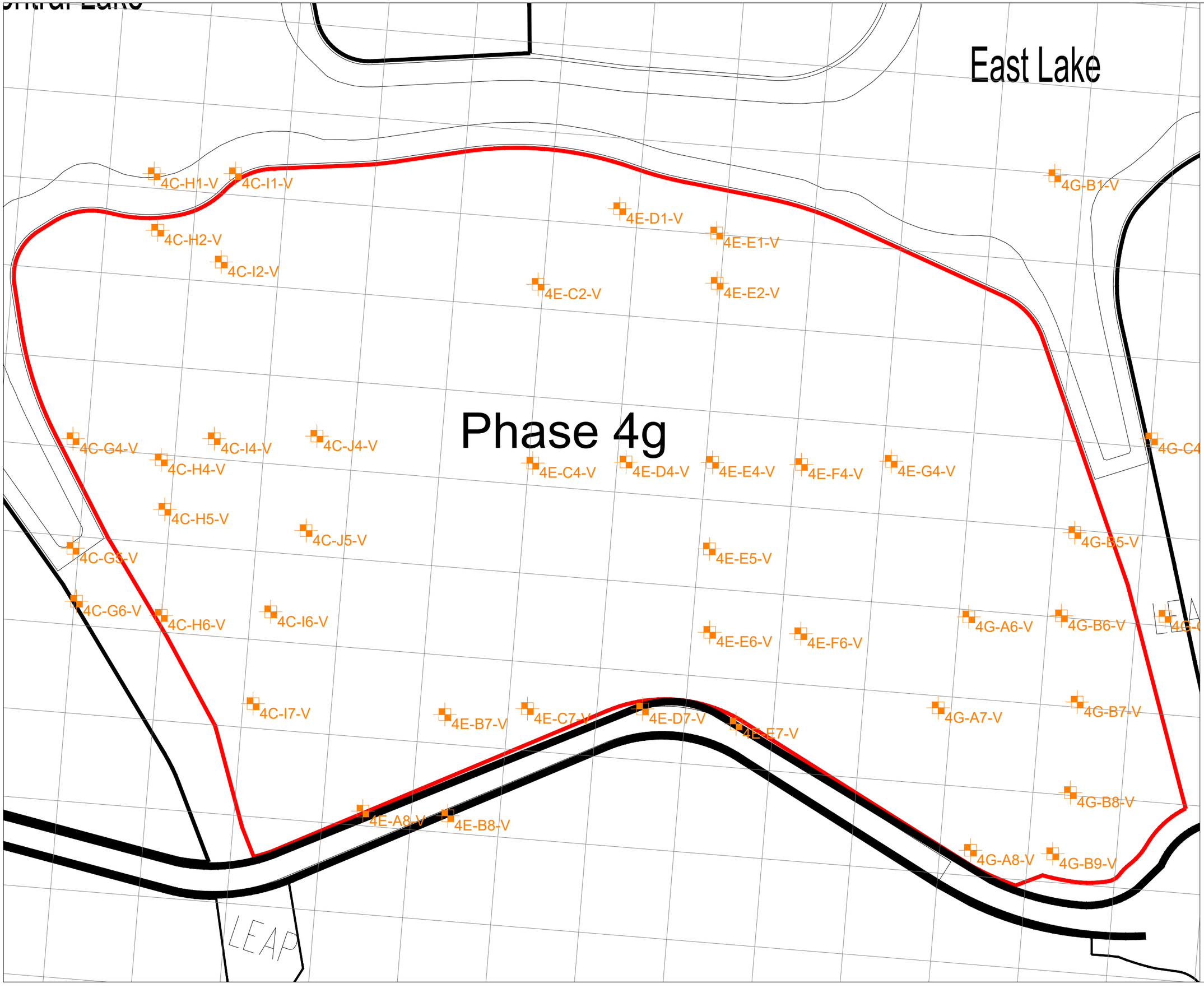
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Job Title:	
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Title:	
BASE OF EXCAVATION PHASE 4G	
Drawing No.	**Rev.:**
1	A
Date:	**Scale:**
20/05/2024	NTS
Drawn by:	**Checked by:**
JT	

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KEY:

SITE BOUNDARY

RLL TESTING GRID

ATKINS CLAY VALIDATION SAMPLE LOCATION

Rev	Date	Amendments	By	Chk
P01	28/07/2025	FIRST ISSUE	AMS	CW

Client

Revantage Real Estate

Project

P18-669 Llanwern Reclamation

Drawing Title

Phase 4G Clay
Validation Location Plan

INFORMATION

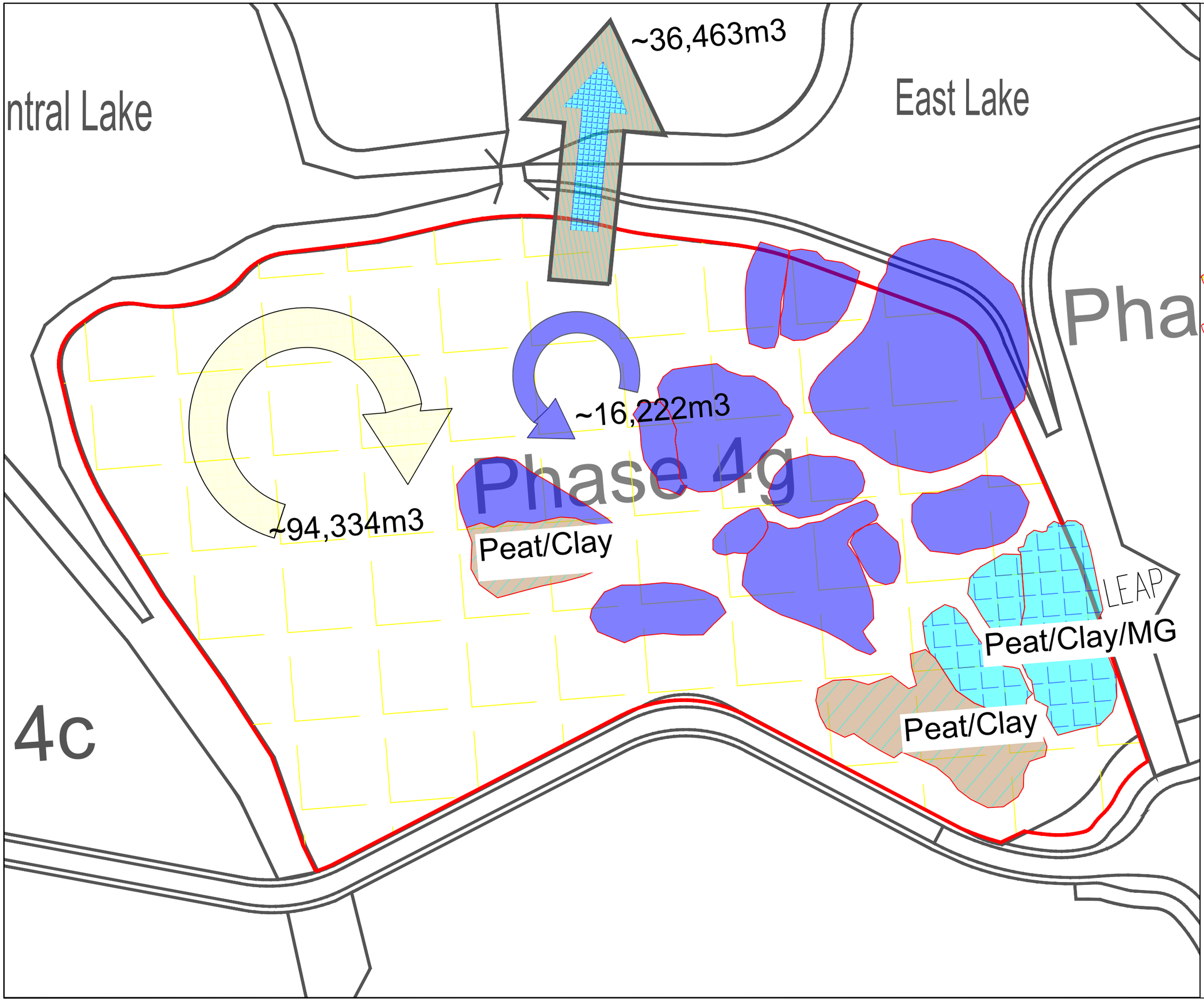
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NTS	AMS	CW	28/07/25

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KEY:

PEAT AND CLAY REMOVED OFF PHASE TO SPORTS PITCH

MADE GROUND (STOCKPILES) REUSED WITHIN PHASE 4G

PHASE 4G SOURCE MATERIAL FROM EXCAVATION

PHASE 4G SITE BOUNDARY

Rev	Date	Amendments	By	Chk
P01	30/07/2025	First Issue	DM	CW

Client

Revantage Real Estate

Project

P18-669
Llanwern Reclamation

Drawing Title

Phase 4G
Material Tracking Information

INFORMATION

	Drawn	Checked	Date
NTS	DM	CW	30/07/2025

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LLANWERN C137

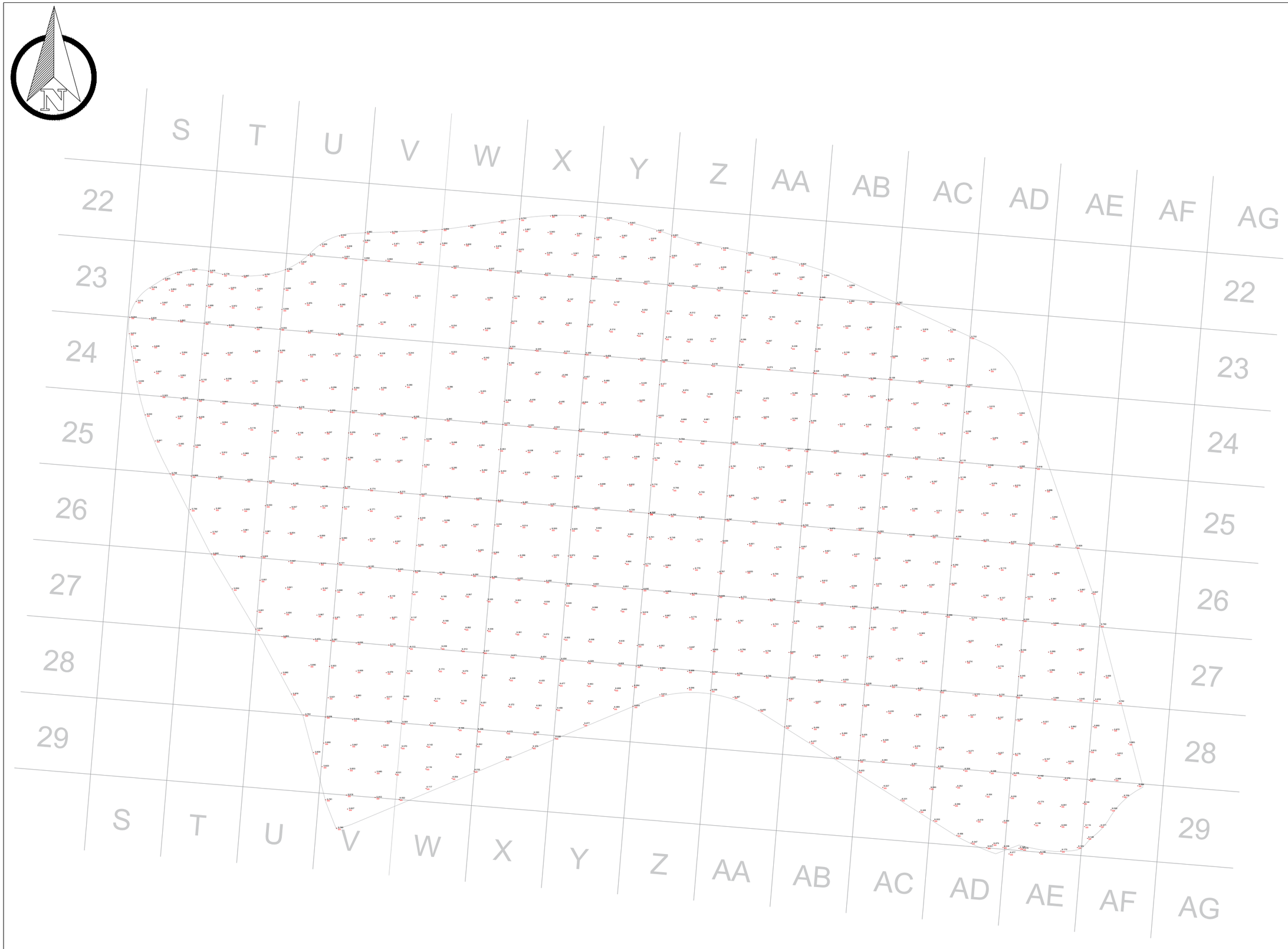
Title:
Phase 4G + 4E Constraits
LAYOUT (SHEET 1 OF 1)

Drawing No.	Rev.:
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Date:	Scale:
20/05/2024	NTS

Drawn by:	Checked by:
JT	

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NOTES

10.000 POINT ELEVATION

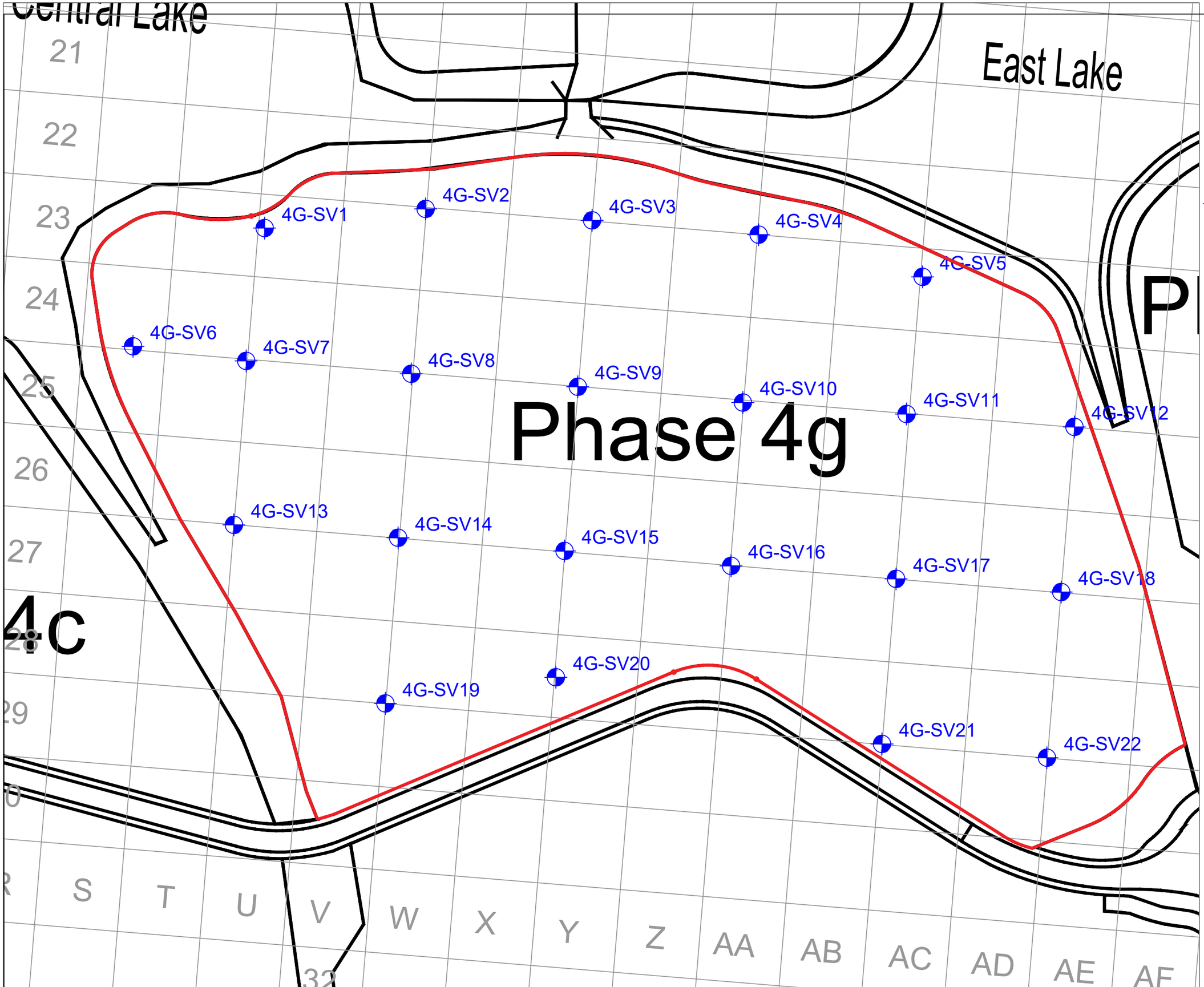
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Title:	
AS-BUILT LEVELS PHASE 4G	
Drawing No.	**Rev.:**
1	A
Date:	**Scale:**
01/08/2024	NTS
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KEY:

4H-SV **SURFACE VALIDATION SAMPLE LOCATION**

PHASE BOUNDARY

RLL 25m x 25m GRID SQUARE

Rev	Date	Amendments	By	Chk
P01	24/11/2023	First Draft	JC	DM

Client

St Modwen Developments

Project

P18-669 Llanwern Reclamation

Drawing Title

Phase 4G Surface Validation Sample Location Plan

INFORMATION

	Drawn	Checked	Date
NTS	JC	DM	24/11/23

Drawing No. — Rev.

18669-RLL-23-XX-DR-O-0519 P01

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Central Lake

East Lake

Phase 4g

4c

4G-SV1
4G-SV2
4G-SV3
4G-SV4
4G-SV5
4G-SV6
4G-SV7
4G-SV8
4G-SV9
4G-SV10
4G-SV11
4G-SV12
4G-SV13
4G-SV14
4G-SV15
4G-SV16
4G-SV17
4G-SV18
4G-SV19
4G-SV20
4G-SV21
4G-SV22

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KEY:

- 4H-SV — SURFACE VALIDATION SAMPLE LOCATION
- PHASE BOUNDARY
- RLL 25m x 25m GRID SQUARE
- ARSENIC
- LEAD
- VANADIUM
- BENZO(B)FLUORANTHENE
- BENZO(A)PYRENE
- DIBENZ(A,H)ANTHRACENE

Rev	Date	Amendments	By	Chk
P01	29/07/2025	First Draft	AMS	CW

Client

Revantage Real Estate

Project

P18-669 Llanwern Reclamation

Drawing Title

Phase 4G Surface Validation Exceedance Location Plan

INFORMATION

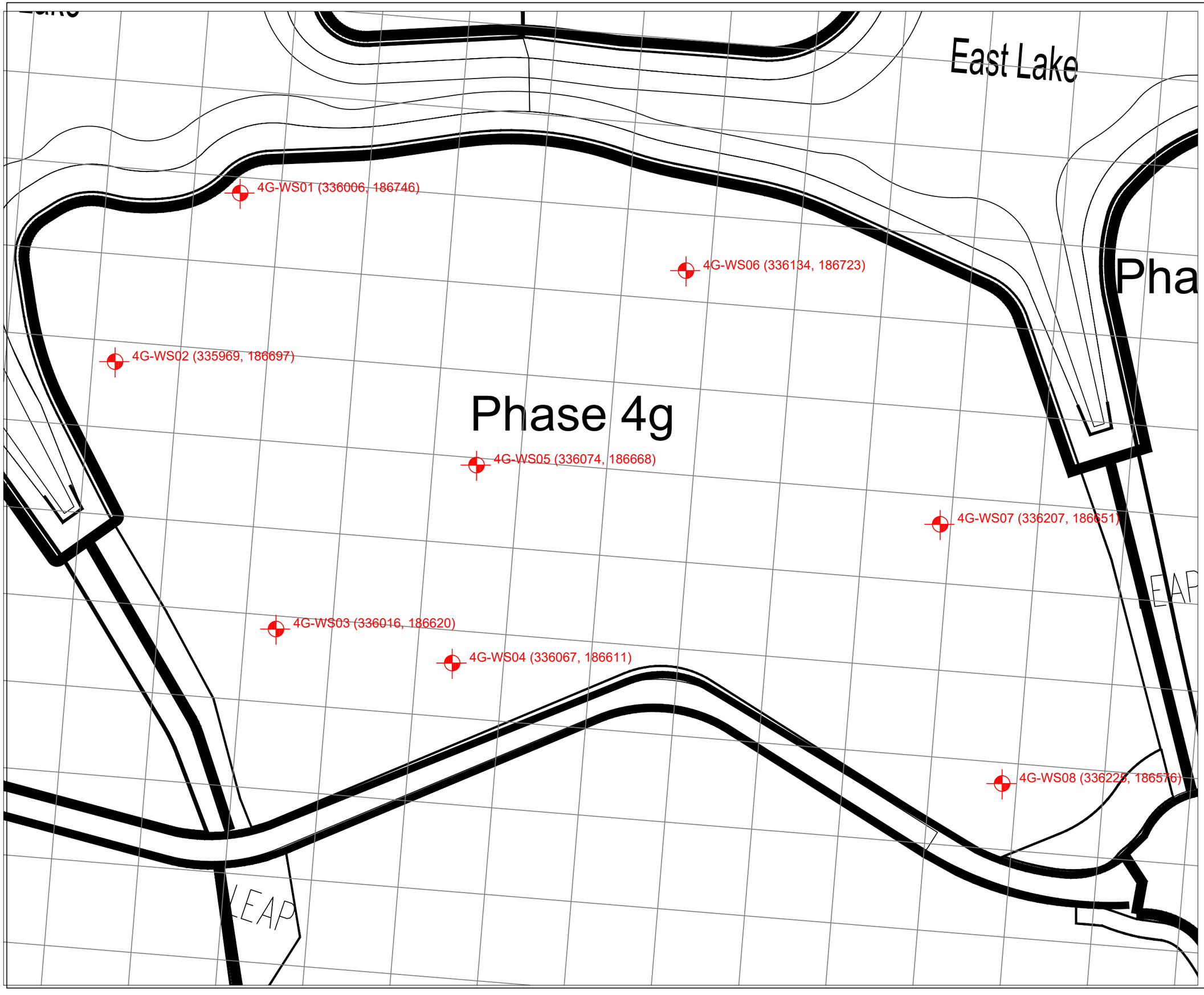
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NTS	JC	CW	29/07/25

Drawing No. — Rev.

18669-RLL-25-XX-DR-O-0770 P01

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KEY:

GAS MONITORING LOCATION

Rev	Date	Amendments	By	Chk
P01	29/07/2025	First Issue	AMS	CW

Client

Revantage Real Estate

Project

P18-669 Llanwern Reclamation

Drawing Title

Phase 4G Gas Monitoring Location Plan

INFORMATION

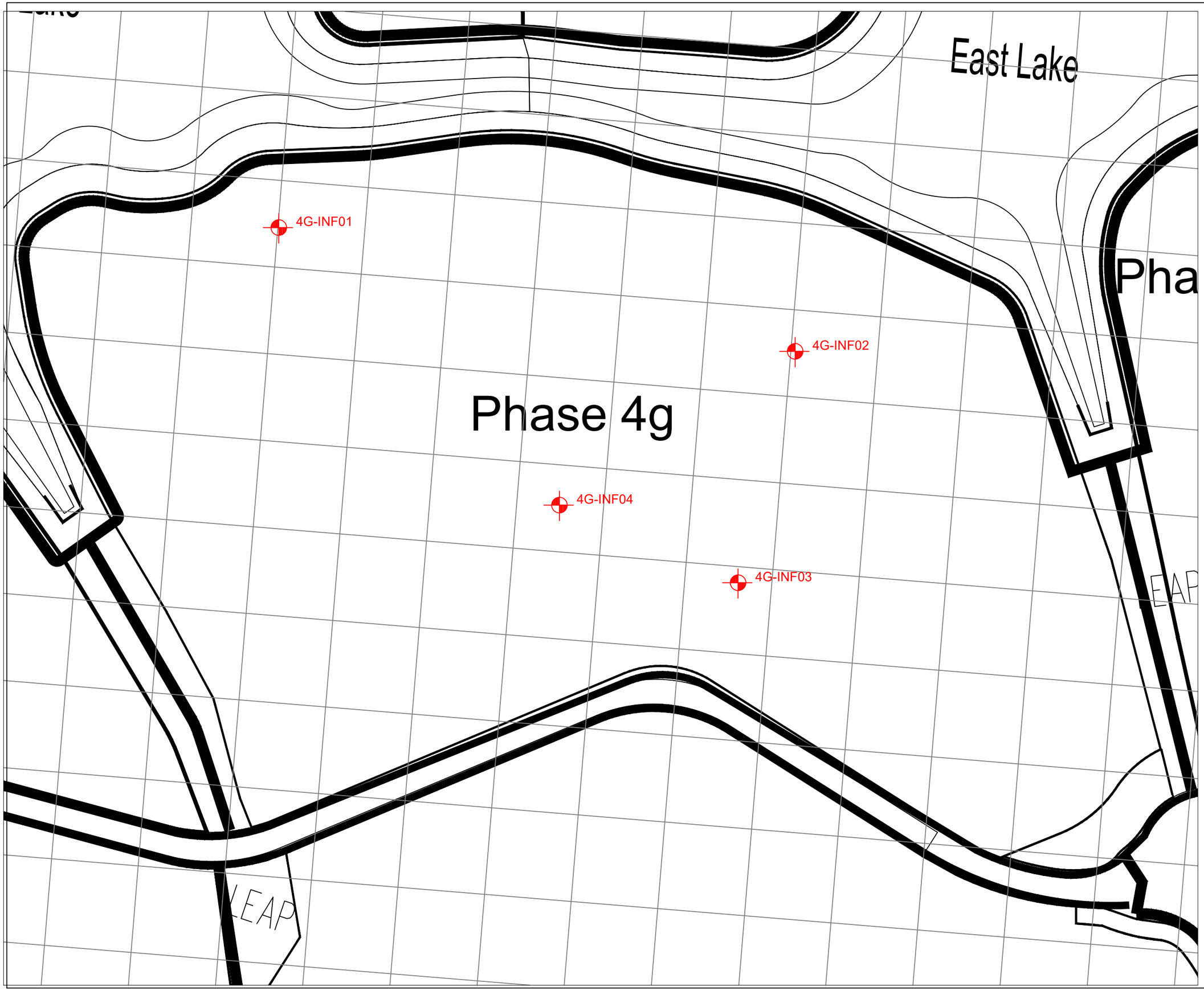
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KEY:

FORMATION FALLING HEAD FORMATION

Rev	Date	Amendments	By	Chk
P01	31/07/2025	First Issue	AMS	CW

Client

Revantage Real Estate

Project

P18-669 Llanwern Reclamation

Drawing Title

Phase 4G Formation
Falling Head Location Plan

INFORMATION

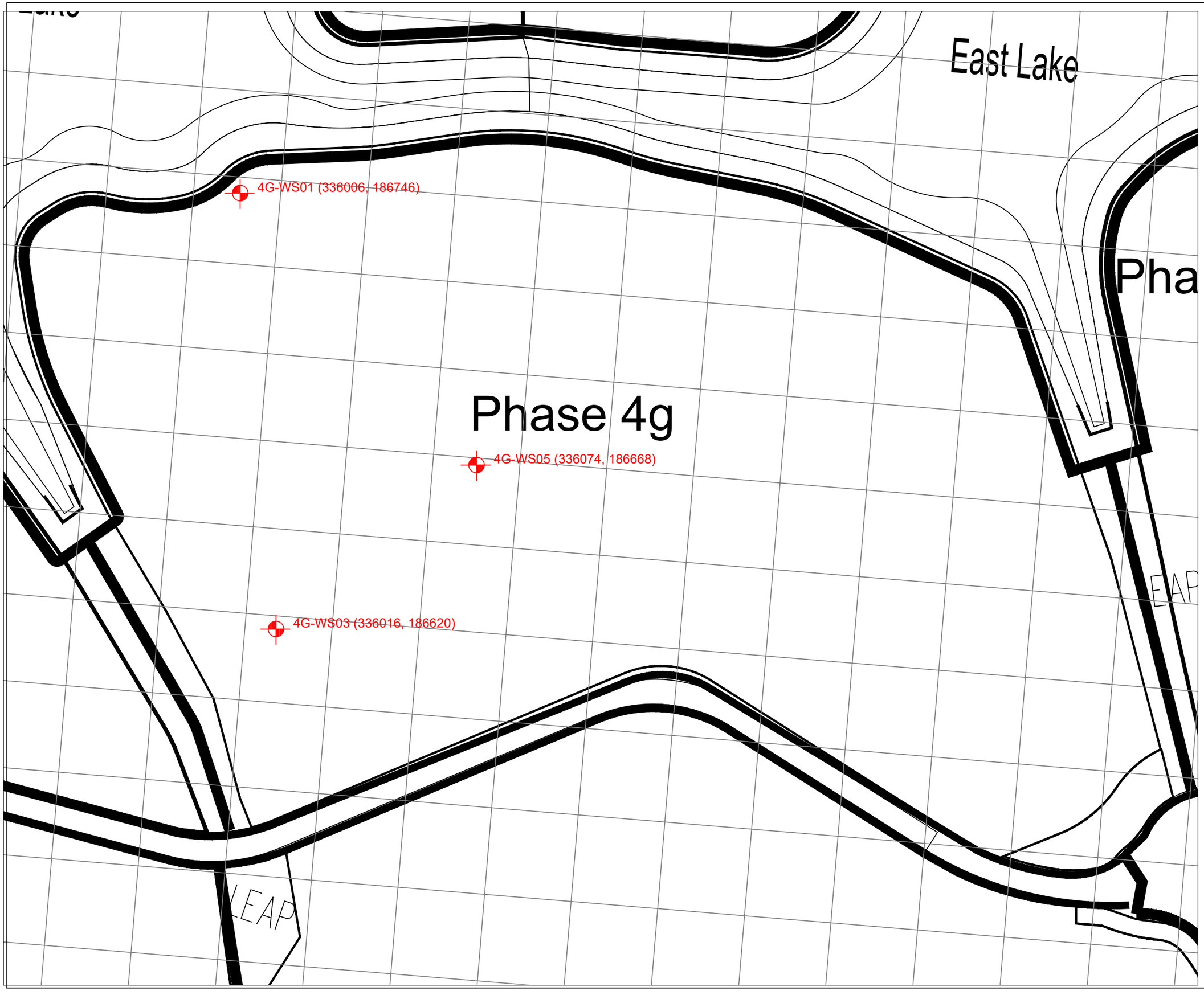
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NTS	AMS	CW	31/07/25

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KEY:

FALLING HEAD LOCATION

Rev	Date	Amendments	By	Chk
P01	31/07/2025	First Issue	AMS	CW

Client

Revantage Real Estate

Project

P18-669 Llanwern Reclamation

Drawing Title

Phase 4G Falling Head Location Plan

INFORMATION

	Drawn	Checked	Date
NTS	AMS	CW	31/07/25

Drawing No. 18669-RLL-25-XX-DR-O-0778

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Appendix B: Photographic Report

Llanwern Reclamation – Phase 4G – Photographic Report



Photograph 1 (05/09/2023) – Numerous piles associated with former overhead conveyors are exposed in Phase 4g.



Photograph 2 (11/09/23) – Natural Tidal Flat Deposits clay is exposed in Phase 4g following excavation.



Photograph 3 (14/09/2023) – ACS engineering backfill material in Phase 4g using a buldozer. Material is engineered in 300mm layers prior to compaction by vibrating roller drum.



Photograph 4 (25/09/23) – Natural Tidal Flat Deposits clay is exposed in Phase 4g following excavation.



Photograph 5 (02/09/23) – Breakout and excavation on a section of the former Drain 3 is complete. Piles are exposed and surveyed prior to backfill.



Photograph 6 (09/10/23) – Backfill in the low area following the excavation to clay in Drain 3. Fill quality appears to be compliant and filled according to specification.



Photograph 7 (09/10/22) – ACS engineering backfill material with a vibrating roller drum in Phase 4g. Layer thickness is compliant with specification; oversize/ scrap is being sprayed/removed by an ACS labourer.



Photograph 8 (09/10/23) – Large area complete to formation in the west of the plot. CBR testing has commenced.



Photograph 9 (10/10/23) – ACS engineering backfill material in Phase 4g using a bladed dozer..



Photograph 10 (10/10/23) – Progress of the fill area in Phase 4g.



Photograph 13 (17/10/23) – Fill area and excavation progress in the south of the Phase.



Photograph 14 (26/10/23) – Vibrating roller and dozer engineer suitable material in layers in the north of Phase 4g.



Photograph 15 (07/11/23) – Layer (EDG) testing ongoing in Phase 4g.



Photograph 16 (07/11/23) – An additional excavation to clay is complete in the south of Phase 4g.



Photograph 17 (28/11/23) – Finished formation level area off area in Phase 4g showing quality of engineered fill.



Photograph 18 (05/12/23) – Breakout of structures associated with the sinter plant on Phase 4g.



Photograph 19 (05/12/23) – Breakout of structures associated with the sinter plant at Phase 4g, exposing a dense grid of piles. ACS engineer surveys piles as encountered prior to them being cropped to the overarching clay level.



Photograph 20 (08/01/24) – ACS continue with excavation to clay level exposing underlying piles.



Photograph 21 (09/01/24) – ACS uncovering further extensive concrete structures.



Photograph 22 (01/02/24) – Excavation to clay level continues in Phase 4G, obstructions encountered, and material is taken to local fill area.



Photograph 23 (05/03/24) – ACS excavate down to clay level exposing dense network of piles in Phase 4G.



Photograph 24 (11/03/24) – ACS continue excavation and fill in 4G.



Photograph 25 (16/04/23) – Phase 4G, finished fill area at formation level.



Photograph 26 (22/04/24) – ACS continue to excavate to the level of the clay Tidal Flat Deposits..

Appendix C: S4UL Screening Summary Table

P18-669 Llanwern Phase 4G Soil Chemical Screening Results

Project: P18-669												189.00		RLL Grid Ref:	S25	S25	S25	S27	S27	S27	T27	T27	T27	T22	T22	T23	T23	T26	T26	T26	U26	U26	U26	U27
Client: Rodgers Leask Environmental						Job No.:									181012-49	181012-49	181012-49	181003-43	181003-43	181003-43	181003-43	181003-43	181003-43	181012-49	181012-49	181012-49	181012-49	181012-49	181012-49	181012-49	181012-49	181012-49	181012-49	181003-43
Quotation No.: Q21-24056						Sample ID.:	Generic Assessment Criteria (GAC) Residential End Use with Homegrown Produce (SOM 1%)	Number of Exceedances	Maximum Concentration Check	Minimum Exceedance Concentration	95th Percentile Concentration	95th Percentile Check	Maximum Concentration	Average Concentration	Minimum Concentration	18512158	18511962	18511966	18449389	18449394	18449398	18449372	18449376	18449380	18512075	18512084	18512054	18512064	18512129	18512139	18512148	18511954	18512026	18512107	18449507
Order No.: .						Client Sample Ref.:									4C-G4	4C-G4	4C-G4	4C-G5	4C-G5	4C-G5	4C-G6	4C-G6	4C-G6	4C-H1	4C-H1	4C-H2	4C-H2	4C-H4	4C-H4	4C-H4	4C-H5	4C-H5	4C-H5	4C-H6
						Sample Type:																											
						Top Depth (m):									0.50-0.50	1.20-1.20	1.80-1.80	0.50-0.50	1.00-1.00	1.50-1.50	0.30-0.30	1.00-1.00	1.50-1.50	0.50-0.50	1.00-1.00	1.50-1.50	0.50-0.50	1.00-1.00	0.50-0.50	1.00-1.00	1.60-1.60	0.50-0.50	1.00-1.00	1.80-1.80	0.50-0.50
						Bottom Depth (m):																											
						Date Sampled:									11/10/2018	11/10/2018	11/10/2018	02/10/2018	02/10/2018	02/10/2018	02/10/2018	02/10/2018	02/10/2018	11/10/2018	11/10/2018	11/10/2018	11/10/2018	11/10/2018	11/10/2018	11/10/2018	11/10/2018	11/10/2018	11/10/2018	02/10/2018
						Asbestos Lab:																											
Determinand	**Accred.**	**SOP**	**Units**	**ALS LOD**	**Chemtest LOD**																												
ACM Type	U	2192		N/A	N/A																												
Asbestos Identification	U	2192		N/A	N/A		11	0.0174	0.0010						Not Detected	-	Not Detected	Not Detected	-	Not Detected	-	Not Detected	-	Not Detected	-	-	Not Detected	Not Detected	Not Detected	-	-	Not Detected	Not Detected	Not Detected
Asbestos by Gravimetry	U	2192	%	0.001	0.001		73								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Asbestos	U	2192	%	0.001	0.001		28								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Moisture	N	2030	%	0.02	0.02		0								5.05	6.62	0.436	5.45	7.9	2.21	2.83	0.974	1.44	9.78	7.02	26	10.9	5.71	4.29	4.31	4.59	6.15	4.21	4.9
Soil Colour	N	2040		N/A	N/A										Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Black	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown
Other Material	N	2040		N/A	N/A										Vegetation	Vegetation	Vegetation	Stones	Stones	Stones	Crushed Brick	Stones	Stones	Stones	Vegetation	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Crushed Brick
Soil Texture	N	2040		N/A	N/A										Sand	Stone/Soil	Stone/Soil	Stone/Soil	Stone/Soil	Stone/Soil	Sandy Loam	Sandy Loam	Loamy Sand	Sand	Stone/Soil	Sand	Sand	Sand	Sand	Sand	Sand	Sand	Sandy Loam	Sandy Loam
pH	M	2010		4	4										9.01	11.9	11.8	11.4	11.3	11.7	9.69	11.4	11.2	8.82	9.27	8.68	8.89	9.23	9.32	8.98	9.58	9.03	8.89	10.4
Cyanide (Total)	M	2300	mg/kg	1	0.5							20.90	1.66	0.50	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Ammoniacal Nitrogen	M	2425	mg/kg	12	0.5							117.00	11.62	0.50	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12
Iron (Total)	N	2430	mg/kg	10000	100							352000.00	105977.66	12000.00	133000.00	121000	154000	157000	155000	299000	249000	352000	96500	189000	150000	136000	73800	187000	196000	127000	206000	164000	83300	226000
Arsenic	M	2450	mg/kg	0.6	0.5	37	2	41.00	38.00	19.00	no exc.	41.00	10.56	1.80	7.22	8.6	6.66	8.55	12.1	10.4	6.4	9.75	13.4	10.1	12.2	11.2	15.7	13.9	14.8	10	16.8	13.8	12.4	16.1
Cadmium	M	2450	mg/kg	0.02	0.1	26	0	no exc.	0.00	2.51	no exc.	4.82	0.66	0.02	0.94	<0.02	1.18	0.261	<0.2	0.711	0.154	0.966	<0.02	<0.2	<0.02	0.998	<0.2	<0.2	<0.2	<0.02	<0.2	<0.2	<0.2	0.558
Chromium	M	2450	mg/kg	0.9	0.5	910	3	1170.00	914.00	679.20	no exc.	1170.00	173.73	0.90	232.00	348	467	127	342	7.82	19.1	8.19	38.7	103	106	<0.9	<9	23.8	9.03	30.5	115	101	34.4	99.3
Manganese	M	2450	mg/kg	1.3	1							49400.00	11216.56	67.60	21100.00	26500	46100	13100	22000	6530	6670	10000	10400	9020	10600	3490	1690	10400	7880	5960	11800	9890	3000	10500
Copper	M	2450	mg/kg	1.4	0.5	2400	0	no exc.	0.00	60.78	no exc.	286.00	27.86	3.21	18.30	27.7	29.7	14.6	23.1	20.8	10.3	24.7	14.9	16.1	32.5	19.5	23.9	20.6	19.1	12.5	38.8	25.9	28.6	43.4
Mercury	M	2450	mg/kg	0.14	0.05	1.2	2	2.17	1.61	1.40	1.40	2.17	0.63	0.05	<0.14	<0.14	<0.14	<0.14	<1.4	<0.14	<0.14	<0.14	<0.14	<1.4	<0.14	<1.4	<1.4	<1.4	<1.4	<0.14	<1.4	<1.4	<1.4	<0.14
Nickel	M	2450	mg/kg	0.2	0.5	130	3	496.00	141.00	47.72	no exc.	496.00	25.40	2.67	14.80	15.6	12.8	13.7	57.8	15.1	41.5	14.3	4.71	23.7	22.1	27.1	33.7	49.7	28	13.3	47.3	27.5	27.2	27
Lead	M	2450	mg/kg	0.7	0.5	200	9	791.00	210.00	166.00	no exc.	791.00	64.50	0.70	17.90	15.1	15.6	57.4	31.2	25	14.9	20.5	4.47	45.3	45.8	35.8	47.2	64.3	51.3	26	55.9	66.2	36.1	67.6
Selenium	M	2450	mg/kg	1	0.25	250	0	no exc.	0.00	16.90	no exc.	24.30	6.48	0.20	7.09	7.8	12.3	7.04	12.8	5.22	4.66	7.14	5.1	<10	1.71	<1	<10	<10	<10	1.25	<10	<10	<10	6.15
Vanadium	U	2450	mg/kg	0.2	0.5	410	23	1890.00	416.00	572.20	572.20	1890.00	216.48	12.00	911.00	941	1890	363	894	169	250	143	121	148	143	56.4	49.4	142	132	87.5	205	176	104	309
Zinc	M	2450	mg/kg	1.9	0.5	3700	0	no exc.	0.00	669.20	no exc.	3120.00	237.07	14.60	73.60	50.6	61.4	275	131	99.4	344	126	53.7	133	184	221	185	179	174	103	195	251	114	301
Organic Matter	M	2625	%	0.35	0.4							93.40	11.86	0.35	5.05	6.62	0.436	5.45	7.9	2.21	2.83	0.974	1.44	9.78	7.02	26	10.9	5.71	4.29	4.31	4.59	6.15	4.21	4.9
Aliphatic TPH >C5-C6	N	2680	mg/kg	0.02	0.05	42	0	no exc.	0.00	1.00	no exc.	1.00	0.09	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatic TPH >C6-C8	N	2680	mg/kg	0.02	0.1	100	0	no exc.	0.00	1.00	no exc.	3.32	0.12	0.00	<0.01	<0.01	<0.01	0.0132	<0.01	0.0239	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatic TPH >C8-C10	M	2680	mg/kg	0.02	0.05	27	1	46.70	46.70	1.00	no exc.	46.70	0.36	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.0239	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatic TPH >C10-C12	M	2680	mg/kg	0.02	2	130	0	no exc.	0.00	6.40	no exc.	112.00	1.52	0.01	<0.01	<0.01	<0.01	0.0121	<0.01	0.0559	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatic TPH >C12-C16	M	2680	mg/kg	0.1	1	1.10E+03	0	no exc.	0.00	33.96	no exc.	177.00	7.16	0.10	1.29	<0.1	<0.1	21	29.2	43.3	1.99	2.24	1.34	3.2	3.06	1.2	1.98	2.1	2.21	1.96	0.453	1.39	<0.1	4.72
Aliphatic TPH >C16-C21	M	2680	mg/kg	0.1	2	6.50E+04	0	no exc.	0.00	88.76	no exc.	210.00	22.43	0.10	6.63	0.767	2.02	46.4	67.6	73.5	10.2	11.9	6.8	14.6	22.8	5	2.79	12.8	10.7	19.3	4.12	6.57	<0.1	18.9
Aliphatic TPH >C21-C35	M	2680	mg/kg	0.1	3	6.50E+04	0	no exc.	0.00	323.40	no exc.	1000.00	88.29	1.00	73.70	20.6	33.6	165	199	141	82.6	87.6	46.4	88.6	49.5	52.1	34.7	129	126	339	53.4	57.3	11.8	83.8
Aliphatic TPH >C35-C44	N	2680	mg/kg	0.1	10	6.50E+04	0	no exc.	0.00	91.52	no exc.	417.00	32.15	0.10	55.50	11.1	18.2	42.5	49.3	30.2	30.7	15.5	4.23	32.9	11.9	25.5	26.1	69	82.2	203	23.2	33.6	4.98	56.4
Total Aliphatic Hydrocarbons	N	2680	mg/kg	0.1	10							4410.00	187.44	5.00	137	32.5	53.8	275	345	288	125	117	58.8	139	87.3	83.8	65.6	213	221	564	81.2	98.8	16.8	164
Aromatic TPH >C5-C7	N	2680	mg/kg	0.02	0.05	70	0	no exc.	0.00	1.00	no exc.	1.00	0.09	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatic TPH >C7-C8	N	2680	mg/kg	0.02	0.05	130	0	no exc.	0.00	1.00	no exc.	1.00	0.09	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatic TPH >C8-C10	M	2680	mg/kg	0.02	0.05	34	0	no exc.	0.00	1.00	no exc.	31.10	0.27	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatic TPH >C10-C12	M	2680	mg/kg	0.02	1	74	1	112.00	112.00	2.14	no exc.	112.00	1.15	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.0365	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatic TPH >C12-C16	M	2680	mg/kg	0.1	1	140	1	177.00	177.00	22.76	no exc.	177.00	6.73	0.10	1.98	0.449	<0.1	7.9	9.11	7.91	2.98	0.967	1.88	3.61	2.37	1.51	1.07	0.765	1.22	1.36	2.51	1.63	0.691	3.51
Aromatic TPH >C16-C21	U	2680	mg/kg	0.1	2	260	3	411.00	350.00	136.20	no exc.	411.00	30.99	1.00	9.97	2.7	4.35	23.9	27.7	22.2	10.5	5.39	6.94	15.1	12.9	6.38	5.42	7.79	7.41	18.7	16.9	9.08	3.86	14.8
Aromatic TPH >C21-C35	M	2680	mg/kg	0.1	2	1100	1	1120.00	1120.00	455.60	no exc.	1120.00	115.53	1.00	113.00	19.7	41.1	112	143	75.2	63.5	42.8	31.5	91.6	62.6	58.5	52.9	145	146	460	54.7	51.8	21.6	104
Aromatic TPH >C35-C44	N	2680	mg/kg	0.1	1	1100	0	no exc.	0.00	156.00	no exc.	597.00	47.37	1.00	109.00	9.57	21.5	60.9	65.5	30.6	48.9	22.6	15.2	59.6	23.8	51.1	58.9	130	150	443	30.5	42.3	10.3	107
Total Aromatic Hydrocarbons	N	2680	mg/kg	0.1	10							1850.00	199.38	5.00	234	32.4	66.9	205	245	136	126	71.8	55.5	170	102	118	118	283	305	923	105	105	36.4	229
Total Petroleum Hydrocarbons	N	2680	mg/kg	0.1	10							5850.00	381.86	10.00	371	64.9	121	480	590	424	251	189	114	309	189	201	184	496	526	1490	186	204	53.2	393
Benzene	M	2760	µg/kg	90	1	87	0	no exc.	0.00	180.00	180.00	1800.00	99.59	1.00	<90	<90	<9	<90	<90	<90	<90	<90	<90	<180	<90	<90	<180	<90	<90	<90	<90	<90	<90	<90
Toluene	M	2760	µg/kg	70	1	130000	0	no exc.	0.00	140.00	no exc.	1400.00	77.98	1.00	<70	<70	<7	<70	<70	<70	<70	<70	<70	<140	<70	<70	<140	<70	<70	<70	<70	<70	<70	<70
Ethylbenzene	M	2760	µg/kg	40	1	47000	0	no exc.	0.00	80.00	no exc.	800.00	44.67	1.00	<40	<40	<4	<40	<40	<40	<40	<40	<40	<80	<40	<40	<80	<40	<40	<40	<40	<40	<40	<40
m & p-Xylene	M	2760	µg/kg	100	1	56000	0	no exc.	0.00	200.00	no exc.	2000.00	111.15	1.00	<100	<100	<10	<100	<100	<100	<100	<100	<100	<200	<100	<100	<200	<100	<100	<100	<100	<100	<100	<100
o-Xylene	M	2760	µg/kg	100	1	60000	0	no exc.	0.00	200.00	no exc.	2000.00	111.26	1.00	<100	<100	<10	<100	<100	<100	<100	<100	<100	<200	<100	<100	<200	<100	<100	<100	<100	<100	<100	<100
Methyl Tert-Butyl Ether	M	2760	µg/kg	100	1							2600.00	117.25	1.00	<100	<100	<10	<100	<100	<100	<100	<100	<100	<200	<100	<100	<200	<100	<100	<100	<100	<100	<100	<100
Naphthalene	M	2800	mg/kg	0.009	0.1	15.00	3	38.30	16.00	3.24	no exc.	38.30	0.99	0.02	<0.09	0.159	0.0211	0.215	0.117	0.0495	0.0255	0.037	0.0238	0.414	0.274	<0.18	0.114	0.101	0.14	0.249	0.608	0.459	0.147	0.209
Acenaphthylene	N	2800	mg/kg	0.012	0.1	170.00	0	no exc.	0.00	0.95	no exc.	51.20	0.72	0.01	<0.12	0.034	<0.012	0.0552	<0.06	<0.012	<0.012	<0.012	0.0171	0.112	0.102	<0.24	<0.12	<0.06	0.182	<0.12	0.458	0.271	0.0745	<0.12
Acenaphthene	M	2800	mg/kg	0.008	0.1	210.00	0	no exc.	0.00	0.40	no exc.	16.50	0.25	0.01	<0.08	0.019	0.0507	0.0187	0.0463	0.015	0.0127	<0.008	<0.008	0.0228	0.0751	<0.16	<0.08	<0.04	<0.04	<0.08	<0.16	<0.04	0.0163	<0.08
Fluorene	M	2800	mg/kg	0.01	0.1	170.00	0	no exc.	0.00	1.07	no exc.	135.00	1.13	0.01	<0.1	0.0228	0.0165	0.0569	<0.05	0.0173	0.0181	<0.01	<0.01	0.0732	0.0951	<0.2	<0.1	<0.05	0.198	<0.1	0.27	0.162	0.0542	<0.1
Phenanthrene	M	2800	mg/kg	0.015	0.1	95.00	2	379.00	140.00	9.12	no exc.	379.00	4.83	0.04	<0.15	0.278	0.29	0.457	0.384	0.14	0.151	0.094	0.127	0.754	1.01	<0.3	0.335	0.279	1.78	0.451	2.12	1.33	0.454	0.406
Anthracene	M	2800	mg/kg	0.016	0.1	2400.00	0	no exc.	0.00	2.33	no exc.	155.00	1.62	0.02	<0.16	0.059	0.0641	0.0927	<0.08	0.0269	0.0465	0.0223	0.0402	0.171	0.254	<0.32	<0.16	0.15	0.428	<0.16	0.596	0.368	0.123	<0.16
Fluoranthene	M	2800	mg/kg	0.017	0.1	280.00	1	374.00	374.00	12.80	no exc.	374.00	7.26	0.08	<0.17	0.581	1.28	0.746	1.16	0.248	0.274	0.181	0.269	1.1	1.84	<0.34	0.513	0.591	2.36	0.662	4.09	2.47	0.696	0.63
Pyrene	M	2800	mg/kg	0.015	0.1	620.00	0	no exc.	0.00	9.12	no exc.	302.00	5.48	0.07	<0.15	0.526	1.35	0.737	1.31	0.252	0.251	0.215	0.256	0.768	1.55	<0.3	0.456	0.484	1.68	0.476	2.82	1.62	0.49	0.491
Benzo[a]anthracene	M	2800	mg/kg	0.014	0.1	7.20	9	206.00	7.94	5.89	no exc.	206.00	3.56	0.05	<0.14	0.507	1.09	0.49	1.07	0.152	0.222	0.114	0.196	0.561	1.21	<0.28	0.399	0.26	0.682	0.32	1.55	0.969	0.288	0.32
Chrysene	M	2800	mg/kg	0.01	0.1	15.00	6	166.00	25.80	6.13	no exc.	166.00	3.04	0.05	<0.1	0.5	1.28	0.502	1.12	0.159	0.25	0.129	0.228	0.583	1.14	<0.2	0.472	0.308	0.684	0.353	1.72	0.909	0.276	0.33
Benzo[b]fluoranthene	M	2800	mg/kg	0.015	0.1	2.60	47	212.00	2.61	9.18	9.18	212.00	4.67	0.06	<0.15	0.723	2.16	0.566	1.7	0.206	0.3	0.148	0.306	1.08	2.02	<0.3	0.72	0.322	0.74	0.41	1.55	1.02	0.346	0.323
Benzo[k]fluoranthene	M	2800	mg/kg	0.014	0.1	77.00	1	81.50	81.50	3.35	no exc.	81.50	1.62	0.01	<0.14	0.301	0.734	0.277	0.633	0.0937	0.123	0.0531	0.111	0.358	0.645	<0.28	0.298	0.129	0.365	0.162	0.825	0.547	0.163	0.154
Benzo[a]pyrene	M	2800	mg/kg	0.015	0.1	2.20	36	147.00	2.21	6.27	6.27	147.00	3.20	0.04	<0.15	0.55	1.67	0.654	1.59	0.178	0.274	0.122	0.139	0.582	1.51	<0.3	0.477	0.35	0.746	0.302	1.75	1.06	0.33	0.297
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.018	0.1	27.00	3	80.50	51.00	3.98	no exc.	80.50	2.23	0.03	<0.18	0.329	1.22	0.509	1.11	0.176	0.21	0.1	0.115	0.461	1.07	<0.36	0.355	0.305	0.556	0.232	1.26	0.956	0.22	0.232
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.023	0.1	0.24	53	24.10	0.26	1.10	1.10	24.10	0.55	0.02	<0.23	0.0806	0.19	0.089	0.193	<0.023	0.0404	<0.023	0.0288	0.114	0.21	<0.46	<0.23	<0.115	<0.115	<0.23	<0.46	0.151	0.0377	<0.23
Benzo[g,h,i]perylene	M	2800	mg/kg	0.024	0.1	320.00	0	no exc.	0.00	4.12	no exc.	88.30	2.15	0.03	<0.24	0.412	1.17	0.539	1.16	0.155	0.206	0.115	0.111	0.477	1	<0.48	0.364	0.29	0.582	<0.24	1.27	0.825	0.201	0.273
Total Of 16 PAH's	N	2800	mg/kg	0.118	2							2460.00	44.19	0.55	<1.18	5.08	12.6	6	11.6	1.87	2.4	1.33	1.97	7.63	14	<2.36	4.5	3.57	11.1	3.62	20.9	13.1	3.92	3.67
Resorcinol	M	2920	mg/kg		0.02							0.02	0.02	0.02																				
Phenol	M	2920	mg/kg	0.01	0.02	280.00	0	no exc.	0.00	0.02	no exc.	0.17	0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cresols	M	2920	mg/kg	0.01	0.02							0.28	0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.0102	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Xylenols	M	2920	mg/kg	0.015	0.02							0.06	0.02	0.02	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
1-Naphthol	N	2920	mg/kg		0.02							0.02	0.02	0.02																				
Trimethylphenols	M	2920	mg/kg		0.02							0.02	0.02	0.02																				
Total Phenols	M	2920	mg/kg	0.035	0.1	280.00	0	no exc.	0.00	0.10	no exc.	0.45	0.05	0.04	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035

P18-669 Llanwern Phase 4G Soil Chemical Screening Results

Project: P18-669							U27	U27	U22	U22	U23	U23	U23	U24	U24	U25	U25	V26	V26	V27	V27	V28	V28	V22	V22	V22	V23	V23	V23	V24	V24	V24	V25	V25	V25
Client: Rodgers Leask Environmental					**Job No.:**		181003-43	181003-43	181012-49	181012-49	181012-49	181012-49	181012-49	181012-49	181012-49	181012-49	181012-49	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
Quotation No.: Q21-24056					**Sample ID.:**	**Generic Assessment Criteria (GAC) Residential End Use with Homegrown Produce (SOM 1%)**	18449354	18449358	18512091	18512095	18512005	18512018	18512042	18511995	18511999	18511978	18511985	18548126	18548131	18548150	18548160	18548185	18548198	18548070	18548138	18548298	18548508	18548523	18548515	18548532	18548543	18548551	18548079	18548087	18548092
Order No.: .					Client Sample Ref.:		4C-H6	4C-H6	4C-I1	4C-I1	4C-I2	4C-I2	4C-I2	4C-I3	4C-I3	4C-I4	4C-I4	4C-I5	4C-I5	4C-I6	4C-I6	4C-I7	4C-I7	4C-J1	4C-J1	4C-J1	4C-J2	4C-J2	4C-J2	4C-J3	4C-J3	4C-J3	4C-J4	4C-J4	4C-J4
					Sample Type:																														
					Top Depth (m):		1.00-1.00	1.50-1.50	0.50-0.50	1.10-1.10	0.50-0.50	1.00-1.00	1.50-1.50	0.50-0.50	0.80-0.80	0.50-0.50	1.00-1.00	0.50-0.50	1.00-1.00	0.50-0.50	1.00-1.00	0.50-0.50	1.00-1.00	0.50-0.50	1.00-1.00	2.00-2.00	0.50-0.50	1.00-1.00	2.00-2.00	0.50-0.50	1.00-1.00	1.50-1.50	0.50-0.50	1.00-1.00	1.40-1.40
					Bottom Depth (m):																														
					Date Sampled:		02/10/2018	02/10/2018	11/10/2018	11/10/2018	11/10/2018	11/10/2018	11/10/2018	11/10/2018	11/10/2018	11/10/2018	11/10/2018	10/17/2018	10/17/2018	10/17/2018	10/17/2018	10/17/2018	10/17/2018	10/17/2018	10/17/2018	10/17/2018	10/17/2018	10/17/2018	10/17/2018	10/17/2018	10/17/2018	10/17/2018	10/17/2018	10/17/2018	10/17/2018
					Asbestos Lab:																														
Determinand	**Accred.**	**SOP**	**Units**	**ALS LOD**	**Chemtest LOD**																														
ACM Type	U	2192		N/A	N/A																														
Asbestos Identification	U	2192		N/A	N/A		-	Not Detected	Not Detected	-	Not Detected	Not Detected	-	Not Detected	-	-	Not Detected	Not Detected	Not Detected	Not Detected	-	Not Detected	-	Not Detected	Not Detected	-	Not Detected	-	Not Detected	-	Not Detected	Not Detected	Not Detected	-	Not Detected
Asbestos by Gravimetry	U	2192	%	0.001	0.001		-	-	-	-	-	-	-	-	-	-	-																		
Total Asbestos	U	2192	%	0.001	0.001		-	-	-	-	-	-	-	-	-	-	-																		
Moisture	N	2030	%	0.02	0.02		29.8	8.22	47.8	7.83	26.4	27.1	10.1	4.19	4.22	4.38	3.78	9.3	11	7.2	10	6.9	10	11	8.9	16	14	11	15	6.5	11	9.9	8.7	5.5	10
Soil Colour	N	2040		N/A	N/A		Dark Brown	Dark Brown	Black	Black	Black	Black	Black	Dark Brown	Black	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Black	Black
Other Material	N	2040		N/A	N/A		Stones	Crushed Brick	Brick	Vegetation	Stones	Stones	Stones	Vegetation	None	Vegetation	Stones	Vegetation	Vegetation	Vegetation	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones
Soil Texture	N	2040		N/A	N/A		Sandy Loam	Sandy Loam	Stone/Soil	Stone/Soil	Sand	Sand	Sand	Stone/Soil	Stone/Soil	Stone/Soil	Stone/Soil	Sandy Loam	Sandy Loam	Loamy Sand	Sandy Loam	Sand	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam	Sand	Sand
pH	M	2010		4	4		10.8	9.86	8.81	11.7	9.1	8.64	9.5	11.6	10.9	10.8	9.21	10.6	9.19	10.5	12.3	9.86	10.7	8.51	8.75	8.3	8.32	9.52	9.96	9.38	9.08	9.31	10.7	11.9	11.9
Cyanide (Total)	M	2300	mg/kg	1	0.5		<1	<1	1.42	<1	<1	1.41	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Ammoniacal Nitrogen	M	2425	mg/kg	12	0.5		<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12
Iron (Total)	N	2430	mg/kg	10000	100		132000	166000	108000	83100	134000	134000	63500	169000	90900	95900	281000	22800	43000	93400	98000	57000	108000	40300	19500	217000	90300	73800	93600	78600	70500	81500	50600	167000	148000
Arsenic	M	2450	mg/kg	0.6	0.5	37	10.7	11.1	8.45	<6	21.3	10.1	8.37	11.6	16.1	9.11	21.6	4.13	6.28	9.64	7.28	7.39	5.68	8.54	5.87	11.4	9.25	8.72	10.5	9.31	9.53	8.6	7.08	<6	<6
Cadmium	M	2450	mg/kg	0.02	0.1	26	<0.2	0.174	1.19	<0.2	<0.2	1.56	0.774	1.46	1.86	<0.2	3.48	<0.02	<0.02	<0.02	<0.2	0.149	<0.02	0.155	0.0664	<0.2	0.184	<0.02	<0.2	<0.02	3.14	<0.02	0.168	<0.2	<0.2
Chromium	M	2450	mg/kg	0.9	0.5	910	369	49.5	36.4	109	214	12.5	171	91.8	116	52.1	54.4	19.6	22.3	21.7	462	41.5	207	39.8	14.9	<9	40.1	81.7	47.2	18.2	9.74	121	32.8	810	449
Manganese	M	2450	mg/kg	1.3	1		15500	6130	3360	18200	11800	5070	7050	7680	9750	8740	8840	6680	4520	4630	29500	5450	19100	3950	4360	14300	4730	10500	4800	4880	3010	9220	4990	34400	43700
Copper	M	2450	mg/kg	1.4	0.5	2400	42.6	17.7	21.7	17	27.8	36	22.6	17.8	17.4	25.7	32.7	4.45	22.2	12.1	18.8	11.1	10.4	17.3	11.2	21.2	17.9	14.5	25.7	43.6	28.8	15.9	10.2	18	30.4
Mercury	M	2450	mg/kg	0.14	0.05	1.2	<1.4	<0.14	<0.14	<1.4	<1.4	<0.14	<0.14	<0.14	<1.4	<1.4	<1.4	<1.4	<0.14	<0.14	<1.4	<0.14	<0.14	<0.14	<0.14	<1.4	<0.14	<0.14	<1.4	<0.14	<0.14	<0.14	<0.14	<1.4	<1.4
Nickel	M	2450	mg/kg	0.2	0.5	130	238	18	25.1	11.5	28.6	22.6	15.1	18.7	19.3	19.6	37.9	2.96	18.6	16	13.1	8.84	6.72	19.1	6.66	15.7	15	13.3	35.2	14.3	19.5	13.6	9.27	8.79	12.9
Lead	M	2450	mg/kg	0.7	0.5	200	26.7	41.6	76.9	25	113	127	25.5	53.1	34.4	49.9	96.7	3.53	8.16	29.1	24.4	45.8	23.2	60.4	12.5	28.5	67.1	62.1	56.4	84.5	56.5	41.5	25.6	<7	24.3
Selenium	M	2450	mg/kg	1	0.25	250	<10	3.89	1.02	<10	<10	1.37	4.02	1.76	<10	<10	<10	4.58	2.93	<1	13.7	2.56	4.94	2.66	3.1	<10	1.87	3.76	<10	1.25	<1	3.55	3.2	16.5	18.5
Vanadium	U	2450	mg/kg	0.2	0.5	410	281	92.1	50.8	134	375	72.3	124	143	129	116	162	64.3	59.3	79	330	72.4	223	49.6	42	129	72.9	124	86.2	65.9	60.5	126	58.9	354	394
Zinc	M	2450	mg/kg	1.9	0.5	3700	138	180	261	68.3	394	593	117	223	137	163	315	32.8	49.4	154	60	203	138	187	50	81.8	258	248	448	302	239	188	113	23.3	63.3
Organic Matter	M	2625	%	0.35	0.4		29.8	8.22	47.8	7.83	26.4	27.1	10.1	4.19	4.22	4.38	3.78	0.94	1.68	1.66	3.26	6.47	5.14	15.4	11.7	19.3	32.1	10.2	12.3	9.79	59.1	14.9	2.24	1.65	7.31
Aliphatic TPH >C5-C6	N	2680	mg/kg	0.02	0.05	42	<0.01	<0.01	0.0167	0.011	<0.01	<0.01	<0.01	<0.01	<0.01	0.012	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatic TPH >C6-C8	N	2680	mg/kg	0.02	0.1	100	0.0231	<0.01	0.0622	0.0594	<0.01	<0.01	<0.01	0.0344	0.0343	0.0469	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatic TPH >C8-C10	M	2680	mg/kg	0.02	0.05	27	0.0147	<0.01	0.0544	0.0583	<0.01	<0.01	<0.01	0.025	0.231	0.0992	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatic TPH >C10-C12	M	2680	mg/kg	0.02	2	130	0.0274	<0.01	0.0866	0.0759	<0.01	<0.01	<0.01	0.0594	1.48	0.306	<0.01	<0.01	<0.01	<0.01	<0.01	0.0236	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.0263	<0.01	<0.01
Aliphatic TPH >C12-C16	M	2680	mg/kg	0.1	1	1.10E+03	37.2	2.05	46.4	22.4	6.49	5.67	2.64	3.95	23.3	9.62	2.77	<0.1	<0.1	2.54	11.5	41	12	3.35	4.65	4.31	4.25	2.46	2.22	0.685	1.45	1.16	9.48	2.27	<0.1
Aliphatic TPH >C16-C21	M	2680	mg/kg	0.1	2	6.50E+04	114	11.9	194	83.7	18.7	13.9	11.2	13.9	15.4	11.8	11.2	2.1	4.18	11.4	27	116	59	19.5	32.6	86.9	10.7	9.21	15.5	4.74	5.54	8.23	21.6	8.96	7.83
Aliphatic TPH >C21-C35	M	2680	mg/kg	0.1	3	6.50E+04	92.5	60.5	154	543	394	215	89.1	135	78.8	93.1	83.7	30.9	28.9	110	85.1	821	388	91.8	134	80.6	45.4	30.7	39.2	27.1	24.8	22.8	55.1	26.7	41.1
Aliphatic TPH >C35-C44	N	2680	mg/kg	0.1	10	6.50E+04	5.85	10.9	58.5	330	417	205	43.8	54.9	44.1	60.6	28.8	33.9	8.43	38.2	26.2	226	98.3	25.4	23.5	3.84	12.6	12	13.7	12.1	5.51	2.27	29.2	6.27	9.38
Total Aliphatic Hydrocarbons	N	2680	mg/kg	0.1	10		250	85.3	452	979	837	439	147	208	162	175	126	66.9	41.5	162	150	1210	557	140	194	176	72.9	54.4	70.7	44.5	37.3	34.5	115	44.2	58.3
Aromatic TPH >C5-C7	N	2680	mg/kg	0.02	0.05	70	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatic TPH >C7-C8	N	2680	mg/kg	0.02	0.05	130	<0.01	<0.01	<0.01	0.0154	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatic TPH >C8-C10	M	2680	mg/kg	0.02	0.05	34	<0.01	<0.01	0.0355	0.0385	<0.01	<0.01	<0.01	0.0167	0.154	0.0665	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatic TPH >C10-C12	M	2680	mg/kg	0.02	1	74	0.0179	<0.01	0.0577	0.0506	<0.01	<0.01	<0.01	0.0396	0.984	0.204	<0.01	<0.01	<0.01	<0.01	<0.01	0.015	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.0175	<0.01	<0.01
Aromatic TPH >C12-C16	M	2680	mg/kg	0.1	1	140	5.95	4.3	13.3	6.54	7.45	6.21	2.04	4.27	10.2	6.33	1.46	<0.1	0.198	2.76	3.35	15.8	6.8	4.88	2.42	6.68	0.583	2.3	<0.1	<0.1	3.95	2.27	2.16	1.46	1.15
Aromatic TPH >C16-C21	U	2680	mg/kg	0.1	2	260	26	16.7	109	34.8	34.3	20.8	12.5	18.4	10.9	15.3	6.65	2.16	1.92	8.29	15.7	53.7	31.9	21.2	13.1	57.4	7	10.2	5.42	4.23	47.2	13.3	7.15	13.6	9.86
Aromatic TPH >C21-C35	M	2680	mg/kg	0.1	2	1100	66.6	71.6	159	488	527	247	90.7	65.7	40.8	84.8	42.4	29.9	19	60.1	77.6	252	165	90.9	85.1	80.4	30.3	53.5	15.4	10.7	114	43	37.6	68.8	46.7
Aromatic TPH >C35-C44	N	2680	mg/kg	0.1	1	1100	35.2	46.4	62.6	346	597	272	54.3	35.6	40.4	75.9	26.3	42.5	9.94	39.1	37.4	103	78	35.4	39	18.7	2.97	28.6	1.61	1.21	31.3	13.5	35.4	20.5	17.2
Total Aromatic Hydrocarbons	N	2680	mg/kg	0.1	10		134	139	344	875	1170	547	160	124	102	182	76.8	74.5	31.1	110	134	424	282	152	140	163	40.9	94.6	22.4	16.1	197	72.2	82.3	104	74.9
Total Petroleum Hydrocarbons	N	2680	mg/kg	0.1	10		384	224	797	1850	2000	986	306	332	267	358	203	141	72.5	273	284	1630	839	292	334	339	114	149	93.1	60.7	234	107	198	149	133
Benzene	M	2760	µg/kg	90	1	87	<90	<90	<180	<90	<180	<180	<180	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90
Toluene	M	2760	µg/kg	70	1	130000	<70	<70	<140	<70	<140	<140	<140	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70
Ethylbenzene	M	2760	µg/kg	40	1	47000	<40	<40	<80	<40	<80	<80	<80	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40
m & p-Xylene	M	2760	µg/kg	100	1	56000	<100	<100	<200	<100	<200	<200	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
o-Xylene	M	2760	µg/kg	100	1	60000	<100	<100	<200	<100	<200	<200	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
Methyl Tert-Butyl Ether	M	2760	µg/kg	100	1		<100	<100	<200	<100	<200	<200	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
Naphthalene	M	2800	mg/kg	0.009	0.1	15.00	0.268	0.366	0.46	0.239	<0.18	0.781	0.0869	1.21	0.456	<0.09	0.17	0.0173	<0.045	0.106	0.114	0.459	0.167	0.463	0.0918	0.348	0.446	0.297	0.198	0.291	0.221	0.116	0.0522	0.122	0.123
Acenaphthylene	N	2800	mg/kg	0.012	0.1	170.00	0.115	0.179	0.535	<0.12	0.6	0.453	<0.06	0.153	0.108	<0.12	0.0893	<0.012	<0.06	0.0238	0.0201	0.145	0.0755	0.205	0.0265	0.142	0.291	0.101	0.137	0.132	0.138	0.273	<0.06	0.0203	<0.012
Acenaphthene	M	2800	mg/kg	0.008	0.1	210.00	0.024	0.0261	<0.08	0.107	<0.16	<0.16	<0.04	0.114	0.21	<0.08	<0.04	<0.008	<0.04	0.0174	0.0427	0.043	0.0282	0.0395	0.0153	0.485	0.0587	0.0335	0.0276	0.0157	0.0214	0.0161	<0.04	0.0168	0.0145
Fluorene	M	2800	mg/kg	0.01	0.1	170.00	0.0777	0.0838	<0.1	0.111	0.253	<0.2	<0.05	0.198	0.17	<0.1	<0.05	<0.01	<0.05	0.0194	0.0295	0.166	0.058	0.123	0.0315	0.358	0.24	0.0625	0.111	0.0616	0.0776	0.175	<0.05	0.0279	0.0239
Phenanthrene	M	2800	mg/kg	0.015	0.1	95.00	0.638	0.817	1.8	0.957	2.79	1.98	0.239	1.81	0.87	<0.15	0.485	0.0439	<0.075	0.385	0.56	1.01	0.545	1.31	0.366	0.87	1.8	0.534	0.999	0.724	0.906	2.36	0.282	0.93	0.544
Anthracene	M	2800	mg/kg	0.016	0.1	2400.00	0.165	0.229	0.492	<0.16	0.751	0.535	<0.08	0.376	0.189	<0.16	0.117	<0.016	<0.08	0.0656	0.0932	0.225	0.123	0.352	0.0777	0.158	0.469	0.15	0.219	0.196	0.195	0.409	0.118	0.193	0.128
Fluoranthene	M	2800	mg/kg	0.017	0.1	280.00	1.1	1.33	4.26	1.49	5.64	3.9	0.539	1.94	1.03	<0.17	0.898	0.0827	0.146	0.502	1	1.26	0.784	2.87	0.618	0.685	3.27	1.5	1.75	1.31	1.55	3.82	0.692	2.52	1.27
Pyrene	M	2800	mg/kg	0.015	0.1	620.00	0.814	0.999	3.35	1.23	4.05	2.81	0.387	1.35	0.72	<0.15	0.709	0.0697	0.148	0.423	0.908	1.42	0.833	2.21	0.495	0.478	2.61	1.35	1.28	1	1.17	2.83	0.589	1.86	0.908
Benzo[a]anthracene	M	2800	mg/kg	0.014	0.1	7.20	0.498	0.708	2.32	0.549	2.46	1.56	0.266	0.9	0.392	<0.14	0.398	0.0498	0.0879	0.269	0.571	0.766	0.488	1.55	0.418	0.37	1.87	0.851	0.792	0.672	0.719	1.37	0.329	1.82	0.83
Chrysene	M	2800	mg/kg	0.01	0.1	15.00	0.435	0.677	1.99	0.682	2.06	1.6	0.294	0.815	0.365	<0.1	0.436	0.0504	0.126	0.286	0.582	0.729	0.459	1.39	0.398	0.323	1.5	0.793	0.75	0.581	0.695	1.26	0.313	1.69	0.855
Benzo[b]fluoranthene	M	2800	mg/kg	0.015	0.1	2.60	0.662	1.04	3.89	0.646	3.19	1.96	0.614	0.913	0.474	<0.15	0.474	0.0782	0.0935	0.446	0.779	0.864	0.682	2.02	0.56	0.446	1.99	1.22	0.783	0.755	1.06	1.48	0.313	2.61	0.989
Benzo[k]fluoranthene	M	2800	mg/kg	0.014	0.1	77.00	0.277	0.324	1.38	0.325	0.966	0.865	0.201	0.381	0.158	<0.14	0.254	0.0275	<0.07	0.141	0.335	0.3	0.23	0.728	0.188	0.128	0.651	0.389	0.332	0.283	0.349	0.53	0.122	0.798	0.366
Benzo[a]pyrene	M	2800	mg/kg	0.015	0.1	2.20	0.494	0.654	2.44	0.799	1.99	1.7	0.408	0.658	0.331	<0.15	0.532	0.0495	0.0989	0.333	0.747	0.604	0.52	1.32	0.426	0.33	1.66	0.904	0.69	0.559	0.702	1.18	0.271	1.79	0.752
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.018	0.1	27.00	0.51	0.465	2.03	0.427	1.44	1.17	0.512	0.388	0.263	<0.18	0.396	0.0333	<0.09	0.173	0.388	0.443	0.566	0.846	0.446	0.211	1.06	0.967	0.645	0.378	0.487	1.08	0.224	1.8	0.517
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.023	0.1	0.24	0.077	0.102	0.43	<0.23	<0.46	<0.46	<0.115	0.112	0.0555	<0.23	<0.115	<0.023	<0.115	0.0591	0.123	0.125	0.074	0.236	0.0825	0.0748	0.306	0.135	0.107	0.104	0.126	0.159	<0.115	0.325	0.157
Benzo[g,h,i]perylene	M	2800	mg/kg	0.024	0.1	320.00	0.428	0.537	1.85	0.517	1.36	1.14	0.474	0.505	0.267	<0.24	0.475	0.0518	<0.12	0.26	0.55	0.526	0.404	0.96	0.366	0.255	1.15	0.641	0.469	0.436	0.552	0.832	0.197	1.37	0.602
Total Of 16 PAH's	N	2800	mg/kg	0.118	2		6.58	8.53	27.2	8.08	27.6	20.4	4.02	11.8	6.06	<1.18	5.43	0.554	0.7	3.51	6.84	9.09	6.04	16.6	4.6	5.66	19.4	9.92	9.29	7.5	8.97	17.9	3.5	17.9	8.08
Resorcinol	M	2920	mg/kg		0.02																														
Phenol	M	2920	mg/kg	0.01	0.02	280.00	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cresols	M	2920	mg/kg	0.01	0.02		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.0116	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Xylenols	M	2920	mg/kg	0.015	0.02		<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
1-Naphthol	N	2920	mg/kg		0.02																														
Trimethylphenols	M	2920	mg/kg		0.02																														
Total Phenols	M	2920	mg/kg	0.035	0.1	280.00	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035

P18-669 Llanwern Phase 4G Soil Chemical Screening Results

Project: P18-669						V26	V26	W23	W23	X22	X22	X23	X23	Y22	Y22	Y23	Y23	W25	W25	Y25	Y25	Z25	Z25	AA25	AA25	AA25	AA26	AA26	AA27	AA27	AB28	AB28	AC25	AC25
Client: Rodgers Leask Environmental			**Job No.:**			181018-22	181018-22	181020-29	181020-29	181030-48	181030-48	181030-48	181030-48	181030-48	181030-48	181030-48	181030-48	181030-48	181030-48	181031-51	181031-51	181031-51	181031-51	181031-51	181031-51	181031-51	181031-51	181031-51	181031-51	181031-51	181031-51	181031-51	181031-51	181031-51
Quotation No.: Q21-24056			**Sample ID.:**		**Generic Assessment Criteria (GAC) Residential End Use with Homegrown Produce (SOM 1%)**	18548111	18548115	18569431	18569435	18632712	18632782	18632739	18632746	18632792	18632797	18632721	18632731	18632769	18632775	18639087	18639150	18639237	18639243	18639252	18639257	18639262	18639127	18639132	18639144	18639155	18639201	18639205	18639109	18639115
Order No.: .			Client Sample Ref.:			4C-J5	4C-J5	4C-K2	4C-K2	4E-C1	4E-C1	4E-C2	4E-C2	4E-D1	4E-D1	4E-D2	4E-D2	4E-B4	4E-B4	4E-C4	4E-C4	4E-D4	4E-D4	4E-E4	4E-E4	4E-E4	4E-E5	4E-E5	4E-E6	4E-E6	4E-E7	4E-E7	4E-G4	4E-G4
			Sample Type:																	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
			Top Depth (m):			0.50-0.50	1.00-1.00	0.50-0.50	1.00-1.00	0.20-0.20	0.40-0.40	0.50-0.50	1.00-1.00	0.50-0.50	1.00-1.00	0.25-0.25	1.00-1.00	0.50-0.50	1.00-1.00	0.50-0.50	1.00-1.00	0.50-0.50	1.20-1.20	0.50-0.50	1.00-1.00	1.50-1.50	0.20-0.20	0.80-0.80	0.25-0.25	0.80-0.80	0.30-0.30	0.80-0.80	0.50-0.50	1.00-1.00
			Bottom Depth (m):																															
			Date Sampled:			10/17/2018	10/17/2018	18/10/2018	18/10/2018	29/10/2018	29/10/2018	29/10/2018	29/10/2018	29/10/2018	29/10/2018	29/10/2018	29/10/2018	29/10/2018	29/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018
			Asbestos Lab:																															
Determinand	**Accred.**	**SOP**	**Units**	**ALS LOD**	**Chemtest LOD**																													
ACM Type	U	2192		N/A	N/A												Chrysotile	Chrysotile											Chrysotile, Amosite		Chrysotile			
Asbestos Identification	U	2192		N/A	N/A		-	Not Detected	Detected	-	Not Detected	-	Not Detected	-	Not Detected	-	-	Detected	Detected		Not Detected	-	Not Detected	-	Not Detected	-	Not Detected	Not Detected	-	Detected	-	Detected	-	-	Not Detected
Asbestos by Gravimetry	U	2192	%	0.001	0.001				<0.001	-								<0.001	<0.001		-	-	-	-	-	-	-	-	0.0174	-	<0.001	-	-	-
Total Asbestos	U	2192	%	0.001	0.001				<0.001	-								<0.001	<0.001		-	-	-	-	-	-	-	-	0.0191	-	<0.001	-	-	-
Moisture	N	2030	%	0.02	0.02		6.2	15	11	7.4	6.7	7.2	9.6	10	6.3	11	8.2	5.7	7.1	5.7	5.2	6.8	20	13	6.6	14	12	12	10	7.9	10	6.1	3.8	6	5.9
Soil Colour	N	2040		N/A	N/A		Black	Black	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Black	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown
Other Material	N	2040		N/A	N/A		Vegetation	Stones	Stones	Stones	Stones	Vegetation	Stones	Stones	Stones	Stones	oncrete/Aggrega	Stones	Vegetation	Stones	Stones	Stones	Vegetation	Vegetation	Stones	Vegetation	Vegetation	Vegetation	Stones	Vegetation	Vegetation	Stones	Stones	Stones	Vegetation
Soil Texture	N	2040		N/A	N/A		Sandy Loam	Sandy Loam	Sand	Sand	Loamy Sand	Sandy Loam	Loamy Sand	Loamy Sand	Loamy Sand	Sand	Loamy Sand	Loamy Sand	Sandy Loam	Loamy Sand	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam	Sand	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam	Sand	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam
pH	M	2010		4	4		11.1	11.4	11.4	11.2	9.04	9.51	8.98	11.6	9.62	9.85	11	11.7	9.45	9.15	11.2	12.6	8.35	11.8	8.94	8.86	10.9	12.1	12.2	11.8	12.2	9.95	12.6	10.1	9.46
Cyanide (Total)	M	2300	mg/kg	1	0.5		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	7.46	15.8	<1	<1	<1	<1	<1	<1	20.9	18.5	12.7	<1	<1	<1	3.56	<1	<1	<1	1.98
Ammoniacal Nitrogen	M	2425	mg/kg	12	0.5		<12	<12	<12	<12	<12	<12	<12	<12	15.4	19.2	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12
Iron (Total)	N	2430	mg/kg	10000	100		108000	109000	63600	27900	47600	57700	80100	63800	32900	33300	57900	201000	210000	216000	160000	223000	51700	151000	43800	41500	43600	130000	92900	125000	185000	114000	188000	38700	52300
Arsenic	M	2450	mg/kg	0.6	0.5	37	17.2	13.5	9.24	5.93	6.16	6.22	10	12.3	5.35	6.63	8.33	7.33	11.5	9.31	9.76	12.8	10.4	8.56	10.5	12.1	11.2	<6	<6	10.3	8.95	13.4	5.77	10.8	10.9
Cadmium	M	2450	mg/kg	0.02	0.1	26	<0.2	<0.2	0.0834	0.144	0.388	<0.02	0.893	2.07	<0.02	<0.02	<0.02	0.342	<0.2	<0.2	<0.2	<0.2	<0.02	<0.02	<0.02	<0.02	<0.02	<0.2	<0.2	<0.2	<0.02	<0.2	<0.02	0.129	<0.02
Chromium	M	2450	mg/kg	0.9	0.5	910	238	115	51.8	8.4	114	30.8	20.5	36.8	16.5	32	126	732	75.9	<9	150	388	16.2	480	34	37.7	69.8	454	369	220	297	60.5	466	38.9	36.2
Manganese	M	2450	mg/kg	1.3	1		31700	14700	3270	873	6110	3690	2780	3570	2290	3490	7680	45700	9030	3260	11200	28300	3220	35900	3750	4240	5570	28800	22300	18000	32400	4850	49400	3590	2860
Copper	M	2450	mg/kg	1.4	0.5	2400	32.7	61.3	27.8	8.04	13.2	17.4	31.8	67.5	7.2	20	19.5	30	26.1	<14	<14	286	14.7	23.9	17.9	26.2	21.1	19	<14	26.7	24.8	17.1	12.5	31.2	107
Mercury	M	2450	mg/kg	0.14	0.05	1.2	<1.4	<1.4	<0.14	<0.14	<0.14	<0.14	<1.4	<0.14	<0.14	<0.14	<0.14	<1.4	<1.4	<1.4	<1.4	<1.4	<0.14	<0.14	1.61	2.17	0.757	<1.4	<1.4	<1.4	<0.14	<1.4	<0.14	<0.14	<0.14
Nickel	M	2450	mg/kg	0.2	0.5	130	22.2	25.1	20.2	9.13	15.7	13.6	30.2	35	7.56	14.7	13.5	22.2	34.1	20.3	17.1	36.3	18.4	14.4	13.3	15.5	18	13.5	6.83	22.5	14.2	21.1	5.87	28.1	33
Lead	M	2450	mg/kg	0.7	0.5	200	47.8	70.9	71.3	55.5	63.4	36.7	97.6	113	15.7	30.5	28.8	24.1	144	55.6	38.2	31.2	23.5	19.6	33	24.7	58.6	16.6	21.8	20	2.92	74.8	<0.7	72.6	112
Selenium	M	2450	mg/kg	1	0.25	250	14.4	<10	<1	<1	3.2	1.85	<10	1.47	1.13	2.57	3.53	17.9	<10	<10	<10	16.4	1.72	13.1	2.36	2.91	3.3	19.3	12	13.3	10.2	<10	13.9	2.25	1.6
Vanadium	U	2450	mg/kg	0.2	0.5	410	268	171	64.7	21.3	132	65	45.7	37.6	33.7	45.6	96.4	397	168	98	179	405	52.3	443	59.2	92.1	84.3	508	335	249	360	95	439	87.9	64.4
Zinc	M	2450	mg/kg	1.9	0.5	3700	110	318	244	90	542	260	332	395	47.6	293	329	69.1	467	236	164	122	109	92.3	97.9	103	156	43.3	45.1	56.1	53.8	239	14.6	151	864
Organic Matter	M	2625	%	0.35	0.4		8.28	8.03	4.97	3.33	36.9	37.1	37.2	10.7	11.8	48.8	44	4.19	7.59	3.28	7.28	2.64	29	8.4	32.2	45.2	31.7	7.36	27.8	1.52	1.14	2.1	1.19	22.8	28.3
Aliphatic TPH >C5-C6	N	2680	mg/kg	0.02	0.05	42	<0.01	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.01	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02
Aliphatic TPH >C6-C8	N	2680	mg/kg	0.02	0.1	100	<0.01	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.0361	<0.01	<0.01	<0.02	<0.01	<0.02	<0.02	<0.02	0.0463	0.0155	0.0391	0.0111	<0.02	0.0561	<0.02	<0.02
Aliphatic TPH >C8-C10	M	2680	mg/kg	0.02	0.05	27	<0.01	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.035	<0.01	<0.01	<0.02	<0.01	<0.02	<0.02	<0.02	0.0328	0.0155	0.0467	<0.01	<0.02	0.619	<0.02	<0.02
Aliphatic TPH >C10-C12	M	2680	mg/kg	0.02	2	130	<0.01	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.0552	<0.01	<0.01	<0.02	<0.01	<0.02	<0.02	<0.02	0.276	0.164	0.981	0.0477	<0.02	0.74	<0.02	<0.02
Aliphatic TPH >C12-C16	M	2680	mg/kg	0.1	1	1.10E+03	1.75	<0.1	1.29	<0.1	1.86	3.69	3.11	2.48	6.9	5.84	3.5	7.19	0.132	2.13	3.7	4.04	1.61	8.13	5.28	3.06	4.72	5.34	1.38	23.5	1.25	0.683	8.03	0.233	1.25
Aliphatic TPH >C16-C21	M	2680	mg/kg	0.1	2	6.50E+04	9.72	5.82	11.3	1.65	11.9	22.2	13.6	10.8	26.7	22.1	20.8	59.4	4.21	9.81	35.9	21.7	19	29.4	20.9	21.4	21.6	28.6	11.1	109	7.31	3.8	13	9.83	10.3
Aliphatic TPH >C21-C35	M	2680	mg/kg	0.1	3	6.50E+04	77.1	43.8	105	37.1	52.3	66.6	52.5	40.6	70.4	64.3	65.3	118	49.6	82.2	64.9	83.4	80.5	65.9	51.3	33.7	43	61.1	35.4	119	28.8	41.6	73.8	46.5	64.8
Aliphatic TPH >C35-C44	N	2680	mg/kg	0.1	10	6.50E+04	42.1	14.7	30.3	10.1	25.2	19.9	24.2	20.1	25.9	18.1	20.5	43.3	17.7	35.8	16.2	27.7	14.8	7.3	7.89	4.55	8.94	18.7	8.93	52.1	16	16.3	20.4	17.4	29.7
Total Aliphatic Hydrocarbons	N	2680	mg/kg	0.1	10		131	64.3	148	48.9	91.3	112	93.5	74	130	110	110	228	71.7	130	121	137	116	111	85.5	62.7	78.3	114	56.9	304	53.4	62.4	115	73.9	106
Aromatic TPH >C5-C7	N	2680	mg/kg	0.02	0.05	70	<0.01	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.01	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	0.156	<0.02	<0.02
Aromatic TPH >C7-C8	N	2680	mg/kg	0.02	0.05	130	<0.01	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.01	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	0.373	<0.02	<0.02
Aromatic TPH >C8-C10	M	2680	mg/kg	0.02	0.05	34	<0.01	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.0233	<0.01	<0.01	<0.02	<0.01	<0.02	<0.02	<0.02	0.0215	<0.01	0.0315	<0.01	<0.02	0.412	<0.02	<0.02
Aromatic TPH >C10-C12	M	2680	mg/kg	0.02	1	74	<0.01	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.0371	<0.01	<0.01	<0.02	<0.01	<0.02	<0.02	<0.02	0.184	0.11	0.654	0.0311	<0.02	0.494	<0.02	<0.02
Aromatic TPH >C12-C16	M	2680	mg/kg	0.1	1	140	1.62	2.52	<0.1	0.444	7.28	8.07	5.84	2.72	7.07	15.2	9.33	4.25	2.49	2.8	2.98	0.856	5.57	2.76	10.4	6.3	7.22	2.3	2.16	5.66	1.7	1.97	3.21	3.58	1.6
Aromatic TPH >C16-C21	U	2680	mg/kg	0.1	2	260	9.71	11.7	1.82	2.35	28.1	46.6	26.1	12.7	20.1	89	66	38.2	10.7	11.3	29.3	13.3	22.6	18.4	86.9	39.7	55	16.2	17.1	45.8	8.59	8.5	34.8	56.6	16.3
Aromatic TPH >C21-C35	M	2680	mg/kg	0.1	2	1100	70.7	63.4	22.3	20.4	108	122	96	69.3	82.9	292	161	150	52.3	61.1	91.2	79.2	107	96.4	358	149	189	80.3	73.3	136	68.6	45.3	216	174	93.1
Aromatic TPH >C35-C44	N	2680	mg/kg	0.1	1	1100	53.4	46.5	3.1	12.5	61	39.1	49.8	42.9	44.9	78.3	54.2	60.6	28.4	44.9	33.6	33.6	31.6	35.7	84.7	36.3	53.5	30.4	25.3	86.9	50.5	28.7	76.5	64.5	43.7
Total Aromatic Hydrocarbons	N	2680	mg/kg	0.1	10		135	124	27.2	35.7	204	216	178	128	155	474	290	253	94	120	157	127	166	153	540	232	305	129	118	275	129	84.5	330	299	155
Total Petroleum Hydrocarbons	N	2680	mg/kg	0.1	10		266	188	175	84.5	295	328	271	202	285	585	400	481	166	250	278	264	282	264	626	294	383	244	175	580	183	147	448	373	261
Benzene	M	2760	µg/kg	90	1	87	<90	<90	<90	<90	<90	<90	<90	<90	<90	<180	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90
Toluene	M	2760	µg/kg	70	1	130000	<70	<70	<70	<70	<70	<70	<70	<70	<70	<140	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	102	<70	<70
Ethylbenzene	M	2760	µg/kg	40	1	47000	<40	<40	<40	<40	<40	<40	<40	<40	<40	<80	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40
m & p-Xylene	M	2760	µg/kg	100	1	56000	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
o-Xylene	M	2760	µg/kg	100	1	60000	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
Methyl Tert-Butyl Ether	M	2760	µg/kg	100	1		<100	<100	<100	<100	<100	<100	<100	<100	<100	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
Naphthalene	M	2800	mg/kg	0.009	0.1	15.00	0.139	0.0748	0.378	0.0957	0.279	0.378	0.219	0.0772	0.229	0.465	0.36	0.186	0.299	0.228	<0.13	<0.13	<0.13	<0.13	0.159	0.367	0.183	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13
Acenaphthylene	N	2800	mg/kg	0.012	0.1	170.00	0.0877	0.0258	0.114	0.0392	0.22	0.157	0.0976	0.0379	0.132	0.192	0.18	0.0808	0.174	0.142	0.234	0.112	0.0516	0.0778	0.8	1.39	0.571	<0.012	<0.012	0.155	<0.012	0.116	<0.06	0.236	0.446
Acenaphthene	M	2800	mg/kg	0.008	0.1	210.00	<0.04	<0.008	0.0213	0.00876	0.043	0.0491	0.027	0.012	0.0258	0.111	0.0434	0.0631	0.0296	0.0225	<0.04	0.0609	0.0285	0.0739	0.221	0.396	0.192	0.047	0.0583	<0.04	0.0292	0.0186	0.255	0.0494	0.088
Fluorene	M	2800	mg/kg	0.01	0.1	170.00	<0.05	<0.01	0.0461	0.02	0.114	0.101	0.0528	0.0182	0.078	0.256	0.285	<0.05	0.182	0.078	0.0945	0.0881	0.075	0.0665	0.488	1.11	0.464	0.0266	0.0265	<0.05	<0.01	0.0597	0.107	0.123	0.365
Phenanthrene	M	2800	mg/kg	0.015	0.1	95.00	0.465	0.221	0.491	0.206	1.47	1.51	0.685	0.361	0.605	2.74	4.08	0.968	1.29	0.848	1.74	2.34	0.549	0.904	5.81	10.3	5.03	0.513	0.803	0.361	0.185	0.659	2.93	1.54	2.81
Anthracene	M	2800	mg/kg	0.016	0.1	2400.00	0.102	0.0427	0.123	0.0539	0.475	0.365	0.177	0.102	0.223	0.735	0.773	0.212	0.394	0.226	0.404	0.503	0.158	0.232	1.45	2.83	1.36	0.112	0.145	<0.08	0.0302	0.188	0.484	0.475	0.779
Fluoranthene	M	2800	mg/kg	0.017	0.1	280.00	0.906	0.41	0.883	0.423	3.03	2.46	1.23	1.09	1.18	4.71	5.47	3.1	1.84	1.62	3.08	6.33	0.738	2.53	10.7	16.6	7.72	1.21	1.35	1.22	0.745	1.02	7.16	3.33	5.18
Pyrene	M	2800	mg/kg	0.015	0.1	620.00	0.807	0.637	0.74	0.336	2.25	1.95	0.932	0.806	0.918	3.93	3.79	2.88	1.38	1.3	2.43	4.32	0.594	2.36	8.71	13.1	6.06	1.1	1.23	1.35	0.777	0.727	6.84	2.64	3.98
Benzo[a]anthracene	M	2800	mg/kg	0.014	0.1	7.20	0.492	0.472	0.52	0.203	1.59	1.29	0.736	0.673	0.648	3.13	2.32	1.63	0.897	0.837	1.62	3.05	0.456	1.65	6.21	8.9	4.25	0.787	0.853	1.25	0.712	0.551	5.4	2.17	2.96
Chrysene	M	2800	mg/kg	0.01	0.1	15.00	0.556	0.439	0.635	0.194	1.51	1.48	0.705	0.638	0.679	3	2.25	1.91	0.946	0.792	1.55	3.27	0.463	1.95	6.2	7.02	4.12	0.799	0.828	1.56	0.831	0.512	6.03	2.02	2.96
Benzo[b]fluoranthene	M	2800	mg/kg	0.015	0.1	2.60	0.619	0.523	0.863	0.218	2.37	1.91	1.12	0.976	1.04	4.41	3.28	2.98	1.29	1.25	2.62	4.82	0.658	3.17	9.9	12.9	6.61	1.29	1.06	2.73	1.46	0.511	8.32	3.58	5.19
Benzo[k]fluoranthene	M	2800	mg/kg	0.014	0.1	77.00	0.278	0.218	0.289	0.107	0.86	0.675	0.338	0.338	0.293	1.38	1.15	0.94	0.521	0.436	0.808	1.69	0.181	1.15	3.52	3.69	2.16	0.458	0.462	1.09	0.496	0.234	3.3	1.59	1.67
Benzo[a]pyrene	M	2800	mg/kg	0.015	0.1	2.20	0.53	0.486	0.458	0.193	1.44	1.13	0.623	0.645	0.614	2.93	1.95	1.88	0.804	0.771	1.62	3.06	0.397	2.15	6.78	8.46	4.06	0.918	0.887	1.96	1.02	0.464	6.2	2.29	3.48
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.018	0.1	27.00	0.314	0.278	0.404	0.158	1.31	0.89	0.452	0.554	0.388	2.54	1.74	1.34	0.736	0.726	1.01	1.88	0.242	1.75	4.16	4.8	3.58	0.504	0.546	1.2	0.554	0.333	5.77	1.55	2.79
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.023	0.1	0.24	<0.115	0.0896	0.0798	0.0311	0.288	0.232	0.124	0.132	0.119	0.574	0.37	0.288	0.161	0.13	0.311	0.598	0.0958	0.401	1.34	1.49	1.02	0.172	0.146	0.376	0.181	0.0828	0.822	0.488	0.824
Benzo[g,h,i]perylene	M	2800	mg/kg	0.024	0.1	320.00	0.457	0.405	0.434	0.193	1.08	0.742	0.465	0.415	0.458	1.98	1.3	1.53	0.584	0.549	1.19	2.04	0.315	1.69	4.93	5.81	3.45	0.635	0.608	1.48	0.71	0.365	4.05	2	3.61
Total Of 16 PAH's	N	2800	mg/kg	0.118	2		5.75	4.32	6.48	2.48	18.3	15.3	7.98	6.87	7.64	33.1	29.4	20	11.5	9.95	19.6	34.6	5.14	20.3	73.6	101	52.2	8.63	9.11	14.7	7.77	6.13	59.7	24.6	37.8
Resorcinol	M	2920	mg/kg		0.02																														
Phenol	M	2920	mg/kg	0.01	0.02	280.00	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.0107	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.0444	<0.01	0.0104	<0.01	<0.01
Cresols	M	2920	mg/kg	0.01	0.02		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.0107	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.0111	<0.01	<0.01	<0.01	<0.01
Xylenols	M	2920	mg/kg	0.015	0.02		<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
1-Naphthol	N	2920	mg/kg		0.02																														
Trimethylphenols	M	2920	mg/kg		0.02																														
Total Phenols	M	2920	mg/kg	0.035	0.1	280.00	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	0.0555	<0.035	<0.035	<0.035	<0.035

P18-669 Llanwern Phase 4G Soil Chemical Screening Results

							Fill Material																						
Project: P18-669							**AB27**	**AB27**	**W29**	**W29**	**AE27**	**AE27**	**AC28**	**AD29**	**AD29**	**AE29**	**W28**	**W28**	**X28**	**Z28**	**Y28**	**Y28**	**AD25**	**AD25**	**AE25**	**AE25**	**AE26**	**AE26**	**X29**	**X29**	**AA22**	**AA22**	**AA22**	**AB25**	**AB25**
Client: Rodgers Leask Environmental				**Job No.:**			181031-51	181031-51	181101-44	181101-44	181107-11	181107-11	181121-47	181121-47	181121-47	181121-47	181102-43	181102-43	181102-43	181102-43	181102-43	181102-43	181106-25	181106-25	181106-25	181106-25	181106-25	181106-25	181101-44	181101-44	181102-43	181102-43	181102-43	181031-51	181031-51
Quotation No.: Q21-24056				**Sample ID.:**	**Generic Assessment Criteria (GAC) Residential End Use with Homegrown Produce (SOM 1%)**		18639174	18639180	18646138	18646160	18681237	18681241	18786527	18786511	18786517	18786500	18653991	18653998	18654016	18654118	18654030	18654036	18673542	18673546	18673497	18673509	18673527	18673532	18646172	18646181	18654049	18654065	18654071	18639092	18639099
Order No.: .				Client Sample Ref.:			4E-F6	4E-F6	4E-A8	4E-A8	4G-B8	4G-B8	4G-A7	4G-A8	4G-A8	4G-B9	4E-A7	4E-A7	4E-B7	4E-D7	4E-C7	4E-C7	4G-A6	4G-A6	4G-B5	4G-B5	4G-B6	4G-B6	4E-B8	4E-B8	4E-E1	4E-E1	4E-E1	4E-F4	4E-F4
				Sample Type:			SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
				Top Depth (m):			0.30-0.30	0.80-0.80	0.50-0.50	1.00-1.00	0.40-0.40	0.80-0.80	0.50-0.50	0.40-0.40	0.70-0.70	0.50-0.50	0.40-0.40	0.90-0.90	0.50-0.50	0.50-0.50	0.50-0.50	1.00-1.00	0.50-0.50	0.70-0.70	0.50-0.50	1.00-1.00	0.50-0.50	0.90-0.90	0.50-0.50	1.00-1.00	0.50-0.50	1.00-1.00	2.00-2.00	0.50-0.50	1.00-1.00
				Bottom Depth (m):																															
				Date Sampled:			30/10/2018	30/10/2018	10/31/2018	10/31/2018	11/6/2018	11/6/2018	20/11/2018	20/11/2018	20/11/2018	20/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	05/11/2018	05/11/2018	05/11/2018	05/11/2018	05/11/2018	05/11/2018	10/31/2018	10/31/2018	01/11/2018	01/11/2018	01/11/2018	30/10/2018	30/10/2018
				Asbestos Lab:																															
Determinand	**Accred.**	**SOP**	**Units**	**ALS LOD**	**Chemtest LOD**																														
ACM Type	U	2192		N/A	N/A					Chrysotile		Chrysotile																							
Asbestos Identification	U	2192		N/A	N/A		-	Not Detected	-	Detected	-	Detected	Not Detected	Not Detected	-	Not Detected	-	Not Detected	Not Detected	Not Detected	Not Detected	-	-	Not Detected	-	Not Detected	-	Not Detected	Not Detected		Not Detected		Not Detected	Not Detected	
Asbestos by Gravimetry	U	2192	%	0.001	0.001		-	-	-	<0.001	-	0.0028	-	-	-	-																			
Total Asbestos	U	2192	%	0.001	0.001		-	-	-	<0.001	-	0.0028	-	-	-	-																			
Moisture	N	2030	%	0.02	0.02		8.8	8.8	7.5	7.7	6	6.7	9.2	8.2	4.6	7.6	9.4	14	7.2	15	7.7	13	14	14	7.7	7.1	9.7	9.4	4.2	6.8	12	8.9	11	7.2	8.5
Soil Colour	N	2040		N/A	N/A		Grey	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Light Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Black	Dark Brown	Dark Brown	Dark Brown	Dark Brown
Other Material	N	2040		N/A	N/A		Stones	Vegetation	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Vegetation	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Vegetation	Vegetation	Stones / Stones	Stones / Stones	ones / Crushed B	Stones / None	tones / Vegetatio	egetation / Stone	egetation / Stone
Soil Texture	N	2040		N/A	N/A		Sandy Loam	Sandy Loam	Sand	Loamy Sand	Loamy Sand	Loamy Sand	Sandy Loam	Loamy Sand	Sand	Sandy Loam	Sandy Loam	Stone/Soil	Stone/Soil	Loamy Sand	Sand	Sand	Sand	Sandy Clay	Sand	Loamy Sand	Sandy Loam	Sandy Loam	Loamy Sand	Loamy Sand	Sand	Loamy Sand	Stone/Soil	Sandy Loam	Sandy Loam
pH	M	2010		4	4		12.7	12.1	10.8	12.5	10.6	12.2	10.7	10.1	11.4	11.7	10.3	11.6	12.7	10.3	10.4	11.4	11.9	11.6	8.81	12.3	10.5	11.9	12.8	12.8	9.42	11.2	11.5	10.1	9.64
Cyanide (Total)	M	2300	mg/kg	1	0.5		<1	1.02	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1.06	1.84
Ammoniacal Nitrogen	M	2425	mg/kg	12	0.5		<12	<12	<12	<12	22.5	<12	<12	<12	<12	<12	<12	<12	21	28.2	13.6	<12	22.7	<12	<12	<12	15.6	<12	117	<12	<12	<12	<12	<12	<12
Iron (Total)	N	2430	mg/kg	10000	100		129000	112000	133000	66500	205000	177000	43400	91800	26700	196000	183000	134000	220000	77100	174000	152000	165000	159000	25000	207000	58700	115000	172000	194000	41600	64500	84900	36200	37500
Arsenic	M	2450	mg/kg	0.6	0.5	37	4.75	<6	<6	5.52	12	<6	6.83	7.85	2.33	7.56	13.6	<6	10.5	12.2	15.3	9.98	13.8	<6	8.81	<6	10.7	<6	<6	8.97	7.22	8.25	6.69	11.7	9.29
Cadmium	M	2450	mg/kg	0.02	0.1	26	<0.02	<0.2	<0.2	<0.02	<0.2	<0.2	<0.02	0.686	0.604	1.84	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	1.19	<0.2	0.245	<0.2	0.932	<0.2	<0.2	<0.2	<0.02	0.877	<0.02	<0.02	<0.02
Chromium	M	2450	mg/kg	0.9	0.5	910	352	439	<9	115	65.8	397	33	245	49.4	403	188	359	775	<9	63.2	168	240	533	21.7	763	79.1	421	987	825	37	115	143	108	59
Manganese	M	2450	mg/kg	1.3	1		29500	32200	2070	13100	7300	413	4350	15700	2950	3380	11500	26600	33000	1940	11400	7850	23700	30100	1110	4310	6010	2070	31900	33200	3000	10400	17100	5510	5380
Copper	M	2450	mg/kg	1.4	0.5	2400	12.4	<14	<14	11.1	84.5	26.4	10.7	19.2	4.82	62.8	25.1	20	34.4	<14	25.3	24.9	32.3	15.9	26.5	28.3	23	16.1	16.2	33.4	14.6	29.2	15.4	18.5	18.7
Mercury	M	2450	mg/kg	0.14	0.05	1.2	<0.14	<1.4	<1.4	<0.14	<1.4	<1.4	<0.14	<1.4	<0.14	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<0.14	<1.4	<0.14	<1.4	<0.14	<1.4	<1.4	<1.4	<0.14	<0.14	<0.14	<0.14	<0.14
Nickel	M	2450	mg/kg	0.2	0.5	130	6.38	8.31	37.5	7.78	54.3	15.4	13.1	18.9	2.88	24.3	21.6	14.6	26.4	14.3	31.6	24.2	22.3	12.7	24.5	12	17.5	12.2	8.78	21.7	17.1	16	10.1	12.9	11.6
Lead	M	2450	mg/kg	0.7	0.5	200	0.992	10.5	41.9	48.9	107	26.2	32.4	37.2	28.5	30.4	86.7	36	31.2	94.4	116	91.6	30.1	14.3	25.2	19.4	54.8	18.3	16.5	11.1	29.2	35.4	26.2	45.6	33.2
Selenium	M	2450	mg/kg	1	0.25	250	10.8	21.1	<10	6.07	<10	20.9	1.3	<10	<1	15.6	<10	10.9	22	<10	<10	<10	6.38	15.5	<1	24.3	2.33	12	21.1	17.1	1.44	4.09	5.45	3.27	3.11
Vanadium	U	2450	mg/kg	0.2	0.5	410	283	379	163	117	106	416	58.8	225	38.8	453	276	419	591	43.7	226	140	430	985	40.4	702	113	286	499	456	47	155	247	112	128
Zinc	M	2450	mg/kg	1.9	0.5	3700	30.9	30.2	145	201	446	89.5	114	112	109	69.1	346	85.9	97.6	270	422	323	99.3	50.6	45.1	51.8	332	75.2	55.3	75.5	128	130	83.5	116	96.3
Organic Matter	M	2625	%	0.35	0.4		1.25	0.972	51.4	4.91	14.3	<0.35	24.8	6.1	10.8	9.64	6.81	8.45	1.56	2.78	6.84	27.1	5.69	3.22	9.03	1.08	6.47	4.26	1.68	1.7	10.7	19.3	6.6	28.1	30.5
Aliphatic TPH >C5-C6	N	2680	mg/kg	0.02	0.05	42	<0.02	<0.02	<0.02	0.0336	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.01	<0.01
Aliphatic TPH >C6-C8	N	2680	mg/kg	0.02	0.1	100	<0.02	<0.02	<0.02	0.137	<0.02	0	<0.02	<0.02	<0.02	<0.02	0.172	3.32	0.0377	<0.02	0.0314	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	0.0549	0.0418	<0.01	<0.01
Aliphatic TPH >C8-C10	M	2680	mg/kg	0.02	0.05	27	<0.02	<0.02	<0.02	0.444	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	2.5	46.7	0.0237	<0.02	0.0238	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	0.0373	0.0237	<0.01	<0.01
Aliphatic TPH >C10-C12	M	2680	mg/kg	0.02	2	130	<0.02	<0.02	<0.02	2.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	7.19	112	0.109	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	0.0461	0.0203	<0.01	<0.01
Aliphatic TPH >C12-C16	M	2680	mg/kg	0.1	1	1.10E+03	0.718	14.5	5.47	34.2	2.6	2.13	0.793	2.71	0.593	1.85	77.4	177	1.71	<0.1	4.01	2.92	2.03	1.5	1.67	1.61	15	2.03	0.617	<0.1	5.78	2.61	2.01	1.15	1.09
Aliphatic TPH >C16-C21	M	2680	mg/kg	0.1	2	6.50E+04	5.58	75.1	23.9	79.4	21.8	9.8	4.98	26.9	5.21	9.2	108	170	10.9	1.25	14.2	9.06	8.87	3.86	4.36	7.42	13.4	9.5	0.203	<0.1	23.7	39.4	12.1	12.2	12.2
Aliphatic TPH >C21-C35	M	2680	mg/kg	0.1	3	6.50E+04	18.2	63.1	131	404	226	60.1	60.5	167	24.7	60.7	425	561	90.5	17.7	97.9	42	53.5	21.9	11.9	51.5	121	74.1	17.4	37.1	94.5	77.6	45.5	27.1	31.4
Aliphatic TPH >C35-C44	N	2680	mg/kg	0.1	10	6.50E+04	8.55	36.3	27.3	91.4	76.7	23.4	17.2	45.8	4.74	13.7	86.1	178	38.7	1.63	116	17.3	25.2	15.1	1.46	8.9	91.6	47.5	3.88	6.78	43.7	16.7	14.2	5.28	3.78
Total Aliphatic Hydrocarbons	N	2680	mg/kg	0.1	10		33	189	188	609	327	95.5	83.5	242	35.2	85.4	4100	4410	202	205	255	120	89.6	42.3	19.4	69.4	241	133	22.1	43.9	168	136	73.7	45.7	48.4
Aromatic TPH >C5-C7	N	2680	mg/kg	0.02	0.05	70	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.2	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.01	<0.01
Aromatic TPH >C7-C8	N	2680	mg/kg	0.02	0.05	130	<0.02	<0.02	<0.02	0.0314	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.2	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.01	<0.01
Aromatic TPH >C8-C10	M	2680	mg/kg	0.02	0.05	34	<0.02	<0.02	<0.02	0.296	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	1.67	31.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	0.0253	<0.02	<0.01	<0.01
Aromatic TPH >C10-C12	M	2680	mg/kg	0.02	1	74	<0.02	<0.02	<0.02	1.36	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	7.19	112	0.109	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	0.0307	<0.02	<0.01	<0.01
Aromatic TPH >C12-C16	M	2680	mg/kg	0.1	1	140	0.197	3.18	3.33	22.4	4.83	0.595	1.82	2.11	0.867	1.44	77.4	177	1.71	<0.1	4.01	2.92	1.41	<0.1	1.18	0.435	5.94	2.16	1.04	1.65	6.88	10.1	4.05	1.69	3.5
Aromatic TPH >C16-C21	U	2680	mg/kg	0.1	2	260	4.06	25.8	15.9	213	36.8	6.37	7.24	11.8	6.21	17.7	108	170	10.9	1.25	14.2	9.06	12.4	5.95	5.16	13.2	13.9	10.7	7.05	9.49	28.9	114	29.6	12	29.6
Aromatic TPH >C21-C35	M	2680	mg/kg	0.1	2	1100	24.4	85.4	65.3	449	187	45.2	50.3	109	16.8	130	425	561	90.5	17.7	97.9	42	98	57	18.6	108	229	108	46	66.9	133	292	93.2	48.4	118
Aromatic TPH >C35-C44	N	2680	mg/kg	0.1	1	1100	14.5	51.3	28.9	123	115	27.6	22.5	60.2	4.96	42.1	86.1	178	38.7	1.63	116	17.3	41	20	6.72	35.5	228	74.8	15.8	26.4	79.5	84.9	29.2	15.9	32.8
Total Aromatic Hydrocarbons	N	2680	mg/kg	0.1	10		43.1	166	113	808	343	79.7	81.8	183	28.9	192	696	1090	142	20.6	232	71.3	153	82.9	31.6	157	476	196	69.9	104	249	501	156	77.9	184
Total Petroleum Hydrocarbons	N	2680	mg/kg	0.1	10		76.1	355	301	1420	671	175	165	425	64.1	277	4820	5850	344	226	488	191	242	125	51.1	226	717	329	92.1	148	417	637	230	124	232
Benzene	M	2760	µg/kg	90	1	87	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	< 90	< 90	< 90	< 90	< 90	< 90	< 90
Toluene	M	2760	µg/kg	70	1	130000	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	135	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	< 70	< 70	< 70	< 70	< 70	< 70	< 70
Ethylbenzene	M	2760	µg/kg	40	1	47000	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	102	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	< 40	< 40	< 40	< 40	< 40	< 40	< 40
m & p-Xylene	M	2760	µg/kg	100	1	56000	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	211	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	< 100	< 100	< 100	< 100	< 100	< 100	< 100
o-Xylene	M	2760	µg/kg	100	1	60000	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	232	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	< 100	< 100	< 100	< 100	< 100	< 100	< 100
Methyl Tert-Butyl Ether	M	2760	µg/kg	100	1		<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	< 130	< 130	< 100	< 100	< 100	< 100	< 100
Naphthalene	M	2800	mg/kg	0.009	0.1	15.00	<0.13	<0.13	<0.13	0.691	<0.13	<0.13	0.105	0.167	0.0268	0.0951	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	0.0835	0.0332	0.136	0.0272	0.243	0.141	0.0326	0.0513	0.325	0.715	0.176	0.382	0.429
Acenaphthylene	N	2800	mg/kg	0.012	0.1	170.00	<0.012	<0.06	0.206	0.184	0.185	<0.06	0.0402	<0.12	<0.012	0.0328	0.0927	<0.012	0.0154	0.0359	0.0431	<0.012	0.0272	<0.012	0.0501	<0.012	0.21	0.0648	<0.012	<0.012	0.133	0.616	0.231	0.148	0.124
Acenaphthene	M	2800	mg/kg	0.008	0.1	210.00	<0.008	<0.04	0.0245	<0.04	<0.04	<0.04	0.0159	<0.08	0.0113	0.124	0.00918	0.244	0.0444	<0.008	0.0173	<0.008	0.0511	0.0303	0.00892	0.0342	0.0287	0.0184	0.0213	0.0254	<0.04	0.0572	0.0312	0.028	0.132
Fluorene	M	2800	mg/kg	0.01	0.1	170.00	<0.01	<0.05	0.193	0.252	0.11	<0.05	0.0223	<0.1	0.0178	0.0574	0.0784	0.0957	0.0211	0.0155	0.029	<0.01	0.033	0.0139	0.0357	0.0126	0.126	0.0337	0.013	0.0117	0.121	0.607	0.284	0.0688	0.122
Phenanthrene	M	2800	mg/kg	0.015	0.1	95.00	0.22	0.176	1.33	2.83	1.03	0.195	0.239	0.432	0.186	1.13	0.511	0.583	0.427	0.15	0.291	0.376	0.464	0.276	0.306	0.616	0.999	0.393	0.291	0.431	1.37	6.7	2.35	0.698	1.55
Anthracene	M	2800	mg/kg	0.016	0.1	2400.00	0.0206	<0.08	0.478	0.59	0.235	<0.08	0.0897	0.254	0.0357	0.247	0.144	0.0602	0.0662	0.0411	0.0747	0.0938	0.111	0.0463	0.0824	0.0602	0.374	0.119	0.0537	0.0686	0.362	1.59	0.434	0.177	0.461
Fluoranthene	M	2800	mg/kg	0.017	0.1	280.00	0.624	0.648	2.16	3.38	1.9	0.393	0.497	1.06	0.221	3.18	0.781	0.33	1.24	0.195	0.492	0.576	1.79	1.2	0.445	1.52	2.13	0.966	0.752	1.11	2.55	10.4	4.25	1.27	3.12
Pyrene	M	2800	mg/kg	0.015	0.1	620.00	0.546	0.711	1.68	2.27	1.41	0.328	0.408	0.903	0.216	3.43	0.798	0.564	1.39	0.171	0.388	0.43	1.84	1.26	0.379	1.45	1.67	0.88	0.689	0.946	1.96	8.01	2.67	0.999	2.6
Benzo[a]anthracene	M	2800	mg/kg	0.014	0.1	7.20	0.249	0.519	0.987	1.21	0.794	0.172	0.333	0.486	0.178	2.57	0.315	0.116	0.923	0.0983	0.247	0.192	1.46	1.04	0.328	1.22	1.15	0.662	0.495	0.629	1.15	4.96	1.78	0.737	1.94
Chrysene	M	2800	mg/kg	0.01	0.1	15.00	0.287	0.565	0.929	1.05	0.696	0.171	0.375	0.608	0.189	2.73	0.307	0.311	1.02	0.11	0.256	0.574	1.47	1.14	0.305	1.29	1.05	0.714	0.605	0.815	1.08	4.27	1.68	0.716	1.88
Benzo[b]fluoranthene	M	2800	mg/kg	0.015	0.1	2.60	0.34	1.17	1.36	1.23	0.858	0.167	0.582	0.95	0.355	4.91	0.352	0.389	1.09	0.16	0.267	0.376	1.62	1.07	0.519	1.61	1.24	0.747	0.464	1.4	1.2	5.49	1.91	1.31	2.96
Benzo[k]fluoranthene	M	2800	mg/kg	0.014	0.1	77.00	0.15	0.394	0.509	0.491	0.363	0.102	0.219	0.318	0.0971	1.73	0.157	0.14	0.624	0.0491	0.106	<0.014	0.914	0.695	0.201	0.718	0.47	0.373	0.297	0.524	0.553	1.96	0.685	0.457	1.03
Benzo[a]pyrene	M	2800	mg/kg	0.015	0.1	2.20	0.255	0.745	0.817	1.04	0.726	0.187	0.371	0.58	0.214	3.19	0.291	0.131	1.16	0.0817	0.238	0.209	1.96	1.39	0.316	1.63	1.13	0.775	0.593	0.74	1	4.09	1.16	0.788	2.21
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.018	0.1	27.00	0.183	0.497	0.567	0.815	0.469	0.114	0.19	0.328	0.149	2.58	0.217	0.174	0.743	0.063	0.157	0.19	1.34	0.875	0.227	0.96	0.729	0.614	0.513	0.593	0.665	3.36	0.679	0.531	1.48
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.023	0.1	0.24	0.0451	0.148	0.124	0.187	0.123	<0.115	0.0599	<0.23	0.0391	0.539	0.0566	0.0382	0.178	<0.023	0.0467	0.0336	0.283	0.207	0.0744	0.264	0.209	0.135	0.119	0.135	0.177	0.686	0.216	0.189	0.427
Benzo[g,h,i]perylene	M	2800	mg/kg	0.024	0.1	320.00	0.206	0.604	0.515	0.783	0.566	0.147	0.25	0.435	0.158	2.24	0.265	0.208	0.895	0.0688	0.206	0.167	1.32	0.946	0.24	1.11	0.862	0.638	0.544	0.627	0.718	2.82	0.792	0.679	1.63
Total Of 16 PAH's	N	2800	mg/kg	0.118	2		3.18	6.17	12.4	16.6	9.75	1.98	3.8	6.52	2.09	28.8	4.56	3.42	9.91	1.35	2.95	3.22							5.48	8.1	13.4	56.3	19.3	9.17	22.1
Resorcinol	M	2920	mg/kg		0.02																														
Phenol	M	2920	mg/kg	0.01	0.02	280.00	<0.01	<0.01	<0.01	0.0325	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.011	<0.01	0.0108	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.0323	<0.01	<0.01	0.0104	0.0107	<0.01	<0.01	<0.01	<0.01	<0.01
Cresols	M	2920	mg/kg	0.01	0.02		<0.01	<0.01	<0.01	0.0217	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Xylenols	M	2920	mg/kg	0.015	0.02		<0.015	<0.015	<0.015	0.0217	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	0.055	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
1-Naphthol	N	2920	mg/kg		0.02																														
Trimethylphenols	M	2920	mg/kg		0.02																														
Total Phenols	M	2920	mg/kg	0.035	0.1	280.00	<0.035	<0.035	<0.035	0.0759	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	0.066	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035

P18-669 Llanwern Phase 4G Soil Chemical Screening Results

Project: P18-669							**AD23**	**AD23**	**AE24**	**AE24**	**AF24**	**AF24**	**AF26**	**AF26**	**AD30**	**AD30**	**Stockpile R199**					**Stockpile R167**													
Client: Rodgers Leask Environmental					**Job No.:**		181103-16	181103-16	181106-25	181106-25	181106-25	181106-25	181107-11	181107-11	181121-47	181121-47	23-08922	210203-41	210203-41	210206-39	210206-39	210130-32	22-29945	22-20752	22-20752	22-20758	22-20758	22-20761	22-20772	210327-46	23-08922	22-35441	22-35441	22-35441	21-41336
Quotation No.: Q21-24056					**Sample ID.:**	**Generic Assessment Criteria (GAC) Residential End Use with Homegrown Produce (SOM 1%)**	18661014	18661019	18673517	18673521	18673566	18673570	18681149	18681204	18786511	18786517	1608362						1482829	1441671	1441672	1441704	1441705	1441720	1441794		1608362	1507513	1507514	1507515	1326723
Order No.: .					Client Sample Ref.:		4G-B2	4G-B2	4G-B4	4G-B4	4G-C4	4G-C4	4G-C6	4G-C6	4G-A8	4G-A8	R192	V20-1	V21-1	T21-1	T21-2	AL33-1	AR32-1	AU34-2	AU34-1	AN36-2	AN36-1	AN35-1	AN35-2	R193-1	R192	R163-1	R163-2	R163-3	W208-3-1
					Sample Type:		SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOIL	SOLID	SOLID	SOLID	SOLID	SOLID	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOLID	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):		0.70-0.70	1.30-1.30	0.30-0.30	0.60-0.60	0.30-0.30	0.80-0.80	0.50-0.50	0.80-0.80	0.40-0.40	0.70-0.70	0.2	1.30-1.30	0.50-0.50	1.00-1.00	2.00-2.00	0.80-0.80	0.5					0.30		0.20-0.20	0.2	0.2	0.2	0.2	0.2
					Bottom Depth (m):												0.2							2.3	0.5	2	0.5		1		0.2				
					Date Sampled:		02/11/2018	02/11/2018	05/11/2018	05/11/2018	05/11/2018	05/11/2018	11/6/2018	11/6/2018	20/11/2018	20/11/2018	44999	2/1/2021	2/1/2021	05/02/2021	05/02/2021	1/29/2021	44777	44712	44712	44712	44712	44712	44712	26/03/2021	44999	44818	44818	44818	44519
					Asbestos Lab:												DURHAM						COVENTRY	NEW-ASB		DURHAM		COVENTRY	DURHAM		DURHAM		DURHAM	DURHAM	
Determinand	**Accred.**	**SOP**	**Units**	**ALS LOD**	**Chemtest LOD**																														
ACM Type	U	2192		N/A	N/A				Chrysotile (White) Asbestos																										
Asbestos Identification	U	2192		N/A	N/A			Not Detected	Detected			Not Detected	Not Detected		Not Detected		No Asbestos Detected	Not Detected		Not Detected			No Asbestos Detected	No Asbestos Detected		No Asbestos Detected		No Asbestos Detected	No Asbestos Detected	Not Detected	No Asbestos Detected		No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Asbestos by Gravimetry	U	2192	%	0.001	0.001				0.0047																										
Total Asbestos	U	2192	%	0.001	0.001																														
Moisture	N	2030	%	0.02	0.02		7.4	9	8.6	6.9	16	11	9.3	8.6	8.2	4.6	12	12	10	16	17	11	7.6	14	6.5	9.1	5	11	13	9	12	16	19	23	11
Soil Colour	N	2040		N/A	N/A		Black	Light Brown	Dark Brown	Dark Brown	Black	Dark Brown	Dark Brown	Dark Brown	Light Brown	Dark Brown	Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Black	Brown	Brown	Brown	Grey	Brown	Black	Dark Brown	Brown	Brown	Brown	Brown	Brown
Other Material	N	2040		N/A	N/A		Stones None	Stones None	Stones Vegetatio	Stones Vegetatio	Stones Vegetatio	Stones Vegetatio	Stones Brick	Stones Brick	tones / Vegetatic	None	Stones	Stones	Stones	Stones	Stones	None	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones and Root	Stones and Root	Stones and Root	Stones
Soil Texture	N	2040		N/A	N/A		Sand	Loamy Sand	Loamy Sand	Loamy Sand	Loamy Sand	Sandy Loam	Sand	Sand	Loamy Sand	Sand	Sand						Gravel	Sand	Sand	Sand	Sand	Sand	Sand		Sand	Sand	Sand	Sand	Sand
pH	M	2010		4	4		9.72	11.4	10.9	9.26	11.3	11.2	8.98	8.81	10.1	11.4	8.2	11.1	10.1	10.8	10.4	11.9	10.1	10.2	10.3	9	10.7	11.6	11.2	10.6	8.2	7.9	8.7	8.8	11
Cyanide (Total)	M	2300	mg/kg	1	0.5		<1	<1	<1	<1	1.27	1.02	<1	<1	<1	<1	0.7	<1	<1	<1	<1	<1	< 0.50	0.7	1.5	< 0.50	< 0.50	< 0.50	< 0.50	11.2	0.7	3.5	< 0.50	< 0.50	0.8
Ammoniacal Nitrogen	M	2425	mg/kg	12	0.5		<12	<12	<12	<12	<12	20.3	<12	<12	<12	<12	6	<12	<12	<12	<12	<12	1.5	12	2.2	18	1.1	0.86	1.6	<12	6	6.9	1.6	1.9	1.1
Iron (Total)	N	2430	mg/kg	10000	100		339000	49700	53600	105000	49100	48100	19300	24600	91800	26700	55000	53700	232000	66400	59400		39000	19000	20000	25000	12000	18000	21000	203000	55000	56000	29000	15000	20000
Arsenic	M	2450	mg/kg	0.6	0.5	37	21.6	7.76	8.77	27.1	9.69	9.25	5.67	6.37	7.85	2.33	16	<6	14.5	<6	6.59	7.73	7.7	17	8	19	5.3	7.3	12	11.3	16	8.8	15	5	38
Cadmium	M	2450	mg/kg	0.02	0.1	26	<0.2	<0.02	<0.02	1.15	0.702	<0.02	<0.02	<0.02	0.686	0.604	0.72	0.348	0.609	<0.2	0.597	1.01	< 0.10	0.24	0.35	0.13	0.17	0.41	0.22	4.82	0.72	1.7	0.32	0.15	0.66
Chromium	M	2450	mg/kg	0.9	0.5	910	<9	<0.9	56.3	6.54	104	12.6	14.4	24.2	245	49.4	86	10.5	<9	44.9	179	1170	26	15	39	13	23	76	48	535	86	40	29	14	130
Manganese	M	2450	mg/kg	1.3	1		10200	467	67.6	3760	10300	2020	4470	2650	15700	2950	4800	3330	4560	2400	8280	16300	1600	480	2400	990	910	2800	2000	30000	4800	2300	1200	740	4600
Copper	M	2450	mg/kg	1.4	0.5	2400	15.7	3.21	10.9	31.3	32.8	14.1	11.1	18	19.2	4.82	35	71.7	<14	25.4	18.6	53.3	21	27	13	33	5.4	17	32	43	35	21	23	11	230
Mercury	M	2450	mg/kg	0.14	0.05	1.2	<1.4	<0.14	<0.14	<0.14	0.268	<0.14	<0.14	<0.14	<1.4	<0.14	0.41	<1	<1	<1	<1	<1	< 0.05	0.12	0.11	0.05	< 0.05	0.07	0.09	<1	0.41	0.11	0.05	< 0.05	0.43
Nickel	M	2450	mg/kg	0.2	0.5	130	31.1	6.59	10.9	26.5	24.7	17.6	10.2	15	18.9	2.88	34	6.41	22.9	17.9	16.4	496	11	18	13	37	7.7	12	21	24	34	17	23	11	34
Lead	M	2450	mg/kg	0.7	0.5	200	9.11	9.73	59.6	39.1	54.6	27.4	25.7	18.9	37.2	28.5	89	12.8	41.1	58	51.7	26.8	13	35	41	27	17	27	51	766	89	210	41	21	120
Selenium	M	2450	mg/kg	1	0.25	250	<10	<1	3.23	<1	3.92	<1	3.7	2.13	<10	<1	1.8	<10	<10	<10	<10	10.4	0.96	1.3	0.73	1.2	< 0.25	1.7	1.2	16	1.8	1.2	0.78	0.35	< 0.20
Vanadium	U	2450	mg/kg	0.2	0.5	410	128	17.9	90.7	43	170	33.5	35.4	33.7	225	38.8	140	52.3	80.1	48.5	245	255	37	21	41	25	24	67	46	1510	140	57	33	19	190
Zinc	M	2450	mg/kg	1.9	0.5	3700	68.5	25.9	233	130	165	145	218	63	112	109	260	44	87.3	127	107	70.7	30	59	110	61	33	39	79	3120	260	820	170	86	200
Organic Matter	M	2625	%	0.35	0.4		14.3	<0.35	0.378	3.65	10.1	1.31	2.02	5.12	6.1	10.8	7.2	4.41	11	37.2	36.7	1.62	16	17	6	5.5	6	12	12	8.96	7.2	21	2.1	2.1	5.9
Aliphatic TPH >C5-C6	N	2680	mg/kg	0.02	0.05	42	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	< 0.05	<0.01	<0.01	<0.01	<0.01	<0.01	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	<0.01	< 0.05	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	0.02	0.1	100	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	< 0.10	<0.01	<0.01	<0.01	0.0133	<0.01	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	<0.01	< 0.10	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	0.02	0.05	27	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.17	<0.01	<0.01	<0.01	0.0121	<0.01	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	<0.01	0.17	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	0.02	2	130	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	2.6	<1	<1	<1	1.58	<1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	<1	2.6	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	0.1	1	1.10E+03	<0.1	4.97	2.89	1.18	0.267	0.918	0.809	<0.1	2.71	0.593	4	2.99	1.74	2.95	3.74	<1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	2.92	4	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	M	2680	mg/kg	0.1	2	6.50E+04	4.52	20.6	11.6	6.52	3.07	8.81	4.67	1.7	26.9	5.21	4.1	11	12	4.12	5.8	<1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	26.9	4.1	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	M	2680	mg/kg	0.1	3	6.50E+04	42.6	48.3	79.1	23.3	18.7	14.9	33.6	17.4	167	24.7	8.9	32.2	47.5	10.6	19.3	4.26	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	115	8.9	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	0.1	10	6.50E+04	3.13	13.1	24.9	8.51	3.25	3.77	17	9.3	45.8	4.74	< 10	7.04	20.7	2.85	4.45	<1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	34.3	< 10	< 1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	0.1	10		50.2	87	118	39.5	25.2	28.4	56.1	28.4	242	35.2	20	53.3	82.2	21.5	34.9	5.54	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	180	20	< 5.0	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	0.02	0.05	70	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	< 0.05	<0.01	<0.01	<0.01	<0.01	<0.01	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	<0.01	< 0.05	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	0.02	0.05	130	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	< 0.05	<0.01	<0.01	<0.01	<0.01	<0.01	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	<0.01	< 0.05	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	M	2680	mg/kg	0.02	0.05	34	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	< 0.05	<0.01	<0.01	<0.01	<0.01	<0.01	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	<0.01	< 0.05	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	M	2680	mg/kg	0.02	1	74	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	9.6	<1	<1	<1	<1	<1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	<1	9.6	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	M	2680	mg/kg	0.1	1	140	0.928	0.795	1.74	<0.1	1.11	0.302	1.98	<0.1	2.11	0.867	17	<1	1.9	3.9	5.13	<1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	<1	17	60	97	42	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	0.1	2	260	10.9	4.69	10.1	1.17	6.46	2.02	12.9	1.7	11.8	6.21	24	1.2	3.32	7.53	12.3	<1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	9.92	24	230	350	180	< 1.0
Aromatic TPH >C21-C35	M	2680	mg/kg	0.1	2	1100	26.6	9.07	49.4	19.4	41.3	19.5	84.9	20.6	109	16.8	64	5.66	22.1	18.6	30.6	3.8	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	46.4	64	570	1100	610	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	0.1	1	1100	1.5	1.61	24.8	15.8	14.2	14.3	49.9	17.2	60.2	4.96	8.9	<1	2.1	2.39	1.14	<1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	4.42	8.9	< 1.0	< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	0.1	10		40	16.2	86.1	36.3	63.1	36.1	150	39.6	183	28.9	120	8.17	29.7	33.3	49.9	5.32	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	61.4	120	870	1500	830	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	0.1	10		90.2	103	205	75.8	88.4	64.5	206	68	425	64.1	140	61.5	112	54.8	84.8	10.9	< 10	< 10	< 10	< 10	< 10	< 10	< 10	241	140	870	1500	830	< 10
Benzene	M	2760	µg/kg	90	1	87	< 90	< 90	< 90	< 90	< 90	< 90	< 90	< 90	< 90	< 90	< 1.0	<180	<180	<1800	<1800	<180	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	<180	< 1.0	< 1.0	< 1.0	2.2	< 1.0
Toluene	M	2760	µg/kg	70	1	130000	< 70	< 70	< 70	< 70	< 70	< 70	< 70	< 70	< 70	< 70	< 1.0	<140	<140	<1400	<1400	<140	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	<140	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	M	2760	µg/kg	40	1	47000	< 40	< 40	< 40	< 40	< 40	< 40	< 40	< 40	< 40	< 40	< 1.0	<80	<80	<800	<800	<80	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	<80	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	M	2760	µg/kg	100	1	56000	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 1.0	<200	<200	<2000	<2000	<200	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	<200	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	M	2760	µg/kg	100	1	60000	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 1.0	<200	<200	<2000	<2000	<200	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	<200	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl Tert-Butyl Ether	M	2760	µg/kg	100	1		< 100	< 100	< 100	< 100	< 100	< 100	< 130	< 130	< 130	< 130	< 1.0	<200	<200	<2000	<2000	<200	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	<200	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Naphthalene	M	2800	mg/kg	0.009	0.1	15.00	0.171	0.029	0.22	0.0337	0.131	0.0492	0.402	0.0605	0.167	0.0268	1.1	0.0429	0.292	0.72	0.42	0.0705	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.0592	1.1	16	< 0.10	< 0.10	2.1
Acenaphthylene	N	2800	mg/kg	0.012	0.1	170.00	0.0511	<0.012	0.116	<0.012	0.0289	0.0145	0.113	<0.012	<0.12	<0.012	0.24	<0.012	0.0823	0.269	0.21	0.0305	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.123	0.24	20	< 0.10	< 0.10	0.71
Acenaphthene	M	2800	mg/kg	0.008	0.1	210.00	0.0108	<0.008	0.0447	<0.008	0.0221	<0.008	0.018	<0.008	<0.08	0.0113	0.12	0.011	0.0122	<0.008	0.0198	<0.008	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.0236	0.12	12	< 0.10	< 0.10	0.13
Fluorene	M	2800	mg/kg	0.01	0.1	170.00	0.0507	0.0128	0.0936	<0.01	0.0358	<0.01	0.0508	0.0114	<0.1	0.0178	0.25	0.0241	0.0424	0.194	0.131	0.0124	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.0576	0.25	23	< 0.10	< 0.10	0.41
Phenanthrene	M	2800	mg/kg	0.015	0.1	95.00	0.557	0.0982	0.778	0.0976	0.388	0.13	0.611	0.198	0.432	0.186	1.4	0.137	0.431	1.67	1.13	0.113	< 0.10	< 0.10	0.84	< 0.10	0.27	0.56	< 0.10	0.54	1.4	140	< 0.10	0.63	3.3
Anthracene	M	2800	mg/kg	0.016	0.1	2400.00	0.113	0.0259	0.261	<0.016	0.104	0.0347	0.179	0.0364	0.254	0.0357	0.55	0.025	0.0933	0.352	0.269	0.0308	< 0.10	< 0.10	0.2	< 0.10	< 0.10	0.13	< 0.10	0.187	0.55	23	< 0.10	0.15	0.77
Fluoranthene	M	2800	mg/kg	0.017	0.1	280.00	0.668	0.133	1.67	0.145	0.785	0.288	1.25	0.3	1.06	0.221	2.8	0.126	0.503	2.12	1.81	0.208	0.39	0.5	1.3	< 0.10	0.4	0.77	0.65	1.55	2.8	240	0.43	1.2	5.4
Pyrene	M	2800	mg/kg	0.015	0.1	620.00	0.511	0.101	1.33	0.127	0.707	0.271	0.995	0.239	0.903	0.216	2.1	0.1	0.397	1.54	1.33	0.163	0.39	0.62	0.94	< 0.10	0.31	0.66	0.78	1.47	2.1	160	0.32	0.97	3.7
Benzo[a]anthracene	M	2800	mg/kg	0.014	0.1	7.20	0.287	0.0587	0.846	0.0943	0.646	0.245	0.75	0.184	0.486	0.178	2.2	0.061	0.299	0.823	0.776	0.126	< 0.10	0.51	0.86	< 0.10	0.11	0.39	< 0.10	0.786	2.2	92	< 0.10	< 0.10	2.6
Chrysene	M	2800	mg/kg	0.01	0.1	15.00	0.278	0.0555	0.779	0.107	0.647	0.261	0.636	0.198	0.608	0.189	2.5	0.0795	0.375	0.859	0.793	0.143	< 0.10	0.57	0.59	< 0.10	0.15	0.53	< 0.10	0.798	2.5	47	< 0.10	< 0.10	2.6
Benzo[b]fluoranthene	M	2800	mg/kg	0.015	0.1	2.60	0.328	0.0591	0.658	0.122	1.2	0.505	1.33	0.182	0.95	0.355	3.2	0.0819	0.553	1.02	1.03	0.247	< 0.10	< 0.10	1.1	< 0.10	0.2	0.68	< 0.10	1.44	3.2	120	< 0.10	< 0.10	3.3
Benzo[k]fluoranthene	M	2800	mg/kg	0.014	0.1	77.00	0.104	0.0213	0.398	0.0515	0.465	0.167	0.343	0.0897	0.318	0.0971	1.5	0.0232	0.165	0.322	0.341	0.0746	< 0.10	< 0.10	0.39	< 0.10	0.1	0.23	< 0.10	0.38	1.5	37	< 0.10	< 0.10	1.5
Benzo[a]pyrene	M	2800	mg/kg	0.015	0.1	2.20	0.216	0.0476	0.742	0.113	0.906	0.364	0.802	0.181	0.58	0.214	2.5	0.0415	0.276	0.627	0.66	0.149	< 0.10	< 0.10	1.1	< 0.10	0.13	0.46	< 0.10	0.759	2.5	87	< 0.10	< 0.10	2
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.018	0.1	27.00	0.175	0.0398	0.474	0.0935	0.589	0.24	0.618	0.116	0.328	0.149	2.6	0.0309	0.294	0.448	0.498	0.175	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.32	< 0.10	0.661	2.6	60	< 0.10	< 0.10	2.4
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.023	0.1	0.24	0.0484	<0.023	0.132	0.0266	0.164	0.0673	0.161	0.0359	<0.23	0.0391	1.1	<0.023	0.0711	<0.023	0.0889	0.0311	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.13	< 0.10	0.129	1.1	9.6	< 0.10	< 0.10	0.41
Benzo[g,h,i]perylene	M	2800	mg/kg	0.024	0.1	320.00	0.194	0.0392	0.556	0.101	0.684	0.278	0.69	0.149	0.435	0.158	2.2	0.0333	0.305	0.445	0.494	0.142	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.4	< 0.10	0.578	2.2	41	< 0.10	< 0.10	1.6
Total Of 16 PAH's	N	2800	mg/kg	0.118	2		3.76	0.72	9.1	1.11	7.5	2.92	8.94	1.98	6.52	2.09	26	0.818	4.19	11.4	10	1.72	< 2.0	2.2	7.3	< 2.0	< 2.0	5.3	< 2.0	9.54	26	1100	< 2.0	3	33
Resorcinol	M	2920	mg/kg		0.02												< 0.020						< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020		< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Phenol	M	2920	mg/kg	0.01	0.02	280.00	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	< 0.020	<0.01	<0.01	<0.01	<0.01	<0.01	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	<0.01	< 0.020	0.063	< 0.020	< 0.020	< 0.020
Cresols	M	2920	mg/kg	0.01	0.02		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	< 0.020	<0.01	<0.01	<0.01	<0.01	<0.01	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	<0.01	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Xylenols	M	2920	mg/kg	0.015	0.02		<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	< 0.020	<0.015	<0.015	<0.015	<0.015	<0.015	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	<0.015	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
1-Naphthol	N	2920	mg/kg		0.02												< 0.020						< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020		< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Trimethylphenols	M	2920	mg/kg		0.02												< 0.020						< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020		< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Total Phenols	M	2920	mg/kg	0.035	0.1	280.00	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	< 0.10	<0.035	<0.035	<0.035	<0.035	<0.035	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	<0.035	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

P18-669 Llanwern Phase 4G Soil Chemical Screening Results

Project: P18-669							Stockpiles																										
Client: Rodgers Leask Environmental					**Job No.:**		21-41336	210218-32	210218-32	210410-54	181207-13	181207-13	181207-13	181207-13	180425-20	180425-20	180425-20	180425-20	180425-20	180425-20	180425-20	180425-20	180425-20	180425-20	180425-20	180425-20	180425-20	180425-20	180526-31	180526-31	180526-31	180526-31	180526-31
Quotation No.: Q21-24056					**Sample ID.:**		1326724																										
Order No.: .					Client Sample Ref.:		W208-3-2	W208-1	W208-2	W123-1	W54-01	W54-02	W54-03	W54-04	W140-09	W140-09.5	W140-10	W140-10.5	W140-11	W140-11.5	W140-12	W140-12.5	W140-13	W140-13.5	W140-14	W140-14.5	W140-15	W140-15.5	W140-16	W140-16.5	W60-01	W60-01.5	W60-02	W60-02.5	W60-03
					Sample Type:		SOIL	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
					Top Depth (m):		0.2	0.20-0.20	0.20-0.20	0.20-0.20	0.00-0.00	0.00-0.00	0.00-0.00	0.00-0.00	0.00-0.00	0.00-0.00	0.00-0.00	0.00-0.00	0.00-0.00	0.00-0.00	0.00-0.00	0.00-0.00	0.00-0.00	0.00-0.00	0.00-0.00	0.00-0.00	0.00-0.00	0.00-0.00	0.00-0.00	0.00-0.00	0.00-0.00	0.00-0.00	0.00-0.00	0.00-0.00	0.00-0.00
					Bottom Depth (m):																													
					Date Sampled:		44519	17/02/2021	17/02/2021	08/04/2021	06/12/2018	06/12/2018	06/12/2018	06/12/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/05/2018	24/05/2018	24/05/2018	24/05/2018	24/05/2018
					Asbestos Lab:																												
Determinand	**Accred.**	**SOP**	**Units**	**ALS LOD**	**Chemtest LOD**																												
ACM Type	U	2192		N/A	N/A																												
Asbestos Identification	U	2192		N/A	N/A			Not Detected			Not Detected		Not Detected		Not Detected			Not Detected			Not Detected			Not Detected			Not Detected			Not Detected			
Asbestos by Gravimetry	U	2192	%	0.001	0.001																												
Total Asbestos	U	2192	%	0.001	0.001																												
Moisture	N	2030	%	0.02	0.02		8	13	17	8	19	15	17	14	5.2	6.5	7.9	9.2	5.7	5.3	6.2	5.9	8.1	12	12	13	7.7	6.6	0.68	4.2	9.3	4.5	4.8	0	0
Soil Colour	N	2040		N/A	N/A		Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Black	Black	Dark Brown
Other Material	N	2040		N/A	N/A		Stones	Stones	Stones	Stones	egetation / Ston	egetation / Ston	egetation / Ston	egetation / Ston	Stones / None	Stones / None	Stones / None	tones / Vegetatio	egetation / Stone	Stones / None	tones / Vegetatio	Stones / None	Stones / None	Stones / None	Stones / None	Stones / N/A	Stones / None	Stones / None	Stones / None	Stones / None	Stones / None	tones / Vegetatio	/ Concrete/Agg	tones / Vegetatio	tones / Vegetatio
Soil Texture	N	2040		N/A	N/A		Sand				Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam	Stone/Soil	Sand	y Sample Receiv	Sand	Sandy Loam	Sandy Loam	Stone/Soil	Sand	y Sample Receiv	Loamy Sand	Sandy Loam	Sandy Loam	Stone/Soil	y Sample Receiv	Sand	y Sample Receiv	Sandy Loam	Sandy Loam	Loamy Sand	Sand	Sand
pH	M	2010		4	4		10.7	10.4	10.6	8.88	8.58	8.77	8.92	8.81	11.3	11.7	9.72	10.3	10.2	9.96	9.39	9.41	9.65	8.83	8.54	8.94	8.66	9.7	9.74	10	8.61	8.6	11.9	11.7	11.5
Cyanide (Total)	M	2300	mg/kg	1	0.5		0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	13.6	7.92	<1	<1	<1
Ammoniacal Nitrogen	M	2425	mg/kg	12	0.5		27	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12
Iron (Total)	N	2430	mg/kg	10000	100		21000	63900	61700	65000	45300	63700	50900	39300	211000	195000	151000	145000	322000	267000	309000	260000	159000	90500	181000	244000	192000	233000	193000	188000	170000	119000	169000	125000	130000
Arsenic	M	2450	mg/kg	0.6	0.5	37	30	17.8	11.6	9.5	7.68	6.12	5.63	9.36	<6	<6	11	8.86	9.51	8.01	10.3	8.73	8.83	<6	9.59	11	11.7	6.67	14.1	10	18.3	16.3	<6	4.75	5.31
Cadmium	M	2450	mg/kg	0.02	0.1	26	0.55	0.382	0.448	0.597	0.235	0.0827	0.0684	0.264	1.9	1.79	1.38	1.13	2.74	2.44	2.75	2.2	1.41	1.4	3.44	2.46	1.62	2.55	1.54	1.61	1.61	4.53	0.798	<0.02	0.268
Chromium	M	2450	mg/kg	0.9	0.5	910	100	205	104	95	101	157	207	94.6	914	863	31.2	92.6	<9	27	<9	12.5	3.91	18.5	<9	<9	9.6	149	26.6	197	100	63.5	745	340	498
Manganese	M	2450	mg/kg	1.3	1		6600	10100	6800	7060	6100	8880	10000	6450	41000	38100	4790	7750	3880	5190	2340	4340	5110	3190	3520	4380	5750	9550	6730	14700	9980	5330	42800	29500	28200
Copper	M	2450	mg/kg	1.4	0.5	2400	140	33.6	27.9	24.4	15.3	20.1	11.9	11.8	18.6	16	12.4	13.6	24.9	14.7	15.4	19.6	14.7	<14	19.4	18.9	16.6	18	31.9	13.9	43.4	33.9	<14	17.7	10.6
Mercury	M	2450	mg/kg	0.14	0.05	1.2	0.4	<1	<1	<0.1	<0.14	<0.14	<0.14	<0.14	<1.4	<1.4	<0.14	<0.14	<1.4	<1.4	<1.4	<1.4	<0.14	<1.4	<1.4	<1.4	<0.14	<1.4	<0.14	<0.14	0.237	<0.14	<1.4	<0.14	<0.14
Nickel	M	2450	mg/kg	0.2	0.5	130	28	25.7	24.2	19.2	18.9	17.2	12.6	14.7	8.98	9.96	11.4	13.9	48.6	31.3	58.2	44.6	12.5	14.8	15.4	14.7	21.6	141	25.3	36.1	24.6	24.7	2.67	8.21	6.4
Lead	M	2450	mg/kg	0.7	0.5	200	97	146	105	74.3	31.7	39.6	23.8	22.1	36.4	32.8	30.9	21	39	18.1	22.6	12.7	11.7	18.8	62.2	34.2	28.1	31.5	48	24.9	218	791	17.2	27.5	71.6
Selenium	M	2450	mg/kg	1	0.25	250	< 0.20	<10	<10	3.7	5.48	5.55	7.45	4.92	15	16.6	1.86	3.95	<10	<10	<10	<10	1.59	<10	<10	<10	1.46	<10	<1	3.31	3.02	3.22	20.3	9.51	8.54
Vanadium	U	2450	mg/kg	0.2	0.5	410	160	163	150	131	181	185	243	139	655	691	79.2	132	268	213	279	282	115	76.5	54	60	140	288	108	235	146	97	544	372	474
Zinc	M	2450	mg/kg	1.9	0.5	3700	180	264	285	242	139	129	111	159	107	84.2	113	102	71.5	57.2	63	47.8	57.2	90.8	195	96.3	116	89.1	162	107	1050	2990	40.5	77.8	344
Organic Matter	M	2625	%	0.35	0.4		6.2	4.12	6.86	4.4	34.5	93.4	43.3	16.1	3.45	2.31	2.76	1.26	1.09	0.94	1.1	0.921	2.4	1.42	2.93	2.12	3.38	0.762	1.93	0.996	70.2	29.7	5.43	19.3	16.8
Aliphatic TPH >C5-C6	N	2680	mg/kg	0.02	0.05	42	< 1.0	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.02	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.01	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatic TPH >C6-C8	N	2680	mg/kg	0.02	0.1	100	< 1.0	0.0276	0.0372	<0.01	<0.02	0.0271	<0.02	<0.02	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.01	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.04
Aliphatic TPH >C8-C10	M	2680	mg/kg	0.02	0.05	27	< 1.0	0.0288	0.0576	<0.01	<0.02	0.026	<0.02	<0.02	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.01	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatic TPH >C10-C12	M	2680	mg/kg	0.02	2	130	< 1.0	<1	<1	<1	<0.02	0.033	<0.02	<0.02	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.01	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatic TPH >C12-C16	M	2680	mg/kg	0.1	1	1.10E+03	< 1.0	<1	<1	<1	3.67	15	3.84	3.35	<0.1	2.13	<0.1	<0.1	<0.1	<0.1	0.455	<0.1	1.23	<0.1	1.39	33.6	1.53	<0.1	<0.1	0.736	14.3	4.67	15.4	20	8.46
Aliphatic TPH >C16-C21	M	2680	mg/kg	0.1	2	6.50E+04	< 1.0	<1	<1	6.74	15	29.1	15.7	8.69	11.7	12.1	2.89	2.78	5.99	8.69	6.02	3.77	11.1	5.25	5.49	19.1	8.94	3.84	15.9	10.5	131	42.9	90	121	78.9
Aliphatic TPH >C21-C35	M	2680	mg/kg	0.1	3	6.50E+04	< 1.0	9.55	5.26	45.9	51.1	117	118	23.7	116	107	24.2	19.6	66.5	92.9	62.9	30.8	94.9	43.1	28.5	11.3	86.3	37.3	170	109	138	81.5	222	354	137
Aliphatic TPH >C35-C44	N	2680	mg/kg	0.1	10	6.50E+04	< 1.0	2.06	1.56	13.2	10.4	20.6	54.1	3.87	30.4	29.7	10.2	6.57	31.3	45.3	24.2	12.7	34.9	7.58	6.67	<0.1	42	15.6	81.2	49.4	27.3	19.2	57.9	77	33
Total Aliphatic Hydrocarbons	N	2680	mg/kg	0.1	10		< 5.0	12.7	7.22	66.3	80.2	181	192	39.6	158	151	37.3	29	104	147	93.6	47.3	142	55.9	42.1	64	139	56.7	267	170	311	148	385	572	257
Aromatic TPH >C5-C7	N	2680	mg/kg	0.02	0.05	70	< 1.0	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.02	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.01	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatic TPH >C7-C8	N	2680	mg/kg	0.02	0.05	130	< 1.0	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.02	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.01	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.0431	<0.04	<0.04
Aromatic TPH >C8-C10	M	2680	mg/kg	0.02	0.05	34	< 1.0	0.0196	0.0384	<0.01	<0.02	<0.02	<0.02	<0.02	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.01	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.049
Aromatic TPH >C10-C12	M	2680	mg/kg	0.02	1	74	< 1.0	<1	<1	<1	<0.02	0.0224	<0.02	<0.02	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.01	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatic TPH >C12-C16	M	2680	mg/kg	0.1	1	140	< 1.0	<1	<1	<1	13.3	69.9	21.2	5.88	1.39	0.563	<0.1	0.165	<0.1	0.451	0.294	0.638	1.32	<0.1	0.992	1.05	0.927	0.281	0.846	0.97	40.9	15.2	10.4	10.1	8.83
Aromatic TPH >C16-C21	U	2680	mg/kg	0.1	2	260	12	1.4	1.44	6.23	151	411	111	38.5	10.7	6.09	1.06	1.42	4.4	3.92	2.83	3.66	6.87	3.94	4.87	3.32	7.76	2.51	6.83	5.3	364	182	46.7	58.7	56.6
Aromatic TPH >C21-C35	M	2680	mg/kg	0.1	2	1100	300	7.17	6.47	48.2	335	915	399	123	61.4	32	11.2	7.25	32	33.1	26.8	25.5	47.6	24.3	29.5	19.8	48.1	21.8	47.3	38.7	1120	636	125	161	168
Aromatic TPH >C35-C44	N	2680	mg/kg	0.1	1	1100	< 1.0	<1	<1	3.86	89.5	226	160	33.3	26.5	18.9	6.05	28.7	19.5	21.2	111	14.3	21.5	8.86	14	6.92	24.6	101	25.4	22.4	326	195	41.3	47.4	52.9
Total Aromatic Hydrocarbons	N	2680	mg/kg	0.1	10		310	9.63	8.91	58.9	588	1620	692	200	99.9	57.5	18.3	37.5	55.9	58.7	140	44.1	77.4	37.1	49.3	31.1	81.4	125	80.4	67.4	1850	1030	223	277	286
Total Petroleum Hydrocarbons	N	2680	mg/kg	0.1	10		310	22.4	16.3	125	669	1800	883	240	257	209	55.6	66.5	160	206	234	91.5	219	93	91.3	95.1	220	182	347	237	2160	1180	608	849	544
Benzene	M	2760	µg/kg	90	1	87	< 1.0	<180	<180	<180	<90	< 1800	<90	< 90	< 9	< 9	< 9	< 9	< 9	< 9	< 9	< 9	< 9	< 9	< 9	< 90	< 9	< 9	< 9	< 9	< 90	< 90	< 90	< 90	< 90
Toluene	M	2760	µg/kg	70	1	130000	< 1.0	<140	<140	<140	< 70	< 1400	< 70	< 70	< 7	< 7	< 7	< 7	< 7	< 7	< 7	< 7	< 7	< 7	< 7	< 70	< 7	< 7	< 7	< 7	< 70	< 70	< 70	< 70	< 70
Ethylbenzene	M	2760	µg/kg	40	1	47000	< 1.0	<80	<80	<80	< 40	< 800	< 40	< 40	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 40	< 4	< 4	< 4	< 4	< 40	< 40	< 40	< 40	< 40
m & p-Xylene	M	2760	µg/kg	100	1	56000	< 1.0	<200	<200	<200	< 100	< 2000	< 100	< 100	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 100	< 10	< 10	< 10	< 10	< 100	< 100	< 100	< 100	< 100
o-Xylene	M	2760	µg/kg	100	1	60000	< 1.0	<200	<200	<200	< 100	< 2000	< 100	< 100	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 100	< 10	< 10	< 10	< 10	< 100	< 100	< 100	< 100	< 100
Methyl Tert-Butyl Ether	M	2760	µg/kg	100	1		< 1.0	<200	<200	<200	189	2600	401	193	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 100	< 10	< 10	< 10	< 10	< 100	< 100	< 100	< 100	< 100
Naphthalene	M	2800	mg/kg	0.009	0.1	15.00	2.6	0.107	0.0985	0.231	0.549	38.3	3.75	1.18	0.182	0.164	0.311	0.235	0.101	0.0903	0.0563	0.103	0.118	0.049	0.704	0.0821	0.196	0.13	0.0747	0.0423	23.2	8.3	1.25	2.13	2.74
Acenaphthylene	N	2800	mg/kg	0.012	0.1	170.00	0.98	0.0836	0.0761	0.0977	0.537	51.2	6.05	1.81	0.04	0.0769	0.141	0.079	0.014	<0.012	0.0143	0.0201	0.0257	<0.012	0.89	0.0274	0.055	0.0364	0.02	0.0173	11.6	5.1	0.363	0.511	0.419
Acenaphthene	M	2800	mg/kg	0.008	0.1	210.00	0.17	0.0192	0.0219	0.0363	0.0462	16.5	0.488	0.171	0.12	0.0481	0.037	0.0251	<0.008	<0.008	<0.008	0.0131	0.0145	<0.008	0.0839	0.00923	0.0196	0.0283	<0.008	<0.008	2.42	0.395	0.109	0.169	0.154
Fluorene	M	2800	mg/kg	0.01	0.1	170.00	0.55	0.0444	0.0868	0.0614	0.219	135	7.71	2.19	0.0569	0.0459	0.148	0.0697	0.0127	<0.01	0.0154	0.0218	0.0228	0.013	1.3	0.0313	0.0552	0.0344	0.0188	0.0113	7.47	2.2	0.289	0.443	0.311
Phenanthrene	M	2800	mg/kg	0.015	0.1	95.00	4.1	0.318	0.53	0.556	2.11	379	48.3	11.5	0.69	0.464	0.762	0.399	0.13	0.129	0.0949	0.147	0.207	0.0853	6.65	0.176	0.369	0.339	0.14	0.0596	48.2	18.2	3.17	4.43	4.19
Anthracene	M	2800	mg/kg	0.016	0.1	2400.00	1.4	0.124	0.166	0.214	0.876	155	20.3	3.8	0.153	0.139	0.283	0.138	0.0304	0.0233	0.021	0.0407	0.0504	0.023	2.68	0.0589	0.105	0.0706	0.0431	0.0212	18.8	7.33	0.89	1.56	0.98
Fluoranthene	M	2800	mg/kg	0.017	0.1	280.00	6.9	0.799	0.835	1.04	7.02	374	98	17.6	1.29	1.02	1.41	0.865	0.295	0.244	0.153	0.255	0.438	0.123	6.22	0.301	0.657	0.644	0.286	0.124	109	49.3	4.65	8.07	6.71
Pyrene	M	2800	mg/kg	0.015	0.1	620.00	4.5	0.633	0.655	0.872	4.76	302	74.5	12.6	1.11	0.844	1.04	0.649	0.227	0.179	0.114	0.189	0.345	0.105	4.27	0.225	0.491	0.528	0.239	0.109	78.6	36.1	3.35	6.18	5.63
Benzo[a]anthracene	M	2800	mg/kg	0.014	0.1	7.20	3	0.379	0.379	0.635	3.1	206	38.5	7.94	0.839	0.627	0.556	0.374	0.119	0.107	0.0682	0.0891	0.185	0.052	2.14	0.132	0.239	0.328	0.118	0.0507	56.5	27.8	2.55	3.96	4.2
Chrysene	M	2800	mg/kg	0.01	0.1	15.00	3.2	0.358	0.371	0.694	3.1	166	35.9	7.13	0.842	0.617	0.549	0.387	0.134	0.144	0.0605	0.109	0.234	0.0627	2.99	0.11	0.266	0.312	0.128	0.0557	52.5	27.4	1.92	4.21	4.14
Benzo[b]fluoranthene	M	2800	mg/kg	0.015	0.1	2.60	4.2	0.577	0.533	1.1	4.48	212	47.4	9.76	1.52	0.885	0.596	0.38	0.179	0.204	0.0708	0.106	0.239	0.0826	2.65	0.146	0.365	0.397	0.179	0.0678	96.3	44.9	3	5.33	7.29
Benzo[k]fluoranthene	M	2800	mg/kg	0.014	0.1	77.00	1.5	0.193	0.178	0.46	1.77	81.5	17.1	3.39	0.612	0.405	0.342	0.216	0.0946	0.0736	0.0911	0.0531	0.108	0.0315	0.832	0.0615	0.191	0.161	0.0861	0.0248	27.3	14.3	1.11	1.6	2.84
Benzo[a]pyrene	M	2800	mg/kg	0.015	0.1	2.20	3	0.341	0.298	0.731	2.76	147	31.4	6.32	0.969	0.695	0.535	0.361	0.123	0.102	0.0624	0.0768	0.168	0.0467	1.85	0.105	0.227	0.323	0.114	0.0451	59.1	27.9	2.23	3.29	4.92
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.018	0.1	27.00	2.9	0.219	0.245	0.786	1.81	80.5	18.1	3.67	0.703	0.502	0.318	0.226	0.0788	0.0765	0.0495	0.0555	0.113	0.0286	1.08	0.0684	0.167	0.206	0.0857	0.028	51	26.2	1.84	2.46	3.7
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.023	0.1	0.24	0.59	0.0495	0.0603	0.106	0.542	24.1	5.15	1.1	0.225	0.155	0.0997	0.0736	<0.023	0.026	<0.023	<0.023	0.0337	<0.023	0.311	<0.023	0.0466	0.0577	0.0235	<0.023	10.3	5.46	0.505	0.622	0.886
Benzo[g,h,i]perylene	M	2800	mg/kg	0.024	0.1	320.00	1.9	0.258	0.23	0.657	2.26	88.3	21.2	4.16	0.868	0.662	0.417	0.302	0.116	0.106	0.0649	0.0737	0.161	0.0417	1.31	0.0823	0.21	0.259	0.11	0.046	47.1	23.1	1.61	2.19	3.51
Total Of 16 PAH's	N	2800	mg/kg	0.118	2		42	4.5	4.76	8.28	35.9	2460	474	94.3	10.2	7.35	7.54	4.78	1.65	1.51	0.937	1.35	2.46	0.744	36	1.62	3.66	3.86	1.67	0.703	700	324	28.8	47.1	52.6
Resorcinol	M	2920	mg/kg		0.02		< 0.020																												
Phenol	M	2920	mg/kg	0.01	0.02	280.00	< 0.020	<0.01	<0.01	<0.01	<0.01	0.0118	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.0105	0.01	<0.01
Cresols	M	2920	mg/kg	0.01	0.02		< 0.020	<0.01	<0.01	<0.01	<0.01	0.0354	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Xylenols	M	2920	mg/kg	0.015	0.02		< 0.020	<0.015	<0.015	<0.015	<0.015	0.0236	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
1-Naphthol	N	2920	mg/kg		0.02		< 0.020																												
Trimethylphenols	M	2920	mg/kg		0.02		< 0.020																												
Total Phenols	M	2920	mg/kg	0.035	0.1	280.00	< 0.10	<0.035	<0.035	<0.035	<0.035	0.0708	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035

P18-669 Llanwern Phase 4G Soil Chemical Screening Results

Project: P18-669											Surface Validation Samples																							**S25**	**S27**
Client: Rodgers Leask Environmental					**Job No.:**		180526-31	23-26235	23-26235	22-23680	24-07882	24-07882	24-07877	24-07877	24-07877	24-08102	24-08102	24-08102	24-09263	24-09263	24-11616	24-11616	24-11616	24-13424	24-13424	24-14959	24-14959	24-14959	23-39518	23-39518	**Number of Exceedances**	**Maximum Concentration Check**	**Minimum Exceedance Concentration**	181012-49	181003-43
Quotation No.: Q21-24056					**Sample ID.:**	**Generic Assessment Criteria (GAC) Residential End Use with Homegrown Produce (SOM 1%)**		1683537	1683538	1454852	1779763	1779764	1779752	1779753	1779754	1780548	1780549	1780550	1784577	1784578	1793604	1793605	1793606	1800300	1800301	1806343	1806344	1806345	1737783	1737784				18511972	18449417
Order No.: .					Client Sample Ref.:		W60-03.5	R179-1	R179-2	R157-1	4g-SV1	4g-SV7	4g-SV3	4g-SV9	4g-SV15	4g-SV6	4g-SV19	4g-SV20	4g-SV13	4g-SV14	4G-SV10	4G-SV16	4G-SV17	4g-SV5	4g-SV11	4G-SV18	4G-SV22	4G-SV21	4G-SV2	4G-SV8				4C-G4-V	4C-G5-V
					Sample Type:		SOLID	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL					
					Top Depth (m):		0.00-0.00			0.20						0.2	0.2	0.2											0.2	0.2				2.40-2.40	2.80-2.80
					Bottom Depth (m):					0.20									0.2	0.2															
					Date Sampled:		24/05/2018	45140	45140	44734	45362	45362	45362	45362	45362	45365	45365	45365	45372	45372	45394	45394	45394	45406	45406	45421	45421	45421	45257	45257				11/10/2018	02/10/2018
					Asbestos Lab:			DURHAM		DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	NEW-ASB	NEW-ASB	NEW-ASB	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	COVENTRY						
Determinand	**Accred.**	**SOP**	**Units**	**ALS LOD**	**Chemtest LOD**																														
ACM Type	U	2192		N/A	N/A						-	-	-	Chrysotile	-	-	-	-						Chrysotile				Chrysotile							
Asbestos Identification	U	2192		N/A	N/A			No Asbestos Detected		No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	Detected	No Asbestos Detected					-	-
Asbestos by Gravimetry	U	2192	%	0.001	0.001									0.011										0.001				<0.001						-	-
Total Asbestos	U	2192	%	0.001	0.001									0.011										0.001				<0.001						-	-
Moisture	N	2030	%	0.02	0.02		0.56	18	21	5.7	14	15	12	15	15	16	12	18	18	10	4.2	5.2	4.3	4.6	6.8	7.1	8.2	15	21	19				2.69	1.72
Soil Colour	N	2040		N/A	N/A		Dark Brown	Brown	Brown	Black	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown				Grey	Dark Brown
Other Material	N	2040		N/A	N/A		tones / Vegetatic	Stones	Stones and Roots	Stones	Stones	Stones	Stones	Stones	Stones	Stones and Roots	Stones and Roots	Stones and Roots	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones and Woo	Stones	Stones and Roots	Stones	Stones				Vegetation	Vegetation
Soil Texture	N	2040		N/A	N/A		Sand	Clay	Clay	Loam	Loam	Loam	Loam	Loam	Clay	Clay	Loam	Clay	Sand	Sand	Sand	Sand	Sand	Loam	Loam	Loam	Loam	Loam	Loam	Clay				Silty Clay Loam	Silty Clay Loam
pH	M	2010		4	4		9.81	8.8	9.2	9.7	10.6	10.4	10.6	11.2	10.2	9.6	10.6	9.8	9.8	9.8	9.3	10.3	10.2	10.8	10.5	11.3	9.8	10.8	11.3	10.8				7.73	8
Cyanide (Total)	M	2300	mg/kg	1	0.5		7.68	3.7	9.4	0.9	< 0.50	0.6	1.3	0.7	< 0.50	< 0.50	< 0.50	0.7	< 0.50	1.8	2.5	4.6	1.4	0.7	2	1.1	1.4	1.6	< 0.50	< 0.50				<1	<1
Ammoniacal Nitrogen	M	2425	mg/kg	12	0.5		<12	18	6.1	1.7	< 0.50	2.3	< 0.50	< 0.50	4.8	1.1	1.5	2.3	41	5.1	3.1	2.1	2.7	3.1	4	< 0.50	2.2	5.1	< 0.50	0.86				138	116
Iron (Total)	N	2430	mg/kg	10000	100		158000	82000	65000	28000	21000	21000	21000	21000	23000	22000	21000	22000	24000	20000	21000	20000	21000	20000	21000	16000	24000	22000	23000	22000				32400	32300
Arsenic	M	2450	mg/kg	0.6	0.5	37	12.3	11	12	8.9	9.4	15	18	24	16	41	19	18	1.8	12	8.4	11	9.5	7.3	12	17	7.8	15	22	15	1	141.00	141.00	16.7	13.3
Cadmium	M	2450	mg/kg	0.02	0.1	26	4.55	1.9	4.3	0.76	0.57	1.5	1.3	0.92	0.48	2	0.98	1.9	< 0.10	0.22	0.2	0.31	0.27	0.18	< 0.10	0.53	0.37	0.57	0.91	0.65	0	no exc.	0.00	0.432	<0.02
Chromium	M	2450	mg/kg	0.9	0.5	910	172	74	75	98	200	350	500	420	110	300	600	140	6.7	200	72	400	100	250	220	510	130	300	340	310	0	no exc.	0.00	49.5	35.8
Manganese	M	2450	mg/kg	1.3	1		14800	4800	3800	6500	13000	18000	28000	21000	8000	18000	18000	8700	200	8900	4400	23000	7600	14000	10000	20000	8000	17000	15000	13000				915	967
Copper	M	2450	mg/kg	1.4	0.5	2400	28.9	35	37	18	27	40	60	48	36	66	56	50	6.6	27	23	40	37	32	29	48	25	42	45	30	0	no exc.	0.00	11.9	17.1
Mercury	M	2450	mg/kg	0.14	0.05	1.2	<0.14	0.48	0.18	0.15	0.15	0.24	0.32	0.18	0.28	0.29	0.38	0.29	< 0.05	0.12	0.17	0.37	0.15	0.09	0.08	0.18	0.12	0.2	0.21	0.19	0	no exc.	0.00	<0.14	<0.14
Nickel	M	2450	mg/kg	0.2	0.5	130	19.5	23	27	19	24	34	45	35	38	49	38	48	4.8	28	20	29	24	29	40	38	26	36	38	29	0	no exc.	0.00	33	42.8
Lead	M	2450	mg/kg	0.7	0.5	200	472	230	620	58	89	230	170	100	71	270	160	110	7	52	58	60	60	43	37	70	54	83	150	94	0	no exc.	0.00	26.1	29.6
Selenium	M	2450	mg/kg	1	0.25	250	5.53	2.4	2.3	0.98	3.1	2.6	1.5	1.9	3.2	2.3	1.9	1.9	< 0.25	1.3	1.4	1.6	1.2	1.2	1.4	1.7	0.86	2.4	2.6	2.6	0	no exc.	0.00	<1	1.45
Vanadium	U	2450	mg/kg	0.2	0.5	410	251	78	69	170	270	310	470	380	230	370	430	270	12	170	79	330	140	240	200	300	180	290	340	290	0	no exc.	0.00	84.6	57
Zinc	M	2450	mg/kg	1.9	0.5	3700	2400	930	2300	150	260	720	470	250	210	740	430	300	38	140	150	150	150	120	120	280	150	200	340	250	0	no exc.	0.00	102	135
Organic Matter	M	2625	%	0.35	0.4		37.2	12	9.2	19	7.1	4.2	9.8	3.9	6.7	5.7	3.8	18	7.6	4	12	20	22	5.2	3.8	5.8	4.6	17	5	13				2.69	1.72
Aliphatic TPH >C5-C6	N	2680	mg/kg	0.02	0.05	42	<0.04	< 0.05	< 0.05	< 1.0	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0	no exc.	0.00	<0.01	<0.01
Aliphatic TPH >C6-C8	N	2680	mg/kg	0.02	0.1	100	<0.04	< 0.10	< 0.10	< 1.0	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0	no exc.	0.00	<0.01	<0.01
Aliphatic TPH >C8-C10	M	2680	mg/kg	0.02	0.05	27	<0.04	0.14	< 0.05	< 1.0	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0	no exc.	0.00	<0.01	<0.01
Aliphatic TPH >C10-C12	M	2680	mg/kg	0.02	2	130	<0.04	2.4	2.4	< 1.0	3.7	6.5	4.3	8.3	4.2	4.4	7	23	5	4.5	6.4	4.8	3.9	8.2	6.4	8.8	7.8	5.5	< 2.0	< 2.0	0	no exc.	0.00	<0.01	<0.01
Aliphatic TPH >C12-C16	M	2680	mg/kg	0.1	1	1.10E+03	6.53	< 1.0	< 1.0	< 1.0	6.1	15	7.3	48	10	7.5	8	42	19	9	11	6.1	2.9	48	14	11	11	14	< 1.0	1.5	0	no exc.	0.00	<0.1	<0.1
Aliphatic TPH >C16-C21	M	2680	mg/kg	0.1	2	6.50E+04	43.1	< 2.0	< 2.0	< 1.0	19	36	33	81	26	19	19	51	29	19	13	10	5.8	210	59	19	13	55	< 2.0	13	0	no exc.	0.00	<0.1	1.13
Aliphatic TPH >C21-C35	M	2680	mg/kg	0.1	3	6.50E+04	91.9	22	< 3.0	150	120	300	53	70	57	68	78	120	34	37	21	18	5.5	210	98	1000	51	72	< 3.0	44	0	no exc.	0.00	<0.1	3.84
Aliphatic TPH >C35-C44	N	2680	mg/kg	0.1	10	6.50E+04	20.3	< 10	< 10	< 1.0	27	82	< 10	14	12	19	30	38	11	< 10	< 10	< 10	< 10	60	24	270	19	13	< 10	18	0	no exc.	0.00	<0.1	0.405
Total Aliphatic Hydrocarbons	N	2680	mg/kg	0.1	10		162	26	< 5.0	150	180	440	97	220	110	120	140	270	99	70	52	39	18	530	200	1300	100	160	< 10	77				<0.1	5.37
Aromatic TPH >C5-C7	N	2680	mg/kg	0.02	0.05	70	<0.04	< 0.05	< 0.05	< 1.0	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0	no exc.	0.00	<0.01	<0.01
Aromatic TPH >C7-C8	N	2680	mg/kg	0.02	0.05	130	<0.04	< 0.05	< 0.05	< 1.0	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0	no exc.	0.00	<0.01	<0.01
Aromatic TPH >C8-C10	M	2680	mg/kg	0.02	0.05	34	<0.04	< 0.05	< 0.05	< 1.0	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0	no exc.	0.00	<0.01	<0.01
Aromatic TPH >C10-C12	M	2680	mg/kg	0.02	1	74	<0.04	< 1.0	< 1.0	6.6	< 1.0	1.3	< 1.0	2.3	< 1.0	< 1.0	1.1	8	< 1.0	< 1.0	< 1.0	1.9	< 1.0	5.9	4.3	< 1.0	< 1.0	4.8	< 1.0	< 1.0	0	no exc.	0.00	<0.01	<0.01
Aromatic TPH >C12-C16	M	2680	mg/kg	0.1	1	140	24.6	< 1.0	< 1.0	< 1.0	1.7	15	2.4	17	5.6	< 1.0	< 1.0	33	3.8	< 1.0	< 1.0	1.8	1	23	5.9	< 1.0	< 1.0	1.2	< 1.0	< 1.0	0	no exc.	0.00	<0.1	0.746
Aromatic TPH >C16-C21	U	2680	mg/kg	0.1	2	260	183	52	18	33	12	37	19	24	26	5	8.2	63	19	9.7	10	12	14	110	29	14	13	40	4.3	13	0	no exc.	0.00	<0.1	1.38
Aromatic TPH >C21-C35	M	2680	mg/kg	0.1	2	1100	437	120	7.8	270	60	89	42	48	62	23	28	110	57	30	15	21	15	130	85	17	18	110	3.5	52	0	no exc.	0.00	0.186	13.9
Aromatic TPH >C35-C44	N	2680	mg/kg	0.1	1	1100	108	3.9	< 1.0	< 1.0	17	12	3.1	13	34	6.1	31	110	16	6.9	< 1.0	4.1	< 1.0	25	13	4	9.7	42	< 1.0	3.3	0	no exc.	0.00	<0.1	4.3
Total Aromatic Hydrocarbons	N	2680	mg/kg	0.1	10		752	170	26	310	74	140	64	91	94	29	37	210	95	47	27	41	31	290	140	35	42	200	< 10	68				0.186	20.3
Total Petroleum Hydrocarbons	N	2680	mg/kg	0.1	10		914	200	30	460	91	150	67	100	130	35	69	320	190	120	79	79	49	830	340	1400	140	360	< 10	140				0.186	25.6
Benzene	M	2760	µg/kg	90	1	87	< 90	< 1.0	< 1.0	3.1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	2.2	2.4	< 1.0	3.1	3.9	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	0	no exc.	0.00	<9	<90
Toluene	M	2760	µg/kg	70	1	130000	< 70	< 1.0	< 1.0	2.1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.3	< 1.0	1.4	2.3	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	0	no exc.	0.00	<7	<70
Ethylbenzene	M	2760	µg/kg	40	1	47000	< 40	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	0	no exc.	0.00	<4	<40
m & p-Xylene	M	2760	µg/kg	100	1	56000	< 100	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	0	no exc.	0.00	<10	<100
o-Xylene	M	2760	µg/kg	100	1	60000	< 100	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	0	no exc.	0.00	<10	<100
Methyl Tert-Butyl Ether	M	2760	µg/kg	100	1		< 100	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0				<10	<100
Naphthalene	M	2800	mg/kg	0.009	0.1	15.00	13.1	3.4	1.5	3	0.54	2	0.86	< 0.10	0.86	0.65	0.4	1.7	1.2	0.68	3.5	5.9	1.7	1.6	1.6	0.52	0.82	3.7	0.49	2.6	0	no exc.	0.00	<0.009	<0.009
Acenaphthylene	N	2800	mg/kg	0.012	0.1	170.00	5.76	4.6	0.41	0.91	< 0.10	< 0.10	0.14	< 0.10	0.44	0.28	0.13	0.52	0.16	< 0.10	0.73	0.68	0.29	< 0.10	< 0.10	< 0.10	0.13	0.33	0.12	0.55	0	no exc.	0.00	<0.012	<0.012
Acenaphthene	M	2800	mg/kg	0.008	0.1	210.00	0.492	0.44	0.21	0.13	< 0.10	1.1	< 0.10	< 0.10	0.24	0.4	< 0.10	0.43	< 0.10	< 0.10	0.17	0.23	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.22	< 0.10	0.22	0	no exc.	0.00	<0.008	<0.008
Fluorene	M	2800	mg/kg	0.01	0.1	170.00	2.56	6	0.41	0.75	< 0.10	0.92	0.11	< 0.10	0.6	0.73	< 0.10	0.84	0.22	< 0.10	1	0.8	0.25	< 0.10	< 0.10	< 0.10	0.14	0.4	< 0.10	0.56	0	no exc.	0.00	<0.01	<0.01
Phenanthrene	M	2800	mg/kg	0.015	0.1	95.00	19.2	24	1.7	4.6	0.87	2.7	1.2	0.76	4.4	3.9	0.68	4.2	1.6	0.7	8.7	9.4	2.2	2	1.2	0.73	1.3	3.2	0.8	3.8	0	no exc.	0.00	<0.015	<0.015
Anthracene	M	2800	mg/kg	0.016	0.1	2400.00	10.6	6.7	0.68	1.3	0.27	0.63	0.23	0.2	1	1.3	0.24	1.1	0.37	< 0.10	1.8	1.8	0.53	0.51	0.33	0.18	0.34	0.87	0.23	1	0	no exc.	0.00	<0.016	<0.016
Fluoranthene	M	2800	mg/kg	0.017	0.1	280.00	61.2	34	3.1	8	1.5	2.6	2.2	1.2	6.7	6.5	1.3	6	2.7	1.1	11	14	4.1	3.3	2	1.2	2.8	5.7	1.3	5.4	0	no exc.	0.00	<0.017	<0.017
Pyrene	M	2800	mg/kg	0.015	0.1	620.00	45.2	24	2.3	5.6	1.5	2.6	2.1	1.1	4.8	4.4	0.96	4.1	2	0.93	7.4	9.4	2.9	2.5	1.7	1.1	2.6	4.3	1	4	0	no exc.	0.00	<0.015	<0.015
Benzo[a]anthracene	M	2800	mg/kg	0.014	0.1	7.20	29.1	14	1.7	4	0.74	0.85	1.4	0.63	2.4	2.9	0.61	2.4	1.5	0.6	4	5.2	1.9	1.5	1.3	0.81	2.2	3	0.67	2.4	0	no exc.	0.00	<0.014	<0.014
Chrysene	M	2800	mg/kg	0.01	0.1	15.00	25.8	13	1.7	3	0.88	1.1	1.4	0.63	1.9	2.4	0.66	2.1	1.3	0.63	4.4	5.6	2	1.4	1.3	0.95	2.3	3.3	0.7	2.5	0	no exc.	0.00	<0.01	<0.01
Benzo[b]fluoranthene	M	2800	mg/kg	0.015	0.1	2.60	42.2	18	2.9	5.4	1.4	1.3	2.7	1.2	3.4	4.1	0.91	3.5	2.3	< 0.10	5.3	7	2.5	2.5	2.2	1.5	4.6	4.5	1.1	3.8	0	no exc.	0.00	<0.015	<0.015
Benzo[k]fluoranthene	M	2800	mg/kg	0.014	0.1	77.00	14.3	6.1	0.82	1.6	0.53	0.44	0.87	0.32	0.91	1.2	0.31	1.2	0.75	< 0.10	1.7	2.4	0.94	0.82	0.8	0.58	1.5	1.5	0.35	1.4	0	no exc.	0.00	<0.014	<0.014
Benzo[a]pyrene	M	2800	mg/kg	0.015	0.1	2.20	27.9	13	1.8	3.9	0.93	0.77	1.7	0.78	2.4	2.5	0.6	2.3	1.7	< 0.10	3.8	4.6	1.7	1.8	1.6	1	3.5	3.3	0.75	2.7	0	no exc.	0.00	<0.015	<0.015
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.018	0.1	27.00	18.3	9.3	1.5	2.9	0.75	0.67	1.3	0.52	1.7	1.8	0.52	1.7	1.2	< 0.10	2.7	3.5	1.3	1.5	1.1	0.79	2.6	2.6	0.49	2.1	0	no exc.	0.00	<0.018	<0.018
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.023	0.1	0.24	6.15	1.9	0.31	0.41	0.19	0.17	0.29	< 0.10	0.33	0.52	< 0.10	0.41	< 0.10	< 0.10	0.61	0.76	0.27	0.32	0.27	< 0.10	0.51	0.54	< 0.10	0.42	0	no exc.	0.00	<0.023	<0.023
Benzo[g,h,i]perylene	M	2800	mg/kg	0.024	0.1	320.00	20.4	8.3	1.4	2.5	0.77	0.62	1.3	0.59	1.5	1.8	0.42	1.7	0.97	< 0.10	2.8	3.4	1.3	1.3	1.2	0.81	2.5	2.4	0.55	1.9	0	no exc.	0.00	<0.024	<0.024
Total Of 16 PAH's	N	2800	mg/kg	0.118	2		342	190	22	48	11	19	18	7.9	34	35	7.7	34	18	4.6	60	75	24	21	17	10	28	40	8.6	35				<0.118	<0.118
Resorcinol	M	2920	mg/kg		0.02			< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020					
Phenol	M	2920	mg/kg	0.01	0.02	280.00	<0.01	0.17	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	0.073	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	0	no exc.	0.00	<0.01	0.0846
Cresols	M	2920	mg/kg	0.01	0.02		<0.01	0.28	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020				<0.01	<0.01
Xylenols	M	2920	mg/kg	0.015	0.02		<0.015	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020				<0.015	<0.015
1-Naphthol	N	2920	mg/kg		0.02			< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020					
Trimethylphenols	M	2920	mg/kg		0.02			< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020					
Total Phenols	M	2920	mg/kg	0.035	0.1	280.00	<0.035	0.45	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0	no exc.	0.00	<0.035	0.0846

P18-669 Llanwern Phase 4G Soil Chemical Screening Results

																					Clay Validation Samples									
Project: P18-669							**T27**	**T22**	**T23**	**T26**	**U26**	**U27**	**U23**	**U25**	**V27**	**V28**	**V25**	**V26**	**X23**	**Y22**	**Y25**	**Z25**	**AA25**	**AA26**	**AA27**	**AA28**	**AC25**	**AB27**	**W29**	**AE27**	**AE27**	**AC28**	**AD29**	**AE29**	**X28**
Client: Rodgers Leask Environmental					**Job No.:**		181003-43	181012-49	181012-49	181012-49	181012-49	181003-43	181012-49	181012-49	181018-22	181018-22	181018-22	181018-22	181030-48	181030-48	181031-51	181031-51	181031-51	181031-51	181031-51	181031-51	181031-51	181031-51	181101-44	181107-11	181107-11	181121-47	181121-47	181121-47	181102-43
Quotation No.: Q21-24056					**Sample ID.:**	**Generic Assessment Criteria (GAC) Residential End Use with Homegrown Produce (SOM 1%)**	18449385	18512113	18512103	18512154	18512119	18449368	18512048	18511989	18548171	18548220	18548098	18548120	18632759	18632810	18639228	18639248	18639218	18639137	18639169	18639212	18639121	18639188	18646164	18681153	18681247	18786535	18786522	18786505	18654023
Order No.: .					Client Sample Ref.:		4C-G6-V	4C-H1-V	4C-H2-V	4C-H4-V	4C-H5-V	4C-H6-V	4C-I2-V	4C-I4-V	4C-I6-V	4C-I7-V	4C-J4-V	4C-J5-V	4E-C2-V	4E-D1-V	4E-C4-V	4E-D4-V	4E-E4-V	4E-E5-V	4E-E6-V	4E-E7-V	4E-G4-V	4E-F6-V	4E-A8V	4G-B7-V	4G-B8-V	4G-A7-V	4G-A8-V	4G-B9-V	4E-B7V
					Sample Type:																SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
					Top Depth (m):		2.90-2.90	1.60-1.60	1.80-1.80	2.00-2.00	2.50-2.50	3.30-3.30	1.70-1.70	2.50-2.50	2.20-2.20	1.80-1.80	2.00-2.00	1.70-1.70	1.65-1.65	1.80-1.80	2.25-2.25	2.10-2.10	2.10-2.10	1.95-1.95	1.80-1.80	1.75-1.75	1.90-1.90	1.55-1.55	1.70-1.70	1.20-1.20	1.60-1.60	1.80-1.80	2.10-2.10	1.60-1.60	1.60-1.60
					Bottom Depth (m):																														
					Date Sampled:		02/10/2018	11/10/2018	11/10/2018	11/10/2018	11/10/2018	02/10/2018	11/10/2018	11/10/2018	10/17/2018	10/17/2018	10/17/2018	10/17/2018	29/10/2018	29/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018	10/31/2018	11/6/2018	11/6/2018	20/11/2018	20/11/2018	20/11/2018	01/11/2018
					Asbestos Lab:																														
Determinand	**Accred.**	**SOP**	**Units**	**ALS LOD**	**Chemtest LOD**																														
ACM Type	U	2192		N/A	N/A																														
Asbestos Identification	U	2192		N/A	N/A		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos by Gravimetry	U	2192	%	0.001	0.001		-	-	-	-	-	-	-	-	-						-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total Asbestos	U	2192	%	0.001	0.001		-	-	-	-	-	-	-	-	-						-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Moisture	N	2030	%	0.02	0.02		43.6	1.07	1.33	5.5	7.98	3.81	1.26	1.02	28	24	23	32	24	25	26	23	23	32	24	32	22	31	23	30	34	22	28	22	24
Soil Colour	N	2040		N/A	N/A		Dark Brown	Dark Brown	Grey	Grey	Black	Dark Brown	Grey	Dark Brown	Grey	Grey	Grey	Grey	Grey	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Grey	Grey	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Black	Dark Brown	Grey	Grey	Dark Brown	Dark Brown
Other Material	N	2040		N/A	N/A		Vegetation	Vegetation	N/A	Vegetation	Vegetation	Vegetation	Stones	Stones	Vegetation	Stones	None	Vegetation	Vegetation	Vegetation	None	None	Vegetation	None	None	None	Vegetation	Vegetation	Vegetation	Vegetation	Vegetation	None	None	Stones	Stones
Soil Texture	N	2040		N/A	N/A		Silt Loam	Silty Clay	Silty Clay Loam	Sandy Silt Loam	Sandy Silt Loam	Silty Clay Loam	Silty Clay	Sandy Clay Loam	Sandy Loam	Sandy Loam	Silty Clay	Sandy Loam	Silty Clay	Loamy Sand	Silty Clay	Silty Clay	Sandy Clay Loam	Silty Clay Loam	Clay	Silty Clay Loam	Loamy Sand	Sandy Clay	Silty Clay	Clay	Clay	Clay	Clay	Silty Clay Loam	Silty Clay Loam
pH	M	2010		4	4		6.87	8.54	8.08	7.4	6.69	7.22	8.56	8.21	7.85	6.91	7.54	7.52	8.46	8.35	6.54	8.06	8.12	6.64	7.63	7.18	8.63	6.87	8.14	7.43	7.54	8.76	7.48	8.48	7.89
Cyanide (Total)	M	2300	mg/kg	1	0.5		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Ammoniacal Nitrogen	M	2425	mg/kg	12	0.5		175	<12	62.5	200	234	141	73.3	<12	194	144	111	99	341	137	194	164	205	190	102	378	68	216	76.4	235	264	59.7	202	113	130
Iron (Total)	N	2430	mg/kg	10000	100		23500	34100	38000	28200	24100	28300	36700	39300	29600	29900	38800	28700	33400	34200	49700	41500	40000	34400	41300	39900	38300	39800	38900	27900	28000	38300	22300	23600	38200
Arsenic	M	2450	mg/kg	0.6	0.5	37	27.4	17.8	18.4	14.2	16.1	12.3	12.6	14.3	13.6	14.9	20.4	12.1	11.1	13.7	16.1	15.2	12.4	13.1	13.6	14	14.2	11.9	18.9	9.92	10.8	12.4	11	8.08	19.1
Cadmium	M	2450	mg/kg	0.02	0.1	26	<0.02	<0.02	0.541	0.475	0.219	<0.02	0.397	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.3	<0.02	<0.02	0.267	0.264	<0.02	0.316
Chromium	M	2450	mg/kg	0.9	0.5	910	12.1	27.8	32.7	35	39.8	36.3	28.5	30.1	33.1	31.6	33.8	49.5	25.6	28.1	46.6	36.4	31.7	37.7	33.7	35.9	30.3	41.4	27	33.3	31	74.3	33.1	25.9	40.8
Manganese	M	2450	mg/kg	1.3	1		708	719	782	271	422	289	638	1380	575	547	995	1180	1260	1640	1260	866	1390	267	736	349	1710	639	1750	277	274	2710	328	650	523
Copper	M	2450	mg/kg	1.4	0.5	2400	20.7	10.5	11.2	14.6	17.6	16	9.96	11.6	15.4	12.6	11.4	17.4	9.52	10.5	14.2	10.6	10.3	16.3	11.8	22.5	12.2	13.7	12.1	19.6	12.9	12	14.7	7.73	11.4
Mercury	M	2450	mg/kg	0.14	0.05	1.2	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14
Nickel	M	2450	mg/kg	0.2	0.5	130	27.3	34.3	43	27.1	29.7	37.2	37.3	39.5	31.6	30.9	42.6	29.5	32	36.9	43.7	43	34	27.7	38.8	30.4	35.1	30.3	42.1	28	24.3	36	30.9	31.1	39.3
Lead	M	2450	mg/kg	0.7	0.5	200	20.2	25.4	28.7	33.7	45	52.2	23.5	24.1	30.4	25.5	29.9	35.7	22.5	24.5	29.3	27.8	22.7	45.1	24.5	39.1	23.8	32	28.8	32	34.3	24.8	29.7	20	29.4
Selenium	M	2450	mg/kg	1	0.25	250	1.81	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1.04	<1	<1	<1
Vanadium	U	2450	mg/kg	0.2	0.5	410	37.6	48.4	62.1	56.1	60.6	57.3	54.2	57.6	53.3	57	62.5	68.4	45.3	50.4	71.4	61.6	53.6	57.8	56.5	58	52.9	65.9	54.2	47.4	48.6	89.4	54.1	43.3	66.9
Zinc	M	2450	mg/kg	1.9	0.5	3700	130	115	128	111	153	143	117	118	113	107	115	132	96.5	104	129	117	103	129	107	165	104	114	116	142	101	97.8	108	83.5	108
Organic Matter	M	2625	%	0.35	0.4		43.6	1.07	1.33	5.5	7.98	3.81	1.26	1.02	3.88	1.61	1.26	5.24	0.852	1	1.48	1.15	1.05	5.78	1.23	5.65	0.953	3.78	0.905	3.64	6.26	1.56	4.14	0.85	1.61
Aliphatic TPH >C5-C6	N	2680	mg/kg	0.02	0.05	42	<0.01	<0.01	<0.01	0.0274	0.0116	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.02	<0.01	<0.02	0.0311	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatic TPH >C6-C8	N	2680	mg/kg	0.02	0.1	100	<0.01	<0.01	<0.01	0.0638	0.0231	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	0.0715	<0.01	<0.02	0.124	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatic TPH >C8-C10	M	2680	mg/kg	0.02	0.05	27	<0.01	<0.01	<0.01	0.0851	0.0182	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	0.195	<0.01	<0.02	0.891	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatic TPH >C10-C12	M	2680	mg/kg	0.02	2	130	<0.01	<0.01	<0.01	0.0623	0.0198	<0.01	<0.01	<0.01	0.0138	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	0.542	<0.01	<0.02	1.53	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatic TPH >C12-C16	M	2680	mg/kg	0.1	1	1.10E+03	0.459	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	70.9	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.156	<0.1	0.174
Aliphatic TPH >C16-C21	M	2680	mg/kg	0.1	2	6.50E+04	2.49	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	1.14	<0.1	67.6	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aliphatic TPH >C21-C35	M	2680	mg/kg	0.1	3	6.50E+04	111	<0.1	<0.1	<0.1	4.21	1.99	<0.1	<0.1	5.78	3.64	<0.1	5.29	<0.1	<0.1	1.79	<0.1	14.1	5.27	<0.1	5.15	<0.1	1.71	<0.1	7.61	6.58	<0.1	0.692	<0.1	0.286
Aliphatic TPH >C35-C44	N	2680	mg/kg	0.1	10	6.50E+04	2.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.235	<0.1	0.525
Total Aliphatic Hydrocarbons	N	2680	mg/kg	0.1	10		117	<0.1	<0.1	<0.1	4.21	1.99	<0.1	<0.1	5.78	3.64	<0.1	5.29	<0.1	<0.1	2.93	<0.1	153	5.27	<0.1	5.15	<0.1	1.71	<0.1	7.61	6.58	<0.1	1.08	<0.1	<0.1
Aromatic TPH >C5-C7	N	2680	mg/kg	0.02	0.05	70	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.02	<0.01	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatic TPH >C7-C8	N	2680	mg/kg	0.02	0.05	130	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.02	<0.01	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatic TPH >C8-C10	M	2680	mg/kg	0.02	0.05	34	<0.01	<0.01	<0.01	0.0562	0.0116	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	0.13	<0.01	<0.02	0.593	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatic TPH >C10-C12	M	2680	mg/kg	0.02	1	74	<0.01	<0.01	<0.01	0.041	0.0132	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	0.361	<0.01	<0.02	1.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatic TPH >C12-C16	M	2680	mg/kg	0.1	1	140	6.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.23	<0.1	21.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.122	<0.1	0.174
Aromatic TPH >C16-C21	U	2680	mg/kg	0.1	2	260	13.1	<0.1	<0.1	0.248	<0.1	<0.1	<0.1	<0.1	1.97	<0.1	<0.1	<0.1	<0.1	1.38	1.42	<0.1	26.2	0.268	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aromatic TPH >C21-C35	M	2680	mg/kg	0.1	2	1100	546	<0.1	<0.1	21.8	22.5	12.6	<0.1	<0.1	38.5	9.17	1.57	19.8	3.49	6.82	6.09	<0.1	9.14	25.1	<0.1	50.5	1.53	11.3	2.3	11.5	29.2	4.61	3.67	<0.1	0.286
Aromatic TPH >C35-C44	N	2680	mg/kg	0.1	1	1100	367	<0.1	<0.1	4.28	3.36	1.19	<0.1	<0.1	7.74	3.64	<0.1	7.45	0.173	1.06	3.1	<0.1	1.62	3.81	<0.1	7.63	2.26	1.67	3.01	1.98	3.75	0.547	0.395	<0.1	0.525
Total Aromatic Hydrocarbons	N	2680	mg/kg	0.1	10		933	<0.1	<0.1	26.3	25.8	13.8	<0.1	<0.1	48.2	12.8	1.57	27.3	3.66	9.25	10.8	<0.1	58.8	29.2	<0.1	58.2	3.78	13	5.32	13.5	32.9	5.16	4.18	<0.1	0.986
Total Petroleum Hydrocarbons	N	2680	mg/kg	0.1	10		1050	<0.1	<0.1	26.7	30.1	15.8	<0.1	<0.1	54	16.4	1.57	32.5	3.66	9.25	13.8	<0.1	213	34.4	<0.1	67.5	3.78	14.7	5.32	21.1	39.5	5.16	5.27	<0.1	0.986
Benzene	M	2760	µg/kg	90	1	87	<90	<9	<9	<9	<90	<90	<9	<9	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90
Toluene	M	2760	µg/kg	70	1	130000	<70	<7	<7	<7	<70	<70	<7	<7	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70
Ethylbenzene	M	2760	µg/kg	40	1	47000	<40	<4	<4	<4	<40	<40	<4	<4	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40
m & p-Xylene	M	2760	µg/kg	100	1	56000	<100	<10	<10	<10	<100	<100	<10	<10	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
o-Xylene	M	2760	µg/kg	100	1	60000	<100	<10	<10	<10	<100	<100	<10	<10	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
Methyl Tert-Butyl Ether	M	2760	µg/kg	100	1		<100	<10	<10	<10	<100	<100	<10	<10	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
Naphthalene	M	2800	mg/kg	0.009	0.1	15.00	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	0.0145	<0.009	<0.009	<0.009	<0.009	<0.009	<0.13	<0.13	<0.13	<0.13	<0.13	0.436	<0.13	<0.13	<0.13	<0.13	<0.13	<0.009	<0.009	<0.009	<0.13
Acenaphthylene	N	2800	mg/kg	0.012	0.1	170.00	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012
Acenaphthene	M	2800	mg/kg	0.008	0.1	210.00	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	0.0282	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
Fluorene	M	2800	mg/kg	0.01	0.1	170.00	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.0344	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Phenanthrene	M	2800	mg/kg	0.015	0.1	95.00	0.0492	<0.015	<0.015	<0.015	0.0433	<0.015	<0.015	<0.015	0.0264	<0.015	<0.015	<0.015	<0.015	<0.015	0.0452	<0.015	0.0718	<0.015	<0.015	0.024	<0.015	<0.015	0.0333	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
Anthracene	M	2800	mg/kg	0.016	0.1	2400.00	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	0.0258	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016
Fluoranthene	M	2800	mg/kg	0.017	0.1	280.00	0.155	<0.017	<0.017	<0.017	0.0831	<0.017	<0.017	<0.017	0.0389	<0.017	<0.017	<0.017	<0.017	<0.017	0.0694	<0.017	0.024	<0.017	<0.017	0.0335	<0.017	<0.017	0.0686	<0.017	0.0304	0.0387	<0.017	<0.017	<0.017
Pyrene	M	2800	mg/kg	0.015	0.1	620.00	0.0943	<0.015	<0.015	<0.015	0.064	<0.015	<0.015	<0.015	0.0314	<0.015	<0.015	<0.015	<0.015	<0.015	0.0569	<0.015	0.0201	<0.015	<0.015	0.0253	<0.015	<0.015	0.0474	<0.015	0.025	0.0401	<0.015	<0.015	<0.015
Benzo[a]anthracene	M	2800	mg/kg	0.014	0.1	7.20	0.0484	<0.014	<0.014	<0.014	0.0391	<0.014	<0.014	<0.014	0.0225	<0.014	<0.014	<0.014	<0.014	<0.014	0.0336	<0.014	<0.014	<0.014	<0.014	0.0255	<0.014	<0.014	0.0255	<0.014	<0.014	0.0383	<0.014	<0.014	<0.014
Chrysene	M	2800	mg/kg	0.01	0.1	15.00	0.0594	<0.01	<0.01	<0.01	0.0444	<0.01	<0.01	<0.01	0.0221	0.019	<0.01	<0.01	<0.01	<0.01	0.0416	<0.01	<0.01	<0.01	<0.01	0.0162	<0.01	<0.01	0.0222	<0.01	0.0202	0.0441	<0.01	<0.01	<0.01
Benzo[b]fluoranthene	M	2800	mg/kg	0.015	0.1	2.60	0.0822	<0.015	<0.015	0.0232	0.0557	<0.015	<0.015	<0.015	0.0321	0.0211	<0.015	<0.015	<0.015	<0.015	0.0623	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	0.0282	<0.015	0.0314	0.0658	<0.015	<0.015	<0.015
Benzo[k]fluoranthene	M	2800	mg/kg	0.014	0.1	77.00	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	0.03	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	0.0198	<0.014	<0.014	<0.014
Benzo[a]pyrene	M	2800	mg/kg	0.015	0.1	2.20	<0.015	<0.015	<0.015	<0.015	0.0398	<0.015	<0.015	<0.015	0.0222	0.023	<0.015	<0.015	<0.015	<0.015	0.0387	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	0.0198	<0.015	<0.015	0.0669	<0.015	<0.015	<0.015
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.018	0.1	27.00	<0.018	<0.018	<0.018	<0.018	0.0317	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	0.0323	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	0.0378	<0.018	<0.018	<0.018
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.023	0.1	0.24	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023
Benzo[g,h,i]perylene	M	2800	mg/kg	0.024	0.1	320.00	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	0.0355	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	0.0502	<0.024	<0.024	<0.024
Total Of 16 PAH's	N	2800	mg/kg	0.118	2		0.488	<0.118	<0.118	<0.118	0.401	<0.118	<0.118	<0.118	0.21	<0.118	<0.118	<0.118	<0.118	<0.118	0.461	<0.118	0.203	<0.118	<0.118	0.672	<0.118	<0.118	0.271	<0.118	<0.118	0.402	<0.118	<0.118	<0.118
Resorcinol	M	2920	mg/kg		0.02																														
Phenol	M	2920	mg/kg	0.01	0.02	280.00	<0.01	<0.01	<0.01	<0.01	<0.01	0.0973	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cresols	M	2920	mg/kg	0.01	0.02		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Xylenols	M	2920	mg/kg	0.015	0.02		<0.015	<0.015	<0.015	<0.015	<0.015	0.0278	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
1-Naphthol	N	2920	mg/kg		0.02																														
Trimethylphenols	M	2920	mg/kg		0.02																														
Total Phenols	M	2920	mg/kg	0.035	0.1	280.00	<0.035	<0.035	<0.035	<0.035	<0.035	0.125	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035

P18-669 Llanwern Phase 4G Soil Chemical Screening Results

Project: P18-669							Z28	Y28	AD25	AE25	AE26	X29	AA22	AB25	AE28	AF24	AF26	AD30
Client: Rodgers Leask Environmental					**Job No.:**		181102-43	181102-43	181106-25	181106-25	181106-25	181101-44	181102-43	181031-51	181107-11	181106-25	181107-11	181121-47
Quotation No.: Q21-24056					**Sample ID.:**	**Generic Assessment Criteria (GAC) Residential End Use with Homegrown Produce (SOM 1%)**	18653985	18654042	18673558	18673513	18673538	18646189	18654079	18639105	18681247	18673574	18681216	18786522
Order No.: .					Client Sample Ref.:		4E-D7V	4E-C7V	4G-A6-V	4G-B5-V	4G-B6-V	4E-B8V	4E-E1V	4E-F4-V	4G-B8-V	4G-C4-V	4G-C6-V	4G-A8-V
					Sample Type:		SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
					Top Depth (m):		1.90-1.90	1.80-1.80	2.80-2.80	2.10-2.10	1.80-1.80	2.60-2.60	2.50-2.50	2.10-2.10	1.60-1.60	2.10-2.10	2.50-2.50	2.10-2.10
					Bottom Depth (m):													
					Date Sampled:		01/11/2018	01/11/2018	05/11/2018	05/11/2018	05/11/2018	10/31/2018	01/11/2018	30/10/2018	11/6/2018	05/11/2018	11/6/2018	20/11/2018
					Asbestos Lab:													
Determinand	**Accred.**	**SOP**	**Units**	**ALS LOD**	**Chemtest LOD**													
ACM Type	U	2192		N/A	N/A													
Asbestos Identification	U	2192		N/A	N/A		-	-	-	-	-							
Asbestos by Gravimetry	U	2192	%	0.001	0.001													
Total Asbestos	U	2192	%	0.001	0.001													
Moisture	N	2030	%	0.02	0.02		31	38	72	21	24	32	18	22	34	24	57	28
Soil Colour	N	2040		N/A	N/A		Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Black	Dark Brown	Grey
Other Material	N	2040		N/A	N/A		Vegetation	Stones	Vegetation	None	Vegetation	/	Stones /	/		Stones Vegetatio		None
Soil Texture	N	2040		N/A	N/A		Sandy Loam	Clay	Loamy Sand	Silty Clay	Sandy Loam	Clay Loam	Loamy Sand	Clay	Clay	Sandy Clay	Clay	Clay
pH	M	2010		4	4		7.87	8.25	6.85	8.16	7.58	8.12	8.36	7.97	7.54	7	7.32	7.48
Cyanide (Total)	M	2300	mg/kg	1	0.5		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Ammoniacal Nitrogen	M	2425	mg/kg	12	0.5		262	269	97.3	<12	200	65.2	227	89.8	264	134	155	202
Iron (Total)	N	2430	mg/kg	10000	100		42200	68100	13200	31500	33400	42000	37200	37400	28000	29900	29200	22300
Arsenic	M	2450	mg/kg	0.6	0.5	37	15	15.5	10.2	141	11.8	24	14	12.3	10.8	10.8	16.1	11
Cadmium	M	2450	mg/kg	0.02	0.1	26	<0.2	<0.02	0.222	0.408	0.317	0.238	0.428	<0.02	<0.02	0.409	0.0926	0.264
Chromium	M	2450	mg/kg	0.9	0.5	910	39.8	115	3.2	26.9	38.6	30.1	34.4	29.8	31	40.1	23.5	33.1
Manganese	M	2450	mg/kg	1.3	1		1300	6170	292	1050	688	397	1600	1220	274	535	352	328
Copper	M	2450	mg/kg	1.4	0.5	2400	<14	23.3	15.6	66	11.5	11.1	12.1	11.1	12.9	24.8	23	14.7
Mercury	M	2450	mg/kg	0.14	0.05	1.2	<1.4	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14
Nickel	M	2450	mg/kg	0.2	0.5	130	29.4	22.1	9.29	33	36.1	39.1	35.7	32.6	24.3	37.8	27.8	30.9
Lead	M	2450	mg/kg	0.7	0.5	200	39.8	45.3	4.61	29.4	28	30.8	28.7	24.5	34.3	27	35	29.7
Selenium	M	2450	mg/kg	1	0.25	250	<10	2.88	1.55	<1	<1	<1	<1	<1	<1	<1	<1	<1
Vanadium	U	2450	mg/kg	0.2	0.5	410	63.9	108	10.5	48.4	62.5	64.2	59.9	52.7	48.6	63.4	43.2	54.1
Zinc	M	2450	mg/kg	1.9	0.5	3700	106	149	47.1	130	97.7	137	113	102	101	119	129	108
Organic Matter	M	2625	%	0.35	0.4		5.07	9.19	59.8	0.926	1.86	1.3	1.81	1.33	6.26	4.5	21.4	4.14
Aliphatic TPH >C5-C6	N	2680	mg/kg	0.02	0.05	42	<0.02	0.0697	<0.02	<0.02	<0.02	0.0219	<0.02	<0.02	<0.02	<0.02	0.0782	<0.02
Aliphatic TPH >C6-C8	N	2680	mg/kg	0.02	0.1	100	0.0526	0.219	<0.02	<0.02	<0.02	0.0876	<0.02	<0.02	<0.02	<0.02	0.177	<0.02
Aliphatic TPH >C8-C10	M	2680	mg/kg	0.02	0.05	27	0.092	0.481	<0.02	<0.02	<0.02	0.299	<0.02	<0.02	<0.02	<0.02	0.244	<0.02
Aliphatic TPH >C10-C12	M	2680	mg/kg	0.02	2	130	0.139	0.881	<0.02	<0.02	<0.02	0.945	<0.02	<0.02	<0.02	<0.02	1.73	<0.02
Aliphatic TPH >C12-C16	M	2680	mg/kg	0.1	1	1.10E+03	0.53	1.63	0.546	<0.1	<0.1	<0.1	0.59	<0.1	<0.1	0.443	5.06	0.156
Aliphatic TPH >C16-C21	M	2680	mg/kg	0.1	2	6.50E+04	1.63	5.65	<0.1	<0.1	<0.1	2.5	<0.1	<0.1	<0.1	<0.1	2.5	<0.1
Aliphatic TPH >C21-C35	M	2680	mg/kg	0.1	3	6.50E+04	16.1	55.3	42.8	<0.1	2.07	21.3	2.43	<0.1	6.58	1.22	23.3	0.692
Aliphatic TPH >C35-C44	N	2680	mg/kg	0.1	10	6.50E+04	3.55	10.8	<0.1	<0.1	<0.1	0.638	<0.1	<0.1	<0.1	<0.1	<0.1	0.235
Total Aliphatic Hydrocarbons	N	2680	mg/kg	0.1	10		20.1	37.2	43.3	<0.1	2.07	24.5	3.02	<0.1	6.58	1.67	30.9	1.08
Aromatic TPH >C5-C7	N	2680	mg/kg	0.02	0.05	70	<0.02	0.0956	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatic TPH >C7-C8	N	2680	mg/kg	0.02	0.05	130	<0.02	0.0308	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatic TPH >C8-C10	M	2680	mg/kg	0.02	0.05	34	0.0613	0.321	<0.02	<0.02	<0.02	0.2	<0.02	<0.02	<0.02	<0.02	0.161	<0.02
Aromatic TPH >C10-C12	M	2680	mg/kg	0.02	1	74	0.139	0.881	<0.02	<0.02	<0.02	0.629	<0.02	<0.02	<0.02	<0.02	1.16	<0.02
Aromatic TPH >C12-C16	M	2680	mg/kg	0.1	1	140	0.53	1.63	2.52	<0.1	<0.1	1.08	<0.1	<0.1	<0.1	<0.1	16.6	0.122
Aromatic TPH >C16-C21	U	2680	mg/kg	0.1	2	260	1.63	5.65	8	0.34	<0.1	2.64	0.299	<0.1	<0.1	0.212	23.8	<0.1
Aromatic TPH >C21-C35	M	2680	mg/kg	0.1	2	1100	16.1	55.3	159	3.05	5.95	10.7	5.4	0.282	29.2	7.47	230	3.67
Aromatic TPH >C35-C44	N	2680	mg/kg	0.1	1	1100	3.55	10.8	32.5	0.95	0.607	3.55	1.76	<0.1	3.75	1.11	23.3	0.395
Total Aromatic Hydrocarbons	N	2680	mg/kg	0.1	10		21.8	73.4	202	4.34	6.55	18	7.46	0.282	32.9	8.8	294	4.18
Total Petroleum Hydrocarbons	N	2680	mg/kg	0.1	10		42.4	114	245	4.34	8.62	44.6	10.5	0.282	39.5	10.5	328	5.27
Benzene	M	2760	µg/kg	90	1	87	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90
Toluene	M	2760	µg/kg	70	1	130000	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70
Ethylbenzene	M	2760	µg/kg	40	1	47000	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40
m & p-Xylene	M	2760	µg/kg	100	1	56000	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
o-Xylene	M	2760	µg/kg	100	1	60000	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
Methyl Tert-Butyl Ether	M	2760	µg/kg	100	1		<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
Naphthalene	M	2800	mg/kg	0.009	0.1	15.00	<0.13	<0.13	<0.09	<0.009	<0.009	0.0553	0.0174	<0.009	<0.009	<0.009	0.3	<0.009
Acenaphthylene	N	2800	mg/kg	0.012	0.1	170.00	<0.012	<0.012	<0.12	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	0.0337	<0.012
Acenaphthene	M	2800	mg/kg	0.008	0.1	210.00	0.0505	0.0216	<0.08	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	1.14	<0.008
Fluorene	M	2800	mg/kg	0.01	0.1	170.00	0.0178	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	1.38	<0.01
Phenanthrene	M	2800	mg/kg	0.015	0.1	95.00	0.141	0.0871	<0.15	<0.015	<0.015	0.0446	0.0667	<0.015	<0.015	<0.015	3.61	<0.015
Anthracene	M	2800	mg/kg	0.016	0.1	2400.00	<0.016	<0.016	<0.16	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	0.619	<0.016
Fluoranthene	M	2800	mg/kg	0.017	0.1	280.00	0.216	0.175	<0.17	<0.017	<0.017	0.0708	0.107	<0.017	0.0304	<0.017	1.45	<0.017
Pyrene	M	2800	mg/kg	0.015	0.1	620.00	0.192	0.224	<0.15	<0.015	<0.015	0.0519	0.0834	<0.015	0.025	<0.015	0.942	<0.015
Benzo[a]anthracene	M	2800	mg/kg	0.014	0.1	7.20	0.103	0.142	<0.14	<0.014	<0.014	0.0235	0.0421	<0.014	<0.014	<0.014	0.222	<0.014
Chrysene	M	2800	mg/kg	0.01	0.1	15.00	0.115	0.153	<0.1	<0.01	<0.01	0.0277	0.0397	<0.01	0.0202	<0.01	0.278	<0.01
Benzo[b]fluoranthene	M	2800	mg/kg	0.015	0.1	2.60	0.107	0.155	<0.15	<0.015	<0.015	0.0308	0.0398	<0.015	0.0314	<0.015	0.282	<0.015
Benzo[k]fluoranthene	M	2800	mg/kg	0.014	0.1	77.00	0.0548	0.0746	<0.14	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	0.0869	<0.014
Benzo[a]pyrene	M	2800	mg/kg	0.015	0.1	2.20	0.103	0.154	<0.15	<0.015	<0.015	<0.015	0.0319	<0.015	<0.015	<0.015	0.13	<0.015
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.018	0.1	27.00	0.0774	0.106	<0.18	<0.018	<0.018	<0.018	0.0231	<0.018	<0.018	<0.018	0.106	<0.018
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.023	0.1	0.24	<0.023	<0.023	<0.23	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023
Benzo[g,h,i]perylene	M	2800	mg/kg	0.024	0.1	320.00	0.0861	0.106	<0.24	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	0.118	<0.024
Total Of 16 PAH's	N	2800	mg/kg	0.118	2		2.6	1.61				0.304	0.451	<0.118	<0.118	<0.118	10.7	<0.118
Resorcinol	M	2920	mg/kg		0.02													
Phenol	M	2920	mg/kg	0.01	0.02	280.00	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cresols	M	2920	mg/kg	0.01	0.02		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Xylenols	M	2920	mg/kg	0.015	0.02		<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
1-Naphthol	N	2920	mg/kg		0.02													
Trimethylphenols	M	2920	mg/kg		0.02													
Total Phenols	M	2920	mg/kg	0.035	0.1	280.00	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035

Appendix D: Chemical Laboratory Results

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

Final Report

Report No.:	22-35441-1
Initial Date of Issue:	23-Sep-2022
Client	Rodgers Leask Environmental
Client Address:	Office 225 2430/2440 Aztec West Almoundsbury Bristol BS32 4AQ
Contact(s):	Caitlin Davies Chris Wilson David McCarroll
Project	P18-669
Quotation No.:	Q22-28243
Order No.:	115623
No. of Samples:	5
Turnaround (Wkdays):	5
Date Approved:	23-Sep-2022
Approved By:	
Details:	Stuart Henderson, Technical Manager

Date Received:	16-Sep-2022
Date Instructed:	16-Sep-2022
Results Due:	23-Sep-2022

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental		**Chemtest Job No.:**			22-35441	22-35441	22-35441	22-35441	22-35441
Quotation No.: Q22-28243		**Chemtest Sample ID.:**			1507511	1507512	1507513	1507514	1507515
		Client Sample ID.:			R165-1	R165-2	R163-1	R163-2	R163-3
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			0.2	0.2	0.2	0.2	0.2
		Date Sampled:			14-Sep-2022	14-Sep-2022	14-Sep-2022	14-Sep-2022	14-Sep-2022
		Asbestos Lab:			DURHAM			DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**					
ACM Type	U	2192		N/A	-			-	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected			No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	7.2	10	16	19	23
Soil Colour	N	2040		N/A	Brown	Brown	Brown	Brown	Brown
Other Material	N	2040		N/A	Stones	Stones	Stones and Roots	Stones and Roots	Stones and Roots
Soil Texture	N	2040		N/A	Sand	Sand	Sand	Sand	Sand
pH	M	2010		4.0	8.7	9.0	7.9	8.7	8.8
Cyanide (Total)	M	2300	mg/kg	0.50	1.3	1.7	3.5	< 0.50	< 0.50
Ammoniacal Nitrogen	M	2425	mg/kg	0.50	< 0.50	0.61	6.9	1.6	1.9
Iron (Total)	N	2430	mg/kg	100	81000	80000	56000	29000	15000
Arsenic	M	2455	mg/kg	0.5	12	11	8.8	15	5.0
Cadmium	M	2455	mg/kg	0.10	0.77	0.61	1.7	0.32	0.15
Chromium	M	2455	mg/kg	0.5	64	65	40	29	14
Manganese	M	2455	mg/kg	1.0	4400	4000	2300	1200	740
Copper	M	2455	mg/kg	0.50	47	30	21	23	11
Mercury	M	2455	mg/kg	0.05	0.29	0.24	0.11	0.05	< 0.05
Nickel	M	2455	mg/kg	0.50	110	24	17	23	11
Lead	M	2455	mg/kg	0.50	110	81	210	41	21
Selenium	M	2455	mg/kg	0.25	1.5	1.5	1.2	0.78	0.35
Vanadium	U	2455	mg/kg	0.5	80	93	57	33	19
Zinc	M	2455	mg/kg	0.50	300	250	820	170	86
Organic Matter	M	2625	%	0.40	7.0	7.2	21	2.1	2.1
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	60	97	42

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental			**Chemtest Job No.:**		22-35441	22-35441	22-35441	22-35441	22-35441
Quotation No.: Q22-28243			**Chemtest Sample ID.:**		1507511	1507512	1507513	1507514	1507515
			Client Sample ID.:		R165-1	R165-2	R163-1	R163-2	R163-3
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.2	0.2	0.2	0.2	0.2
			Date Sampled:		14-Sep-2022	14-Sep-2022	14-Sep-2022	14-Sep-2022	14-Sep-2022
			Asbestos Lab:		DURHAM			DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**					
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0	230	350	180
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	< 1.0	570	1100	610
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	870	1500	830
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	< 10	870	1500	830
Benzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	2.2
Toluene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Naphthalene	M	2800	mg/kg	0.10	< 0.10	2.7	16	< 0.10	< 0.10
Acenaphthylene	N	2800	mg/kg	0.10	< 0.10	0.56	20	< 0.10	< 0.10
Acenaphthene	M	2800	mg/kg	0.10	< 0.10	0.17	12	< 0.10	< 0.10
Fluorene	M	2800	mg/kg	0.10	< 0.10	0.38	23	< 0.10	< 0.10
Phenanthrene	M	2800	mg/kg	0.10	4.0	3.4	140	< 0.10	0.63
Anthracene	M	2800	mg/kg	0.10	1.3	1.0	23	< 0.10	0.15
Fluoranthene	M	2800	mg/kg	0.10	6.9	7.9	240	0.43	1.2
Pyrene	M	2800	mg/kg	0.10	4.8	6.0	160	0.32	0.97
Benzo[a]anthracene	M	2800	mg/kg	0.10	3.4	3.6	92	< 0.10	< 0.10
Chrysene	M	2800	mg/kg	0.10	2.8	3.9	47	< 0.10	< 0.10
Benzo[b]fluoranthene	M	2800	mg/kg	0.10	4.7	5.9	120	< 0.10	< 0.10
Benzo[k]fluoranthene	M	2800	mg/kg	0.10	1.7	1.8	37	< 0.10	< 0.10
Benzo[a]pyrene	M	2800	mg/kg	0.10	3.4	4.1	87	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.10	2.1	2.9	60	< 0.10	< 0.10
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10	0.50	0.54	9.6	< 0.10	< 0.10
Benzo[g,h,i]perylene	M	2800	mg/kg	0.10	2.0	2.5	41	< 0.10	< 0.10
Total Of 16 PAH's	N	2800	mg/kg	2.0	38	47	1100	< 2.0	3.0
Resorcinol	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Phenol	M	2920	mg/kg	0.020	< 0.020	< 0.020	0.063	< 0.020	< 0.020
Cresols	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Xylenols	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
1-Naphthol	N	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Trimethylphenols	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Total Phenols	M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

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

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

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

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

Amended Report

Report No.:	23-08922-2		
Initial Date of Issue:	30-Mar-2023	**Date of Re-Issue:**	05-Apr-2023
Client	Rodgers Leask Environmental		
Client Address:	Office 225 2430/2440 Aztec West Almoundsbury Bristol BS32 4AQ		
Contact(s):	Chris Wilson David McCarroll Rebecca Marsden		
Project	P18-669		
Quotation No.:	Q23-30306	**Date Received:**	16-Mar-2023
Order No.:	132306	**Date Instructed:**	16-Mar-2023
No. of Samples:	11		
Turnaround (Wkdays):	19	**Results Due:**	13-Apr-2023
Date Approved:	05-Apr-2023		
Approved By:			
Details:	Stuart Henderson, Technical Manager		

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental		**Chemtest Job No.:**			23-08922	23-08922	23-08922	23-08922	23-08922	23-08922	23-08922	23-08922	23-08922
Quotation No.: Q23-30306		**Chemtest Sample ID.:**			1608356	1608357	1608358	1608359	1608360	1608361	1608362	1608363	1608364
		Client Sample ID.:			R187-1	R187-2	R193-1	R193-2	R193-3	R193-4	R192	R194-1	R194-2
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
		Bottom Depth (m):			0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
		Date Sampled:			14-Mar-2023	14-Mar-2023	14-Mar-2023	14-Mar-2023	14-Mar-2023	14-Mar-2023	14-Mar-2023	14-Mar-2023	14-Mar-2023
		Asbestos Lab:				DURHAM		DURHAM		DURHAM	DURHAM		DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
ACM Type	U	2192		N/A		-		-		-	-		-
Asbestos Identification	U	2192		N/A		No Asbestos Detected		No Asbestos Detected		No Asbestos Detected	No Asbestos Detected		No Asbestos Detected
Asbestos by Gravimetry	U	2192	%	0.001									
Total Asbestos	U	2192	%	0.001									
Moisture	N	2030	%	0.020	66	8.8	9.8	8.8	9.4	12	12	11	8.2
Soil Colour	N	2040		N/A	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown
Other Material	N	2040		N/A	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones
Soil Texture	N	2040		N/A	Sand	Sand	Sand	Sand	Sand	Sand	Sand	Sand	Sand
pH	M	2010		4.0	9.8	8.6	8.6	8.6	8.7	8.7	8.2	8.6	8.8
Cyanide (Total)	M	2300	mg/kg	0.50	0.50	2.5	1.5	5.3	5.1	2.5	0.70	2.5	1.9
Ammoniacal Nitrogen	M	2425	mg/kg	0.50	1.1	3.7	2.7	3.7	3.3	3.4	6.0	4.4	1.8
Iron (Total)	N	2430	mg/kg	100	73000	55000	46000	43000	44000	49000	55000	45000	52000
Arsenic	M	2455	mg/kg	0.5	11	16	15	13	14	16	16	13	16
Cadmium	M	2455	mg/kg	0.10	0.56	0.72	0.97	0.74	0.64	0.64	0.72	0.69	0.93
Chromium	M	2455	mg/kg	0.5	130	84	64	67	64	74	86	90	97
Manganese	M	2455	mg/kg	1.0	8000	4600	4500	4300	3900	5000	4800	6200	6000
Copper	M	2455	mg/kg	0.50	18	35	27	29	26	32	35	32	52
Mercury	M	2455	mg/kg	0.05	0.12	0.30	0.18	0.30	0.25	0.51	0.41	0.19	0.35
Nickel	M	2455	mg/kg	0.50	19	35	29	29	29	35	34	29	32
Lead	M	2455	mg/kg	0.50	61	110	92	100	92	92	89	83	190
Selenium	M	2455	mg/kg	0.25	1.3	2.0	1.8	1.9	1.7	2.0	1.8	2.0	1.9
Vanadium	U	2455	mg/kg	0.5	100	110	74	74	80	90	140	110	160
Zinc	M	2455	mg/kg	0.50	140	270	240	270	230	310	260	300	320
Aliphatic VPH >C5-C6	M	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C7	M	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C7-C8	M	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C8-C10	M	2780	mg/kg	0.05	< 0.05	0.14	0.13	0.13	0.13	< 0.05	0.17	< 0.05	0.15
Total Aliphatic VPH >C5-C10	M	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aliphatic EPH >C10-C12	M	2690	mg/kg	2.00	5.1	3.1	3.1	2.5	3.1	3.1	2.6	2.6	3.1
Aliphatic EPH >C12-C16	M	2690	mg/kg	1.00	11	4.9	5.3	3.4	4.4	3.4	4.0	3.9	9.8
Aliphatic EPH >C16-C21	M	2690	mg/kg	2.00	5.8	4.4	6.6	2.1	5.6	5.0	4.1	5.1	25
Aliphatic EPH >C21-C35	M	2690	mg/kg	3.00	16	15	12	5.3	14	13	8.9	8.8	39
Aliphatic EPH >C35-C40	N	2690	mg/kg	10.00	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Total Aliphatic EPH >C10-C35	M	2690	mg/kg	5.00	38	28	27	13	27	25	20	20	77
Total Aliphatic EPH >C10-C40	N	2690	mg/kg	10.00	38	28	27	13	27	25	20	20	77
Aromatic VPH >C5-C7	M	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental		**Chemtest Job No.:**			23-08922	23-08922	23-08922	23-08922	23-08922	23-08922	23-08922	23-08922	23-08922
Quotation No.: Q23-30306		**Chemtest Sample ID.:**			1608356	1608357	1608358	1608359	1608360	1608361	1608362	1608363	1608364
		Client Sample ID.:			R187-1	R187-2	R193-1	R193-2	R193-3	R193-4	R192	R194-1	R194-2
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
		Bottom Depth (m):			0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
		Date Sampled:			14-Mar-2023	14-Mar-2023	14-Mar-2023	14-Mar-2023	14-Mar-2023	14-Mar-2023	14-Mar-2023	14-Mar-2023	14-Mar-2023
		Asbestos Lab:				DURHAM		DURHAM		DURHAM	DURHAM		DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Aromatic VPH >C7-C8	M	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	M	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	M	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12	M	2690	mg/kg	1.00	22	10	10	9.4	11	11	9.6	11	9.7
Aromatic EPH >C12-C16	M	2690	mg/kg	1.00	41	16	14	14	16	16	17	17	16
Aromatic EPH >C16-C21	N	2690	mg/kg	2.00	57	27	21	26	23	25	24	27	31
Aromatic EPH >C21-C35	M	2690	mg/kg	2.00	29	39	19	13	17	29	64	40	61
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00	19	8.3	6.3	7.1	7.7	6.6	8.9	7.0	9.3
Total Aromatic EPH >C10-C35	M	2690	mg/kg	5.00	150	92	64	62	67	81	110	95	120
Total Aromatic EPH >C10-C40	N	2690	mg/kg	10.00	170	100	71	70	75	88	120	100	130
Total VPH >C5-C10	M	2780	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Total EPH >C10-C35	M	2690	mg/kg	10.00	190	120	91	76	95	110	130	120	190
Total EPH >C10-C40	N	2690	mg/kg	10.00	210	130	97	83	100	110	140	120	200
Organic Matter	M	2625	%	0.40	3.5	10	14	11	10	7.0	7.2	18	16
Benzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Naphthalene	M	2800	mg/kg	0.10	0.55	2.9	2.1	5.3	2.5	2.5	1.1	2.4	3.9
Acenaphthylene	N	2800	mg/kg	0.10	0.13	0.57	0.77	1.7	0.52	0.55	0.24	0.51	0.70
Acenaphthene	M	2800	mg/kg	0.10	< 0.10	0.15	0.17	0.28	0.17	0.19	0.12	0.13	0.15
Fluorene	M	2800	mg/kg	0.10	< 0.10	0.42	0.72	2.0	0.36	0.39	0.25	0.37	0.34
Phenanthrene	M	2800	mg/kg	0.10	0.40	2.5	6.4	16	3.6	3.5	1.4	2.8	2.9
Anthracene	M	2800	mg/kg	0.10	0.22	1.0	2.9	3.2	1.0	1.2	0.55	0.99	0.96
Fluoranthene	M	2800	mg/kg	0.10	0.99	5.1	12	22	7.6	7.6	2.8	5.2	6.5
Pyrene	M	2800	mg/kg	0.10	0.83	3.9	8.7	15	5.7	6.1	2.1	4.0	5.4
Benzo[a]anthracene	M	2800	mg/kg	0.10	0.50	2.8	5.3	8.3	3.5	4.0	2.2	2.8	4.0
Chrysene	M	2800	mg/kg	0.10	0.48	3.1	5.9	8.9	3.9	4.2	2.5	3.4	4.2
Benzo[b]fluoranthene	M	2800	mg/kg	0.10	0.66	4.4	7.5	12	5.6	6.2	3.2	5.4	6.5
Benzo[k]fluoranthene	M	2800	mg/kg	0.10	0.27	1.4	2.3	3.6	1.5	1.9	1.5	1.5	2.0
Benzo[a]pyrene	M	2800	mg/kg	0.10	0.49	2.9	5.4	8.2	3.6	4.5	2.5	4.2	4.5
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.10	0.45	2.7	4.4	7.3	3.2	3.7	2.6	3.9	4.0
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10	< 0.10	0.51	0.91	1.2	0.59	0.62	1.1	0.78	0.72
Benzo[g,h,i]perylene	M	2800	mg/kg	0.10	0.38	2.3	3.7	6.0	2.7	3.0	2.2	3.4	3.4
Total Of 16 PAH's	N	2800	mg/kg	2.0	6.4	37	69	120	46	50	26	42	50

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental					23-08922	23-08922	23-08922	23-08922	23-08922	23-08922	23-08922	23-08922	23-08922
Quotation No.: Q23-30306			**Chemtest Sample ID.:**		1608356	1608357	1608358	1608359	1608360	1608361	1608362	1608363	1608364
			Client Sample ID.:		R187-1	R187-2	R193-1	R193-2	R193-3	R193-4	R192	R194-1	R194-2
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
			Bottom Depth (m):		0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
			Date Sampled:		14-Mar-2023	14-Mar-2023	14-Mar-2023	14-Mar-2023	14-Mar-2023	14-Mar-2023	14-Mar-2023	14-Mar-2023	14-Mar-2023
			Asbestos Lab:			DURHAM		DURHAM		DURHAM	DURHAM		DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Resorcinol	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Phenol	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Cresols	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Xylenols	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
1-Naphthol	N	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Trimethylphenols	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Total Phenols	M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental		**Chemtest Job No.:**			23-08922	23-08922
Quotation No.: Q23-30306		**Chemtest Sample ID.:**			1608365	1608366
		Client Sample ID.:			R194-3	R194-4
		Sample Type:			SOIL	SOIL
		Top Depth (m):			0.20	0.20
		Bottom Depth (m):			0.20	0.20
		Date Sampled:			14-Mar-2023	14-Mar-2023
		Asbestos Lab:				DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
ACM Type	U	2192		N/A		Fibres/Clumps
Asbestos Identification	U	2192		N/A		Chrysotile
Asbestos by Gravimetry	U	2192	%	0.001		<0.001
Total Asbestos	U	2192	%	0.001		<0.001
Moisture	N	2030	%	0.020	12	14
Soil Colour	N	2040		N/A	Brown	Brown
Other Material	N	2040		N/A	Stones	Stones
Soil Texture	N	2040		N/A	Sand	Sand
pH	M	2010		4.0	9.2	8.2
Cyanide (Total)	M	2300	mg/kg	0.50	2.0	1.8
Ammoniacal Nitrogen	M	2425	mg/kg	0.50	3.3	5.1
Iron (Total)	N	2430	mg/kg	100	33000	37000
Arsenic	M	2455	mg/kg	0.5	7.8	9.8
Cadmium	M	2455	mg/kg	0.10	0.41	0.78
Chromium	M	2455	mg/kg	0.5	41	51
Manganese	M	2455	mg/kg	1.0	2200	2700
Copper	M	2455	mg/kg	0.50	19	22
Mercury	M	2455	mg/kg	0.05	0.14	0.21
Nickel	M	2455	mg/kg	0.50	21	21
Lead	M	2455	mg/kg	0.50	61	90
Selenium	M	2455	mg/kg	0.25	1.0	1.5
Vanadium	U	2455	mg/kg	0.5	47	63
Zinc	M	2455	mg/kg	0.50	160	200
Aliphatic VPH >C5-C6	M	2780	mg/kg	0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C7	M	2780	mg/kg	0.05	< 0.05	< 0.05
Aliphatic VPH >C7-C8	M	2780	mg/kg	0.05	< 0.05	< 0.05
Aliphatic VPH >C8-C10	M	2780	mg/kg	0.05	0.14	0.21
Total Aliphatic VPH >C5-C10	M	2780	mg/kg	0.25	< 0.25	< 0.25
Aliphatic EPH >C10-C12	M	2690	mg/kg	2.00	3.0	3.1
Aliphatic EPH >C12-C16	M	2690	mg/kg	1.00	4.8	5.5
Aliphatic EPH >C16-C21	M	2690	mg/kg	2.00	8.1	7.5
Aliphatic EPH >C21-C35	M	2690	mg/kg	3.00	15	7.1
Aliphatic EPH >C35-C40	N	2690	mg/kg	10.00	< 10	< 10
Total Aliphatic EPH >C10-C35	M	2690	mg/kg	5.00	31	23
Total Aliphatic EPH >C10-C40	N	2690	mg/kg	10.00	31	23
Aromatic VPH >C5-C7	M	2780	mg/kg	0.05	< 0.05	< 0.05

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental			**Chemtest Job No.:**		23-08922	23-08922
Quotation No.: Q23-30306			**Chemtest Sample ID.:**		1608365	1608366
			Client Sample ID.:		R194-3	R194-4
			Sample Type:		SOIL	SOIL
			Top Depth (m):		0.20	0.20
			Bottom Depth (m):		0.20	0.20
			Date Sampled:		14-Mar-2023	14-Mar-2023
			Asbestos Lab:			DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
Aromatic VPH >C7-C8	M	2780	mg/kg	0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	M	2780	mg/kg	0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	M	2780	mg/kg	0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12	M	2690	mg/kg	1.00	10	12
Aromatic EPH >C12-C16	M	2690	mg/kg	1.00	17	16
Aromatic EPH >C16-C21	N	2690	mg/kg	2.00	42	34
Aromatic EPH >C21-C35	M	2690	mg/kg	2.00	69	70
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00	8.5	11
Total Aromatic EPH >C10-C35	M	2690	mg/kg	5.00	140	130
Total Aromatic EPH >C10-C40	N	2690	mg/kg	10.00	150	140
Total VPH >C5-C10	M	2780	mg/kg	0.50	< 0.50	< 0.50
Total EPH >C10-C35	M	2690	mg/kg	10.00	170	160
Total EPH >C10-C40	N	2690	mg/kg	10.00	180	170
Organic Matter	M	2625	%	0.40	15	8.4
Benzene	M	2760	µg/kg	1.0	1.5	1.8
Toluene	M	2760	µg/kg	1.0	< 1.0	< 1.0
Ethylbenzene	M	2760	µg/kg	1.0	< 1.0	< 1.0
m & p-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0
o-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0	< 1.0	< 1.0
Naphthalene	M	2800	mg/kg	0.10	4.0	4.2
Acenaphthylene	N	2800	mg/kg	0.10	0.92	1.0
Acenaphthene	M	2800	mg/kg	0.10	0.17	0.24
Fluorene	M	2800	mg/kg	0.10	0.57	0.71
Phenanthrene	M	2800	mg/kg	0.10	4.2	5.5
Anthracene	M	2800	mg/kg	0.10	2.0	1.9
Fluoranthene	M	2800	mg/kg	0.10	9.4	9.3
Pyrene	M	2800	mg/kg	0.10	6.9	6.5
Benzo[a]anthracene	M	2800	mg/kg	0.10	4.6	4.6
Chrysene	M	2800	mg/kg	0.10	5.0	4.8
Benzo[b]fluoranthene	M	2800	mg/kg	0.10	8.0	7.1
Benzo[k]fluoranthene	M	2800	mg/kg	0.10	2.5	2.4
Benzo[a]pyrene	M	2800	mg/kg	0.10	5.5	5.1
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.10	4.6	4.5
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10	0.89	0.85
Benzo[g,h,i]perylene	M	2800	mg/kg	0.10	4.0	3.9
Total Of 16 PAH's	N	2800	mg/kg	2.0	63	63

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental					**Chemtest Job No.:**	23-08922	23-08922
Quotation No.: Q23-30306					**Chemtest Sample ID.:**	1608365	1608366
					Client Sample ID.:	R194-3	R194-4
					Sample Type:	SOIL	SOIL
					Top Depth (m):	0.20	0.20
					Bottom Depth (m):	0.20	0.20
					Date Sampled:	14-Mar-2023	14-Mar-2023
					Asbestos Lab:		DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**			
Resorcinol	M	2920	mg/kg	0.020		< 0.020	< 0.020
Phenol	M	2920	mg/kg	0.020		< 0.020	< 0.020
Cresols	M	2920	mg/kg	0.020		< 0.020	< 0.020
Xylenols	M	2920	mg/kg	0.020		< 0.020	< 0.020
1-Naphthol	N	2920	mg/kg	0.020		< 0.020	< 0.020
Trimethylphenols	M	2920	mg/kg	0.020		< 0.020	< 0.020
Total Phenols	M	2920	mg/kg	0.10		< 0.10	< 0.10

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C40	Acetone/Heptane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

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

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

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

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

Final Report

Report No.:	23-26235-1
Initial Date of Issue:	14-Aug-2023
Re-Issue Details:	
Client	Rodgers Leask Environmental
Client Address:	Office 225 2430/2440 Aztec West Almoundsbury Bristol BS32 4AQ
Contact(s):	Chris Wilson David McCarroll Sion Roberts
Project	P18-669
Quotation No.:	Q23-30306
Order No.:	132306
No. of Samples:	2
Turnaround (Wkdays):	5
Date Approved:	14-Aug-2023
Approved By:	
Details:	Stuart Henderson, Technical Manager

Date Received:	04-Aug-2023
Date Instructed:	04-Aug-2023
Results Due:	10-Aug-2023

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental		**Chemtest Job No.:**			23-26235	23-26235
Quotation No.: Q23-30306		**Chemtest Sample ID.:**			1683537	1683538
		Client Sample ID.:			R179-1	R179-2
		Sample Type:			SOIL	SOIL
		Date Sampled:			02-Aug-2023	02-Aug-2023
		Asbestos Lab:			DURHAM	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
ACM Type	U	2192		N/A	-	
Asbestos Identification	U	2192		N/A	No Asbestos Detected	
Moisture	N	2030	%	0.020	18	21
Soil Colour	N	2040		N/A	Brown	Brown
Other Material	N	2040		N/A	Stones	Stones and Roots
Soil Texture	N	2040		N/A	Clay	Clay
pH	M	2010		4.0	8.8	9.2
Cyanide (Total)	M	2300	mg/kg	0.50	3.7	9.4
Ammoniacal Nitrogen	M	2425	mg/kg	0.50	18	6.1
Iron (Total)	N	2430	mg/kg	100	82000	65000
Arsenic	M	2455	mg/kg	0.5	11	12
Cadmium	M	2455	mg/kg	0.10	1.9	4.3
Chromium	M	2455	mg/kg	0.5	74	75
Manganese	M	2455	mg/kg	1.0	4800	3800
Copper	M	2455	mg/kg	0.50	35	37
Mercury	M	2455	mg/kg	0.05	0.48	0.18
Nickel	M	2455	mg/kg	0.50	23	27
Lead	M	2455	mg/kg	0.50	230	620
Selenium	M	2455	mg/kg	0.25	2.4	2.3
Vanadium	U	2455	mg/kg	0.5	78	69
Zinc	M	2455	mg/kg	0.50	930	2300
Aliphatic VPH >C5-C6	U	2780	mg/kg	0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C7	U	2780	mg/kg	0.05	< 0.05	< 0.05
Aliphatic VPH >C7-C8	U	2780	mg/kg	0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C8 (Sum)	N	2780	mg/kg	0.10	< 0.10	< 0.10
Aliphatic VPH >C8-C10	U	2780	mg/kg	0.05	0.14	< 0.05
Total Aliphatic VPH >C5-C10	U	2780	mg/kg	0.25	< 0.25	< 0.25
Aliphatic EPH >C10-C12	M	2690	mg/kg	2.00	2.4	2.4
Aliphatic EPH >C12-C16	M	2690	mg/kg	1.00	< 1.0	< 1.0
Aliphatic EPH >C16-C21	M	2690	mg/kg	2.00	< 2.0	< 2.0
Aliphatic EPH >C21-C35	M	2690	mg/kg	3.00	22	< 3.0
Aliphatic EPH >C35-C40	N	2690	mg/kg	10.00	< 10	< 10
Total Aliphatic EPH >C10-C35	M	2690	mg/kg	5.00	26	< 5.0
Total Aliphatic EPH >C10-C40	N	2690	mg/kg	10.00	26	< 10
Aromatic VPH >C5-C7	U	2780	mg/kg	0.05	< 0.05	< 0.05
Aromatic VPH >C7-C8	U	2780	mg/kg	0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	U	2780	mg/kg	0.05	< 0.05	< 0.05

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental		**Chemtest Job No.:**			23-26235	23-26235
Quotation No.: Q23-30306		**Chemtest Sample ID.:**			1683537	1683538
		Client Sample ID.:			R179-1	R179-2
		Sample Type:			SOIL	SOIL
		Date Sampled:			02-Aug-2023	02-Aug-2023
		Asbestos Lab:			DURHAM	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
Total Aromatic VPH >C5-C10	U	2780	mg/kg	0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12	U	2690	mg/kg	1.00	< 1.0	< 1.0
Aromatic EPH >C12-C16	U	2690	mg/kg	1.00	< 1.0	< 1.0
Aromatic EPH >C16-C21	U	2690	mg/kg	2.00	52	18
Aromatic EPH >C21-C35	U	2690	mg/kg	2.00	120	7.8
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00	3.9	< 1.0
Total Aromatic EPH >C10-C35	U	2690	mg/kg	5.00	170	26
Total Aromatic EPH >C10-C40	N	2690	mg/kg	10.00	170	26
Total VPH >C5-C10	U	2780	mg/kg	0.50	< 0.50	< 0.50
Total EPH >C10-C35	U	2690	mg/kg	10.00	200	30
Total EPH >C10-C40	N	2690	mg/kg	10.00	200	30
Organic Matter	M	2625	%	0.40	12	9.2
Benzene	M	2760	µg/kg	1.0	< 1.0	< 1.0
Toluene	M	2760	µg/kg	1.0	< 1.0	< 1.0
Ethylbenzene	M	2760	µg/kg	1.0	< 1.0	< 1.0
m & p-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0
o-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0	< 1.0	< 1.0
Naphthalene	M	2800	mg/kg	0.10	3.4	1.5
Acenaphthylene	N	2800	mg/kg	0.10	4.6	0.41
Acenaphthene	M	2800	mg/kg	0.10	0.44	0.21
Fluorene	M	2800	mg/kg	0.10	6.0	0.41
Phenanthrene	M	2800	mg/kg	0.10	24	1.7
Anthracene	M	2800	mg/kg	0.10	6.7	0.68
Fluoranthene	M	2800	mg/kg	0.10	34	3.1
Pyrene	M	2800	mg/kg	0.10	24	2.3
Benzo[a]anthracene	M	2800	mg/kg	0.10	14	1.7
Chrysene	M	2800	mg/kg	0.10	13	1.7
Benzo[b]fluoranthene	M	2800	mg/kg	0.10	18	2.9
Benzo[k]fluoranthene	M	2800	mg/kg	0.10	6.1	0.82
Benzo[a]pyrene	M	2800	mg/kg	0.10	13	1.8
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.10	9.3	1.5
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10	1.9	0.31
Benzo[g,h,i]perylene	M	2800	mg/kg	0.10	8.3	1.4
Total Of 16 PAH's	N	2800	mg/kg	2.0	190	22
Resorcinol	M	2920	mg/kg	0.020	< 0.020	< 0.020
Phenol	M	2920	mg/kg	0.020	0.17	< 0.020
Cresols	M	2920	mg/kg	0.020	0.28	< 0.020
Xylenols	M	2920	mg/kg	0.020	< 0.020	< 0.020

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental					**Chemtest Job No.:**	23-26235	23-26235
Quotation No.: Q23-30306					**Chemtest Sample ID.:**	1683537	1683538
					Client Sample ID.:	R179-1	R179-2
					Sample Type:	SOIL	SOIL
					Date Sampled:	02-Aug-2023	02-Aug-2023
					Asbestos Lab:	DURHAM	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**			
1-Naphthol	N	2920	mg/kg	0.020		< 0.020	< 0.020
Trimethylphenols	M	2920	mg/kg	0.020		< 0.020	< 0.020
Total Phenols	M	2920	mg/kg	0.10		0.45	< 0.10

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C40	Acetone/Heptane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

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

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

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

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

Final Report

Report No.:	23-39518-1
Initial Date of Issue:	05-Dec-2023
Re-Issue Details:	
Client	Rodgers Leask Environmental
Client Address:	Office 225 2430/2440 Aztec West Almoundsbury Bristol BS32 4AQ
Contact(s):	Aimee Meredith-Smith Chris Wilson David McCarroll
Project	P18-669
Quotation No.:	Q23-32656
Order No.:	23-32656
No. of Samples:	2
Turnaround (Wkdays):	5
Date Approved:	05-Dec-2023
Approved By:	
Details:	Stuart Henderson, Technical Manager

Date Received:	29-Nov-2023
Date Instructed:	29-Nov-2023
Results Due:	05-Dec-2023

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental		**Chemtest Job No.:**			23-39518	23-39518
Quotation No.: Q23-32656		**Chemtest Sample ID.:**			1737783	1737784
		Client Sample ID.:			4G-SV2	4G-SV8
		Sample Type:			SOIL	SOIL
		Top Depth (m):			0.2	0.2
		Date Sampled:			27-Nov-2023	27-Nov-2023
		Asbestos Lab:			COVENTRY	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
ACM Type	U	2192		N/A	-	
Asbestos Identification	U	2192		N/A	No Asbestos Detected	
Moisture	N	2030	%	0.020	21	19
Soil Colour	N	2040		N/A	Brown	Brown
Other Material	N	2040		N/A	Stones	Stones
Soil Texture	N	2040		N/A	Loam	Clay
pH at 20C	M	2010		4.0	11.3	10.8
Cyanide (Total)	M	2300	mg/kg	0.50	< 0.50	< 0.50
Ammoniacal Nitrogen	M	2425	mg/kg	0.50	< 0.50	0.86
Iron (Total)	N	2430	mg/kg	100	23000	22000
Arsenic	M	2455	mg/kg	0.5	22	15
Cadmium	M	2455	mg/kg	0.10	0.91	0.65
Chromium	M	2455	mg/kg	0.5	340	310
Manganese	M	2455	mg/kg	1.0	15000	13000
Copper	M	2455	mg/kg	0.50	45	30
Mercury	M	2455	mg/kg	0.05	0.21	0.19
Nickel	M	2455	mg/kg	0.50	38	29
Lead	M	2455	mg/kg	0.50	150	94
Selenium	M	2455	mg/kg	0.25	2.6	2.6
Vanadium	U	2455	mg/kg	0.5	340	290
Zinc	M	2455	mg/kg	0.50	340	250
Aliphatic VPH >C5-C6	U	2780	mg/kg	0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C7	U	2780	mg/kg	0.05	< 0.05	< 0.05
Aliphatic VPH >C7-C8	U	2780	mg/kg	0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C8 (Sum)	N	2780	mg/kg	0.10	< 0.10	< 0.10
Aliphatic VPH >C8-C10	U	2780	mg/kg	0.05	< 0.05	< 0.05
Total Aliphatic VPH >C5-C10	U	2780	mg/kg	0.25	< 0.25	< 0.25
Aliphatic EPH >C10-C12	M	2690	mg/kg	2.00	< 2.0	< 2.0
Aliphatic EPH >C12-C16	M	2690	mg/kg	1.00	< 1.0	1.5
Aliphatic EPH >C16-C21	M	2690	mg/kg	2.00	< 2.0	13
Aliphatic EPH >C21-C35	M	2690	mg/kg	3.00	< 3.0	44
Aliphatic EPH >C35-C40	N	2690	mg/kg	10.00	< 10	18
Total Aliphatic EPH >C10-C35	M	2690	mg/kg	5.00	< 5.0	58
Total Aliphatic EPH >C10-C40	N	2690	mg/kg	10.00	< 10	77
Aromatic VPH >C5-C7	U	2780	mg/kg	0.05	< 0.05	< 0.05
Aromatic VPH >C7-C8	U	2780	mg/kg	0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	U	2780	mg/kg	0.05	< 0.05	< 0.05

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental			**Chemtest Job No.:**		23-39518	23-39518
Quotation No.: Q23-32656			**Chemtest Sample ID.:**		1737783	1737784
			Client Sample ID.:		4G-SV2	4G-SV8
			Sample Type:		SOIL	SOIL
			Top Depth (m):		0.2	0.2
			Date Sampled:		27-Nov-2023	27-Nov-2023
			Asbestos Lab:		COVENTRY	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
Total Aromatic VPH >C5-C10	U	2780	mg/kg	0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12	U	2690	mg/kg	1.00	< 1.0	< 1.0
Aromatic EPH >C12-C16	U	2690	mg/kg	1.00	< 1.0	< 1.0
Aromatic EPH >C16-C21	U	2690	mg/kg	2.00	4.3	13
Aromatic EPH >C21-C35	U	2690	mg/kg	2.00	3.5	52
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00	< 1.0	3.3
Total Aromatic EPH >C10-C35	U	2690	mg/kg	5.00	7.8	65
Total Aromatic EPH >C10-C40	N	2690	mg/kg	10.00	< 10	68
Total VPH >C5-C10	U	2780	mg/kg	0.50	< 0.50	< 0.50
Total EPH >C10-C35	U	2690	mg/kg	10.00	< 10	120
Total EPH >C10-C40	N	2690	mg/kg	10.00	< 10	140
Organic Matter	M	2625	%	0.40	5.0	13
Benzene	M	2760	µg/kg	1.0	< 1.0	< 1.0
Toluene	M	2760	µg/kg	1.0	< 1.0	< 1.0
Ethylbenzene	M	2760	µg/kg	1.0	< 1.0	< 1.0
m & p-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0
o-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0	< 1.0	< 1.0
Naphthalene	M	2800	mg/kg	0.10	0.49	2.6
Acenaphthylene	N	2800	mg/kg	0.10	0.12	0.55
Acenaphthene	M	2800	mg/kg	0.10	< 0.10	0.22
Fluorene	M	2800	mg/kg	0.10	< 0.10	0.56
Phenanthrene	M	2800	mg/kg	0.10	0.80	3.8
Anthracene	M	2800	mg/kg	0.10	0.23	1.0
Fluoranthene	M	2800	mg/kg	0.10	1.3	5.4
Pyrene	M	2800	mg/kg	0.10	1.0	4.0
Benzo[a]anthracene	M	2800	mg/kg	0.10	0.67	2.4
Chrysene	M	2800	mg/kg	0.10	0.70	2.5
Benzo[b]fluoranthene	M	2800	mg/kg	0.10	1.1	3.8
Benzo[k]fluoranthene	M	2800	mg/kg	0.10	0.35	1.4
Benzo[a]pyrene	M	2800	mg/kg	0.10	0.75	2.7
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.10	0.49	2.1
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10	< 0.10	0.42
Benzo[g,h,i]perylene	M	2800	mg/kg	0.10	0.55	1.9
Total Of 16 PAH's	N	2800	mg/kg	2.0	8.6	35
Resorcinol	M	2920	mg/kg	0.020	< 0.020	< 0.020
Phenol	M	2920	mg/kg	0.020	< 0.020	< 0.020
Cresols	M	2920	mg/kg	0.020	< 0.020	< 0.020

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental			**Chemtest Job No.:**		23-39518	23-39518
Quotation No.: Q23-32656			**Chemtest Sample ID.:**		1737783	1737784
			Client Sample ID.:		4G-SV2	4G-SV8
			Sample Type:		SOIL	SOIL
			Top Depth (m):		0.2	0.2
			Date Sampled:		27-Nov-2023	27-Nov-2023
			Asbestos Lab:		COVENTRY	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
Xylenols	M	2920	mg/kg	0.020	< 0.020	< 0.020
1-Naphthol	N	2920	mg/kg	0.020	< 0.020	< 0.020
Trimethylphenols	M	2920	mg/kg	0.020	< 0.020	< 0.020
Total Phenols	M	2920	mg/kg	0.10	< 0.10	< 0.10

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH at 20°C	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C40	Acetone/Heptane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

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<	"less than"
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SOP	Standard operating procedure
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All results are expressed on a dry weight basis

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

For all other tests the samples were dried at < 37°C prior to analysis
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Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
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E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

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All soil samples will be retained for a period of 30 days from the date of receipt
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Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Amended Report

Report No.:	24-07877-2		
Initial Date of Issue:	20-Mar-2024	**Date of Re-Issue:**	21-Mar-2024
Re-Issue Details:	This report has been revised and directly supersedes 24-07877-1 in its entirety		
Client	Rodgers Leask Environmental		
Client Address:	Office 225 2430/2440 Aztec West Almoundsbury Bristol BS32 4AQ		
Contact(s):	Aimee Meredith-Smith Chris Wilson David McCarroll		
Project	P18-669		
Quotation No.:	Q24-34048	**Date Received:**	14-Mar-2024
Order No.:	136787	**Date Instructed:**	14-Mar-2024
No. of Samples:	3		
Turnaround (Wkdays):	10	**Results Due:**	27-Mar-2024
Date Approved:	21-Mar-2024		
Approved By:			
Details:	Stuart Henderson, Technical Manager		

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

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental			**Chemtest Job No.:**			24-07877	24-07877	24-07877
Quotation No.: Q24-34048			**Chemtest Sample ID.:**			1779752	1779753	1779754
Order No.: 136787			Client Sample Ref.:			1	1	1
			Client Sample ID.:			4g-SV3	4g-SV9	4g-SV15
			Sample Type:			SOIL	SOIL	SOIL
			Date Sampled:			11-Mar-2024	11-Mar-2024	11-Mar-2024
			Asbestos Lab:			DURHAM	DURHAM	DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**			
ACM Type		U	2192		N/A	-	Fibres/Clumps	-
Asbestos Identification		U	2192		N/A	No Asbestos Detected	Chrysotile	No Asbestos Detected
Asbestos by Gravimetry		U	2192	%	0.001		0.011	
Total Asbestos		U	2192	%	0.001		0.011	
Moisture		N	2030	%	0.020	12	15	15
Soil Colour		N	2040		N/A	Brown	Brown	Brown
Other Material		N	2040		N/A	Stones	Stones	Stones
Soil Texture		N	2040		N/A	Loam	Loam	Clay
pH at 20C		M	2010		4.0	10.6	11.2	10.2
Cyanide (Total)		M	2300	mg/kg	0.50	1.3	0.70	< 0.50
Ammoniacal Nitrogen		M	2425	mg/kg	0.50	< 0.50	< 0.50	4.8
Iron (Total)		N	2430	mg/kg	100	21000	21000	23000
Arsenic		M	2455	mg/kg	0.5	18	24	16
Cadmium		M	2455	mg/kg	0.10	1.3	0.92	0.48
Chromium		M	2455	mg/kg	0.5	500	420	110
Manganese		M	2455	mg/kg	1.0	28000	21000	8000
Copper		M	2455	mg/kg	0.50	60	48	36
Mercury		M	2455	mg/kg	0.05	0.32	0.18	0.28
Nickel		M	2455	mg/kg	0.50	45	35	38
Lead		M	2455	mg/kg	0.50	170	100	71
Selenium		M	2455	mg/kg	0.25	1.5	1.9	3.2
Vanadium		U	2455	mg/kg	0.5	470	380	230
Zinc		M	2455	mg/kg	0.50	470	250	210
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C8 (Sum)	HS_2D_AL	N	2780	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	4.3	8.3	4.2
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00	7.3	48	10
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	33	81	26
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00	53	70	57
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	< 10	14	12
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00	97	210	98
Total Aliphatic EPH >C10-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	97	220	110
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental			**Chemtest Job No.:**			24-07877	24-07877	24-07877
Quotation No.: Q24-34048			**Chemtest Sample ID.:**			1779752	1779753	1779754
Order No.: 136787			Client Sample Ref.:			1	1	1
			Client Sample ID.:			4g-SV3	4g-SV9	4g-SV15
			Sample Type:			SOIL	SOIL	SOIL
			Date Sampled:			11-Mar-2024	11-Mar-2024	11-Mar-2024
			Asbestos Lab:			DURHAM	DURHAM	DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**			
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0	2.3	< 1.0
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	2.4	17	5.6
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	19	24	26
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	42	48	62
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00	3.1	13	34
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00	64	91	94
Total Aromatic EPH >C10-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	10.00	67	100	130
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00	160	300	190
Total EPH >C10-C40 MC	EH_2D_Total_#1	N	2690	mg/kg	10.00	160	330	240
Organic Matter		M	2625	%	0.40	9.8	3.9	6.7
Benzene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
Toluene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
o-Xylene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
Naphthalene		M	2800	mg/kg	0.10	0.86	< 0.10	0.86
Acenaphthylene		N	2800	mg/kg	0.10	0.14	< 0.10	0.44
Acenaphthene		M	2800	mg/kg	0.10	< 0.10	< 0.10	0.24
Fluorene		M	2800	mg/kg	0.10	0.11	< 0.10	0.60
Phenanthrene		M	2800	mg/kg	0.10	1.2	0.76	4.4
Anthracene		M	2800	mg/kg	0.10	0.23	0.20	1.0
Fluoranthene		M	2800	mg/kg	0.10	2.2	1.2	6.7
Pyrene		M	2800	mg/kg	0.10	2.1	1.1	4.8
Benzo[a]anthracene		M	2800	mg/kg	0.10	1.4	0.63	2.4
Chrysene		M	2800	mg/kg	0.10	1.4	0.63	1.9
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	2.7	1.2	3.4
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	0.87	0.32	0.91
Benzo[a]pyrene		M	2800	mg/kg	0.10	1.7	0.78	2.4
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	1.3	0.52	1.7
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	0.29	< 0.10	0.33
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	1.3	0.59	1.5
Total Of 16 PAH's		N	2800	mg/kg	2.0	18	7.9	34
Resorcinol		M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental			**Chemtest Job No.:**			24-07877	24-07877	24-07877
Quotation No.: Q24-34048			**Chemtest Sample ID.:**			1779752	1779753	1779754
Order No.: 136787			Client Sample Ref.:			1	1	1
			Client Sample ID.:			4g-SV3	4g-SV9	4g-SV15
			Sample Type:			SOIL	SOIL	SOIL
			Date Sampled:			11-Mar-2024	11-Mar-2024	11-Mar-2024
			Asbestos Lab:			DURHAM	DURHAM	DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**			
Phenol		M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020
Cresols		M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020
Xylenols		M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020
1-Naphthol		N	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020
Trimethylphenols		M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020
Total Phenols		M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
2010	pH Value of Soils	pH at 20°C	pH Meter	
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.	
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930	
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry	
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.	
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.	
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.	
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.	
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40	Acetone/Heptane extraction / GCxGC FID detection	
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.	
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection	
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS	
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.	

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

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

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

Water Sample Category Key for Accreditation

DW - Drinking Water
GW - Ground Water
LE - Land Leachate
NA - Not Applicable
PL - Prepared Leachate
PW - Processed Water

Report Information

RE - Recreational Water
SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

Clean Up Codes

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

HWOL Acronym System

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

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

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

Amended Report

Report No.:	24-07882-2		
Initial Date of Issue:	20-Mar-2024	**Date of Re-Issue:**	21-Mar-2024
Re-Issue Details:	This report has been revised and directly supersedes 24-07882-1 in its entirety		
Client	Rodgers Leask Environmental		
Client Address:	Office 225 2430/2440 Aztec West Almoundsbury Bristol BS32 4AQ		
Contact(s):	Aimee Meredith-Smith Chris Wilson David McCarroll		
Project	P18-669		
Quotation No.:	Q24-34048	**Date Received:**	14-Mar-2024
Order No.:	136787	**Date Instructed:**	14-Mar-2024
No. of Samples:	4		
Turnaround (Wkdays):	10	**Results Due:**	27-Mar-2024
Date Approved:	21-Mar-2024		
Approved By:			
Details:	Stuart Henderson, Technical Manager		

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

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental			**Chemtest Job No.:**			24-07882	24-07882	24-07882	24-07882
Quotation No.: Q24-34048			**Chemtest Sample ID.:**			1779763	1779764	1779765	1779766
Order No.: 136787			Client Sample Ref.:			1	1	1	1
			Client Sample ID.:			4g-SV1	4g-SV7	4g-SV13	4g-SV14
			Sample Type:			SOIL	SOIL	SOIL	SOIL
			Date Sampled:			11-Mar-2024	11-Mar-2024	11-Mar-2024	11-Mar-2024
			Asbestos Lab:			DURHAM	DURHAM	DURHAM	DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**				
ACM Type		U	2192		N/A	-	-	Fibres/Clumps	-
Asbestos Identification		U	2192		N/A	No Asbestos Detected	No Asbestos Detected	Chrysotile	No Asbestos Detected
Asbestos by Gravimetry		U	2192	%	0.001			0.005	
Total Asbestos		U	2192	%	0.001			0.005	
Moisture		N	2030	%	0.020	14	15	10	14
Soil Colour		N	2040		N/A	Brown	Brown	Brown	Brown
Other Material		N	2040		N/A	Stones	Stones	Stones	Stones
Soil Texture		N	2040		N/A	Loam	Loam	Loam	Loam
pH at 20C		M	2010		4.0	10.6	10.4	11.2	10.6
Cyanide (Total)		M	2300	mg/kg	0.50	< 0.50	0.60	4.0	0.80
Ammoniacal Nitrogen		M	2425	mg/kg	0.50	< 0.50	2.3	0.58	0.57
Iron (Total)		N	2430	mg/kg	100	21000	21000	20000	22000
Arsenic		M	2455	mg/kg	0.5	9.4	15	7.6	17
Cadmium		M	2455	mg/kg	0.10	0.57	1.5	0.11	0.62
Chromium		M	2455	mg/kg	0.5	200	350	380	220
Manganese		M	2455	mg/kg	1.0	13000	18000	20000	16000
Copper		M	2455	mg/kg	0.50	27	40	43	51
Mercury		M	2455	mg/kg	0.05	0.15	0.24	0.51	0.17
Nickel		M	2455	mg/kg	0.50	24	34	24	42
Lead		M	2455	mg/kg	0.50	89	230	49	98
Selenium		M	2455	mg/kg	0.25	3.1	2.6	2.0	2.2
Vanadium		U	2455	mg/kg	0.5	270	310	320	260
Zinc		M	2455	mg/kg	0.50	260	720	110	210
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C8 (Sum)	HS_2D_AL	N	2780	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	3.7	6.5	3.8	3.8
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00	6.1	15	6.3	3.8
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	19	36	11	8.9
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00	120	300	33	23
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	27	82	< 10	< 10
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00	150	360	54	39
Total Aliphatic EPH >C10-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	180	440	54	39
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental				**Chemtest Job No.:**		24-07882	24-07882	24-07882	24-07882
Quotation No.: Q24-34048				**Chemtest Sample ID.:**		1779763	1779764	1779765	1779766
Order No.: 136787				Client Sample Ref.:		1	1	1	1
				Client Sample ID.:		4g-SV1	4g-SV7	4g-SV13	4g-SV14
				Sample Type:		SOIL	SOIL	SOIL	SOIL
				Date Sampled:		11-Mar-2024	11-Mar-2024	11-Mar-2024	11-Mar-2024
				Asbestos Lab:		DURHAM	DURHAM	DURHAM	DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**				
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0	1.3	< 1.0	< 1.0
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	1.7	15	1.9	< 1.0
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	12	37	19	15
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	60	89	69	56
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00	17	12	22	4.4
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00	74	140	90	72
Total Aromatic EPH >C10-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	10.00	91	150	110	76
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00	230	500	140	110
Total EPH >C10-C40 MC	EH_2D_Total_#1	N	2690	mg/kg	10.00	270	590	170	120
Organic Matter		M	2625	%	0.40	7.1	4.2	15	6.4
Benzene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	6.7
Toluene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Naphthalene		M	2800	mg/kg	0.10	0.54	2.0	0.87	1.7
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10	< 0.10	0.16	0.42
Acenaphthene		M	2800	mg/kg	0.10	< 0.10	1.1	0.27	< 0.10
Fluorene		M	2800	mg/kg	0.10	< 0.10	0.92	0.26	< 0.10
Phenanthrene		M	2800	mg/kg	0.10	0.87	2.7	4.1	2.0
Anthracene		M	2800	mg/kg	0.10	0.27	0.63	0.73	0.57
Fluoranthene		M	2800	mg/kg	0.10	1.5	2.6	6.4	4.1
Pyrene		M	2800	mg/kg	0.10	1.5	2.6	6.4	4.1
Benzo[a]anthracene		M	2800	mg/kg	0.10	0.74	0.85	3.4	2.4
Chrysene		M	2800	mg/kg	0.10	0.88	1.1	4.2	2.4
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	1.4	1.3	5.3	4.2
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	0.53	0.44	2.2	1.6
Benzo[a]pyrene		M	2800	mg/kg	0.10	0.93	0.77	3.8	2.8
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	0.75	0.67	2.8	2.6
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	0.19	0.17	0.61	0.55
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	0.77	0.62	2.7	2.3
Total Of 16 PAH's		N	2800	mg/kg	2.0	11	19	44	32
Resorcinol		M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental			**Chemtest Job No.:**			24-07882	24-07882	24-07882	24-07882
Quotation No.: Q24-34048			**Chemtest Sample ID.:**			1779763	1779764	1779765	1779766
Order No.: 136787			Client Sample Ref.:			1	1	1	1
			Client Sample ID.:			4g-SV1	4g-SV7	4g-SV13	4g-SV14
			Sample Type:			SOIL	SOIL	SOIL	SOIL
			Date Sampled:			11-Mar-2024	11-Mar-2024	11-Mar-2024	11-Mar-2024
			Asbestos Lab:			DURHAM	DURHAM	DURHAM	DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**				
Phenol		M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020
Cresols		M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020
Xylenols		M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020
1-Naphthol		N	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020
Trimethylphenols		M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020
Total Phenols		M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
2010	pH Value of Soils	pH at 20°C	pH Meter	
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.	
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930	
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry	
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.	
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.	
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.	
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.	
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40	Acetone/Heptane extraction / GCxGC FID detection	
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.	
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection	
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS	
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.	

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
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SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
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SOP	Standard operating procedure
LOD	Limit of detection

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The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

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

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
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Sample Retention and Disposal

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All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

Water Sample Category Key for Accreditation

DW - Drinking Water
GW - Ground Water
LE - Land Leachate
NA - Not Applicable
PL - Prepared Leachate
PW - Processed Water

Report Information

RE - Recreational Water
SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

Clean Up Codes

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

HWOL Acronym System

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

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

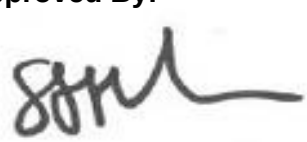
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Final Report

Report No.:	24-08102-1
Initial Date of Issue:	21-Mar-2024
Re-Issue Details:	
Client	Rodgers Leask Environmental
Client Address:	Office 225 2430/2440 Aztec West Almoundsbury Bristol BS32 4AQ
Contact(s):	Aimee Meredith-Smith Chris Wilson David McCarroll
Project	P18-669

Quotation No.:		**Date Received:**	15-Mar-2024
Order No.:	136787	**Date Instructed:**	15-Mar-2024
No. of Samples:	3		
Turnaround (Wkdays):	5	**Results Due:**	21-Mar-2024
Date Approved:	21-Mar-2024		

Approved By:



Details: Stuart Henderson, Technical Manager

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

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental			**Chemtest Job No.:**			24-08102	24-08102	24-08102
Quotation No.:			**Chemtest Sample ID.:**			1780548	1780549	1780550
Order No.: 136787			Client Sample Ref.:			1	1	1
			Client Sample ID.:			4g-SV6	4g-SV19	4g-SV20
			Sample Type:			SOIL	SOIL	SOIL
			Top Depth (m):			0.2	0.2	0.2
			Bottom Depth (m):			0.2	0.2	0.2
			Date Sampled:			14-Mar-2024	14-Mar-2024	14-Mar-2024
			Asbestos Lab:			DURHAM	DURHAM	DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**			
ACM Type		U	2192		N/A	-	-	-
Asbestos Identification		U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture		N	2030	%	0.020	16	12	18
Soil Colour		N	2040		N/A	Brown	Brown	Brown
Other Material		N	2040		N/A	Stones and Roots	Stones and Roots	Stones and Roots
Soil Texture		N	2040		N/A	Clay	Loam	Clay
pH at 20C		M	2010		4.0	9.6	10.6	9.8
Cyanide (Total)		M	2300	mg/kg	0.50	< 0.50	< 0.50	0.70
Ammoniacal Nitrogen		M	2425	mg/kg	0.50	1.1	1.5	2.3
Iron (Total)		N	2430	mg/kg	100	22000	21000	22000
Arsenic		M	2455	mg/kg	0.5	41	19	18
Cadmium		M	2455	mg/kg	0.10	2.0	0.98	1.9
Chromium		M	2455	mg/kg	0.5	300	600	140
Manganese		M	2455	mg/kg	1.0	18000	18000	8700
Copper		M	2455	mg/kg	0.50	66	56	50
Mercury		M	2455	mg/kg	0.05	0.29	0.38	0.29
Nickel		M	2455	mg/kg	0.50	49	38	48
Lead		M	2455	mg/kg	0.50	270	160	110
Selenium		M	2455	mg/kg	0.25	2.3	1.9	1.9
Vanadium		U	2455	mg/kg	0.5	370	430	270
Zinc		M	2455	mg/kg	0.50	740	430	300
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C8 (Sum)	HS_2D_AL	N	2780	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	4.4	7.0	23
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00	7.5	8.0	42
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	19	19	51
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00	68	78	120
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	19	30	38
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00	99	110	230
Total Aliphatic EPH >C10-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	120	140	270

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental			**Chemtest Job No.:**			24-08102	24-08102	24-08102
Quotation No.:			**Chemtest Sample ID.:**			1780548	1780549	1780550
Order No.: 136787			Client Sample Ref.:			1	1	1
			Client Sample ID.:			4g-SV6	4g-SV19	4g-SV20
			Sample Type:			SOIL	SOIL	SOIL
			Top Depth (m):			0.2	0.2	0.2
			Bottom Depth (m):			0.2	0.2	0.2
			Date Sampled:			14-Mar-2024	14-Mar-2024	14-Mar-2024
			Asbestos Lab:			DURHAM	DURHAM	DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**			
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0	1.1	8.0
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0	< 1.0	33
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	5.0	8.2	63
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	23	28	110
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00	6.1	31	110
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00	29	37	210
Total Aromatic EPH >C10-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	10.00	35	69	320
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00	130	150	450
Total EPH >C10-C40 MC	EH_2D_Total_#1	N	2690	mg/kg	10.00	150	210	600
Organic Matter		M	2625	%	0.40	5.7	3.8	18
Benzene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
Toluene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
o-Xylene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
Naphthalene		M	2800	mg/kg	0.10	0.65	0.40	1.7
Acenaphthylene		N	2800	mg/kg	0.10	0.28	0.13	0.52
Acenaphthene		M	2800	mg/kg	0.10	0.40	< 0.10	0.43
Fluorene		M	2800	mg/kg	0.10	0.73	< 0.10	0.84
Phenanthrene		M	2800	mg/kg	0.10	3.9	0.68	4.2
Anthracene		M	2800	mg/kg	0.10	1.3	0.24	1.1
Fluoranthene		M	2800	mg/kg	0.10	6.5	1.3	6.0
Pyrene		M	2800	mg/kg	0.10	4.4	0.96	4.1
Benzo[a]anthracene		M	2800	mg/kg	0.10	2.9	0.61	2.4
Chrysene		M	2800	mg/kg	0.10	2.4	0.66	2.1
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	4.1	0.91	3.5
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	1.2	0.31	1.2
Benzo[a]pyrene		M	2800	mg/kg	0.10	2.5	0.60	2.3
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	1.8	0.52	1.7
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	0.52	< 0.10	0.41

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental				**Chemtest Job No.:**		24-08102	24-08102	24-08102
Quotation No.:				**Chemtest Sample ID.:**		1780548	1780549	1780550
Order No.: 136787				Client Sample Ref.:		1	1	1
				Client Sample ID.:		4g-SV6	4g-SV19	4g-SV20
				Sample Type:		SOIL	SOIL	SOIL
				Top Depth (m):		0.2	0.2	0.2
				Bottom Depth (m):		0.2	0.2	0.2
				Date Sampled:		14-Mar-2024	14-Mar-2024	14-Mar-2024
				Asbestos Lab:		DURHAM	DURHAM	DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**			
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	1.8	0.42	1.7
Total Of 16 PAH's		N	2800	mg/kg	2.0	35	7.7	34
Resorcinol		M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020
Phenol		M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020
Cresols		M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020
Xylenols		M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020
1-Naphthol		N	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020
Trimethylphenols		M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020
Total Phenols		M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10

Test Methods

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2010	pH Value of Soils	pH at 20°C	pH Meter	
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2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.	
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2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.	
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection	
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS	
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.	

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Charges may apply to extended sample storage

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HWOL Acronym System

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

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

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

Final Report

Report No.:	24-09263-1
Initial Date of Issue:	02-Apr-2024
Re-Issue Details:	
Client	Rodgers Leask Environmental
Client Address:	Office 225 2430/2440 Aztec West Almoundsbury Bristol BS32 4AQ
Contact(s):	Aimee Meredith-Smith Chris Wilson David McCarroll
Project	P18-669
Quotation No.:	Q24-34048
Order No.:	136787
No. of Samples:	2
Turnaround (Wkdays):	5
Date Approved:	02-Apr-2024
Approved By:	
Details:	Stuart Henderson, Technical Manager

Date Received:	25-Mar-2024
Date Instructed:	25-Mar-2024
Results Due:	02-Apr-2024

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

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental			**Chemtest Job No.:**			24-09263	24-09263
Quotation No.: Q24-34048			**Chemtest Sample ID.:**			1784577	1784578
Order No.: 136787			Client Sample Ref.:			1	1
			Client Sample ID.:			4g-SV13	4g-SV14
			Sample Type:			SOIL	SOIL
			Top Depth (m):			0.2	0.2
			Bottom Depth (m):			0.2	0.2
			Date Sampled:			21-Mar-2024	21-Mar-2024
			Asbestos Lab:			DURHAM	DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**		
ACM Type		U	2192		N/A	-	-
Asbestos Identification		U	2192		N/A	No Asbestos Detected	No Asbestos Detected
Moisture		N	2030	%	0.020	18	10
Soil Colour		N	2040		N/A	Brown	Brown
Other Material		N	2040		N/A	Stones	Stones
Soil Texture		N	2040		N/A	Sand	Sand
pH at 20C		M	2010		4.0	9.8	9.8
Cyanide (Total)		M	2300	mg/kg	0.50	< 0.50	1.8
Ammoniacal Nitrogen		M	2425	mg/kg	0.50	41	5.1
Iron (Total)		N	2430	mg/kg	100	24000	20000
Arsenic		M	2455	mg/kg	0.5	1.8	12
Cadmium		M	2455	mg/kg	0.10	< 0.10	0.22
Chromium		M	2455	mg/kg	0.5	6.7	200
Manganese		M	2455	mg/kg	1.0	200	8900
Copper		M	2455	mg/kg	0.50	6.6	27
Mercury		M	2455	mg/kg	0.05	< 0.05	0.12
Nickel		M	2455	mg/kg	0.50	4.8	28
Lead		M	2455	mg/kg	0.50	7.0	52
Selenium		M	2455	mg/kg	0.25	< 0.25	1.3
Vanadium		U	2455	mg/kg	0.5	12	170
Zinc		M	2455	mg/kg	0.50	38	140
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C8 (Sum)	HS_2D_AL	N	2780	mg/kg	0.10	< 0.10	< 0.10
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	< 0.25	< 0.25
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	5.0	4.5
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00	19	9.0
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	29	19
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00	34	37
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	11	< 10
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00	88	70
Total Aliphatic EPH >C10-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	99	70
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0	< 1.0
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	3.8	< 1.0
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	19	9.7
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	57	30
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00	16	6.9
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00	79	40
Total Aromatic EPH >C10-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	10.00	95	47
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	< 0.50	< 0.50
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00	170	110
Total EPH >C10-C40 MC	EH_2D_Total_#1	N	2690	mg/kg	10.00	190	120
Organic Matter		M	2625	%	0.40	7.6	4.0
Benzene		M	2760	µg/kg	1.0	< 1.0	< 1.0
Toluene		M	2760	µg/kg	1.0	< 1.0	< 1.0
Ethylbenzene		M	2760	µg/kg	1.0	< 1.0	< 1.0
m & p-Xylene		M	2760	µg/kg	1.0	< 1.0	< 1.0
o-Xylene		M	2760	µg/kg	1.0	< 1.0	< 1.0
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0	< 1.0	< 1.0
Naphthalene		M	2800	mg/kg	0.10	1.2	0.68
Acenaphthylene		N	2800	mg/kg	0.10	0.16	< 0.10
Acenaphthene		M	2800	mg/kg	0.10	< 0.10	< 0.10

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental			**Chemtest Job No.:**			24-09263	24-09263
Quotation No.: Q24-34048			**Chemtest Sample ID.:**			1784577	1784578
Order No.: 136787			Client Sample Ref.:			1	1
			Client Sample ID.:			4g-SV13	4g-SV14
			Sample Type:			SOIL	SOIL
			Top Depth (m):			0.2	0.2
			Bottom Depth (m):			0.2	0.2
			Date Sampled:			21-Mar-2024	21-Mar-2024
			Asbestos Lab:			DURHAM	DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**		
Fluorene		M	2800	mg/kg	0.10	0.22	< 0.10
Phenanthrene		M	2800	mg/kg	0.10	1.6	0.70
Anthracene		M	2800	mg/kg	0.10	0.37	< 0.10
Fluoranthene		M	2800	mg/kg	0.10	2.7	1.1
Pyrene		M	2800	mg/kg	0.10	2.0	0.93
Benzo[a]anthracene		M	2800	mg/kg	0.10	1.5	0.60
Chrysene		M	2800	mg/kg	0.10	1.3	0.63
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	2.3	< 0.10
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	0.75	< 0.10
Benzo[a]pyrene		M	2800	mg/kg	0.10	1.7	< 0.10
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	1.2	< 0.10
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	0.97	< 0.10
Total Of 16 PAH's		N	2800	mg/kg	2.0	18	4.6
Resorcinol		M	2920	mg/kg	0.020	< 0.020	< 0.020
Phenol		M	2920	mg/kg	0.020	< 0.020	< 0.020
Cresols		M	2920	mg/kg	0.020	< 0.020	< 0.020
Xylenols		M	2920	mg/kg	0.020	< 0.020	< 0.020
1-Naphthol		N	2920	mg/kg	0.020	< 0.020	< 0.020
Trimethylphenols		M	2920	mg/kg	0.020	< 0.020	< 0.020
Total Phenols		M	2920	mg/kg	0.10	< 0.10	< 0.10

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
2010	pH Value of Soils	pH at 20°C	pH Meter	
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.	
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930	
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry	
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.	
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.	
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.	
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.	
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40	Acetone/Heptane extraction / GCxGC FID detection	
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.	
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection	
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS	
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.	

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

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

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

Water Sample Category Key for Accreditation

DW - Drinking Water
GW - Ground Water
LE - Land Leachate
NA - Not Applicable
PL - Prepared Leachate

Report Information

PW - Processed Water
RE - Recreational Water
SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

Clean Up Codes

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

HWOL Acronym System

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

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

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

Final Report

Report No.:	24-11616-1
Initial Date of Issue:	19-Apr-2024
Re-Issue Details:	
Client	Rodgers Leask Environmental
Client Address:	Office 225 2430/2440 Aztec West Almoundsbury Bristol BS32 4AQ
Contact(s):	Aimee Meredith-Smith Chris Wilson David McCarroll
Project	P18-669

Quotation No.:	Q24-34048	**Date Received:**	16-Apr-2024
Order No.:	136787	**Date Instructed:**	16-Apr-2024
No. of Samples:	3		
Turnaround (Wkdays):	4	**Results Due:**	19-Apr-2024
Date Approved:	19-Apr-2024		

Approved By:



Details: David Smith, Technical Director

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

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental			**Chemtest Job No.:**			24-11616	24-11616	24-11616
Quotation No.: Q24-34048			**Chemtest Sample ID.:**			1793604	1793605	1793606
					Client Sample ID.:	4G-SV10	4G-SV16	4G-SV17
					Sample Type:	SOIL	SOIL	SOIL
					Date Sampled:	12-Apr-2024	12-Apr-2024	12-Apr-2024
					Asbestos Lab:	NEW-ASB	NEW-ASB	NEW-ASB
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**			
ACM Type		U	2192		N/A	-	-	-
Asbestos Identification		U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture		N	2030	%	0.020	4.2	5.2	4.3
Soil Colour		N	2040		N/A	Brown	Brown	Brown
Other Material		N	2040		N/A	Stones	Stones	Stones
Soil Texture		N	2040		N/A	Sand	Sand	Sand
pH at 20C		M	2010		4.0	9.3	10.3	10.2
Cyanide (Total)		M	2300	mg/kg	0.50	2.5	4.6	1.4
Ammoniacal Nitrogen		M	2425	mg/kg	0.50	3.1	2.1	2.7
Iron (Total)		N	2430	mg/kg	100	21000	20000	21000
Arsenic		M	2455	mg/kg	0.5	8.4	11	9.5
Cadmium		M	2455	mg/kg	0.10	0.20	0.31	0.27
Chromium		M	2455	mg/kg	0.5	72	400	100
Manganese		M	2455	mg/kg	1.0	4400	23000	7600
Copper		M	2455	mg/kg	0.50	23	40	37
Mercury		M	2455	mg/kg	0.05	0.17	0.37	0.15
Nickel		M	2455	mg/kg	0.50	20	29	24
Lead		M	2455	mg/kg	0.50	58	60	60
Selenium		M	2455	mg/kg	0.25	1.4	1.6	1.2
Vanadium		U	2455	mg/kg	0.5	79	330	140
Zinc		M	2455	mg/kg	0.50	150	150	150
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C8 (Sum)	HS_2D_AL	N	2780	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	6.4	4.8	3.9
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00	11	6.1	2.9
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	13	10	5.8
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00	21	18	5.5
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	< 10	< 10	< 10
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00	52	39	18
Total Aliphatic EPH >C10-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	52	39	18
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental			**Chemtest Job No.:**			24-11616	24-11616	24-11616
Quotation No.: Q24-34048			**Chemtest Sample ID.:**			1793604	1793605	1793606
					Client Sample ID.:	4G-SV10	4G-SV16	4G-SV17
					Sample Type:	SOIL	SOIL	SOIL
					Date Sampled:	12-Apr-2024	12-Apr-2024	12-Apr-2024
					Asbestos Lab:	NEW-ASB	NEW-ASB	NEW-ASB
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**			
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0	1.9	< 1.0
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0	1.8	1.0
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	10	12	14
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	15	21	15
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00	< 1.0	4.1	< 1.0
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00	27	36	31
Total Aromatic EPH >C10-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	10.00	27	41	31
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00	79	75	49
Total EPH >C10-C40 MC	EH_2D_Total_#1	N	2690	mg/kg	10.00	79	79	49
Organic Matter		M	2625	%	0.40	12	20	22
Benzene		M	2760	µg/kg	1.0	2.2	2.4	< 1.0
Toluene		M	2760	µg/kg	1.0	< 1.0	1.3	< 1.0
Ethylbenzene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
o-Xylene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
Naphthalene		M	2800	mg/kg	0.10	3.5	5.9	1.7
Acenaphthylene		N	2800	mg/kg	0.10	0.73	0.68	0.29
Acenaphthene		M	2800	mg/kg	0.10	0.17	0.23	< 0.10
Fluorene		M	2800	mg/kg	0.10	1.0	0.80	0.25
Phenanthrene		M	2800	mg/kg	0.10	8.7	9.4	2.2
Anthracene		M	2800	mg/kg	0.10	1.8	1.8	0.53
Fluoranthene		M	2800	mg/kg	0.10	11	14	4.1
Pyrene		M	2800	mg/kg	0.10	7.4	9.4	2.9
Benzo[a]anthracene		M	2800	mg/kg	0.10	4.0	5.2	1.9
Chrysene		M	2800	mg/kg	0.10	4.4	5.6	2.0
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	5.3	7.0	2.5
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	1.7	2.4	0.94
Benzo[a]pyrene		M	2800	mg/kg	0.10	3.8	4.6	1.7
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	2.7	3.5	1.3
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	0.61	0.76	0.27
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	2.8	3.4	1.3
Total Of 16 PAH's		N	2800	mg/kg	2.0	60	75	24
Resorcinol		M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020
Phenol		M	2920	mg/kg	0.020	0.073	< 0.020	< 0.020
Cresols		M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020
Xylenols		M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020
1-Naphthol		N	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental								
				Chemtest Job No.:		24-11616	24-11616	24-11616
Quotation No.: Q24-34048				**Chemtest Sample ID.:**		1793604	1793605	1793606
				Client Sample ID.:		4G-SV10	4G-SV16	4G-SV17
				Sample Type:		SOIL	SOIL	SOIL
				Date Sampled:		12-Apr-2024	12-Apr-2024	12-Apr-2024
				Asbestos Lab:		NEW-ASB	NEW-ASB	NEW-ASB
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**			
Trimethylphenols		M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020
Total Phenols		M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
2010	pH Value of Soils	pH at 20°C	pH Meter	
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <30°C.	
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930	
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry	
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.	
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.	
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.	
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.	
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40	Acetone/Heptane extraction / GCxGC FID detection	
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.	
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection	
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS	
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.	

Report Information

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I/S	Insufficient Sample
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N/E	not evaluated
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All results are expressed on a dry weight basis

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

For all other tests the samples were dried at < 37°C prior to analysis
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A - Date of sampling not supplied
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Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
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Water Sample Category Key for Accreditation

DW - Drinking Water
GW - Ground Water
LE - Land Leachate
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PW - Processed Water

Report Information

RE - Recreational Water
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TS - Treated Sewage
UL - Unspecified Liquid

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NC - No Clean Up
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HWOL Acronym System

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

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

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

Amended Report

Report No.:	24-13424-3		
Initial Date of Issue:	03-May-2024	**Date of Re-Issue:**	08-May-2024
Re-Issue Details:	This report has been revised and directly supersedes 24-13424-2 in its entirety		
Client	Rodgers Leask Environmental		
Client Address:	Office 225 2430/2440 Aztec West Almoundsbury Bristol BS32 4AQ		
Contact(s):	Aimee Meredith-Smith Chris Wilson David McCarroll		
Project	P18-669		
Quotation No.:	Q24-34048	**Date Received:**	29-Apr-2024
Order No.:	136787	**Date Instructed:**	07-May-2024
No. of Samples:	4		
Turnaround (Wkdays):	5	**Results Due:**	13-May-2024
Date Approved:	08-May-2024		

Approved By:



Details: David Smith, Technical Director

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

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental				**Chemtest Job No.:**		24-13424	24-13424	24-13424	24-13424
Quotation No.: Q24-34048				**Chemtest Sample ID.:**		1800299	1800300	1800301	1800302
				Client Sample ID.:		4g-SV4	4g-SV5	4g-SV11	4g-SV12
				Sample Type:		SOIL	SOIL	SOIL	SOIL
				Date Sampled:		24-Apr-2024	24-Apr-2024	24-Apr-2024	24-Apr-2024
				Asbestos Lab:		DURHAM	DURHAM	DURHAM	DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**				
ACM Type		U	2192		N/A	Fibres/Clumps	Fibres/Clumps	-	-
Asbestos Identification		U	2192		N/A	Chrysotile	Chrysotile	No Asbestos Detected	No Asbestos Detected
Asbestos by Gravimetry		U	2192	%	0.001		0.001		
Total Asbestos		U	2192	%	0.001		0.001		
Moisture		N	2030	%	0.020	6.4	4.6	6.8	7.3
Soil Colour		N	2040		N/A	Brown	Brown	Brown	Brown
Other Material		N	2040		N/A	Stones	Stones	Stones	Stones
Soil Texture		N	2040		N/A	Loam	Loam	Loam	Loam
pH at 20C		M	2010		4.0	10.4	10.8	10.5	11.1
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010		0.90	0.48	
Total Sulphur		U	2175	%	0.010		0.43	0.67	
Chloride (Water Soluble)		M	2220	g/l	0.010		0.020	0.044	
Nitrate (Water Soluble)		N	2220	g/l	0.010		< 0.010	< 0.010	
Cyanide (Total)		M	2300	mg/kg	0.50	0.90	0.70	2.0	< 0.50
Ammoniacal Nitrogen		M	2425	mg/kg	0.50	3.7	3.1	4.0	7.2
Iron (Total)		N	2430	mg/kg	100	20000	20000	21000	20000
Arsenic		M	2455	mg/kg	0.5	9.9	7.3	12	7.7
Cadmium		M	2455	mg/kg	0.10	0.38	0.18	< 0.10	0.13
Chromium		M	2455	mg/kg	0.5	290	250	220	450
Manganese		M	2455	mg/kg	1.0	12000	14000	10000	21000
Copper		M	2455	mg/kg	0.50	99	32	29	36
Mercury		M	2455	mg/kg	0.05	0.14	0.09	0.08	0.08
Nickel		M	2455	mg/kg	0.50	26	29	40	22
Lead		M	2455	mg/kg	0.50	76	43	37	39
Selenium		M	2455	mg/kg	0.25	1.5	1.2	1.4	0.96
Vanadium		U	2455	mg/kg	0.5	250	240	200	310
Zinc		M	2455	mg/kg	0.50	160	120	120	110
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C8 (Sum)	HS_2D_AL	N	2780	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	6.9	8.2	6.4	6.6
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00	19	48	14	24
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	79	210	59	87
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00	190	210	98	64
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	58	60	24	13

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental				**Chemtest Job No.:**		24-13424	24-13424	24-13424	24-13424
Quotation No.: Q24-34048				**Chemtest Sample ID.:**		1800299	1800300	1800301	1800302
				Client Sample ID.:		4g-SV4	4g-SV5	4g-SV11	4g-SV12
				Sample Type:		SOIL	SOIL	SOIL	SOIL
				Date Sampled:		24-Apr-2024	24-Apr-2024	24-Apr-2024	24-Apr-2024
				Asbestos Lab:		DURHAM	DURHAM	DURHAM	DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**				
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00	300	470	180	180
Total Aliphatic EPH >C10-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	360	530	200	190
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	5.7	5.9	4.3	21
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	20	23	5.9	10
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	120	110	29	32
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	210	130	85	75
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00	34	25	13	12
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00	350	270	120	140
Total Aromatic EPH >C10-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	10.00	390	290	140	150
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00	650	740	300	320
Total EPH >C10-C40 MC	EH_2D_Total_#1	N	2690	mg/kg	10.00	740	830	340	350
Organic Matter		M	2625	%	0.40	9.9	5.2	3.8	4.2
Benzene		M	2760	µg/kg	1.0	4.1	3.1	3.9	3.8
Toluene		M	2760	µg/kg	1.0	1.9	1.4	2.3	1.5
Ethylbenzene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Naphthalene		M	2800	mg/kg	0.10	20	1.6	1.6	5.8
Acenaphthylene		N	2800	mg/kg	0.10	6.2	< 0.10	< 0.10	< 0.10
Acenaphthene		M	2800	mg/kg	0.10	0.77	< 0.10	< 0.10	< 0.10
Fluorene		M	2800	mg/kg	0.10	10	< 0.10	< 0.10	< 0.10
Phenanthrene		M	2800	mg/kg	0.10	97	2.0	1.2	1.6
Anthracene		M	2800	mg/kg	0.10	17	0.51	0.33	< 0.10
Fluoranthene		M	2800	mg/kg	0.10	100	3.3	2.0	5.4
Pyrene		M	2800	mg/kg	0.10	61	2.5	1.7	5.2
Benzo[a]anthracene		M	2800	mg/kg	0.10	33	1.5	1.3	4.9
Chrysene		M	2800	mg/kg	0.10	34	1.4	1.3	5.8
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	41	2.5	2.2	9.0
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	13	0.82	0.80	3.5
Benzo[a]pyrene		M	2800	mg/kg	0.10	27	1.8	1.6	7.9
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	20	1.5	1.1	5.1
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	4.2	0.32	0.27	0.93
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	18	1.3	1.2	4.8

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental				**Chemtest Job No.:**		24-13424	24-13424	24-13424	24-13424
Quotation No.: Q24-34048				**Chemtest Sample ID.:**		1800299	1800300	1800301	1800302
				Client Sample ID.:		4g-SV4	4g-SV5	4g-SV11	4g-SV12
				Sample Type:		SOIL	SOIL	SOIL	SOIL
				Date Sampled:		24-Apr-2024	24-Apr-2024	24-Apr-2024	24-Apr-2024
				Asbestos Lab:		DURHAM	DURHAM	DURHAM	DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**				
Total Of 16 PAH's		N	2800	mg/kg	2.0	500	21	17	60
Resorcinol		M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020
Phenol		M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020
Cresols		M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020
Xylenols		M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020
1-Naphthol		N	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020
Trimethylphenols		M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020
Total Phenols		M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10

Test Methods

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2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930	
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES	
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry	
2220	Water soluble Chloride in Soils	Chloride	Aqueous extraction and measurememrnt by 'Aquakem 600' Discrete Analyser using ferric nitrate / mercuric thiocyanate.	
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.	
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.	
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.	
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.	
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40	Acetone/Heptane extraction / GCxGC FID detection	
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.	
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection	
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS	
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.	

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Any comments or interpretations are outside the scope of UKAS accreditation.
The Laboratory is not accredited for any sampling activities and reported results relate to the samples 'as received' at the laboratory.
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All results are expressed on a dry weight basis.

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NC - No Clean Up
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HS - Headspace analysis
EH - Extractable hydrocarbons – i.e. everything extracted by the solvent
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1D - GC – Single coil gas chromatography
Total - Aliphatics & Aromatics
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AR - Aromatic only
2D - GC-GC – Double coil gas chromatography
#1 - EH_2D_Total but with humics mathematically subtracted
#2 - EH_2D_Total but with fatty acids mathematically subtracted
+ - Operator to indicate cumulative e.g. EH+EH_Total or EH_CU+HS_Total

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

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

Amended Report

Report No.:	24-14959-2		
Initial Date of Issue:	17-May-2024	**Date of Re-Issue:**	22-May-2024
Re-Issue Details:	This report has been revised and directly supersedes 24-14959-1 in its entirety		
Client	Rodgers Leask Environmental		
Client Address:	Office 225 2430/2440 Aztec West Almoundsbury Bristol BS32 4AQ		
Contact(s):	Aimee Meredith-Smith Chris Wilson David McCarroll		
Project	P18-669		
Quotation No.:		**Date Received:**	13-May-2024
Order No.:	136787	**Date Instructed:**	13-May-2024
No. of Samples:	3		
Turnaround (Wkdays):	10	**Results Due:**	24-May-2024
Date Approved:	22-May-2024		

Approved By:



Details: David Smith, Technical Director

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

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental			**Chemtest Job No.:**			24-14959	24-14959	24-14959
Quotation No.:			**Chemtest Sample ID.:**			1806343	1806344	1806345
			Client Sample ID.:			4G-SV18	4G-SV22	4G-SV21
			Sample Type:			SOIL	SOIL	SOIL
			Date Sampled:			09-May-2024	09-May-2024	09-May-2024
			Asbestos Lab:			DURHAM	DURHAM	DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**			
ACM Type		U	2192		N/A	-	-	Fibres/Clumps
Asbestos Identification		U	2192		N/A	No Asbestos Detected	No Asbestos Detected	Chrysotile
Asbestos by Gravimetry		U	2192	%	0.001			<0.001
Total Asbestos		U	2192	%	0.001			<0.001
Moisture		N	2030	%	0.020	7.1	8.2	15
Soil Colour		N	2040		N/A	Brown	Brown	Brown
Other Material		N	2040		N/A	Stones and Wood	Stones	Stones and Roots
Soil Texture		N	2040		N/A	Loam	Loam	Loam
pH at 20C		M	2010		4.0	11.3	9.8	10.8
Cyanide (Total)		M	2300	mg/kg	0.50	1.1	1.4	1.6
Ammoniacal Nitrogen		M	2425	mg/kg	0.50	< 0.50	2.2	5.1
Iron (Total)		N	2430	mg/kg	100	16000	24000	22000
Arsenic		M	2455	mg/kg	0.5	17	7.8	15
Cadmium		M	2455	mg/kg	0.10	0.53	0.37	0.57
Chromium		M	2455	mg/kg	0.5	510	130	300
Manganese		M	2455	mg/kg	1.0	20000	8000	17000
Copper		M	2455	mg/kg	0.50	48	25	42
Mercury		M	2455	mg/kg	0.05	0.18	0.12	0.20
Nickel		M	2455	mg/kg	0.50	38	26	36
Lead		M	2455	mg/kg	0.50	70	54	83
Selenium		M	2455	mg/kg	0.25	1.7	0.86	2.4
Vanadium		U	2455	mg/kg	0.5	300	180	290
Zinc		M	2455	mg/kg	0.50	280	150	200
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C8 (Sum)	HS_2D_AL	N	2780	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	8.8	7.8	5.5
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00	11	11	14
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	19	13	55
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00	1000	51	72
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	270	19	13
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00	1100	83	150
Total Aliphatic EPH >C10-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	1300	100	160
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental			**Chemtest Job No.:**			24-14959	24-14959	24-14959
Quotation No.:			**Chemtest Sample ID.:**			1806343	1806344	1806345
			Client Sample ID.:			4G-SV18	4G-SV22	4G-SV21
			Sample Type:			SOIL	SOIL	SOIL
			Date Sampled:			09-May-2024	09-May-2024	09-May-2024
			Asbestos Lab:			DURHAM	DURHAM	DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**			
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0	< 1.0	4.8
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0	< 1.0	1.2
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	14	13	40
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	17	18	110
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00	4.0	9.7	42
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00	31	32	160
Total Aromatic EPH >C10-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	10.00	35	42	200
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00	1100	120	310
Total EPH >C10-C40 MC	EH_2D_Total_#1	N	2690	mg/kg	10.00	1400	140	360
Organic Matter		M	2625	%	0.40	5.8	4.6	17
Benzene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
Toluene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
o-Xylene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
Naphthalene		M	2800	mg/kg	0.10	0.52	0.82	3.7
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10	0.13	0.33
Acenaphthene		M	2800	mg/kg	0.10	< 0.10	< 0.10	0.22
Fluorene		M	2800	mg/kg	0.10	< 0.10	0.14	0.40
Phenanthrene		M	2800	mg/kg	0.10	0.73	1.3	3.2
Anthracene		M	2800	mg/kg	0.10	0.18	0.34	0.87
Fluoranthene		M	2800	mg/kg	0.10	1.2	2.8	5.7
Pyrene		M	2800	mg/kg	0.10	1.1	2.6	4.3
Benzo[a]anthracene		M	2800	mg/kg	0.10	0.81	2.2	3.0
Chrysene		M	2800	mg/kg	0.10	0.95	2.3	3.3
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	1.5	4.6	4.5
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	0.58	1.5	1.5
Benzo[a]pyrene		M	2800	mg/kg	0.10	1.0	3.5	3.3
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	0.79	2.6	2.6
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	< 0.10	0.51	0.54
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	0.81	2.5	2.4
Total Of 16 PAH's		N	2800	mg/kg	2.0	10	28	40
Resorcinol		M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020
Phenol		M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental				**Chemtest Job No.:**		24-14959	24-14959	24-14959
Quotation No.:				**Chemtest Sample ID.:**		1806343	1806344	1806345
				Client Sample ID.:		4G-SV18	4G-SV22	4G-SV21
				Sample Type:		SOIL	SOIL	SOIL
				Date Sampled:		09-May-2024	09-May-2024	09-May-2024
				Asbestos Lab:		DURHAM	DURHAM	DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**			
Cresols		M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020
Xylenols		M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020
1-Naphthol		N	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020
Trimethylphenols		M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020
Total Phenols		M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
2010	pH Value of Soils	pH at 20°C	pH Meter	
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <30°C.	
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930	
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry	
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.	
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.	
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.	
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.	
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40	Acetone/Heptane extraction / GCxGC FID detection	
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.	
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection	
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS	
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.	

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

This report shall not be reproduced except in full, and only with the prior approval of the laboratory.
Any comments or interpretations are outside the scope of UKAS accreditation.
The Laboratory is not accredited for any sampling activities and reported results relate to the samples 'as received' at the laboratory.
Uncertainty of measurement for the determinands tested are available upon request .
None of the results in this report have been recovery corrected.
All results are expressed on a dry weight basis.

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

For all other tests the samples were dried at ≤ 30°C prior to analysis.
All Asbestos testing is performed at the indicated laboratory .
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1.

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt.
All water samples will be retained for 14 days from the date of receipt.
Charges may apply to extended sample storage.

Water Sample Category Key for Accreditation

DW - Drinking Water
GW - Ground Water
LE - Land Leachate
NA - Not Applicable

Report Information

PL - Prepared Leachate
PW - Processed Water
RE - Recreational Water
SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

Clean Up Codes

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

HWOL Acronym System

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

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

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Project Jonah site office
Llan Coed House
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Llandarcy
SA10 6HJ

Attention: John Fitzgerald

CERTIFICATE OF ANALYSIS

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

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

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

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

Approved By:



Sonia McWhan

Operations Manager

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

CERTIFICATE OF ANALYSIS

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

Received Sample Overview

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

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

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

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

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

CERTIFICATE OF ANALYSIS

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

Results Legend

X Test

N No Determination Possible

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

Lab Sample No(s)			17438052			17438102			17438117			17438127			17438136			17438061			17438071
Customer Sample Reference			W140-09			W140-10			W140-11			W140-12			W140-13			W140-14			W140-15
AGS Reference																					
Depth (m)			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 8		X			X			X			X			X			X		
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 16	X			X			X			X			X			X			X
Ammonium Soil by Titration	All	NDPs: 0 Tests: 16		X			X			X			X			X			X		
Anions by Kone (soil)	All	NDPs: 0 Tests: 8		X			X			X			X			X			X		
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 8	X			X			X			X			X			X			X
CEN Readings	All	NDPs: 0 Tests: 16	X			X			X			X			X			X			X
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 32	X	X		X	X		X	X		X	X		X	X		X	X		X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 16	X			X			X			X			X			X			X
EPH CWG (Aliphatic) Filtered GC (W)	All	NDPs: 0 Tests: 16	X			X			X			X			X			X			X
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 16		X			X			X			X			X			X		
EPH CWG (Aromatic) Filtered GC (W)	All	NDPs: 0 Tests: 16	X			X			X			X			X			X			X
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 16		X			X			X			X			X			X		
GRO by GC-FID (S)	All	NDPs: 0 Tests: 16			X			X			X			X			X			X	
GRO by GC-FID (W)	All	NDPs: 0 Tests: 16	X			X			X			X			X			X			X
Mercury Dissolved	All	NDPs: 0 Tests: 16	X			X			X			X			X			X			X

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

CERTIFICATE OF ANALYSIS

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

Results Legend

- X Test
- N No Determination Possible

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

Lab Sample No(s)			17438052			17438102			17438117			17438127			17438136			17438061			17438071
Customer Sample Reference			W140-09			W140-10			W140-11			W140-12			W140-13			W140-14			W140-15
AGS Reference																					
Depth (m)			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Metals in solid samples by OES	All	NDPs: 0 Tests: 16		X			X			X			X			X			X		
PAH by GCMS	All	NDPs: 0 Tests: 16		X			X			X			X			X			X		
PAH in waters by GC-MS (diss.filt)	All	NDPs: 0 Tests: 16	X			X			X			X			X			X			X
pH	All	NDPs: 0 Tests: 16		X			X			X			X			X			X		
pH Value of Filtered Water	All	NDPs: 0 Tests: 16	X			X			X			X			X			X			X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 16		X			X			X			X			X			X		
Sample description	All	NDPs: 0 Tests: 16		X			X			X			X			X			X		
Total Organic Carbon	All	NDPs: 0 Tests: 16		X			X			X			X			X			X		
Total Sulphate	All	NDPs: 0 Tests: 8		X			X			X			X			X			X		
Total Sulphur	All	NDPs: 0 Tests: 8		X			X			X			X			X			X		
TPH CWG Filtered (W)	All	NDPs: 0 Tests: 16	X			X			X			X			X			X			X
TPH CWG GC (S)	All	NDPs: 0 Tests: 16		X			X			X			X			X			X		
VOC MS (S)	All	NDPs: 0 Tests: 16			X			X			X			X			X			X	
VOC MS (W)	All	NDPs: 0 Tests: 16	X			X			X			X			X			X			X

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

CERTIFICATE OF ANALYSIS

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

Results Legend

X Test

N No Determination Possible

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

Lab Sample No(s)			17438066		17438078			17438087		
Customer Sample Reference			W140-14.5		W140-15.5			W140-16.5		
AGS Reference										
Depth (m)			0.00 - 0.00		0.00 - 0.00			0.00 - 0.00		
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 16			X			X		
Ammonium Soil by Titration	All	NDPs: 0 Tests: 16	X			X			X	
CEN Readings	All	NDPs: 0 Tests: 16			X			X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 32	X		X	X		X	X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 16			X			X		
EPH CWG (Aliphatic) Filtered GC (W)	All	NDPs: 0 Tests: 16			X			X		
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 16	X			X			X	
EPH CWG (Aromatic) Filtered GC (W)	All	NDPs: 0 Tests: 16			X			X		
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 16	X			X			X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 16		X			X			X
GRO by GC-FID (W)	All	NDPs: 0 Tests: 16			X			X		
Mercury Dissolved	All	NDPs: 0 Tests: 16			X			X		
Metals in solid samples by OES	All	NDPs: 0 Tests: 16	X			X			X	
PAH by GCMS	All	NDPs: 0 Tests: 16	X			X			X	
PAH in waters by GC-MS (diss.filt)	All	NDPs: 0 Tests: 16			X			X		

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CERTIFICATE OF ANALYSIS

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

Results Legend

X **Test**

N **No Determination Possible**

Sample Types -

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

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

CERTIFICATE OF ANALYSIS

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

Sample Descriptions

Grain Sizes

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

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

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

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

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

Validated

CERTIFICATE OF ANALYSIS

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

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

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

Validated

CERTIFICATE OF ANALYSIS

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

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

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

Validated

CERTIFICATE OF ANALYSIS

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

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

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

Validated

CERTIFICATE OF ANALYSIS

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

PAH by GCMS

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

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

Validated

CERTIFICATE OF ANALYSIS

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

PAH by GCMS

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

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

Validated

CERTIFICATE OF ANALYSIS

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

PAH by GCMS

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

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

Validated

CERTIFICATE OF ANALYSIS

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

TPH CWG (S)

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

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

Validated

CERTIFICATE OF ANALYSIS

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

TPH CWG (S)

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

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

Validated

CERTIFICATE OF ANALYSIS

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

TPH CWG (S)

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

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

Validated

CERTIFICATE OF ANALYSIS

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

VOC MS (S)

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

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

Validated

CERTIFICATE OF ANALYSIS

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

VOC MS (S)

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

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

CERTIFICATE OF ANALYSIS

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

VOC MS (S)

Results Legend

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

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

CERTIFICATE OF ANALYSIS

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

Asbestos Identification - Solid Samples

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

Validated

CERTIFICATE OF ANALYSIS

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

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

CERTIFICATE OF ANALYSIS

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

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

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

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

Leach Test Information

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

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

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

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

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

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

Leach Test Information

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

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

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

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

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

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

Leach Test Information

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

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

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

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

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

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

Leach Test Information

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

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

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

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

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

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

Leach Test Information

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

Mcerts Certification does not apply to leachates

09/05/2018 10:54:07

10:53:41 09/05/2018

CERTIFICATE OF ANALYSIS

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

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

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

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

Leach Test Information

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

Mcerts Certification does not apply to leachates
09/05/2018 10:54:07

10:53:41 09/05/2018

CERTIFICATE OF ANALYSIS

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

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

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

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

Leach Test Information

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

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

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

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

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

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

Leach Test Information

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

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

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

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

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

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

Leach Test Information

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

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

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

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

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

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

Leach Test Information

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

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

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

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

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

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

Leach Test Information

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

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

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

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

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

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

Leach Test Information

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

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

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

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

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

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

Leach Test Information

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

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

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

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

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

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

Leach Test Information

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

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

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

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

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

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

Leach Test Information

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

Mcerts Certification does not apply to leachates

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10:53:41 09/05/2018

CERTIFICATE OF ANALYSIS

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

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

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

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

Leach Test Information

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

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

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

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

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

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

Leach Test Information

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

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

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

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

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

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

Leach Test Information

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

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

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

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

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

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

Leach Test Information

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

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

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

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

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

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

Leach Test Information

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

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

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

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

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

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

Leach Test Information

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

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

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

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

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

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

Leach Test Information

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

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

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

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

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

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

Leach Test Information

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

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

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

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

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

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

Leach Test Information

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

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

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

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

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

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

Leach Test Information

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

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

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

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

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

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

Leach Test Information

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

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

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

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

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

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

Leach Test Information

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

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

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

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

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

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

Leach Test Information

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

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

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

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

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

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

Leach Test Information

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

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

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

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

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

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

Leach Test Information

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

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

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

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

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

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

Leach Test Information

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

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

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

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

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

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

Leach Test Information

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

Mcerts Certification does not apply to leachates
09/05/2018 10:54:07

10:53:41 09/05/2018

CERTIFICATE OF ANALYSIS

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

Table of Results - Appendix

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

NA = not applicable.

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

CERTIFICATE OF ANALYSIS

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

Test Completion Dates

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

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

Appendix

General

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

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

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

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

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

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

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

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

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

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

11. Results relate only to the items tested.

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

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

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

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

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

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

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

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

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

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

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

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

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

Sample Deviations

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

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

Asbestos

Identification of Asbestos in Bulk Materials & Soils

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

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

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

Visual Estimation Of Fibre Content

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

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

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

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Manor Road (off Manor Lane)
Hawarden
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Website: www.alsenvironmental.co.uk

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

Attention: John Fitzgerald

CERTIFICATE OF ANALYSIS

Date:	16 October 2018
Customer:	H_ATKINS_LDC
Sample Delivery Group (SDG):	181003-43
Your Reference:	
Location:	Llanwern
Report No:	477047

This report has been revised and directly supersedes 477045 in its entirety.

We received 28 samples on Wednesday October 03, 2018 and 28 of these samples were scheduled for analysis which was completed on Tuesday October 16, 2018. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

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

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

Approved By:



Sonia McWhan

Operations Manager

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

CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
18449421	4C-F5		0.50 - 0.50	02/10/2018
18449426	4C-F5		1.00 - 1.00	02/10/2018
18449431	4C-F5		1.50 - 1.50	02/10/2018
18449438	4C-F6		0.60 - 0.60	02/10/2018
18449442	4C-F6		1.20 - 1.20	02/10/2018
18449453	4C-F7		0.60 - 0.60	02/10/2018
18449458	4C-F7		1.20 - 1.20	02/10/2018
18449446	4C-F6-V		2.30 - 2.30	02/10/2018
18449389	4C-G5		0.50 - 0.50	02/10/2018
18449394	4C-G5		1.00 - 1.00	02/10/2018
18449398	4C-G5		1.50 - 1.50	02/10/2018
18449372	4C-G6		0.30 - 0.30	02/10/2018
18449376	4C-G6		1.00 - 1.00	02/10/2018
18449380	4C-G6		1.50 - 1.50	02/10/2018
18449417	4C-G5-V		2.80 - 2.80	02/10/2018
18449385	4C-G6-V		2.90 - 2.90	02/10/2018
18449507	4C-H6		0.50 - 0.50	02/10/2018
18449354	4C-H6		1.00 - 1.00	02/10/2018
18449358	4C-H6		1.50 - 1.50	02/10/2018
18449480	4C-H7		0.50 - 0.50	02/10/2018
18449489	4C-H7		1.00 - 1.00	02/10/2018
18449494	4C-H7		1.70 - 1.70	02/10/2018
18449350	4C-H8		0.50 - 0.50	02/10/2018
18449407	4C-H8		1.00 - 1.00	02/10/2018
18449467	4C-H8		1.50 - 1.50	02/10/2018
18449368	4C-H6-V		3.30 - 3.30	02/10/2018
18449502	4C-H7-V		3.30 - 3.30	02/10/2018
18449475	4C-H8-V		3.00 - 3.00	02/10/2018

Maximum Sample/Coolbox Temperature (°C) :

ISO5667-3 Water quality - Sampling - Part3 -

During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

12.4

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

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

Validated

CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

Results Legend

X Test

N No Determination Possible

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

			Lab Sample No(s)																			
			18449421			18449426			18449431			18449438			18449442			18449453			18449458	
			Customer Sample Reference																			
			4C-F5			4C-F5			4C-F5			4C-F6			4C-F6			4C-F7			4C-F7	
			AGS Reference																			
			Depth (m)			0.50 - 0.50			1.00 - 1.00			1.50 - 1.50			0.60 - 0.60			1.20 - 1.20			0.60 - 0.60			1.20 - 1.20
			Container	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB
			Sample Type	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 11					X						X						X			
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 22	X			X			X			X			X			X			X	
Ammonium Soil by Titration	All	NDPs: 0 Tests: 28		X			X			X			X			X			X				
Anions by Kone (soil)	All	NDPs: 0 Tests: 11					X						X						X			
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 11				X						X						X				
Asbestos Quantification - Full	All	NDPs: 0 Tests: 1				X																
CEN Readings	All	NDPs: 0 Tests: 22	X			X			X			X			X			X			X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 50	X	X		X	X		X	X		X	X		X	X		X	X		X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 22	X			X			X			X			X			X			X	
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 22	X			X			X			X			X			X			X	
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 28		X			X			X			X			X			X			
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 22	X			X			X			X			X			X			X	
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 28		X			X			X			X			X			X			
GRO by GC-FID (S)	All	NDPs: 0 Tests: 28			X			X			X			X			X			X		
GRO by GC-FID (W)	All	NDPs: 0 Tests: 22	X			X			X			X			X			X			X	

18449380	4C-G6		1.50 - 1.50	250g Amber Jar (ALE210)	S																						
				1kg TUB	S																						
18449376	4C-G6		1.00 - 1.00	60g VOC (ALE215)	S																						
				250g Amber Jar (ALE210)	S																						
				1kg TUB	S																						
18449372	4C-G6		0.30 - 0.30	60g VOC (ALE215)	S																						
				250g Amber Jar (ALE210)	S																						
				1kg TUB	S																						
18449398	4C-G5		1.50 - 1.50	60g VOC (ALE215)	S																						
				250g Amber Jar (ALE210)	S																						
				1kg TUB	S																						
18449394	4C-G5		1.00 - 1.00	60g VOC (ALE215)	S																						
				250g Amber Jar (ALE210)	S																						
				1kg TUB	S																						
18449389	4C-G5		0.50 - 0.50	60g VOC (ALE215)	S																						
				250g Amber Jar (ALE210)	S																						
				1kg TUB	S																						
18449446	4C-F6-V		2.30 - 2.30	60g VOC (ALE215)	S																						
				250g Amber Jar (ALE210)	S																						
18449458	4C-F7		1.20 - 1.20	60g VOC (ALE215)	S																						
				250g Amber Jar (ALE210)	S																						

Validated

CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

Results Legend

X Test

N No Determination Possible

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

Lab Sample No(s)			18449421			18449426			18449431			18449438			18449442			18449453			18449458
Customer Sample Reference			4C-F5			4C-F5			4C-F5			4C-F6			4C-F6			4C-F7			4C-F7
AGS Reference																					
Depth (m)			0.50 - 0.50			1.00 - 1.00			1.50 - 1.50			0.60 - 0.60			1.20 - 1.20			0.60 - 0.60			1.20 - 1.20
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Mercury Dissolved	All	NDPs: 0 Tests: 22	X			X			X			X			X			X			X
Metals in solid samples by OES	All	NDPs: 0 Tests: 28		X			X			X			X			X			X		
PAH by GCMS	All	NDPs: 0 Tests: 28		X			X			X			X			X			X		
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 22	X			X			X			X			X			X			X
pH	All	NDPs: 0 Tests: 28		X			X			X			X			X			X		
pH Value	All	NDPs: 0 Tests: 22	X			X			X			X			X			X			X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 28		X			X			X			X			X			X		
Sample description	All	NDPs: 0 Tests: 28		X			X			X			X			X			X		
Total Organic Carbon	All	NDPs: 0 Tests: 28		X			X			X			X			X			X		
Total Sulphate	All	NDPs: 0 Tests: 11					X						X						X		
Total Sulphur	All	NDPs: 0 Tests: 11					X						X						X		
TPH CWG (W)	All	NDPs: 0 Tests: 22	X			X			X			X			X			X			X
TPH CWG GC (S)	All	NDPs: 0 Tests: 28		X			X			X			X			X			X		
VOC MS (S)	All	NDPs: 0 Tests: 28			X			X			X			X			X			X	

16:49:15 16/10/2018

18449380	4C-G6		1.50 - 1.50	250g Amber Jar (ALE210)	S		X	X		X		X	X	X				X				
				1kg TUB	S	X			X		X								X			
18449376	4C-G6		1.00 - 1.00	60g VOC (ALE215)	S																	X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X	X	X		X				
				1kg TUB	S	X			X		X								X			
18449372	4C-G6		0.30 - 0.30	60g VOC (ALE215)	S																	X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X				X				
				1kg TUB	S	X			X		X								X			
18449398	4C-G5		1.50 - 1.50	60g VOC (ALE215)	S																	X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X	X	X		X				
				1kg TUB	S	X			X		X								X			
18449394	4C-G5		1.00 - 1.00	60g VOC (ALE215)	S																	X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X				X				
				1kg TUB	S	X			X		X								X			
18449389	4C-G5		0.50 - 0.50	60g VOC (ALE215)	S																	X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X	X	X		X				
				1kg TUB	S	X			X		X								X			
18449446	4C-F6-V		2.30 - 2.30	60g VOC (ALE215)	S																	X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X				X				
18449458	4C-F7		1.20 - 1.20	60g VOC (ALE215)	S																	X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X				X				

Validated

CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

Results Legend

X Test

N No Determination Possible

Sample Types -

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

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 11	18449380	4C-G6		1.50 - 1.50	60g VOC (ALE215)	S
			18449417	4C-G5-V		2.80 - 2.80	250g Amber Jar (ALE210)	S
			18449385	4C-G6-V		2.90 - 2.90	60g VOC (ALE215)	S
			18449507	4C-H6		0.50 - 0.50	250g Amber Jar (ALE210)	S
			18449354	4C-H6		1.00 - 1.00	250g Amber Jar (ALE210)	S
			18449358	4C-H6		1.50 - 1.50	250g Amber Jar (ALE210)	S
			18449480	4C-H7		0.50 - 0.50	250g Amber Jar (ALE210)	S
			18449489	4C-H7		1.00 - 1.00	250g Amber Jar (ALE210)	S
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 22					1kg TUB	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 28					250g Amber Jar (ALE210)	S
Anions by Kone (soil)	All	NDPs: 0 Tests: 11					250g Amber Jar (ALE210)	S
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 11					1kg TUB	S
CEN Readings	All	NDPs: 0 Tests: 22					1kg TUB	S
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 50					250g Amber Jar (ALE210)	S
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 22					1kg TUB	S
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 22					1kg TUB	S
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 28					250g Amber Jar (ALE210)	S
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 22					1kg TUB	S
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 28					250g Amber Jar (ALE210)	S
GRO by GC-FID (S)	All	NDPs: 0 Tests: 28					60g VOC (ALE215)	S
GRO by GC-FID (W)	All	NDPs: 0 Tests: 22					1kg TUB	S
Mercury Dissolved	All	NDPs: 0 Tests: 22					1kg TUB	S

18449475	4C-H8-V		3.00 - 3.00	60g VOC (ALE215)	S														X				
				250g Amber Jar (ALE210)	S			X				X			X		X						
18449502	4C-H7-V		3.30 - 3.30	60g VOC (ALE215)	S														X				
				250g Amber Jar (ALE210)	S			X				X			X		X						
18449368	4C-H6-V		3.30 - 3.30	60g VOC (ALE215)	S														X				
				250g Amber Jar (ALE210)	S			X				X			X		X						
18449467	4C-H8		1.50 - 1.50	60g VOC (ALE215)	S														X				
				250g Amber Jar (ALE210)	S	X		X	X			X			X		X						
				1kg TUB	S		X			X	X	X	X	X		X				X	X		
18449407	4C-H8		1.00 - 1.00	60g VOC (ALE215)	S														X				
				250g Amber Jar (ALE210)	S			X				X			X		X						
				1kg TUB	S		X				X	X	X	X		X				X	X		
18449350	4C-H8		0.50 - 0.50	60g VOC (ALE215)	S														X				
				250g Amber Jar (ALE210)	S	X		X	X			X			X		X						
				1kg TUB	S		X			X	X	X	X	X		X				X	X		
18449494	4C-H7		1.70 - 1.70	60g VOC (ALE215)	S														X				
				250g Amber Jar (ALE210)	S			X				X			X		X						
				1kg TUB	S		X				X	X	X	X		X				X	X		
18449489	4C-H7		1.00 - 1.00	60g VOC (ALE215)	S														X				

Validated

CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

Results Legend

X Test

N No Determination Possible

Sample Types -

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

Lab Sample No(s)			18449380	18449417	18449385	18449507			18449354			18449358			18449480			18449489	
Customer Sample Reference			4C-G6	4C-G5-V	4C-G6-V	4C-H6			4C-H6			4C-H6			4C-H7			4C-H7	
AGS Reference																				
Depth (m)			1.50 - 1.50	2.80 - 2.80	2.90 - 2.90	0.50 - 0.50			1.00 - 1.00			1.50 - 1.50			0.50 - 0.50			1.00 - 1.00	
Container			60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Metals in solid samples by OES	All	NDPs: 0 Tests: 28		X		X			X			X			X			X			X
PAH by GCMS	All	NDPs: 0 Tests: 28		X		X			X			X			X			X			X
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 22						X			X			X			X			X	
pH	All	NDPs: 0 Tests: 28		X		X			X			X			X			X			X
pH Value	All	NDPs: 0 Tests: 22						X			X			X			X			X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 28		X		X			X			X			X			X			X
Sample description	All	NDPs: 0 Tests: 28		X		X			X			X			X			X			X
Total Organic Carbon	All	NDPs: 0 Tests: 28		X		X			X			X			X			X			X
Total Sulphate	All	NDPs: 0 Tests: 11							X						X						X
Total Sulphur	All	NDPs: 0 Tests: 11							X						X						X
TPH CWG (W)	All	NDPs: 0 Tests: 22						X			X			X			X			X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 28		X		X			X			X			X			X			X
VOC MS (S)	All	NDPs: 0 Tests: 28	X		X		X			X			X			X			X		

18449475	4C-H8-V		3.00 - 3.00	60g VOC (ALE215)	S		
				250g Amber Jar (ALE210)	S	X	
18449502	4C-H7-V		3.30 - 3.30	60g VOC (ALE215)	S		X
				250g Amber Jar (ALE210)	S	X	
18449368	4C-H6-V		3.30 - 3.30	60g VOC (ALE215)	S	X	
				250g Amber Jar (ALE210)	S	X	
18449467	4C-H8		1.50 - 1.50	60g VOC (ALE215)	S		X
				250g Amber Jar (ALE210)	S	X	
				1kg TUB	S	X	
18449407	4C-H8		1.00 - 1.00	60g VOC (ALE215)	S		X
				250g Amber Jar (ALE210)	S	X	
				1kg TUB	S	X	
18449350	4C-H8		0.50 - 0.50	60g VOC (ALE215)	S		X
				250g Amber Jar (ALE210)	S	X	
				1kg TUB	S	X	
18449494	4C-H7		1.70 - 1.70	60g VOC (ALE215)	S		X
				250g Amber Jar (ALE210)	S	X	
				1kg TUB	S	X	
18449489	4C-H7		1.00 - 1.00	60g VOC (ALE215)	S		X

CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

Sample Descriptions

Grain Sizes

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

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
18449421	4C-F5	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	Vegetation
18449426	4C-F5	1.00 - 1.00	Dark Brown	Sandy Loam	Crushed Brick	Stones
18449431	4C-F5	1.50 - 1.50	Dark Brown	Loamy Sand	Stones	Stones
18449438	4C-F6	0.60 - 0.60	Dark Brown	Loamy Sand	Stones	Stones
18449442	4C-F6	1.20 - 1.20	Dark Brown	Loamy Sand	Stones	Stones
18449453	4C-F7	0.60 - 0.60	Dark Brown	Loamy Sand	Stones	Stones
18449458	4C-F7	1.20 - 1.20	Dark Brown	Loamy Sand	Crushed Brick	Stones
18449446	4C-F6-V	2.30 - 2.30	Dark Brown	Loamy Sand	Stones	Vegetation
18449389	4C-G5	0.50 - 0.50	Dark Brown	Stone/Soil	Stones	Vegetation
18449394	4C-G5	1.00 - 1.00	Dark Brown	Stone/Soil	Stones	N/A
18449398	4C-G5	1.50 - 1.50	Dark Brown	Stone/Soil	Stones	N/A
18449372	4C-G6	0.30 - 0.30	Dark Brown	Sandy Loam	Crushed Brick	Stones
18449376	4C-G6	1.00 - 1.00	Dark Brown	Sandy Loam	Stones	None
18449380	4C-G6	1.50 - 1.50	Dark Brown	Loamy Sand	Stones	None
18449417	4C-G5-V	2.80 - 2.80	Dark Brown	Silty Clay Loam	Vegetation	N/A
18449385	4C-G6-V	2.90 - 2.90	Dark Brown	Silt Loam	Vegetation	Stones
18449354	4C-H6	1.00 - 1.00	Dark Brown	Sandy Loam	Stones	None
18449358	4C-H6	1.50 - 1.50	Dark Brown	Sandy Loam	Crushed Brick	Stones
18449507	4C-H6	0.50 - 0.50	Dark Brown	Sandy Loam	Crushed Brick	Stones
18449480	4C-H7	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	None
18449489	4C-H7	1.00 - 1.00	Dark Brown	Stone/Soil	Stones	N/A
18449494	4C-H7	1.70 - 1.70	Dark Brown	Stone/Soil	Stones	None
18449350	4C-H8	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	None
18449407	4C-H8	1.00 - 1.00	Dark Brown	Loamy Sand	Crushed Brick	Stones
18449467	4C-H8	1.50 - 1.50	Dark Brown	Loamy Sand	Stones	Vegetation
18449368	4C-H6-V	3.30 - 3.30	Dark Brown	Silty Clay Loam	Vegetation	N/A
18449502	4C-H7-V	3.30 - 3.30	Grey	Clay	None	None
18449475	4C-H8-V	3.00 - 3.00	Dark Brown	Silt Loam	Stones	None

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

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

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

CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

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

Component	LOD/Units	Method	Customer Sample Ref.	4C-F5	4C-F5	4C-F5	4C-F6	4C-F6	4C-F7
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.60 - 0.60	1.20 - 1.20	0.60 - 0.60
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	02/10/2018	02/10/2018	02/10/2018	02/10/2018	02/10/2018	02/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	03/10/2018	03/10/2018	03/10/2018	03/10/2018	03/10/2018	03/10/2018
			SDG Ref	181003-43	181003-43	181003-43	181003-43	181003-43	181003-43
			Lab Sample No.(s)	18449421	18449426	18449431	18449438	18449442	18449453
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		8.8	1.8	0	1.4	1.9	0.69
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132			0.245		0.207		0.17
Sulphate, Total potential	<0.06 %	TM132			0.735		0.621		0.51
Soil Organic Matter (SOM)	<0.35 %	TM132		3.57 #	3.69 #	1.76 #	5.33 #	2.74 #	4.71 #
pH	1 pH Units	TM133		11.8 M	11.6 M	11.6 M	10.1 M	11.4 M	10.8 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		21 M	8.09 M	7.04 M	9.91 M	6.6 M	10.1 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	0.353 M	0.708 M	<0.2 M	0.0287 M	<0.2 M
Chromium	<0.9 mg/kg	TM181		120 M	101 M	78.3 M	109 M	46.7 M	89.8 M
Copper	<1.4 mg/kg	TM181		29.8 M	18.9 M	18 M	21.2 M	10.8 M	19.5 M
Iron	<1000 mg/kg	TM181		302000 #	240000 #	273000 #	158000 #	189000 #	226000 #
Lead	<0.7 mg/kg	TM181		45.7 M	20.7 M	31 M	65.1 M	19.7 M	91.3 M
Manganese	<0.13 mg/kg	TM181		28500 M	24900 M	16600 M	10700 M	11600 M	10400 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<0.14 M	<0.14 M	<1.4 M	<0.14 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		23.9 M	14.4 M	11 M	25.8 M	14.4 M	24.1 M
Selenium	<1 mg/kg	TM181		16.3 #	12.7 #	8.96 #	<10 #	7.11 #	<10 #
Vanadium	<0.2 mg/kg	TM181		562 #	454 #	298 #	642 #	124 #	357 #
Zinc	<1.9 mg/kg	TM181		168 M	86.9 M	127 M	235 M	92.6 M	329 M
Sulphate, acid soluble (total)	<0.02 %	TM221			0.706		0.381		0.318
Calcium	<21 mg/kg	TM224			138000		151000		136000
Magnesium	<8 mg/kg	TM224			11400		10900		13400
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243			0.207 M		0.154 M		0.152 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304			<0.001 #				
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304			<0.001 #				
Additional Asbestos Components (Using TM048)		TM304			None #				
Analysts Comments		TM304			N/A				
Asbestos Quantification - Total - %	<0.001 %	TM304			<0.001 #				

Validated

CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

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

Component	LOD/Units	Method	Customer Sample Ref.	4C-F7	4C-F6-V	4C-G5	4C-G5	4C-G5	4C-G6
			Depth (m)	1.20 - 1.20	2.30 - 2.30	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	02/10/2018	02/10/2018	02/10/2018	02/10/2018	02/10/2018	02/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	03/10/2018	03/10/2018	03/10/2018	03/10/2018	03/10/2018	03/10/2018
			SDG Ref	181003-43	181003-43	181003-43	181003-43	181003-43	181003-43
			Lab Sample No.(s)	18449458	18449446	18449389	18449394	18449398	18449372
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		3.3	28	9.1	9.8	12	1.7
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	291 M	<12 #	<12 #	<12 #	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 #	<0.01 #	<0.01 #	0.0102 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 #	<0.01 #	<0.01 #	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 #	<0.015 #	<0.015 #	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 #	<0.035 #	<0.035 #	<0.035 M
Sulphur, Total	<0.02 %	TM132				0.251		0.147	
Sulphate, Total potential	<0.06 %	TM132				0.753		0.441	
Soil Organic Matter (SOM)	<0.35 %	TM132		4.62 #	5.17 #	5.45 #	7.9 #	2.21 #	2.83 #
pH	1 pH Units	TM133		10.3 M	7.33 M	11.4 #	11.3 #	11.7 #	9.69 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 #	<1 #	<1 #	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 #	<1 #	<1 #	<1 M
Arsenic	<0.6 mg/kg	TM181		9.87 M	12.3 M	8.55 #	12.1 #	10.4 #	6.4 M
Cadmium	<0.02 mg/kg	TM181		2.58 M	<0.02 M	0.261 #	<0.2 #	0.711 #	0.154 M
Chromium	<0.9 mg/kg	TM181		320 M	37.2 M	127 #	342 #	7.82 #	19.1 M
Copper	<1.4 mg/kg	TM181		22.7 M	16 M	14.6 #	23.1 #	20.8 #	10.3 M
Iron	<1000 mg/kg	TM181		206000 #	24300 #	157000 #	155000 #	299000 #	249000 #
Lead	<0.7 mg/kg	TM181		143 M	33.9 M	57.4 #	31.2 #	25 #	14.9 M
Manganese	<0.13 mg/kg	TM181		10900 M	175 M	13100 #	22000 #	6530 #	6670 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<0.14 M	<0.14 #	<1.4 #	<0.14 #	<0.14 M
Nickel	<0.2 mg/kg	TM181		37.7 M	25.8 M	13.7 #	57.8 #	15.1 #	41.5 M
Selenium	<1 mg/kg	TM181		<10 #	<1 #	7.04 #	12.8 #	5.22 #	4.66 #
Vanadium	<0.2 mg/kg	TM181		258 #	53.6 #	363 #	894 #	169 #	250 #
Zinc	<1.9 mg/kg	TM181		1380 M	126 M	275 #	131 #	99.4 #	344 M
Sulphate, acid soluble (total)	<0.02 %	TM221				0.421		0.346	
Calcium	<21 mg/kg	TM224				159000		77000	
Magnesium	<8 mg/kg	TM224				12700		9830	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243				0.179 #		0.187 #	

Validated

CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

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

Component	LOD/Units	Method	Customer Sample Ref.	4C-G6	4C-G6	4C-G5-V	4C-G6-V	4C-H6	4C-H6
			Depth (m)	1.00 - 1.00	1.50 - 1.50	2.80 - 2.80	2.90 - 2.90	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	02/10/2018	02/10/2018	02/10/2018	02/10/2018	02/10/2018	02/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	03/10/2018	03/10/2018	03/10/2018	03/10/2018	03/10/2018	03/10/2018
			SDG Ref	181003-43	181003-43	181003-43	181003-43	181003-43	181003-43
			Lab Sample No.(s)	18449376	18449380	18449417	18449385	18449507	18449354
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		9.7	8.6	29	63	0	4.9
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	116 M	175 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	0.0846 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	0.0846 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.265				0.117	
Sulphate, Total potential	<0.06 %	TM132		0.795				0.351	
Soil Organic Matter (SOM)	<0.35 %	TM132		0.974 #	1.44 #	1.72 #	43.6 #	4.9 #	29.8 #
pH	1 pH Units	TM133		11.4 M	11.2 M	8 M	6.87 M	10.4 M	10.8 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		9.75 M	13.4 M	13.3 M	27.4 M	16.1 M	10.7 M
Cadmium	<0.02 mg/kg	TM181		0.966 M	<0.02 M	<0.02 M	<0.02 M	0.558 M	<0.2 M
Chromium	<0.9 mg/kg	TM181		8.19 M	38.7 M	35.8 M	12.1 M	99.3 M	369 M
Copper	<1.4 mg/kg	TM181		24.7 M	14.9 M	17.1 M	20.7 M	43.4 M	42.6 M
Iron	<1000 mg/kg	TM181		352000 #	96500 #	32300 #	23500 #	226000 #	132000 #
Lead	<0.7 mg/kg	TM181		20.5 M	4.47 M	29.6 M	20.2 M	67.6 M	26.7 M
Manganese	<0.13 mg/kg	TM181		10000 M	10400 M	967 M	708 M	10500 M	15500 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		14.3 M	4.71 M	42.8 M	27.3 M	27 M	238 M
Selenium	<1 mg/kg	TM181		7.14 #	5.1 #	1.45 #	1.81 #	6.15 #	<10 #
Vanadium	<0.2 mg/kg	TM181		143 #	121 #	57 #	37.6 #	309 #	281 #
Zinc	<1.9 mg/kg	TM181		126 M	53.7 M	135 M	130 M	301 M	138 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.42				0.191	
Calcium	<21 mg/kg	TM224		64100				108000	
Magnesium	<8 mg/kg	TM224		5710				12700	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.175 M				0.0922 M	

CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

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

Component	LOD/Units	Method	Customer Sample Ref.	4C-H6	4C-H7	4C-H7	4C-H7	4C-H8	4C-H8
			Depth (m)	1.50 - 1.50	0.50 - 0.50	1.00 - 1.00	1.70 - 1.70	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	02/10/2018	02/10/2018	02/10/2018	02/10/2018	02/10/2018	02/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	03/10/2018	03/10/2018	03/10/2018	03/10/2018	03/10/2018	03/10/2018
			SDG Ref	181003-43	181003-43	181003-43	181003-43	181003-43	181003-43
			Lab Sample No.(s)	18449358	18449480	18449489	18449494	18449350	18449407
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		0	5.8	7.3	6.7	3.8	0
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 #	<12 #	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0319 M	<0.01 #	<0.01 #	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 #	<0.01 #	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 #	<0.015 #	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 #	<0.035 #	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.247		0.228		0.435	
Sulphate, Total potential	<0.06 %	TM132		0.741		0.684		1.31	
Soil Organic Matter (SOM)	<0.35 %	TM132		8.22 #	5.95 #	7.17 #	4.43 #	3.88 #	6.05 #
pH	1 pH Units	TM133		9.86 M	11.1 M	10.7 #	10.8 #	11.4 M	11.3 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 #	<1 #	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 #	<1 #	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		11.1 M	75.5 M	30.8 #	89.2 #	5.32 M	9.16 M
Cadmium	<0.02 mg/kg	TM181		0.174 M	1.03 M	0.513 #	<0.2 #	<0.02 M	2.38 M
Chromium	<0.9 mg/kg	TM181		49.5 M	37.5 M	25.9 #	165 #	<0.9 M	135 M
Copper	<1.4 mg/kg	TM181		17.7 M	38.4 M	26 #	32.5 #	5.56 M	74.6 M
Iron	<1000 mg/kg	TM181		166000 #	238000 #	135000 #	167000 #	79700 #	224000 #
Lead	<0.7 mg/kg	TM181		41.6 M	76.3 M	97.4 #	56.1 #	37.4 M	112 M
Manganese	<0.13 mg/kg	TM181		6130 M	43000 M	15000 #	39900 #	2460 M	8710 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 #	<1.4 #	<0.14 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		18 M	38.9 M	64 #	36 #	13.9 M	29.8 M
Selenium	<1 mg/kg	TM181		3.89 #	20.9 #	7.99 #	25 #	1.7 #	<10 #
Vanadium	<0.2 mg/kg	TM181		92.1 #	137 #	75.8 #	166 #	54.9 #	143 #
Zinc	<1.9 mg/kg	TM181		180 M	384 M	433 #	240 #	193 M	366 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.254		0.28		0.315	
Calcium	<21 mg/kg	TM224		86300		138000		114000	
Magnesium	<8 mg/kg	TM224		11800		29800		41600	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.103 M		0.164 #		0.0913 M	

CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

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

Component	LOD/Units	Method	Customer Sample Ref.	4C-H8	4C-H6-V	4C-H7-V	4C-H8-V		
			Depth (m)	1.50 - 1.50	3.30 - 3.30	3.30 - 3.30	3.00 - 3.00		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	02/10/2018	02/10/2018	02/10/2018	02/10/2018		
			Sample Time	00:00	00:00	00:00	00:00		
			Date Received	03/10/2018	03/10/2018	03/10/2018	03/10/2018		
			SDG Ref	181003-43	181003-43	181003-43	181003-43		
			Lab Sample No.(s)	18449467	18449368	18449502	18449475		
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		3.2	28	28	31		
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	141 M	36.9 M	254 M		
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M		
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0973 M	<0.01 M	<0.01 M		
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	0.0278 M	<0.015 M	<0.015 M		
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	0.125 M	<0.035 M	<0.035 M		
Sulphur, Total	<0.02 %	TM132		0.249					
Sulphate, Total potential	<0.06 %	TM132		0.747					
Soil Organic Matter (SOM)	<0.35 %	TM132		5 #	3.81 #	1.95 #	5.1 #		
pH	1 pH Units	TM133		11.2 M	7.22 M	8.09 M	7.26 M		
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M		
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M		
Arsenic	<0.6 mg/kg	TM181		8.37 M	12.3 M	9.62 M	12.8 M		
Cadmium	<0.02 mg/kg	TM181		0.534 M	<0.02 M	<0.02 M	<0.02 M		
Chromium	<0.9 mg/kg	TM181		434 M	36.3 M	34.6 M	37.8 M		
Copper	<1.4 mg/kg	TM181		25.7 M	16 M	14 M	17.9 M		
Iron	<1000 mg/kg	TM181		194000 #	28300 #	30500 #	26900 #		
Lead	<0.7 mg/kg	TM181		65.8 M	52.2 M	28.8 M	34.5 M		
Manganese	<0.13 mg/kg	TM181		18800 M	289 M	353 M	583 M		
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M		
Nickel	<0.2 mg/kg	TM181		15.1 M	37.2 M	37.2 M	25.8 M		
Selenium	<1 mg/kg	TM181		9.23 #	<1 #	<1 #	1.16 #		
Vanadium	<0.2 mg/kg	TM181		322 #	57.3 #	57.2 #	61.3 #		
Zinc	<1.9 mg/kg	TM181		223 M	143 M	133 M	136 M		
Sulphate, acid soluble (total)	<0.02 %	TM221		0.328					
Calcium	<21 mg/kg	TM224		151000					
Magnesium	<8 mg/kg	TM224		12100					
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.0935 M					

Validated

CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

PAH by GCMS

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

Component	LOD/Units	Method	Customer Sample Ref.	4C-F5	4C-F5	4C-F5	4C-F6	4C-F6	4C-F7
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.60 - 0.60	1.20 - 1.20	0.60 - 0.60
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	02/10/2018	02/10/2018	02/10/2018	02/10/2018	02/10/2018	02/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	03/10/2018	03/10/2018	03/10/2018	03/10/2018	03/10/2018	03/10/2018
			SDG Ref	181003-43	181003-43	181003-43	181003-43	181003-43	181003-43
			Lab Sample No.(s)	18449421	18449426	18449431	18449438	18449442	18449453
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		81	95.5	80.4	80.9	82	81.7
Acenaphthene-d10 % recovery**	%	TM218		85.8	93.7	78.4	78	79.3	89.7
Phenanthrene-d10 % recovery**	%	TM218		91.1	91.8	78.3	77	80	88.5
Chrysene-d12 % recovery**	%	TM218		84	89.9	76.6	72.2	74.5	83.6
Perylene-d12 % recovery**	%	TM218		81.6	91.3	74.6	70.9	74.3	79
Naphthalene	<0.009 mg/kg	TM218		0.104 M	0.0711 M	0.0632 M	0.185 M	0.133 M	0.166 M
Acenaphthylene	<0.012 mg/kg	TM218		0.0526 M	0.125 M	0.0259 M	0.0793 M	0.0596 M	0.081 M
Acenaphthene	<0.008 mg/kg	TM218		0.0402 M	0.0355 M	0.0226 M	0.0155 M	0.0188 M	<0.04 M
Fluorene	<0.01 mg/kg	TM218		0.0375 M	0.15 M	0.0224 M	0.0507 M	0.0329 M	0.0509 M
Phenanthrene	<0.015 mg/kg	TM218		0.593 M	1.37 M	0.306 M	0.459 M	0.331 M	0.438 M
Anthracene	<0.016 mg/kg	TM218		0.128 M	0.357 M	0.0625 M	0.12 M	0.0872 M	0.104 M
Fluoranthene	<0.017 mg/kg	TM218		1.44 M	2.27 M	0.729 M	0.72 M	0.647 M	0.756 M
Pyrene	<0.015 mg/kg	TM218		1.3 M	1.85 M	0.669 M	0.537 M	0.54 M	0.612 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.809 M	1.08 M	0.412 M	0.324 M	0.365 M	0.36 M
Chrysene	<0.01 mg/kg	TM218		0.848 M	1.06 M	0.456 M	0.291 M	0.395 M	0.379 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		1.14 M	1.26 M	0.591 M	0.358 M	0.638 M	0.72 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.502 M	0.46 M	0.233 M	0.146 M	0.237 M	0.293 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.907 M	1.15 M	0.461 M	0.31 M	0.413 M	0.347 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.829 M	0.859 M	0.333 M	0.227 M	0.332 M	0.368 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.115 M	0.157 M	0.0627 M	0.0442 M	0.0719 M	<0.115 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.777 M	0.991 M	0.413 M	0.246 M	0.328 M	0.282 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		9.62	13.2	4.86	4.11	4.63	4.96

Validated

CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

PAH by GCMS

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

Component	LOD/Units	Method	Customer Sample Ref.	4C-F7	4C-F6-V	4C-G5	4C-G5	4C-G5	4C-G6
			Depth (m)	1.20 - 1.20	2.30 - 2.30	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	02/10/2018	02/10/2018	02/10/2018	02/10/2018	02/10/2018	02/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	03/10/2018	03/10/2018	03/10/2018	03/10/2018	03/10/2018	03/10/2018
			SDG Ref	181003-43	181003-43	181003-43	181003-43	181003-43	181003-43
			Lab Sample No.(s)	18449458	18449446	18449389	18449394	18449398	18449372
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		95	94	86.9	83.3	79.7	17
Acenaphthene-d10 % recovery**	%	TM218		88.7	93.4	78.5	82.8	85.9	16.2
Phenanthrene-d10 % recovery**	%	TM218		89.5	93.4	79.9	78.6	83.2	16
Chrysene-d12 % recovery**	%	TM218		83.3	88.9	76.2	77.3	81.8	15.7
Perylene-d12 % recovery**	%	TM218		79.3	89.4	72.7	71.9	80.6	15.1
Naphthalene	<0.009 mg/kg	TM218		0.245 M	0.0211 M	0.215 #	0.117 #	0.0495 #	0.0255 M
Acenaphthylene	<0.012 mg/kg	TM218		0.102 M	<0.012 M	0.0552 #	<0.06 #	<0.012 #	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		0.0216 M	<0.008 M	0.0187 #	0.0463 #	0.015 #	0.0127 M
Fluorene	<0.01 mg/kg	TM218		0.0545 M	<0.01 M	0.0569 #	<0.05 #	0.0173 #	0.0181 M
Phenanthrene	<0.015 mg/kg	TM218		0.563 M	<0.015 M	0.457 #	0.384 #	0.14 #	0.151 M
Anthracene	<0.016 mg/kg	TM218		0.148 M	<0.016 M	0.0927 #	<0.08 #	0.0269 #	0.0465 M
Fluoranthene	<0.017 mg/kg	TM218		1.05 M	<0.017 M	0.746 #	1.16 #	0.248 #	0.274 M
Pyrene	<0.015 mg/kg	TM218		0.89 M	<0.015 M	0.737 #	1.31 #	0.252 #	0.251 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.523 M	<0.014 M	0.49 #	1.07 #	0.152 #	0.222 M
Chrysene	<0.01 mg/kg	TM218		0.552 M	<0.01 M	0.502 #	1.12 #	0.159 #	0.25 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.645 M	<0.015 M	0.566 #	1.7 #	0.206 #	0.3 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.236 M	<0.014 M	0.277 #	0.633 #	0.0937 #	0.123 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.505 M	<0.015 M	0.654 #	1.59 #	0.178 #	0.274 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.325 M	<0.018 M	0.509 #	1.11 #	0.176 #	0.21 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.0639 M	<0.023 M	0.089 #	0.193 #	<0.023 #	0.0404 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.377 M	<0.024 M	0.539 #	1.16 #	0.155 #	0.206 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		6.3	<0.118	6	11.6	1.87	2.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

PAH by GCMS

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

Component	LOD/Units	Method	Customer Sample Ref.	4C-G6	4C-G6	4C-G5-V	4C-G6-V	4C-H6	4C-H6
			Depth (m)	1.00 - 1.00	1.50 - 1.50	2.80 - 2.80	2.90 - 2.90	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	02/10/2018	02/10/2018	02/10/2018	02/10/2018	02/10/2018	02/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	03/10/2018	03/10/2018	03/10/2018	03/10/2018	03/10/2018	03/10/2018
			SDG Ref	181003-43	181003-43	181003-43	181003-43	181003-43	181003-43
			Lab Sample No.(s)	18449376	18449380	18449417	18449385	18449507	18449354
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		83.4	79.2	75.8	83.6	90.3	77.5
Acenaphthene-d10 % recovery**	%	TM218		77.8	77.2	82.9	89.8	81.6	88.5
Phenanthrene-d10 % recovery**	%	TM218		78.9	75.5	87.9	94.7	78.8	84.7
Chrysene-d12 % recovery**	%	TM218		73.4	72.4	91.6	82.8	70.9	79
Perylene-d12 % recovery**	%	TM218		76.7	71.2	90.6	76.7	70.1	82.4
Naphthalene	<0.009 mg/kg	TM218		0.037 M	0.0238 M	<0.009 M	<0.009 M	0.209 M	0.268 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	0.0171 M	<0.012 M	<0.012 M	<0.12 M	0.115 M
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	<0.008 M	<0.008 M	<0.008 M	<0.08 M	0.024 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.1 M	0.0777 M
Phenanthrene	<0.015 mg/kg	TM218		0.094 M	0.127 M	<0.015 M	0.0492 M	0.406 M	0.638 M
Anthracene	<0.016 mg/kg	TM218		0.0223 M	0.0402 M	<0.016 M	<0.016 M	<0.16 M	0.165 M
Fluoranthene	<0.017 mg/kg	TM218		0.181 M	0.269 M	<0.017 M	0.155 M	0.63 M	1.1 M
Pyrene	<0.015 mg/kg	TM218		0.215 M	0.256 M	<0.015 M	0.0943 M	0.491 M	0.814 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.114 M	0.196 M	<0.014 M	0.0484 M	0.32 M	0.498 M
Chrysene	<0.01 mg/kg	TM218		0.129 M	0.228 M	<0.01 M	0.0594 M	0.33 M	0.435 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.148 M	0.306 M	<0.015 M	0.0822 M	0.323 M	0.662 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.0531 M	0.111 M	<0.014 M	<0.014 M	0.154 M	0.277 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.122 M	0.139 M	<0.015 M	<0.015 M	0.297 M	0.494 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.1 M	0.115 M	<0.018 M	<0.018 M	0.232 M	0.51 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	0.0288 M	<0.023 M	<0.023 M	<0.23 M	0.077 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.115 M	0.111 M	<0.024 M	<0.024 M	0.273 M	0.428 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		1.33	1.97	<0.118	0.488	3.67	6.58

CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

PAH by GCMS

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

Component	LOD/Units	Method	Customer Sample Ref.	4C-H6	4C-H7	4C-H7	4C-H7	4C-H8	4C-H8
			Depth (m)	1.50 - 1.50	0.50 - 0.50	1.00 - 1.00	1.70 - 1.70	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	02/10/2018	02/10/2018	02/10/2018	02/10/2018	02/10/2018	02/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	03/10/2018	03/10/2018	03/10/2018	03/10/2018	03/10/2018	03/10/2018
			SDG Ref	181003-43	181003-43	181003-43	181003-43	181003-43	181003-43
			Lab Sample No.(s)	18449358	18449480	18449489	18449494	18449350	18449407
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		96.4	80.7	80.2	107	84.4	88.6
Acenaphthene-d10 % recovery**	%	TM218		94.4	87.2	84.8	88.8	83.1	83.2
Phenanthrene-d10 % recovery**	%	TM218		93.4	87.2	86.7	91	80.9	82.4
Chrysene-d12 % recovery**	%	TM218		89.2	78.9	76.7	83.4	76.1	82.1
Perylene-d12 % recovery**	%	TM218		84.6	77.2	79.1	84.7	71.6	78.8
Naphthalene	<0.009 mg/kg	TM218		0.366 M	0.417 M	0.236 #	0.164 #	0.345 M	0.324 M
Acenaphthylene	<0.012 mg/kg	TM218		0.179 M	0.287 M	0.172 #	0.0459 #	0.196 M	0.158 M
Acenaphthene	<0.008 mg/kg	TM218		0.0261 M	0.0819 M	0.0266 #	0.0112 #	0.0376 M	<0.04 M
Fluorene	<0.01 mg/kg	TM218		0.0838 M	0.48 M	0.129 #	0.0365 #	0.168 M	0.0826 M
Phenanthrene	<0.015 mg/kg	TM218		0.817 M	2.89 M	1.03 #	0.43 #	1.34 M	0.751 M
Anthracene	<0.016 mg/kg	TM218		0.229 M	0.553 M	0.206 #	0.0905 #	0.376 M	0.214 M
Fluoranthene	<0.017 mg/kg	TM218		1.33 M	3.71 M	1.51 #	0.648 #	2.35 M	1.5 M
Pyrene	<0.015 mg/kg	TM218		0.999 M	2.52 M	1.1 #	0.505 #	1.88 M	1.18 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.708 M	1.43 M	0.666 #	0.256 #	1.03 M	0.703 M
Chrysene	<0.01 mg/kg	TM218		0.677 M	1.22 M	0.665 #	0.248 #	1.02 M	0.622 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		1.04 M	1.5 M	1.06 #	0.364 #	0.983 M	1.04 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.324 M	0.588 M	0.34 #	0.135 #	0.468 M	0.335 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.654 M	1.22 M	0.615 #	0.237 #	0.923 M	0.651 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.465 M	1.13 M	0.625 #	0.221 #	0.696 M	0.45 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.102 M	0.176 M	0.12 #	0.0346 #	0.13 M	<0.115 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.537 M	0.939 M	0.46 #	0.206 #	0.719 M	0.481 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		8.53	19.1	8.95	3.63	12.7	8.49

Validated

CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

PAH by GCMS

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

Component	LOD/Units	Method	Customer Sample Ref.	4C-H8	4C-H6-V	4C-H7-V	4C-H8-V		
			Depth (m)	1.50 - 1.50	3.30 - 3.30	3.30 - 3.30	3.00 - 3.00		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	02/10/2018	02/10/2018	02/10/2018	02/10/2018		
			Sample Time	00:00	00:00	00:00	00:00		
			Date Received	03/10/2018	03/10/2018	03/10/2018	03/10/2018		
			SDG Ref	181003-43	181003-43	181003-43	181003-43		
			Lab Sample No.(s)	18449467	18449368	18449502	18449475		
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		93.9	80.7	77.6	77.5		
Acenaphthene-d10 % recovery**	%	TM218		88.5	77.9	85.1	78		
Phenanthrene-d10 % recovery**	%	TM218		90.9	78.1	87.5	80.3		
Chrysene-d12 % recovery**	%	TM218		91.2	75.5	78.1	78.7		
Perylene-d12 % recovery**	%	TM218		86.8	76.5	74.8	76.8		
Naphthalene	<0.009 mg/kg	TM218		0.118 M	<0.009 M	<0.009 M	<0.009 M		
Acenaphthylene	<0.012 mg/kg	TM218		0.042 M	<0.012 M	<0.012 M	<0.012 M		
Acenaphthene	<0.008 mg/kg	TM218		0.0117 M	<0.008 M	<0.008 M	<0.008 M		
Fluorene	<0.01 mg/kg	TM218		0.0311 M	<0.01 M	<0.01 M	<0.01 M		
Phenanthrene	<0.015 mg/kg	TM218		0.256 M	<0.015 M	<0.015 M	<0.015 M		
Anthracene	<0.016 mg/kg	TM218		0.0676 M	<0.016 M	<0.016 M	<0.016 M		
Fluoranthene	<0.017 mg/kg	TM218		0.419 M	<0.017 M	<0.017 M	0.0299 M		
Pyrene	<0.015 mg/kg	TM218		0.346 M	<0.015 M	<0.015 M	0.0231 M		
Benz(a)anthracene	<0.014 mg/kg	TM218		0.206 M	<0.014 M	<0.014 M	<0.014 M		
Chrysene	<0.01 mg/kg	TM218		0.2 M	<0.01 M	<0.01 M	<0.01 M		
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.325 M	<0.015 M	<0.015 M	<0.015 M		
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.114 M	<0.014 M	<0.014 M	<0.014 M		
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.19 M	<0.015 M	<0.015 M	<0.015 M		
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.14 M	<0.018 M	<0.018 M	<0.018 M		
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.0332 M	<0.023 M	<0.023 M	<0.023 M		
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.14 M	<0.024 M	<0.024 M	<0.024 M		
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		2.64	<0.118	<0.118	<0.118		

CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

TPH CWG (S)

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

Component	LOD/Units	Method	Customer Sample Ref.	4C-F5	4C-F5	4C-F5	4C-F6	4C-F6	4C-F7
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.60 - 0.60	1.20 - 1.20	0.60 - 0.60
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	02/10/2018	02/10/2018	02/10/2018	02/10/2018	02/10/2018	02/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	03/10/2018	03/10/2018	03/10/2018	03/10/2018	03/10/2018	03/10/2018
			SDG Ref	181003-43	181003-43	181003-43	181003-43	181003-43	181003-43
			Lab Sample No.(s)	18449421	18449426	18449431	18449438	18449442	18449453
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		78	87	96	56	42.8	66
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		0.171 M	0.383 M	0.263 M	<0.1 #	<0.1 #	<0.1 #
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.01	0.012	<0.01	<0.01	<0.01
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.0208	0.0234	0.04	0.0112	0.0133	<0.01
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.0219	0.0468	0.036	0.0162	0.0102	<0.01
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.0658	0.166	0.091	0.0122	0.0265	<0.01
Aliphatics >C12-C16	<0.1 mg/kg	TM173		7.79	17.4	2.83	<0.1	4.37	2.53
Aliphatics >C16-C21	<0.1 mg/kg	TM173		17.2	31.2	7.7	8.44	11	10.2
Aliphatics >C21-C35	<0.1 mg/kg	TM173		78.8	86.1	50.8	76.7	61.9	123
Aliphatics >C35-C44	<0.1 mg/kg	TM173		13.7	27.5	8.2	21.6	9.28	64.5
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		117	162	69.6	107	86.6	200
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.0142	0.0316	0.024	0.0101	<0.01	<0.01
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		0.0438	0.111	0.061	<0.01	0.0173	<0.01
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		4.13	3.47	2.32	2.19	3.7	4.5
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		15.6	13.7	8.98	12	14.8	12.6
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		91.5	93.6	59.1	65.5	99.3	92.8
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		43.7	46.3	29.4	38.6	38	92.4
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		16.2	17.7	11.1	14.9	13.1	41.8
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		155	157	99.9	118	156	202
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		273	320	170	225	242	402

Validated

CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

TPH CWG (S)

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

Component	LOD/Units	Method	Customer Sample Ref.	4C-F7	4C-F6-V	4C-G5	4C-G5	4C-G5	4C-G6
			Depth (m)	1.20 - 1.20	2.30 - 2.30	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	02/10/2018	02/10/2018	02/10/2018	02/10/2018	02/10/2018	02/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	03/10/2018	03/10/2018	03/10/2018	03/10/2018	03/10/2018	03/10/2018
			SDG Ref	181003-43	181003-43	181003-43	181003-43	181003-43	181003-43
			Lab Sample No.(s)	18449458	18449446	18449389	18449394	18449398	18449372
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		58.9	105	50	57	81	66
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.1 #	3.83 M	<0.1 #	<0.1 #	0.161 #	<0.1 #
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	0.0224	<0.01	<0.01	<0.01	<0.01
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.01	0.0714	0.0132	<0.01	0.0239	<0.01
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01	0.581	<0.01	<0.01	0.0239	<0.01
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01	1.66	0.0121	<0.01	0.0559	<0.01
Aliphatics >C12-C16	<0.1 mg/kg	TM173		3.85	0.659	21	29.2	43.3	1.99
Aliphatics >C16-C21	<0.1 mg/kg	TM173		14.2	<0.1	46.4	67.6	73.5	10.2
Aliphatics >C21-C35	<0.1 mg/kg	TM173		118	2.29	165	199	141	82.6
Aliphatics >C35-C44	<0.1 mg/kg	TM173		65.6	0.132	42.5	49.3	30.2	30.7
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		201	3.08	275	345	288	125
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01	0.388	<0.01	<0.01	0.016	<0.01
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01	1.11	<0.01	<0.01	0.0365	<0.01
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		2.67	3.66	7.9	9.11	7.91	2.98
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		11.7	1.4	23.9	27.7	22.2	10.5
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		91.7	23.8	112	143	75.2	63.5
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		79.8	2.63	60.9	65.5	30.6	48.9
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		35	<0.1	23.7	24.6	11.6	20.8
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		186	31.5	205	245	136	126
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		387	38.4	480	590	424	251

Validated

CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

TPH CWG (S)

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

Component	LOD/Units	Method	Customer Sample Ref.	4C-G6	4C-G6	4C-G5-V	4C-G6-V	4C-H6	4C-H6
			Depth (m)	1.00 - 1.00	1.50 - 1.50	2.80 - 2.80	2.90 - 2.90	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	02/10/2018	02/10/2018	02/10/2018	02/10/2018	02/10/2018	02/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	03/10/2018	03/10/2018	03/10/2018	03/10/2018	03/10/2018	03/10/2018
			SDG Ref	181003-43	181003-43	181003-43	181003-43	181003-43	181003-43
			Lab Sample No.(s)	18449376	18449380	18449417	18449385	18449507	18449354
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		88	85.1	115	80	56	73
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 #	<0.1 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	0.0231
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	0.0147
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	0.0274
Aliphatics >C12-C16	<0.1 mg/kg	TM173		2.24	1.34	<0.1	0.459	4.72	37.2
Aliphatics >C16-C21	<0.1 mg/kg	TM173		11.9	6.8	1.13	2.49	18.9	114
Aliphatics >C21-C35	<0.1 mg/kg	TM173		87.6	46.4	3.84	111	83.8	92.5
Aliphatics >C35-C44	<0.1 mg/kg	TM173		15.5	4.23	0.405	2.3	56.4	5.85
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		117	58.8	5.37	117	164	250
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	0.0179
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		0.967	1.88	0.746	6.3	3.51	5.95
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		5.39	6.94	1.38	13.1	14.8	26
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		42.8	31.5	13.9	546	104	66.6
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		22.6	15.2	4.3	367	107	35.2
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		9.07	5.96	1.49	50	44.9	15.3
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		71.8	55.5	20.3	933	229	134
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		189	114	25.6	1050	393	384

CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

TPH CWG (S)

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

Component	LOD/Units	Method	Customer Sample Ref.	4C-H6	4C-H7	4C-H7	4C-H7	4C-H8	4C-H8
			Depth (m)	1.50 - 1.50	0.50 - 0.50	1.00 - 1.00	1.70 - 1.70	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	02/10/2018	02/10/2018	02/10/2018	02/10/2018	02/10/2018	02/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	03/10/2018	03/10/2018	03/10/2018	03/10/2018	03/10/2018	03/10/2018
			SDG Ref	181003-43	181003-43	181003-43	181003-43	181003-43	181003-43
			Lab Sample No.(s)	18449358	18449480	18449489	18449494	18449350	18449407
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		38	48.8	74	60	49	49
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.01	0.0117	0.0119	0.0107	0.0104	0.022
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	0.012
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	0.011
Aliphatics >C12-C16	<0.1 mg/kg	TM173		2.05	<0.1	1.5	1.24	<0.1	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		11.9	5.8	7.05	5.53	4.61	2.81
Aliphatics >C21-C35	<0.1 mg/kg	TM173		60.5	64.2	49.4	34.9	64.5	33.8
Aliphatics >C35-C44	<0.1 mg/kg	TM173		10.9	12.2	20.7	11.6	20	9.01
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		85.3	82.2	78.6	53.2	89.1	45.6
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		4.3	5.52	2.78	1.97	2.68	1.57
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		16.7	27.6	10.4	7.78	15.5	8.02
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		71.6	79.1	46.2	33.7	74.4	38.3
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		46.4	35.9	29.2	17.8	46.2	20.5
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		19.2	13.6	12.7	7.18	18.5	7.83
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		139	148	88.7	61.2	139	68.4
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		224	230	167	114	228	114

CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

TPH CWG (S)

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

Component	LOD/Units	Method	Customer Sample Ref.	4C-H8	4C-H6-V	4C-H7-V	4C-H8-V		
			Depth (m)	1.50 - 1.50	3.30 - 3.30	3.30 - 3.30	3.00 - 3.00		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	02/10/2018	02/10/2018	02/10/2018	02/10/2018		
			Sample Time	00:00	00:00	00:00	00:00		
			Date Received	03/10/2018	03/10/2018	03/10/2018	03/10/2018		
			SDG Ref	181003-43	181003-43	181003-43	181003-43		
			Lab Sample No.(s)	18449467	18449368	18449502	18449475		
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		55	103	92	103		
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.1 #	<0.1 M	<0.1 M	<0.1 M		
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01		
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01		
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01		
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01		
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	<0.1	0.983	0.49		
Aliphatics >C16-C21	<0.1 mg/kg	TM173		5.01	<0.1	0.77	0.31		
Aliphatics >C21-C35	<0.1 mg/kg	TM173		40.7	1.99	1.53	6.53		
Aliphatics >C35-C44	<0.1 mg/kg	TM173		2.32	<0.1	<0.1	<0.1		
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		48.1	1.99	3.28	7.33		
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01		
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01		
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01		
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01		
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		0.682	<0.1	<0.1	<0.1		
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		4.24	<0.1	<0.1	2.34		
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		25.8	12.6	4.87	50.5		
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		10.5	1.19	1.11	11.8		
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		3.77	0.1	<0.1	4.23		
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		41.2	13.8	5.98	64.7		
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		89.3	15.8	9.26	72		

Validated

CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

VOC MS (S)

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

Component	LOD/Units	Method	Customer Sample Ref.	4C-F5	4C-F5	4C-F5	4C-F6	4C-F6	4C-F7
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.60 - 0.60	1.20 - 1.20	0.60 - 0.60
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	02/10/2018	02/10/2018	02/10/2018	02/10/2018	02/10/2018	02/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	03/10/2018	03/10/2018	03/10/2018	03/10/2018	03/10/2018	03/10/2018
			SDG Ref	181003-43	181003-43	181003-43	181003-43	181003-43	181003-43
			Lab Sample No.(s)	18449421	18449426	18449431	18449438	18449442	18449453
			AGS Reference						
Dibromofluoromethane**	%	TM116		107	109	103	100	103	98.5
Toluene-d8**	%	TM116		97.9	99	94.5	93.1	95	94.4
4-Bromofluorobenzene**	%	TM116		95	91.2	87.3	86	83.2	87.6
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

VOC MS (S)

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

Component	LOD/Units	Method	Customer Sample Ref.	4C-F7	4C-F6-V	4C-G5	4C-G5	4C-G5	4C-G6
			Depth (m)	1.20 - 1.20	2.30 - 2.30	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	02/10/2018	02/10/2018	02/10/2018	02/10/2018	02/10/2018	02/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	03/10/2018	03/10/2018	03/10/2018	03/10/2018	03/10/2018	03/10/2018
			SDG Ref	181003-43	181003-43	181003-43	181003-43	181003-43	181003-43
			Lab Sample No.(s)	18449458	18449446	18449389	18449394	18449398	18449372
			AGS Reference						
Dibromofluoromethane**	%	TM116		98.6	114	95	106	102	100
Toluene-d8**	%	TM116		95.3	95.6	93.3	93.6	97.8	98.4
4-Bromofluorobenzene**	%	TM116		83	88.5	78	82.9	91.8	94.5
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 #	<0.1 #	<0.1 #	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 #	<0.09 #	<0.09 #	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 #	<0.07 #	<0.07 #	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 #	<0.04 #	<0.04 #	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 #	<0.1 #	<0.1 #	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 #	<0.13 #	<0.13 #	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

VOC MS (S)

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

Component	LOD/Units	Method	Customer Sample Ref.	4C-G6	4C-G6	4C-G5-V	4C-G6-V	4C-H6	4C-H6
			Depth (m)	1.00 - 1.00	1.50 - 1.50	2.80 - 2.80	2.90 - 2.90	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	02/10/2018	02/10/2018	02/10/2018	02/10/2018	02/10/2018	02/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	03/10/2018	03/10/2018	03/10/2018	03/10/2018	03/10/2018	03/10/2018
			SDG Ref	181003-43	181003-43	181003-43	181003-43	181003-43	181003-43
			Lab Sample No.(s)	18449376	18449380	18449417	18449385	18449507	18449354
			AGS Reference						
Dibromofluoromethane**	%	TM116		98.8	107	101	105	94.4	101
Toluene-d8**	%	TM116		98.2	98	97.9	95.7	93.2	93.4
4-Bromofluorobenzene**	%	TM116		92.1	92.1	91.2	85.1	83.2	78.3
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

VOC MS (S)

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

Component	LOD/Units	Method	Customer Sample Ref.	4C-H6	4C-H7	4C-H7	4C-H7	4C-H8	4C-H8
			Depth (m)	1.50 - 1.50	0.50 - 0.50	1.00 - 1.00	1.70 - 1.70	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	02/10/2018	02/10/2018	02/10/2018	02/10/2018	02/10/2018	02/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	03/10/2018	03/10/2018	03/10/2018	03/10/2018	03/10/2018	03/10/2018
			SDG Ref	181003-43	181003-43	181003-43	181003-43	181003-43	181003-43
			Lab Sample No.(s)	18449358	18449480	18449489	18449494	18449350	18449407
			AGS Reference						
Dibromofluoromethane**	%	TM116		90.5	100	100	98.5	98	98.2
Toluene-d8**	%	TM116		91.7	93.8	97	96.2	95.9	95.2
4-Bromofluorobenzene**	%	TM116		81.2	82.1	87.8	86.5	86.6	83.6
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 #	<0.1 #	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 #	<0.09 #	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 #	<0.07 #	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 #	<0.04 #	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 #	<0.1 #	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 #	<0.13 #	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

VOC MS (S)

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

Component	LOD/Units	Method	Customer Sample Ref.	4C-H8	4C-H6-V	4C-H7-V	4C-H8-V		
			Depth (m)	1.50 - 1.50	3.30 - 3.30	3.30 - 3.30	3.00 - 3.00		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	02/10/2018	02/10/2018	02/10/2018	02/10/2018		
			Sample Time	00:00	00:00	00:00	00:00		
			Date Received	03/10/2018	03/10/2018	03/10/2018	03/10/2018		
			SDG Ref	181003-43	181003-43	181003-43	181003-43		
			Lab Sample No.(s)	18449467	18449368	18449502	18449475		
			AGS Reference						
Dibromofluoromethane**	%	TM116		96.4	106	103	107		
Toluene-d8**	%	TM116		96.6	96.2	99.2	96.3		
4-Bromofluorobenzene**	%	TM116		81.6	88.4	91.3	90.6		
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M		
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M		
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M		
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M		
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #		
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M		
Naphthalene	<0.013 mg/kg	TM116		0.137 M	<0.13 M	<0.13 M	<0.13 M		
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4		

CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

Asbestos Identification - Solid Samples

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-F5 1.00 - 1.00 SOLID 02/10/2018 00:00:00 03/10/2018 20:58:57 181003-43 18449426 TM048	09/10/2018	Marcin Magdziarek	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-F6 0.60 - 0.60 SOLID 02/10/2018 00:00:00 04/10/2018 06:54:44 181003-43 18449438 TM048	08/10/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-F7 0.60 - 0.60 SOLID 02/10/2018 00:00:00 04/10/2018 06:56:57 181003-43 18449453 TM048	08/10/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-G5 0.50 - 0.50 SOLID 02/10/2018 00:00:00 03/10/2018 20:14:19 181003-43 18449389 TM048	08/10/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-G5 1.50 - 1.50 SOLID 02/10/2018 00:00:00 03/10/2018 20:56:01 181003-43 18449398 TM048	09/10/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-G6 1.00 - 1.00 SOLID 02/10/2018 00:00:00 04/10/2018 06:51:47 181003-43 18449376 TM048	08/10/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 181003-43 **Client Reference:** **Report Number:** 477047
Location: Llanwern **Order Number:** LLA485 **Superseded Report:** 477045

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-H6 0.50 - 0.50 SOLID 02/10/2018 00:00:00 03/10/2018 21:05:12 181003-43 18449507 TM048	09/10/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-H6 1.50 - 1.50 SOLID 02/10/2018 00:00:00 03/10/2018 21:07:11 181003-43 18449358 TM048	09/10/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-H7 1.00 - 1.00 SOLID 02/10/2018 00:00:00 03/10/2018 19:41:12 181003-43 18449489 TM048	09/10/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-H8 0.50 - 0.50 SOLID 02/10/2018 00:00:00 03/10/2018 19:43:03 181003-43 18449350 TM048	09/10/2018	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-H8 1.50 - 1.50 SOLID 02/10/2018 00:00:00 04/10/2018 07:34:11 181003-43 18449467 TM048	08/10/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

Asbestos Quantification - Full

		Additional Asbestos Components (Using TM048)	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM Evaluation - %	Asbestos Quantification - Total - %
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-F5 1.00 - 1.00 SOLID 02/10/2018 00:00:00 03/10/2018 20:58:30 181003-43 18449426 TM304	None (#)	N/A	<0.001 (#)	<0.001 (#)	<0.001 (#)

CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.093	**Natural Moisture Content (%)**	3.95
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	96.2
Particle Size <4mm	>95%		

Case	
SDG	181003-43
Lab Sample Number(s)	18449350
Sampled Date	02-Oct-2018
Customer Sample Ref.	4C-H8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00128	<0.0005	0.0128	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00243	<0.001	0.0243	<0.01	-	-	-
Copper	0.00194	<0.0003	0.0194	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00224	<0.001	0.0224	<0.01	-	-	-
Vanadium	0.113	<0.001	1.13	<0.01	-	-	-
Zinc	0.00163	<0.001	0.0163	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000517	<0.00001	0.000517	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000103	<0.000005	0.000103	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000115	<0.000005	0.000115	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000573	<0.000005	0.000573	<0.00005	-	-	-
Anthracene by GCMS	0.0000138	<0.000005	0.000138	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000514	<0.000005	0.000514	<0.00005	-	-	-
Fluorene by GCMS	0.00000991	<0.000005	0.0000991	<0.00005	-	-	-
Chrysene by GCMS	0.00000671	<0.000005	0.0000671	<0.00005	-	-	-
Pyrene by GCMS	0.000074	<0.000005	0.00074	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.00000868	<0.000005	0.0000868	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00000673	<0.000005	0.0000673	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000364	<0.000002	0.0000364	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000306	<0.000082	0.00306	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Oct-2018
pH (pH Units)	11.07
Conductivity (µS/cm)	417.00
Temperature (°C)	16.80
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.093	**Natural Moisture Content (%)**	3.95
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	96.2
Particle Size <4mm	>95%		

Case	
SDG	181003-43
Lab Sample Number(s)	18449350
Sampled Date	02-Oct-2018
Customer Sample Ref.	4C-H8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Oct-2018
pH (pH Units)	11.07
Conductivity (µS/cm)	417.00
Temperature (°C)	16.80
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.15
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.1
Particle Size <4mm	>95%		

Case	
SDG	181003-43
Lab Sample Number(s)	18449354
Sampled Date	02-Oct-2018
Customer Sample Ref.	4C-H6
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00245	<0.0005	0.0245	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0018	<0.001	0.018	<0.01	-	-	-
Copper	0.0015	<0.0003	0.015	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000419	<0.0004	0.00419	<0.004	-	-	-
Selenium	0.00209	<0.001	0.0209	<0.01	-	-	-
Vanadium	0.0951	<0.001	0.951	<0.01	-	-	-
Zinc	0.00143	<0.001	0.0143	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000321	<0.00001	0.000321	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000543	<0.000005	0.0000543	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000522	<0.000005	0.0000522	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000315	<0.000005	0.000315	<0.00005	-	-	-
Anthracene by GCMS	0.000011	<0.000005	0.00011	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000266	<0.000005	0.000266	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000288	<0.000005	0.000288	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000114	<0.000005	0.000114	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000737	<0.000005	0.0000737	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000698	<0.000002	0.0000698	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000155	<0.000005	0.000155	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00000631	<0.000005	0.0000631	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000188	<0.000082	0.00188	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Oct-2018
pH (pH Units)	9.92
Conductivity (µS/cm)	165.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.15
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.1
Particle Size <4mm	>95%		

Case	
SDG	181003-43
Lab Sample Number(s)	18449354
Sampled Date	02-Oct-2018
Customer Sample Ref.	4C-H6
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Oct-2018
pH (pH Units)	9.92
Conductivity (µS/cm)	165.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

16/10/2018 16:49:51

16:49:15 16/10/2018

CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.090	**Natural Moisture Content (%)**	0
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	100
Particle Size <4mm	>95%		

Case	
SDG	181003-43
Lab Sample Number(s)	18449358
Sampled Date	02-Oct-2018
Customer Sample Ref.	4C-H6
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00347	<0.0005	0.0347	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00137	<0.001	0.0137	<0.01	-	-	-
Copper	0.00168	<0.0003	0.0168	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00192	<0.001	0.0192	<0.01	-	-	-
Vanadium	0.0912	<0.001	0.912	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000202	<0.00001	0.000202	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000643	<0.000005	0.0000643	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000469	<0.000005	0.000469	<0.00005	-	-	-
Anthracene by GCMS	0.0000159	<0.000005	0.000159	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000348	<0.000005	0.000348	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	0.000028	<0.000005	0.00028	<0.00005	-	-	-
Pyrene by GCMS	0.0000402	<0.000005	0.000402	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000186	<0.000005	0.000186	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000269	<0.000005	0.000269	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000167	<0.000005	0.000167	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000126	<0.000002	0.000126	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000265	<0.000005	0.000265	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000118	<0.000005	0.000118	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000305	<0.000082	0.00305	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Oct-2018
pH (pH Units)	10.22
Conductivity (µS/cm)	120.00
Temperature (°C)	16.90
Volume Leachant (Litres)	0.900

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.090	**Natural Moisture Content (%)**	0
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	100
Particle Size <4mm	>95%		

Case	
SDG	181003-43
Lab Sample Number(s)	18449358
Sampled Date	02-Oct-2018
Customer Sample Ref.	4C-H6
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Oct-2018
pH (pH Units)	10.22
Conductivity (µS/cm)	120.00
Temperature (°C)	16.90
Volume Leachant (Litres)	0.900

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.092	**Natural Moisture Content (%)**	1.73
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	98.3
Particle Size <4mm	>95%		

Case	
SDG	181003-43
Lab Sample Number(s)	18449372
Sampled Date	02-Oct-2018
Customer Sample Ref.	4C-G6
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00192	<0.0005	0.0192	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00154	<0.001	0.0154	<0.01	-	-	-
Copper	0.00204	<0.0003	0.0204	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00044	<0.0004	0.0044	<0.004	-	-	-
Selenium	0.00305	<0.001	0.0305	<0.01	-	-	-
Vanadium	0.059	<0.001	0.59	<0.01	-	-	-
Zinc	0.00218	<0.001	0.0218	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000298	<0.00001	0.000298	<0.0001	-	-	-
Acenaphthene by GCMS	0.000019	<0.000005	0.00019	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000067	<0.000005	0.000067	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000493	<0.000005	0.000493	<0.00005	-	-	-
Anthracene by GCMS	0.0000147	<0.000005	0.000147	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000329	<0.000005	0.000329	<0.00005	-	-	-
Fluorene by GCMS	0.00000596	<0.000005	0.0000596	<0.00005	-	-	-
Chrysene by GCMS	0.0000222	<0.000005	0.000222	<0.00005	-	-	-
Pyrene by GCMS	0.000275	<0.000005	0.00275	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000114	<0.000005	0.000114	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000149	<0.000005	0.000149	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000833	<0.000005	0.0000833	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000885	<0.000002	0.0000885	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000013	<0.000005	0.00013	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00000511	<0.000005	0.0000511	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000517	<0.000082	0.00517	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Oct-2018
pH (pH Units)	10.25
Conductivity (µS/cm)	184.00
Temperature (°C)	17.40
Volume Leachant (Litres)	0.898

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.092	**Natural Moisture Content (%)**	1.73
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	98.3
Particle Size <4mm	>95%		

Case	
SDG	181003-43
Lab Sample Number(s)	18449372
Sampled Date	02-Oct-2018
Customer Sample Ref.	4C-G6
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Oct-2018
pH (pH Units)	10.25
Conductivity (µS/cm)	184.00
Temperature (°C)	17.40
Volume Leachant (Litres)	0.898

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.7
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.3
Particle Size <4mm	>95%		

Case	
SDG	181003-43
Lab Sample Number(s)	18449376
Sampled Date	02-Oct-2018
Customer Sample Ref.	4C-G6
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000535	<0.00001	0.000535	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00144	<0.0005	0.0144	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00337	<0.001	0.0337	<0.01	-	-	-
Copper	0.00273	<0.0003	0.0273	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00185	<0.001	0.0185	<0.01	-	-	-
Vanadium	0.041	<0.001	0.41	<0.01	-	-	-
Zinc	0.00192	<0.001	0.0192	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000119	<0.00001	0.00119	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000504	<0.000005	0.000504	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000456	<0.000005	0.000456	<0.00005	-	-	-
Anthracene by GCMS	0.00000806	<0.000005	0.0000806	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000597	<0.000005	0.000597	<0.00005	-	-	-
Fluorene by GCMS	0.0000303	<0.000005	0.000303	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.000102	<0.000005	0.00102	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000414	<0.000082	0.00414	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Oct-2018
pH (pH Units)	11.18
Conductivity (µS/cm)	558.00
Temperature (°C)	19.20
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.7
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.3
Particle Size <4mm	>95%		

Case	
SDG	181003-43
Lab Sample Number(s)	18449376
Sampled Date	02-Oct-2018
Customer Sample Ref.	4C-G6
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Oct-2018
pH (pH Units)	11.18
Conductivity (µS/cm)	558.00
Temperature (°C)	19.20
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.41
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.4
Particle Size <4mm	>95%		

Case	
SDG	181003-43
Lab Sample Number(s)	18449380
Sampled Date	02-Oct-2018
Customer Sample Ref.	4C-G6
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.000049	<0.00001	0.00049	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000685	<0.0005	0.00685	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.000754	<0.0003	0.00754	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00169	<0.001	0.0169	<0.01	-	-	-
Vanadium	0.0516	<0.001	0.516	<0.01	-	-	-
Zinc	0.00139	<0.001	0.0139	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000267	<0.00001	0.000267	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000792	<0.000005	0.000792	<0.00005	-	-	-
Anthracene by GCMS	0.00000954	<0.000005	0.0000954	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000567	<0.000005	0.000567	<0.00005	-	-	-
Fluorene by GCMS	0.00000547	<0.000005	0.0000547	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.000101	<0.000005	0.00101	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000278	<0.000082	0.00278	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Oct-2018
pH (pH Units)	11.11
Conductivity (µS/cm)	544.00
Temperature (°C)	19.30
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.41
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.4
Particle Size <4mm	>95%		

Case	
SDG	181003-43
Lab Sample Number(s)	18449380
Sampled Date	02-Oct-2018
Customer Sample Ref.	4C-G6
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Oct-2018
pH (pH Units)	11.11
Conductivity (µS/cm)	544.00
Temperature (°C)	19.30
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181003-43
Lab Sample Number(s)	18449389
Sampled Date	02-Oct-2018
Customer Sample Ref.	4C-G5
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000102	<0.00001	0.000102	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000867	<0.0005	0.00867	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0123	<0.001	0.123	<0.01	-	-	-
Copper	0.00236	<0.0003	0.0236	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000554	<0.0004	0.00554	<0.004	-	-	-
Selenium	0.00145	<0.001	0.0145	<0.01	-	-	-
Vanadium	0.0679	<0.001	0.679	<0.01	-	-	-
Zinc	0.00114	<0.001	0.0114	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000264	<0.00001	0.000264	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000211	<0.000005	0.000211	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000209	<0.000005	0.000209	<0.00005	-	-	-
Fluorene by GCMS	0.00000569	<0.000005	0.0000569	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000249	<0.000005	0.000249	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000099	<0.000082	0.00099	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Oct-2018
pH (pH Units)	11.12
Conductivity (µS/cm)	718.00
Temperature (°C)	19.40
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181003-43
Lab Sample Number(s)	18449389
Sampled Date	02-Oct-2018
Customer Sample Ref.	4C-G5
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Oct-2018
pH (pH Units)	11.12
Conductivity (µS/cm)	718.00
Temperature (°C)	19.40
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.2
Particle Size <4mm	>95%		

Case	
SDG	181003-43
Lab Sample Number(s)	18449394
Sampled Date	02-Oct-2018
Customer Sample Ref.	4C-G5
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000315	<0.00001	0.000315	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000617	<0.0005	0.00617	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00419	<0.001	0.0419	<0.01	-	-	-
Copper	0.00129	<0.0003	0.0129	<0.003	-	-	-
Lead	0.000286	<0.0002	0.00286	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00125	<0.001	0.0125	<0.01	-	-	-
Vanadium	0.183	<0.001	1.83	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000551	<0.00001	0.000551	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000189	<0.000005	0.000189	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000511	<0.000005	0.000511	<0.00005	-	-	-
Anthracene by GCMS	0.0000132	<0.000005	0.000132	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000478	<0.000005	0.000478	<0.00005	-	-	-
Fluorene by GCMS	0.00000852	<0.000005	0.0000852	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000772	<0.000005	0.000772	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000272	<0.000082	0.00272	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Oct-2018
pH (pH Units)	11.47
Conductivity (µS/cm)	603.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.2
Particle Size <4mm	>95%		

Case	
SDG	181003-43
Lab Sample Number(s)	18449394
Sampled Date	02-Oct-2018
Customer Sample Ref.	4C-G5
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Oct-2018
pH (pH Units)	11.47
Conductivity (µS/cm)	603.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	181003-43
Lab Sample Number(s)	18449398
Sampled Date	02-Oct-2018
Customer Sample Ref.	4C-G5
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000194	<0.00001	0.000194	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00828	<0.001	0.0828	<0.01	-	-	-
Copper	0.00476	<0.0003	0.0476	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00069	<0.0004	0.0069	<0.004	-	-	-
Selenium	0.00146	<0.001	0.0146	<0.01	-	-	-
Vanadium	0.0596	<0.001	0.596	<0.01	-	-	-
Zinc	0.00394	<0.001	0.0394	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000323	<0.00001	0.000323	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000833	<0.000005	0.0000833	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000364	<0.000005	0.000364	<0.00005	-	-	-
Anthracene by GCMS	0.0000105	<0.000005	0.000105	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000305	<0.000005	0.000305	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000461	<0.000005	0.000461	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000209	<0.000005	0.000209	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000185	<0.000082	0.00185	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Oct-2018
pH (pH Units)	11.41
Conductivity (µS/cm)	843.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	181003-43
Lab Sample Number(s)	18449398
Sampled Date	02-Oct-2018
Customer Sample Ref.	4C-G5
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Oct-2018
pH (pH Units)	11.41
Conductivity (µS/cm)	843.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.090	**Natural Moisture Content (%)**	0
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	100
Particle Size <4mm	>95%		

Case	
SDG	181003-43
Lab Sample Number(s)	18449407
Sampled Date	02-Oct-2018
Customer Sample Ref.	4C-H8
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000153	<0.00001	0.000153	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00126	<0.0005	0.0126	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00248	<0.001	0.0248	<0.01	-	-	-
Copper	0.00163	<0.0003	0.0163	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00198	<0.001	0.0198	<0.01	-	-	-
Vanadium	0.096	<0.001	0.96	<0.01	-	-	-
Zinc	0.0011	<0.001	0.011	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000443	<0.00001	0.00443	<0.0001	-	-	-
Acenaphthene by GCMS	0.000018	<0.000005	0.00018	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000855	<0.000005	0.000855	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000474	<0.000005	0.000474	<0.00005	-	-	-
Anthracene by GCMS	0.0000127	<0.000005	0.000127	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000756	<0.000005	0.000756	<0.00005	-	-	-
Fluorene by GCMS	0.0000446	<0.000005	0.000446	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.000053	<0.000005	0.00053	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000779	<0.000082	0.00779	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Oct-2018
pH (pH Units)	11.34
Conductivity (µS/cm)	476.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.900

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.090	**Natural Moisture Content (%)**	0
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	100
Particle Size <4mm	>95%		

Case	
SDG	181003-43
Lab Sample Number(s)	18449407
Sampled Date	02-Oct-2018
Customer Sample Ref.	4C-H8
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Oct-2018
pH (pH Units)	11.34
Conductivity (µS/cm)	476.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.900

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.65
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.2
Particle Size <4mm	>95%		

Case	
SDG	181003-43
Lab Sample Number(s)	18449421
Sampled Date	02-Oct-2018
Customer Sample Ref.	4C-F5
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000233	<0.00001	0.000233	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000851	<0.0005	0.00851	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00248	<0.001	0.0248	<0.01	-	-	-
Copper	0.00683	<0.0003	0.0683	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000416	<0.0004	0.00416	<0.004	-	-	-
Selenium	0.00154	<0.001	0.0154	<0.01	-	-	-
Vanadium	0.0484	<0.001	0.484	<0.01	-	-	-
Zinc	0.00136	<0.001	0.0136	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000514	<0.00001	0.000514	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000245	<0.000005	0.000245	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000107	<0.000005	0.00107	<0.00005	-	-	-
Anthracene by GCMS	0.0000122	<0.000005	0.000122	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000845	<0.000005	0.000845	<0.00005	-	-	-
Fluorene by GCMS	0.0000143	<0.000005	0.000143	<0.00005	-	-	-
Chrysene by GCMS	0.00000908	<0.000005	0.0000908	<0.00005	-	-	-
Pyrene by GCMS	0.000104	<0.000005	0.00104	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000407	<0.000082	0.00407	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Oct-2018
pH (pH Units)	11.50
Conductivity (µS/cm)	734.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.65
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.2
Particle Size <4mm	>95%		

Case	
SDG	181003-43
Lab Sample Number(s)	18449421
Sampled Date	02-Oct-2018
Customer Sample Ref.	4C-F5
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Oct-2018
pH (pH Units)	11.50
Conductivity (µS/cm)	734.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.77
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.1
Particle Size <4mm	>95%		

Case	
SDG	181003-43
Lab Sample Number(s)	18449426
Sampled Date	02-Oct-2018
Customer Sample Ref.	4C-F5
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000417	<0.00001	0.000417	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00248	<0.001	0.0248	<0.01	-	-	-
Copper	0.00347	<0.0003	0.0347	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00124	<0.001	0.0124	<0.01	-	-	-
Vanadium	0.0251	<0.001	0.251	<0.01	-	-	-
Zinc	0.00442	<0.001	0.0442	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000805	<0.00001	0.000805	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000683	<0.000005	0.000683	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000113	<0.000005	0.000113	<0.00005	-	-	-
Fluoranthene by GCMS	0.000192	<0.000005	0.00192	<0.00005	-	-	-
Anthracene by GCMS	0.0000243	<0.000005	0.000243	<0.00005	-	-	-
Phenanthrene by GCMS	0.000179	<0.000005	0.00179	<0.00005	-	-	-
Fluorene by GCMS	0.0000221	<0.000005	0.000221	<0.00005	-	-	-
Chrysene by GCMS	0.0000172	<0.000005	0.000172	<0.00005	-	-	-
Pyrene by GCMS	0.000178	<0.000005	0.00178	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000109	<0.000005	0.000109	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00000585	<0.000005	0.0000585	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000024	<0.000002	0.000024	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000791	<0.000082	0.00791	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Oct-2018
pH (pH Units)	11.48
Conductivity (µS/cm)	956.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.77
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.1
Particle Size <4mm	>95%		

Case	
SDG	181003-43
Lab Sample Number(s)	18449426
Sampled Date	02-Oct-2018
Customer Sample Ref.	4C-F5
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Oct-2018
pH (pH Units)	11.48
Conductivity (µS/cm)	956.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.090	**Natural Moisture Content (%)**	0
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	100
Particle Size <4mm	>95%		

Case	
SDG	181003-43
Lab Sample Number(s)	18449431
Sampled Date	02-Oct-2018
Customer Sample Ref.	4C-F5
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000133	<0.00001	0.000133	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00066	<0.0005	0.0066	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00209	<0.001	0.0209	<0.01	-	-	-
Copper	0.00181	<0.0003	0.0181	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00124	<0.001	0.0124	<0.01	-	-	-
Vanadium	0.014	<0.001	0.14	<0.01	-	-	-
Zinc	0.00267	<0.001	0.0267	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000433	<0.00001	0.000433	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000393	<0.000005	0.000393	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000851	<0.000005	0.0000851	<0.00005	-	-	-
Fluoranthene by GCMS	0.000251	<0.000005	0.00251	<0.00005	-	-	-
Anthracene by GCMS	0.0000214	<0.000005	0.000214	<0.00005	-	-	-
Phenanthrene by GCMS	0.000226	<0.000005	0.00226	<0.00005	-	-	-
Fluorene by GCMS	0.0000345	<0.000005	0.000345	<0.00005	-	-	-
Chrysene by GCMS	0.0000206	<0.000005	0.000206	<0.00005	-	-	-
Pyrene by GCMS	0.000219	<0.000005	0.00219	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000125	<0.000005	0.000125	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000875	<0.000082	0.00875	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Oct-2018
pH (pH Units)	11.56
Conductivity (µS/cm)	1,160.00
Temperature (°C)	19.00
Volume Leachant (Litres)	0.900

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.090	**Natural Moisture Content (%)**	0
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	100
Particle Size <4mm	>95%		

Case	
SDG	181003-43
Lab Sample Number(s)	18449431
Sampled Date	02-Oct-2018
Customer Sample Ref.	4C-F5
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Oct-2018
pH (pH Units)	11.56
Conductivity (µS/cm)	1,160.00
Temperature (°C)	19.00
Volume Leachant (Litres)	0.900

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.091	**Natural Moisture Content (%)**	1.42
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	98.6
Particle Size <4mm	>95%		

Case	
SDG	181003-43
Lab Sample Number(s)	18449438
Sampled Date	02-Oct-2018
Customer Sample Ref.	4C-F6
Depth (m)	0.60 - 0.60

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.284	<0.2	2.84	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00183	<0.0005	0.0183	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00151	<0.0003	0.0151	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000441	<0.0004	0.00441	<0.004	-	-	-
Selenium	0.00354	<0.001	0.0354	<0.01	-	-	-
Vanadium	0.0903	<0.001	0.903	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000285	<0.00001	0.000285	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000255	<0.000005	0.000255	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000193	<0.000005	0.000193	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.000027	<0.000005	0.00027	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0001	<0.000082	0.001	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Oct-2018
pH (pH Units)	10.39
Conductivity (µS/cm)	251.00
Temperature (°C)	19.00
Volume Leachant (Litres)	0.899

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.091	**Natural Moisture Content (%)**	1.42
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	98.6
Particle Size <4mm	>95%		

Case	
SDG	181003-43
Lab Sample Number(s)	18449438
Sampled Date	02-Oct-2018
Customer Sample Ref.	4C-F6
Depth (m)	0.60 - 0.60

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Oct-2018
pH (pH Units)	10.39
Conductivity (µS/cm)	251.00
Temperature (°C)	19.00
Volume Leachant (Litres)	0.899

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.092	**Natural Moisture Content (%)**	1.94
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	98.1
Particle Size <4mm	>95%		

Case	
SDG	181003-43
Lab Sample Number(s)	18449442
Sampled Date	02-Oct-2018
Customer Sample Ref.	4C-F6
Depth (m)	1.20 - 1.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.00015	<0.00001	0.0015	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00125	<0.0005	0.0125	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.0038	<0.0003	0.038	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000401	<0.0004	0.00401	<0.004	-	-	-
Selenium	0.00378	<0.001	0.0378	<0.01	-	-	-
Vanadium	0.0456	<0.001	0.456	<0.01	-	-	-
Zinc	0.0013	<0.001	0.013	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000298	<0.00001	0.000298	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000118	<0.000005	0.000118	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000478	<0.000005	0.000478	<0.00005	-	-	-
Anthracene by GCMS	0.00000778	<0.000005	0.0000778	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000465	<0.000005	0.000465	<0.00005	-	-	-
Fluorene by GCMS	0.0000069	<0.000005	0.000069	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000453	<0.000005	0.000453	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000196	<0.000082	0.00196	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Oct-2018
pH (pH Units)	11.14
Conductivity (µS/cm)	519.00
Temperature (°C)	19.00
Volume Leachant (Litres)	0.898

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.092	**Natural Moisture Content (%)**	1.94
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	98.1
Particle Size <4mm	>95%		

Case	
SDG	181003-43
Lab Sample Number(s)	18449442
Sampled Date	02-Oct-2018
Customer Sample Ref.	4C-F6
Depth (m)	1.20 - 1.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Oct-2018
pH (pH Units)	11.14
Conductivity (µS/cm)	519.00
Temperature (°C)	19.00
Volume Leachant (Litres)	0.898

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.090	**Natural Moisture Content (%)**	0.695
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	99.3
Particle Size <4mm	>95%		

Case	
SDG	181003-43
Lab Sample Number(s)	18449453
Sampled Date	02-Oct-2018
Customer Sample Ref.	4C-F7
Depth (m)	0.60 - 0.60

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00144	<0.0005	0.0144	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.000804	<0.0003	0.00804	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00253	<0.001	0.0253	<0.01	-	-	-
Vanadium	0.103	<0.001	1.03	<0.01	-	-	-
Zinc	0.00127	<0.001	0.0127	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00008	<0.00001	0.0008	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000224	<0.000005	0.000224	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000223	<0.000005	0.000223	<0.00005	-	-	-
Fluoranthene by GCMS	0.000303	<0.000005	0.00303	<0.00005	-	-	-
Anthracene by GCMS	0.000036	<0.000005	0.00036	<0.00005	-	-	-
Phenanthrene by GCMS	0.000147	<0.000005	0.00147	<0.00005	-	-	-
Fluorene by GCMS	0.0000198	<0.000005	0.000198	<0.00005	-	-	-
Chrysene by GCMS	0.000142	<0.000005	0.00142	<0.00005	-	-	-
Pyrene by GCMS	0.000277	<0.000005	0.00277	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000114	<0.000005	0.00114	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000258	<0.000005	0.00258	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000114	<0.000005	0.00114	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000173	<0.000002	0.00173	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000304	<0.000005	0.000304	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000112	<0.000005	0.00112	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000126	<0.000005	0.00126	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00198	<0.000082	0.0198	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Oct-2018
pH (pH Units)	10.68
Conductivity (µS/cm)	255.00
Temperature (°C)	19.20
Volume Leachant (Litres)	0.899

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.090	**Natural Moisture Content (%)**	0.695
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	99.3
Particle Size <4mm	>95%		

Case	
SDG	181003-43
Lab Sample Number(s)	18449453
Sampled Date	02-Oct-2018
Customer Sample Ref.	4C-F7
Depth (m)	0.60 - 0.60

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Oct-2018
pH (pH Units)	10.68
Conductivity (µS/cm)	255.00
Temperature (°C)	19.20
Volume Leachant (Litres)	0.899

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.093	**Natural Moisture Content (%)**	3.41
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	96.7
Particle Size <4mm	>95%		

Case	
SDG	181003-43
Lab Sample Number(s)	18449458
Sampled Date	02-Oct-2018
Customer Sample Ref.	4C-F7
Depth (m)	1.20 - 1.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00248	<0.0005	0.0248	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00128	<0.0003	0.0128	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00259	<0.001	0.0259	<0.01	-	-	-
Vanadium	0.127	<0.001	1.27	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000212	<0.00001	0.000212	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000727	<0.000005	0.000727	<0.00005	-	-	-
Anthracene by GCMS	0.00000983	<0.000005	0.0000983	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000433	<0.000005	0.000433	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	0.0000289	<0.000005	0.000289	<0.00005	-	-	-
Pyrene by GCMS	0.0000771	<0.000005	0.000771	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000075	<0.000005	0.000075	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000437	<0.000005	0.000437	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000018	<0.000005	0.00018	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000209	<0.000002	0.000209	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000149	<0.000005	0.000149	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000172	<0.000005	0.000172	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000375	<0.000082	0.00375	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Oct-2018
pH (pH Units)	10.56
Conductivity (µS/cm)	201.00
Temperature (°C)	19.00
Volume Leachant (Litres)	0.897

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.093	**Natural Moisture Content (%)**	3.41
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	96.7
Particle Size <4mm	>95%		

Case	
SDG	181003-43
Lab Sample Number(s)	18449458
Sampled Date	02-Oct-2018
Customer Sample Ref.	4C-F7
Depth (m)	1.20 - 1.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Oct-2018
pH (pH Units)	10.56
Conductivity (µS/cm)	201.00
Temperature (°C)	19.00
Volume Leachant (Litres)	0.897

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.093	**Natural Moisture Content (%)**	3.31
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	96.8
Particle Size <4mm	>95%		

Case	
SDG	181003-43
Lab Sample Number(s)	18449467
Sampled Date	02-Oct-2018
Customer Sample Ref.	4C-H8
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.552	<0.2	5.52	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000127	<0.00001	0.000127	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00119	<0.0005	0.0119	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00191	<0.001	0.0191	<0.01	-	-	-
Copper	0.00224	<0.0003	0.0224	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00268	<0.001	0.0268	<0.01	-	-	-
Vanadium	0.146	<0.001	1.46	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000525	<0.00001	0.000525	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000871	<0.000005	0.0000871	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000121	<0.000005	0.000121	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000467	<0.000005	0.000467	<0.00005	-	-	-
Anthracene by GCMS	0.0000103	<0.000005	0.000103	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000491	<0.000005	0.000491	<0.00005	-	-	-
Fluorene by GCMS	0.000015	<0.000005	0.00015	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000544	<0.000005	0.000544	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000249	<0.000082	0.00249	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Oct-2018
pH (pH Units)	11.01
Conductivity (µS/cm)	397.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.897

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.093	**Natural Moisture Content (%)**	3.31
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	96.8
Particle Size <4mm	>95%		

Case	
SDG	181003-43
Lab Sample Number(s)	18449467
Sampled Date	02-Oct-2018
Customer Sample Ref.	4C-H8
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Oct-2018
pH (pH Units)	11.01
Conductivity (µS/cm)	397.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.897

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.16
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.2
Particle Size <4mm	>95%		

Case	
SDG	181003-43
Lab Sample Number(s)	18449480
Sampled Date	02-Oct-2018
Customer Sample Ref.	4C-H7
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000349	<0.00001	0.000349	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0015	<0.0005	0.015	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00168	<0.001	0.0168	<0.01	-	-	-
Copper	0.00218	<0.0003	0.0218	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000434	<0.0004	0.00434	<0.004	-	-	-
Selenium	0.00189	<0.001	0.0189	<0.01	-	-	-
Vanadium	0.11	<0.001	1.1	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000548	<0.00001	0.000548	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000986	<0.000005	0.0000986	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000181	<0.000005	0.000181	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000558	<0.000005	0.000558	<0.00005	-	-	-
Anthracene by GCMS	0.0000148	<0.000005	0.000148	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000661	<0.000005	0.000661	<0.00005	-	-	-
Fluorene by GCMS	0.0000205	<0.000005	0.000205	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000627	<0.000005	0.000627	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000303	<0.000082	0.00303	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Oct-2018
pH (pH Units)	11.00
Conductivity (µS/cm)	351.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.16
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.2
Particle Size <4mm	>95%		

Case	
SDG	181003-43
Lab Sample Number(s)	18449480
Sampled Date	02-Oct-2018
Customer Sample Ref.	4C-H7
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Oct-2018
pH (pH Units)	11.00
Conductivity (µS/cm)	351.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.87
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.7
Particle Size <4mm	>95%		

Case	
SDG	181003-43
Lab Sample Number(s)	18449489
Sampled Date	02-Oct-2018
Customer Sample Ref.	4C-H7
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000146	<0.00001	0.000146	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00165	<0.0005	0.0165	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00189	<0.001	0.0189	<0.01	-	-	-
Copper	0.00144	<0.0003	0.0144	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00195	<0.001	0.0195	<0.01	-	-	-
Vanadium	0.0806	<0.001	0.806	<0.01	-	-	-
Zinc	0.00122	<0.001	0.0122	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000282	<0.00001	0.000282	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000548	<0.000005	0.0000548	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000261	<0.000005	0.000261	<0.00005	-	-	-
Anthracene by GCMS	0.00000914	<0.000005	0.0000914	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000335	<0.000005	0.000335	<0.00005	-	-	-
Fluorene by GCMS	0.00000909	<0.000005	0.0000909	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000241	<0.000005	0.000241	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00000562	<0.000005	0.0000562	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000036	<0.000002	0.000036	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000145	<0.000082	0.00145	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Oct-2018
pH (pH Units)	11.17
Conductivity (µS/cm)	229.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.87
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.7
Particle Size <4mm	>95%		

Case	
SDG	181003-43
Lab Sample Number(s)	18449489
Sampled Date	02-Oct-2018
Customer Sample Ref.	4C-H7
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	0.018	<0.01	0.18	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	0.018	<0.01	0.18	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.018	<0.01	0.18	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	0.018	<0.01	0.18	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Oct-2018
pH (pH Units)	11.17
Conductivity (µS/cm)	229.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.18
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.3
Particle Size <4mm	>95%		

Case	
SDG	181003-43
Lab Sample Number(s)	18449494
Sampled Date	02-Oct-2018
Customer Sample Ref.	4C-H7
Depth (m)	1.70 - 1.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000354	<0.00001	0.000354	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00132	<0.0005	0.0132	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00135	<0.001	0.0135	<0.01	-	-	-
Copper	0.00182	<0.0003	0.0182	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000436	<0.0004	0.00436	<0.004	-	-	-
Selenium	0.00219	<0.001	0.0219	<0.01	-	-	-
Vanadium	0.0966	<0.001	0.966	<0.01	-	-	-
Zinc	0.00118	<0.001	0.0118	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000108	<0.00001	0.00108	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000133	<0.000005	0.000133	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000499	<0.000005	0.000499	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000691	<0.000005	0.000691	<0.00005	-	-	-
Anthracene by GCMS	0.0000246	<0.000005	0.000246	<0.00005	-	-	-
Phenanthrene by GCMS	0.000119	<0.000005	0.00119	<0.00005	-	-	-
Fluorene by GCMS	0.0000388	<0.000005	0.000388	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000629	<0.000005	0.000629	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000486	<0.000082	0.00486	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Oct-2018
pH (pH Units)	10.95
Conductivity (µS/cm)	272.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.18
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.3
Particle Size <4mm	>95%		

Case	
SDG	181003-43
Lab Sample Number(s)	18449494
Sampled Date	02-Oct-2018
Customer Sample Ref.	4C-H7
Depth (m)	1.70 - 1.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	0.013	<0.01	0.13	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.013	<0.01	0.13	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.013	<0.01	0.13	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Oct-2018
pH (pH Units)	10.95
Conductivity (µS/cm)	272.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.090	**Natural Moisture Content (%)**	0
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	100
Particle Size <4mm	>95%		

Case	
SDG	181003-43
Lab Sample Number(s)	18449507
Sampled Date	02-Oct-2018
Customer Sample Ref.	4C-H6
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00271	<0.0005	0.0271	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00164	<0.001	0.0164	<0.01	-	-	-
Copper	0.0018	<0.0003	0.018	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00188	<0.001	0.0188	<0.01	-	-	-
Vanadium	0.0928	<0.001	0.928	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000358	<0.00001	0.000358	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000719	<0.000005	0.0000719	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000199	<0.000005	0.000199	<0.00005	-	-	-
Fluoranthene by GCMS	0.000053	<0.000005	0.00053	<0.00005	-	-	-
Anthracene by GCMS	0.0000143	<0.000005	0.000143	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000554	<0.000005	0.000554	<0.00005	-	-	-
Fluorene by GCMS	0.0000163	<0.000005	0.000163	<0.00005	-	-	-
Chrysene by GCMS	0.0000168	<0.000005	0.000168	<0.00005	-	-	-
Pyrene by GCMS	0.000045	<0.000005	0.00045	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000195	<0.000005	0.000195	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000021	<0.000005	0.00021	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000117	<0.000005	0.000117	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000119	<0.000002	0.000119	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000191	<0.000005	0.000191	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00000974	<0.000005	0.0000974	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000357	<0.000082	0.00357	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Oct-2018
pH (pH Units)	10.49
Conductivity (µS/cm)	159.00
Temperature (°C)	17.40
Volume Leachant (Litres)	0.900

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.090	**Natural Moisture Content (%)**	0
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	100
Particle Size <4mm	>95%		

Case	
SDG	181003-43
Lab Sample Number(s)	18449507
Sampled Date	02-Oct-2018
Customer Sample Ref.	4C-H6
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Oct-2018
pH (pH Units)	10.49
Conductivity (µS/cm)	159.00
Temperature (°C)	17.40
Volume Leachant (Litres)	0.900

Mcerts Certification does not apply to leachates

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Table of Results - Appendix

Method No	Reference	Description
ASB_PREP		
PM001		Preparation of Samples for Metals Analysis
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM243		Mixed Anions In Soils By Kone
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only

NA = not applicable.

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

CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

Test Completion Dates

Lab Sample No(s)	18449421	18449426	18449431	18449438	18449442	18449453	18449458	18449446	18449389	18449394
Customer Sample Ref.	4C-F5	4C-F5	4C-F5	4C-F6	4C-F6	4C-F7	4C-F7	4C-F6-V	4C-G5	4C-G5
AGS Ref.										
Depth	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.60 - 0.60	1.20 - 1.20	0.60 - 0.60	1.20 - 1.20	2.30 - 2.30	0.50 - 0.50	1.00 - 1.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)		09-Oct-2018		15-Oct-2018		15-Oct-2018			11-Oct-2018	
Ammoniacal Nitrogen	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018		10-Oct-2018	10-Oct-2018
Ammonium Soil by Titration	05-Oct-2018	08-Oct-2018	05-Oct-2018	08-Oct-2018	05-Oct-2018	09-Oct-2018	08-Oct-2018	08-Oct-2018	08-Oct-2018	05-Oct-2018
Anions by Kone (soil)		09-Oct-2018		10-Oct-2018		09-Oct-2018			10-Oct-2018	
Asbestos ID in Solid Samples		09-Oct-2018		08-Oct-2018		08-Oct-2018			08-Oct-2018	
Asbestos Quantification - Full		09-Oct-2018								
CEN 10:1 Leachate (1 Stage)	05-Oct-2018	04-Oct-2018	05-Oct-2018	05-Oct-2018	05-Oct-2018	05-Oct-2018	05-Oct-2018		05-Oct-2018	04-Oct-2018
CEN Readings	06-Oct-2018	06-Oct-2018	08-Oct-2018	08-Oct-2018	08-Oct-2018	08-Oct-2018	08-Oct-2018		08-Oct-2018	06-Oct-2018
Cyanide Comp/Free/Total/Thiocyanate	10-Oct-2018	10-Oct-2018	10-Oct-2018	09-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018
Dissolved Metals by ICP-MS	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018		10-Oct-2018	10-Oct-2018
EPH CWG (Aliphatic) Aqueous GC (W)	08-Oct-2018	09-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018		10-Oct-2018	09-Oct-2018
EPH CWG (Aliphatic) GC (S)	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	09-Oct-2018	09-Oct-2018
EPH CWG (Aromatic) Aqueous GC (W)	08-Oct-2018	09-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018		10-Oct-2018	09-Oct-2018
EPH CWG (Aromatic) GC (S)	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	09-Oct-2018	09-Oct-2018
GRO by GC-FID (S)	06-Oct-2018	06-Oct-2018	05-Oct-2018	09-Oct-2018	07-Oct-2018	09-Oct-2018	09-Oct-2018	05-Oct-2018	09-Oct-2018	09-Oct-2018
GRO by GC-FID (W)	08-Oct-2018	09-Oct-2018	09-Oct-2018	09-Oct-2018	09-Oct-2018	09-Oct-2018	09-Oct-2018		09-Oct-2018	09-Oct-2018
Mercury Dissolved	09-Oct-2018	08-Oct-2018	09-Oct-2018	10-Oct-2018	09-Oct-2018	09-Oct-2018	09-Oct-2018		09-Oct-2018	09-Oct-2018
Metals in solid samples by OES	08-Oct-2018	11-Oct-2018	11-Oct-2018	11-Oct-2018	11-Oct-2018	11-Oct-2018	11-Oct-2018	09-Oct-2018	11-Oct-2018	08-Oct-2018
PAH by GCMS	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018
PAH Spec MS - Aqueous (W)	08-Oct-2018	09-Oct-2018	09-Oct-2018	09-Oct-2018	09-Oct-2018	09-Oct-2018	09-Oct-2018		09-Oct-2018	09-Oct-2018
pH	10-Oct-2018	10-Oct-2018	10-Oct-2018	09-Oct-2018	10-Oct-2018	09-Oct-2018	10-Oct-2018	10-Oct-2018	09-Oct-2018	10-Oct-2018
pH Value	09-Oct-2018	09-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018		10-Oct-2018	09-Oct-2018
Phenols by HPLC (S)	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	09-Oct-2018	10-Oct-2018	09-Oct-2018
Sample description	03-Oct-2018	04-Oct-2018	03-Oct-2018	03-Oct-2018	03-Oct-2018	03-Oct-2018	04-Oct-2018	04-Oct-2018	03-Oct-2018	03-Oct-2018
Total Organic Carbon	11-Oct-2018	10-Oct-2018	11-Oct-2018	10-Oct-2018	11-Oct-2018	10-Oct-2018	11-Oct-2018	16-Oct-2018	11-Oct-2018	10-Oct-2018
Total Sulphate		10-Oct-2018		10-Oct-2018		10-Oct-2018			10-Oct-2018	
Total Sulphur		08-Oct-2018		12-Oct-2018		09-Oct-2018			12-Oct-2018	
TPH CWG (W)	08-Oct-2018	09-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018		10-Oct-2018	09-Oct-2018
TPH CWG GC (S)	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	09-Oct-2018	10-Oct-2018
VOC MS (S)	05-Oct-2018	05-Oct-2018	05-Oct-2018	05-Oct-2018	05-Oct-2018	05-Oct-2018	05-Oct-2018	05-Oct-2018	05-Oct-2018	05-Oct-2018

Lab Sample No(s)	18449398	18449372	18449376	18449380	18449417	18449385	18449354	18449358	18449507	18449480
Customer Sample Ref.	4C-G5	4C-G6	4C-G6	4C-G6	4C-G5-V	4C-G6-V	4C-H6	4C-H6	4C-H6	4C-H7
AGS Ref.										
Depth	1.50 - 1.50	0.30 - 0.30	1.00 - 1.00	1.50 - 1.50	2.80 - 2.80	2.90 - 2.90	1.00 - 1.00	1.50 - 1.50	0.50 - 0.50	0.50 - 0.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	11-Oct-2018		11-Oct-2018					09-Oct-2018	09-Oct-2018	
Ammoniacal Nitrogen	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018			10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018
Ammonium Soil by Titration	05-Oct-2018	08-Oct-2018	05-Oct-2018	05-Oct-2018	09-Oct-2018	08-Oct-2018	08-Oct-2018	08-Oct-2018	08-Oct-2018	08-Oct-2018
Anions by Kone (soil)	10-Oct-2018		09-Oct-2018					09-Oct-2018	09-Oct-2018	
Asbestos ID in Solid Samples	09-Oct-2018		08-Oct-2018					09-Oct-2018	09-Oct-2018	
CEN 10:1 Leachate (1 Stage)	04-Oct-2018	05-Oct-2018	05-Oct-2018	05-Oct-2018			05-Oct-2018	05-Oct-2018	05-Oct-2018	04-Oct-2018
CEN Readings	06-Oct-2018	06-Oct-2018	08-Oct-2018	08-Oct-2018			06-Oct-2018	06-Oct-2018	06-Oct-2018	06-Oct-2018
Cyanide Comp/Free/Total/Thiocyanate	09-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018
Dissolved Metals by ICP-MS	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018			10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018
EPH CWG (Aliphatic) Aqueous GC (W)	09-Oct-2018	09-Oct-2018	10-Oct-2018	10-Oct-2018			09-Oct-2018	09-Oct-2018	09-Oct-2018	09-Oct-2018
EPH CWG (Aliphatic) GC (S)	09-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	09-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018
EPH CWG (Aromatic) Aqueous GC (W)	09-Oct-2018	09-Oct-2018	10-Oct-2018	10-Oct-2018			09-Oct-2018	09-Oct-2018	09-Oct-2018	09-Oct-2018
EPH CWG (Aromatic) GC (S)	09-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	09-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018
GRO by GC-FID (S)	06-Oct-2018	09-Oct-2018	06-Oct-2018	07-Oct-2018	05-Oct-2018	05-Oct-2018	05-Oct-2018	09-Oct-2018	09-Oct-2018	07-Oct-2018
GRO by GC-FID (W)	09-Oct-2018	08-Oct-2018	09-Oct-2018	09-Oct-2018			08-Oct-2018	08-Oct-2018	08-Oct-2018	09-Oct-2018
Mercury Dissolved	09-Oct-2018	09-Oct-2018	09-Oct-2018	09-Oct-2018			09-Oct-2018	09-Oct-2018	09-Oct-2018	08-Oct-2018
Metals in solid samples by OES	11-Oct-2018	11-Oct-2018	11-Oct-2018	08-Oct-2018	09-Oct-2018	10-Oct-2018	08-Oct-2018	11-Oct-2018	11-Oct-2018	11-Oct-2018
PAH by GCMS	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018
PAH Spec MS - Aqueous (W)	09-Oct-2018	09-Oct-2018	09-Oct-2018	09-Oct-2018			09-Oct-2018	09-Oct-2018	09-Oct-2018	09-Oct-2018
pH	10-Oct-2018	10-Oct-2018	09-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	09-Oct-2018	09-Oct-2018	10-Oct-2018
pH Value	09-Oct-2018	09-Oct-2018	10-Oct-2018	10-Oct-2018			09-Oct-2018	09-Oct-2018	09-Oct-2018	09-Oct-2018
Phenols by HPLC (S)	09-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	09-Oct-2018	10-Oct-2018	10-Oct-2018
Sample description	03-Oct-2018	04-Oct-2018	03-Oct-2018	03-Oct-2018	03-Oct-2018	03-Oct-2018	03-Oct-2018	04-Oct-2018	04-Oct-2018	03-Oct-2018
Total Organic Carbon	11-Oct-2018	11-Oct-2018	16-Oct-2018	10-Oct-2018	16-Oct-2018	11-Oct-2018	11-Oct-2018	16-Oct-2018	11-Oct-2018	15-Oct-2018
Total Sulphate	08-Oct-2018		10-Oct-2018					10-Oct-2018	10-Oct-2018	
Total Sulphur	12-Oct-2018		08-Oct-2018					08-Oct-2018	08-Oct-2018	
TPH CWG (W)	09-Oct-2018	09-Oct-2018	10-Oct-2018	10-Oct-2018			09-Oct-2018	09-Oct-2018	09-Oct-2018	09-Oct-2018
TPH CWG GC (S)	09-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	09-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018
VOC MS (S)	05-Oct-2018	05-Oct-2018	05-Oct-2018	05-Oct-2018	05-Oct-2018	05-Oct-2018	05-Oct-2018	05-Oct-2018	05-Oct-2018	05-Oct-2018

Validated

CERTIFICATE OF ANALYSIS

SDG:	181003-43	**Client Reference:**		**Report Number:**	477047
Location:	Llanwern	**Order Number:**	LLA485	**Superseded Report:**	477045

Lab Sample No(s)	18449489	18449494	18449350	18449407	18449467	18449368	18449502	18449475
Customer Sample Ref.	4C-H7	4C-H7	4C-H8	4C-H8	4C-H8	4C-H6-V	4C-H7-V	4C-H8-V
AGS Ref.								
Depth	1.00 - 1.00	1.70 - 1.70	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	3.30 - 3.30	3.30 - 3.30	3.00 - 3.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	11-Oct-2018		09-Oct-2018		09-Oct-2018			
Ammoniacal Nitrogen	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018			
Ammonium Soil by Titration	09-Oct-2018	05-Oct-2018	08-Oct-2018	08-Oct-2018	08-Oct-2018	08-Oct-2018	05-Oct-2018	08-Oct-2018
Anions by Kone (soil)	10-Oct-2018		09-Oct-2018		10-Oct-2018			
Asbestos ID in Solid Samples	09-Oct-2018		09-Oct-2018		08-Oct-2018			
CEN 10:1 Leachate (1 Stage)	04-Oct-2018	04-Oct-2018	05-Oct-2018	05-Oct-2018	05-Oct-2018			
CEN Readings	06-Oct-2018	06-Oct-2018	06-Oct-2018	06-Oct-2018	06-Oct-2018			
Cyanide Comp/Free/Total/Thiocyanate	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	09-Oct-2018
Dissolved Metals by ICP-MS	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018			
EPH CWG (Aliphatic) Aqueous GC (W)	09-Oct-2018	09-Oct-2018	09-Oct-2018	08-Oct-2018	08-Oct-2018			
EPH CWG (Aliphatic) GC (S)	09-Oct-2018	09-Oct-2018	10-Oct-2018	09-Oct-2018	09-Oct-2018	09-Oct-2018	10-Oct-2018	10-Oct-2018
EPH CWG (Aromatic) Aqueous GC (W)	09-Oct-2018	09-Oct-2018	09-Oct-2018	08-Oct-2018	08-Oct-2018			
EPH CWG (Aromatic) GC (S)	09-Oct-2018	09-Oct-2018	10-Oct-2018	09-Oct-2018	09-Oct-2018	09-Oct-2018	10-Oct-2018	10-Oct-2018
GRO by GC-FID (S)	06-Oct-2018	09-Oct-2018	09-Oct-2018	09-Oct-2018	09-Oct-2018	05-Oct-2018	06-Oct-2018	05-Oct-2018
GRO by GC-FID (W)	09-Oct-2018	09-Oct-2018	08-Oct-2018	08-Oct-2018	08-Oct-2018			
Mercury Dissolved	08-Oct-2018	08-Oct-2018	09-Oct-2018	09-Oct-2018	09-Oct-2018			
Metals in solid samples by OES	11-Oct-2018	08-Oct-2018	11-Oct-2018	11-Oct-2018	11-Oct-2018	09-Oct-2018	08-Oct-2018	06-Oct-2018
PAH by GCMS	10-Oct-2018	11-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018
PAH Spec MS - Aqueous (W)	09-Oct-2018	09-Oct-2018	09-Oct-2018	08-Oct-2018	08-Oct-2018			
pH	09-Oct-2018	10-Oct-2018	09-Oct-2018	10-Oct-2018	09-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018
pH Value	09-Oct-2018	09-Oct-2018	09-Oct-2018	09-Oct-2018	09-Oct-2018			
Phenols by HPLC (S)	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018	10-Oct-2018
Sample description	03-Oct-2018	03-Oct-2018	03-Oct-2018	04-Oct-2018	04-Oct-2018	03-Oct-2018	03-Oct-2018	03-Oct-2018
Total Organic Carbon	11-Oct-2018	10-Oct-2018	15-Oct-2018	10-Oct-2018	11-Oct-2018	11-Oct-2018	11-Oct-2018	10-Oct-2018
Total Sulphate	10-Oct-2018		10-Oct-2018		10-Oct-2018			
Total Sulphur	12-Oct-2018		08-Oct-2018		08-Oct-2018			
TPH CWG (W)	09-Oct-2018	09-Oct-2018	09-Oct-2018	08-Oct-2018	08-Oct-2018			
TPH CWG GC (S)	09-Oct-2018	09-Oct-2018	10-Oct-2018	09-Oct-2018	09-Oct-2018	09-Oct-2018	10-Oct-2018	10-Oct-2018
VOC MS (S)	05-Oct-2018	05-Oct-2018	05-Oct-2018	05-Oct-2018	05-Oct-2018	05-Oct-2018	05-Oct-2018	05-Oct-2018

Appendix

General

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

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

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

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

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

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

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

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

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

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

11. Results relate only to the items tested.

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

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

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

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

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

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

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

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

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

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

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

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

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

Sample Deviations

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

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

Asbestos

Identification of Asbestos in Bulk Materials & Soils

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

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

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

Visual Estimation Of Fibre Content

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

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

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

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Atkins Global Ltd
Project Jonah site office
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Suite 24
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SA10 6HJ

Attention: John Fitzgerald

CERTIFICATE OF ANALYSIS

Date:	22 October 2018
Customer:	H_ATKINS_LDC
Sample Delivery Group (SDG):	181012-49
Your Reference:	
Location:	Llanwern
Report No:	477920

We received 30 samples on Friday October 12, 2018 and 30 of these samples were scheduled for analysis which was completed on Monday October 22, 2018. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

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

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

Approved By:



Sonia McWhan

Operations Manager

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

CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
18512099	4C-F2		0.50 - 0.50	11/10/2018
18512158	4C-G4		0.50 - 0.50	11/10/2018
18511962	4C-G4		1.20 - 1.20	11/10/2018
18511966	4C-G4		1.80 - 1.80	11/10/2018
18511972	4C-G4-V		2.40 - 2.40	11/10/2018
18512075	4C-H1		0.50 - 0.50	11/10/2018
18512084	4C-H1		1.00 - 1.00	11/10/2018
18512054	4C-H2		0.50 - 0.50	11/10/2018
18512064	4C-H2		1.00 - 1.00	11/10/2018
18512129	4C-H4		0.50 - 0.50	11/10/2018
18512139	4C-H4		1.00 - 1.00	11/10/2018
18512148	4C-H4		1.60 - 1.60	11/10/2018
18511954	4C-H5		0.50 - 0.50	11/10/2018
18512026	4C-H5		1.00 - 1.00	11/10/2018
18512107	4C-H5		1.80 - 1.80	11/10/2018
18512113	4C-H1-V		1.60 - 1.60	11/10/2018
18512103	4C-H2-V		1.80 - 1.80	11/10/2018
18512154	4C-H4-V		2.00 - 2.00	11/10/2018
18512119	4C-H5-V		2.50 - 2.50	11/10/2018
18512091	4C-I1		0.50 - 0.50	11/10/2018
18512095	4C-I1		1.10 - 1.10	11/10/2018
18512005	4C-I2		0.50 - 0.50	11/10/2018
18512018	4C-I2		1.00 - 1.00	11/10/2018
18512042	4C-I2		1.50 - 1.50	11/10/2018
18511995	4C-I3		0.50 - 0.50	11/10/2018
18511999	4C-I3		0.80 - 0.80	11/10/2018
18511978	4C-I4		0.50 - 0.50	11/10/2018
18511985	4C-I4		1.00 - 1.00	11/10/2018
18512048	4C-I2-V		1.70 - 1.70	11/10/2018
18511989	4C-I4-V		2.50 - 2.50	11/10/2018

Maximum Sample/Coolbox Temperature (°C) : **13.2**

ISO5667-3 Water quality - Sampling - Part3 -

During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

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

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

Validated

CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

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

Lab Sample No(s)			18512099			18512158			18511962			18511966			18511972			18512075			18512084
Customer Sample Reference			4C-F2			4C-G4			4C-G4			4C-G4			4C-G4-V			4C-H1			4C-H1
AGS Reference																					
Depth (m)			0.50 - 0.50			0.50 - 0.50			1.20 - 1.20			1.80 - 1.80			2.40 - 2.40			0.50 - 0.50			1.00 - 1.00
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 14		X			X						X					X			
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 24	X			X			X			X					X			X	
Ammonium Soil by Titration	All	NDPs: 0 Tests: 30		X			X			X			X		X			X			X
Anions by Kone (soil)	All	NDPs: 0 Tests: 14		X			X						X					X			
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 14	X			X						X					X				
Asbestos Quantification - Full	All	NDPs: 0 Tests: 1	X																		
CEN Readings	All	NDPs: 0 Tests: 24	X			X			X			X					X			X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 54	X	X		X	X		X	X		X	X		X		X	X		X	X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 24	X			X			X			X					X			X	
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 24	X			X			X			X					X			X	
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 30		X			X			X			X		X			X			X
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 24	X			X			X			X					X			X	
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 30		X			X			X			X		X			X			X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 30			X			X			X			X		X			X		
GRO by GC-FID (W)	All	NDPs: 0 Tests: 24	X			X			X			X					X			X	

18512026	4C-H5		1.00 - 1.00	250g Amber Jar (ALE210)	S	X		X	X				X			X		X		
				1kg TUB	S		X			X		X	X	X	X		X			X
18511954	4C-H5		0.50 - 0.50	60g VOC (ALE215)	S														X	
				250g Amber Jar (ALE210)	S			X					X			X		X		
				1kg TUB	S		X					X	X	X	X		X			X
18512148	4C-H4		1.60 - 1.60	60g VOC (ALE215)	S														X	
				250g Amber Jar (ALE210)	S			X					X			X		X		
				1kg TUB	S		X					X	X	X	X		X			X
18512139	4C-H4		1.00 - 1.00	60g VOC (ALE215)	S														X	
				250g Amber Jar (ALE210)	S	X		X	X				X			X		X		
				1kg TUB	S		X			X		X	X	X	X		X			X
18512129	4C-H4		0.50 - 0.50	60g VOC (ALE215)	S														X	
				250g Amber Jar (ALE210)	S	X		X	X				X			X		X		
				1kg TUB	S		X			X		X	X	X	X		X			X
18512064	4C-H2		1.00 - 1.00	60g VOC (ALE215)	S														X	
				250g Amber Jar (ALE210)	S	X		X	X				X			X		X		
				1kg TUB	S		X			X		X	X	X	X		X			X
18512054	4C-H2		0.50 - 0.50	60g VOC (ALE215)	S														X	
				250g Amber Jar (ALE210)	S			X					X			X		X		
				1kg TUB	S		X					X	X	X	X		X			X
18512084	4C-H1		1.00 - 1.00	60g VOC (ALE215)	S														X	

Validated

CERTIFICATE OF ANALYSIS

SDG: 181012-49	**Client Reference:**	**Report Number:** 477920
Location: Llanwern	**Order Number:** LLA488	**Superseded Report:**

Results Legend

- X Test
- N No Determination Possible

Sample Types -

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

Lab Sample No(s)			18512099			18512158			18511962			18511966			18511972		18512075			18512084	
Customer Sample Reference			4C-F2			4C-G4			4C-G4			4C-G4			4C-G4-V		4C-H1			4C-H1	
AGS Reference																					
Depth (m)			0.50 - 0.50			0.50 - 0.50			1.20 - 1.20			1.80 - 1.80			2.40 - 2.40		0.50 - 0.50			1.00 - 1.00	
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Mercury Dissolved	All	NDPs: 0 Tests: 24	X			X			X			X					X			X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 30		X			X			X			X		X			X			X
PAH by GCMS	All	NDPs: 0 Tests: 30		X			X			X			X		X			X			X
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 24	X			X			X			X					X			X	
pH	All	NDPs: 0 Tests: 30		X			X			X			X		X			X			X
pH Value	All	NDPs: 0 Tests: 24	X			X			X			X					X			X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 30		X			X			X			X		X			X			X
Sample description	All	NDPs: 0 Tests: 30		X			X			X			X		X			X			X
Total Organic Carbon	All	NDPs: 0 Tests: 30		X			X			X			X		X			X			X
Total Sulphate	All	NDPs: 0 Tests: 14		X			X						X					X			
Total Sulphur	All	NDPs: 0 Tests: 14		X			X						X					X			
TPH CWG (W)	All	NDPs: 0 Tests: 24	X			X			X			X					X			X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 30		X			X			X			X		X			X			X
VOC MS (S)	All	NDPs: 0 Tests: 30			X			X			X			X		X			X		

16:03:46 22/10/2018

18512026	4C-H5		1.00 - 1.00	250g Amber Jar (ALE210)	S		X	X		X		X	X	X	X	X		X				
				1kg TUB	S	X			X		X								X			
18511954	4C-H5		0.50 - 0.50	60g VOC (ALE215)	S																X	
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X					X			
				1kg TUB	S	X			X		X								X			
18512148	4C-H4		1.60 - 1.60	60g VOC (ALE215)	S																X	
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X					X			
				1kg TUB	S	X			X		X								X			
18512139	4C-H4		1.00 - 1.00	60g VOC (ALE215)	S																X	
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X	X	X			X			
				1kg TUB	S	X			X		X								X			
18512129	4C-H4		0.50 - 0.50	60g VOC (ALE215)	S																X	
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X	X	X			X			
				1kg TUB	S	X			X		X								X			
18512064	4C-H2		1.00 - 1.00	60g VOC (ALE215)	S																X	
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X	X	X			X			
				1kg TUB	S	X			X		X								X			
18512054	4C-H2		0.50 - 0.50	60g VOC (ALE215)	S																X	
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X					X			
				1kg TUB	S	X			X		X								X			
18512084	4C-H1		1.00 - 1.00	60g VOC (ALE215)	S																X	

Validated

CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

Results Legend

- X — Test
- N — No Determination Possible

Sample Types -

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

Lab Sample No(s)			18512026			18512107		18512113		18512103		18512154		18512119			18512091			18512095	18512005
Customer Sample Reference			4C-H5			4C-H5		4C-H1-V		4C-H2-V		4C-H4-V		4C-H5-V			4C-I1			4C-I1	4C-I2
AGS Reference																					
Depth (m)			1.00 - 1.00			1.80 - 1.80		1.60 - 1.60		1.80 - 1.80		2.00 - 2.00		2.50 - 2.50			0.50 - 0.50			1.10 - 1.10	0.50 - 0.50
Container			60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 14			X											X					
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 24		X											X			X			X
Ammonium Soil by Titration	All	NDPs: 0 Tests: 30			X		X		X		X		X			X			X		
Anions by Kone (soil)	All	NDPs: 0 Tests: 14			X											X					
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 14		X											X						X
CEN Readings	All	NDPs: 0 Tests: 24		X											X			X			X
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 54		X	X		X		X		X		X		X	X		X	X		X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 24		X											X			X			X
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 24		X											X			X			X
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 30			X		X		X		X		X			X			X		
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 24		X											X			X			X
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 30			X		X		X		X		X			X			X		
GRO by GC-FID (S)	All	NDPs: 0 Tests: 30	X			X		X		X		X		X			X			X	
GRO by GC-FID (W)	All	NDPs: 0 Tests: 24		X											X			X			X
Mercury Dissolved	All	NDPs: 0 Tests: 24		X											X			X			X

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18512048	4C-I2-V		1.70 - 1.70	250g Amber Jar (ALE210)	S				x					x				x			x			
18511985	4C-I4		1.00 - 1.00	60g VOC (ALE215)	S																	x		
				250g Amber Jar (ALE210)	S	x			x		x				x				x			x			
				1kg TUB	S			x				x		x		x		x			x			x		x
18511978	4C-I4		0.50 - 0.50	60g VOC (ALE215)	S																	x		
				250g Amber Jar (ALE210)	S				x						x				x			x			
				1kg TUB	S			x						x		x		x			x			x		x
18511999	4C-I3		0.80 - 0.80	60g VOC (ALE215)	S																	x		
				250g Amber Jar (ALE210)	S				x						x				x			x			
				1kg TUB	S			x						x		x		x			x			x		x
18511995	4C-I3		0.50 - 0.50	60g VOC (ALE215)	S																	x		
				250g Amber Jar (ALE210)	S	x			x		x				x				x			x			
				1kg TUB	S			x				x		x		x		x			x			x		x
18512042	4C-I2		1.50 - 1.50	60g VOC (ALE215)	S																	x		
				250g Amber Jar (ALE210)	S				x						x				x			x			
				1kg TUB	S			x						x		x		x			x			x		x
18512018	4C-I2		1.00 - 1.00	60g VOC (ALE215)	S																	x		
				250g Amber Jar (ALE210)	S	x			x		x				x				x			x			
				1kg TUB	S			x				x		x		x		x			x			x		x
18512005	4C-I2		0.50 - 0.50	60g VOC (ALE215)	S																	x		
				250g Amber Jar (ALE210)	S	x			x		x				x				x			x			

Validated

CERTIFICATE OF ANALYSIS

SDG: 181012-49 **Client Reference:** **Report Number:** 477920
Location: Llanwern **Order Number:** LLA488 **Superseded Report:**

Results Legend

X Test

N No Determination Possible

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

			Lab Sample No(s)	18512026	18512107		18512113		18512103		18512154		18512119		18512091		18512095		18512005
			Customer Sample Reference	4C-H5	4C-H5		4C-H1-V		4C-H2-V		4C-H4-V		4C-H5-V		4C-I1		4C-I1		4C-I2
			AGS Reference																
			Depth (m)	1.00 - 1.00	1.80 - 1.80		1.60 - 1.60		1.80 - 1.80		2.00 - 2.00		2.50 - 2.50		0.50 - 0.50		1.10 - 1.10		0.50 - 0.50
			Container	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB
			Sample Type	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Metals in solid samples by OES	All	NDPs: 0 Tests: 30				X		X		X		X		X		X			X		
PAH by GCMS	All	NDPs: 0 Tests: 30				X		X		X		X		X		X			X		
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 24		X											X			X			X
pH	All	NDPs: 0 Tests: 30				X		X		X		X		X		X			X		
pH Value	All	NDPs: 0 Tests: 24		X											X			X			X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 30				X		X		X		X		X		X			X		
Sample description	All	NDPs: 0 Tests: 30				X		X		X		X		X		X			X		
Total Organic Carbon	All	NDPs: 0 Tests: 30				X		X		X		X		X		X			X		
Total Sulphate	All	NDPs: 0 Tests: 14				X										X					
Total Sulphur	All	NDPs: 0 Tests: 14				X										X					
TPH CWG (W)	All	NDPs: 0 Tests: 24		X											X			X			X
TPH CWG GC (S)	All	NDPs: 0 Tests: 30				X		X		X		X		X		X			X		
VOC MS (S)	All	NDPs: 0 Tests: 30	X				X		X		X		X				X			X	

18512048	4C-I2-V		1.70 - 1.70	250g Amber Jar (ALE210)	S	X
18511985	4C-I4		1.00 - 1.00	60g VOC (ALE215)	S	
				250g Amber Jar (ALE210)	S	X
				1kg TUB	S	
18511978	4C-I4		0.50 - 0.50	60g VOC (ALE215)	S	
				250g Amber Jar (ALE210)	S	X
				1kg TUB	S	
18511999	4C-I3		0.80 - 0.80	60g VOC (ALE215)	S	
				250g Amber Jar (ALE210)	S	X
				1kg TUB	S	
18511995	4C-I3		0.50 - 0.50	60g VOC (ALE215)	S	
				250g Amber Jar (ALE210)	S	X
				1kg TUB	S	
18512042	4C-I2		1.50 - 1.50	60g VOC (ALE215)	S	
				250g Amber Jar (ALE210)	S	X
				1kg TUB	S	
18512018	4C-I2		1.00 - 1.00	60g VOC (ALE215)	S	
				250g Amber Jar (ALE210)	S	X
				1kg TUB	S	
18512005	4C-I2		0.50 - 0.50	60g VOC (ALE215)	S	
				250g Amber Jar (ALE210)	S	X

CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -

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

Lab Sample No(s)			18512048			18511989
Customer Sample Reference			4C-I2-V			4C-I4-V
AGS Reference						
Depth (m)			1.70 - 1.70			2.50 - 2.50
Container			60g VOC (ALE215)	250g Amber Jar (ALE210)	400g Tub (ALE214)	60g VOC (ALE215)
Sample Type			S	S	S	S
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 24			X	
Ammonium Soil by Titration	All	NDPs: 0 Tests: 30		X		
CEN Readings	All	NDPs: 0 Tests: 24			X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 54		X	X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 24			X	
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 24			X	
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 30		X		
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 24			X	
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 30		X		
GRO by GC-FID (S)	All	NDPs: 0 Tests: 30	X			X
GRO by GC-FID (W)	All	NDPs: 0 Tests: 24			X	
Mercury Dissolved	All	NDPs: 0 Tests: 24			X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 30		X		
PAH by GCMS	All	NDPs: 0 Tests: 30		X		
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 24			X	

Validated

CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

Results Legend

X **Test**

N **No Determination Possible**

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

Lab Sample No(s)			18512048			18511989
Customer Sample Reference			4C-I2-V			4C-I4-V
AGS Reference						
Depth (m)			1.70 - 1.70			2.50 - 2.50
Container			60g VOC (ALE215)	250g Amber Jar (ALE210)	400g Tub (ALE214)	60g VOC (ALE215)
Sample Type			S	S	S	S
pH	All	NDPs: 0 Tests: 30		X		
pH Value	All	NDPs: 0 Tests: 24			X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 30		X		
Sample description	All	NDPs: 0 Tests: 30		X		
Total Organic Carbon	All	NDPs: 0 Tests: 30		X		
TPH CWG (W)	All	NDPs: 0 Tests: 24			X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 30		X		
VOC MS (S)	All	NDPs: 0 Tests: 30	X			X

CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

Sample Descriptions

Grain Sizes

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

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
18512099	4C-F2	0.50 - 0.50	Black	Loamy Sand	Stones	N/A
18511962	4C-G4	1.20 - 1.20	Dark Brown	Stone/Soil	Vegetation	Stones
18511966	4C-G4	1.80 - 1.80	Dark Brown	Stone/Soil	Vegetation	Stones
18512158	4C-G4	0.50 - 0.50	Dark Brown	Sand	Vegetation	Stones
18511972	4C-G4-V	2.40 - 2.40	Grey	Silty Clay Loam	Vegetation	N/A
18512075	4C-H1	0.50 - 0.50	Dark Brown	Sand	Stones	Vegetation
18512084	4C-H1	1.00 - 1.00	Dark Brown	Stone/Soil	Vegetation	Crushed Brick
18512054	4C-H2	0.50 - 0.50	Black	Sand	Stones	Crushed Brick
18512064	4C-H2	1.00 - 1.00	Dark Brown	Sand	Stones	Vegetation
18512129	4C-H4	0.50 - 0.50	Dark Brown	Sand	Stones	Vegetation
18512139	4C-H4	1.00 - 1.00	Dark Brown	Sand	Stones	Vegetation
18512148	4C-H4	1.60 - 1.60	Dark Brown	Sand	Stones	N/A
18511954	4C-H5	0.50 - 0.50	Dark Brown	Sand	Stones	Vegetation
18512026	4C-H5	1.00 - 1.00	Dark Brown	Sand	Stones	Vegetation
18512107	4C-H5	1.80 - 1.80	Dark Brown	Sandy Loam	Stones	N/A
18512113	4C-H1-V	1.60 - 1.60	Dark Brown	Silty Clay	Vegetation	N/A
18512103	4C-H2-V	1.80 - 1.80	Grey	Silty Clay Loam	N/A	N/A
18512154	4C-H4-V	2.00 - 2.00	Grey	Sandy Silt Loam	Vegetation	N/A
18512119	4C-H5-V	2.50 - 2.50	Black	Sandy Silt Loam	Vegetation	N/A
18512091	4C-I1	0.50 - 0.50	Black	Stone/Soil	Brick	Stones
18512095	4C-I1	1.10 - 1.10	Black	Stone/Soil	Vegetation	Stones
18512005	4C-I2	0.50 - 0.50	Black	Sand	Stones	Vegetation
18512018	4C-I2	1.00 - 1.00	Black	Sand	Stones	Crushed Brick
18512042	4C-I2	1.50 - 1.50	Black	Sand	Stones	N/A
18511995	4C-I3	0.50 - 0.50	Dark Brown	Stone/Soil	Vegetation	Stones
18511999	4C-I3	0.80 - 0.80	Black	Stone/Soil	None	Stones
18511978	4C-I4	0.50 - 0.50	Dark Brown	Stone/Soil	Vegetation	Stones
18511985	4C-I4	1.00 - 1.00	Dark Brown	Stone/Soil	Stones	N/A
18512048	4C-I2-V	1.70 - 1.70	Grey	Silty Clay	Stones	Vegetation
18511989	4C-I4-V	2.50 - 2.50	Dark Brown	Sandy Clay Loam	Stones	None

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

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

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

Validated

CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

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

Component	LOD/Units	Method	Customer Sample Ref.	4C-F2	4C-G4	4C-G4	4C-G4	4C-G4-V	4C-H1
			Depth (m)	0.50 - 0.50	0.50 - 0.50	1.20 - 1.20	1.80 - 1.80	2.40 - 2.40	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/10/2018	11/10/2018	11/10/2018	11/10/2018	11/10/2018	11/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	12/10/2018	12/10/2018	12/10/2018	12/10/2018	12/10/2018	12/10/2018
			SDG Ref	181012-49	181012-49	181012-49	181012-49	181012-49	181012-49
			Lab Sample No.(s)	18512099	18512158	18511962	18511966	18511972	18512075
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		8.6	8.8	9.3	11	29	10
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 #	<12 #	138 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 #	<0.01 #	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 #	<0.01 #	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 #	<0.015 #	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 #	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.357	0.275		0.271		0.157
Sulphate, Total potential	<0.06 %	TM132		1.07	0.825		0.813		0.471
Soil Organic Matter (SOM)	<0.35 %	TM132		1.55 #	5.05 #	6.62 #	0.436 #	2.69 #	9.78 #
pH	1 pH Units	TM133		12.6 M	9.01 M	11.9 #	11.8 #	7.73 M	8.82 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 #	<1 #	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 #	<1 #	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		12 M	7.22 M	8.6 #	6.66 #	16.7 M	10.1 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	0.944 M	<0.02 #	1.18 #	0.432 M	<0.2 M
Chromium	<0.9 mg/kg	TM181		356 M	232 M	348 #	467 #	49.5 M	103 M
Copper	<1.4 mg/kg	TM181		42.1 M	18.3 M	27.7 #	29.7 #	11.9 M	16.1 M
Iron	<1000 mg/kg	TM181		423000 #	133000 #	121000 #	154000 #	32400 #	189000 #
Lead	<0.7 mg/kg	TM181		<7 M	17.9 M	15.1 #	15.6 #	26.1 M	45.3 M
Manganese	<0.13 mg/kg	TM181		32600 M	21100 M	26500 #	46100 #	915 M	9020 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<0.14 M	<0.14 #	<0.14 #	<0.14 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		16.2 M	14.8 M	15.6 #	12.8 #	33 M	23.7 M
Selenium	<1 mg/kg	TM181		19.2 #	7.09 #	7.8 #	12.3 #	<1 #	<10 #
Vanadium	<0.2 mg/kg	TM181		1150 #	911 #	941 #	1890 #	84.6 #	148 #
Zinc	<1.9 mg/kg	TM181		20.6 M	73.6 M	50.6 #	61.4 #	102 M	133 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.616	0.699		0.717		0.13
Calcium	<21 mg/kg	TM224		189000	196000		200000		96000
Magnesium	<8 mg/kg	TM224		7230	13600		13000		12500
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.0634 M	0.196 M		0.0919 #		0.0484 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304		<0.001 #					
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304		<0.001 #					
Additional Asbestos Components (Using TM048)		TM304		None #					
Analysts Comments		TM304		N/C					
Asbestos Quantification - Total - %	<0.001 %	TM304		<0.001 #					

CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

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

Component	LOD/Units	Method	Customer Sample Ref.	4C-H1	4C-H2	4C-H2	4C-H4	4C-H4	4C-H4
			Depth (m)	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	1.60 - 1.60
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/10/2018	11/10/2018	11/10/2018	11/10/2018	11/10/2018	11/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	12/10/2018	12/10/2018	12/10/2018	12/10/2018	12/10/2018	12/10/2018
			SDG Ref	181012-49	181012-49	181012-49	181012-49	181012-49	181012-49
			Lab Sample No.(s)	18512084	18512054	18512064	18512129	18512139	18512148
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		12	10	15	9.3	9.7	10
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132				0.155	0.267	0.207	
Sulphate, Total potential	<0.06 %	TM132				0.465	0.801	0.621	
Soil Organic Matter (SOM)	<0.35 %	TM132		7.02 #	26 #	10.9 #	5.71 #	4.29 #	4.31 #
pH	1 pH Units	TM133		9.27 M	8.68 M	8.89 M	9.23 M	9.32 M	8.98 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		12.2 M	11.2 M	15.7 M	13.9 M	14.8 M	10 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	0.998 M	<0.2 M	<0.2 M	<0.2 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		106 M	<0.9 M	<9 M	23.8 M	9.03 M	30.5 M
Copper	<1.4 mg/kg	TM181		32.5 M	19.5 M	23.9 M	20.6 M	19.1 M	12.5 M
Iron	<1000 mg/kg	TM181		150000 #	136000 #	73800 #	187000 #	196000 #	127000 #
Lead	<0.7 mg/kg	TM181		45.8 M	35.8 M	47.2 M	64.3 M	51.3 M	26 M
Manganese	<0.13 mg/kg	TM181		10600 M	3490 M	1690 M	10400 M	7880 M	5960 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<1.4 M	<1.4 M	<1.4 M	<1.4 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		22.1 M	27.1 M	33.7 M	49.7 M	28 M	13.3 M
Selenium	<1 mg/kg	TM181		1.71 #	<1 #	<10 #	<10 #	<10 #	1.25 #
Vanadium	<0.2 mg/kg	TM181		143 #	56.4 #	49.4 #	142 #	132 #	87.5 #
Zinc	<1.9 mg/kg	TM181		184 M	221 M	185 M	179 M	174 M	103 M
Sulphate, acid soluble (total)	<0.02 %	TM221				0.254	0.282	0.305	
Calcium	<21 mg/kg	TM224				60200	127000	132000	
Magnesium	<8 mg/kg	TM224				7720	22600	17900	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243				0.0479 M	0.179 M	0.164 M	

CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

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

Customer Sample Ref.	4C-H5	4C-H5	4C-H5	4C-H1-V	4C-H2-V	4C-H4-V
Depth (m)	0.50 - 0.50	1.00 - 1.00	1.80 - 1.80	1.60 - 1.60	1.80 - 1.80	2.00 - 2.00
Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Date Sampled	11/10/2018	11/10/2018	11/10/2018	11/10/2018	11/10/2018	11/10/2018
Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
Date Received	12/10/2018	12/10/2018	12/10/2018	12/10/2018	12/10/2018	12/10/2018
SDG Ref	181012-49	181012-49	181012-49	181012-49	181012-49	181012-49
Lab Sample No.(s)	18511954	18512026	18512107	18512113	18512103	18512154
AGS Reference						

Component	LOD/Units	Method											
Moisture Content Ratio (% of as received sample)	%	PM024	1.9		9		16		26		25		34	
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12	M	<12	M	<12	M	<12	M	62.5	M	200	M
Phenol	<0.01 mg/kg	TM062 (S)	<0.01	M	<0.01	M	<0.01	M	<0.01	M	<0.01	M	<0.01	M
Cresols	<0.01 mg/kg	TM062 (S)	<0.01	M	<0.01	M	<0.01	M	<0.01	M	<0.01	M	<0.01	M
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015	M	<0.015	M	<0.015	M	<0.015	M	<0.015	M	<0.015	M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035	M	<0.035	M	<0.035	M	<0.035	M	<0.035	M	<0.035	M
Sulphur, Total	<0.02 %	TM132			0.2		0.105							
Sulphate, Total potential	<0.06 %	TM132			0.6		0.315							
Soil Organic Matter (SOM)	<0.35 %	TM132	4.59	#	6.15	#	4.21	#	1.07	#	1.33	#	5.5	#
pH	1 pH Units	TM133	9.58	M	9.03	M	8.89	M	8.54	M	8.08	M	7.4	M
Cyanide, Total	<1 mg/kg	TM153	<1	M	<1	M	<1	M	<1	M	<1	M	<1	M
Cyanide, Free	<1 mg/kg	TM153	<1	M	<1	M	<1	M	<1	M	<1	M	<1	M
Arsenic	<0.6 mg/kg	TM181	16.8	M	13.8	M	12.4	M	17.8	M	18.4	M	14.2	M
Cadmium	<0.02 mg/kg	TM181	<0.2	M	<0.2	M	<0.2	M	<0.02	M	0.541	M	0.475	M
Chromium	<0.9 mg/kg	TM181	115	M	101	M	34.4	M	27.8	M	32.7	M	35	M
Copper	<1.4 mg/kg	TM181	38.8	M	25.9	M	28.6	M	10.5	M	11.2	M	14.6	M
Iron	<1000 mg/kg	TM181	206000	#	164000	#	83300	#	34100	#	38000	#	28200	#
Lead	<0.7 mg/kg	TM181	55.9	M	66.2	M	36.1	M	25.4	M	28.7	M	33.7	M
Manganese	<0.13 mg/kg	TM181	11800	M	9890	M	3000	M	719	M	782	M	271	M
Mercury	<0.14 mg/kg	TM181	<1.4	M	<1.4	M	<1.4	M	<0.14	M	<0.14	M	<0.14	M
Nickel	<0.2 mg/kg	TM181	47.3	M	27.5	M	27.2	M	34.3	M	43	M	27.1	M
Selenium	<1 mg/kg	TM181	<10	#	<10	#	<10	#	<1	#	<1	#	<1	#
Vanadium	<0.2 mg/kg	TM181	205	#	176	#	104	#	48.4	#	62.1	#	56.1	#
Zinc	<1.9 mg/kg	TM181	195	M	251	M	114	M	115	M	128	M	111	M
Sulphate, acid soluble (total)	<0.02 %	TM221			0.293		0.0939							
Calcium	<21 mg/kg	TM224			140000		57200							
Magnesium	<8 mg/kg	TM224			15800		10200							
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243			0.146	M	0.0919	M						

CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

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

Component	LOD/Units	Method	Customer Sample Ref.	4C-H5-V	4C-I1	4C-I1	4C-I2	4C-I2	4C-I2
			Depth (m)	2.50 - 2.50	0.50 - 0.50	1.10 - 1.10	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/10/2018	11/10/2018	11/10/2018	11/10/2018	11/10/2018	11/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	12/10/2018	12/10/2018	12/10/2018	12/10/2018	12/10/2018	12/10/2018
			SDG Ref	181012-49	181012-49	181012-49	181012-49	181012-49	181012-49
			Lab Sample No.(s)	18512119	18512091	18512095	18512005	18512018	18512042
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		39	9.7	9.2	5.9	7.7	17
Exchangeable Ammonia as N	<12 mg/kg	TM024		234 M	<12 M	<12 #	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 #	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 #	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 #	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 #	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132			0.0954		0.221	0.202	
Sulphate, Total potential	<0.06 %	TM132			0.286		0.663	0.606	
Soil Organic Matter (SOM)	<0.35 %	TM132		7.98 #	47.8 #	7.83 #	26.4 #	27.1 #	10.1 #
pH	1 pH Units	TM133		6.69 M	8.81 M	11.7 #	9.1 M	8.64 M	9.5 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	1.42 M	<1 #	<1 M	1.41 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 #	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		16.1 M	8.45 M	<6 #	21.3 M	10.1 M	8.37 M
Cadmium	<0.02 mg/kg	TM181		0.219 M	1.19 M	<0.2 #	<0.2 M	1.56 M	0.774 M
Chromium	<0.9 mg/kg	TM181		39.8 M	36.4 M	109 #	214 M	12.5 M	171 M
Copper	<1.4 mg/kg	TM181		17.6 M	21.7 M	17 #	27.8 M	36 M	22.6 M
Iron	<1000 mg/kg	TM181		24100 #	108000 #	83100 #	134000 #	134000 #	63500 #
Lead	<0.7 mg/kg	TM181		45 M	76.9 M	25 #	113 M	127 M	25.5 M
Manganese	<0.13 mg/kg	TM181		422 M	3360 M	18200 #	11800 M	5070 M	7050 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<1.4 #	<1.4 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		29.7 M	25.1 M	11.5 #	28.6 M	22.6 M	15.1 M
Selenium	<1 mg/kg	TM181		<1 #	1.02 #	<10 #	<10 #	1.37 #	4.02 #
Vanadium	<0.2 mg/kg	TM181		60.6 #	50.8 #	134 #	375 #	72.3 #	124 #
Zinc	<1.9 mg/kg	TM181		153 M	261 M	68.3 #	394 M	593 M	117 M
Sulphate, acid soluble (total)	<0.02 %	TM221			0.159		0.194	0.212	
Calcium	<21 mg/kg	TM224			72900		149000	105000	
Magnesium	<8 mg/kg	TM224			19100		15500	9870	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243			0.0812 M		0.0616 M	0.063 M	

Validated

CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

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

Component	LOD/Units	Method	Customer Sample Ref.	4C-I3	4C-I3	4C-I4	4C-I4	4C-I2-V	4C-I4-V
			Depth (m)	0.50 - 0.50	0.80 - 0.80	0.50 - 0.50	1.00 - 1.00	1.70 - 1.70	2.50 - 2.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/10/2018	11/10/2018	11/10/2018	11/10/2018	11/10/2018	11/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	12/10/2018	12/10/2018	12/10/2018	12/10/2018	12/10/2018	12/10/2018
			SDG Ref	181012-49	181012-49	181012-49	181012-49	181012-49	181012-49
			Lab Sample No.(s)	18511995	18511999	18511978	18511985	18512048	18511989
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		4.1	3.8	8.2	8.1	29	25
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 #	<12 #	<12 #	<12 #	73.3 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 #	<0.015 #	<0.015 #	<0.015 #	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 #	<0.035 #	<0.035 #	<0.035 #	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.0834			0.0853		
Sulphate, Total potential	<0.06 %	TM132		0.25			0.256		
Soil Organic Matter (SOM)	<0.35 %	TM132		4.19 #	4.22 #	4.38 #	3.78 #	1.26 #	1.02 #
pH	1 pH Units	TM133		11.6 #	10.9 #	10.8 #	9.21 #	8.56 M	8.21 M
Cyanide, Total	<1 mg/kg	TM153		<1 #	<1 #	<1 #	<1 #	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 #	<1 #	<1 #	<1 #	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		11.6 #	16.1 #	9.11 #	21.6 #	12.6 M	14.3 M
Cadmium	<0.02 mg/kg	TM181		1.46 #	1.86 #	<0.2 #	3.48 #	0.397 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		91.8 #	116 #	52.1 #	54.4 #	28.5 M	30.1 M
Copper	<1.4 mg/kg	TM181		17.8 #	17.4 #	25.7 #	32.7 #	9.96 M	11.6 M
Iron	<1000 mg/kg	TM181		169000 #	90900 #	95900 #	281000 #	36700 #	39300 #
Lead	<0.7 mg/kg	TM181		53.1 #	34.4 #	49.9 #	96.7 #	23.5 M	24.1 M
Manganese	<0.13 mg/kg	TM181		7680 #	9750 #	8740 #	8840 #	638 M	1380 M
Mercury	<0.14 mg/kg	TM181		<0.14 #	<1.4 #	<1.4 #	<1.4 #	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		18.7 #	19.3 #	19.6 #	37.9 #	37.3 M	39.5 M
Selenium	<1 mg/kg	TM181		1.76 #	<10 #	<10 #	<10 #	<1 #	<1 #
Vanadium	<0.2 mg/kg	TM181		143 #	129 #	116 #	162 #	54.2 #	57.6 #
Zinc	<1.9 mg/kg	TM181		223 #	137 #	163 #	315 #	117 M	118 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.359			0.183		
Calcium	<21 mg/kg	TM224		157000			109000		
Magnesium	<8 mg/kg	TM224		24500			13600		
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.131 #			0.106 #		

CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

PAH by GCMS

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

Component	LOD/Units	Method	Customer Sample Ref.	4C-F2	4C-G4	4C-G4	4C-G4	4C-G4-V	4C-H1
			Depth (m)	0.50 - 0.50	0.50 - 0.50	1.20 - 1.20	1.80 - 1.80	2.40 - 2.40	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/10/2018	11/10/2018	11/10/2018	11/10/2018	11/10/2018	11/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	12/10/2018	12/10/2018	12/10/2018	12/10/2018	12/10/2018	12/10/2018
			SDG Ref	181012-49	181012-49	181012-49	181012-49	181012-49	181012-49
			Lab Sample No.(s)	18512099	18512158	18511962	18511966	18511972	18512075
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		94.2	90.8	95.3	87.1	85.4	91.3
Acenaphthene-d10 % recovery**	%	TM218		91.6	78	88.9	88.1	89.2	83.6
Phenanthrene-d10 % recovery**	%	TM218		92.1	82.4	89	95.3	92.5	91.4
Chrysene-d12 % recovery**	%	TM218		96	88.8	98.3	88.5	82.1	93.9
Perylene-d12 % recovery**	%	TM218		109	90.8	101	89.2	95.8	101
Naphthalene	<0.009 mg/kg	TM218		0.0131 M	<0.09 M	0.159 #	0.0211 #	<0.009 M	0.414 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.12 M	0.034 #	<0.012 #	<0.012 M	0.112 M
Acenaphthene	<0.008 mg/kg	TM218		0.00993 M	<0.08 M	0.019 #	0.0507 #	<0.008 M	0.0228 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	<0.1 M	0.0228 #	0.0165 #	<0.01 M	0.0732 M
Phenanthrene	<0.015 mg/kg	TM218		0.17 M	<0.15 M	0.278 #	0.29 #	<0.015 M	0.754 M
Anthracene	<0.016 mg/kg	TM218		0.0225 M	<0.16 M	0.059 #	0.0641 #	<0.016 M	0.171 M
Fluoranthene	<0.017 mg/kg	TM218		0.55 M	<0.17 M	0.581 #	1.28 #	<0.017 M	1.1 M
Pyrene	<0.015 mg/kg	TM218		0.515 M	<0.15 M	0.526 #	1.35 #	<0.015 M	0.768 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.311 M	<0.14 M	0.507 #	1.09 #	<0.014 M	0.561 M
Chrysene	<0.01 mg/kg	TM218		0.395 M	<0.1 M	0.5 #	1.28 #	<0.01 M	0.583 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.917 M	<0.15 M	0.723 #	2.16 #	<0.015 M	1.08 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.275 M	<0.14 M	0.301 #	0.734 #	<0.014 M	0.358 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.459 M	<0.15 M	0.55 #	1.67 #	<0.015 M	0.582 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.367 M	<0.18 M	0.329 #	1.22 #	<0.018 M	0.461 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.0787 M	<0.23 M	0.0806 #	0.19 #	<0.023 M	0.114 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.499 M	<0.24 M	0.412 #	1.17 #	<0.024 M	0.477 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		4.58	<1.18	5.08	12.6	<0.118	7.63

CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

PAH by GCMS

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

Component	LOD/Units	Method	Customer Sample Ref.	4C-H1	4C-H2	4C-H2	4C-H4	4C-H4	4C-H4
			Depth (m)	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	1.60 - 1.60
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/10/2018	11/10/2018	11/10/2018	11/10/2018	11/10/2018	11/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	12/10/2018	12/10/2018	12/10/2018	12/10/2018	12/10/2018	12/10/2018
			SDG Ref	181012-49	181012-49	181012-49	181012-49	181012-49	181012-49
			Lab Sample No.(s)	18512084	18512054	18512064	18512129	18512139	18512148
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		85.2	92.8	86.6	91.3	90.8	88.6
Acenaphthene-d10 % recovery**	%	TM218		89.6	90.5	88.9	93.4	89.7	90.7
Phenanthrene-d10 % recovery**	%	TM218		94.2	92.8	88.9	101	97.8	91.7
Chrysene-d12 % recovery**	%	TM218		82.4	78	76.9	95.4	89.8	81.5
Perylene-d12 % recovery**	%	TM218		81.5	68.6	75.7	107	96	82.2
Naphthalene	<0.009 mg/kg	TM218		0.274 M	<0.18 M	0.114 M	0.101 M	0.14 M	0.249 M
Acenaphthylene	<0.012 mg/kg	TM218		0.102 M	<0.24 M	<0.12 M	<0.06 M	0.182 M	<0.12 M
Acenaphthene	<0.008 mg/kg	TM218		0.0751 M	<0.16 M	<0.08 M	<0.04 M	<0.04 M	<0.08 M
Fluorene	<0.01 mg/kg	TM218		0.0951 M	<0.2 M	<0.1 M	<0.05 M	0.198 M	<0.1 M
Phenanthrene	<0.015 mg/kg	TM218		1.01 M	<0.3 M	0.335 M	0.279 M	1.78 M	0.451 M
Anthracene	<0.016 mg/kg	TM218		0.254 M	<0.32 M	<0.16 M	0.15 M	0.428 M	<0.16 M
Fluoranthene	<0.017 mg/kg	TM218		1.84 M	<0.34 M	0.513 M	0.591 M	2.36 M	0.662 M
Pyrene	<0.015 mg/kg	TM218		1.55 M	<0.3 M	0.456 M	0.484 M	1.68 M	0.476 M
Benz(a)anthracene	<0.014 mg/kg	TM218		1.21 M	<0.28 M	0.399 M	0.26 M	0.682 M	0.32 M
Chrysene	<0.01 mg/kg	TM218		1.14 M	<0.2 M	0.472 M	0.308 M	0.684 M	0.353 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		2.02 M	<0.3 M	0.72 M	0.322 M	0.74 M	0.41 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.645 M	<0.28 M	0.298 M	0.129 M	0.365 M	0.162 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		1.51 M	<0.3 M	0.477 M	0.35 M	0.746 M	0.302 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		1.07 M	<0.36 M	0.355 M	0.305 M	0.556 M	0.232 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.21 M	<0.46 M	<0.23 M	<0.115 M	<0.115 M	<0.23 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		1 M	<0.48 M	0.364 M	0.29 M	0.582 M	<0.24 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		14	<2.36	4.5	3.57	11.1	3.62

CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

PAH by GCMS

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

Component	LOD/Units	Method	Customer Sample Ref.	4C-H5	4C-H5	4C-H5	4C-H1-V	4C-H2-V	4C-H4-V
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.80 - 1.80	1.60 - 1.60	1.80 - 1.80	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/10/2018	11/10/2018	11/10/2018	11/10/2018	11/10/2018	11/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	12/10/2018	12/10/2018	12/10/2018	12/10/2018	12/10/2018	12/10/2018
			SDG Ref	181012-49	181012-49	181012-49	181012-49	181012-49	181012-49
			Lab Sample No.(s)	18511954	18512026	18512107	18512113	18512103	18512154
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		91.6	93	87.2	89.2	77.6	90.9
Acenaphthene-d10 % recovery**	%	TM218		92.8	92.5	94.3	79.1	81.9	90.8
Phenanthrene-d10 % recovery**	%	TM218		98	93.5	102	95.5	87.3	94.2
Chrysene-d12 % recovery**	%	TM218		96.6	78.2	84.2	85.6	80.1	91.6
Perylene-d12 % recovery**	%	TM218		105	86.1	89.1	86.3	78.8	113
Naphthalene	<0.009 mg/kg	TM218		0.608 M	0.459 M	0.147 M	<0.009 M	<0.009 M	<0.009 M
Acenaphthylene	<0.012 mg/kg	TM218		0.458 M	0.271 M	0.0745 M	<0.012 M	<0.012 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		<0.16 M	<0.04 M	0.0163 M	<0.008 M	<0.008 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		0.27 M	0.162 M	0.0542 M	<0.01 M	<0.01 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		2.12 M	1.33 M	0.454 M	<0.015 M	<0.015 M	<0.015 M
Anthracene	<0.016 mg/kg	TM218		0.596 M	0.368 M	0.123 M	<0.016 M	<0.016 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		4.09 M	2.47 M	0.696 M	<0.017 M	<0.017 M	<0.017 M
Pyrene	<0.015 mg/kg	TM218		2.82 M	1.62 M	0.49 M	<0.015 M	<0.015 M	<0.015 M
Benz(a)anthracene	<0.014 mg/kg	TM218		1.55 M	0.969 M	0.288 M	<0.014 M	<0.014 M	<0.014 M
Chrysene	<0.01 mg/kg	TM218		1.72 M	0.909 M	0.276 M	<0.01 M	<0.01 M	<0.01 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		1.55 M	1.02 M	0.346 M	<0.015 M	<0.015 M	0.0232 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.825 M	0.547 M	0.163 M	<0.014 M	<0.014 M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		1.75 M	1.06 M	0.33 M	<0.015 M	<0.015 M	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		1.26 M	0.956 M	0.22 M	<0.018 M	<0.018 M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.46 M	0.151 M	0.0377 M	<0.023 M	<0.023 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		1.27 M	0.825 M	0.201 M	<0.024 M	<0.024 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		20.9	13.1	3.92	<0.118	<0.118	<0.118

CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

PAH by GCMS

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

Component	LOD/Units	Method	Customer Sample Ref.	4C-H5-V	4C-I1	4C-I1	4C-I2	4C-I2	4C-I2
			Depth (m)	2.50 - 2.50	0.50 - 0.50	1.10 - 1.10	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/10/2018	11/10/2018	11/10/2018	11/10/2018	11/10/2018	11/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	12/10/2018	12/10/2018	12/10/2018	12/10/2018	12/10/2018	12/10/2018
			SDG Ref	181012-49	181012-49	181012-49	181012-49	181012-49	181012-49
			Lab Sample No.(s)	18512119	18512091	18512095	18512005	18512018	18512042
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		98.1	84.3	93.8	84.6	87.4	91.4
Acenaphthene-d10 % recovery**	%	TM218		94.5	74.3	91.7	79.8	94.2	91
Phenanthrene-d10 % recovery**	%	TM218		92.7	87.7	94.4	84.4	93.8	92.6
Chrysene-d12 % recovery**	%	TM218		99.2	78	75.8	72.7	85.4	87.6
Perylene-d12 % recovery**	%	TM218		110	76.9	90.6	66	85.4	96.3
Naphthalene	<0.009 mg/kg	TM218		<0.009 M	0.46 M	0.239 #	<0.18 M	0.781 M	0.0869 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	0.535 M	<0.12 #	0.6 M	0.453 M	<0.06 M
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	<0.08 M	0.107 #	<0.16 M	<0.16 M	<0.04 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	<0.1 M	0.111 #	0.253 M	<0.2 M	<0.05 M
Phenanthrene	<0.015 mg/kg	TM218		0.0433 M	1.8 M	0.957 #	2.79 M	1.98 M	0.239 M
Anthracene	<0.016 mg/kg	TM218		<0.016 M	0.492 M	<0.16 #	0.751 M	0.535 M	<0.08 M
Fluoranthene	<0.017 mg/kg	TM218		0.0831 M	4.26 M	1.49 #	5.64 M	3.9 M	0.539 M
Pyrene	<0.015 mg/kg	TM218		0.064 M	3.35 M	1.23 #	4.05 M	2.81 M	0.387 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.0391 M	2.32 M	0.549 #	2.46 M	1.56 M	0.266 M
Chrysene	<0.01 mg/kg	TM218		0.0444 M	1.99 M	0.682 #	2.06 M	1.6 M	0.294 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.0557 M	3.89 M	0.646 #	3.19 M	1.96 M	0.614 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 M	1.38 M	0.325 #	0.966 M	0.865 M	0.201 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.0398 M	2.44 M	0.799 #	1.99 M	1.7 M	0.408 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.0317 M	2.03 M	0.427 #	1.44 M	1.17 M	0.512 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	0.43 M	<0.23 #	<0.46 M	<0.46 M	<0.115 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 M	1.85 M	0.517 #	1.36 M	1.14 M	0.474 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		0.401	27.2	8.08	27.6	20.4	4.02

CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

PAH by GCMS

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

Component	LOD/Units	Method	Customer Sample Ref.	4C-I3	4C-I3	4C-I4	4C-I4	4C-I2-V	4C-I4-V
			Depth (m)	0.50 - 0.50	0.80 - 0.80	0.50 - 0.50	1.00 - 1.00	1.70 - 1.70	2.50 - 2.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/10/2018	11/10/2018	11/10/2018	11/10/2018	11/10/2018	11/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	12/10/2018	12/10/2018	12/10/2018	12/10/2018	12/10/2018	12/10/2018
			SDG Ref	181012-49	181012-49	181012-49	181012-49	181012-49	181012-49
			Lab Sample No.(s)	18511995	18511999	18511978	18511985	18512048	18511989
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		95.6	86.8	85.3	91	75.4	91.3
Acenaphthene-d10 % recovery**	%	TM218		94.7	91.6	82.1	94.4	77.9	85.3
Phenanthrene-d10 % recovery**	%	TM218		94.5	96.2	76	101	82.8	87.4
Chrysene-d12 % recovery**	%	TM218		104	81.3	77.4	96.5	86.9	88.2
Perylene-d12 % recovery**	%	TM218		101	80.9	79.7	105	100	92.9
Naphthalene	<0.009 mg/kg	TM218		1.21 #	0.456 #	<0.09 #	0.17 #	<0.009 M	<0.009 M
Acenaphthylene	<0.012 mg/kg	TM218		0.153 #	0.108 #	<0.12 #	0.0893 #	<0.012 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		0.114 #	0.21 #	<0.08 #	<0.04 #	<0.008 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		0.198 #	0.17 #	<0.1 #	<0.05 #	<0.01 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		1.81 #	0.87 #	<0.15 #	0.485 #	<0.015 M	<0.015 M
Anthracene	<0.016 mg/kg	TM218		0.376 #	0.189 #	<0.16 #	0.117 #	<0.016 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		1.94 #	1.03 #	<0.17 #	0.898 #	<0.017 M	<0.017 M
Pyrene	<0.015 mg/kg	TM218		1.35 #	0.72 #	<0.15 #	0.709 #	<0.015 M	<0.015 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.9 #	0.392 #	<0.14 #	0.398 #	<0.014 M	<0.014 M
Chrysene	<0.01 mg/kg	TM218		0.815 #	0.365 #	<0.1 #	0.436 #	<0.01 M	<0.01 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.913 #	0.474 #	<0.15 #	0.474 #	<0.015 M	<0.015 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.381 #	0.158 #	<0.14 #	0.254 #	<0.014 M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.658 #	0.331 #	<0.15 #	0.532 #	<0.015 M	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.388 #	0.263 #	<0.18 #	0.396 #	<0.018 M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.112 #	0.0555 #	<0.23 #	<0.115 #	<0.023 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.505 #	0.267 #	<0.24 #	0.475 #	<0.024 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		11.8	6.06	<1.18	5.43	<0.118	<0.118

CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

TPH CWG (S)

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

Component	LOD/Units	Method	Customer Sample Ref.	4C-F2	4C-G4	4C-G4	4C-G4	4C-G4-V	4C-H1
			Depth (m)	0.50 - 0.50	0.50 - 0.50	1.20 - 1.20	1.80 - 1.80	2.40 - 2.40	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/10/2018	11/10/2018	11/10/2018	11/10/2018	11/10/2018	11/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	12/10/2018	12/10/2018	12/10/2018	12/10/2018	12/10/2018	12/10/2018
			SDG Ref	181012-49	181012-49	181012-49	181012-49	181012-49	181012-49
			Lab Sample No.(s)	18512099	18512158	18511962	18511966	18511972	18512075
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		95	36	48	97	72	25.6
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.1 M	<0.1 #	<0.1 #	<0.1 #	<0.1 M	<0.1 #
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C12-C16	<0.1 mg/kg	TM173		0.904	1.29	<0.1	<0.1	<0.1	3.2
Aliphatics >C16-C21	<0.1 mg/kg	TM173		4.05	6.63	0.767	2.02	<0.1	14.6
Aliphatics >C21-C35	<0.1 mg/kg	TM173		19.2	73.7	20.6	33.6	<0.1	88.6
Aliphatics >C35-C44	<0.1 mg/kg	TM173		7.56	55.5	11.1	18.2	<0.1	32.9
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		31.8	137	32.5	53.8	<0.1	139
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	1.98	0.449	<0.1	<0.1	3.61
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		3.06	9.97	2.7	4.35	<0.1	15.1
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		25.4	113	19.7	41.1	0.186	91.6
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		10.1	109	9.57	21.5	<0.1	59.6
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		3.9	46.7	3.58	8.09	<0.1	24.3
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		38.5	234	32.4	66.9	0.186	170
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		70.3	371	64.9	121	0.186	309

Validated

CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

TPH CWG (S)

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

Component	LOD/Units	Method	Customer Sample Ref.	4C-H1	4C-H2	4C-H2	4C-H4	4C-H4	4C-H4
			Depth (m)	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	1.60 - 1.60
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/10/2018	11/10/2018	11/10/2018	11/10/2018	11/10/2018	11/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	12/10/2018	12/10/2018	12/10/2018	12/10/2018	12/10/2018	12/10/2018
			SDG Ref	181012-49	181012-49	181012-49	181012-49	181012-49	181012-49
			Lab Sample No.(s)	18512084	18512054	18512064	18512129	18512139	18512148
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		59.2	51	59	81	69.7	79
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.1 #	<0.1 #	<0.1 #	<0.1 M	<0.1 #	<0.1 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C12-C16	<0.1 mg/kg	TM173		3.06	1.2	1.98	2.1	2.21	1.96
Aliphatics >C16-C21	<0.1 mg/kg	TM173		22.8	5	2.79	12.8	10.7	19.3
Aliphatics >C21-C35	<0.1 mg/kg	TM173		49.5	52.1	34.7	129	126	339
Aliphatics >C35-C44	<0.1 mg/kg	TM173		11.9	25.5	26.1	69	82.2	203
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		87.3	83.8	65.6	213	221	564
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		2.37	1.51	1.07	0.765	1.22	1.36
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		12.9	6.38	5.42	7.79	7.41	18.7
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		62.6	58.5	52.9	145	146	460
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		23.8	51.1	58.9	130	150	443
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		8.52	22.2	26.8	55.3	66.1	190
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		102	118	118	283	305	923
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		189	201	184	496	526	1490

CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

TPH CWG (S)

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

Component	LOD/Units	Method	Customer Sample Ref.	4C-H5	4C-H5	4C-H5	4C-H1-V	4C-H2-V	4C-H4-V
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.80 - 1.80	1.60 - 1.60	1.80 - 1.80	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/10/2018	11/10/2018	11/10/2018	11/10/2018	11/10/2018	11/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	12/10/2018	12/10/2018	12/10/2018	12/10/2018	12/10/2018	12/10/2018
			SDG Ref	181012-49	181012-49	181012-49	181012-49	181012-49	181012-49
			Lab Sample No.(s)	18511954	18512026	18512107	18512113	18512103	18512154
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		75	69.3	74	98	93	100
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.1 M	<0.1 #	<0.1 M	<0.1 M	<0.1 M	0.342 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	0.0274
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	0.0638
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	0.0851
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	0.0623
Aliphatics >C12-C16	<0.1 mg/kg	TM173		0.453	1.39	<0.1	<0.1	<0.1	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		4.12	6.57	<0.1	<0.1	<0.1	<0.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		53.4	57.3	11.8	<0.1	<0.1	<0.1
Aliphatics >C35-C44	<0.1 mg/kg	TM173		23.2	33.6	4.98	<0.1	<0.1	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		81.2	98.8	16.8	<0.1	<0.1	<0.1
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	0.0562
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	0.041
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		2.51	1.63	0.691	<0.1	<0.1	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		16.9	9.08	3.86	<0.1	<0.1	0.248
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		54.7	51.8	21.6	<0.1	<0.1	21.8
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		30.5	42.3	10.3	<0.1	<0.1	4.28
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		12.5	18.8	3.97	<0.1	<0.1	1.46
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		105	105	36.4	<0.1	<0.1	26.3
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		186	204	53.2	<0.1	<0.1	26.7

CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

TPH CWG (S)

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

Component	LOD/Units	Method	Customer Sample Ref.	4C-H5-V	4C-I1	4C-I1	4C-I2	4C-I2	4C-I2
			Depth (m)	2.50 - 2.50	0.50 - 0.50	1.10 - 1.10	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/10/2018	11/10/2018	11/10/2018	11/10/2018	11/10/2018	11/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	12/10/2018	12/10/2018	12/10/2018	12/10/2018	12/10/2018	12/10/2018
			SDG Ref	181012-49	181012-49	181012-49	181012-49	181012-49	181012-49
			Lab Sample No.(s)	18512119	18512091	18512095	18512005	18512018	18512042
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		87	36.7	75	20.8	15	35.8
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.1 M	0.317 #	0.311 #	<0.1 #	<0.1 #	<0.1 #
Aliphatics >C5-C6	<0.01 mg/kg	TM089		0.0116	0.0167	0.011	<0.01	<0.01	<0.01
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.0231	0.0622	0.0594	<0.01	<0.01	<0.01
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.0182	0.0544	0.0583	<0.01	<0.01	<0.01
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.0198	0.0866	0.0759	<0.01	<0.01	<0.01
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	46.4	22.4	6.49	5.67	2.64
Aliphatics >C16-C21	<0.1 mg/kg	TM173		<0.1	194	83.7	18.7	13.9	11.2
Aliphatics >C21-C35	<0.1 mg/kg	TM173		4.21	154	543	394	215	89.1
Aliphatics >C35-C44	<0.1 mg/kg	TM173		<0.1	58.5	330	417	205	43.8
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		4.21	452	979	837	439	147
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.01	0.0154	<0.01	<0.01	<0.01
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.0116	0.0355	0.0385	<0.01	<0.01	<0.01
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		0.0132	0.0577	0.0506	<0.01	<0.01	<0.01
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	13.3	6.54	7.45	6.21	2.04
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		<0.1	109	34.8	34.3	20.8	12.5
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		22.5	159	488	527	247	90.7
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		3.36	62.6	346	597	272	54.3
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		<0.1	24.5	136	258	119	22.2
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		25.8	344	875	1170	547	160
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		30.1	797	1850	2000	986	306

Validated

CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

TPH CWG (S)

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

Component	LOD/Units	Method	Customer Sample Ref.	4C-I3	4C-I3	4C-I4	4C-I4	4C-I2-V	4C-I4-V
			Depth (m)	0.50 - 0.50	0.80 - 0.80	0.50 - 0.50	1.00 - 1.00	1.70 - 1.70	2.50 - 2.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/10/2018	11/10/2018	11/10/2018	11/10/2018	11/10/2018	11/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	12/10/2018	12/10/2018	12/10/2018	12/10/2018	12/10/2018	12/10/2018
			SDG Ref	181012-49	181012-49	181012-49	181012-49	181012-49	181012-49
			Lab Sample No.(s)	18511995	18511999	18511978	18511985	18512048	18511989
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		66	70.2	59.6	71	99	90
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		0.192 #	2.89 #	0.741 #	<0.1 #	<0.1 M	<0.1 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.01	0.012	<0.01	<0.01	<0.01
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.0344	0.0343	0.0469	<0.01	<0.01	<0.01
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.025	0.231	0.0992	<0.01	<0.01	<0.01
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.0594	1.48	0.306	<0.01	<0.01	<0.01
Aliphatics >C12-C16	<0.1 mg/kg	TM173		3.95	23.3	9.62	2.77	<0.1	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		13.9	15.4	11.8	11.2	<0.1	<0.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		135	78.8	93.1	83.7	<0.1	<0.1
Aliphatics >C35-C44	<0.1 mg/kg	TM173		54.9	44.1	60.6	28.8	<0.1	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		208	162	175	126	<0.1	<0.1
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.0167	0.154	0.0665	<0.01	<0.01	<0.01
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		0.0396	0.984	0.204	<0.01	<0.01	<0.01
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		4.27	10.2	6.33	1.46	<0.1	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		18.4	10.9	15.3	6.65	<0.1	<0.1
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		65.7	40.8	84.8	42.4	<0.1	<0.1
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		35.6	40.4	75.9	26.3	<0.1	<0.1
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		14.3	21.5	33.4	11	<0.1	<0.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		124	102	182	76.8	<0.1	<0.1
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		332	267	358	203	<0.1	<0.1

Validated

CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

VOC MS (S)

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

Component	LOD/Units	Method	Customer Sample Ref.	4C-F2	4C-G4	4C-G4	4C-G4	4C-G4-V	4C-H1
			Depth (m)	0.50 - 0.50	0.50 - 0.50	1.20 - 1.20	1.80 - 1.80	2.40 - 2.40	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/10/2018	11/10/2018	11/10/2018	11/10/2018	11/10/2018	11/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	12/10/2018	12/10/2018	12/10/2018	12/10/2018	12/10/2018	12/10/2018
			SDG Ref	181012-49	181012-49	181012-49	181012-49	181012-49	181012-49
			Lab Sample No.(s)	18512099	18512158	18511962	18511966	18511972	18512075
			AGS Reference						
Dibromofluoromethane**	%	TM116		115	106	109	77.2	109	103
Toluene-d8**	%	TM116		98.5	92.7	95.9	94.3	94.3	94.2
4-Bromofluorobenzene**	%	TM116		93.6	81.6	85.2	85.9	79.7	78.1
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.01 M	<0.1 M	<0.1 #	<0.01 #	<0.01 M	<0.2 M
Benzene	<0.009 mg/kg	TM116		<0.009 M	<0.09 M	<0.09 #	<0.009 #	<0.009 M	<0.18 M
Toluene	<0.007 mg/kg	TM116		<0.007 M	<0.07 M	<0.07 #	<0.007 #	<0.007 M	<0.14 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.004 M	<0.04 M	<0.04 #	<0.004 #	<0.004 M	<0.08 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.01 #	<0.1 #	<0.1 #	<0.01 #	<0.01 #	<0.2 #
o-Xylene	<0.01 mg/kg	TM116		<0.01 M	<0.1 M	<0.1 #	<0.01 #	<0.01 M	<0.2 M
Naphthalene	<0.013 mg/kg	TM116		<0.013 M	<0.13 M	<0.13 #	<0.013 #	<0.013 M	<0.26 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.04	<0.4	<0.4	<0.04	<0.04	<0.8

CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

VOC MS (S)

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

Component	LOD/Units	Method	Customer Sample Ref.	4C-H1	4C-H2	4C-H2	4C-H4	4C-H4	4C-H4
			Depth (m)	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	1.60 - 1.60
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/10/2018	11/10/2018	11/10/2018	11/10/2018	11/10/2018	11/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	12/10/2018	12/10/2018	12/10/2018	12/10/2018	12/10/2018	12/10/2018
			SDG Ref	181012-49	181012-49	181012-49	181012-49	181012-49	181012-49
			Lab Sample No.(s)	18512084	18512054	18512064	18512129	18512139	18512148
			AGS Reference						
Dibromofluoromethane**	%	TM116		105	118	115	117	111	110
Toluene-d8**	%	TM116		96.5	96	96.2	95.5	97.1	97.1
4-Bromofluorobenzene**	%	TM116		83.4	78.9	90.2	86.6	87.6	89
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 #	<0.1 M	<0.2 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 #	<0.09 M	<0.18 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 #	<0.07 M	<0.14 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 #	<0.04 M	<0.08 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.2 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 M	<0.2 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 #	<0.13 M	<0.26 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.8	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

VOC MS (S)

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

Component	LOD/Units	Method	Customer Sample Ref.	4C-H5	4C-H5	4C-H5	4C-H1-V	4C-H2-V	4C-H4-V
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.80 - 1.80	1.60 - 1.60	1.80 - 1.80	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/10/2018	11/10/2018	11/10/2018	11/10/2018	11/10/2018	11/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	12/10/2018	12/10/2018	12/10/2018	12/10/2018	12/10/2018	12/10/2018
			SDG Ref	181012-49	181012-49	181012-49	181012-49	181012-49	181012-49
			Lab Sample No.(s)	18511954	18512026	18512107	18512113	18512103	18512154
			AGS Reference						
Dibromofluoromethane**	%	TM116		111	106	110	108	112	119
Toluene-d8**	%	TM116		96.1	95.4	96.2	95.1	97	88.1
4-Bromofluorobenzene**	%	TM116		82.4	84.3	81.1	88.5	83.4	70.4
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.01 M	<0.01 M	<0.01 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.009 M	<0.009 M	<0.009 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.007 M	<0.007 M	<0.007 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.004 M	<0.004 M	<0.004 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.01 #	<0.01 #	<0.01 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.01 M	<0.01 M	<0.01 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	0.161 M	<0.013 M	<0.013 M	<0.013 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.04	<0.04	<0.04

Validated

CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

VOC MS (S)

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

Component	LOD/Units	Method	Customer Sample Ref.	4C-H5-V	4C-I1	4C-I1	4C-I2	4C-I2	4C-I2
			Depth (m)	2.50 - 2.50	0.50 - 0.50	1.10 - 1.10	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/10/2018	11/10/2018	11/10/2018	11/10/2018	11/10/2018	11/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	12/10/2018	12/10/2018	12/10/2018	12/10/2018	12/10/2018	12/10/2018
			SDG Ref	181012-49	181012-49	181012-49	181012-49	181012-49	181012-49
			Lab Sample No.(s)	18512119	18512091	18512095	18512005	18512018	18512042
			AGS Reference						
Dibromofluoromethane**	%	TM116		118	105	110	87.3	93.7	103
Toluene-d8**	%	TM116		91.2	94.8	93.6	88.7	91	94.3
4-Bromofluorobenzene**	%	TM116		85.4	82.7	84.2	70	70.4	77.8
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.2 #	<0.1 #	<0.2 M	<0.2 M	<0.2 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.18 #	<0.09 #	<0.18 M	<0.18 M	<0.18 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.14 #	<0.07 #	<0.14 M	<0.14 M	<0.14 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.08 #	<0.04 #	<0.08 M	<0.08 M	<0.08 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.2 #	<0.1 #	<0.2 #	<0.2 #	<0.2 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.2 #	<0.1 #	<0.2 M	<0.2 M	<0.2 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.26 #	<0.13 #	<0.26 M	<0.26 M	<0.26 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.8	<0.4	<0.8	<0.8	<0.8

CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

VOC MS (S)

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

Component	LOD/Units	Method	Customer Sample Ref.	4C-I3	4C-I3	4C-I4	4C-I4	4C-I2-V	4C-I4-V
			Depth (m)	0.50 - 0.50	0.80 - 0.80	0.50 - 0.50	1.00 - 1.00	1.70 - 1.70	2.50 - 2.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/10/2018	11/10/2018	11/10/2018	11/10/2018	11/10/2018	11/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	12/10/2018	12/10/2018	12/10/2018	12/10/2018	12/10/2018	12/10/2018
			SDG Ref	181012-49	181012-49	181012-49	181012-49	181012-49	181012-49
			Lab Sample No.(s)	18511995	18511999	18511978	18511985	18512048	18511989
			AGS Reference						
Dibromofluoromethane**	%	TM116		105	109	101	111	116	121
Toluene-d8**	%	TM116		96.3	96.3	94.5	95.1	96.8	97.9
4-Bromofluorobenzene**	%	TM116		86.1	83.7	79.7	80.5	84.9	89.7
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.01 M	<0.01 M
Benzene	<0.009 mg/kg	TM116		<0.09 #	<0.09 #	<0.09 #	<0.09 #	<0.009 M	<0.009 M
Toluene	<0.007 mg/kg	TM116		<0.07 #	<0.07 #	<0.07 #	<0.07 #	<0.007 M	<0.007 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 #	<0.04 #	<0.04 #	<0.04 #	<0.004 M	<0.004 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.01 #	<0.01 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.01 M	<0.01 M
Naphthalene	<0.013 mg/kg	TM116		0.597 #	0.73 #	0.244 #	<0.13 #	<0.013 M	<0.013 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.04	<0.04

CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

Asbestos Identification - Solid Samples

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-F2 0.50 - 0.50 SOLID 11/10/2018 00:00:00 13/10/2018 15:42:13 181012-49 18512099 TM048	16/10/2018	Barbara Urbanek-Walsh	Loose fibres in soil.	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-G4 0.50 - 0.50 SOLID 11/10/2018 00:00:00 13/10/2018 15:21:40 181012-49 18512158 TM048	17/10/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-G4 1.80 - 1.80 SOLID 11/10/2018 00:00:00 13/10/2018 15:36:12 181012-49 18511966 TM048	16/10/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-H1 0.50 - 0.50 SOLID 11/10/2018 00:00:00 13/10/2018 16:47:28 181012-49 18512075 TM048	16/10/2018	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-H2 1.00 - 1.00 SOLID 11/10/2018 00:00:00 13/10/2018 13:51:39 181012-49 18512064 TM048	17/10/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-H4 0.50 - 0.50 SOLID 11/10/2018 00:00:00 13/10/2018 14:50:13 181012-49 18512129 TM048	16/10/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 181012-49 **Client Reference:** **Report Number:** 477920
Location: Llanwern **Order Number:** LLA488 **Superseded Report:**

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-H4 1.00 - 1.00 SOLID 11/10/2018 00:00:00 13/10/2018 14:48:01 181012-49 18512139 TM048	16/10/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-H5 1.00 - 1.00 SOLID 11/10/2018 00:00:00 13/10/2018 14:44:56 181012-49 18512026 TM048	17/10/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-H5 1.80 - 1.80 SOLID 11/10/2018 00:00:00 13/10/2018 13:39:48 181012-49 18512107 TM048	17/10/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-I1 0.50 - 0.50 SOLID 11/10/2018 00:00:00 13/10/2018 15:40:11 181012-49 18512091 TM048	16/10/2018	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-I2 0.50 - 0.50 SOLID 11/10/2018 00:00:00 13/10/2018 13:43:53 181012-49 18512005 TM048	17/10/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-I2 1.00 - 1.00 SOLID 11/10/2018 00:00:00 13/10/2018 13:47:35 181012-49 18512018 TM048	17/10/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 181012-49 **Client Reference:** **Report Number:** 477920
Location: Llanwern **Order Number:** LLA488 **Superseded Report:**

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-I3 0.50 - 0.50 SOLID 11/10/2018 00:00:00 13/10/2018 16:41:25 181012-49 18511995 TM048	16/10/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-I4 1.00 - 1.00 SOLID 11/10/2018 00:00:00 13/10/2018 15:38:36 181012-49 18511985 TM048	16/10/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

Asbestos Quantification - Full

		Additional Asbestos Components (Using TM048)	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM Evaluation - %	Asbestos Quantification - Total - %
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-F2 0.50 - 0.50 SOLID 11/10/2018 00:00:00 13/10/2018 15:42:46 181012-49 18512099 TM304	None (#)	N/C	<0.001 (#)	<0.001 (#)	<0.001 (#)

Validated

CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.092	**Natural Moisture Content (%)**	1.94
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	98.1
Particle Size <4mm	>95%		

Case	
SDG	181012-49
Lab Sample Number(s)	18511954
Sampled Date	11-Oct-2018
Customer Sample Ref.	4C-H5
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00387	<0.0005	0.0387	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00183	<0.0003	0.0183	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00235	<0.001	0.0235	<0.01	-	-	-
Vanadium	0.104	<0.001	1.04	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000437	<0.00001	0.000437	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000141	<0.000005	0.000141	<0.00005	-	-	-
Fluoranthene by GCMS	0.000106	<0.000005	0.00106	<0.00005	-	-	-
Anthracene by GCMS	0.0000168	<0.000005	0.000168	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000649	<0.000005	0.000649	<0.00005	-	-	-
Fluorene by GCMS	0.0000108	<0.000005	0.000108	<0.00005	-	-	-
Chrysene by GCMS	0.0000189	<0.000005	0.000189	<0.00005	-	-	-
Pyrene by GCMS	0.0000771	<0.000005	0.000771	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000015	<0.000005	0.00015	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000613	<0.000005	0.000613	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000305	<0.000005	0.000305	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000318	<0.000002	0.000318	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.00000929	<0.000005	0.0000929	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000179	<0.000005	0.000179	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000239	<0.000005	0.000239	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000542	<0.000082	0.00542	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	13-Oct-2018
pH (pH Units)	9.98
Conductivity (µS/cm)	140.00
Temperature (°C)	19.80
Volume Leachant (Litres)	0.898

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.092	**Natural Moisture Content (%)**	1.94
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	98.1
Particle Size <4mm	>95%		

Case	
SDG	181012-49
Lab Sample Number(s)	18511954
Sampled Date	11-Oct-2018
Customer Sample Ref.	4C-H5
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	13-Oct-2018
pH (pH Units)	9.98
Conductivity (µS/cm)	140.00
Temperature (°C)	19.80
Volume Leachant (Litres)	0.898

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.7
Particle Size <4mm	>95%		

Case	
SDG	181012-49
Lab Sample Number(s)	18511962
Sampled Date	11-Oct-2018
Customer Sample Ref.	4C-G4
Depth (m)	1.20 - 1.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0195	<0.001	0.195	<0.01	-	-	-
Copper	0.00876	<0.0003	0.0876	<0.003	-	-	-
Lead	0.000315	<0.0002	0.00315	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000402	<0.0004	0.00402	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.04	<0.001	0.4	<0.01	-	-	-
Zinc	0.0234	<0.001	0.234	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000228	<0.00001	0.000228	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000128	<0.000005	0.000128	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.00000878	<0.000005	0.0000878	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000154	<0.000005	0.000154	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000124	<0.000005	0.000124	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	13-Oct-2018
pH (pH Units)	11.67
Conductivity (µS/cm)	940.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.7
Particle Size <4mm	>95%		

Case	
SDG	181012-49
Lab Sample Number(s)	18511962
Sampled Date	11-Oct-2018
Customer Sample Ref.	4C-G4
Depth (m)	1.20 - 1.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	13-Oct-2018
pH (pH Units)	11.67
Conductivity (µS/cm)	940.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181012-49
Lab Sample Number(s)	18511966
Sampled Date	11-Oct-2018
Customer Sample Ref.	4C-G4
Depth (m)	1.80 - 1.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.018	<0.001	0.18	<0.01	-	-	-
Copper	0.00145	<0.0003	0.0145	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0133	<0.001	0.133	<0.01	-	-	-
Zinc	0.00173	<0.001	0.0173	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000647	<0.00001	0.000647	<0.0001	-	-	-
Acenaphthene by GCMS	0.000062	<0.000005	0.00062	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000569	<0.000005	0.00569	<0.00005	-	-	-
Anthracene by GCMS	0.0000326	<0.000005	0.000326	<0.00005	-	-	-
Phenanthrene by GCMS	0.000207	<0.000005	0.00207	<0.00005	-	-	-
Fluorene by GCMS	0.0000206	<0.000005	0.000206	<0.00005	-	-	-
Chrysene by GCMS	0.0000659	<0.000005	0.000659	<0.00005	-	-	-
Pyrene by GCMS	0.000491	<0.000005	0.00491	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000158	<0.000005	0.000158	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000355	<0.000005	0.000355	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000193	<0.000005	0.000193	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000195	<0.000002	0.000195	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000147	<0.000005	0.000147	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00162	<0.000082	0.0162	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	13-Oct-2018
pH (pH Units)	11.94
Conductivity (µS/cm)	1,630.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181012-49
Lab Sample Number(s)	18511966
Sampled Date	11-Oct-2018
Customer Sample Ref.	4C-G4
Depth (m)	1.80 - 1.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	13-Oct-2018
pH (pH Units)	11.94
Conductivity (µS/cm)	1,630.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.93
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.8
Particle Size <4mm	>95%		

Case	
SDG	181012-49
Lab Sample Number(s)	18511978
Sampled Date	11-Oct-2018
Customer Sample Ref.	4C-I4
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00257	<0.0005	0.0257	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00176	<0.0003	0.0176	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.0062	<0.001	0.062	<0.01	-	-	-
Vanadium	0.134	<0.001	1.34	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000323	<0.00001	0.00323	<0.0001	-	-	-
Acenaphthene by GCMS	0.000713	<0.000005	0.00713	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000153	<0.000005	0.000153	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000445	<0.000005	0.000445	<0.00005	-	-	-
Anthracene by GCMS	0.0000239	<0.000005	0.000239	<0.00005	-	-	-
Phenanthrene by GCMS	0.000159	<0.000005	0.00159	<0.00005	-	-	-
Fluorene by GCMS	0.000127	<0.000005	0.00127	<0.00005	-	-	-
Chrysene by GCMS	0.00000756	<0.000005	0.0000756	<0.00005	-	-	-
Pyrene by GCMS	0.0000396	<0.000005	0.000396	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000156	<0.000005	0.000156	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00147	<0.000082	0.0147	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	13-Oct-2018
pH (pH Units)	10.51
Conductivity (µS/cm)	260.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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16:03:46 22/10/2018

CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.93
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.8
Particle Size <4mm	>95%		

Case	
SDG	181012-49
Lab Sample Number(s)	18511978
Sampled Date	11-Oct-2018
Customer Sample Ref.	4C-I4
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	13-Oct-2018
pH (pH Units)	10.51
Conductivity (µS/cm)	260.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181012-49
Lab Sample Number(s)	18511985
Sampled Date	11-Oct-2018
Customer Sample Ref.	4C-I4
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.934	<0.2	9.34	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00321	<0.0005	0.0321	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00116	<0.001	0.0116	<0.01	-	-	-
Copper	0.000308	<0.0003	0.00308	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00195	<0.001	0.0195	<0.01	-	-	-
Vanadium	0.149	<0.001	1.49	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000304	<0.00001	0.000304	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000856	<0.000005	0.0000856	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000749	<0.000005	0.000749	<0.00005	-	-	-
Anthracene by GCMS	0.0000221	<0.000005	0.000221	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000909	<0.000005	0.000909	<0.00005	-	-	-
Fluorene by GCMS	0.0000104	<0.000005	0.000104	<0.00005	-	-	-
Chrysene by GCMS	0.0000357	<0.000005	0.000357	<0.00005	-	-	-
Pyrene by GCMS	0.0000631	<0.000005	0.000631	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000327	<0.000005	0.000327	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000266	<0.000005	0.000266	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000111	<0.000005	0.000111	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000122	<0.000002	0.000122	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000209	<0.000005	0.000209	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000111	<0.000005	0.000111	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000451	<0.000082	0.00451	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	13-Oct-2018
pH (pH Units)	10.05
Conductivity (µS/cm)	131.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181012-49
Lab Sample Number(s)	18511985
Sampled Date	11-Oct-2018
Customer Sample Ref.	4C-I4
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	13-Oct-2018
pH (pH Units)	10.05
Conductivity (µS/cm)	131.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.120	**Natural Moisture Content (%)**	33.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	75
Particle Size <4mm	>95%		

Case	
SDG	181012-49
Lab Sample Number(s)	18511989
Sampled Date	11-Oct-2018
Customer Sample Ref.	4C-I4-V
Depth (m)	2.50 - 2.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.726	<0.2	7.26	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00194	<0.0005	0.0194	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00231	<0.0003	0.0231	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.03	<0.003	0.3	<0.03	-	-	-
Nickel	0.00105	<0.0004	0.0105	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00436	<0.001	0.0436	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000102	<0.000005	0.000102	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.00000749	<0.000005	0.0000749	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	17-Oct-2018
pH (pH Units)	8.32
Conductivity (µS/cm)	170.00
Temperature (°C)	16.30
Volume Leachant (Litres)	0.870

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.120	**Natural Moisture Content (%)**	33.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	75
Particle Size <4mm	>95%		

Case	
SDG	181012-49
Lab Sample Number(s)	18511989
Sampled Date	11-Oct-2018
Customer Sample Ref.	4C-I4-V
Depth (m)	2.50 - 2.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	17-Oct-2018
pH (pH Units)	8.32
Conductivity (µS/cm)	170.00
Temperature (°C)	16.30
Volume Leachant (Litres)	0.870

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.28
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.9
Particle Size <4mm	>95%		

Case	
SDG	181012-49
Lab Sample Number(s)	18511995
Sampled Date	11-Oct-2018
Customer Sample Ref.	4C-I3
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000111	<0.00001	0.000111	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00134	<0.0005	0.0134	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00519	<0.001	0.0519	<0.01	-	-	-
Copper	0.00561	<0.0003	0.0561	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00061	<0.0004	0.0061	<0.004	-	-	-
Selenium	0.00112	<0.001	0.0112	<0.01	-	-	-
Vanadium	0.055	<0.001	0.55	<0.01	-	-	-
Zinc	0.0109	<0.001	0.109	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000949	<0.00001	0.00949	<0.0001	-	-	-
Acenaphthene by GCMS	0.000262	<0.000005	0.00262	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000134	<0.000005	0.00134	<0.00005	-	-	-
Fluoranthene by GCMS	0.000483	<0.000005	0.00483	<0.00005	-	-	-
Anthracene by GCMS	0.000125	<0.000005	0.00125	<0.00005	-	-	-
Phenanthrene by GCMS	0.00106	<0.000005	0.0106	<0.00005	-	-	-
Fluorene by GCMS	0.000206	<0.000005	0.00206	<0.00005	-	-	-
Chrysene by GCMS	0.000023	<0.000005	0.00023	<0.00005	-	-	-
Pyrene by GCMS	0.000337	<0.000005	0.00337	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000113	<0.000005	0.000113	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00359	<0.000082	0.0359	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	13-Oct-2018
pH (pH Units)	11.46
Conductivity (µS/cm)	593.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.28
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.9
Particle Size <4mm	>95%		

Case	
SDG	181012-49
Lab Sample Number(s)	18511995
Sampled Date	11-Oct-2018
Customer Sample Ref.	4C-I3
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	13-Oct-2018
pH (pH Units)	11.46
Conductivity (µS/cm)	593.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	3.95
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	96.2
Particle Size <4mm	>95%		

Case	
SDG	181012-49
Lab Sample Number(s)	18511999
Sampled Date	11-Oct-2018
Customer Sample Ref.	4C-I3
Depth (m)	0.80 - 0.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000124	<0.00001	0.000124	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00127	<0.0005	0.0127	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00356	<0.001	0.0356	<0.01	-	-	-
Copper	0.0032	<0.0003	0.032	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000528	<0.0004	0.00528	<0.004	-	-	-
Selenium	0.00197	<0.001	0.0197	<0.01	-	-	-
Vanadium	0.079	<0.001	0.79	<0.01	-	-	-
Zinc	0.0022	<0.001	0.022	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0029	<0.00001	0.029	<0.0001	-	-	-
Acenaphthene by GCMS	0.00205	<0.000005	0.0205	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000473	<0.000005	0.000473	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000892	<0.000005	0.000892	<0.00005	-	-	-
Anthracene by GCMS	0.0000461	<0.000005	0.000461	<0.00005	-	-	-
Phenanthrene by GCMS	0.000313	<0.000005	0.00313	<0.00005	-	-	-
Fluorene by GCMS	0.000528	<0.000005	0.00528	<0.00005	-	-	-
Chrysene by GCMS	0.00000785	<0.000005	0.0000785	<0.00005	-	-	-
Pyrene by GCMS	0.0000738	<0.000005	0.000738	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000153	<0.000005	0.000153	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00608	<0.000082	0.0608	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	13-Oct-2018
pH (pH Units)	10.94
Conductivity (µS/cm)	382.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	3.95
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	96.2
Particle Size <4mm	>95%		

Case	
SDG	181012-49
Lab Sample Number(s)	18511999
Sampled Date	11-Oct-2018
Customer Sample Ref.	4C-I3
Depth (m)	0.80 - 0.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.011	<0.01	0.11	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	0.016	<0.01	0.16	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.016	<0.01	0.16	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.046	<0.01	0.46	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	13-Oct-2018
pH (pH Units)	10.94
Conductivity (µS/cm)	382.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.27
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.1
Particle Size <4mm	>95%		

Case	
SDG	181012-49
Lab Sample Number(s)	18512005
Sampled Date	11-Oct-2018
Customer Sample Ref.	4C-I2
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00558	<0.0005	0.0558	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00127	<0.001	0.0127	<0.01	-	-	-
Copper	0.00474	<0.0003	0.0474	<0.003	-	-	-
Lead	0.00104	<0.0002	0.0104	<0.002	-	-	-
Manganese	0.0039	<0.003	0.039	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00243	<0.001	0.0243	<0.01	-	-	-
Vanadium	0.101	<0.001	1.01	<0.01	-	-	-
Zinc	0.0027	<0.001	0.027	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.0585	<0.019	0.585	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000256	<0.00001	0.000256	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000239	<0.000005	0.000239	<0.00005	-	-	-
Fluoranthene by GCMS	0.000265	<0.000005	0.00265	<0.00005	-	-	-
Anthracene by GCMS	0.0000317	<0.000005	0.000317	<0.00005	-	-	-
Phenanthrene by GCMS	0.000145	<0.000005	0.00145	<0.00005	-	-	-
Fluorene by GCMS	0.0000147	<0.000005	0.000147	<0.00005	-	-	-
Chrysene by GCMS	0.00016	<0.000005	0.0016	<0.00005	-	-	-
Pyrene by GCMS	0.000201	<0.000005	0.00201	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000114	<0.000005	0.00114	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000167	<0.000005	0.00167	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000059	<0.000005	0.00059	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000572	<0.000002	0.000572	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000173	<0.000005	0.000173	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000106	<0.000005	0.00106	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000624	<0.000005	0.000624	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00145	<0.000082	0.0145	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	13-Oct-2018
pH (pH Units)	9.80
Conductivity (µS/cm)	132.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.27
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.1
Particle Size <4mm	>95%		

Case	
SDG	181012-49
Lab Sample Number(s)	18512005
Sampled Date	11-Oct-2018
Customer Sample Ref.	4C-I2
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	13-Oct-2018
pH (pH Units)	9.80
Conductivity (µS/cm)	132.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181012-49
Lab Sample Number(s)	18512018
Sampled Date	11-Oct-2018
Customer Sample Ref.	4C-I2
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00445	<0.0005	0.0445	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00245	<0.001	0.0245	<0.01	-	-	-
Copper	0.00462	<0.0003	0.0462	<0.003	-	-	-
Lead	0.00552	<0.0002	0.0552	<0.002	-	-	-
Manganese	0.0196	<0.003	0.196	<0.03	-	-	-
Nickel	0.00102	<0.0004	0.0102	<0.004	-	-	-
Selenium	0.00118	<0.001	0.0118	<0.01	-	-	-
Vanadium	0.028	<0.001	0.28	<0.01	-	-	-
Zinc	0.0132	<0.001	0.132	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.247	<0.019	2.47	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000339	<0.00001	0.000339	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000228	<0.000005	0.000228	<0.00005	-	-	-
Fluoranthene by GCMS	0.000174	<0.000005	0.00174	<0.00005	-	-	-
Anthracene by GCMS	0.0000232	<0.000005	0.000232	<0.00005	-	-	-
Phenanthrene by GCMS	0.000109	<0.000005	0.00109	<0.00005	-	-	-
Fluorene by GCMS	0.00000812	<0.000005	0.0000812	<0.00005	-	-	-
Chrysene by GCMS	0.000131	<0.000005	0.00131	<0.00005	-	-	-
Pyrene by GCMS	0.000128	<0.000005	0.00128	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000798	<0.000005	0.000798	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000143	<0.000005	0.00143	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000521	<0.000005	0.000521	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000426	<0.000002	0.000426	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000159	<0.000005	0.000159	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000109	<0.000005	0.00109	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000566	<0.000005	0.000566	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00113	<0.000082	0.0113	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	13-Oct-2018
pH (pH Units)	9.27
Conductivity (µS/cm)	106.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181012-49
Lab Sample Number(s)	18512018
Sampled Date	11-Oct-2018
Customer Sample Ref.	4C-I2
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	13-Oct-2018
pH (pH Units)	9.27
Conductivity (µS/cm)	106.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.89
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91
Particle Size <4mm	>95%		

Case	
SDG	181012-49
Lab Sample Number(s)	18512026
Sampled Date	11-Oct-2018
Customer Sample Ref.	4C-H5
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00536	<0.0005	0.0536	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00102	<0.001	0.0102	<0.01	-	-	-
Copper	0.000589	<0.0003	0.00589	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00248	<0.001	0.0248	<0.01	-	-	-
Vanadium	0.0923	<0.001	0.923	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000421	<0.00001	0.000421	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000129	<0.000005	0.000129	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000704	<0.000005	0.000704	<0.00005	-	-	-
Anthracene by GCMS	0.0000127	<0.000005	0.000127	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000585	<0.000005	0.000585	<0.00005	-	-	-
Fluorene by GCMS	0.0000128	<0.000005	0.000128	<0.00005	-	-	-
Chrysene by GCMS	0.0000266	<0.000005	0.000266	<0.00005	-	-	-
Pyrene by GCMS	0.0000545	<0.000005	0.000545	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000151	<0.000005	0.000151	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000508	<0.000005	0.000508	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000205	<0.000005	0.000205	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000262	<0.000002	0.000262	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000109	<0.000005	0.000109	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000138	<0.000005	0.000138	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000237	<0.000005	0.000237	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000451	<0.000082	0.00451	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	13-Oct-2018
pH (pH Units)	9.59
Conductivity (µS/cm)	140.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.89
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91
Particle Size <4mm	>95%		

Case	
SDG	181012-49
Lab Sample Number(s)	18512026
Sampled Date	11-Oct-2018
Customer Sample Ref.	4C-H5
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	13-Oct-2018
pH (pH Units)	9.59
Conductivity (µS/cm)	140.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

22/10/2018 16:04:20

16:03:46 22/10/2018

CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.109	**Natural Moisture Content (%)**	20.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	83
Particle Size <4mm	>95%		

Case	
SDG	181012-49
Lab Sample Number(s)	18512042
Sampled Date	11-Oct-2018
Customer Sample Ref.	4C-I2
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00318	<0.0005	0.0318	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0022	<0.001	0.022	<0.01	-	-	-
Copper	0.00303	<0.0003	0.0303	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000512	<0.0004	0.00512	<0.004	-	-	-
Selenium	0.00225	<0.001	0.0225	<0.01	-	-	-
Vanadium	0.103	<0.001	1.03	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000146	<0.00001	0.000146	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000066	<0.000005	0.00066	<0.00005	-	-	-
Anthracene by GCMS	0.0000112	<0.000005	0.000112	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000467	<0.000005	0.000467	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	0.000025	<0.000005	0.00025	<0.00005	-	-	-
Pyrene by GCMS	0.0000488	<0.000005	0.000488	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000208	<0.000005	0.000208	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000531	<0.000005	0.000531	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000017	<0.000005	0.00017	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000279	<0.000002	0.000279	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000163	<0.000005	0.000163	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000215	<0.000005	0.000215	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000369	<0.000082	0.00369	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	13-Oct-2018
pH (pH Units)	10.68
Conductivity (µS/cm)	237.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.882

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.109	**Natural Moisture Content (%)**	20.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	83
Particle Size <4mm	>95%		

Case	
SDG	181012-49
Lab Sample Number(s)	18512042
Sampled Date	11-Oct-2018
Customer Sample Ref.	4C-I2
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	13-Oct-2018
pH (pH Units)	10.68
Conductivity (µS/cm)	237.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.882

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181012-49
Lab Sample Number(s)	18512054
Sampled Date	11-Oct-2018
Customer Sample Ref.	4C-H2
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00385	<0.0005	0.0385	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00103	<0.001	0.0103	<0.01	-	-	-
Copper	0.000721	<0.0003	0.00721	<0.003	-	-	-
Lead	0.000352	<0.0002	0.00352	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0214	<0.001	0.214	<0.01	-	-	-
Zinc	0.00296	<0.001	0.0296	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.36	<0.019	3.6	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000542	<0.000005	0.0000542	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000485	<0.000005	0.000485	<0.00005	-	-	-
Anthracene by GCMS	0.00000626	<0.000005	0.0000626	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000387	<0.000005	0.000387	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	0.000035	<0.000005	0.00035	<0.00005	-	-	-
Pyrene by GCMS	0.0000361	<0.000005	0.000361	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000266	<0.000005	0.000266	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000324	<0.000005	0.000324	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000119	<0.000005	0.000119	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000105	<0.000002	0.000105	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000276	<0.000005	0.000276	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000146	<0.000005	0.000146	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000293	<0.000082	0.00293	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	13-Oct-2018
pH (pH Units)	9.16
Conductivity (µS/cm)	83.40
Temperature (°C)	18.80
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181012-49
Lab Sample Number(s)	18512054
Sampled Date	11-Oct-2018
Customer Sample Ref.	4C-H2
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	13-Oct-2018
pH (pH Units)	9.16
Conductivity (µS/cm)	83.40
Temperature (°C)	18.80
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	181012-49
Lab Sample Number(s)	18512064
Sampled Date	11-Oct-2018
Customer Sample Ref.	4C-H2
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0131	<0.0005	0.131	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00129	<0.0003	0.0129	<0.003	-	-	-
Lead	0.000208	<0.0002	0.00208	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0151	<0.001	0.151	<0.01	-	-	-
Zinc	0.00295	<0.001	0.0295	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.268	<0.019	2.68	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000141	<0.000005	0.000141	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.000017	<0.000005	0.00017	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	0.00000926	<0.000005	0.0000926	<0.00005	-	-	-
Pyrene by GCMS	0.0000114	<0.000005	0.000114	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000173	<0.000005	0.000173	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00000815	<0.000005	0.0000815	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.00000786	<0.000005	0.0000786	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000085	<0.000082	0.00085	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	13-Oct-2018
pH (pH Units)	8.70
Conductivity (µS/cm)	6.96
Temperature (°C)	18.80
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	181012-49
Lab Sample Number(s)	18512064
Sampled Date	11-Oct-2018
Customer Sample Ref.	4C-H2
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	13-Oct-2018
pH (pH Units)	8.70
Conductivity (µS/cm)	6.96
Temperature (°C)	18.80
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181012-49
Lab Sample Number(s)	18512075
Sampled Date	11-Oct-2018
Customer Sample Ref.	4C-H1
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00393	<0.0005	0.0393	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00154	<0.001	0.0154	<0.01	-	-	-
Copper	0.000924	<0.0003	0.00924	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0473	<0.001	0.473	<0.01	-	-	-
Zinc	0.00301	<0.001	0.0301	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.227	<0.019	2.27	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000208	<0.00001	0.000208	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.00013	<0.000005	0.0013	<0.00005	-	-	-
Anthracene by GCMS	0.000021	<0.000005	0.00021	<0.00005	-	-	-
Phenanthrene by GCMS	0.000103	<0.000005	0.00103	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	0.0000713	<0.000005	0.000713	<0.00005	-	-	-
Pyrene by GCMS	0.000094	<0.000005	0.00094	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000037	<0.000005	0.00037	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0001	<0.000005	0.001	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000393	<0.000005	0.000393	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000515	<0.000002	0.000515	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000183	<0.000005	0.000183	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000454	<0.000005	0.000454	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000409	<0.000005	0.000409	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000773	<0.000082	0.00773	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	13-Oct-2018
pH (pH Units)	9.46
Conductivity (µS/cm)	92.90
Temperature (°C)	18.50
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181012-49
Lab Sample Number(s)	18512075
Sampled Date	11-Oct-2018
Customer Sample Ref.	4C-H1
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	13-Oct-2018
pH (pH Units)	9.46
Conductivity (µS/cm)	92.90
Temperature (°C)	18.50
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181012-49
Lab Sample Number(s)	18512084
Sampled Date	11-Oct-2018
Customer Sample Ref.	4C-H1
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00596	<0.0005	0.0596	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00257	<0.0003	0.0257	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000645	<0.0004	0.00645	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.095	<0.001	0.95	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000195	<0.00001	0.000195	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000516	<0.000005	0.0000516	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000467	<0.000005	0.000467	<0.00005	-	-	-
Anthracene by GCMS	0.00000777	<0.000005	0.0000777	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000391	<0.000005	0.000391	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	0.0000371	<0.000005	0.000371	<0.00005	-	-	-
Pyrene by GCMS	0.0000376	<0.000005	0.000376	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000321	<0.000005	0.000321	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000351	<0.000005	0.000351	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000139	<0.000005	0.000139	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000132	<0.000002	0.000132	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000282	<0.000005	0.000282	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000145	<0.000005	0.000145	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00033	<0.000082	0.0033	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	13-Oct-2018
pH (pH Units)	10.50
Conductivity (µS/cm)	216.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181012-49
Lab Sample Number(s)	18512084
Sampled Date	11-Oct-2018
Customer Sample Ref.	4C-H1
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	13-Oct-2018
pH (pH Units)	10.50
Conductivity (µS/cm)	216.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.7
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.3
Particle Size <4mm	>95%		

Case	
SDG	181012-49
Lab Sample Number(s)	18512091
Sampled Date	11-Oct-2018
Customer Sample Ref.	4C-I1
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00366	<0.0005	0.0366	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00207	<0.001	0.0207	<0.01	-	-	-
Copper	0.00335	<0.0003	0.0335	<0.003	-	-	-
Lead	0.000564	<0.0002	0.00564	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00102	<0.0004	0.0102	<0.004	-	-	-
Selenium	0.00148	<0.001	0.0148	<0.01	-	-	-
Vanadium	0.0331	<0.001	0.331	<0.01	-	-	-
Zinc	0.00183	<0.001	0.0183	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.421	<0.019	4.21	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000269	<0.00001	0.000269	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000601	<0.000005	0.0000601	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000947	<0.000005	0.0000947	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000615	<0.000005	0.000615	<0.00005	-	-	-
Anthracene by GCMS	0.0000124	<0.000005	0.000124	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000397	<0.000005	0.000397	<0.00005	-	-	-
Fluorene by GCMS	0.00000941	<0.000005	0.0000941	<0.00005	-	-	-
Chrysene by GCMS	0.0000534	<0.000005	0.000534	<0.00005	-	-	-
Pyrene by GCMS	0.000067	<0.000005	0.00067	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000414	<0.000005	0.000414	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000797	<0.000005	0.000797	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000256	<0.000005	0.000256	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000268	<0.000002	0.000268	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.00000839	<0.000005	0.0000839	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000622	<0.000005	0.000622	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000369	<0.000005	0.000369	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000567	<0.000082	0.00567	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	13-Oct-2018
pH (pH Units)	9.50
Conductivity (µS/cm)	122.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.7
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.3
Particle Size <4mm	>95%		

Case	
SDG	181012-49
Lab Sample Number(s)	18512091
Sampled Date	11-Oct-2018
Customer Sample Ref.	4C-I1
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	0.013	<0.01	0.13	<0.1	-	-	-
Aromatics >EC16-EC21	0.032	<0.01	0.32	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.045	<0.01	0.45	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.046	<0.01	0.46	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	13-Oct-2018
pH (pH Units)	9.50
Conductivity (µS/cm)	122.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181012-49
Lab Sample Number(s)	18512095
Sampled Date	11-Oct-2018
Customer Sample Ref.	4C-I1
Depth (m)	1.10 - 1.10

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00494	<0.0003	0.0494	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000871	<0.0004	0.00871	<0.004	-	-	-
Selenium	0.00161	<0.001	0.0161	<0.01	-	-	-
Vanadium	0.0124	<0.001	0.124	<0.01	-	-	-
Zinc	0.00445	<0.001	0.0445	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000193	<0.00001	0.00193	<0.0001	-	-	-
Acenaphthene by GCMS	0.000148	<0.000005	0.00148	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000126	<0.000005	0.00126	<0.00005	-	-	-
Anthracene by GCMS	0.0000246	<0.000005	0.000246	<0.00005	-	-	-
Phenanthrene by GCMS	0.000194	<0.000005	0.00194	<0.00005	-	-	-
Fluorene by GCMS	0.0000455	<0.000005	0.000455	<0.00005	-	-	-
Chrysene by GCMS	0.000011	<0.000005	0.00011	<0.00005	-	-	-
Pyrene by GCMS	0.0000982	<0.000005	0.000982	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.00000602	<0.000005	0.0000602	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000847	<0.000082	0.00847	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	13-Oct-2018
pH (pH Units)	11.54
Conductivity (µS/cm)	1,030.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181012-49
Lab Sample Number(s)	18512095
Sampled Date	11-Oct-2018
Customer Sample Ref.	4C-I1
Depth (m)	1.10 - 1.10

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	13-Oct-2018
pH (pH Units)	11.54
Conductivity (µS/cm)	1,030.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.41
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.4
Particle Size <4mm	>95%		

Case	
SDG	181012-49
Lab Sample Number(s)	18512099
Sampled Date	11-Oct-2018
Customer Sample Ref.	4C-F2
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00154	<0.001	0.0154	<0.01	-	-	-
Copper	0.00129	<0.0003	0.0129	<0.003	-	-	-
Lead	0.000683	<0.0002	0.00683	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.006	<0.001	0.06	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000101	<0.00001	0.00101	<0.0001	-	-	-
Acenaphthene by GCMS	0.000037	<0.000005	0.00037	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000383	<0.000005	0.000383	<0.00005	-	-	-
Fluoranthene by GCMS	0.000918	<0.000005	0.00918	<0.00005	-	-	-
Anthracene by GCMS	0.0000981	<0.000005	0.000981	<0.00005	-	-	-
Phenanthrene by GCMS	0.00076	<0.000005	0.0076	<0.00005	-	-	-
Fluorene by GCMS	0.0000575	<0.000005	0.000575	<0.00005	-	-	-
Chrysene by GCMS	0.0000853	<0.000005	0.000853	<0.00005	-	-	-
Pyrene by GCMS	0.000735	<0.000005	0.00735	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000376	<0.000005	0.000376	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000308	<0.000005	0.000308	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000922	<0.000002	0.0000922	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00291	<0.000082	0.0291	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	13-Oct-2018
pH (pH Units)	12.23
Conductivity (µS/cm)	3.61
Temperature (°C)	18.80
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.41
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.4
Particle Size <4mm	>95%		

Case	
SDG	181012-49
Lab Sample Number(s)	18512099
Sampled Date	11-Oct-2018
Customer Sample Ref.	4C-F2
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	13-Oct-2018
pH (pH Units)	12.23
Conductivity (µS/cm)	3.61
Temperature (°C)	18.80
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.107	**Natural Moisture Content (%)**	19
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	84
Particle Size <4mm	>95%		

Case	
SDG	181012-49
Lab Sample Number(s)	18512107
Sampled Date	11-Oct-2018
Customer Sample Ref.	4C-H5
Depth (m)	1.80 - 1.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00496	<0.0005	0.0496	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00117	<0.001	0.0117	<0.01	-	-	-
Copper	0.000801	<0.0003	0.00801	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.0023	<0.001	0.023	<0.01	-	-	-
Vanadium	0.111	<0.001	1.11	<0.01	-	-	-
Zinc	0.00119	<0.001	0.0119	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000057	<0.00001	0.00057	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000748	<0.000005	0.0000748	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000176	<0.000005	0.000176	<0.00005	-	-	-
Fluoranthene by GCMS	0.00013	<0.000005	0.0013	<0.00005	-	-	-
Anthracene by GCMS	0.0000265	<0.000005	0.000265	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000989	<0.000005	0.000989	<0.00005	-	-	-
Fluorene by GCMS	0.0000141	<0.000005	0.000141	<0.00005	-	-	-
Chrysene by GCMS	0.0000713	<0.000005	0.000713	<0.00005	-	-	-
Pyrene by GCMS	0.0000985	<0.000005	0.000985	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000565	<0.000005	0.000565	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000632	<0.000005	0.000632	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000231	<0.000005	0.000231	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000301	<0.000002	0.000301	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.00000748	<0.000005	0.0000748	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000484	<0.000005	0.000484	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000282	<0.000005	0.000282	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000778	<0.000082	0.00778	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	13-Oct-2018
pH (pH Units)	9.59
Conductivity (µS/cm)	126.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.883

Mcerts Certification does not apply to leachates

22/10/2018 16:04:20

16:03:46 22/10/2018

CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.107	**Natural Moisture Content (%)**	19
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	84
Particle Size <4mm	>95%		

Case	
SDG	181012-49
Lab Sample Number(s)	18512107
Sampled Date	11-Oct-2018
Customer Sample Ref.	4C-H5
Depth (m)	1.80 - 1.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	13-Oct-2018
pH (pH Units)	9.59
Conductivity (µS/cm)	126.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.883

Mcerts Certification does not apply to leachates

22/10/2018 16:04:20

16:03:46 22/10/2018

CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.7
Particle Size <4mm	>95%		

Case	
SDG	181012-49
Lab Sample Number(s)	18512129
Sampled Date	11-Oct-2018
Customer Sample Ref.	4C-H4
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00233	<0.0005	0.0233	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.000397	<0.0003	0.00397	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00301	<0.001	0.0301	<0.01	-	-	-
Vanadium	0.0842	<0.001	0.842	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000417	<0.00001	0.000417	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000731	<0.000005	0.0000731	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000533	<0.000005	0.0000533	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000427	<0.000005	0.000427	<0.00005	-	-	-
Anthracene by GCMS	0.0000142	<0.000005	0.000142	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000496	<0.000005	0.000496	<0.00005	-	-	-
Fluorene by GCMS	0.00000917	<0.000005	0.0000917	<0.00005	-	-	-
Chrysene by GCMS	0.00000845	<0.000005	0.0000845	<0.00005	-	-	-
Pyrene by GCMS	0.000041	<0.000005	0.00041	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000163	<0.000005	0.000163	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000236	<0.000082	0.00236	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	13-Oct-2018
pH (pH Units)	10.36
Conductivity (µS/cm)	169.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.7
Particle Size <4mm	>95%		

Case	
SDG	181012-49
Lab Sample Number(s)	18512129
Sampled Date	11-Oct-2018
Customer Sample Ref.	4C-H4
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	13-Oct-2018
pH (pH Units)	10.36
Conductivity (µS/cm)	169.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.7
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.3
Particle Size <4mm	>95%		

Case	
SDG	181012-49
Lab Sample Number(s)	18512139
Sampled Date	11-Oct-2018
Customer Sample Ref.	4C-H4
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00327	<0.0005	0.0327	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0041	<0.001	0.041	<0.01	-	-	-
Copper	0.00105	<0.0003	0.0105	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00321	<0.001	0.0321	<0.01	-	-	-
Vanadium	0.0965	<0.001	0.965	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000325	<0.00001	0.000325	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000728	<0.000005	0.0000728	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000256	<0.000005	0.000256	<0.00005	-	-	-
Anthracene by GCMS	0.00000668	<0.000005	0.0000668	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000268	<0.000005	0.000268	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	0.0000149	<0.000005	0.000149	<0.00005	-	-	-
Pyrene by GCMS	0.0000223	<0.000005	0.000223	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000196	<0.000005	0.000196	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000126	<0.000005	0.000126	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000011	<0.000005	0.00011	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00000517	<0.000005	0.0000517	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000184	<0.000082	0.00184	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	13-Oct-2018
pH (pH Units)	10.07
Conductivity (µS/cm)	152.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.7
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.3
Particle Size <4mm	>95%		

Case	
SDG	181012-49
Lab Sample Number(s)	18512139
Sampled Date	11-Oct-2018
Customer Sample Ref.	4C-H4
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	13-Oct-2018
pH (pH Units)	10.07
Conductivity (µS/cm)	152.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181012-49
Lab Sample Number(s)	18512148
Sampled Date	11-Oct-2018
Customer Sample Ref.	4C-H4
Depth (m)	1.60 - 1.60

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00593	<0.0005	0.0593	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00141	<0.001	0.0141	<0.01	-	-	-
Copper	0.000775	<0.0003	0.00775	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00427	<0.001	0.0427	<0.01	-	-	-
Vanadium	0.064	<0.001	0.64	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.609	<0.019	6.09	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000112	<0.00001	0.000112	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000194	<0.000005	0.000194	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000165	<0.000005	0.000165	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	0.0000118	<0.000005	0.000118	<0.00005	-	-	-
Pyrene by GCMS	0.0000174	<0.000005	0.000174	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000194	<0.000005	0.000194	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00000975	<0.000005	0.0000975	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000106	<0.000005	0.000106	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00000561	<0.000005	0.0000561	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000122	<0.000082	0.00122	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	13-Oct-2018
pH (pH Units)	9.73
Conductivity (µS/cm)	125.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181012-49
Lab Sample Number(s)	18512148
Sampled Date	11-Oct-2018
Customer Sample Ref.	4C-H4
Depth (m)	1.60 - 1.60

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	13-Oct-2018
pH (pH Units)	9.73
Conductivity (µS/cm)	125.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.65
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.2
Particle Size <4mm	>95%		

Case	
SDG	181012-49
Lab Sample Number(s)	18512158
Sampled Date	11-Oct-2018
Customer Sample Ref.	4C-G4
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0249	<0.001	0.249	<0.01	-	-	-
Copper	0.00847	<0.0003	0.0847	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0541	<0.001	0.541	<0.01	-	-	-
Zinc	0.00322	<0.001	0.0322	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000028	<0.00001	0.00028	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000684	<0.000005	0.0000684	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000375	<0.000005	0.000375	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000258	<0.000005	0.000258	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	0.00000726	<0.000005	0.0000726	<0.00005	-	-	-
Pyrene by GCMS	0.0000367	<0.000005	0.000367	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000143	<0.000005	0.000143	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000156	<0.000082	0.00156	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	13-Oct-2018
pH (pH Units)	11.42
Conductivity (µS/cm)	801.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.65
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.2
Particle Size <4mm	>95%		

Case	
SDG	181012-49
Lab Sample Number(s)	18512158
Sampled Date	11-Oct-2018
Customer Sample Ref.	4C-G4
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	13-Oct-2018
pH (pH Units)	11.42
Conductivity (µS/cm)	801.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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Table of Results - Appendix

Method No	Reference	Description
ASB_PREP		
PM001		Preparation of Samples for Metals Analysis
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM243		Mixed Anions In Soils By Kone
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only

NA = not applicable.

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

CERTIFICATE OF ANALYSIS

SDG:	181012-49	**Client Reference:**		**Report Number:**	477920
Location:	Llanwern	**Order Number:**	LLA488	**Superseded Report:**	

Test Completion Dates

Lab Sample No(s)	18512099	18511962	18511966	18512158	18511972	18512075	18512084	18512054	18512064	18512129
Customer Sample Ref.	4C-F2	4C-G4	4C-G4	4C-G4	4C-G4-V	4C-H1	4C-H1	4C-H2	4C-H2	4C-H4
AGS Ref.										
Depth	0.50 - 0.50	1.20 - 1.20	1.80 - 1.80	0.50 - 0.50	2.40 - 2.40	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	19-Oct-2018		17-Oct-2018	17-Oct-2018		19-Oct-2018			19-Oct-2018	19-Oct-2018
Ammoniacal Nitrogen	17-Oct-2018	17-Oct-2018	17-Oct-2018	17-Oct-2018		17-Oct-2018	17-Oct-2018	17-Oct-2018	17-Oct-2018	17-Oct-2018
Ammonium Soil by Titration	16-Oct-2018	16-Oct-2018	16-Oct-2018	16-Oct-2018	16-Oct-2018	16-Oct-2018	16-Oct-2018	16-Oct-2018	16-Oct-2018	16-Oct-2018
Anions by Kone (soil)	19-Oct-2018		17-Oct-2018	17-Oct-2018		19-Oct-2018			18-Oct-2018	19-Oct-2018
Asbestos ID in Solid Samples	16-Oct-2018		16-Oct-2018	17-Oct-2018		16-Oct-2018			17-Oct-2018	16-Oct-2018
Asbestos Quantification - Full	18-Oct-2018									
CEN 10:1 Leachate (1 Stage)	13-Oct-2018	13-Oct-2018	13-Oct-2018	13-Oct-2018		13-Oct-2018	13-Oct-2018	13-Oct-2018	13-Oct-2018	13-Oct-2018
CEN Readings	17-Oct-2018	17-Oct-2018	17-Oct-2018	17-Oct-2018		17-Oct-2018	17-Oct-2018	17-Oct-2018	17-Oct-2018	17-Oct-2018
Cyanide Comp/Free/Total/Thiocyanate	18-Oct-2018	18-Oct-2018	18-Oct-2018	18-Oct-2018	22-Oct-2018	22-Oct-2018	18-Oct-2018	18-Oct-2018	22-Oct-2018	18-Oct-2018
Dissolved Metals by ICP-MS	17-Oct-2018	17-Oct-2018	17-Oct-2018	17-Oct-2018		17-Oct-2018	17-Oct-2018	17-Oct-2018	17-Oct-2018	17-Oct-2018
EPH CWG (Aliphatic) Aqueous GC (W)	18-Oct-2018	18-Oct-2018	18-Oct-2018	18-Oct-2018		18-Oct-2018	18-Oct-2018	18-Oct-2018	18-Oct-2018	18-Oct-2018
EPH CWG (Aliphatic) GC (S)	18-Oct-2018	19-Oct-2018	17-Oct-2018	19-Oct-2018	17-Oct-2018	18-Oct-2018	18-Oct-2018	18-Oct-2018	17-Oct-2018	18-Oct-2018
EPH CWG (Aromatic) Aqueous GC (W)	18-Oct-2018	18-Oct-2018	18-Oct-2018	18-Oct-2018		18-Oct-2018	18-Oct-2018	18-Oct-2018	18-Oct-2018	18-Oct-2018
EPH CWG (Aromatic) GC (S)	18-Oct-2018	19-Oct-2018	17-Oct-2018	19-Oct-2018	17-Oct-2018	18-Oct-2018	18-Oct-2018	18-Oct-2018	17-Oct-2018	18-Oct-2018
GRO by GC-FID (S)	17-Oct-2018	18-Oct-2018	17-Oct-2018	18-Oct-2018	17-Oct-2018	18-Oct-2018	18-Oct-2018	18-Oct-2018	18-Oct-2018	18-Oct-2018
GRO by GC-FID (W)	17-Oct-2018	17-Oct-2018	17-Oct-2018	17-Oct-2018		17-Oct-2018	17-Oct-2018	17-Oct-2018	17-Oct-2018	17-Oct-2018
Mercury Dissolved	22-Oct-2018	18-Oct-2018	19-Oct-2018	19-Oct-2018		19-Oct-2018	19-Oct-2018	19-Oct-2018	19-Oct-2018	22-Oct-2018
Metals in solid samples by OES	22-Oct-2018	19-Oct-2018	18-Oct-2018	18-Oct-2018	19-Oct-2018	19-Oct-2018	19-Oct-2018	18-Oct-2018	19-Oct-2018	19-Oct-2018
PAH by GCMS	18-Oct-2018	18-Oct-2018	17-Oct-2018	18-Oct-2018	19-Oct-2018	18-Oct-2018	18-Oct-2018	19-Oct-2018	17-Oct-2018	19-Oct-2018
PAH Spec MS - Aqueous (W)	18-Oct-2018	19-Oct-2018	18-Oct-2018	19-Oct-2018		18-Oct-2018	19-Oct-2018	19-Oct-2018	19-Oct-2018	19-Oct-2018
pH	19-Oct-2018	17-Oct-2018	18-Oct-2018	18-Oct-2018	18-Oct-2018	18-Oct-2018	19-Oct-2018	19-Oct-2018	18-Oct-2018	18-Oct-2018
pH Value	17-Oct-2018	17-Oct-2018	18-Oct-2018	18-Oct-2018		18-Oct-2018	17-Oct-2018	18-Oct-2018	18-Oct-2018	17-Oct-2018
Phenols by HPLC (S)	19-Oct-2018	19-Oct-2018	19-Oct-2018	19-Oct-2018	19-Oct-2018	17-Oct-2018	19-Oct-2018	17-Oct-2018	19-Oct-2018	17-Oct-2018
Sample description	12-Oct-2018	12-Oct-2018	12-Oct-2018	12-Oct-2018	12-Oct-2018	12-Oct-2018	13-Oct-2018	13-Oct-2018	12-Oct-2018	12-Oct-2018
Total Organic Carbon	20-Oct-2018	20-Oct-2018	20-Oct-2018	20-Oct-2018	20-Oct-2018	20-Oct-2018	20-Oct-2018	20-Oct-2018	20-Oct-2018	20-Oct-2018
Total Sulphate	19-Oct-2018		17-Oct-2018	17-Oct-2018		19-Oct-2018			19-Oct-2018	19-Oct-2018
Total Sulphur	20-Oct-2018		18-Oct-2018	18-Oct-2018		18-Oct-2018			18-Oct-2018	18-Oct-2018
TPH CWG (W)	18-Oct-2018	18-Oct-2018	18-Oct-2018	18-Oct-2018		18-Oct-2018	18-Oct-2018	18-Oct-2018	18-Oct-2018	18-Oct-2018
TPH CWG GC (S)	18-Oct-2018	19-Oct-2018	17-Oct-2018	19-Oct-2018	17-Oct-2018	18-Oct-2018	18-Oct-2018	18-Oct-2018	18-Oct-2018	18-Oct-2018
VOC MS (S)	18-Oct-2018	18-Oct-2018	17-Oct-2018	18-Oct-2018	17-Oct-2018	18-Oct-2018	19-Oct-2018	18-Oct-2018	19-Oct-2018	18-Oct-2018

Lab Sample No(s)	18512139	18512148	18511954	18512026	18512107	18512113	18512103	18512154	18512119	18512091
Customer Sample Ref.	4C-H4	4C-H4	4C-H5	4C-H5	4C-H5	4C-H1-V	4C-H2-V	4C-H4-V	4C-H5-V	4C-I1
AGS Ref.										
Depth	1.00 - 1.00	1.60 - 1.60	0.50 - 0.50	1.00 - 1.00	1.80 - 1.80	1.60 - 1.60	1.80 - 1.80	2.00 - 2.00	2.50 - 2.50	0.50 - 0.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	19-Oct-2018			19-Oct-2018	19-Oct-2018					17-Oct-2018
Ammoniacal Nitrogen	17-Oct-2018	19-Oct-2018	17-Oct-2018	17-Oct-2018	17-Oct-2018					17-Oct-2018
Ammonium Soil by Titration	16-Oct-2018	16-Oct-2018	16-Oct-2018	16-Oct-2018	16-Oct-2018	16-Oct-2018	16-Oct-2018	16-Oct-2018	16-Oct-2018	16-Oct-2018
Anions by Kone (soil)	19-Oct-2018			19-Oct-2018	18-Oct-2018					17-Oct-2018
Asbestos ID in Solid Samples	16-Oct-2018			17-Oct-2018	17-Oct-2018					16-Oct-2018
CEN 10:1 Leachate (1 Stage)	13-Oct-2018	13-Oct-2018	13-Oct-2018	13-Oct-2018	13-Oct-2018					13-Oct-2018
CEN Readings	17-Oct-2018	17-Oct-2018	17-Oct-2018	17-Oct-2018	17-Oct-2018					17-Oct-2018
Cyanide Comp/Free/Total/Thiocyanate	22-Oct-2018	22-Oct-2018	18-Oct-2018	22-Oct-2018	18-Oct-2018	22-Oct-2018	17-Oct-2018	22-Oct-2018	17-Oct-2018	18-Oct-2018
Dissolved Metals by ICP-MS	17-Oct-2018	19-Oct-2018	17-Oct-2018	17-Oct-2018	17-Oct-2018					17-Oct-2018
EPH CWG (Aliphatic) Aqueous GC (W)	18-Oct-2018	18-Oct-2018	18-Oct-2018	18-Oct-2018	18-Oct-2018					18-Oct-2018
EPH CWG (Aliphatic) GC (S)	18-Oct-2018	18-Oct-2018	19-Oct-2018	18-Oct-2018	19-Oct-2018	18-Oct-2018	18-Oct-2018	19-Oct-2018	18-Oct-2018	18-Oct-2018
EPH CWG (Aromatic) Aqueous GC (W)	18-Oct-2018	18-Oct-2018	18-Oct-2018	18-Oct-2018	18-Oct-2018					18-Oct-2018
EPH CWG (Aromatic) GC (S)	18-Oct-2018	18-Oct-2018	19-Oct-2018	18-Oct-2018	19-Oct-2018	18-Oct-2018	18-Oct-2018	19-Oct-2018	18-Oct-2018	18-Oct-2018
GRO by GC-FID (S)	18-Oct-2018	18-Oct-2018	18-Oct-2018	18-Oct-2018	18-Oct-2018	17-Oct-2018	17-Oct-2018	17-Oct-2018	17-Oct-2018	18-Oct-2018
GRO by GC-FID (W)	17-Oct-2018	17-Oct-2018	17-Oct-2018	17-Oct-2018	17-Oct-2018					17-Oct-2018
Mercury Dissolved	19-Oct-2018	19-Oct-2018	19-Oct-2018	19-Oct-2018	19-Oct-2018					19-Oct-2018
Metals in solid samples by OES	19-Oct-2018	22-Oct-2018	19-Oct-2018	19-Oct-2018	19-Oct-2018	18-Oct-2018	18-Oct-2018	19-Oct-2018	18-Oct-2018	17-Oct-2018
PAH by GCMS	19-Oct-2018	17-Oct-2018	19-Oct-2018	19-Oct-2018	19-Oct-2018	17-Oct-2018	18-Oct-2018	18-Oct-2018	18-Oct-2018	17-Oct-2018
PAH Spec MS - Aqueous (W)	19-Oct-2018	19-Oct-2018	18-Oct-2018	18-Oct-2018	19-Oct-2018					19-Oct-2018
pH	18-Oct-2018	18-Oct-2018	18-Oct-2018	18-Oct-2018	18-Oct-2018	18-Oct-2018	18-Oct-2018	18-Oct-2018	18-Oct-2018	18-Oct-2018
pH Value	17-Oct-2018	19-Oct-2018	17-Oct-2018	18-Oct-2018	18-Oct-2018					17-Oct-2018
Phenols by HPLC (S)	17-Oct-2018	19-Oct-2018	19-Oct-2018	19-Oct-2018	17-Oct-2018	19-Oct-2018	18-Oct-2018	17-Oct-2018	19-Oct-2018	19-Oct-2018
Sample description	12-Oct-2018	12-Oct-2018	12-Oct-2018	12-Oct-2018	12-Oct-2018	12-Oct-2018	12-Oct-2018	12-Oct-2018	12-Oct-2018	12-Oct-2018
Total Organic Carbon	20-Oct-2018	20-Oct-2018	20-Oct-2018	20-Oct-2018	20-Oct-2018	20-Oct-2018	20-Oct-2018	20-Oct-2018	20-Oct-2018	20-Oct-2018
Total Sulphate	19-Oct-2018			19-Oct-2018	19-Oct-2018					17-Oct-2018
Total Sulphur	18-Oct-2018			18-Oct-2018	18-Oct-2018					18-Oct-2018
TPH CWG (W)	18-Oct-2018	18-Oct-2018	18-Oct-2018	18-Oct-2018	18-Oct-2018					18-Oct-2018
TPH CWG GC (S)	18-Oct-2018	18-Oct-2018	19-Oct-2018	18-Oct-2018	19-Oct-2018	18-Oct-2018	18-Oct-2018	19-Oct-2018	18-Oct-2018	18-Oct-2018
VOC MS (S)	18-Oct-2018	19-Oct-2018	18-Oct-2018	19-Oct-2018	18-Oct-2018	17-Oct-2018	17-Oct-2018	18-Oct-2018	18-Oct-2018	19-Oct-2018

Validated

CERTIFICATE OF ANALYSIS

SDG: 181012-49 **Client Reference:** **Report Number:** 477920
Location: Llanwern **Order Number:** LLA488 **Superseded Report:**

Lab Sample No(s)	18512095	18512005	18512018	18512042	18511995	18511999	18511978	18511985	18512048	18511989
Customer Sample Ref.	4C-I1	4C-I2	4C-I2	4C-I2	4C-I3	4C-I3	4C-I4	4C-I4	4C-I2-V	4C-I4-V
AGS Ref.										
Depth	1.10 - 1.10	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.50 - 0.50	0.80 - 0.80	0.50 - 0.50	1.00 - 1.00	1.70 - 1.70	2.50 - 2.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)		19-Oct-2018	19-Oct-2018		17-Oct-2018			19-Oct-2018		
Ammoniacal Nitrogen	17-Oct-2018	17-Oct-2018	17-Oct-2018	17-Oct-2018	17-Oct-2018	17-Oct-2018	17-Oct-2018	17-Oct-2018		19-Oct-2018
Ammonium Soil by Titration	16-Oct-2018	16-Oct-2018	16-Oct-2018	16-Oct-2018	16-Oct-2018	16-Oct-2018	16-Oct-2018	16-Oct-2018	16-Oct-2018	16-Oct-2018
Anions by Kone (soil)		19-Oct-2018	19-Oct-2018		17-Oct-2018			17-Oct-2018		
Asbestos ID in Solid Samples		17-Oct-2018	17-Oct-2018		16-Oct-2018			16-Oct-2018		
CEN 10:1 Leachate (1 Stage)	13-Oct-2018	13-Oct-2018	13-Oct-2018	13-Oct-2018	13-Oct-2018	13-Oct-2018	13-Oct-2018	13-Oct-2018		17-Oct-2018
CEN Readings	17-Oct-2018	17-Oct-2018	17-Oct-2018	17-Oct-2018	17-Oct-2018	17-Oct-2018	17-Oct-2018	17-Oct-2018		18-Oct-2018
Cyanide Comp/Free/Total/Thiocyanate	18-Oct-2018	22-Oct-2018	18-Oct-2018	22-Oct-2018	22-Oct-2018	18-Oct-2018	18-Oct-2018	22-Oct-2018	17-Oct-2018	22-Oct-2018
Dissolved Metals by ICP-MS	17-Oct-2018	17-Oct-2018	17-Oct-2018	17-Oct-2018	17-Oct-2018	17-Oct-2018	17-Oct-2018	17-Oct-2018		19-Oct-2018
EPH CWG (Aliphatic) Aqueous GC (W)	18-Oct-2018	18-Oct-2018	18-Oct-2018	18-Oct-2018	18-Oct-2018	18-Oct-2018	18-Oct-2018	18-Oct-2018		19-Oct-2018
EPH CWG (Aliphatic) GC (S)	17-Oct-2018	18-Oct-2018	17-Oct-2018	18-Oct-2018	17-Oct-2018	17-Oct-2018	17-Oct-2018	17-Oct-2018	17-Oct-2018	18-Oct-2018
EPH CWG (Aromatic) Aqueous GC (W)	18-Oct-2018	18-Oct-2018	18-Oct-2018	18-Oct-2018	18-Oct-2018	18-Oct-2018	18-Oct-2018	18-Oct-2018		19-Oct-2018
EPH CWG (Aromatic) GC (S)	17-Oct-2018	18-Oct-2018	17-Oct-2018	18-Oct-2018	17-Oct-2018	17-Oct-2018	17-Oct-2018	17-Oct-2018	17-Oct-2018	18-Oct-2018
GRO by GC-FID (S)	18-Oct-2018	18-Oct-2018	18-Oct-2018	18-Oct-2018	18-Oct-2018	17-Oct-2018	18-Oct-2018	18-Oct-2018	17-Oct-2018	17-Oct-2018
GRO by GC-FID (W)	17-Oct-2018	17-Oct-2018	17-Oct-2018	17-Oct-2018	17-Oct-2018	17-Oct-2018	17-Oct-2018	17-Oct-2018		18-Oct-2018
Mercury Dissolved	18-Oct-2018	19-Oct-2018	19-Oct-2018	19-Oct-2018	19-Oct-2018	19-Oct-2018	19-Oct-2018	19-Oct-2018		19-Oct-2018
Metals in solid samples by OES	19-Oct-2018	19-Oct-2018	18-Oct-2018	18-Oct-2018	18-Oct-2018	19-Oct-2018	19-Oct-2018	18-Oct-2018	19-Oct-2018	19-Oct-2018
PAH by GCMS	19-Oct-2018	18-Oct-2018	19-Oct-2018	18-Oct-2018	18-Oct-2018	18-Oct-2018	18-Oct-2018	19-Oct-2018	18-Oct-2018	18-Oct-2018
PAH Spec MS - Aqueous (W)	18-Oct-2018	19-Oct-2018	19-Oct-2018	18-Oct-2018	18-Oct-2018	19-Oct-2018	19-Oct-2018	19-Oct-2018		19-Oct-2018
pH	18-Oct-2018	18-Oct-2018	18-Oct-2018	18-Oct-2018	18-Oct-2018	18-Oct-2018	17-Oct-2018	18-Oct-2018	18-Oct-2018	18-Oct-2018
pH Value	17-Oct-2018	17-Oct-2018	17-Oct-2018	17-Oct-2018	18-Oct-2018	18-Oct-2018	17-Oct-2018	17-Oct-2018		19-Oct-2018
Phenols by HPLC (S)	17-Oct-2018	17-Oct-2018	19-Oct-2018	17-Oct-2018	19-Oct-2018	19-Oct-2018	19-Oct-2018	19-Oct-2018	17-Oct-2018	19-Oct-2018
Sample description	12-Oct-2018	12-Oct-2018	13-Oct-2018	12-Oct-2018	12-Oct-2018	12-Oct-2018	12-Oct-2018	12-Oct-2018	12-Oct-2018	13-Oct-2018
Total Organic Carbon	20-Oct-2018	20-Oct-2018	17-Oct-2018	20-Oct-2018	20-Oct-2018	20-Oct-2018	20-Oct-2018	20-Oct-2018	20-Oct-2018	20-Oct-2018
Total Sulphate		19-Oct-2018	19-Oct-2018		17-Oct-2018			19-Oct-2018		
Total Sulphur		18-Oct-2018	18-Oct-2018		18-Oct-2018			20-Oct-2018		
TPH CWG (W)	18-Oct-2018	18-Oct-2018	18-Oct-2018	18-Oct-2018	18-Oct-2018	18-Oct-2018	18-Oct-2018	18-Oct-2018		19-Oct-2018
TPH CWG GC (S)	18-Oct-2018	18-Oct-2018	18-Oct-2018	18-Oct-2018	18-Oct-2018	17-Oct-2018	18-Oct-2018	18-Oct-2018	17-Oct-2018	18-Oct-2018
VOC MS (S)	19-Oct-2018	19-Oct-2018	19-Oct-2018	18-Oct-2018	19-Oct-2018	19-Oct-2018	18-Oct-2018	18-Oct-2018	17-Oct-2018	17-Oct-2018

Appendix General

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

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

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

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

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

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

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

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

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

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

11. Results relate only to the items tested.

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

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

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

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

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

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

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

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

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

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

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

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

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

Sample Deviations

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

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

Asbestos

Identification of Asbestos in Bulk Materials & Soils

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

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

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

Visual Estimation Of Fibre Content

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

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

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

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Hawarden
Deeside
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Website: www.alsenvironmental.co.uk

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

Attention: John Fitzgerald

CERTIFICATE OF ANALYSIS

Date:	16 November 2018
Customer:	H_ATKINS_LDC
Sample Delivery Group (SDG):	181018-22
Your Reference:	
Location:	Llanwern
Report No:	481508

This report has been revised and directly supersedes 481496 in its entirety.

We received 51 samples on Thursday October 18, 2018 and 50 of these samples were scheduled for analysis which was completed on Friday November 16, 2018. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

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

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

Approved By:



Sonia McWhan

Operations Manager

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

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
18548486	3C-H4		0.50 - 0.50	17/10/2018
18548490	3C-H4		1.00 - 1.00	17/10/2018
18548494	3C-H4		2.00 - 2.00	17/10/2018
18548372	3C-H5		0.30 - 0.30	17/10/2018
18548388	3C-H5		0.80 - 0.80	17/10/2018
18548403	3C-H5		1.50 - 1.50	17/10/2018
18548501	3C-H4-V		2.70 - 2.70	17/10/2018
18548415	3C-H5-V		2.70 - 2.70	17/10/2018
18548458	3C-I4		0.50 - 0.50	17/10/2018
18548465	3C-I4		1.00 - 1.00	17/10/2018
18548469	3C-I4		2.00 - 2.00	17/10/2018
18548282	3C-I5		0.30 - 0.30	17/10/2018
18548317	3C-I5		0.80 - 0.80	17/10/2018
18548332	3C-I5		1.50 - 1.50	17/10/2018
18548346	3C-I5		2.00 - 2.00	17/10/2018
18548126	4C-I5		0.50 - 0.50	17/10/2018
18548131	4C-I5		1.00 - 1.00	17/10/2018
18548150	4C-I6		0.50 - 0.50	17/10/2018
18548160	4C-I6		1.00 - 1.00	17/10/2018
18548185	4C-I7		0.50 - 0.50	17/10/2018
18548198	4C-I7		1.00 - 1.00	17/10/2018
18548239	4C-I8		0.50 - 0.50	17/10/2018
18548253	4C-I8		1.00 - 1.00	17/10/2018
18548476	3C-I4-V		3.40 - 3.40	17/10/2018
18548359	3C-I5-V		3.20 - 3.20	17/10/2018
18548171	4C-I6-V		2.20 - 2.20	17/10/2018
18548220	4C-I7-V		1.80 - 1.80	17/10/2018
18548268	4C-I8-V		1.90 - 1.90	17/10/2018
18548424	3C-J4		0.50 - 0.50	17/10/2018
18548433	3C-J4		0.70 - 1.30	17/10/2018
18548447	3C-J4		1.80 - 1.80	17/10/2018
18548070	4C-J1		0.50 - 0.50	17/10/2018
18548138	4C-J1		1.00 - 1.00	17/10/2018
18548298	4C-J1		2.00 - 2.00	17/10/2018
18548508	4C-J2		0.50 - 0.50	17/10/2018
18548523	4C-J2		1.00 - 1.00	17/10/2018
18548515	4C-J2		2.00 - 2.00	17/10/2018
18548532	4C-J3		0.50 - 0.50	17/10/2018
18548543	4C-J3		1.00 - 1.00	17/10/2018
18548551	4C-J3		1.50 - 1.50	17/10/2018
18548079	4C-J4		0.50 - 0.50	17/10/2018
18548087	4C-J4		1.00 - 1.00	17/10/2018
18548092	4C-J4		1.40 - 1.40	17/10/2018
18548111	4C-J5		0.50 - 0.50	17/10/2018
18548115	4C-J5		1.00 - 1.00	17/10/2018
18548453	3C-J4-V		3.70 - 3.70	17/10/2018
18548442	4C-J1-V		2.70 - 2.70	17/10/2018
18548074	4C-J3-V		1.90 - 1.90	17/10/2018
18548098	4C-J4-V		2.00 - 2.00	17/10/2018
18548120	4C-J5-V		1.70 - 1.70	17/10/2018
18548557	NO ID			

Maximum Sample/Coolbox Temperature (°C) :

ISO5667-3 Water quality - Sampling - Part3 -

During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

12.4

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

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

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

Results Legend

X Test

N No Determination Possible

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

			Lab Sample No(s)	18548486			18548490			18548494		18548372			18548388			18548403			18548501
			Customer Sample Reference	3C-H4			3C-H4			3C-H4		3C-H5			3C-H5			3C-H5			3C-H4-V
			AGS Reference																		
			Depth (m)	0.50 - 0.50			1.00 - 1.00			2.00 - 2.00		0.30 - 0.30			0.80 - 0.80			1.50 - 1.50			2.70 - 2.70
			Container	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	400g Tub (ALE214)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)
			Sample Type	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 25			X					X			X						X			
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 38		X			X				X	X			X			X				
Ammonium Soil by Titration	All	NDPs: 0 Tests: 50			X			X		X			X			X			X		X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 25			X					X			X						X			
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 25		X							X	X						X				
Calorific Value (S)*	All	NDPs: 0 Tests: 2									X								X			
CEN Readings	All	NDPs: 0 Tests: 38		X			X				X	X			X			X				
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 88		X	X		X	X		X	X	X	X		X	X		X	X		X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 38		X			X				X	X			X			X				
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 38		X			X				X	X			X			X				
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 50			X			X		X			X			X			X		X	
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 38		X			X				X	X			X			X				
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 50			X			X		X			X			X			X		X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 50				X			X	X				X			X			X			X
GRO by GC-FID (W)	All	NDPs: 0 Tests: 38		X			X				X	X			X			X				

18548346	3C-I5		2.00 - 2.00	1kg TUB	S			x			x			x	x	x	x			x				x
18548332	3C-I5		1.50 - 1.50	60g VOC (ALE215)	S																		x	
				250g Amber Jar (ALE210)	S	x			x	x					x				x			x		
				1kg TUB	S			x			x			x	x	x	x			x				x
18548317	3C-I5		0.80 - 0.80	60g VOC (ALE215)	S																		x	
				250g Amber Jar (ALE210)	S				x						x				x			x		
				1kg TUB	S			x						x	x	x	x			x				x
18548282	3C-I5		0.30 - 0.30	60g VOC (ALE215)	S																		x	
				250g Amber Jar (ALE210)	S	x			x	x					x				x			x		
				1kg TUB	S			x			x			x	x	x	x			x				x
18548469	3C-I4		2.00 - 2.00	60g VOC (ALE215)	S																		x	
				250g Amber Jar (ALE210)	S				x						x				x			x		
				1kg TUB	S			x						x	x	x	x			x				x
18548465	3C-I4		1.00 - 1.00	60g VOC (ALE215)	S																		x	
				250g Amber Jar (ALE210)	S	x			x	x					x				x			x		
				1kg TUB	S			x			x			x	x	x	x			x				x
18548458	3C-I4		0.50 - 0.50	60g VOC (ALE215)	S																		x	
				250g Amber Jar (ALE210)	S	x			x	x					x				x			x		
				1kg TUB	S			x			x			x	x	x	x			x				x
18548415	3C-H5-V		2.70 - 2.70	60g VOC (ALE215)	S																		x	
				250g Amber Jar (ALE210)	S				x						x				x			x		

Validated

CERTIFICATE OF ANALYSIS

SDG: 181018-22 **Client Reference:** **Report Number:** 481508
Location: Llanwern **Order Number:** LLA491 **Superseded Report:** 481496

Results Legend

X Test

N No Determination Possible

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

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
			18548486	3C-H4		0.50 - 0.50	1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			18548490	3C-H4		1.00 - 1.00	1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			18548494	3C-H4		2.00 - 2.00	250g Amber Jar (ALE210)	S
							400g Tub (ALE214)	S
			18548372	3C-H5		0.30 - 0.30	1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			18548388	3C-H5		0.80 - 0.80	1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			18548403	3C-H5		1.50 - 1.50	1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			18548501	3C-H4-V		2.70 - 2.70	250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
Mercury Dissolved	All	NDPs: 0 Tests: 38	X				X	
							X	
							X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 50		X			X	
							X	
							X	
PAH by GCMS	All	NDPs: 0 Tests: 50		X			X	
							X	
							X	
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 38	X				X	
							X	
							X	
pH	All	NDPs: 0 Tests: 50		X			X	
							X	
							X	
pH Value	All	NDPs: 0 Tests: 38	X				X	
							X	
							X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 50		X			X	
							X	
							X	
Sample description	All	NDPs: 0 Tests: 50		X			X	
							X	
							X	
Total Organic Carbon	All	NDPs: 0 Tests: 50		X			X	
							X	
							X	
Total Sulphate	All	NDPs: 0 Tests: 25		X			X	
							X	
							X	
Total Sulphur	All	NDPs: 0 Tests: 25		X			X	
							X	
							X	
TPH CWG (W)	All	NDPs: 0 Tests: 38	X				X	
							X	
							X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 50		X			X	
							X	
							X	
VOC MS (S)	All	NDPs: 0 Tests: 50			X		X	
							X	
							X	

18548346	3C-I5		2.00 - 2.00	1kg TUB	S	x				x		x							x			
18548332	3C-I5		1.50 - 1.50	60g VOC (ALE215)	S																	x
				250g Amber Jar (ALE210)	S		x		x		x			x		x		x			x		
				1kg TUB	S	x				x		x							x			
18548317	3C-I5		0.80 - 0.80	60g VOC (ALE215)	S																	x
				250g Amber Jar (ALE210)	S		x		x		x			x		x					x		
				1kg TUB	S	x				x		x							x			
18548282	3C-I5		0.30 - 0.30	60g VOC (ALE215)	S																	x
				250g Amber Jar (ALE210)	S		x		x		x			x		x		x			x		
				1kg TUB	S	x				x		x							x			
18548469	3C-I4		2.00 - 2.00	60g VOC (ALE215)	S																	x
				250g Amber Jar (ALE210)	S		x		x		x			x		x					x		
				1kg TUB	S	x				x		x							x			
18548465	3C-I4		1.00 - 1.00	60g VOC (ALE215)	S																	x
				250g Amber Jar (ALE210)	S		x		x		x			x		x		x			x		
				1kg TUB	S	x				x		x							x			
18548458	3C-I4		0.50 - 0.50	60g VOC (ALE215)	S																	x
				250g Amber Jar (ALE210)	S		x		x		x			x		x		x			x		
				1kg TUB	S	x				x		x							x			
18548415	3C-H5-V		2.70 - 2.70	60g VOC (ALE215)	S																	x
				250g Amber Jar (ALE210)	S		x		x		x			x		x					x		

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

Results Legend

X Test

N No Determination Possible

Sample Types -

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

Lab Sample No(s)			18548346		18548126			18548131			18548150			18548160			18548185			18548198
Customer Sample Reference			3C-I5		4C-I5			4C-I5			4C-I6			4C-I6			4C-I7			4C-I7
AGS Reference																				
Depth (m)			2.00 - 2.00		0.50 - 0.50			1.00 - 1.00			0.50 - 0.50			1.00 - 1.00			0.50 - 0.50			1.00 - 1.00
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 25	X			X			X			X						X			
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 38			X			X			X			X			X			X	
Ammonium Soil by Titration	All	NDPs: 0 Tests: 50	X			X			X			X			X			X				X
Anions by Kone (soil)	All	NDPs: 0 Tests: 25	X			X			X			X						X			
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 25			X			X			X						X				
CEN Readings	All	NDPs: 0 Tests: 38			X			X			X			X			X			X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 88	X		X	X		X	X		X	X		X	X		X	X		X	X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 38			X			X			X			X			X			X	
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 38			X			X			X			X			X			X	
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 50	X			X			X			X			X			X				X
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 38			X			X			X			X			X			X	
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 50	X			X			X			X			X			X				X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 50		X			X			X			X			X			X			
GRO by GC-FID (W)	All	NDPs: 0 Tests: 38			X			X			X			X			X			X	
Mercury Dissolved	All	NDPs: 0 Tests: 38			X			X			X			X			X			X	

18548433	3C-J4		0.70 - 1.30	1kg TUB	S		X			X	X	X	X	X		X			X	X
18548424	3C-J4		0.50 - 0.50	60g VOC (ALE215)	S													X		
				250g Amber Jar (ALE210)	S			X				X			X		X			
				1kg TUB	S		X				X	X	X	X		X			X	X
18548268	4C-I8-V		1.90 - 1.90	60g VOC (ALE215)	S													X		
				250g Amber Jar (ALE210)	S			X				X			X		X			
18548220	4C-I7-V		1.80 - 1.80	60g VOC (ALE215)	S													X		
				250g Amber Jar (ALE210)	S			X				X			X		X			
18548171	4C-I6-V		2.20 - 2.20	60g VOC (ALE215)	S													X		
				250g Amber Jar (ALE210)	S			X				X			X		X			
18548359	3C-I5-V		3.20 - 3.20	60g VOC (ALE215)	S													X		
				250g Amber Jar (ALE210)	S			X				X			X		X			
18548476	3C-I4-V		3.40 - 3.40	60g VOC (ALE215)	S													X		
				250g Amber Jar (ALE210)	S			X				X			X		X			
18548253	4C-I8		1.00 - 1.00	60g VOC (ALE215)	S													X		
				250g Amber Jar (ALE210)	S			X				X			X		X			
				1kg TUB	S		X				X	X	X	X		X			X	X
18548239	4C-I8		0.50 - 0.50	60g VOC (ALE215)	S													X		
				250g Amber Jar (ALE210)	S	X		X	X			X			X		X			
				1kg TUB	S		X			X	X	X	X	X		X			X	X
18548198	4C-I7		1.00 - 1.00	60g VOC (ALE215)	S													X		

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

Results Legend

X Test

N No Determination Possible

Sample Types -

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

Lab Sample No(s)			18548346		18548126			18548131			18548150			18548160			18548185			18548198
Customer Sample Reference			3C-i5		4C-i5			4C-i5			4C-i6			4C-i6			4C-i7			4C-i7
AGS Reference																				
Depth (m)			2.00 - 2.00		0.50 - 0.50			1.00 - 1.00			0.50 - 0.50			1.00 - 1.00			0.50 - 0.50			1.00 - 1.00
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Metals in solid samples by OES	All	NDPs: 0 Tests: 50	X			X			X			X			X			X			X
PAH by GCMS	All	NDPs: 0 Tests: 50	X			X			X			X			X			X			X
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 38			X			X			X			X			X			X	
pH	All	NDPs: 0 Tests: 50	X			X			X			X			X			X			X
pH Value	All	NDPs: 0 Tests: 38			X			X			X			X			X			X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 50	X			X			X			X			X			X			X
Sample description	All	NDPs: 0 Tests: 50	X			X			X			X			X			X			X
Total Organic Carbon	All	NDPs: 0 Tests: 50	X			X			X			X			X			X			X
Total Sulphate	All	NDPs: 0 Tests: 25	X			X			X			X						X			
Total Sulphur	All	NDPs: 0 Tests: 25	X			X			X			X						X			
TPH CWG (W)	All	NDPs: 0 Tests: 38			X			X			X			X			X			X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 50	X			X			X			X			X			X			X
VOC MS (S)	All	NDPs: 0 Tests: 50		X			X			X			X			X			X		

18548433	3C-J4		0.70 - 1.30	1kg TUB	S				X		X							X		
18548424	3C-J4		0.50 - 0.50	60g VOC (ALE215)	S															X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X					X		
				1kg TUB	S			X		X								X		
18548268	4C-I8-V		1.90 - 1.90	60g VOC (ALE215)	S															X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X					X		
18548220	4C-I7-V		1.80 - 1.80	60g VOC (ALE215)	S															X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X					X		
18548171	4C-I6-V		2.20 - 2.20	60g VOC (ALE215)	S															X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X					X		
18548359	3C-I5-V		3.20 - 3.20	60g VOC (ALE215)	S															X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X					X		
18548476	3C-I4-V		3.40 - 3.40	60g VOC (ALE215)	S															X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X					X		
18548253	4C-I8		1.00 - 1.00	60g VOC (ALE215)	S															X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X					X		
				1kg TUB	S			X		X								X		
18548239	4C-I8		0.50 - 0.50	60g VOC (ALE215)	S															X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X	X	X			X		
				1kg TUB	S			X		X								X		
18548198	4C-I7		1.00 - 1.00	60g VOC (ALE215)	S															X

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

Results Legend

X Test

N No Determination Possible

Sample Types -

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

Lab Sample No(s)			18548433		18548447			18548070			18548138			18548298			18548508			18548523
Customer Sample Reference			3C-J4		3C-J4			4C-J1			4C-J1			4C-J1			4C-J2			4C-J2
AGS Reference																				
Depth (m)			0.70 - 1.30		1.80 - 1.80			0.50 - 0.50			1.00 - 1.00			2.00 - 2.00			0.50 - 0.50			1.00 - 1.00
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 25	X			X			X			X						X			
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 38			X			X			X			X			X			X	
Ammonium Soil by Titration	All	NDPs: 0 Tests: 50	X			X			X			X			X			X				X
Anions by Kone (soil)	All	NDPs: 0 Tests: 25	X			X			X			X						X			
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 25			X			X			X						X				
CEN Readings	All	NDPs: 0 Tests: 38			X			X			X			X			X			X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 88	X		X	X		X	X		X	X		X	X		X	X		X	X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 38			X			X			X			X			X			X	
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 38			X			X			X			X			X			X	
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 50	X			X			X			X			X			X				X
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 38			X			X			X			X			X			X	
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 50	X			X			X			X			X			X				X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 50		X			X			X			X			X			X			
GRO by GC-FID (W)	All	NDPs: 0 Tests: 38			X			X			X			X			X			X	
Mercury Dissolved	All	NDPs: 0 Tests: 38			X			X			X			X			X			X	

18548092	4C-J4		1.40 - 1.40	250g Amber Jar (ALE210)	S		X			X		X				X				X				
				1kg TUB	S			X				X	X	X	X	X	X			X				X	X
18548087	4C-J4		1.00 - 1.00	60g VOC (ALE215)	S																		X		
				250g Amber Jar (ALE210)	S					X				X				X				X				
				1kg TUB	S			X					X	X	X	X	X			X				X	X
18548079	4C-J4		0.50 - 0.50	60g VOC (ALE215)	S																		X		
				250g Amber Jar (ALE210)	S		X			X	X			X				X				X				
				1kg TUB	S			X				X	X	X	X	X	X			X				X	X
18548551	4C-J3		1.50 - 1.50	60g VOC (ALE215)	S																		X		
				250g Amber Jar (ALE210)	S		X			X	X			X				X				X				
				1kg TUB	S			X				X	X	X	X	X	X			X				X	X
18548543	4C-J3		1.00 - 1.00	60g VOC (ALE215)	S																		X		
				250g Amber Jar (ALE210)	S		X			X	X			X				X				X				
				1kg TUB	S			X				X	X	X	X	X	X			X				X	X
18548532	4C-J3		0.50 - 0.50	60g VOC (ALE215)	S																		X		
				250g Amber Jar (ALE210)	S					X				X				X				X				
				1kg TUB	S			X					X	X	X	X	X			X				X	X
18548515	4C-J2		2.00 - 2.00	60g VOC (ALE215)	S																		X		
				250g Amber Jar (ALE210)	S		X			X	X			X				X				X				
				1kg TUB	S			X				X	X	X	X	X	X			X				X	X
18548523	4C-J2		1.00 - 1.00	60g VOC (ALE215)	S																		X		

Validated

CERTIFICATE OF ANALYSIS

SDG: 181018-22 **Client Reference:** **Report Number:** 481508
Location: Llanwern **Order Number:** LLA491 **Superseded Report:** 481496

Results Legend

X Test

N No Determination Possible

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

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
			18548433	3C-J4		0.70 - 1.30	250g Amber Jar (ALE210)	S
			18548433	3C-J4		0.70 - 1.30	60g VOC (ALE215)	S
			18548447	3C-J4		1.80 - 1.80	1kg TUB	S
			18548447	3C-J4		1.80 - 1.80	250g Amber Jar (ALE210)	S
			18548447	3C-J4		1.80 - 1.80	60g VOC (ALE215)	S
			18548070	4C-J1		0.50 - 0.50	1kg TUB	S
			18548070	4C-J1		0.50 - 0.50	250g Amber Jar (ALE210)	S
			18548070	4C-J1		0.50 - 0.50	60g VOC (ALE215)	S
			18548138	4C-J1		1.00 - 1.00	1kg TUB	S
			18548138	4C-J1		1.00 - 1.00	250g Amber Jar (ALE210)	S
			18548138	4C-J1		1.00 - 1.00	60g VOC (ALE215)	S
			18548298	4C-J1		2.00 - 2.00	1kg TUB	S
			18548298	4C-J1		2.00 - 2.00	250g Amber Jar (ALE210)	S
			18548298	4C-J1		2.00 - 2.00	60g VOC (ALE215)	S
			18548508	4C-J2		0.50 - 0.50	1kg TUB	S
			18548508	4C-J2		0.50 - 0.50	250g Amber Jar (ALE210)	S
			18548508	4C-J2		0.50 - 0.50	60g VOC (ALE215)	S
			18548523	4C-J2		1.00 - 1.00	1kg TUB	S
			18548523	4C-J2		1.00 - 1.00	250g Amber Jar (ALE210)	S
Metals in solid samples by OES	All	NDPs: 0 Tests: 50	X				X	
							X	
							X	
							X	
							X	
PAH by GCMS	All	NDPs: 0 Tests: 50	X				X	
							X	
							X	
							X	
							X	
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 38			X			
							X	
							X	
							X	
							X	
pH	All	NDPs: 0 Tests: 50	X				X	
							X	
							X	
							X	
							X	
pH Value	All	NDPs: 0 Tests: 38			X			
							X	
							X	
							X	
							X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 50	X				X	
							X	
							X	
							X	
							X	
Sample description	All	NDPs: 0 Tests: 50	X				X	
							X	
							X	
							X	
							X	
Total Organic Carbon	All	NDPs: 0 Tests: 50	X				X	
							X	
							X	
							X	
							X	
Total Sulphate	All	NDPs: 0 Tests: 25	X				X	
							X	
							X	
Total Sulphur	All	NDPs: 0 Tests: 25	X				X	
							X	
							X	
TPH CWG (W)	All	NDPs: 0 Tests: 38			X			
							X	
							X	
							X	
							X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 50	X				X	
							X	
							X	
							X	
							X	
VOC MS (S)	All	NDPs: 0 Tests: 50		X				
							X	
							X	
							X	
							X	

18548092	4C-J4		1.40 - 1.40	250g Amber Jar (ALE210)	1kg TUB	60g VOC (ALE215)	250g Amber Jar (ALE210)	1kg TUB	60g VOC (ALE215)	250g Amber Jar (ALE210)	1kg TUB	60g VOC (ALE215)	250g Amber Jar (ALE210)	1kg TUB	60g VOC (ALE215)	250g Amber Jar (ALE210)	1kg TUB	60g VOC (ALE215)	250g Amber Jar (ALE210)	1kg TUB	60g VOC (ALE215)	250g Amber Jar (ALE210)	1kg TUB	60g VOC (ALE215)
				S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
18548087	4C-J4		1.00 - 1.00																					
18548079	4C-J4		0.50 - 0.50																					
18548551	4C-J3		1.50 - 1.50																					
18548543	4C-J3		1.00 - 1.00																					
18548532	4C-J3		0.50 - 0.50																					
18548515	4C-J2		2.00 - 2.00																					
18548523	4C-J2		1.00 - 1.00																					

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

Results Legend

X Test

N No Determination Possible

Sample Types -

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

Lab Sample No(s)			18548092	18548111				18548115			18548453		18548442			18548074		18548098		18548120	
Customer Sample Reference			4C-J4	4C-J5				4C-J5			3C-J4-V		4C-J1-V			4C-J3-V		4C-J4-V		4C-J5-V	
AGS Reference																					
Depth (m)			1.40 - 1.40	0.50 - 0.50				1.00 - 1.00			3.70 - 3.70		2.70 - 2.70			1.90 - 1.90		2.00 - 2.00		1.70 - 1.70	
Container			60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)		1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	
Sample Type			S	S	S	S		S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 25							X												
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 38		X				X													
Ammonium Soil by Titration	All	NDPs: 0 Tests: 50			X				X		X		X		X		X		X		
Anions by Kone (soil)	All	NDPs: 0 Tests: 25							X												
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 25						X													
CEN Readings	All	NDPs: 0 Tests: 38		X				X													
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 88		X	X			X	X		X		X		X		X		X		
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 38		X				X													
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 38		X				X													
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 50			X				X		X		X		X		X		X		
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 38		X				X													
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 50			X				X		X		X		X		X		X		
GRO by GC-FID (S)	All	NDPs: 0 Tests: 50	X			X				X		X		X		X		X			X
GRO by GC-FID (W)	All	NDPs: 0 Tests: 38		X				X													
Mercury Dissolved	All	NDPs: 0 Tests: 38		X				X													

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

Results Legend

X Test

N No Determination Possible

Sample Types -

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

Lab Sample No(s)			18548092	18548111			18548115			18548453		18548442		18548074		18548098		18548120	
Customer Sample Reference			4C-J4	4C-J5			4C-J5			3C-J4-V		4C-J1-V		4C-J3-V		4C-J4-V		4C-J5-V	
AGS Reference																			
Depth (m)			1.40 - 1.40	0.50 - 0.50			1.00 - 1.00			3.70 - 3.70		2.70 - 2.70		1.90 - 1.90		2.00 - 2.00		1.70 - 1.70	
Container			60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Metals in solid samples by OES	All	NDPs: 0 Tests: 50			X			X		X		X		X		X		X	
PAH by GCMS	All	NDPs: 0 Tests: 50			X			X		X		X		X		X		X	
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 38		X			X												
pH	All	NDPs: 0 Tests: 50			X			X		X		X		X		X		X	
pH Value	All	NDPs: 0 Tests: 38		X			X												
Phenols by HPLC (S)	All	NDPs: 0 Tests: 50			X			X		X		X		X		X		X	
Sample description	All	NDPs: 0 Tests: 50			X			X		X		X		X		X		X	
Total Organic Carbon	All	NDPs: 0 Tests: 50			X			X		X		X		X		X		X	
Total Sulphate	All	NDPs: 0 Tests: 25						X											
Total Sulphur	All	NDPs: 0 Tests: 25						X											
TPH CWG (W)	All	NDPs: 0 Tests: 38		X			X												
TPH CWG GC (S)	All	NDPs: 0 Tests: 50			X			X		X		X		X		X		X	
VOC MS (S)	All	NDPs: 0 Tests: 50	X			X			X		X		X		X		X		X

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

Sample Descriptions

Grain Sizes

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

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
18548486	3C-H4	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
18548490	3C-H4	1.00 - 1.00	Black	Sand	Stones	Vegetation
18548494	3C-H4	2.00 - 2.00	Black	Sand	Stones	Vegetation
18548372	3C-H5	0.30 - 0.30	Grey	Sandy Loam	Vegetation	Stones
18548388	3C-H5	0.80 - 0.80	Dark Brown	Sand	Stones	None
18548403	3C-H5	1.50 - 1.50	Dark Brown	Sand	Stones	None
18548501	3C-H4-V	2.70 - 2.70	Dark Brown	Sandy Clay Loam	Stones	Vegetation
18548415	3C-H5-V	2.70 - 2.70	Dark Brown	Loamy Sand	Stones	Vegetation
18548458	3C-I4	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
18548465	3C-I4	1.00 - 1.00	Dark Brown	Sand	Stones	None
18548469	3C-I4	2.00 - 2.00	Dark Brown	Sand	Stones	Crushed Brick
18548282	3C-I5	0.30 - 0.30	Dark Brown	Loamy Sand	Stones	Vegetation
18548317	3C-I5	0.80 - 0.80	Black	Sand	Stones	Vegetation
18548332	3C-I5	1.50 - 1.50	Black	Sand	Stones	None
18548346	3C-I5	2.00 - 2.00	Black	Stone/Soil	Stones	None
18548126	4C-I5	0.50 - 0.50	Dark Brown	Sandy Loam	Vegetation	Stones
18548131	4C-I5	1.00 - 1.00	Dark Brown	Sandy Loam	Vegetation	Stones
18548150	4C-I6	0.50 - 0.50	Dark Brown	Loamy Sand	Vegetation	Stones
18548160	4C-I6	1.00 - 1.00	Dark Brown	Sandy Loam	Stones	Vegetation
18548185	4C-I7	0.50 - 0.50	Dark Brown	Sand	Stones	None
18548198	4C-I7	1.00 - 1.00	Dark Brown	Sandy Loam	Stones	Concrete/Aggregate
18548239	4C-I8	0.50 - 0.50	Dark Brown	Sandy Loam	Vegetation	Stones
18548253	4C-I8	1.00 - 1.00	Dark Brown	Sand	Stones	Vegetation
18548476	3C-I4-V	3.40 - 3.40	Dark Brown	Silty Clay Loam	Vegetation	None
18548359	3C-I5-V	3.20 - 3.20	Dark Brown	Sandy Clay Loam	None	None
18548171	4C-I6-V	2.20 - 2.20	Grey	Sandy Loam	Vegetation	Stones
18548220	4C-I7-V	1.80 - 1.80	Grey	Sandy Loam	Stones	Vegetation
18548268	4C-I8-V	1.90 - 1.90	Grey	Silty Clay	None	None
18548424	3C-J4	0.50 - 0.50	Dark Brown	Clay Loam	Vegetation	Stones
18548433	3C-J4	0.70 - 1.30	Dark Brown	Loamy Sand	Stones	Vegetation
18548447	3C-J4	1.80 - 1.80	Dark Brown	Stone/Soil	Stones	Crushed Brick
18548070	4C-J1	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	Crushed Brick
18548138	4C-J1	1.00 - 1.00	Dark Brown	Sandy Loam	Stones	None
18548298	4C-J1	2.00 - 2.00	Dark Brown	Sandy Loam	Stones	N/A
18548508	4C-J2	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	Brick
18548515	4C-J2	2.00 - 2.00	Dark Brown	Sandy Loam	Stones	None
18548523	4C-J2	1.00 - 1.00	Dark Brown	Sandy Loam	Stones	N/A
18548532	4C-J3	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	Concrete/Aggregate

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

			Colour	Description	Inclusions	Inclusions 2
18548543	4C-J3	1.00 - 1.00	Dark Brown	Sandy Loam	Stones	N/A
18548551	4C-J3	1.50 - 1.50	Dark Brown	Sandy Loam	Stones	N/A
18548079	4C-J4	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	Crushed Brick
18548087	4C-J4	1.00 - 1.00	Black	Sand	Stones	Concrete/Aggregate
18548092	4C-J4	1.40 - 1.40	Black	Sand	Stones	None
18548111	4C-J5	0.50 - 0.50	Black	Sandy Loam	Vegetation	Stones
18548115	4C-J5	1.00 - 1.00	Black	Sandy Loam	Stones	Vegetation
18548453	3C-J4-V	3.70 - 3.70	Grey	Silty Clay	None	None
18548442	4C-J1-V	2.70 - 2.70	Grey	Silty Clay	None	None
18548074	4C-J3-V	1.90 - 1.90	Grey	Silty Clay	None	None
18548098	4C-J4-V	2.00 - 2.00	Grey	Silty Clay	None	None
18548120	4C-J5-V	1.70 - 1.70	Grey	Sandy Loam	Vegetation	Stones

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

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

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

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

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

Component	LOD/Units	Method	Customer Sample Ref.	3C-H4	3C-H4	3C-H4	3C-H5	3C-H5	3C-H5
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.30 - 0.30	0.80 - 0.80	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548486	18548490	18548494	18548372	18548388	18548403
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		26	14	15	20	8	13
Gross Calorific Value in Dry Matter Q(V/gr/d)	<0.5 MJ/kg	SUB				18.4			18.1
Gross Calorific Value Original Q(V/gr/ar)	<0.5 MJ/kg	SUB				15.3			15.6
Net Calorific Value in Dry Matter Q(V/net/d)	<0.5 MJ/kg	SUB				18.2			17.8
Net Calorific Value in Original Q(V/net/ar)	<0.5 MJ/kg	SUB				14.7			15
Water Analytical M (ad)	<0.5 %	SUB				1.01			0.86
Water Gross M(ex)	<0.5 %	SUB				16.1			12.8
Water Total M(ar)	<0.5 %	SUB				17			13.5
Exchangeable Ammonia as N	<12 mg/kg	TM024		142 M	<12 M	85 M	328 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	0.058 M	0.0236 M	<0.01 M	0.0109 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	0.278 M	0.142 M	0.0126 M	0.0109 M	0.023 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	0.116 M	0.0236 M	0.0378 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	0.452 M	0.189 M	0.0504 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.0844		0.412	0.0398		0.437
Sulphate, Total potential	<0.06 %	TM132		0.253		1.24	0.119		1.31
Soil Organic Matter (SOM)	<0.35 %	TM132		8.98 #	81.2 #	74.3 #	4.9 #	2.81 #	62.2 #
pH	1 pH Units	TM133		7.02 M	8.29 M	9.08 M	8.06 M	12.6 M	10.7 M
Cyanide, Total	<1 mg/kg	TM153		1.51 M	1.64 M	3.07 M	<1 M	1.6 M	3.23 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		15.1 M	8.2 M	9.64 M	13.4 M	<6 M	7.13 M
Cadmium	<0.02 mg/kg	TM181		0.931 M	0.386 M	0.532 M	0.0891 M	<0.2 M	0.144 M
Chromium	<0.9 mg/kg	TM181		56.4 M	53.9 M	73.8 M	41.3 M	460 M	42.3 M
Copper	<1.4 mg/kg	TM181		26.2 M	29.5 M	33.8 M	22 M	<14 M	42.9 M
Iron	<1000 mg/kg	TM181		36200 #	42900 #	39100 #	25000 #	158000 #	52100 #
Lead	<0.7 mg/kg	TM181		131 M	2080 M	96.7 M	40.4 M	52.4 M	44.8 M
Manganese	<0.13 mg/kg	TM181		1530 M	3550 M	4970 M	891 M	35200 M	2190 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<1.4 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		28.9 M	13.8 M	17.8 M	26.2 M	10.1 M	14.8 M
Selenium	<1 mg/kg	TM181		<1 #	2.03 #	2.23 #	<1 #	14.4 #	1.24 #
Vanadium	<0.2 mg/kg	TM181		75.5 #	56.6 #	73.7 #	65.6 #	427 #	28.7 #
Zinc	<1.9 mg/kg	TM181		555 M	634 M	594 M	140 M	400 M	245 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.0741		0.11	0.0533		0.063
Calcium	<21 mg/kg	TM224		13600		44500	8210		22500

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

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

Component	LOD/Units	Method	Customer Sample Ref.	3C-H4	3C-H4	3C-H4	3C-H5	3C-H5	3C-H5
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.30 - 0.30	0.80 - 0.80	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548486	18548490	18548494	18548372	18548388	18548403
			AGS Reference						
Magnesium	<8 mg/kg	TM224		7080		7310	6510		3160
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.0758 M		0.0813 M	0.102 M		0.0428 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

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

Component	LOD/Units	Method	Customer Sample Ref.	3C-H4-V	3C-H5-V	3C-I4	3C-I4	3C-I4	3C-I5
			Depth (m)	2.70 - 2.70	2.70 - 2.70	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548501	18548415	18548458	18548465	18548469	18548282
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		22	20	26	9.2	8.6	19
Exchangeable Ammonia as N	<12 mg/kg	TM024		164 M	<12 M	204 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		0.0129 M	0.0875 M	<0.01 M	0.022 M	<0.01 M	0.062 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	0.0875 M	<0.035 M	<0.035 M	<0.035 M	0.062 M
Sulphur, Total	<0.02 %	TM132				0.032	0.159		0.142
Sulphate, Total potential	<0.06 %	TM132				0.096	0.477		0.426
Soil Organic Matter (SOM)	<0.35 %	TM132		1.76 #	4.71 #	6.19 #	<0.35 #	5.84 #	6.96 #
pH	1 pH Units	TM133		8.13 M	8.63 M	7.51 M	12.8 M	12.5 M	8.34 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	40.5 M	<1 M	<1 M	<1 M	11.2 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		11 M	12.9 M	18.1 M	3.86 M	<6 M	15 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	1.31 M	0.388 M	<0.02 M	<0.2 M	2.41 M
Chromium	<0.9 mg/kg	TM181		43.9 M	46.8 M	35.1 M	464 M	734 M	276 M
Copper	<1.4 mg/kg	TM181		22.2 M	27.7 M	19.4 M	10.3 M	17.5 M	55.7 M
Iron	<1000 mg/kg	TM181		28200 #	68300 #	26700 #	132000 #	154000 #	130000 #
Lead	<0.7 mg/kg	TM181		22 M	342 M	52.6 M	8.94 M	17.2 M	423 M
Manganese	<0.13 mg/kg	TM181		891 M	4440 M	792 M	20600 M	18600 M	11900 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<1.4 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		33.8 M	19.2 M	28.9 M	3.82 M	8.02 M	43.5 M
Selenium	<1 mg/kg	TM181		<1 #	1.31 #	<1 #	6.41 #	15 #	<10 #
Vanadium	<0.2 mg/kg	TM181		80.3 #	76.9 #	63.7 #	406 #	631 #	249 #
Zinc	<1.9 mg/kg	TM181		124 M	2560 M	179 M	63.1 M	111 M	2610 M
Sulphate, acid soluble (total)	<0.02 %	TM221				0.0615	0.301		0.168
Calcium	<21 mg/kg	TM224				8820	190000		108000
Magnesium	<8 mg/kg	TM224				6040	24900		13500
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243				0.0512 M	0.053 M		0.134 M

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

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

Component	LOD/Units	Method	Customer Sample Ref.	3C-I5	3C-I5	3C-I5	4C-I5	4C-I5	4C-I6
			Depth (m)	0.80 - 0.80	1.50 - 1.50	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548317	18548332	18548346	18548126	18548131	18548150
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		9.7	8.9	11	9.3	11	7.2
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 #	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0111 M	0.022 M	<0.01 #	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		0.0444 M	0.022 M	<0.01 #	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 #	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		0.0555 M	0.0439 M	<0.035 #	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132			0.19	0.181	1.54	1.02	0.322
Sulphate, Total potential	<0.06 %	TM132			0.57	0.543	4.62	3.06	0.966
Soil Organic Matter (SOM)	<0.35 %	TM132		29.3 #	54.5 #	26.7 #	0.94 #	1.68 #	1.66 #
pH	1 pH Units	TM133		12.6 M	12.1 M	11.7 #	10.6 M	9.19 M	10.5 M
Cyanide, Total	<1 mg/kg	TM153		12.3 M	<1 M	<1 #	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 #	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		7.15 M	4.03 M	3.32 #	4.13 M	6.28 M	9.64 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	<0.02 M	<0.02 #	<0.02 M	<0.02 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		220 M	165 M	49.4 #	19.6 M	22.3 M	21.7 M
Copper	<1.4 mg/kg	TM181		17.8 M	11.4 M	6.46 #	4.45 M	22.2 M	12.1 M
Iron	<1000 mg/kg	TM181		106000 #	59600 #	20700 #	22800 #	43000 #	93400 #
Lead	<0.7 mg/kg	TM181		142 M	13.5 M	13.1 #	3.53 M	8.16 M	29.1 M
Manganese	<0.13 mg/kg	TM181		17200 M	8780 M	6630 #	6680 M	4520 M	4630 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 #	<1.4 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		11.3 M	7.78 M	3.31 #	2.96 M	18.6 M	16 M
Selenium	<1 mg/kg	TM181		4.62 #	4.61 #	4.01 #	4.58 #	2.93 #	<1 #
Vanadium	<0.2 mg/kg	TM181		217 #	161 #	59.6 #	64.3 #	59.3 #	79 #
Zinc	<1.9 mg/kg	TM181		1270 M	92 M	88.4 #	32.8 M	49.4 M	154 M
Sulphate, acid soluble (total)	<0.02 %	TM221			0.201	1.26	3.52	1.84	0.649
Calcium	<21 mg/kg	TM224			93600	171000	193000	160000	118000
Magnesium	<8 mg/kg	TM224			14600	22600	31500	23000	16400
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243			0.0433 M	0.118 #	1.58 M	1.62 M	0.159 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

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

Component	LOD/Units	Method	Customer Sample Ref.	4C-I6	4C-I7	4C-I7	4C-I8	4C-I8	3C-I4-V
			Depth (m)	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	3.40 - 3.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548160	18548185	18548198	18548239	18548253	18548476
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		10	6.9	10	6.7	13	24
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	246 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.0115 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132			0.394		0.662		
Sulphate, Total potential	<0.06 %	TM132			1.18		1.99		
Soil Organic Matter (SOM)	<0.35 %	TM132		3.26 #	6.47 #	5.14 #	3.26 #	19.5 #	0.597 #
pH	1 pH Units	TM133		12.3 M	9.86 M	10.7 M	10.5 M	10.8 M	8.93 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		7.28 M	7.39 M	5.68 M	5.03 M	6.83 M	14.2 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	0.149 M	<0.02 M	<0.02 M	<0.2 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		462 M	41.5 M	207 M	32.4 M	30 M	35.1 M
Copper	<1.4 mg/kg	TM181		18.8 M	11.1 M	10.4 M	3.88 M	17.6 M	11.8 M
Iron	<1000 mg/kg	TM181		98000 #	57000 #	108000 #	28200 #	174000 #	35400 #
Lead	<0.7 mg/kg	TM181		24.4 M	45.8 M	23.2 M	10.7 M	48.2 M	24.6 M
Manganese	<0.13 mg/kg	TM181		29500 M	5450 M	19100 M	6960 M	8060 M	492 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<0.14 M	<0.14 M	<0.14 M	<1.4 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		13.1 M	8.84 M	6.72 M	5.19 M	20.8 M	34.2 M
Selenium	<1 mg/kg	TM181		13.7 #	2.56 #	4.94 #	3.8 #	<10 #	<1 #
Vanadium	<0.2 mg/kg	TM181		330 #	72.4 #	223 #	109 #	114 #	55.2 #
Zinc	<1.9 mg/kg	TM181		60 M	203 M	138 M	57.7 M	118 M	103 M
Sulphate, acid soluble (total)	<0.02 %	TM221			0.756		2.62		
Calcium	<21 mg/kg	TM224			179000		182000		
Magnesium	<8 mg/kg	TM224			18300		34000		
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243			0.0969 M		1.1 M		

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

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

Component	LOD/Units	Method	Customer Sample Ref.	3C-I5-V	4C-I6-V	4C-I7-V	4C-I8-V	3C-J4	3C-J4
			Depth (m)	3.20 - 3.20	2.20 - 2.20	1.80 - 1.80	1.90 - 1.90	0.50 - 0.50	0.70 - 1.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548359	18548171	18548220	18548268	18548424	18548433
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		34	28	24	27	29	6.3
Exchangeable Ammonia as N	<12 mg/kg	TM024		317 M	194 M	144 M	183 M	183 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.0747 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.0213 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	0.096 M
Sulphur, Total	<0.02 %	TM132							0.118
Sulphate, Total potential	<0.06 %	TM132							0.354
Soil Organic Matter (SOM)	<0.35 %	TM132		6.69 #	3.88 #	1.61 #	1.91 #	6.1 #	14.9 #
pH	1 pH Units	TM133		7.56 M	7.85 M	6.91 M	7.4 M	7.45 M	12.8 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		14.3 M	13.6 M	14.9 M	12.4 M	10.9 M	2.79 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	<0.02 M	<0.02 M	<0.02 M	<0.02 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		77.4 M	33.1 M	31.6 M	35.8 M	28.8 M	338 M
Copper	<1.4 mg/kg	TM181		19.1 M	15.4 M	12.6 M	17.9 M	13.9 M	2.1 M
Iron	<1000 mg/kg	TM181		32100 #	29600 #	29900 #	33500 #	26400 #	107000 #
Lead	<0.7 mg/kg	TM181		33.1 M	30.4 M	25.5 M	26.3 M	36.1 M	14.4 M
Manganese	<0.13 mg/kg	TM181		2910 M	575 M	547 M	644 M	1040 M	20900 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		26.5 M	31.6 M	30.9 M	30.4 M	29.4 M	18.7 M
Selenium	<1 mg/kg	TM181		1.49 #	<1 #	<1 #	<1 #	<1 #	6.6 #
Vanadium	<0.2 mg/kg	TM181		119 #	53.3 #	57 #	55.7 #	48.5 #	371 #
Zinc	<1.9 mg/kg	TM181		132 M	113 M	107 M	136 M	178 M	83.5 M
Sulphate, acid soluble (total)	<0.02 %	TM221							0.21
Calcium	<21 mg/kg	TM224							233000
Magnesium	<8 mg/kg	TM224							45600
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243							0.0117 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

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

Component	LOD/Units	Method	Customer Sample Ref.	3C-J4	4C-J1	4C-J1	4C-J1	4C-J2	4C-J2
			Depth (m)	1.80 - 1.80	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548447	18548070	18548138	18548298	18548508	18548523
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		5	11	8.9	16	14	11
Exchangeable Ammonia as N	<12 mg/kg	TM024		17.7 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0105 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.0116 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.175	0.401	0.323		0.309	
Sulphate, Total potential	<0.06 %	TM132		0.525	1.2	0.969		0.927	
Soil Organic Matter (SOM)	<0.35 %	TM132		1.14 #	15.4 #	11.7 #	19.3 #	32.1 #	10.2 #
pH	1 pH Units	TM133		12.9 M	8.51 M	8.75 M	8.3 M	8.32 M	9.52 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		4.42 M	8.54 M	5.87 M	11.4 M	9.25 M	8.72 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	0.155 M	0.0664 M	<0.2 M	0.184 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		627 M	39.8 M	14.9 M	<9 M	40.1 M	81.7 M
Copper	<1.4 mg/kg	TM181		8.18 M	17.3 M	11.2 M	21.2 M	17.9 M	14.5 M
Iron	<1000 mg/kg	TM181		153000 #	40300 #	19500 #	217000 #	90300 #	73800 #
Lead	<0.7 mg/kg	TM181		5.03 M	60.4 M	12.5 M	28.5 M	67.1 M	62.1 M
Manganese	<0.13 mg/kg	TM181		24500 M	3950 M	4360 M	14300 M	4730 M	10500 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<1.4 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		1.62 M	19.1 M	6.66 M	15.7 M	15 M	13.3 M
Selenium	<1 mg/kg	TM181		8.12 #	2.66 #	3.1 #	<10 #	1.87 #	3.76 #
Vanadium	<0.2 mg/kg	TM181		499 #	49.6 #	42 #	129 #	72.9 #	124 #
Zinc	<1.9 mg/kg	TM181		28.8 M	187 M	50 M	81.8 M	258 M	248 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.232	0.785	0.603		0.443	
Calcium	<21 mg/kg	TM224		215000	114000	196000		127000	
Magnesium	<8 mg/kg	TM224		11700	17100	17500		22900	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.0077 M	0.212 M	0.283 M		0.179 M	

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

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

Component	LOD/Units	Method	Customer Sample Ref.	4C-J2	4C-J3	4C-J3	4C-J3	4C-J4	4C-J4
			Depth (m)	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548515	18548532	18548543	18548551	18548079	18548087
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		15	6.5	11	9.9	8.7	5.5
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.339		0.196	0.181	0.317	
Sulphate, Total potential	<0.06 %	TM132		1.02		0.588	0.543	0.951	
Soil Organic Matter (SOM)	<0.35 %	TM132		12.3 #	9.79 #	59.1 #	14.9 #	2.24 #	1.65 #
pH	1 pH Units	TM133		9.96 M	9.38 M	9.08 M	9.31 M	10.7 M	11.9 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		10.5 M	9.31 M	9.53 M	8.6 M	7.08 M	<6 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	<0.02 M	3.14 M	<0.02 M	0.168 M	<0.2 M
Chromium	<0.9 mg/kg	TM181		47.2 M	18.2 M	9.74 M	121 M	32.8 M	810 M
Copper	<1.4 mg/kg	TM181		25.7 M	43.6 M	28.8 M	15.9 M	10.2 M	18 M
Iron	<1000 mg/kg	TM181		93600 #	78600 #	70500 #	81500 #	50600 #	167000 #
Lead	<0.7 mg/kg	TM181		56.4 M	84.5 M	56.5 M	41.5 M	25.6 M	<7 M
Manganese	<0.13 mg/kg	TM181		4800 M	4880 M	3010 M	9220 M	4990 M	34400 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		35.2 M	14.3 M	19.5 M	13.6 M	9.27 M	8.79 M
Selenium	<1 mg/kg	TM181		<10 #	1.25 #	<1 #	3.55 #	3.2 #	16.5 #
Vanadium	<0.2 mg/kg	TM181		86.2 #	65.9 #	60.5 #	126 #	58.9 #	354 #
Zinc	<1.9 mg/kg	TM181		448 M	302 M	239 M	188 M	113 M	23.3 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.519		0.129	0.174	1.37	
Calcium	<21 mg/kg	TM224		118000		78700	142000	157000	
Magnesium	<8 mg/kg	TM224		15500		12600	8530	27800	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.244 M		0.0478 M	0.0259 M	1.05 M	

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

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

Component	LOD/Units	Method	Customer Sample Ref.	4C-J4	4C-J5	4C-J5	3C-J4-V	4C-J1-V	4C-J3-V
			Depth (m)	1.40 - 1.40	0.50 - 0.50	1.00 - 1.00	3.70 - 3.70	2.70 - 2.70	1.90 - 1.90
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548092	18548111	18548115	18548453	18548442	18548074
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		10	6.2	15	30	25	25
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	173 M	162 M	106 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.324		0.241			
Sulphate, Total potential	<0.06 %	TM132		0.972		0.723			
Soil Organic Matter (SOM)	<0.35 %	TM132		7.31 #	8.28 #	8.03 #	3.57 #	0.712 #	1.95 #
pH	1 pH Units	TM133		11.9 M	11.1 M	11.4 M	8.11 M	8.21 M	7.23 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		<6 M	17.2 M	13.5 M	12.7 M	14.8 M	15.6 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	<0.2 M	<0.2 M	<0.02 M	<0.02 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		449 M	238 M	115 M	39.6 M	27.5 M	36.4 M
Copper	<1.4 mg/kg	TM181		30.4 M	32.7 M	61.3 M	17.8 M	24.6 M	10.5 M
Iron	<1000 mg/kg	TM181		148000 #	108000 #	109000 #	30000 #	41600 #	27800 #
Lead	<0.7 mg/kg	TM181		24.3 M	47.8 M	70.9 M	30.2 M	24.3 M	27.7 M
Manganese	<0.13 mg/kg	TM181		43700 M	31700 M	14700 M	477 M	1630 M	519 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<1.4 M	<1.4 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		12.9 M	22.2 M	25.1 M	29.9 M	44.9 M	38.8 M
Selenium	<1 mg/kg	TM181		18.5 #	14.4 #	<10 #	<1 #	<1 #	<1 #
Vanadium	<0.2 mg/kg	TM181		394 #	268 #	171 #	64.3 #	51.2 #	64.3 #
Zinc	<1.9 mg/kg	TM181		63.3 M	110 M	318 M	147 M	108 M	111 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.662		0.322			
Calcium	<21 mg/kg	TM224		188000		126000			
Magnesium	<8 mg/kg	TM224		7390		16900			
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.107 M		0.216 M			

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

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

Component	LOD/Units	Method	Customer Sample Ref.	4C-J4-V	4C-J5-V				
			Depth (m)	2.00 - 2.00	1.70 - 1.70				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	17/10/2018	17/10/2018				
			Sample Time	00:00	00:00				
			Date Received	18/10/2018	18/10/2018				
			SDG Ref	181018-22	181018-22				
			Lab Sample No.(s)	18548098	18548120				
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		23	32				
Exchangeable Ammonia as N	<12 mg/kg	TM024		111 M	99 M				
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M				
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M				
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M				
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M				
Soil Organic Matter (SOM)	<0.35 %	TM132		1.26 #	5.24 #				
pH	1 pH Units	TM133		7.54 M	7.52 M				
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M				
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M				
Arsenic	<0.6 mg/kg	TM181		20.4 M	12.1 M				
Cadmium	<0.02 mg/kg	TM181		<0.02 M	<0.02 M				
Chromium	<0.9 mg/kg	TM181		33.8 M	49.5 M				
Copper	<1.4 mg/kg	TM181		11.4 M	17.4 M				
Iron	<1000 mg/kg	TM181		38800 #	28700 #				
Lead	<0.7 mg/kg	TM181		29.9 M	35.7 M				
Manganese	<0.13 mg/kg	TM181		995 M	1180 M				
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M				
Nickel	<0.2 mg/kg	TM181		42.6 M	29.5 M				
Selenium	<1 mg/kg	TM181		<1 #	<1 #				
Vanadium	<0.2 mg/kg	TM181		62.5 #	68.4 #				
Zinc	<1.9 mg/kg	TM181		115 M	132 M				

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

PAH by GCMS

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

Component	LOD/Units	Method	Customer Sample Ref.	3C-H4	3C-H4	3C-H4	3C-H5	3C-H5	3C-H5
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.30 - 0.30	0.80 - 0.80	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548486	18548490	18548494	18548372	18548388	18548403
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		90.6	135	86	91.5	92	87.5
Acenaphthene-d10 % recovery**	%	TM218		86.5	155	98	89.6	86.6	88.5
Phenanthrene-d10 % recovery**	%	TM218		82.9	158	96	91.5	83.3	87
Chrysene-d12 % recovery**	%	TM218		80.5	188	84	88.3	80.4	95
Perylene-d12 % recovery**	%	TM218		86.1	210	69	88.8	83.3	79
Naphthalene	<0.009 mg/kg	TM218		0.0358 M	418 M	1360 M	0.029 M	0.101 M	18.4 M
Acenaphthylene	<0.012 mg/kg	TM218		0.0384 M	20.7 M	70.4 M	<0.012 M	0.0512 M	24.9 M
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	27.6 M	20.3 M	<0.008 M	<0.008 M	2.01 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	32.3 M	56.8 M	<0.01 M	0.0145 M	20.9 M
Phenanthrene	<0.015 mg/kg	TM218		0.133 M	109 M	214 M	0.102 M	0.152 M	152 M
Anthracene	<0.016 mg/kg	TM218		0.0323 M	32.3 M	66.6 M	<0.016 M	0.033 M	45.2 M
Fluoranthene	<0.017 mg/kg	TM218		0.265 M	101 M	274 M	0.146 M	0.26 M	289 M
Pyrene	<0.015 mg/kg	TM218		0.224 M	66.1 M	187 M	0.107 M	0.204 M	203 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.134 M	33.9 M	82.8 M	0.0805 M	0.162 M	111 M
Chrysene	<0.01 mg/kg	TM218		0.152 M	27.6 M	74.4 M	0.0871 M	0.155 M	89.7 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.242 M	36.2 M	67.6 M	0.13 M	0.285 M	96.3 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.075 M	9.93 M	32.6 M	0.0397 M	0.0994 M	45.5 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.2 M	24.9 M	59.9 M	0.0825 M	0.214 M	92.3 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.141 M	14.5 M	50.2 M	0.0443 M	0.199 M	51.1 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.0359 M	<11.5 M	6.73 M	<0.023 M	0.0489 M	16.5 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.199 M	15.8 M	39.3 M	0.0729 M	0.261 M	66.2 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		1.91	970	2660	0.921	2.24	1320

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

PAH by GCMS

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

Component	LOD/Units	Method	Customer Sample Ref.	3C-H4-V	3C-H5-V	3C-I4	3C-I4	3C-I4	3C-I5
			Depth (m)	2.70 - 2.70	2.70 - 2.70	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548501	18548415	18548458	18548465	18548469	18548282
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		81.1	90.6	83.5	93.6	79	94.1
Acenaphthene-d10 % recovery**	%	TM218		82.2	90.2	85	92.3	82.9	94.3
Phenanthrene-d10 % recovery**	%	TM218		88.2	91.6	90.3	89.3	85.8	96.3
Chrysene-d12 % recovery**	%	TM218		88.8	91.5	88.8	83.7	81.7	101
Perylene-d12 % recovery**	%	TM218		86.9	88.1	85.6	75.7	77.6	98.7
Naphthalene	<0.009 mg/kg	TM218		0.518 M	0.474 M	<0.009 M	0.474 M	0.091 M	0.262 M
Acenaphthylene	<0.012 mg/kg	TM218		0.0482 M	0.483 M	<0.012 M	0.0472 M	0.0174 M	0.288 M
Acenaphthene	<0.008 mg/kg	TM218		0.0356 M	0.0187 M	<0.008 M	0.0239 M	0.0194 M	0.0116 M
Fluorene	<0.01 mg/kg	TM218		0.0718 M	0.0594 M	<0.01 M	0.0911 M	0.0221 M	0.0376 M
Phenanthrene	<0.015 mg/kg	TM218		0.312 M	0.537 M	0.0252 M	0.949 M	0.516 M	0.367 M
Anthracene	<0.016 mg/kg	TM218		0.0718 M	0.243 M	<0.016 M	0.106 M	0.0553 M	0.148 M
Fluoranthene	<0.017 mg/kg	TM218		0.363 M	1.57 M	0.0634 M	0.708 M	0.678 M	1.05 M
Pyrene	<0.015 mg/kg	TM218		0.226 M	1.31 M	0.0492 M	0.528 M	0.533 M	0.855 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.136 M	1.11 M	0.0312 M	0.312 M	0.286 M	0.816 M
Chrysene	<0.01 mg/kg	TM218		0.107 M	1.04 M	0.0309 M	0.405 M	0.381 M	0.716 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.116 M	1.56 M	0.0292 M	0.385 M	0.307 M	1.11 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.0475 M	0.73 M	<0.014 M	0.119 M	0.124 M	0.454 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.103 M	1.54 M	0.0309 M	0.238 M	0.222 M	1.04 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.101 M	1.45 M	0.0312 M	0.135 M	0.267 M	0.928 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	0.323 M	<0.023 M	0.0482 M	0.0397 M	0.213 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.0759 M	1.73 M	<0.024 M	0.171 M	0.18 M	1.12 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		2.33	14.2	0.291	4.74	3.74	9.42

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

PAH by GCMS

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

Component	LOD/Units	Method	Customer Sample Ref.	3C-I5	3C-I5	3C-I5	4C-I5	4C-I5	4C-I6
			Depth (m)	0.80 - 0.80	1.50 - 1.50	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548317	18548332	18548346	18548126	18548131	18548150
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		78.3	92.4	92.2	95.1	94.5	94.9
Acenaphthene-d10 % recovery**	%	TM218		84.3	89.4	87.5	95.5	96.6	94.5
Phenanthrene-d10 % recovery**	%	TM218		88.1	89.6	83.8	99.2	97.8	99.3
Chrysene-d12 % recovery**	%	TM218		88.1	78.2	74.9	98	95.3	95.3
Perylene-d12 % recovery**	%	TM218		84.7	70.4	74.6	92.5	91.4	88.1
Naphthalene	<0.009 mg/kg	TM218		0.847 M	8.43 M	0.498 #	0.0173 M	<0.045 M	0.106 M
Acenaphthylene	<0.012 mg/kg	TM218		0.225 M	1.09 M	0.143 #	<0.012 M	<0.06 M	0.0238 M
Acenaphthene	<0.008 mg/kg	TM218		0.0196 M	0.067 M	0.0171 #	<0.008 M	<0.04 M	0.0174 M
Fluorene	<0.01 mg/kg	TM218		0.111 M	0.791 M	0.0954 #	<0.01 M	<0.05 M	0.0194 M
Phenanthrene	<0.015 mg/kg	TM218		0.736 M	5.61 M	0.922 #	0.0439 M	<0.075 M	0.385 M
Anthracene	<0.016 mg/kg	TM218		0.191 M	1.05 M	0.284 #	<0.016 M	<0.08 M	0.0656 M
Fluoranthene	<0.017 mg/kg	TM218		1.24 M	6.28 M	2.02 #	0.0827 M	0.146 M	0.502 M
Pyrene	<0.015 mg/kg	TM218		0.946 M	4.19 M	1.52 #	0.0697 M	0.148 M	0.423 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.667 M	2.08 M	0.908 #	0.0498 M	0.0879 M	0.269 M
Chrysene	<0.01 mg/kg	TM218		0.599 M	1.82 M	0.792 #	0.0504 M	0.126 M	0.286 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.877 M	2.55 M	1.04 #	0.0782 M	0.0935 M	0.446 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.309 M	0.831 M	0.361 #	0.0275 M	<0.07 M	0.141 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.723 M	1.46 M	0.832 #	0.0495 M	0.0989 M	0.333 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.88 M	1.25 M	0.549 #	0.0333 M	<0.09 M	0.173 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.129 M	0.248 M	0.152 #	<0.023 M	<0.115 M	0.0591 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.654 M	0.787 M	0.716 #	0.0518 M	<0.12 M	0.26 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		9.16	38.5	10.9	0.554	0.7	3.51

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

PAH by GCMS

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

Component	LOD/Units	Method	Customer Sample Ref.	4C-I6	4C-I7	4C-I7	4C-I8	4C-I8	3C-I4-V
			Depth (m)	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	3.40 - 3.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548160	18548185	18548198	18548239	18548253	18548476
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		91	92.4	83.2	89.4	92.2	93.9
Acenaphthene-d10 % recovery**	%	TM218		92.2	96.7	85.6	86.4	92.2	91
Phenanthrene-d10 % recovery**	%	TM218		95	99.8	93.4	91	95.1	89.3
Chrysene-d12 % recovery**	%	TM218		91.3	97.8	91.9	84.9	97.2	88.4
Perylene-d12 % recovery**	%	TM218		86	89	88.9	80.4	89.2	92.4
Naphthalene	<0.009 mg/kg	TM218		0.114 M	0.459 M	0.167 M	0.305 M	0.907 M	<0.009 M
Acenaphthylene	<0.012 mg/kg	TM218		0.0201 M	0.145 M	0.0755 M	<0.12 M	0.134 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		0.0427 M	0.043 M	0.0282 M	0.0943 M	0.403 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		0.0295 M	0.166 M	0.058 M	<0.1 M	0.328 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		0.56 M	1.01 M	0.545 M	0.439 M	1.73 M	<0.015 M
Anthracene	<0.016 mg/kg	TM218		0.0932 M	0.225 M	0.123 M	0.178 M	0.358 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		1 M	1.26 M	0.784 M	0.339 M	2.85 M	<0.017 M
Pyrene	<0.015 mg/kg	TM218		0.908 M	1.42 M	0.833 M	0.292 M	2.55 M	<0.015 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.571 M	0.766 M	0.488 M	<0.14 M	2.47 M	<0.014 M
Chrysene	<0.01 mg/kg	TM218		0.582 M	0.729 M	0.459 M	<0.1 M	2.11 M	<0.01 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.779 M	0.864 M	0.682 M	<0.15 M	2.75 M	<0.015 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.335 M	0.3 M	0.23 M	<0.14 M	0.844 M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.747 M	0.604 M	0.52 M	<0.15 M	2.6 M	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.388 M	0.443 M	0.566 M	<0.18 M	1.46 M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.123 M	0.125 M	0.074 M	<0.23 M	0.423 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.55 M	0.526 M	0.404 M	<0.24 M	1.78 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		6.84	9.09	6.04	1.65	23.7	<0.118

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

PAH by GCMS

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

Component	LOD/Units	Method	Customer Sample Ref.	3C-I5-V	4C-I6-V	4C-I7-V	4C-I8-V	3C-J4	3C-J4
			Depth (m)	3.20 - 3.20	2.20 - 2.20	1.80 - 1.80	1.90 - 1.90	0.50 - 0.50	0.70 - 1.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548359	18548171	18548220	18548268	18548424	18548433
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		94.8	91.2	90.3	84.1	94.9	94.7
Acenaphthene-d10 % recovery**	%	TM218		95.1	90.5	91.1	82.1	95.4	95
Phenanthrene-d10 % recovery**	%	TM218		96.5	94.1	91.1	85.5	94.8	97.3
Chrysene-d12 % recovery**	%	TM218		102	96	90.5	82.8	100	98.2
Perylene-d12 % recovery**	%	TM218		100	96.5	91.1	82.3	97.9	86.8
Naphthalene	<0.009 mg/kg	TM218		0.0336 M	0.0145 M	<0.009 M	<0.009 M	0.0451 M	2.08 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M	3.64 M
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	<0.008 M	<0.008 M	<0.008 M	<0.008 M	0.129 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	1.77 M
Phenanthrene	<0.015 mg/kg	TM218		0.101 M	0.0264 M	<0.015 M	<0.015 M	0.0961 M	11.3 M
Anthracene	<0.016 mg/kg	TM218		<0.016 M	<0.016 M	<0.016 M	<0.016 M	<0.016 M	4.98 M
Fluoranthene	<0.017 mg/kg	TM218		0.173 M	0.0389 M	<0.017 M	<0.017 M	0.138 M	35.3 M
Pyrene	<0.015 mg/kg	TM218		0.159 M	0.0314 M	<0.015 M	<0.015 M	0.0985 M	25.2 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.112 M	0.0225 M	<0.014 M	<0.014 M	0.0747 M	15.7 M
Chrysene	<0.01 mg/kg	TM218		0.135 M	0.0221 M	0.019 M	<0.01 M	0.0754 M	11.3 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.15 M	0.0321 M	0.0211 M	<0.015 M	0.101 M	17 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.059 M	<0.014 M	<0.014 M	<0.014 M	0.0308 M	5.96 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.136 M	0.0222 M	0.023 M	<0.015 M	0.0651 M	13.7 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.0785 M	<0.018 M	<0.018 M	<0.018 M	0.049 M	6.8 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	<0.023 M	<0.023 M	<0.023 M	<0.023 M	2.56 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.0978 M	<0.024 M	<0.024 M	<0.024 M	0.0575 M	8.3 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		1.23	0.21	<0.118	<0.118	0.831	166

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

PAH by GCMS

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

Component	LOD/Units	Method	Customer Sample Ref.	3C-J4	4C-J1	4C-J1	4C-J1	4C-J2	4C-J2
			Depth (m)	1.80 - 1.80	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548447	18548070	18548138	18548298	18548508	18548523
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		92.6	96.2	83.3	93	93.9	80.7
Acenaphthene-d10 % recovery**	%	TM218		89.8	95.5	84.9	92.9	93.4	82.3
Phenanthrene-d10 % recovery**	%	TM218		89.3	94.6	90.6	95.2	95.4	88.5
Chrysene-d12 % recovery**	%	TM218		94.1	96.7	83.1	98.7	97.6	83.7
Perylene-d12 % recovery**	%	TM218		98.6	91.4	81.1	94.6	94.1	76.9
Naphthalene	<0.009 mg/kg	TM218		0.0671 M	0.463 M	0.0918 M	0.348 M	0.446 M	0.297 M
Acenaphthylene	<0.012 mg/kg	TM218		0.0152 M	0.205 M	0.0265 M	0.142 M	0.291 M	0.101 M
Acenaphthene	<0.008 mg/kg	TM218		0.0928 M	0.0395 M	0.0153 M	0.485 M	0.0587 M	0.0335 M
Fluorene	<0.01 mg/kg	TM218		0.0549 M	0.123 M	0.0315 M	0.358 M	0.24 M	0.0625 M
Phenanthrene	<0.015 mg/kg	TM218		1.14 M	1.31 M	0.366 M	0.87 M	1.8 M	0.534 M
Anthracene	<0.016 mg/kg	TM218		0.142 M	0.352 M	0.0777 M	0.158 M	0.469 M	0.15 M
Fluoranthene	<0.017 mg/kg	TM218		1.85 M	2.87 M	0.618 M	0.685 M	3.27 M	1.5 M
Pyrene	<0.015 mg/kg	TM218		1.76 M	2.21 M	0.495 M	0.478 M	2.61 M	1.35 M
Benz(a)anthracene	<0.014 mg/kg	TM218		1.25 M	1.55 M	0.418 M	0.37 M	1.87 M	0.851 M
Chrysene	<0.01 mg/kg	TM218		1.59 M	1.39 M	0.398 M	0.323 M	1.5 M	0.793 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		1.7 M	2.02 M	0.56 M	0.446 M	1.99 M	1.22 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.513 M	0.728 M	0.188 M	0.128 M	0.651 M	0.389 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.981 M	1.32 M	0.426 M	0.33 M	1.66 M	0.904 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.577 M	0.846 M	0.446 M	0.211 M	1.06 M	0.967 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.189 M	0.236 M	0.0825 M	0.0748 M	0.306 M	0.135 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.755 M	0.96 M	0.366 M	0.255 M	1.15 M	0.641 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		12.7	16.6	4.6	5.66	19.4	9.92

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

PAH by GCMS

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

Component	LOD/Units	Method	Customer Sample Ref.	4C-J2	4C-J3	4C-J3	4C-J3	4C-J4	4C-J4
			Depth (m)	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548515	18548532	18548543	18548551	18548079	18548087
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		83.4	95.4	94	81	82	80.6
Acenaphthene-d10 % recovery**	%	TM218		85.7	94	91.2	83.6	84.2	84.2
Phenanthrene-d10 % recovery**	%	TM218		89.8	94.4	90.4	87.2	85.1	90.2
Chrysene-d12 % recovery**	%	TM218		82.5	95.1	86.9	85.1	79	85.4
Perylene-d12 % recovery**	%	TM218		85.5	87.9	79.3	73	79.3	79.6
Naphthalene	<0.009 mg/kg	TM218		0.198 M	0.291 M	0.221 M	0.116 M	0.0522 M	0.122 M
Acenaphthylene	<0.012 mg/kg	TM218		0.137 M	0.132 M	0.138 M	0.273 M	<0.06 M	0.0203 M
Acenaphthene	<0.008 mg/kg	TM218		0.0276 M	0.0157 M	0.0214 M	0.0161 M	<0.04 M	0.0168 M
Fluorene	<0.01 mg/kg	TM218		0.111 M	0.0616 M	0.0776 M	0.175 M	<0.05 M	0.0279 M
Phenanthrene	<0.015 mg/kg	TM218		0.999 M	0.724 M	0.906 M	2.36 M	0.282 M	0.93 M
Anthracene	<0.016 mg/kg	TM218		0.219 M	0.196 M	0.195 M	0.409 M	0.118 M	0.193 M
Fluoranthene	<0.017 mg/kg	TM218		1.75 M	1.31 M	1.55 M	3.82 M	0.692 M	2.52 M
Pyrene	<0.015 mg/kg	TM218		1.28 M	1 M	1.17 M	2.83 M	0.589 M	1.86 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.792 M	0.672 M	0.719 M	1.37 M	0.329 M	1.82 M
Chrysene	<0.01 mg/kg	TM218		0.75 M	0.581 M	0.695 M	1.26 M	0.313 M	1.69 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.783 M	0.755 M	1.06 M	1.48 M	0.313 M	2.61 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.332 M	0.283 M	0.349 M	0.53 M	0.122 M	0.798 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.69 M	0.559 M	0.702 M	1.18 M	0.271 M	1.79 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.645 M	0.378 M	0.487 M	1.08 M	0.224 M	1.8 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.107 M	0.104 M	0.126 M	0.159 M	<0.115 M	0.325 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.469 M	0.436 M	0.552 M	0.832 M	0.197 M	1.37 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		9.29	7.5	8.97	17.9	3.5	17.9

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

PAH by GCMS

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

Component	LOD/Units	Method	Customer Sample Ref.	4C-J4	4C-J5	4C-J5	3C-J4-V	4C-J1-V	4C-J3-V
			Depth (m)	1.40 - 1.40	0.50 - 0.50	1.00 - 1.00	3.70 - 3.70	2.70 - 2.70	1.90 - 1.90
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548092	18548111	18548115	18548453	18548442	18548074
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		94.9	90	94.3	80.2	83.2	94.9
Acenaphthene-d10 % recovery**	%	TM218		93.7	87.2	94.6	83	86.9	94
Phenanthrene-d10 % recovery**	%	TM218		93.4	94.1	96.9	89.4	94.6	95.3
Chrysene-d12 % recovery**	%	TM218		98.1	89.7	96.6	87.7	92.6	102
Perylene-d12 % recovery**	%	TM218		96	82.6	94.9	84.7	86.9	102
Naphthalene	<0.009 mg/kg	TM218		0.123 M	0.139 M	0.0748 M	0.0207 M	0.145 M	<0.009 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	0.0877 M	0.0258 M	<0.012 M	0.132 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		0.0145 M	<0.04 M	<0.008 M	<0.008 M	0.698 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		0.0239 M	<0.05 M	<0.01 M	<0.01 M	0.405 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		0.544 M	0.465 M	0.221 M	<0.015 M	0.948 M	<0.015 M
Anthracene	<0.016 mg/kg	TM218		0.128 M	0.102 M	0.0427 M	<0.016 M	0.135 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		1.27 M	0.906 M	0.41 M	<0.017 M	0.213 M	<0.017 M
Pyrene	<0.015 mg/kg	TM218		0.908 M	0.807 M	0.637 M	<0.015 M	0.139 M	<0.015 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.83 M	0.492 M	0.472 M	<0.014 M	0.0269 M	<0.014 M
Chrysene	<0.01 mg/kg	TM218		0.855 M	0.556 M	0.439 M	<0.01 M	0.0236 M	<0.01 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.989 M	0.619 M	0.523 M	<0.015 M	0.0205 M	<0.015 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.366 M	0.278 M	0.218 M	<0.014 M	<0.014 M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.752 M	0.53 M	0.486 M	<0.015 M	<0.015 M	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.517 M	0.314 M	0.278 M	<0.018 M	<0.018 M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.157 M	<0.115 M	0.0896 M	<0.023 M	<0.023 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.602 M	0.457 M	0.405 M	<0.024 M	<0.024 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		8.08	5.75	4.32	<0.118	2.89	<0.118

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

PAH by GCMS

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

Component	LOD/Units	Method	Customer Sample Ref.	4C-J4-V	4C-J5-V				
			Depth (m)	2.00 - 2.00	1.70 - 1.70				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	17/10/2018	17/10/2018				
			Sample Time	00:00	00:00				
			Date Received	18/10/2018	18/10/2018				
			SDG Ref	181018-22	181018-22				
			Lab Sample No.(s)	18548098	18548120				
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		95.4	87.7				
Acenaphthene-d10 % recovery**	%	TM218		95.3	88.2				
Phenanthrene-d10 % recovery**	%	TM218		94.9	94.1				
Chrysene-d12 % recovery**	%	TM218		100	92.1				
Perylene-d12 % recovery**	%	TM218		99.8	88.8				
Naphthalene	<0.009 mg/kg	TM218		<0.009 M	<0.009 M				
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.012 M				
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	<0.008 M				
Fluorene	<0.01 mg/kg	TM218		<0.01 M	<0.01 M				
Phenanthrene	<0.015 mg/kg	TM218		<0.015 M	<0.015 M				
Anthracene	<0.016 mg/kg	TM218		<0.016 M	<0.016 M				
Fluoranthene	<0.017 mg/kg	TM218		<0.017 M	<0.017 M				
Pyrene	<0.015 mg/kg	TM218		<0.015 M	<0.015 M				
Benz(a)anthracene	<0.014 mg/kg	TM218		<0.014 M	<0.014 M				
Chrysene	<0.01 mg/kg	TM218		<0.01 M	<0.01 M				
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		<0.015 M	<0.015 M				
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 M	<0.014 M				
Benzo(a)pyrene	<0.015 mg/kg	TM218		<0.015 M	<0.015 M				
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		<0.018 M	<0.018 M				
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	<0.023 M				
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 M	<0.024 M				
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		<0.118	<0.118				

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

TPH CWG (S)

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

Component	LOD/Units	Method	Customer Sample Ref.	3C-H4	3C-H4	3C-H4	3C-H5	3C-H5	3C-H5
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.30 - 0.30	0.80 - 0.80	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548486	18548490	18548494	18548372	18548388	18548403
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		91	98	110 2	112	82.4	44.1
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.1 M	186 M	67.4 2 M	<0.1 M	<0.1 M	0.557 #
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	0.303	<0.2 2	<0.01	<0.01	0.023
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.01	1.62	0.775 2	<0.01	<0.01	0.0771
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01	2.94	1.26 2	<0.01	<0.01	0.069
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01	108	38.5 2	<0.01	<0.01	0.161
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	14.8	16.5	<0.1	<0.1	8.96
Aliphatics >C16-C21	<0.1 mg/kg	TM173		0.407	120	96.4	<0.1	3.36	92.2
Aliphatics >C21-C35	<0.1 mg/kg	TM173		8.23	152	212	6.31	51.7	109
Aliphatics >C35-C44	<0.1 mg/kg	TM173		1.11	33.4	91.3	<0.1	5.84	29.9
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		9.75	321	416	6.31	60.9	240
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.2	<0.2 2	<0.01	<0.01	0.0426
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.2	<0.2 2	<0.01	<0.01	0.0322
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01	1.96	0.839 2	<0.01	<0.01	0.046
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01	71.7	25.7 2	<0.01	<0.01	0.107
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	509	542	<0.1	<0.1	63.6
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		<0.1	1350	1570	1.82	0.384	499
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		15.3	2090	2240	20.3	7.9	1530
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		1.16	477	522	10	<0.1	444
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		<0.1	126	142	4.46	<0.1	116
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		16.4	4420	4870	32.1	8.29	2540
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		26.2	4930	5360	38.4	69.2	2780

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

TPH CWG (S)

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

Component	LOD/Units	Method	Customer Sample Ref.	3C-H4-V	3C-H5-V	3C-I4	3C-I4	3C-I4	3C-I5
			Depth (m)	2.70 - 2.70	2.70 - 2.70	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548501	18548415	18548458	18548465	18548469	18548282
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		94	83	126	12.5	65	75
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		0.288 M	<0.1 M	<0.1 M	<0.1 #	<0.1 #	<0.1 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.0181	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.0155	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.143	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C12-C16	<0.1 mg/kg	TM173		0.206	1.11	<0.1	7.21	2.1	0.787
Aliphatics >C16-C21	<0.1 mg/kg	TM173		0.868	15.7	<0.1	13.4	10.8	11.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		5.67	79	5.69	68.1	56.7	76.8
Aliphatics >C35-C44	<0.1 mg/kg	TM173		0.935	21.9	<0.1	6.44	11.1	27.6
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		7.68	118	5.69	95.2	80.6	116
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.0103	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		0.0955	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	2.92	<0.1	16.4	0.182	2.03
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		0.369	21.9	1.28	23.2	4.8	11.7
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		6.57	112	25.5	53.7	18.6	93.7
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		3.53	47.1	7.38	12.3	1	56.3
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		1.15	15.9	2.53	3.51	<0.1	20.8
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		10.5	184	34.1	106	24.6	164
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		18.4	302	39.8	201	105	280

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

TPH CWG (S)

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

Component	LOD/Units	Method	Customer Sample Ref.	3C-I5	3C-I5	3C-I5	4C-I5	4C-I5	4C-I6
			Depth (m)	0.80 - 0.80	1.50 - 1.50	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548317	18548332	18548346	18548126	18548131	18548150
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		13.9	4.5	25.8	87	96	59
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.1 #	<0.1 #	<0.1 #	<0.1 M	<0.1 M	<0.1 #
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.01	0.0417	<0.01	<0.01	<0.01	<0.01
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01	0.0176	<0.01	<0.01	<0.01	<0.01
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01	0.0143	<0.01	<0.01	<0.01	<0.01
Aliphatics >C12-C16	<0.1 mg/kg	TM173		2.33	17.8	2.65	<0.1	<0.1	2.54
Aliphatics >C16-C21	<0.1 mg/kg	TM173		10	27.4	14	2.1	4.18	11.4
Aliphatics >C21-C35	<0.1 mg/kg	TM173		77	69.8	13.1	30.9	28.9	110
Aliphatics >C35-C44	<0.1 mg/kg	TM173		12.6	7.15	1.3	33.9	8.43	38.2
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		102	122	31.1	66.9	41.5	162
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01	0.0121	<0.01	<0.01	<0.01	<0.01
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		0.165	19.6	6.1	<0.1	0.198	2.76
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		3.58	42.4	88.3	2.16	1.92	8.29
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		19	79.6	167	29.9	19	60.1
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		1.73	20.7	41	42.5	9.94	39.1
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		<0.1	6.69	12.5	20.2	3.55	16.7
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		24.5	162	302	74.5	31.1	110
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		126	284	333	141	72.5	273

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

TPH CWG (S)

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

Component	LOD/Units	Method	Customer Sample Ref.	4C-I6	4C-I7	4C-I7	4C-I8	4C-I8	3C-I4-V
			Depth (m)	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	3.40 - 3.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548160	18548185	18548198	18548239	18548253	18548476
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		87	42.3	74.4	76	57.7	100
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.1 M	<0.1 #	<0.1 M	0.425 M	0.535 #	<0.1 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	0.0129	0.0138	<0.01
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	0.0247	0.0357	<0.01
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	0.0418	0.0575	<0.01
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01	0.0236	<0.01	0.19	0.208	<0.01
Aliphatics >C12-C16	<0.1 mg/kg	TM173		11.5	41	12	4.4	38.2	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		27	116	59	9.62	157	<0.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		85.1	821	388	109	915	<0.1
Aliphatics >C35-C44	<0.1 mg/kg	TM173		26.2	226	98.3	129	258	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		150	1210	557	252	1370	<0.1
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	0.0253	<0.01
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	0.0173	<0.01
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	0.0279	0.038	<0.01
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01	0.015	<0.01	0.126	0.139	<0.01
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		3.35	15.8	6.8	11.1	15.9	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		15.7	53.7	31.9	15.1	72.5	<0.1
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		77.6	252	165	146	356	2.45
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		37.4	103	78	210	137	<0.1
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		14.9	40.3	31.4	93.7	50.7	<0.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		134	424	282	382	581	2.45
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		284	1630	839	634	1950	2.45

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

TPH CWG (S)

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

Component	LOD/Units	Method	Customer Sample Ref.	3C-I5-V	4C-I6-V	4C-I7-V	4C-I8-V	3C-J4	3C-J4
			Depth (m)	3.20 - 3.20	2.20 - 2.20	1.80 - 1.80	1.90 - 1.90	0.50 - 0.50	0.70 - 1.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548359	18548171	18548220	18548268	18548424	18548433
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		18.3	92	101	97	77	16
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.1 #	<0.1 M	<0.1 M	<0.1 M	<0.1 M	0.165 #
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	0.0149
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	0.0352
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	0.0113	0.0277
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01	0.0138	<0.01	<0.01	0.0127	0.0363
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	<0.1	<0.1	<0.1	<0.1	7.7
Aliphatics >C16-C21	<0.1 mg/kg	TM173		<0.1	<0.1	<0.1	<0.1	<0.1	24.5
Aliphatics >C21-C35	<0.1 mg/kg	TM173		4.38	5.78	3.64	2.95	8.7	71.5
Aliphatics >C35-C44	<0.1 mg/kg	TM173		<0.1	<0.1	<0.1	<0.1	<0.1	7.52
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		4.38	5.78	3.64	2.95	8.7	111
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	0.0181
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	0.0245
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	<0.1	<0.1	<0.1	0.815	17.8
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		<0.1	1.97	<0.1	0.332	2.13	104
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		26.6	38.5	9.17	16	35.8	279
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		3.34	7.74	3.64	3.99	6.33	63.8
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		<0.1	2.6	1.28	0.802	1.99	18.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		30	48.2	12.8	20.3	45.1	465
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		34.4	54	16.4	23.3	53.8	577

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

TPH CWG (S)

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

Component	LOD/Units	Method	Customer Sample Ref.	3C-J4	4C-J1	4C-J1	4C-J1	4C-J2	4C-J2
			Depth (m)	1.80 - 1.80	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548447	18548070	18548138	18548298	18548508	18548523
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		108	46	45	94	57	50
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.1 M	<0.1 #	<0.1 #	<0.1 M	<0.1 #	<0.1 #
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C12-C16	<0.1 mg/kg	TM173		2.4	3.35	4.65	4.31	4.25	2.46
Aliphatics >C16-C21	<0.1 mg/kg	TM173		17.9	19.5	32.6	86.9	10.7	9.21
Aliphatics >C21-C35	<0.1 mg/kg	TM173		106	91.8	134	80.6	45.4	30.7
Aliphatics >C35-C44	<0.1 mg/kg	TM173		27.3	25.4	23.5	3.84	12.6	12
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		154	140	194	176	72.9	54.4
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		1.78	4.88	2.42	6.68	0.583	2.3
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		18.8	21.2	13.1	57.4	7	10.2
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		83.9	90.9	85.1	80.4	30.3	53.5
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		26.4	35.4	39	18.7	2.97	28.6
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		9.21	13.4	16	7.33	<0.1	12.7
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		131	152	140	163	40.9	94.6
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		285	292	334	339	114	149

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

TPH CWG (S)

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

Component	LOD/Units	Method	Customer Sample Ref.	4C-J2	4C-J3	4C-J3	4C-J3	4C-J4	4C-J4
			Depth (m)	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548515	18548532	18548543	18548551	18548079	18548087
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		75	58	54	62	91.8	79
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.1 M	<0.1 #	<0.1 #	<0.1 #	<0.1 M	<0.1 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	0.0263	<0.01
Aliphatics >C12-C16	<0.1 mg/kg	TM173		2.22	0.685	1.45	1.16	9.48	2.27
Aliphatics >C16-C21	<0.1 mg/kg	TM173		15.5	4.74	5.54	8.23	21.6	8.96
Aliphatics >C21-C35	<0.1 mg/kg	TM173		39.2	27.1	24.8	22.8	55.1	26.7
Aliphatics >C35-C44	<0.1 mg/kg	TM173		13.7	12.1	5.51	2.27	29.2	6.27
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		70.7	44.5	37.3	34.5	115	44.2
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	0.0175	<0.01
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	<0.1	3.95	2.27	2.16	1.46
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		5.42	4.23	47.2	13.3	7.15	13.6
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		15.4	10.7	114	43	37.6	68.8
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		1.61	1.21	31.3	13.5	35.4	20.5
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		<0.1	<0.1	11.4	5.38	16.3	7.31
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		22.4	16.1	197	72.2	82.3	104
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		93.1	60.7	234	107	198	149

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

TPH CWG (S)

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

Component	LOD/Units	Method	Customer Sample Ref.	4C-J4	4C-J5	4C-J5	3C-J4-V	4C-J1-V	4C-J3-V
			Depth (m)	1.40 - 1.40	0.50 - 0.50	1.00 - 1.00	3.70 - 3.70	2.70 - 2.70	1.90 - 1.90
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548092	18548111	18548115	18548453	18548442	18548074
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		100	65	68	88	77	92
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.1 M	<0.1 #	<0.1 #	<0.1 M	4.28 M	<0.1 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	0.0333	<0.01
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	0.142	<0.01
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	0.662	<0.01
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	1.8	<0.01
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	1.75	<0.1	<0.1	9.35	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		7.83	9.72	5.82	<0.1	167	<0.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		41.1	77.1	43.8	2.3	90.9	<0.1
Aliphatics >C35-C44	<0.1 mg/kg	TM173		9.38	42.1	14.7	0.985	<0.1	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		58.3	131	64.3	3.28	267	<0.1
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	0.442	<0.01
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	1.2	<0.01
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		1.15	1.62	2.52	<0.1	14.2	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		9.86	9.71	11.7	<0.1	126	<0.1
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		46.7	70.7	63.4	7.8	78.2	0.454
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		17.2	53.4	46.5	3.83	1.93	0.858
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		6.88	22.7	20.1	1.58	1.13	0.496
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		74.9	135	124	11.6	220	1.31
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		133	266	188	14.9	491	1.31

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

TPH CWG (S)

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

Component	LOD/Units	Method	Customer Sample Ref.					
			4C-J4-V	4C-J5-V				
			Depth (m) 2.00 - 2.00	1.70 - 1.70				
			Sample Type Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled 17/10/2018	17/10/2018				
			Sample Time 00:00	00:00				
			Date Received 18/10/2018	18/10/2018				
			SDG Ref 181018-22	181018-22				
			Lab Sample No.(s) 18548098	18548120				
			AGS Reference					
GRO Surrogate % recovery**	%	TM089	106	107				
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089	<0.1 M	<0.1 M				
Aliphatics >C5-C6	<0.01 mg/kg	TM089	<0.01	<0.01				
Aliphatics >C6-C8	<0.01 mg/kg	TM089	<0.01	<0.01				
Aliphatics >C8-C10	<0.01 mg/kg	TM089	<0.01	<0.01				
Aliphatics >C10-C12	<0.01 mg/kg	TM089	<0.01	<0.01				
Aliphatics >C12-C16	<0.1 mg/kg	TM173	<0.1	<0.1				
Aliphatics >C16-C21	<0.1 mg/kg	TM173	<0.1	<0.1				
Aliphatics >C21-C35	<0.1 mg/kg	TM173	<0.1	5.29				
Aliphatics >C35-C44	<0.1 mg/kg	TM173	<0.1	<0.1				
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173	<0.1	5.29				
Aromatics >EC5-EC7	<0.01 mg/kg	TM089	<0.01	<0.01				
Aromatics >EC7-EC8	<0.01 mg/kg	TM089	<0.01	<0.01				
Aromatics >EC8-EC10	<0.01 mg/kg	TM089	<0.01	<0.01				
Aromatics >EC10-EC12	<0.01 mg/kg	TM089	<0.01	<0.01				
Aromatics >EC12-EC16	<0.1 mg/kg	TM173	<0.1	<0.1				
Aromatics >EC16-EC21	<0.1 mg/kg	TM173	<0.1	<0.1				
Aromatics >EC21-EC35	<0.1 mg/kg	TM173	1.57	19.8				
Aromatics >EC35-EC44	<0.1 mg/kg	TM173	<0.1	7.45				
Aromatics >EC40-EC44	<0.1 mg/kg	TM173	<0.1	2.42				
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173	1.57	27.3				
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173	1.57	32.5				

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

VOC MS (S)

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

Component	LOD/Units	Method	Customer Sample Ref.	3C-H4	3C-H4	3C-H4	3C-H5	3C-H5	3C-H5
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.30 - 0.30	0.80 - 0.80	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548486	18548490	18548494	18548372	18548388	18548403
			AGS Reference						
Dibromofluoromethane**	%	TM116		104	94.5	86 2	105	102	88.5
Toluene-d8**	%	TM116		98.3	96.9	92.8 2	98.5	98.7	89.6
4-Bromofluorobenzene**	%	TM116		94.9	88.7	82.5 2	99.7	95.6	73.3
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.01 2 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.009 2 M	<0.09 M	<0.09 M	0.114 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	0.12 M	0.0284 2 M	<0.07 M	<0.07 M	0.146 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.004 2 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	0.144 #	0.0519 2 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.01 2 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	579 M	411 2 M	<0.13 M	<0.13 M	8.18 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	- 2	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

VOC MS (S)

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

Component	LOD/Units	Method	Customer Sample Ref.	3C-H4-V	3C-H5-V	3C-I4	3C-I4	3C-I4	3C-I5
			Depth (m)	2.70 - 2.70	2.70 - 2.70	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548501	18548415	18548458	18548465	18548469	18548282
			AGS Reference						
Dibromofluoromethane**	%	TM116		107	99.6	108	101	89.4	102
Toluene-d8**	%	TM116		100	97.9	97.7	98.7	90.9	99.1
4-Bromofluorobenzene**	%	TM116		99.8	95.7	95.8	102	81.1	93
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<2 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<1.8 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<1.4 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.8 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<2 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<2 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		1.57 M	<0.26 M	<0.26 M	<2.6 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<8	<0.4	<0.4

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

VOC MS (S)

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

Component	LOD/Units	Method	Customer Sample Ref.	3C-I5	3C-I5	3C-I5	4C-I5	4C-I5	4C-I6
			Depth (m)	0.80 - 0.80	1.50 - 1.50	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548317	18548332	18548346	18548126	18548131	18548150
			AGS Reference						
Dibromofluoromethane**	%	TM116		94	99.1	88.8	114	105	96.5
Toluene-d8**	%	TM116		92.8	98.6	91.1	91.3	97.3	92.8
4-Bromofluorobenzene**	%	TM116		75.9	95.8	70.9	98.6	99.8	85.1
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<2 M	<0.2 #	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<1.8 M	<0.18 #	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<1.4 M	<0.14 #	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.8 M	<0.08 #	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<2 #	<0.2 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<2 M	<0.2 #	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	4.59 M	0.327 #	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<8	<0.8	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

VOC MS (S)

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

Component	LOD/Units	Method	Customer Sample Ref.	4C-I6	4C-I7	4C-I7	4C-I8	4C-I8	3C-I4-V
			Depth (m)	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	3.40 - 3.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548160	18548185	18548198	18548239	18548253	18548476
			AGS Reference						
Dibromofluoromethane**	%	TM116		105	109	103	107	111	105
Toluene-d8**	%	TM116		97.4	97.7	93.1	92.7	97.3	99.4
4-Bromofluorobenzene**	%	TM116		96	90.4	97.1	99.8	90	100
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	-	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

VOC MS (S)

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

Component	LOD/Units	Method	Customer Sample Ref.	3C-I5-V	4C-I6-V	4C-I7-V	4C-I8-V	3C-J4	3C-J4
			Depth (m)	3.20 - 3.20	2.20 - 2.20	1.80 - 1.80	1.90 - 1.90	0.50 - 0.50	0.70 - 1.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548359	18548171	18548220	18548268	18548424	18548433
			AGS Reference						
Dibromofluoromethane**	%	TM116		99.9	107	115	105	104	81.9
Toluene-d8**	%	TM116		93	92.4	99.9	97.9	98.3	87.4
4-Bromofluorobenzene**	%	TM116		82.8	95.4	104	95.8	94.7	64.5
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.2 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.18 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.14 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.08 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.2 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.2 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.26 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.8

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

VOC MS (S)

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

Component	LOD/Units	Method	Customer Sample Ref.	3C-J4	4C-J1	4C-J1	4C-J1	4C-J2	4C-J2
			Depth (m)	1.80 - 1.80	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548447	18548070	18548138	18548298	18548508	18548523
			AGS Reference						
Dibromofluoromethane**	%	TM116		101	92.2	90.4	102	91.8	101
Toluene-d8**	%	TM116		100	89.8	95.2	96.4	91.7	94.1
4-Bromofluorobenzene**	%	TM116		102	80.3	89.5	98.5	86.9	87.4
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.2 #	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.18 #	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.14 #	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.08 #	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.2 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.2 #	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.26 #	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.8	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

VOC MS (S)

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

Component	LOD/Units	Method	Customer Sample Ref.	4C-J2	4C-J3	4C-J3	4C-J3	4C-J4	4C-J4
			Depth (m)	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548515	18548532	18548543	18548551	18548079	18548087
			AGS Reference						
Dibromofluoromethane**	%	TM116		98	103	97.1	97.5	108	105
Toluene-d8**	%	TM116		95	96.1	92.9	95.5	95.9	97.4
4-Bromofluorobenzene**	%	TM116		88.6	94.9	89.8	83.7	97	92.3
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 ♦ M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 ♦ M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 ♦ M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	-	<0.4	-	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

VOC MS (S)

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

Component	LOD/Units	Method	Customer Sample Ref.	4C-J4	4C-J5	4C-J5	3C-J4-V	4C-J1-V	4C-J3-V
			Depth (m)	1.40 - 1.40	0.50 - 0.50	1.00 - 1.00	3.70 - 3.70	2.70 - 2.70	1.90 - 1.90
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548092	18548111	18548115	18548453	18548442	18548074
			AGS Reference						
Dibromofluoromethane**	%	TM116		112	102	101	104	107	108
Toluene-d8**	%	TM116		101	92.5	91.3	99.6	94.3	99.6
4-Bromofluorobenzene**	%	TM116		102	84.3	88.3	99.9	95	98.6
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	0.194 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	0.56 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

VOC MS (S)

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

Component	LOD/Units	Method	Customer Sample Ref.					
			4C-J4-V	4C-J5-V				
			Depth (m) 2.00 - 2.00	1.70 - 1.70				
			Sample Type Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled 17/10/2018	17/10/2018				
			Sample Time 00:00	00:00				
			Date Received 18/10/2018	18/10/2018				
			SDG Ref 181018-22	181018-22				
			Lab Sample No.(s) 18548098	18548120				
			AGS Reference					
Dibromofluoromethane**	%	TM116	116	109				
Toluene-d8**	%	TM116	101	96.8				
4-Bromofluorobenzene**	%	TM116	103	98.8				
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116	<0.1 M	<0.1 M				
Benzene	<0.009 mg/kg	TM116	<0.09 M	<0.09 M				
Toluene	<0.007 mg/kg	TM116	<0.07 M	<0.07 M				
Ethylbenzene	<0.004 mg/kg	TM116	<0.04 M	<0.04 M				
p/m-Xylene	<0.01 mg/kg	TM116	<0.1 #	<0.1 #				
o-Xylene	<0.01 mg/kg	TM116	<0.1 M	<0.1 M				
Naphthalene	<0.013 mg/kg	TM116	<0.13 M	<0.13 M				
Sum of BTEX	<0.04 mg/kg	TM116	<0.4	<0.4				

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

Asbestos Identification - Solid Samples

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-H4 0.50 - 0.50 SOLID 17/10/2018 00:00:00 20/10/2018 15:47:18 181018-22 18548486 TM048	29/10/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-H4 2.00 - 2.00 SOLID 17/10/2018 00:00:00 19/10/2018 11:43:50 181018-22 18548494 TM048	29/10/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-H5 0.30 - 0.30 SOLID 17/10/2018 00:00:00 19/10/2018 06:40:13 181018-22 18548372 TM048	29/10/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-H5 1.50 - 1.50 SOLID 17/10/2018 00:00:00 20/10/2018 15:51:54 181018-22 18548403 TM048	29/10/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-I4 0.50 - 0.50 SOLID 17/10/2018 00:00:00 20/10/2018 15:49:17 181018-22 18548458 TM048	29/10/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-I4 1.00 - 1.00 SOLID 17/10/2018 00:00:00 19/10/2018 11:40:17 181018-22 18548465 TM048	29/10/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 181018-22 **Client Reference:** **Report Number:** 481508
Location: Llanwern **Order Number:** LLA491 **Superseded Report:** 481496

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-I5 0.30 - 0.30 SOLID 17/10/2018 00:00:00 19/10/2018 09:45:47 181018-22 18548282 TM048	29/10/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-I5 1.50 - 1.50 SOLID 17/10/2018 00:00:00 19/10/2018 07:54:18 181018-22 18548332 TM048	29/10/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-I5 2.00 - 2.00 SOLID 17/10/2018 00:00:00 19/10/2018 06:36:42 181018-22 18548346 TM048	29/10/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-I5 0.50 - 0.50 SOLID 17/10/2018 00:00:00 20/10/2018 15:40:33 181018-22 18548126 TM048	29/10/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-I5 1.00 - 1.00 SOLID 17/10/2018 00:00:00 18/10/2018 17:06:23 181018-22 18548131 TM048	24/10/2018	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-I6 0.50 - 0.50 SOLID 17/10/2018 00:00:00 18/10/2018 17:07:59 181018-22 18548150 TM048	24/10/2018	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 181018-22 **Client Reference:** **Report Number:** 481508
Location: Llanwern **Order Number:** LLA491 **Superseded Report:** 481496

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-I7 0.50 - 0.50 SOLID 17/10/2018 00:00:00 19/10/2018 06:43:58 181018-22 18548185 TM048	29/10/2018	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-I8 0.50 - 0.50 SOLID 17/10/2018 00:00:00 20/10/2018 14:12:11 181018-22 18548239 TM048	24/10/2018	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-J4 0.70 - 1.30 SOLID 17/10/2018 00:00:00 20/10/2018 15:53:37 181018-22 18548433 TM048	29/10/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-J4 1.80 - 1.80 SOLID 17/10/2018 00:00:00 20/10/2018 15:55:35 181018-22 18548447 TM048	24/10/2018	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-J1 0.50 - 0.50 SOLID 17/10/2018 00:00:00 20/10/2018 15:42:21 181018-22 18548070 TM048	29/10/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-J1 1.00 - 1.00 SOLID 17/10/2018 00:00:00 20/10/2018 14:21:00 181018-22 18548138 TM048	29/10/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 181018-22 **Client Reference:** **Report Number:** 481508
Location: Llanwern **Order Number:** LLA491 **Superseded Report:** 481496

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-J2 0.50 - 0.50 SOLID 17/10/2018 00:00:00 20/10/2018 14:23:08 181018-22 18548508 TM048	29/10/2018	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-J2 2.00 - 2.00 SOLID 17/10/2018 00:00:00 20/10/2018 14:25:12 181018-22 18548515 TM048	29/10/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-J3 1.00 - 1.00 SOLID 17/10/2018 00:00:00 20/10/2018 14:17:06 181018-22 18548543 TM048	24/10/2018	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-J3 1.50 - 1.50 SOLID 17/10/2018 00:00:00 20/10/2018 14:13:47 181018-22 18548551 TM048	24/10/2018	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-J4 0.50 - 0.50 SOLID 17/10/2018 00:00:00 20/10/2018 14:15:51 181018-22 18548079 TM048	29/10/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-J4 1.40 - 1.40 SOLID 17/10/2018 00:00:00 20/10/2018 09:55:58 181018-22 18548092 TM048	24/10/2018	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**	**Report Number:** 481508
Location:	Llanwern	**Order Number:** LLA491	**Superseded Report:** 481496

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-J5 1.00 - 1.00 SOLID 17/10/2018 00:00:00 20/10/2018 15:44:49 181018-22 18548115 TM048	24/10/2018	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548070
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-J1
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	7.08	<0.2	70.8	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00516	<0.0005	0.0516	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00285	<0.0003	0.0285	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00066	<0.0004	0.0066	<0.004	-	-	-
Selenium	0.00199	<0.001	0.0199	<0.01	-	-	-
Vanadium	0.0506	<0.001	0.506	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000482	<0.00001	0.000482	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000012	<0.000005	0.00012	<0.00005	-	-	-
Fluoranthene by GCMS	0.000138	<0.000005	0.00138	<0.00005	-	-	-
Anthracene by GCMS	0.0000182	<0.000005	0.000182	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000715	<0.000005	0.000715	<0.00005	-	-	-
Fluorene by GCMS	0.00000903	<0.000005	0.0000903	<0.00005	-	-	-
Chrysene by GCMS	0.0000934	<0.000005	0.000934	<0.00005	-	-	-
Pyrene by GCMS	0.000118	<0.000005	0.00118	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000561	<0.000005	0.000561	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000144	<0.000005	0.00144	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000457	<0.000005	0.000457	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000588	<0.000002	0.000588	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000155	<0.000005	0.000155	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000564	<0.000005	0.000564	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000488	<0.000005	0.000488	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000934	<0.000082	0.00934	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	9.16
Conductivity (µS/cm)	237.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

16/11/2018 16:48:06

16:47:22 16/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548070
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-J1
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	9.16
Conductivity (µS/cm)	237.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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16:47:22 16/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.53
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.3
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548079
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-J4
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000132	<0.00001	0.000132	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000552	<0.0005	0.00552	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00149	<0.001	0.0149	<0.01	-	-	-
Copper	0.00164	<0.0003	0.0164	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00191	<0.001	0.0191	<0.01	-	-	-
Vanadium	0.0481	<0.001	0.481	<0.01	-	-	-
Zinc	0.00144	<0.001	0.0144	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000539	<0.00001	0.000539	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000198	<0.000005	0.000198	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000792	<0.000005	0.000792	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000625	<0.000005	0.000625	<0.00005	-	-	-
Fluorene by GCMS	0.0000113	<0.000005	0.000113	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.000118	<0.000005	0.00118	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000345	<0.000082	0.00345	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	10.95
Conductivity (µS/cm)	689.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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16:47:22 16/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.53
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.3
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548079
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-J4
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	10.95
Conductivity (µS/cm)	689.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

16/11/2018 16:48:06

16:47:22 16/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181018-22
Lab Sample Number(s)	18548087
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-J4
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00295	<0.001	0.0295	<0.01	-	-	-
Copper	0.00155	<0.0003	0.0155	<0.003	-	-	-
Lead	0.000736	<0.0002	0.00736	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00102	<0.001	0.0102	<0.01	-	-	-
Vanadium	0.002	<0.001	0.02	<0.01	-	-	-
Zinc	0.0367	<0.001	0.367	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000891	<0.00001	0.000891	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000104	<0.000005	0.000104	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000721	<0.000005	0.0000721	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000408	<0.000005	0.000408	<0.00005	-	-	-
Anthracene by GCMS	0.00000654	<0.000005	0.0000654	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000703	<0.000005	0.000703	<0.00005	-	-	-
Fluorene by GCMS	0.00000673	<0.000005	0.0000673	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000302	<0.000005	0.000302	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000261	<0.000082	0.00261	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	11.74
Conductivity (µS/cm)	1,740.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181018-22
Lab Sample Number(s)	18548087
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-J4
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	11.74
Conductivity (µS/cm)	1,740.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181018-22
Lab Sample Number(s)	18548092
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-J4
Depth (m)	1.40 - 1.40

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00452	<0.001	0.0452	<0.01	-	-	-
Copper	0.000963	<0.0003	0.00963	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00116	<0.001	0.0116	<0.01	-	-	-
Vanadium	0.00231	<0.001	0.0231	<0.01	-	-	-
Zinc	0.00393	<0.001	0.0393	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000117	<0.00001	0.00117	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000995	<0.000005	0.0000995	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000752	<0.000005	0.000752	<0.00005	-	-	-
Anthracene by GCMS	0.00000961	<0.000005	0.0000961	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000518	<0.000005	0.000518	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000602	<0.000005	0.000602	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000323	<0.000082	0.00323	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	11.93
Conductivity (µS/cm)	1,730.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181018-22
Lab Sample Number(s)	18548092
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-J4
Depth (m)	1.40 - 1.40

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	11.93
Conductivity (µS/cm)	1,730.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181018-22
Lab Sample Number(s)	18548111
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-J5
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000344	<0.00001	0.000344	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00107	<0.0005	0.0107	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00392	<0.001	0.0392	<0.01	-	-	-
Copper	0.00289	<0.0003	0.0289	<0.003	-	-	-
Lead	0.000214	<0.0002	0.00214	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000481	<0.0004	0.00481	<0.004	-	-	-
Selenium	0.00206	<0.001	0.0206	<0.01	-	-	-
Vanadium	0.077	<0.001	0.77	<0.01	-	-	-
Zinc	0.00235	<0.001	0.0235	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.525	<0.019	5.25	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000224	<0.00001	0.000224	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000451	<0.000005	0.000451	<0.00005	-	-	-
Anthracene by GCMS	0.00000903	<0.000005	0.0000903	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000327	<0.000005	0.000327	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000476	<0.000005	0.000476	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000957	<0.000002	0.0000957	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000166	<0.000082	0.00166	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Oct-2018
pH (pH Units)	10.86
Conductivity (µS/cm)	316.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181018-22
Lab Sample Number(s)	18548111
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-J5
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Oct-2018
pH (pH Units)	10.86
Conductivity (µS/cm)	316.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548115
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-J5
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000482	<0.00001	0.000482	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000628	<0.0005	0.00628	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00235	<0.001	0.0235	<0.01	-	-	-
Copper	0.00401	<0.0003	0.0401	<0.003	-	-	-
Lead	0.000241	<0.0002	0.00241	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000496	<0.0004	0.00496	<0.004	-	-	-
Selenium	0.00167	<0.001	0.0167	<0.01	-	-	-
Vanadium	0.0443	<0.001	0.443	<0.01	-	-	-
Zinc	0.00307	<0.001	0.0307	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000321	<0.00001	0.000321	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000314	<0.000005	0.000314	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000391	<0.000005	0.000391	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000103	<0.000082	0.00103	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Oct-2018
pH (pH Units)	11.21
Conductivity (µS/cm)	534.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548115
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-J5
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Oct-2018
pH (pH Units)	11.21
Conductivity (µS/cm)	534.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.7
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548126
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-I5
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00102	<0.0003	0.0102	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000619	<0.0004	0.00619	<0.004	-	-	-
Selenium	0.00105	<0.001	0.0105	<0.01	-	-	-
Vanadium	0.039	<0.001	0.39	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000196	<0.00001	0.000196	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000219	<0.000005	0.000219	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000183	<0.000005	0.000183	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Oct-2018
pH (pH Units)	10.31
Conductivity (µS/cm)	1,700.00
Temperature (°C)	18.00
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.7
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548126
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-I5
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Oct-2018
pH (pH Units)	10.31
Conductivity (µS/cm)	1,700.00
Temperature (°C)	18.00
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

16/11/2018 16:48:06

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548131
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-I5
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000508	<0.0005	0.00508	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.0012	<0.0003	0.012	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000614	<0.0004	0.00614	<0.004	-	-	-
Selenium	0.00276	<0.001	0.0276	<0.01	-	-	-
Vanadium	0.0446	<0.001	0.446	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000023	<0.00001	0.00023	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000101	<0.000005	0.000101	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.00000898	<0.000005	0.0000898	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.00000992	<0.000005	0.0000992	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Oct-2018
pH (pH Units)	9.81
Conductivity (µS/cm)	1,110.00
Temperature (°C)	17.90
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548131
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-I5
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Oct-2018
pH (pH Units)	9.81
Conductivity (µS/cm)	1,110.00
Temperature (°C)	17.90
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.77
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.1
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548138
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-J1
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0022	<0.0005	0.022	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00117	<0.001	0.0117	<0.01	-	-	-
Copper	0.000813	<0.0003	0.00813	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00232	<0.001	0.0232	<0.01	-	-	-
Vanadium	0.0331	<0.001	0.331	<0.01	-	-	-
Zinc	0.00244	<0.001	0.0244	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000164	<0.00001	0.000164	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000818	<0.000005	0.000818	<0.00005	-	-	-
Anthracene by GCMS	0.0000127	<0.000005	0.000127	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000497	<0.000005	0.000497	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	0.0000436	<0.000005	0.000436	<0.00005	-	-	-
Pyrene by GCMS	0.0000666	<0.000005	0.000666	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000205	<0.000005	0.000205	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000712	<0.000005	0.000712	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000352	<0.000005	0.000352	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000382	<0.000002	0.000382	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000146	<0.000005	0.000146	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000428	<0.000005	0.000428	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000339	<0.000005	0.000339	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000527	<0.000082	0.00527	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	8.91
Conductivity (µS/cm)	147.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.77
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.1
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548138
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-J1
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	8.91
Conductivity (µS/cm)	147.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.76
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.8
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548150
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-I6
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000144	<0.00001	0.000144	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00227	<0.0005	0.0227	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00161	<0.001	0.0161	<0.01	-	-	-
Copper	0.0025	<0.0003	0.025	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000637	<0.0004	0.00637	<0.004	-	-	-
Selenium	0.00237	<0.001	0.0237	<0.01	-	-	-
Vanadium	0.078	<0.001	0.78	<0.01	-	-	-
Zinc	0.00277	<0.001	0.0277	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000249	<0.00001	0.000249	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000575	<0.000005	0.0000575	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000509	<0.000005	0.0000509	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000373	<0.000005	0.000373	<0.00005	-	-	-
Anthracene by GCMS	0.00000695	<0.000005	0.0000695	<0.00005	-	-	-
Phenanthrene by GCMS	0.000026	<0.000005	0.00026	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	0.0000105	<0.000005	0.000105	<0.00005	-	-	-
Pyrene by GCMS	0.0000305	<0.000005	0.000305	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000121	<0.000005	0.000121	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000176	<0.000005	0.000176	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000103	<0.000005	0.000103	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000787	<0.000002	0.0000787	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000138	<0.000005	0.000138	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00000875	<0.000005	0.0000875	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000217	<0.000082	0.00217	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	10.56
Conductivity (µS/cm)	251.00
Temperature (°C)	18.00
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.76
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.8
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548150
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-I6
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	10.56
Conductivity (µS/cm)	251.00
Temperature (°C)	18.00
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181018-22
Lab Sample Number(s)	18548160
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-I6
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000609	<0.0005	0.00609	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00126	<0.001	0.0126	<0.01	-	-	-
Copper	0.00998	<0.0003	0.0998	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00249	<0.0004	0.0249	<0.004	-	-	-
Selenium	0.00255	<0.001	0.0255	<0.01	-	-	-
Vanadium	0.0276	<0.001	0.276	<0.01	-	-	-
Zinc	0.00189	<0.001	0.0189	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000209	<0.00001	0.00209	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000613	<0.000005	0.000613	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000911	<0.000005	0.0000911	<0.00005	-	-	-
Fluoranthene by GCMS	0.000204	<0.000005	0.00204	<0.00005	-	-	-
Anthracene by GCMS	0.0000138	<0.000005	0.000138	<0.00005	-	-	-
Phenanthrene by GCMS	0.000199	<0.000005	0.00199	<0.00005	-	-	-
Fluorene by GCMS	0.0000141	<0.000005	0.000141	<0.00005	-	-	-
Chrysene by GCMS	0.000011	<0.000005	0.00011	<0.00005	-	-	-
Pyrene by GCMS	0.000154	<0.000005	0.00154	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000874	<0.000082	0.00874	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Oct-2018
pH (pH Units)	11.52
Conductivity (µS/cm)	1,010.00
Temperature (°C)	18.00
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181018-22
Lab Sample Number(s)	18548160
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-I6
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Oct-2018
pH (pH Units)	11.52
Conductivity (µS/cm)	1,010.00
Temperature (°C)	18.00
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181018-22
Lab Sample Number(s)	18548185
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-I7
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00192	<0.0005	0.0192	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00143	<0.001	0.0143	<0.01	-	-	-
Copper	0.00255	<0.0003	0.0255	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000406	<0.0004	0.00406	<0.004	-	-	-
Selenium	0.00327	<0.001	0.0327	<0.01	-	-	-
Vanadium	0.103	<0.001	1.03	<0.01	-	-	-
Zinc	0.0122	<0.001	0.122	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000278	<0.00001	0.000278	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000091	<0.000005	0.00091	<0.00005	-	-	-
Anthracene by GCMS	0.00000918	<0.000005	0.0000918	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000294	<0.000005	0.000294	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	0.0000262	<0.000005	0.000262	<0.00005	-	-	-
Pyrene by GCMS	0.00013	<0.000005	0.0013	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000196	<0.000005	0.000196	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000674	<0.000005	0.000674	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000291	<0.000005	0.000291	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000035	<0.000002	0.00035	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000251	<0.000005	0.000251	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000026	<0.000005	0.00026	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000516	<0.000082	0.00516	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	8.70
Conductivity (µS/cm)	211.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181018-22
Lab Sample Number(s)	18548185
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-I7
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	8.70
Conductivity (µS/cm)	211.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181018-22
Lab Sample Number(s)	18548198
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-I7
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000317	<0.00001	0.000317	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000798	<0.0005	0.00798	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00145	<0.001	0.0145	<0.01	-	-	-
Copper	0.00248	<0.0003	0.0248	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00412	<0.001	0.0412	<0.01	-	-	-
Vanadium	0.168	<0.001	1.68	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000046	<0.00001	0.00046	<0.0001	-	-	-
Acenaphthene by GCMS	0.000034	<0.000005	0.00034	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000859	<0.000005	0.0000859	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000875	<0.000005	0.000875	<0.00005	-	-	-
Anthracene by GCMS	0.00000869	<0.000005	0.0000869	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000214	<0.000005	0.000214	<0.00005	-	-	-
Fluorene by GCMS	0.0000099	<0.000005	0.000099	<0.00005	-	-	-
Chrysene by GCMS	0.000028	<0.000005	0.00028	<0.00005	-	-	-
Pyrene by GCMS	0.000195	<0.000005	0.00195	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000162	<0.000005	0.000162	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000207	<0.000005	0.000207	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000112	<0.000005	0.000112	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000981	<0.000002	0.0000981	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000173	<0.000005	0.000173	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00000621	<0.000005	0.0000621	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00052	<0.000082	0.0052	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	10.79
Conductivity (µS/cm)	367.00
Temperature (°C)	17.10
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181018-22
Lab Sample Number(s)	18548198
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-I7
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	10.79
Conductivity (µS/cm)	367.00
Temperature (°C)	17.10
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	7.18
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.3
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548239
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-I8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000219	<0.00001	0.000219	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000722	<0.0005	0.00722	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00107	<0.001	0.0107	<0.01	-	-	-
Copper	0.002	<0.0003	0.02	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00059	<0.0004	0.0059	<0.004	-	-	-
Selenium	0.00362	<0.001	0.0362	<0.01	-	-	-
Vanadium	0.0361	<0.001	0.361	<0.01	-	-	-
Zinc	0.00135	<0.001	0.0135	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00219	<0.00001	0.0219	<0.0001	-	-	-
Acenaphthene by GCMS	0.000347	<0.000005	0.00347	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000283	<0.000005	0.000283	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000276	<0.000005	0.000276	<0.00005	-	-	-
Anthracene by GCMS	0.0000536	<0.000005	0.000536	<0.00005	-	-	-
Phenanthrene by GCMS	0.000149	<0.000005	0.00149	<0.00005	-	-	-
Fluorene by GCMS	0.000188	<0.000005	0.00188	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000248	<0.000005	0.000248	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00301	<0.000082	0.0301	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	10.34
Conductivity (µS/cm)	1,070.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	7.18
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.3
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548239
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-I8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	10.34
Conductivity (µS/cm)	1,070.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181018-22
Lab Sample Number(s)	18548253
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-I8
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00158	<0.0005	0.0158	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00122	<0.001	0.0122	<0.01	-	-	-
Copper	0.0105	<0.0003	0.105	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00303	<0.0004	0.0303	<0.004	-	-	-
Selenium	0.00545	<0.001	0.0545	<0.01	-	-	-
Vanadium	0.13	<0.001	1.3	<0.01	-	-	-
Zinc	0.00126	<0.001	0.0126	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000158	<0.00001	0.00158	<0.0001	-	-	-
Acenaphthene by GCMS	0.000146	<0.000005	0.00146	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000125	<0.000005	0.000125	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000737	<0.000005	0.000737	<0.00005	-	-	-
Anthracene by GCMS	0.000033	<0.000005	0.00033	<0.00005	-	-	-
Phenanthrene by GCMS	0.000173	<0.000005	0.00173	<0.00005	-	-	-
Fluorene by GCMS	0.000035	<0.000005	0.00035	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000617	<0.000005	0.000617	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000693	<0.000082	0.00693	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	11.03
Conductivity (µS/cm)	523.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181018-22
Lab Sample Number(s)	18548253
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-I8
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	11.03
Conductivity (µS/cm)	523.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.111	**Natural Moisture Content (%)**	23.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	81
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548282
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-I5
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	0.09	<0.05	0.9	<0.5	-	-	-
Arsenic	0.00296	<0.0005	0.0296	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00752	<0.0003	0.0752	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.00333	<0.003	0.0333	<0.03	-	-	-
Nickel	0.00144	<0.0004	0.0144	<0.004	-	-	-
Selenium	0.00152	<0.001	0.0152	<0.01	-	-	-
Vanadium	0.00243	<0.001	0.0243	<0.01	-	-	-
Zinc	0.00357	<0.001	0.0357	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.491	<0.019	4.91	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000325	<0.000005	0.000325	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000229	<0.000005	0.000229	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000266	<0.000005	0.000266	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000278	<0.000005	0.000278	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000121	<0.000005	0.000121	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000199	<0.000002	0.000199	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000034	<0.000005	0.00034	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000238	<0.000005	0.000238	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0002	<0.000082	0.002	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	8.37
Conductivity (µS/cm)	175.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.879

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.111	**Natural Moisture Content (%)**	23.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	81
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548282
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-I5
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	8.37
Conductivity (µS/cm)	175.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.879

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.107	**Natural Moisture Content (%)**	19
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	84
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548298
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-J1
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.634	<0.2	6.34	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000899	<0.0005	0.00899	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00108	<0.0003	0.0108	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.133	<0.003	1.33	<0.03	-	-	-
Nickel	0.00111	<0.0004	0.0111	<0.004	-	-	-
Selenium	0.00142	<0.001	0.0142	<0.01	-	-	-
Vanadium	0.00827	<0.001	0.0827	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.257	<0.019	2.57	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000297	<0.00001	0.000297	<0.0001	-	-	-
Acenaphthene by GCMS	0.000193	<0.000005	0.00193	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000778	<0.000005	0.0000778	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000623	<0.000005	0.000623	<0.00005	-	-	-
Anthracene by GCMS	0.0000169	<0.000005	0.000169	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000692	<0.000005	0.000692	<0.00005	-	-	-
Fluorene by GCMS	0.000043	<0.000005	0.00043	<0.00005	-	-	-
Chrysene by GCMS	0.0000109	<0.000005	0.000109	<0.00005	-	-	-
Pyrene by GCMS	0.0000475	<0.000005	0.000475	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000081	<0.000005	0.000081	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000143	<0.000002	0.000143	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000503	<0.000082	0.00503	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	8.99
Conductivity (µS/cm)	187.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.883

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.107	**Natural Moisture Content (%)**	19
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	84
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548298
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-J1
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	8.99
Conductivity (µS/cm)	187.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.883

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.7
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.3
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548317
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-I5
Depth (m)	0.80 - 0.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.83	<0.2	8.3	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0035	<0.0005	0.035	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00388	<0.001	0.0388	<0.01	-	-	-
Copper	0.0523	<0.0003	0.523	<0.003	-	-	-
Lead	0.00466	<0.0002	0.0466	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00411	<0.0004	0.0411	<0.004	-	-	-
Selenium	0.00293	<0.001	0.0293	<0.01	-	-	-
Vanadium	0.0075	<0.001	0.075	<0.01	-	-	-
Zinc	0.00621	<0.001	0.0621	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000038	<0.00001	0.00038	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	11.90
Conductivity (µS/cm)	2,110.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.7
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.3
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548317
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-I5
Depth (m)	0.80 - 0.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	11.90
Conductivity (µS/cm)	2,110.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.77
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.1
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548332
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-I5
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.228	<0.2	2.28	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00214	<0.001	0.0214	<0.01	-	-	-
Copper	0.00727	<0.0003	0.0727	<0.003	-	-	-
Lead	0.00155	<0.0002	0.0155	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.0015	<0.0004	0.015	<0.004	-	-	-
Selenium	0.00366	<0.001	0.0366	<0.01	-	-	-
Vanadium	0.00159	<0.001	0.0159	<0.01	-	-	-
Zinc	0.00369	<0.001	0.0369	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000338	<0.00001	0.00338	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000128	<0.000005	0.000128	<0.00005	-	-	-
Fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000351	<0.000082	0.00351	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	11.86
Conductivity (µS/cm)	1,190.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.77
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.1
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548332
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-I5
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	11.86
Conductivity (µS/cm)	1,190.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548346
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-I5
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000127	<0.00001	0.000127	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00328	<0.001	0.0328	<0.01	-	-	-
Copper	0.00397	<0.0003	0.0397	<0.003	-	-	-
Lead	0.00067	<0.0002	0.0067	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000543	<0.0004	0.00543	<0.004	-	-	-
Selenium	0.0023	<0.001	0.023	<0.01	-	-	-
Vanadium	0.00671	<0.001	0.0671	<0.01	-	-	-
Zinc	0.0115	<0.001	0.115	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00283	<0.00001	0.0283	<0.0001	-	-	-
Acenaphthene by GCMS	0.000033	<0.000005	0.00033	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000742	<0.000005	0.000742	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000239	<0.000005	0.000239	<0.00005	-	-	-
Anthracene by GCMS	0.00000965	<0.000005	0.0000965	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000367	<0.000005	0.000367	<0.00005	-	-	-
Fluorene by GCMS	0.0000331	<0.000005	0.000331	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000182	<0.000005	0.000182	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00305	<0.000082	0.0305	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	11.88
Conductivity (µS/cm)	1,130.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548346
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-I5
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	11.88
Conductivity (µS/cm)	1,130.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.112	**Natural Moisture Content (%)**	25
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	80
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548372
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-H5
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	8.77	<0.2	87.7	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0128	<0.0005	0.128	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.0207	<0.0003	0.207	<0.003	-	-	-
Lead	0.000322	<0.0002	0.00322	<0.002	-	-	-
Manganese	0.0838	<0.003	0.838	<0.03	-	-	-
Nickel	0.0062	<0.0004	0.062	<0.004	-	-	-
Selenium	0.00202	<0.001	0.0202	<0.01	-	-	-
Vanadium	0.00442	<0.001	0.0442	<0.01	-	-	-
Zinc	0.0124	<0.001	0.124	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.53	<0.019	5.3	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000205	<0.000005	0.000205	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000187	<0.000005	0.000187	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000148	<0.000005	0.000148	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	8.57
Conductivity (µS/cm)	210.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.878

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.112	**Natural Moisture Content (%)**	25
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	80
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548372
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-H5
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	8.57
Conductivity (µS/cm)	210.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.878

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.7
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548388
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-H5
Depth (m)	0.80 - 0.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000575	<0.0005	0.00575	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.0116	<0.0003	0.116	<0.003	-	-	-
Lead	0.0133	<0.0002	0.133	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00102	<0.0004	0.0102	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00869	<0.001	0.0869	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000121	<0.00001	0.000121	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000137	<0.000005	0.000137	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.00000993	<0.000005	0.0000993	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	12.04
Conductivity (µS/cm)	4,630.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.7
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548388
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-H5
Depth (m)	0.80 - 0.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	12.04
Conductivity (µS/cm)	4,630.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181018-22
Lab Sample Number(s)	18548403
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-H5
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.459	<0.2	4.59	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	0.1	<0.05	1	<0.5	-	-	-
Arsenic	0.00169	<0.0005	0.0169	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.0142	<0.0003	0.142	<0.003	-	-	-
Lead	0.000238	<0.0002	0.00238	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00241	<0.0004	0.0241	<0.004	-	-	-
Selenium	0.0119	<0.001	0.119	<0.01	-	-	-
Vanadium	0.0515	<0.001	0.515	<0.01	-	-	-
Zinc	0.0107	<0.001	0.107	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.564	<0.019	5.64	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0102	<0.00001	0.102	<0.0001	-	-	-
Acenaphthene by GCMS	0.00106	<0.000005	0.0106	<0.00005	-	-	-
Acenaphthylene by GCMS	0.012	<0.000005	0.12	<0.00005	-	-	-
Fluoranthene by GCMS	0.00474	<0.000005	0.0474	<0.00005	-	-	-
Anthracene by GCMS	0.00163	<0.000005	0.0163	<0.00005	-	-	-
Phenanthrene by GCMS	0.0115	<0.000005	0.115	<0.00005	-	-	-
Fluorene by GCMS	0.00573	<0.000005	0.0573	<0.00005	-	-	-
Chrysene by GCMS	0.000208	<0.000005	0.00208	<0.00005	-	-	-
Pyrene by GCMS	0.00293	<0.000005	0.0293	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000183	<0.000005	0.00183	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000143	<0.000005	0.00143	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000637	<0.000005	0.000637	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000674	<0.000002	0.000674	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000137	<0.000005	0.000137	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000959	<0.000005	0.000959	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000481	<0.000005	0.000481	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0506	<0.000082	0.506	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	11.36
Conductivity (µS/cm)	494.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181018-22
Lab Sample Number(s)	18548403
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-H5
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	0.025	<0.01	0.25	<0.1	-	-	-
Aromatics >EC16-EC21	0.036	<0.01	0.36	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.061	<0.01	0.61	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.063	<0.01	0.63	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	11.36
Conductivity (µS/cm)	494.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.127	**Natural Moisture Content (%)**	40.8
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	71
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548424
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-J4
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	8.9	<0.2	89	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00383	<0.0005	0.0383	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00543	<0.0003	0.0543	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.00617	<0.003	0.0617	<0.03	-	-	-
Nickel	0.00234	<0.0004	0.0234	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00138	<0.001	0.0138	<0.01	-	-	-
Zinc	0.00117	<0.001	0.0117	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.00000981	<0.000005	0.0000981	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.00000728	<0.000005	0.0000728	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	8.24
Conductivity (µS/cm)	316.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.863

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.127	**Natural Moisture Content (%)**	40.8
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	71
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548424
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-J4
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	8.24
Conductivity (µS/cm)	316.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.863

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.72
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.7
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548433
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-J4
Depth (m)	0.70 - 1.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	4.45	<0.2	44.5	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00051	<0.0005	0.0051	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00157	<0.001	0.0157	<0.01	-	-	-
Copper	0.00723	<0.0003	0.0723	<0.003	-	-	-
Lead	0.0019	<0.0002	0.019	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000537	<0.0004	0.00537	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00714	<0.001	0.0714	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000011	<0.00001	0.00011	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000172	<0.000005	0.000172	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000113	<0.000005	0.000113	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000153	<0.000005	0.000153	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	12.43
Conductivity (µS/cm)	5,300.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.72
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.7
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548433
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-J4
Depth (m)	0.70 - 1.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	12.43
Conductivity (µS/cm)	5,300.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.26
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548447
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-J4
Depth (m)	1.80 - 1.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.011	<0.001	0.11	<0.01	-	-	-
Copper	0.00501	<0.0003	0.0501	<0.003	-	-	-
Lead	0.00954	<0.0002	0.0954	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.0091	<0.001	0.091	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000187	<0.00001	0.00187	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000145	<0.000005	0.000145	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000137	<0.000005	0.000137	<0.00005	-	-	-
Fluoranthene by GCMS	0.000238	<0.000005	0.00238	<0.00005	-	-	-
Anthracene by GCMS	0.0000231	<0.000005	0.000231	<0.00005	-	-	-
Phenanthrene by GCMS	0.00016	<0.000005	0.0016	<0.00005	-	-	-
Fluorene by GCMS	0.0000189	<0.000005	0.000189	<0.00005	-	-	-
Chrysene by GCMS	0.000017	<0.000005	0.00017	<0.00005	-	-	-
Pyrene by GCMS	0.000248	<0.000005	0.00248	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.00000769	<0.000005	0.0000769	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000929	<0.000082	0.00929	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	12.17
Conductivity (µS/cm)	6,730.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.26
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548447
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-J4
Depth (m)	1.80 - 1.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	12.17
Conductivity (µS/cm)	6,730.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.122	**Natural Moisture Content (%)**	35.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	74
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548458
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-I4
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	5.46	<0.2	54.6	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00329	<0.0005	0.0329	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00669	<0.0003	0.0669	<0.003	-	-	-
Lead	0.000366	<0.0002	0.00366	<0.002	-	-	-
Manganese	0.00642	<0.003	0.0642	<0.03	-	-	-
Nickel	0.00275	<0.0004	0.0275	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00205	<0.001	0.0205	<0.01	-	-	-
Zinc	0.00509	<0.001	0.0509	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.318	<0.019	3.18	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000172	<0.00001	0.000172	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.00000774	<0.000005	0.0000774	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.00000737	<0.000005	0.0000737	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.00000554	<0.000005	0.0000554	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	8.34
Conductivity (µS/cm)	169.00
Temperature (°C)	16.30
Volume Leachant (Litres)	0.868

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.122	**Natural Moisture Content (%)**	35.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	74
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548458
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-I4
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	8.34
Conductivity (µS/cm)	169.00
Temperature (°C)	16.30
Volume Leachant (Litres)	0.868

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181018-22
Lab Sample Number(s)	18548465
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-I4
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00777	<0.001	0.0777	<0.01	-	-	-
Copper	0.00717	<0.0003	0.0717	<0.003	-	-	-
Lead	0.000515	<0.0002	0.00515	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000461	<0.0004	0.00461	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00236	<0.001	0.0236	<0.01	-	-	-
Zinc	0.00215	<0.001	0.0215	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000255	<0.00001	0.000255	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	12.00
Conductivity (µS/cm)	2,050.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181018-22
Lab Sample Number(s)	18548465
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-I4
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	12.00
Conductivity (µS/cm)	2,050.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.41
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.4
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548469
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-I4
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000664	<0.0005	0.00664	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0079	<0.001	0.079	<0.01	-	-	-
Copper	0.0164	<0.0003	0.164	<0.003	-	-	-
Lead	0.00116	<0.0002	0.0116	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00165	<0.0004	0.0165	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00676	<0.001	0.0676	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000137	<0.00001	0.000137	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000255	<0.000005	0.000255	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000224	<0.000005	0.000224	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000232	<0.000005	0.000232	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0000849	<0.000082	0.000849	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	11.95
Conductivity (µS/cm)	3,840.00
Temperature (°C)	19.40
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.41
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.4
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548469
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-I4
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	11.95
Conductivity (µS/cm)	3,840.00
Temperature (°C)	19.40
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

16/11/2018 16:48:06

16:47:22 16/11/2018

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.122	**Natural Moisture Content (%)**	35.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	74
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548486
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-H4
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	2.48	<0.2	24.8	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00122	<0.0005	0.0122	<0.005	-	-	-
Cadmium	0.000123	<0.00008	0.00123	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00545	<0.0003	0.0545	<0.003	-	-	-
Lead	0.000383	<0.0002	0.00383	<0.002	-	-	-
Manganese	0.276	<0.003	2.76	<0.03	-	-	-
Nickel	0.00238	<0.0004	0.0238	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00106	<0.001	0.0106	<0.01	-	-	-
Zinc	0.017	<0.001	0.17	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000335	<0.00001	0.000335	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000078	<0.000005	0.000078	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.00000893	<0.000005	0.0000893	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.00000672	<0.000005	0.0000672	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	8.30
Conductivity (µS/cm)	266.00
Temperature (°C)	17.10
Volume Leachant (Litres)	0.868

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.122	**Natural Moisture Content (%)**	35.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	74
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548486
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-H4
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	8.30
Conductivity (µS/cm)	266.00
Temperature (°C)	17.10
Volume Leachant (Litres)	0.868

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548490
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-H4
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.202	<0.2	2.02	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0087	<0.0005	0.087	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.015	<0.0003	0.15	<0.003	-	-	-
Lead	0.000572	<0.0002	0.00572	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00227	<0.0004	0.0227	<0.004	-	-	-
Selenium	0.00742	<0.001	0.0742	<0.01	-	-	-
Vanadium	0.0471	<0.001	0.471	<0.01	-	-	-
Zinc	0.00181	<0.001	0.0181	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.445	<0.019	4.45	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	3.57	<0.001	35.7	<0.01	-	-	-
Acenaphthene by GCMS	0.0623	<0.0005	0.623	<0.005	-	-	-
Acenaphthylene by GCMS	0.111	<0.0005	1.11	<0.005	-	-	-
Fluoranthene by GCMS	0.0156	<0.0005	0.156	<0.005	-	-	-
Anthracene by GCMS	0.0145	<0.0005	0.145	<0.005	-	-	-
Phenanthrene by GCMS	0.059	<0.0005	0.59	<0.005	-	-	-
Fluorene by GCMS	0.0489	<0.0005	0.489	<0.005	-	-	-
Chrysene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Pyrene by GCMS	0.0108	<0.0005	0.108	<0.005	-	-	-
Benz(a)anthracene by GCMS	0.0029	<0.0005	0.029	<0.005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Benzo(a)pyrene by GCMS	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Benzo(ghi)perylene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
PAH 16 EPA Total by GCMS	3.89	<0.0082	38.9	<0.082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	12	<0.05	120	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	0.024	<0.01	0.24	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	9.92
Conductivity (µS/cm)	140.00
Temperature (°C)	17.40
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548490
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-H4
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	0.039	<0.01	0.39	<0.1	-	-	-
Aliphatics >C10-C12	7.12	<0.01	71.2	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	0.046	<0.01	0.46	<0.1	-	-	-
Aromatics >EC10-EC12	4.75	<0.01	47.5	<0.1	-	-	-
Aromatics >EC12-EC16	0.649	<0.01	6.49	<0.1	-	-	-
Aromatics >EC16-EC21	0.254	<0.01	2.54	<0.1	-	-	-
Aromatics >EC21-EC35	0.072	<0.01	0.72	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.975	<0.01	9.75	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	13	<0.01	130	<0.1	-	-	-
Toluene by GC	0.006	<0.004	0.06	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	0.012	<0.008	0.12	<0.08	-	-	-
o Xylene by GC	0.007	<0.003	0.07	<0.03	-	-	-
Sum m&p and o Xylene by GC	0.019	<0.011	0.19	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	9.92
Conductivity (µS/cm)	140.00
Temperature (°C)	17.40
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548494
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-H4
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.42	<0.2	4.2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	0.42	<0.05	4.2	<0.5	-	-	-
Arsenic	0.00396	<0.0005	0.0396	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0011	<0.001	0.011	<0.01	-	-	-
Copper	0.0123	<0.0003	0.123	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00214	<0.0004	0.0214	<0.004	-	-	-
Selenium	0.00537	<0.001	0.0537	<0.01	-	-	-
Vanadium	0.0503	<0.001	0.503	<0.01	-	-	-
Zinc	0.00108	<0.001	0.0108	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.176	<0.019	1.76	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	7.29	<0.001	72.9	<0.01	-	-	-
Acenaphthene by GCMS	0.0815	<0.0005	0.815	<0.005	-	-	-
Acenaphthylene by GCMS	0.265	<0.0005	2.65	<0.005	-	-	-
Fluoranthene by GCMS	0.0193	<0.0005	0.193	<0.005	-	-	-
Anthracene by GCMS	0.0225	<0.0005	0.225	<0.005	-	-	-
Phenanthrene by GCMS	0.0958	<0.0005	0.958	<0.005	-	-	-
Fluorene by GCMS	0.0964	<0.0005	0.964	<0.005	-	-	-
Chrysene by GCMS	0.00336	<0.0005	0.0336	<0.005	-	-	-
Pyrene by GCMS	0.0132	<0.0005	0.132	<0.005	-	-	-
Benz(a)anthracene by GCMS	0.00239	<0.0005	0.0239	<0.005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00459	<0.0005	0.0459	<0.005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0044	<0.0005	0.044	<0.005	-	-	-
Benzo(a)pyrene by GCMS	0.00274	<0.0002	0.0274	<0.002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Benzo(ghi)perylene by GCMS	0.003	<0.0005	0.03	<0.005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00117	<0.0005	0.0117	<0.005	-	-	-
PAH 16 EPA Total by GCMS	7.91	<0.0082	79.1	<0.082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	18.6	<0.05	186	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	0.017	<0.01	0.17	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	10.67
Conductivity (µS/cm)	213.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548494
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-H4
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	0.041	<0.01	0.41	<0.1	-	-	-
Aliphatics >C10-C12	11.1	<0.01	111	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	0.048	<0.01	0.48	<0.1	-	-	-
Aromatics >EC10-EC12	7.41	<0.01	74.1	<0.1	-	-	-
Aromatics >EC12-EC16	1.3	<0.01	13	<0.1	-	-	-
Aromatics >EC16-EC21	0.338	<0.01	3.38	<0.1	-	-	-
Aromatics >EC21-EC35	0.052	<0.01	0.52	<0.1	-	-	-
Total Aromatics >EC12-EC35	1.69	<0.01	16.9	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	20.3	<0.01	203	<0.1	-	-	-
Toluene by GC	0.005	<0.004	0.05	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	0.012	<0.008	0.12	<0.08	-	-	-
o Xylene by GC	0.008	<0.003	0.08	<0.03	-	-	-
Sum m&p and o Xylene by GC	0.02	<0.011	0.2	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	10.67
Conductivity (µS/cm)	213.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548508
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-J2
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00601	<0.0005	0.0601	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00234	<0.0003	0.0234	<0.003	-	-	-
Lead	0.000233	<0.0002	0.00233	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000536	<0.0004	0.00536	<0.004	-	-	-
Selenium	0.00253	<0.001	0.0253	<0.01	-	-	-
Vanadium	0.0347	<0.001	0.347	<0.01	-	-	-
Zinc	0.00283	<0.001	0.0283	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000787	<0.000005	0.000787	<0.00005	-	-	-
Anthracene by GCMS	0.0000135	<0.000005	0.000135	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000371	<0.000005	0.000371	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	0.0000464	<0.000005	0.000464	<0.00005	-	-	-
Pyrene by GCMS	0.0000674	<0.000005	0.000674	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000266	<0.000005	0.000266	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000762	<0.000005	0.000762	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000351	<0.000005	0.000351	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000418	<0.000002	0.000418	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000142	<0.000005	0.000142	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000459	<0.000005	0.000459	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000378	<0.000005	0.000378	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000521	<0.000082	0.00521	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	8.60
Conductivity (µS/cm)	155.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548508
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-J2
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	8.60
Conductivity (µS/cm)	155.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548515
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-J2
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00501	<0.0005	0.0501	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0012	<0.001	0.012	<0.01	-	-	-
Copper	0.00556	<0.0003	0.0556	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00103	<0.0004	0.0103	<0.004	-	-	-
Selenium	0.00279	<0.001	0.0279	<0.01	-	-	-
Vanadium	0.0536	<0.001	0.536	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000162	<0.00001	0.000162	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000587	<0.000005	0.000587	<0.00005	-	-	-
Anthracene by GCMS	0.00000832	<0.000005	0.0000832	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000381	<0.000005	0.000381	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	0.0000294	<0.000005	0.000294	<0.00005	-	-	-
Pyrene by GCMS	0.0000446	<0.000005	0.000446	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000207	<0.000005	0.000207	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000485	<0.000005	0.000485	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000276	<0.000005	0.000276	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000283	<0.000002	0.000283	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000251	<0.000005	0.000251	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000239	<0.000005	0.000239	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00037	<0.000082	0.0037	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	10.31
Conductivity (µS/cm)	189.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548515
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-J2
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	10.31
Conductivity (µS/cm)	189.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548523
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-J2
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00754	<0.0005	0.0754	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00223	<0.0003	0.0223	<0.003	-	-	-
Lead	0.000224	<0.0002	0.00224	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000405	<0.0004	0.00405	<0.004	-	-	-
Selenium	0.00314	<0.001	0.0314	<0.01	-	-	-
Vanadium	0.0531	<0.001	0.531	<0.01	-	-	-
Zinc	0.00154	<0.001	0.0154	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00002	<0.00001	0.0002	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000635	<0.000005	0.0000635	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000766	<0.000005	0.0000766	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000762	<0.000005	0.000762	<0.00005	-	-	-
Anthracene by GCMS	0.0000125	<0.000005	0.000125	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000426	<0.000005	0.000426	<0.00005	-	-	-
Fluorene by GCMS	0.00000681	<0.000005	0.0000681	<0.00005	-	-	-
Chrysene by GCMS	0.0000312	<0.000005	0.000312	<0.00005	-	-	-
Pyrene by GCMS	0.0000621	<0.000005	0.000621	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000222	<0.000005	0.000222	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000747	<0.000005	0.000747	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000286	<0.000005	0.000286	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000332	<0.000002	0.000332	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.00000994	<0.000005	0.0000994	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000601	<0.000005	0.000601	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000368	<0.000005	0.000368	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000531	<0.000082	0.00531	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	9.19
Conductivity (µS/cm)	151.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548523
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-J2
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	9.19
Conductivity (µS/cm)	151.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181018-22
Lab Sample Number(s)	18548532
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-J3
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00368	<0.0005	0.0368	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00135	<0.001	0.0135	<0.01	-	-	-
Copper	0.00117	<0.0003	0.0117	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00177	<0.001	0.0177	<0.01	-	-	-
Vanadium	0.0683	<0.001	0.683	<0.01	-	-	-
Zinc	0.00278	<0.001	0.0278	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000741	<0.000005	0.000741	<0.00005	-	-	-
Anthracene by GCMS	0.0000114	<0.000005	0.000114	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000422	<0.000005	0.000422	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	0.0000259	<0.000005	0.000259	<0.00005	-	-	-
Pyrene by GCMS	0.0000524	<0.000005	0.000524	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000189	<0.000005	0.000189	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000602	<0.000005	0.000602	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00002	<0.000005	0.0002	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000269	<0.000002	0.000269	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.00000784	<0.000005	0.0000784	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000285	<0.000005	0.000285	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000026	<0.000005	0.00026	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000394	<0.000082	0.00394	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	9.97
Conductivity (µS/cm)	105.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181018-22
Lab Sample Number(s)	18548532
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-J3
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	9.97
Conductivity (µS/cm)	105.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548543
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-J3
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00456	<0.0005	0.0456	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00179	<0.001	0.0179	<0.01	-	-	-
Copper	0.00085	<0.0003	0.0085	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00179	<0.001	0.0179	<0.01	-	-	-
Vanadium	0.0476	<0.001	0.476	<0.01	-	-	-
Zinc	0.00116	<0.001	0.0116	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000811	<0.000005	0.000811	<0.00005	-	-	-
Anthracene by GCMS	0.0000138	<0.000005	0.000138	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000473	<0.000005	0.000473	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	0.0000416	<0.000005	0.000416	<0.00005	-	-	-
Pyrene by GCMS	0.00007	<0.000005	0.0007	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000295	<0.000005	0.000295	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000865	<0.000005	0.000865	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000296	<0.000005	0.000296	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000431	<0.000002	0.000431	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000159	<0.000005	0.000159	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000508	<0.000005	0.000508	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000388	<0.000005	0.000388	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000548	<0.000082	0.00548	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	9.69
Conductivity (µS/cm)	80.10
Temperature (°C)	18.10
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548543
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-J3
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	9.69
Conductivity (µS/cm)	80.10
Temperature (°C)	18.10
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.1
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548551
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-J3
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.00001	<0.00001	0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00454	<0.0005	0.0454	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00127	<0.001	0.0127	<0.01	-	-	-
Copper	0.000651	<0.0003	0.00651	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00156	<0.001	0.0156	<0.01	-	-	-
Vanadium	0.0433	<0.001	0.433	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.0206	<0.019	0.206	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000678	<0.000005	0.000678	<0.00005	-	-	-
Anthracene by GCMS	0.0000114	<0.000005	0.000114	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000408	<0.000005	0.000408	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	0.0000414	<0.000005	0.000414	<0.00005	-	-	-
Pyrene by GCMS	0.0000541	<0.000005	0.000541	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000185	<0.000005	0.000185	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000688	<0.000005	0.000688	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000284	<0.000005	0.000284	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000332	<0.000002	0.000332	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000379	<0.000005	0.000379	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000249	<0.000005	0.000249	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000427	<0.000082	0.00427	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	9.74
Conductivity (µS/cm)	84.20
Temperature (°C)	18.10
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.1
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548551
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-J3
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	9.74
Conductivity (µS/cm)	84.20
Temperature (°C)	18.10
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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Table of Results - Appendix

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

NA = not applicable.

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

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

Test Completion Dates

Lab Sample No(s)	18548486	18548490	18548494	18548372	18548388	18548403	18548501	18548415	18548458	18548465
Customer Sample Ref.	3C-H4	3C-H4	3C-H4	3C-H5	3C-H5	3C-H5	3C-H4-V	3C-H5-V	3C-I4	3C-I4
AGS Ref.										
Depth	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.30 - 0.30	0.80 - 0.80	1.50 - 1.50	2.70 - 2.70	2.70 - 2.70	0.50 - 0.50	1.00 - 1.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	23-Oct-2018		23-Oct-2018	24-Oct-2018		23-Oct-2018			23-Oct-2018	23-Oct-2018
Ammoniacal Nitrogen	26-Oct-2018	25-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018			25-Oct-2018	26-Oct-2018
Ammonium Soil by Titration	23-Oct-2018	29-Oct-2018	24-Oct-2018	30-Oct-2018	24-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	24-Oct-2018	23-Oct-2018
Anions by Kone (soil)	24-Oct-2018		24-Oct-2018	24-Oct-2018		24-Oct-2018			24-Oct-2018	24-Oct-2018
Asbestos ID in Solid Samples	29-Oct-2018		29-Oct-2018	29-Oct-2018		29-Oct-2018			29-Oct-2018	29-Oct-2018
Calorific Value (S)*			16-Nov-2018			16-Nov-2018				
CEN 10:1 Leachate (1 Stage)	20-Oct-2018	31-Oct-2018	31-Oct-2018	20-Oct-2018	20-Oct-2018	20-Oct-2018			20-Oct-2018	20-Oct-2018
CEN Readings	23-Oct-2018	01-Nov-2018	01-Nov-2018	24-Oct-2018	23-Oct-2018	24-Oct-2018			23-Oct-2018	24-Oct-2018
Cyanide Comp/Free/Total/Thiocyanate	26-Oct-2018	29-Oct-2018	26-Oct-2018	26-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	26-Oct-2018	26-Oct-2018
Dissolved Metals by ICP-MS	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	30-Oct-2018	29-Oct-2018			29-Oct-2018	29-Oct-2018
EPH CWG (Aliphatic) Aqueous GC (W)	30-Oct-2018	30-Oct-2018	30-Oct-2018	31-Oct-2018	30-Oct-2018	31-Oct-2018			31-Oct-2018	30-Oct-2018
EPH CWG (Aliphatic) GC (S)	25-Oct-2018	25-Oct-2018	25-Oct-2018	23-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018
EPH CWG (Aromatic) Aqueous GC (W)	30-Oct-2018	30-Oct-2018	30-Oct-2018	31-Oct-2018	30-Oct-2018	31-Oct-2018			31-Oct-2018	30-Oct-2018
EPH CWG (Aromatic) GC (S)	25-Oct-2018	26-Oct-2018	26-Oct-2018	23-Oct-2018	25-Oct-2018	26-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018
GRO by GC-FID (S)	27-Oct-2018	29-Oct-2018	30-Oct-2018	27-Oct-2018	29-Oct-2018	29-Oct-2018	27-Oct-2018	27-Oct-2018	27-Oct-2018	29-Oct-2018
GRO by GC-FID (W)	29-Oct-2018	29-Oct-2018	29-Oct-2018	24-Oct-2018	29-Oct-2018	29-Oct-2018			29-Oct-2018	29-Oct-2018
Mercury Dissolved	27-Oct-2018	27-Oct-2018	27-Oct-2018	27-Oct-2018	24-Oct-2018	29-Oct-2018			27-Oct-2018	27-Oct-2018
Metals in solid samples by OES	24-Oct-2018	26-Oct-2018	26-Oct-2018	25-Oct-2018	28-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	24-Oct-2018	26-Oct-2018
PAH by GCMS	24-Oct-2018	24-Oct-2018	26-Oct-2018	22-Oct-2018	24-Oct-2018	22-Oct-2018	26-Oct-2018	24-Oct-2018	26-Oct-2018	24-Oct-2018
PAH Spec MS - Aqueous (W)	31-Oct-2018	02-Nov-2018	02-Nov-2018	30-Oct-2018	29-Oct-2018	30-Oct-2018			30-Oct-2018	30-Oct-2018
pH	30-Oct-2018	29-Oct-2018	30-Oct-2018	30-Oct-2018	29-Oct-2018	30-Oct-2018	29-Oct-2018	29-Oct-2018	30-Oct-2018	30-Oct-2018
pH Value	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018			31-Oct-2018	31-Oct-2018
Phenols by HPLC (S)	25-Oct-2018	25-Oct-2018	29-Oct-2018	24-Oct-2018	25-Oct-2018	26-Oct-2018	29-Oct-2018	25-Oct-2018	25-Oct-2018	29-Oct-2018
Sample description	19-Oct-2018	19-Oct-2018	19-Oct-2018	18-Oct-2018	19-Oct-2018	19-Oct-2018	19-Oct-2018	19-Oct-2018	19-Oct-2018	19-Oct-2018
Total Organic Carbon	25-Oct-2018	24-Oct-2018	25-Oct-2018	25-Oct-2018	24-Oct-2018	25-Oct-2018	24-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018
Total Sulphate	30-Oct-2018		25-Oct-2018	24-Oct-2018		24-Oct-2018			25-Oct-2018	25-Oct-2018
Total Sulphur	23-Oct-2018		23-Oct-2018	20-Oct-2018		23-Oct-2018			24-Oct-2018	23-Oct-2018
TPH CWG (W)	30-Oct-2018	30-Oct-2018	30-Oct-2018	31-Oct-2018	30-Oct-2018	31-Oct-2018			31-Oct-2018	30-Oct-2018
TPH CWG GC (S)	27-Oct-2018	29-Oct-2018	30-Oct-2018	27-Oct-2018	29-Oct-2018	29-Oct-2018	27-Oct-2018	27-Oct-2018	27-Oct-2018	29-Oct-2018
VOC MS (S)	29-Oct-2018	31-Oct-2018	01-Nov-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	01-Nov-2018	01-Nov-2018	31-Oct-2018

Lab Sample No(s)	18548469	18548282	18548317	18548332	18548346	18548126	18548131	18548150	18548160	18548185
Customer Sample Ref.	3C-I4	3C-I5	3C-I5	3C-I5	3C-I5	4C-I5	4C-I5	4C-I6	4C-I6	4C-I7
AGS Ref.										
Depth	2.00 - 2.00	0.30 - 0.30	0.80 - 0.80	1.50 - 1.50	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)		23-Oct-2018		24-Oct-2018	23-Oct-2018	24-Oct-2018	24-Oct-2018	23-Oct-2018		23-Oct-2018
Ammoniacal Nitrogen	25-Oct-2018	25-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	25-Oct-2018	26-Oct-2018	26-Oct-2018	25-Oct-2018
Ammonium Soil by Titration	24-Oct-2018	23-Oct-2018	23-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	24-Oct-2018	29-Oct-2018	23-Oct-2018	30-Oct-2018
Anions by Kone (soil)		24-Oct-2018		24-Oct-2018	24-Oct-2018	24-Oct-2018	24-Oct-2018	24-Oct-2018		24-Oct-2018
Asbestos ID in Solid Samples		29-Oct-2018		29-Oct-2018	29-Oct-2018	29-Oct-2018	24-Oct-2018	24-Oct-2018		29-Oct-2018
CEN 10:1 Leachate (1 Stage)	20-Oct-2018	20-Oct-2018	20-Oct-2018	20-Oct-2018	20-Oct-2018	19-Oct-2018	19-Oct-2018	20-Oct-2018	19-Oct-2018	20-Oct-2018
CEN Readings	24-Oct-2018	23-Oct-2018	24-Oct-2018	24-Oct-2018	24-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018
Cyanide Comp/Free/Total/Thiocyanate	29-Oct-2018	29-Oct-2018	29-Oct-2018	26-Oct-2018	29-Oct-2018	26-Oct-2018	26-Oct-2018	25-Oct-2018	25-Oct-2018	26-Oct-2018
Dissolved Metals by ICP-MS	29-Oct-2018	30-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018
EPH CWG (Aliphatic) Aqueous GC (W)	31-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018
EPH CWG (Aliphatic) GC (S)	25-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018	23-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018
EPH CWG (Aromatic) Aqueous GC (W)	31-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018
EPH CWG (Aromatic) GC (S)	25-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018	23-Oct-2018	25-Oct-2018	26-Oct-2018	26-Oct-2018	25-Oct-2018
GRO by GC-FID (S)	29-Oct-2018	27-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	30-Oct-2018	29-Oct-2018	29-Oct-2018
GRO by GC-FID (W)	30-Oct-2018	29-Oct-2018	29-Oct-2018	30-Oct-2018	30-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018
Mercury Dissolved	27-Oct-2018	29-Oct-2018	27-Oct-2018	27-Oct-2018	27-Oct-2018	24-Oct-2018	24-Oct-2018	29-Oct-2018	24-Oct-2018	24-Oct-2018
Metals in solid samples by OES	29-Oct-2018	30-Oct-2018	28-Oct-2018	24-Oct-2018	30-Oct-2018	25-Oct-2018	25-Oct-2018	26-Oct-2018	25-Oct-2018	26-Oct-2018
PAH by GCMS	26-Oct-2018	24-Oct-2018	26-Oct-2018	29-Oct-2018	24-Oct-2018	22-Oct-2018	22-Oct-2018	22-Oct-2018	22-Oct-2018	24-Oct-2018
PAH Spec MS - Aqueous (W)	30-Oct-2018	29-Oct-2018	30-Oct-2018	30-Oct-2018	31-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	31-Oct-2018	29-Oct-2018
pH	01-Nov-2018	30-Oct-2018	29-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	29-Oct-2018	30-Oct-2018
pH Value	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018
Phenols by HPLC (S)	25-Oct-2018	25-Oct-2018	29-Oct-2018	25-Oct-2018	29-Oct-2018	26-Oct-2018	24-Oct-2018	29-Oct-2018	24-Oct-2018	26-Oct-2018
Sample description	19-Oct-2018	19-Oct-2018	19-Oct-2018	19-Oct-2018	19-Oct-2018	18-Oct-2018	18-Oct-2018	19-Oct-2018	18-Oct-2018	19-Oct-2018
Total Organic Carbon	25-Oct-2018	30-Oct-2018	24-Oct-2018	30-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018	30-Oct-2018	24-Oct-2018	25-Oct-2018
Total Sulphate		24-Oct-2018		24-Oct-2018	24-Oct-2018	24-Oct-2018	24-Oct-2018	24-Oct-2018		25-Oct-2018
Total Sulphur		23-Oct-2018		23-Oct-2018	23-Oct-2018	20-Oct-2018	20-Oct-2018	23-Oct-2018		23-Oct-2018
TPH CWG (W)	31-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018
TPH CWG GC (S)	29-Oct-2018	27-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	30-Oct-2018	29-Oct-2018	29-Oct-2018
VOC MS (S)	29-Oct-2018	29-Oct-2018	29-Oct-2018	01-Nov-2018	31-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	29-Oct-2018

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

Lab Sample No(s)	18548198	18548239	18548253	18548476	18548359	18548171	18548220	18548268	18548424	18548433
Customer Sample Ref.	4C-I7	4C-I8	4C-I8	3C-I4-V	3C-I5-V	4C-I6-V	4C-I7-V	4C-I8-V	3C-J4	3C-J4
AGS Ref.										
Depth	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	3.40 - 3.40	3.20 - 3.20	2.20 - 2.20	1.80 - 1.80	1.90 - 1.90	0.50 - 0.50	0.70 - 1.30
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)		24-Oct-2018								24-Oct-2018
Ammoniacal Nitrogen	26-Oct-2018	25-Oct-2018	25-Oct-2018						26-Oct-2018	25-Oct-2018
Ammonium Soil by Titration	24-Oct-2018	23-Oct-2018	24-Oct-2018	24-Oct-2018	23-Oct-2018	30-Oct-2018	23-Oct-2018	29-Oct-2018	24-Oct-2018	23-Oct-2018
Anions by Kone (soil)		24-Oct-2018								24-Oct-2018
Asbestos ID in Solid Samples		24-Oct-2018								29-Oct-2018
CEN 10:1 Leachate (1 Stage)	20-Oct-2018	20-Oct-2018	20-Oct-2018						20-Oct-2018	20-Oct-2018
CEN Readings	23-Oct-2018	23-Oct-2018	23-Oct-2018						23-Oct-2018	24-Oct-2018
Cyanide Comp/Free/Total/Thiocyanate	26-Oct-2018	25-Oct-2018	25-Oct-2018	26-Oct-2018	26-Oct-2018	25-Oct-2018	25-Oct-2018	29-Oct-2018	29-Oct-2018	26-Oct-2018
Dissolved Metals by ICP-MS	29-Oct-2018	30-Oct-2018	30-Oct-2018						30-Oct-2018	29-Oct-2018
EPH CWG (Aliphatic) Aqueous GC (W)	31-Oct-2018	30-Oct-2018	30-Oct-2018						30-Oct-2018	31-Oct-2018
EPH CWG (Aliphatic) GC (S)	25-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018	23-Oct-2018	23-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018
EPH CWG (Aromatic) Aqueous GC (W)	31-Oct-2018	30-Oct-2018	30-Oct-2018						30-Oct-2018	31-Oct-2018
EPH CWG (Aromatic) GC (S)	25-Oct-2018	26-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018	23-Oct-2018	23-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018
GRO by GC-FID (S)	29-Oct-2018	29-Oct-2018	29-Oct-2018	27-Oct-2018	29-Oct-2018	29-Oct-2018	27-Oct-2018	27-Oct-2018	27-Oct-2018	30-Oct-2018
GRO by GC-FID (W)	29-Oct-2018	31-Oct-2018	29-Oct-2018						29-Oct-2018	29-Oct-2018
Mercury Dissolved	27-Oct-2018	24-Oct-2018	24-Oct-2018						29-Oct-2018	27-Oct-2018
Metals in solid samples by OES	28-Oct-2018	25-Oct-2018	28-Oct-2018	28-Oct-2018	26-Oct-2018	26-Oct-2018	25-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018
PAH by GCMS	26-Oct-2018	22-Oct-2018	24-Oct-2018	24-Oct-2018	24-Oct-2018	22-Oct-2018	22-Oct-2018	26-Oct-2018	24-Oct-2018	22-Oct-2018
PAH Spec MS - Aqueous (W)	30-Oct-2018	29-Oct-2018	29-Oct-2018						29-Oct-2018	30-Oct-2018
pH	01-Nov-2018	30-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	26-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018
pH Value	31-Oct-2018	31-Oct-2018	31-Oct-2018						30-Oct-2018	31-Oct-2018
Phenols by HPLC (S)	26-Oct-2018	26-Oct-2018	25-Oct-2018	29-Oct-2018	25-Oct-2018	26-Oct-2018	29-Oct-2018	25-Oct-2018	25-Oct-2018	26-Oct-2018
Sample description	19-Oct-2018	18-Oct-2018	19-Oct-2018	19-Oct-2018	19-Oct-2018	18-Oct-2018	18-Oct-2018	19-Oct-2018	19-Oct-2018	19-Oct-2018
Total Organic Carbon	25-Oct-2018	24-Oct-2018	24-Oct-2018	30-Oct-2018	24-Oct-2018	24-Oct-2018	24-Oct-2018	24-Oct-2018	24-Oct-2018	25-Oct-2018
Total Sulphate		24-Oct-2018								24-Oct-2018
Total Sulphur		20-Oct-2018								23-Oct-2018
TPH CWG (W)	31-Oct-2018	31-Oct-2018	30-Oct-2018						30-Oct-2018	31-Oct-2018
TPH CWG GC (S)	29-Oct-2018	29-Oct-2018	29-Oct-2018	27-Oct-2018	29-Oct-2018	29-Oct-2018	27-Oct-2018	27-Oct-2018	27-Oct-2018	30-Oct-2018
VOC MS (S)	30-Oct-2018	31-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	30-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	31-Oct-2018

Lab Sample No(s)	18548447	18548070	18548138	18548298	18548508	18548515	18548523	18548532	18548543	18548551
Customer Sample Ref.	3C-J4	4C-J1	4C-J1	4C-J1	4C-J2	4C-J2	4C-J2	4C-J3	4C-J3	4C-J3
AGS Ref.										
Depth	1.80 - 1.80	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.50 - 0.50	2.00 - 2.00	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	24-Oct-2018	24-Oct-2018	23-Oct-2018		23-Oct-2018	23-Oct-2018			23-Oct-2018	23-Oct-2018
Ammoniacal Nitrogen	26-Oct-2018	25-Oct-2018	25-Oct-2018	26-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018
Ammonium Soil by Titration	23-Oct-2018	24-Oct-2018	30-Oct-2018	24-Oct-2018	29-Oct-2018	30-Oct-2018	30-Oct-2018	24-Oct-2018	30-Oct-2018	30-Oct-2018
Anions by Kone (soil)	24-Oct-2018	24-Oct-2018	24-Oct-2018		24-Oct-2018	24-Oct-2018			24-Oct-2018	24-Oct-2018
Asbestos ID in Solid Samples	24-Oct-2018	29-Oct-2018	29-Oct-2018		29-Oct-2018	29-Oct-2018			24-Oct-2018	24-Oct-2018
CEN 10:1 Leachate (1 Stage)	20-Oct-2018	20-Oct-2018	20-Oct-2018	20-Oct-2018	20-Oct-2018	20-Oct-2018	20-Oct-2018	20-Oct-2018	20-Oct-2018	20-Oct-2018
CEN Readings	24-Oct-2018	24-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	24-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018
Cyanide Comp/Free/Total/Thiocyanate	29-Oct-2018	26-Oct-2018	26-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	26-Oct-2018	29-Oct-2018	26-Oct-2018
Dissolved Metals by ICP-MS	29-Oct-2018	29-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	29-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018
EPH CWG (Aliphatic) Aqueous GC (W)	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018
EPH CWG (Aliphatic) GC (S)	25-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018	23-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018
EPH CWG (Aromatic) Aqueous GC (W)	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018
EPH CWG (Aromatic) GC (S)	25-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018	23-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018
GRO by GC-FID (S)	29-Oct-2018	30-Oct-2018	30-Oct-2018	29-Oct-2018	30-Oct-2018	29-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018
GRO by GC-FID (W)	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018
Mercury Dissolved	27-Oct-2018	27-Oct-2018	24-Oct-2018	29-Oct-2018	24-Oct-2018	29-Oct-2018	27-Oct-2018	24-Oct-2018	24-Oct-2018	29-Oct-2018
Metals in solid samples by OES	30-Oct-2018	24-Oct-2018	30-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	28-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018
PAH by GCMS	24-Oct-2018	24-Oct-2018	26-Oct-2018	24-Oct-2018	24-Oct-2018	26-Oct-2018	26-Oct-2018	24-Oct-2018	24-Oct-2018	26-Oct-2018
PAH Spec MS - Aqueous (W)	29-Oct-2018	31-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018
pH	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	01-Nov-2018	30-Oct-2018	30-Oct-2018
pH Value	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018
Phenols by HPLC (S)	25-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	25-Oct-2018	25-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	01-Nov-2018
Sample description	19-Oct-2018	19-Oct-2018	19-Oct-2018	19-Oct-2018	19-Oct-2018	19-Oct-2018	19-Oct-2018	19-Oct-2018	19-Oct-2018	19-Oct-2018
Total Organic Carbon	25-Oct-2018	25-Oct-2018	25-Oct-2018	24-Oct-2018	25-Oct-2018	25-Oct-2018	24-Oct-2018	25-Oct-2018	30-Oct-2018	25-Oct-2018
Total Sulphate	25-Oct-2018	24-Oct-2018	24-Oct-2018		24-Oct-2018	24-Oct-2018			24-Oct-2018	24-Oct-2018
Total Sulphur	23-Oct-2018	23-Oct-2018	24-Oct-2018		23-Oct-2018	23-Oct-2018			23-Oct-2018	23-Oct-2018
TPH CWG (W)	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018
TPH CWG GC (S)	29-Oct-2018	30-Oct-2018	30-Oct-2018	29-Oct-2018	30-Oct-2018	29-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018
VOC MS (S)	31-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	31-Oct-2018	30-Oct-2018

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

Lab Sample No(s)	18548079	18548087	18548092	18548111	18548115	18548453	18548442	18548074	18548098	18548120
Customer Sample Ref.	4C-J4	4C-J4	4C-J4	4C-J5	4C-J5	3C-J4-V	4C-J1-V	4C-J3-V	4C-J4-V	4C-J5-V
AGS Ref.										
Depth	0.50 - 0.50	1.00 - 1.00	1.40 - 1.40	0.50 - 0.50	1.00 - 1.00	3.70 - 3.70	2.70 - 2.70	1.90 - 1.90	2.00 - 2.00	1.70 - 1.70
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	24-Oct-2018		24-Oct-2018		24-Oct-2018					
Ammoniacal Nitrogen	26-Oct-2018	26-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018					
Ammonium Soil by Titration	24-Oct-2018	24-Oct-2018	24-Oct-2018	23-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	29-Oct-2018	24-Oct-2018	29-Oct-2018
Anions by Kone (soil)	24-Oct-2018		24-Oct-2018		24-Oct-2018					
Asbestos ID in Solid Samples	29-Oct-2018		24-Oct-2018		24-Oct-2018					
CEN 10:1 Leachate (1 Stage)	20-Oct-2018	20-Oct-2018	20-Oct-2018	19-Oct-2018	19-Oct-2018					
CEN Readings	23-Oct-2018	24-Oct-2018	24-Oct-2018	31-Oct-2018	23-Oct-2018					
Cyanide Comp/Free/Total/Thiocyanate	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	29-Oct-2018	31-Oct-2018	29-Oct-2018	25-Oct-2018
Dissolved Metals by ICP-MS	30-Oct-2018	29-Oct-2018	29-Oct-2018	30-Oct-2018	30-Oct-2018					
EPH CWG (Aliphatic) Aqueous GC (W)	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018					
EPH CWG (Aliphatic) GC (S)	25-Oct-2018	25-Oct-2018	25-Oct-2018	26-Oct-2018	23-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018	23-Oct-2018
EPH CWG (Aromatic) Aqueous GC (W)	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018					
EPH CWG (Aromatic) GC (S)	25-Oct-2018	25-Oct-2018	25-Oct-2018	26-Oct-2018	23-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018	23-Oct-2018
GRO by GC-FID (S)	29-Oct-2018	27-Oct-2018	27-Oct-2018	30-Oct-2018	30-Oct-2018	27-Oct-2018	29-Oct-2018	27-Oct-2018	27-Oct-2018	29-Oct-2018
GRO by GC-FID (W)	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018					
Mercury Dissolved	24-Oct-2018	27-Oct-2018	27-Oct-2018	29-Oct-2018	24-Oct-2018					
Metals in solid samples by OES	24-Oct-2018	28-Oct-2018	24-Oct-2018	25-Oct-2018	25-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	25-Oct-2018
PAH by GCMS	26-Oct-2018	26-Oct-2018	24-Oct-2018	22-Oct-2018	22-Oct-2018	26-Oct-2018	26-Oct-2018	24-Oct-2018	24-Oct-2018	22-Oct-2018
PAH Spec MS - Aqueous (W)	29-Oct-2018	31-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018					
pH	30-Oct-2018	01-Nov-2018	30-Oct-2018	29-Oct-2018	30-Oct-2018	29-Oct-2018	26-Oct-2018	30-Oct-2018	26-Oct-2018	29-Oct-2018
pH Value	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018					
Phenols by HPLC (S)	25-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	24-Oct-2018	26-Oct-2018	26-Oct-2018	30-Oct-2018	25-Oct-2018	26-Oct-2018
Sample description	19-Oct-2018	19-Oct-2018	19-Oct-2018	18-Oct-2018	18-Oct-2018	19-Oct-2018	19-Oct-2018	19-Oct-2018	19-Oct-2018	18-Oct-2018
Total Organic Carbon	25-Oct-2018	25-Oct-2018	25-Oct-2018	24-Oct-2018	25-Oct-2018	24-Oct-2018	30-Oct-2018	24-Oct-2018	24-Oct-2018	24-Oct-2018
Total Sulphate	24-Oct-2018		24-Oct-2018		24-Oct-2018					
Total Sulphur	23-Oct-2018		23-Oct-2018		20-Oct-2018					
TPH CWG (W)	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018					
TPH CWG GC (S)	29-Oct-2018	27-Oct-2018	27-Oct-2018	30-Oct-2018	30-Oct-2018	27-Oct-2018	29-Oct-2018	27-Oct-2018	27-Oct-2018	29-Oct-2018
VOC MS (S)	01-Nov-2018	29-Oct-2018	29-Oct-2018	30-Oct-2018	30-Oct-2018	29-Oct-2018	30-Oct-2018	29-Oct-2018	29-Oct-2018	30-Oct-2018

Appendix

General

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

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

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

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

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

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

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

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

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

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

11. Results relate only to the items tested.

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

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

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

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

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

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

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

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

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

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

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

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

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

Sample Deviations

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

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

Asbestos

Identification of Asbestos in Bulk Materials & Soils

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

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

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

Visual Estimation Of Fibre Content

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

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

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

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Attention: John Fitzgerald

CERTIFICATE OF ANALYSIS

Date:	12 November 2018
Customer:	H_ATKINS_LDC
Sample Delivery Group (SDG):	181020-29
Your Reference:	
Location:	Llanwern
Report No:	480661

This report has been revised and directly supersedes 479955 in its entirety.

We received 46 samples on Saturday October 20, 2018 and 46 of these samples were scheduled for analysis which was completed on Monday November 12, 2018. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

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

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

Approved By:



Sonia McWhan

Operations Manager

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

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
18569608	3C-B5		0.50 - 0.50	18/10/2018
18569616	3C-B5		1.00 - 1.00	18/10/2018
18569620	3C-B5-V		1.40 - 1.40	18/10/2018
18569592	3C-C5		0.50 - 0.50	18/10/2018
18569601	3C-C5		1.00 - 1.00	18/10/2018
18569571	3C-D5		0.80 - 0.80	18/10/2018
18569579	3C-D5		1.60 - 1.60	18/10/2018
18569583	3C-D5-V		2.60 - 2.60	18/10/2018
18569551	3C-E5		0.50 - 0.50	18/10/2018
18569555	3C-E5		1.50 - 1.50	18/10/2018
18569560	3C-E5		2.00 - 2.00	18/10/2018
18569439	4C-E2		0.50 - 0.50	18/10/2018
18569443	4C-E2		0.70 - 0.70	18/10/2018
18569632	4C-E5		0.50 - 0.50	18/10/2018
18569636	4C-E5		1.00 - 1.00	18/10/2018
18569575	4C-E6		0.50 - 0.50	18/10/2018
18569624	4C-E6		1.00 - 1.00	18/10/2018
18569400	4C-E7		0.50 - 0.50	18/10/2018
18569462	4C-E7		1.00 - 1.00	18/10/2018
18569525	4C-E7		1.40 - 1.40	18/10/2018
18569566	3C-E5-V		3.40 - 3.40	18/10/2018
18569646	4C-E5-V		2.00 - 2.00	18/10/2018
18569628	4C-E6-V		2.00 - 2.00	18/10/2018
18569533	3C-F5		0.50 - 0.50	18/10/2018
18569538	3C-F5		1.00 - 1.00	18/10/2018
18569542	3C-F5		2.00 - 2.00	18/10/2018
18569547	3C-F5-V		3.40 - 3.40	18/10/2018
18569504	3C-G4		0.50 - 0.50	18/10/2018
18569512	3C-G4		1.00 - 1.00	18/10/2018
18569520	3C-G4		2.00 - 2.00	18/10/2018
18569447	3C-G5		0.50 - 0.50	18/10/2018
18569451	3C-G5		1.00 - 1.00	18/10/2018
18569455	3C-G5		1.50 - 1.50	18/10/2018
18569415	4C-G8		0.50 - 0.50	18/10/2018
18569420	4C-G8		1.00 - 1.00	18/10/2018
18569529	3C-G4-V		3.10 - 3.10	18/10/2018
18569469	3C-G5-V		3.00 - 3.00	18/10/2018
18569427	4C-G8-V		2.60 - 2.60	18/10/2018
18569496	3C-I3		0.50 - 0.50	18/10/2018
18569500	3C-I3		1.50 - 1.50	18/10/2018
18569476	3C-J3		0.50 - 0.50	18/10/2018
18569480	3C-J3		1.50 - 1.50	18/10/2018
18569484	3C-J3		2.00 - 2.00	18/10/2018
18569492	3C-J3-V		3.40 - 3.40	18/10/2018
18569431	4C-K2		0.50 - 0.50	18/10/2018
18569435	4C-K2		1.00 - 1.00	18/10/2018

Maximum Sample/Coolbox Temperature (°C) : **10.8**

ISO5667-3 Water quality - Sampling - Part3 -

During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

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

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

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

Results Legend

X Test

N No Determination Possible

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

			Lab Sample No(s)																	
			18569608			18569616			18569620		18569592			18569601			18569571		18569579	
			Customer Sample Reference																	
			3C-B5			3C-B5			3C-B5-V		3C-C5			3C-C5			3C-D5		3C-D5	
			AGS Reference																	
			Depth (m)																	
			0.50 - 0.50			1.00 - 1.00			1.40 - 1.40		0.50 - 0.50			1.00 - 1.00			0.80 - 0.80		1.60 - 1.60	
			Container																	
			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
			Sample Type																	
			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 24					X								X			X			
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 36	X			X					X			X			X			X	
Ammonium Soil by Titration	All	NDPs: 0 Tests: 46		X			X		X			X			X			X			X
Anions by Kone (soil)	All	NDPs: 0 Tests: 24					X								X			X			
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 24				X								X			X				
Asbestos Quantification - Full	All	NDPs: 0 Tests: 2																			
CEN Readings	All	NDPs: 0 Tests: 36	X			X					X			X			X			X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 82	X	X		X	X		X		X	X		X	X		X	X		X	X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 36	X			X					X			X			X			X	
EPH CWG (Aliphatic) Filtered GC (W)	All	NDPs: 0 Tests: 36	X			X					X			X			X			X	
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 46		X			X		X			X			X			X			X
EPH CWG (Aromatic) Filtered GC (W)	All	NDPs: 0 Tests: 36	X			X					X			X			X			X	
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 46		X			X		X			X			X			X			X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 46			X			X		X			X			X			X		
GRO by GC-FID (W)	All	NDPs: 0 Tests: 36	X			X					X			X			X			X	

18569632	4C-E5		0.50 - 0.50	60g VOC (ALE215)	S																		X	
				250g Amber Jar (ALE210)	S			X					X				X			X			
				1kg TUB	S		X					X	X	X	X		X					X
18569443	4C-E2		0.70 - 0.70	60g VOC (ALE215)	S																	X		
				250g Amber Jar (ALE210)	S	X		X	X			X				X			X				
				1kg TUB	S		X			X		X	X	X	X		X					X
18569439	4C-E2		0.50 - 0.50	60g VOC (ALE215)	S																	X		
				250g Amber Jar (ALE210)	S			X					X				X			X			
				1kg TUB	S		X					X	X	X	X		X					X
18569560	3C-E5		2.00 - 2.00	60g VOC (ALE215)	S																	X		
				250g Amber Jar (ALE210)	S	X		X	X				X				X			X			
				1kg TUB	S		X			X	X	X	X	X	X		X					X
18569555	3C-E5		1.50 - 1.50	60g VOC (ALE215)	S																	X		
				250g Amber Jar (ALE210)	S	X		X	X				X				X			X			
				1kg TUB	S		X			X		X	X	X	X		X					X
18569551	3C-E5		0.50 - 0.50	60g VOC (ALE215)	S																	X		
				250g Amber Jar (ALE210)	S			X					X				X			X			
				1kg TUB	S		X					X	X	X	X		X					X
18569583	3C-D5-V		2.60 - 2.60	60g VOC (ALE215)	S																	X		
				250g Amber Jar (ALE210)	S			X					X				X			X			
18569579	3C-D5		1.60 - 1.60	60g VOC (ALE215)	S																	X		

Validated

CERTIFICATE OF ANALYSIS

SDG: 181020-29 **Client Reference:** **Report Number:** 480661
Location: Llanwern **Order Number:** LLA492 **Superseded Report:** 479955

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
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PL - Prepared Leachate
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TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
Mercury Dissolved	All	NDPs: 0 Tests: 36	18569608	3C-B5		0.50 - 0.50	1kg TUB	S
			18569616	3C-B5		1.00 - 1.00	1kg TUB	S
			18569620	3C-B5-V		1.40 - 1.40	1kg TUB	S
			18569592	3C-C5		0.50 - 0.50	1kg TUB	S
			18569601	3C-C5		1.00 - 1.00	1kg TUB	S
			18569571	3C-D5		0.80 - 0.80	1kg TUB	S
			18569579	3C-D5		1.60 - 1.60	1kg TUB	S
Metals in solid samples by OES	All	NDPs: 0 Tests: 46	18569608	3C-B5		0.50 - 0.50	250g Amber Jar (ALE210)	S
			18569616	3C-B5		1.00 - 1.00	250g Amber Jar (ALE210)	S
			18569620	3C-B5-V		1.40 - 1.40	250g Amber Jar (ALE210)	S
			18569592	3C-C5		0.50 - 0.50	250g Amber Jar (ALE210)	S
			18569601	3C-C5		1.00 - 1.00	250g Amber Jar (ALE210)	S
			18569571	3C-D5		0.80 - 0.80	250g Amber Jar (ALE210)	S
			18569579	3C-D5		1.60 - 1.60	250g Amber Jar (ALE210)	S
PAH by GCMS	All	NDPs: 0 Tests: 46	18569608	3C-B5		0.50 - 0.50	250g Amber Jar (ALE210)	S
			18569616	3C-B5		1.00 - 1.00	250g Amber Jar (ALE210)	S
			18569620	3C-B5-V		1.40 - 1.40	250g Amber Jar (ALE210)	S
			18569592	3C-C5		0.50 - 0.50	250g Amber Jar (ALE210)	S
			18569601	3C-C5		1.00 - 1.00	250g Amber Jar (ALE210)	S
			18569571	3C-D5		0.80 - 0.80	250g Amber Jar (ALE210)	S
			18569579	3C-D5		1.60 - 1.60	250g Amber Jar (ALE210)	S
PAH in waters by GC-MS (diss.filt)	All	NDPs: 0 Tests: 36	18569608	3C-B5		0.50 - 0.50	1kg TUB	S
			18569616	3C-B5		1.00 - 1.00	1kg TUB	S
			18569620	3C-B5-V		1.40 - 1.40	1kg TUB	S
			18569592	3C-C5		0.50 - 0.50	1kg TUB	S
			18569601	3C-C5		1.00 - 1.00	1kg TUB	S
			18569571	3C-D5		0.80 - 0.80	1kg TUB	S
			18569579	3C-D5		1.60 - 1.60	1kg TUB	S
pH	All	NDPs: 0 Tests: 46	18569608	3C-B5		0.50 - 0.50	250g Amber Jar (ALE210)	S
			18569616	3C-B5		1.00 - 1.00	250g Amber Jar (ALE210)	S
			18569620	3C-B5-V		1.40 - 1.40	250g Amber Jar (ALE210)	S
			18569592	3C-C5		0.50 - 0.50	250g Amber Jar (ALE210)	S
			18569601	3C-C5		1.00 - 1.00	250g Amber Jar (ALE210)	S
			18569571	3C-D5		0.80 - 0.80	250g Amber Jar (ALE210)	S
			18569579	3C-D5		1.60 - 1.60	250g Amber Jar (ALE210)	S
pH Value of Filtered Water	All	NDPs: 0 Tests: 36	18569608	3C-B5		0.50 - 0.50	1kg TUB	S
			18569616	3C-B5		1.00 - 1.00	1kg TUB	S
			18569620	3C-B5-V		1.40 - 1.40	1kg TUB	S
			18569592	3C-C5		0.50 - 0.50	1kg TUB	S
			18569601	3C-C5		1.00 - 1.00	1kg TUB	S
			18569571	3C-D5		0.80 - 0.80	1kg TUB	S
			18569579	3C-D5		1.60 - 1.60	1kg TUB	S
Phenols by HPLC (S)	All	NDPs: 0 Tests: 46	18569608	3C-B5		0.50 - 0.50	250g Amber Jar (ALE210)	S
			18569616	3C-B5		1.00 - 1.00	250g Amber Jar (ALE210)	S
			18569620	3C-B5-V		1.40 - 1.40	250g Amber Jar (ALE210)	S
			18569592	3C-C5		0.50 - 0.50	250g Amber Jar (ALE210)	S
			18569601	3C-C5		1.00 - 1.00	250g Amber Jar (ALE210)	S
			18569571	3C-D5		0.80 - 0.80	250g Amber Jar (ALE210)	S
			18569579	3C-D5		1.60 - 1.60	250g Amber Jar (ALE210)	S
Sample description	All	NDPs: 0 Tests: 46	18569608	3C-B5		0.50 - 0.50	250g Amber Jar (ALE210)	S
			18569616	3C-B5		1.00 - 1.00	250g Amber Jar (ALE210)	S
			18569620	3C-B5-V		1.40 - 1.40	250g Amber Jar (ALE210)	S
			18569592	3C-C5		0.50 - 0.50	250g Amber Jar (ALE210)	S
			18569601	3C-C5		1.00 - 1.00	250g Amber Jar (ALE210)	S
			18569571	3C-D5		0.80 - 0.80	250g Amber Jar (ALE210)	S
			18569579	3C-D5		1.60 - 1.60	250g Amber Jar (ALE210)	S
Total Organic Carbon	All	NDPs: 0 Tests: 46	18569608	3C-B5		0.50 - 0.50	250g Amber Jar (ALE210)	S
			18569616	3C-B5		1.00 - 1.00	250g Amber Jar (ALE210)	S
			18569620	3C-B5-V		1.40 - 1.40	250g Amber Jar (ALE210)	S
			18569592	3C-C5		0.50 - 0.50	250g Amber Jar (ALE210)	S
			18569601	3C-C5		1.00 - 1.00	250g Amber Jar (ALE210)	S
			18569571	3C-D5		0.80 - 0.80	250g Amber Jar (ALE210)	S
			18569579	3C-D5		1.60 - 1.60	250g Amber Jar (ALE210)	S
Total Sulphate	All	NDPs: 0 Tests: 24	18569608	3C-B5		0.50 - 0.50	250g Amber Jar (ALE210)	S
			18569616	3C-B5		1.00 - 1.00	250g Amber Jar (ALE210)	S
			18569592	3C-C5		0.50 - 0.50	250g Amber Jar (ALE210)	S
			18569601	3C-C5		1.00 - 1.00	250g Amber Jar (ALE210)	S
			18569571	3C-D5		0.80 - 0.80	250g Amber Jar (ALE210)	S
Total Sulphur	All	NDPs: 0 Tests: 24	18569608	3C-B5		0.50 - 0.50	250g Amber Jar (ALE210)	S
			18569616	3C-B5		1.00 - 1.00	250g Amber Jar (ALE210)	S
			18569592	3C-C5		0.50 - 0.50	250g Amber Jar (ALE210)	S
			18569601	3C-C5		1.00 - 1.00	250g Amber Jar (ALE210)	S
			18569571	3C-D5		0.80 - 0.80	250g Amber Jar (ALE210)	S
TPH CWG Filtered (W)	All	NDPs: 0 Tests: 36	18569608	3C-B5		0.50 - 0.50	1kg TUB	S
			18569616	3C-B5		1.00 - 1.00	1kg TUB	S
			18569620	3C-B5-V		1.40 - 1.40	1kg TUB	S
			18569592	3C-C5		0.50 - 0.50	1kg TUB	S
			18569601	3C-C5		1.00 - 1.00	1kg TUB	S
			18569571	3C-D5		0.80 - 0.80	1kg TUB	S
			18569579	3C-D5		1.60 - 1.60	1kg TUB	S
TPH CWG GC (S)	All	NDPs: 0 Tests: 46	18569608	3C-B5		0.50 - 0.50	250g Amber Jar (ALE210)	S
			18569616	3C-B5		1.00 - 1.00	250g Amber Jar (ALE210)	S
			18569620	3C-B5-V		1.40 - 1.40	250g Amber Jar (ALE210)	S
			18569592	3C-C5		0.50 - 0.50	250g Amber Jar (ALE210)	S
			18569601	3C-C5		1.00 - 1.00	250g Amber Jar (ALE210)	S
			18569571	3C-D5		0.80 - 0.80	250g Amber Jar (ALE210)	S
			18569579	3C-D5		1.60 - 1.60	250g Amber Jar (ALE210)	S
VOC MS (S)	All	NDPs: 0 Tests: 46	18569608	3C-B5		0.50 - 0.50	60g VOC (ALE215)	S
			18569616	3C-B5		1.00 - 1.00	60g VOC (ALE215)	S
			18569620	3C-B5-V		1.40 - 1.40	60g VOC (ALE215)	S
			18569592	3C-C5		0.50 - 0.50	60g VOC (ALE215)	S
			18569601	3C-C5		1.00 - 1.00	60g VOC (ALE215)	S
			18569571	3C-D5		0.80 - 0.80	60g VOC (ALE215)	S
			18569579	3C-D5		1.60 - 1.60	60g VOC (ALE215)	S

18569632	4C-E5		0.50 - 0.50	60g VOC (ALE215)	S																	X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X					X		
				1kg TUB	S	X			X		X							X			
18569443	4C-E2		0.70 - 0.70	60g VOC (ALE215)	S																	X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X	X	X			X		
				1kg TUB	S	X			X		X							X			
18569439	4C-E2		0.50 - 0.50	60g VOC (ALE215)	S																	X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X					X		
				1kg TUB	S	X			X		X							X			
18569560	3C-E5		2.00 - 2.00	60g VOC (ALE215)	S																	X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X	X	X			X		
				1kg TUB	S	X			X		X							X			
18569555	3C-E5		1.50 - 1.50	60g VOC (ALE215)	S																	X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X	X	X			X		
				1kg TUB	S	X			X		X							X			
18569551	3C-E5		0.50 - 0.50	60g VOC (ALE215)	S																	X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X					X		
				1kg TUB	S	X			X		X							X			
18569583	3C-D5-V		2.60 - 2.60	60g VOC (ALE215)	S																	X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X					X		
18569579	3C-D5		1.60 - 1.60	60g VOC (ALE215)	S																	X

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

Results Legend

X Test

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S - Soil/Solid
UNS - Unspecified Solid
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SL - Sludge
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Lab Sample No(s)			18569636			18569575			18569624			18569400			18569462			18569525		18569566
Customer Sample Reference			4C-E5			4C-E6			4C-E6			4C-E7			4C-E7			4C-E7		3C-E5-V
AGS Reference																				
Depth (m)			1.00 - 1.00			0.50 - 0.50			1.00 - 1.00			0.50 - 0.50			1.00 - 1.00			1.40 - 1.40		3.40 - 3.40
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 24		X			X			X			X			X					
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 36	X			X			X			X			X			X			
Ammonium Soil by Titration	All	NDPs: 0 Tests: 46		X			X			X			X			X			X		X
Anions by Kone (soil)	All	NDPs: 0 Tests: 24		X			X			X			X			X					
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 24	X			X			X			X			X						
CEN Readings	All	NDPs: 0 Tests: 36	X			X			X			X			X			X			
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 82	X	X		X	X		X	X		X	X		X	X		X	X		X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 36	X			X			X			X			X			X			
EPH CWG (Aliphatic) Filtered GC (W)	All	NDPs: 0 Tests: 36	X			X			X			X			X			X			
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 46		X			X			X			X			X			X		X
EPH CWG (Aromatic) Filtered GC (W)	All	NDPs: 0 Tests: 36	X			X			X			X			X			X			
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 46		X			X			X			X			X			X		X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 46			X			X			X			X			X			X	
GRO by GC-FID (W)	All	NDPs: 0 Tests: 36	X			X			X			X			X			X			
Mercury Dissolved	All	NDPs: 0 Tests: 36	X			X			X			X			X			X			

18569512	3C-G4		1.00 - 1.00	250g Amber Jar (ALE210)	S		X			X	X			X			X			X				
				1kg TUB	S			X				X	X	X	X	X			X				X	X
18569504	3C-G4		0.50 - 0.50	60g VOC (ALE215)	S																X			
				250g Amber Jar (ALE210)	S				X					X			X			X				
				1kg TUB	S			X					X	X	X	X			X				X	X
18569547	3C-F5-V		3.40 - 3.40	60g VOC (ALE215)	S																X			
				250g Amber Jar (ALE210)	S				X					X			X			X				
18569542	3C-F5		2.00 - 2.00	60g VOC (ALE215)	S																X			
				250g Amber Jar (ALE210)	S				X					X			X			X				
				1kg TUB	S			X					X	X	X	X			X				X	X
18569538	3C-F5		1.00 - 1.00	60g VOC (ALE215)	S																X			
				250g Amber Jar (ALE210)	S		X			X	X			X			X			X				
				1kg TUB	S			X				X	X	X	X	X			X				X	X
18569533	3C-F5		0.50 - 0.50	60g VOC (ALE215)	S																X			
				250g Amber Jar (ALE210)	S		X			X	X			X			X			X				
				1kg TUB	S			X				X	X	X	X	X			X				X	X
18569628	4C-E6-V		2.00 - 2.00	60g VOC (ALE215)	S																X			
				250g Amber Jar (ALE210)	S				X					X			X			X				
18569646	4C-E5-V		2.00 - 2.00	60g VOC (ALE215)	S																X			
				250g Amber Jar (ALE210)	S				X					X			X			X				
18569566	3C-E5-V		3.40 - 3.40	60g VOC (ALE215)	S																X			

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

Results Legend

X Test

N No Determination Possible

Sample Types -

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

Lab Sample No(s)			18569636			18569575			18569624			18569400			18569462			18569525			18569566	
Customer Sample Reference			4C-E5			4C-E6			4C-E6			4C-E7			4C-E7			4C-E7			3C-E5-V	
AGS Reference																							
Depth (m)			1.00 - 1.00			0.50 - 0.50			1.00 - 1.00			0.50 - 0.50			1.00 - 1.00			1.40 - 1.40			3.40 - 3.40	
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Metals in solid samples by OES	All	NDPs: 0 Tests: 46		X			X			X			X			X			X			X	
PAH by GCMS	All	NDPs: 0 Tests: 46		X			X			X			X			X			X			X	
PAH in waters by GC-MS (diss.filt)	All	NDPs: 0 Tests: 36	X			X			X			X			X			X					
pH	All	NDPs: 0 Tests: 46		X			X			X			X			X			X			X	
pH Value of Filtered Water	All	NDPs: 0 Tests: 36	X			X			X			X			X			X					
Phenols by HPLC (S)	All	NDPs: 0 Tests: 46		X			X			X			X			X			X			X	
Sample description	All	NDPs: 0 Tests: 46		X			X			X			X			X			X			X	
Total Organic Carbon	All	NDPs: 0 Tests: 46		X			X			X			X			X			X			X	
Total Sulphate	All	NDPs: 0 Tests: 24		X			X			X			X			X							
Total Sulphur	All	NDPs: 0 Tests: 24		X			X			X			X			X							
TPH CWG Filtered (W)	All	NDPs: 0 Tests: 36	X			X			X			X			X			X					
TPH CWG GC (S)	All	NDPs: 0 Tests: 46		X			X			X			X			X			X			X	
VOC MS (S)	All	NDPs: 0 Tests: 46			X			X			X			X			X			X			

18569512	3C-G4		1.00 - 1.00	250g Amber Jar (ALE210)	S	x	x		x		x	x	x	x	x		x		
				1kg TUB	S			x		x								x			
18569504	3C-G4		0.50 - 0.50	60g VOC (ALE215)	S															x	
				250g Amber Jar (ALE210)	S	x	x		x		x	x	x					x		
				1kg TUB	S			x		x								x			
18569547	3C-F5-V		3.40 - 3.40	60g VOC (ALE215)	S															x	
				250g Amber Jar (ALE210)	S	x	x		x		x	x	x					x		
18569542	3C-F5		2.00 - 2.00	60g VOC (ALE215)	S															x	
				250g Amber Jar (ALE210)	S	x	x		x		x	x	x					x		
				1kg TUB	S			x		x								x			
18569538	3C-F5		1.00 - 1.00	60g VOC (ALE215)	S															x	
				250g Amber Jar (ALE210)	S	x	x		x		x	x	x	x	x			x		
				1kg TUB	S			x		x								x			
18569533	3C-F5		0.50 - 0.50	60g VOC (ALE215)	S															x	
				250g Amber Jar (ALE210)	S	x	x		x		x	x	x	x	x			x		
				1kg TUB	S			x		x								x			
18569628	4C-E6-V		2.00 - 2.00	60g VOC (ALE215)	S															x	
				250g Amber Jar (ALE210)	S	x	x		x		x	x	x					x		
18569646	4C-E5-V		2.00 - 2.00	60g VOC (ALE215)	S															x	
				250g Amber Jar (ALE210)	S	x	x		x		x	x	x					x		
18569566	3C-E5-V		3.40 - 3.40	60g VOC (ALE215)	S															x	

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

Results Legend

X Test

N No Determination Possible

Sample Types -

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

Lab Sample No(s)			18569512		18569520			18569447			18569451			18569455			18569415			18569420	
Customer Sample Reference			3C-G4		3C-G4			3C-G5			3C-G5			3C-G5			4C-G8			4C-G8	
AGS Reference																					
Depth (m)			1.00 - 1.00		2.00 - 2.00			0.50 - 0.50			1.00 - 1.00			1.50 - 1.50			0.50 - 0.50			1.00 - 1.00	
Container			60g VOC (ALE215)		1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	400g Tub (ALE214)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S		S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 24				X			X					X				X			X	
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 36		X				X			X				X		X			X		
Ammonium Soil by Titration	All	NDPs: 0 Tests: 46				X			X			X		X				X			X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 24				X			X					X				X			X	
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 24		X				X							X		X			X		
CEN Readings	All	NDPs: 0 Tests: 36		X				X			X				X		X			X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 82		X	X			X	X		X	X		X	X		X	X		X	X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 36		X				X			X				X		X			X		
EPH CWG (Aliphatic) Filtered GC (W)	All	NDPs: 0 Tests: 36		X				X			X				X		X			X		
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 46				X			X			X		X				X			X	
EPH CWG (Aromatic) Filtered GC (W)	All	NDPs: 0 Tests: 36		X				X			X				X		X			X		
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 46				X			X			X		X				X			X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 46	X				X			X			X			X			X				X
GRO by GC-FID (W)	All	NDPs: 0 Tests: 36		X				X			X				X		X			X		
Mercury Dissolved	All	NDPs: 0 Tests: 36		X				X			X				X		X			X		

18569484	3C-J3		2.00 - 2.00	60g VOC (ALE215)	S																X		
				250g Amber Jar (ALE210)	S	X		X	X			X			X		X						
				1kg TUB	S		X			X	X	X	X	X		X				X		X	X
18569480	3C-J3		1.50 - 1.50	60g VOC (ALE215)	S																X		
				250g Amber Jar (ALE210)	S	X		X	X			X			X		X						
				1kg TUB	S		X			X	X	X	X	X		X				X		X	X
18569476	3C-J3		0.50 - 0.50	60g VOC (ALE215)	S																X		
				250g Amber Jar (ALE210)	S			X				X			X		X						
				1kg TUB	S		X				X	X	X	X		X				X		X	X
18569500	3C-I3		1.50 - 1.50	60g VOC (ALE215)	S																X		
				250g Amber Jar (ALE210)	S	X		X	X			X			X		X						
				1kg TUB	S		X			X	X	X	X	X		X				X		X	X
18569496	3C-I3		0.50 - 0.50	60g VOC (ALE215)	S																X		
				250g Amber Jar (ALE210)	S	X		X	X			X			X		X						
				1kg TUB	S		X			X	X	X	X	X		X				X		X	X
18569427	4C-G8-V		2.60 - 2.60	60g VOC (ALE215)	S																X		
				250g Amber Jar (ALE210)	S			X				X			X		X						
18569469	3C-G5-V		3.00 - 3.00	60g VOC (ALE215)	S																X		
				250g Amber Jar (ALE210)	S			X				X			X		X						
18569529	3C-G4-V		3.10 - 3.10	60g VOC (ALE215)	S																X		
				250g Amber Jar (ALE210)	S			X				X			X		X						

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

Results Legend

X Test

N No Determination Possible

Sample Types -

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

Lab Sample No(s)			18569512	18569520			18569447			18569451			18569455			18569415			18569420	
Customer Sample Reference			3C-G4	3C-G4			3C-G5			3C-G5			3C-G5			4C-G8			4C-G8	
AGS Reference																				
Depth (m)			1.00 - 1.00	2.00 - 2.00			0.50 - 0.50			1.00 - 1.00			1.50 - 1.50			0.50 - 0.50			1.00 - 1.00	
Container			60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	400g Tub (ALE214)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Metals in solid samples by OES	All	NDPs: 0 Tests: 46			X			X			X		X				X			X	
PAH by GCMS	All	NDPs: 0 Tests: 46			X			X			X		X				X			X	
PAH in waters by GC-MS (diss.filt)	All	NDPs: 0 Tests: 36		X			X			X				X		X			X		
pH	All	NDPs: 0 Tests: 46			X			X			X		X				X			X	
pH Value of Filtered Water	All	NDPs: 0 Tests: 36		X			X			X				X		X			X		
Phenols by HPLC (S)	All	NDPs: 0 Tests: 46			X			X			X		X				X			X	
Sample description	All	NDPs: 0 Tests: 46			X			X			X		X				X			X	
Total Organic Carbon	All	NDPs: 0 Tests: 46			X			X			X		X				X			X	
Total Sulphate	All	NDPs: 0 Tests: 24			X			X					X				X			X	
Total Sulphur	All	NDPs: 0 Tests: 24			X			X					X				X			X	
TPH CWG Filtered (W)	All	NDPs: 0 Tests: 36		X			X			X				X		X			X		
TPH CWG GC (S)	All	NDPs: 0 Tests: 46			X			X			X		X				X			X	
VOC MS (S)	All	NDPs: 0 Tests: 46	X			X			X			X			X			X				X

18569484	3C-J3		2.00 - 2.00	60g VOC (ALE215)	S		
				250g Amber Jar (ALE210)	S	X	
				1kg TUB	S		
18569480	3C-J3		1.50 - 1.50	60g VOC (ALE215)	S		
				250g Amber Jar (ALE210)	S	X	
				1kg TUB	S		
18569476	3C-J3		0.50 - 0.50	60g VOC (ALE215)	S		
				250g Amber Jar (ALE210)	S	X	
				1kg TUB	S		
18569500	3C-I3		1.50 - 1.50	60g VOC (ALE215)	S		
				250g Amber Jar (ALE210)	S	X	
				1kg TUB	S		
18569496	3C-I3		0.50 - 0.50	60g VOC (ALE215)	S		
				250g Amber Jar (ALE210)	S	X	
				1kg TUB	S		
18569427	4C-G8-V		2.60 - 2.60	60g VOC (ALE215)	S		
				250g Amber Jar (ALE210)	S	X	
18569469	3C-G5-V		3.00 - 3.00	60g VOC (ALE215)	S		
				250g Amber Jar (ALE210)	S	X	
18569529	3C-G4-V		3.10 - 3.10	60g VOC (ALE215)	S		
				250g Amber Jar (ALE210)	S	X	

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

Results Legend

X Test

N No Determination Possible

Sample Types -

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

Lab Sample No(s)			18569492		18569431			18569435		
Customer Sample Reference			3C-J3-V		4C-K2			4C-K2		
AGS Reference										
Depth (m)			3.40 - 3.40		0.50 - 0.50			1.00 - 1.00		
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 24				X				
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 36			X			X		
Ammonium Soil by Titration	All	NDPs: 0 Tests: 46	X			X			X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 24				X				
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 24			X					
Asbestos Quantification - Full	All	NDPs: 0 Tests: 2			X					
CEN Readings	All	NDPs: 0 Tests: 36			X			X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 82	X		X	X		X	X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 36			X			X		
EPH CWG (Aliphatic) Filtered GC (W)	All	NDPs: 0 Tests: 36			X			X		
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 46	X			X			X	
EPH CWG (Aromatic) Filtered GC (W)	All	NDPs: 0 Tests: 36			X			X		
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 46	X			X			X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 46		X			X			X
GRO by GC-FID (W)	All	NDPs: 0 Tests: 36			X			X		

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

Results Legend

X **Test**

N **No Determination Possible**

Sample Types -

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

Lab Sample No(s)			18569492		18569431			18569435		
Customer Sample Reference			3C-J3-V		4C-K2			4C-K2		
AGS Reference										
Depth (m)			3.40 - 3.40		0.50 - 0.50			1.00 - 1.00		
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S
Mercury Dissolved	All	NDPs: 0 Tests: 36			X			X		
Metals in solid samples by OES	All	NDPs: 0 Tests: 46	X			X			X	
PAH by GCMS	All	NDPs: 0 Tests: 46	X			X			X	
PAH in waters by GC-MS (diss.filt)	All	NDPs: 0 Tests: 36			X			X		
pH	All	NDPs: 0 Tests: 46	X			X			X	
pH Value of Filtered Water	All	NDPs: 0 Tests: 36			X			X		
Phenols by HPLC (S)	All	NDPs: 0 Tests: 46	X			X			X	
Sample description	All	NDPs: 0 Tests: 46	X			X			X	
Total Organic Carbon	All	NDPs: 0 Tests: 46	X			X			X	
Total Sulphate	All	NDPs: 0 Tests: 24				X				
Total Sulphur	All	NDPs: 0 Tests: 24				X				
TPH CWG Filtered (W)	All	NDPs: 0 Tests: 36			X			X		
TPH CWG GC (S)	All	NDPs: 0 Tests: 46	X			X			X	
VOC MS (S)	All	NDPs: 0 Tests: 46		X			X			X

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

Sample Descriptions

Grain Sizes

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

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
18569608	3C-B5	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
18569616	3C-B5	1.00 - 1.00	Dark Brown	Stone/Soil	Vegetation	Stones
18569620	3C-B5-V	1.40 - 1.40	Dark Brown	Sandy Loam	Vegetation	Stones
18569592	3C-C5	0.50 - 0.50	Dark Brown	Sandy Loam	Vegetation	Stones
18569601	3C-C5	1.00 - 1.00	Dark Brown	Sand	Stones	Vegetation
18569571	3C-D5	0.80 - 0.80	Dark Brown	Sandy Loam	Vegetation	Stones
18569579	3C-D5	1.60 - 1.60	Dark Brown	Stone/Soil	Stones	None
18569583	3C-D5-V	2.60 - 2.60	Dark Brown	Sandy Clay Loam	Vegetation	Stones
18569551	3C-E5	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	Vegetation
18569555	3C-E5	1.50 - 1.50	Dark Brown	Sandy Loam	Stones	Vegetation
18569560	3C-E5	2.00 - 2.00	Dark Brown	Sandy Loam	Stones	Vegetation
18569439	4C-E2	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	None
18569443	4C-E2	0.70 - 0.70	Dark Brown	Stone/Soil	None	Stones
18569632	4C-E5	0.50 - 0.50	Dark Brown	Sand	Stones	Vegetation
18569636	4C-E5	1.00 - 1.00	Dark Brown	Sand	Vegetation	Stones
18569575	4C-E6	0.50 - 0.50	Dark Brown	Sandy Loam	Vegetation	Stones
18569624	4C-E6	1.00 - 1.00	Dark Brown	Stone/Soil	Vegetation	Stones
18569400	4C-E7	0.50 - 0.50	Dark Brown	Stone/Soil	Vegetation	Stones
18569462	4C-E7	1.00 - 1.00	Dark Brown	Stone/Soil	Vegetation	Stones
18569525	4C-E7	1.40 - 1.40	Dark Brown	Loamy Sand	Stones	N/A
18569566	3C-E5-V	3.40 - 3.40	Dark Brown	Silty Clay Loam	Vegetation	Stones
18569646	4C-E5-V	2.00 - 2.00	Dark Brown	Clay	Vegetation	Stones
18569628	4C-E6-V	2.00 - 2.00	Dark Brown	Sandy Clay Loam	None	None
18569533	3C-F5	0.50 - 0.50	Dark Brown	Stone/Soil	Vegetation	Stones
18569538	3C-F5	1.00 - 1.00	Dark Brown	Stone/Soil	Vegetation	Stones
18569542	3C-F5	2.00 - 2.00	Black	Sand	Stones	N/A
18569547	3C-F5-V	3.40 - 3.40	Dark Brown	Sandy Clay Loam	Stones	Vegetation
18569504	3C-G4	0.50 - 0.50	Light Brown	Sandy Clay	Stones	Vegetation
18569512	3C-G4	1.00 - 1.00	Black	Sand	Stones	None
18569520	3C-G4	2.00 - 2.00	Dark Brown	Stone/Soil	Vegetation	Stones
18569447	3C-G5	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	None
18569451	3C-G5	1.00 - 1.00	Dark Brown	Sandy Loam	Stones	None
18569455	3C-G5	1.50 - 1.50	Dark Brown	Sandy Loam	Stones	None
18569415	4C-G8	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	Vegetation
18569420	4C-G8	1.00 - 1.00	Dark Brown	Sandy Loam	Stones	Vegetation
18569529	3C-G4-V	3.10 - 3.10	Dark Brown	Clay	Vegetation	Stones
18569469	3C-G5-V	3.00 - 3.00	Grey	Clay	Stones	Vegetation
18569427	4C-G8-V	2.60 - 2.60	Dark Brown	Clay	Vegetation	Stones

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

			Colour	Description	Inclusions	Inclusions 2
18569496	3C-I3	0.50 - 0.50	Dark Brown	Stone/Soil	Vegetation	Stones
18569500	3C-I3	1.50 - 1.50	Dark Brown	Sandy Loam	Stones	Vegetation
18569476	3C-J3	0.50 - 0.50	Black	Loamy Sand	Stones	Vegetation
18569480	3C-J3	1.50 - 1.50	Dark Brown	Sandy Loam	Vegetation	Stones
18569484	3C-J3	2.00 - 2.00	Dark Brown	Sandy Loam	Stones	None
18569492	3C-J3-V	3.40 - 3.40	Dark Brown	Silty Clay	Vegetation	N/A
18569431	4C-K2	0.50 - 0.50	Dark Brown	Sand	Stones	Vegetation
18569435	4C-K2	1.00 - 1.00	Dark Brown	Sand	Stones	Vegetation

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

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

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

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

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

Component	LOD/Units	Method	Customer Sample Ref.	3C-B5	3C-B5	3C-B5-V	3C-C5	3C-C5	3C-D5
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.40 - 1.40	0.50 - 0.50	1.00 - 1.00	0.80 - 0.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018
			SDG Ref	181020-29	181020-29	181020-29	181020-29	181020-29	181020-29
			Lab Sample No.(s)	18569608	18569616	18569620	18569592	18569601	18569571
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		12	14	25	19	9.6	15
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 #	226 M	<12 M	<12 M	15.1 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0116 #	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		0.0113 M	<0.01 #	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 #	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 #	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132			0.401			0.298	0.219
Sulphate, Total potential	<0.06 %	TM132			1.2			0.894	0.657
Soil Organic Matter (SOM)	<0.35 %	TM132		6.74 #	3.03 #	2.31 #	19.7 #	7.84 #	12.6 #
pH	1 pH Units	TM133		8.79 M	11 #	7.96 M	8.4 M	11.3 M	8.41 M
Cyanide, Total	<1 mg/kg	TM153		1.98 & M	2.01 #	<1 M	8.51 M	18.7 & M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 & M	<1 #	<1 M	<1 M	<1 & M	<1 M
Arsenic	<0.6 mg/kg	TM181		9 M	12.2 #	12.6 M	19.3 M	9.45 M	9.01 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	<0.2 #	<0.02 M	10.1 M	1.9 M	0.192 M
Chromium	<0.9 mg/kg	TM181		170 M	174 #	30.3 M	115 M	204 M	45 M
Copper	<1.4 mg/kg	TM181		18.8 M	57 #	18.4 M	44.9 M	69 M	23 M
Iron	<1000 mg/kg	TM181		113000 #	245000 #	45300 #	175000 #	252000 #	51100 #
Lead	<0.7 mg/kg	TM181		81.5 M	54.6 #	26.9 M	1320 M	190 M	84.5 M
Manganese	<0.13 mg/kg	TM181		10700 M	19800 #	1220 M	10700 M	17900 M	3250 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<1.4 #	<0.14 M	<1.4 M	<1.4 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		13.9 M	38.4 #	31.9 M	40.2 M	59.9 M	19.7 M
Selenium	<1 mg/kg	TM181		5.13 #	<10 #	<1 #	<10 #	<10 #	1.45 #
Vanadium	<0.2 mg/kg	TM181		231 #	275 #	53 #	195 #	399 #	67.7 #
Zinc	<1.9 mg/kg	TM181		492 M	302 #	127 M	5610 M	749 M	300 M
Sulphate, acid soluble (total)	<0.02 %	TM221			0.759			0.932	0.119
Calcium	<21 mg/kg	TM224			135000			132000	83400
Magnesium	<8 mg/kg	TM224			10200			8300	17900
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243			0.239 #			0.294 M	0.114 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

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

Component	LOD/Units	Method	Customer Sample Ref.	3C-D5	3C-D5-V	3C-E5	3C-E5	3C-E5	4C-E2
			Depth (m)	1.60 - 1.60	2.60 - 2.60	0.50 - 0.50	1.50 - 1.50	2.00 - 2.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018
			SDG Ref	181020-29	181020-29	181020-29	181020-29	181020-29	181020-29
			Lab Sample No.(s)	18569579	18569583	18569551	18569555	18569560	18569439
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		14	24	11	5.4	5.5	10
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 #	185 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 #	<0.01 M	<0.01 M	0.0211 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 #	<0.01 M	0.0112 M	0.0211 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 #	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 #	<0.035 M	<0.035 M	0.0423 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132					0.2	0.302	
Sulphate, Total potential	<0.06 %	TM132					0.6	0.906	
Soil Organic Matter (SOM)	<0.35 %	TM132		2.88 #	2.05 #	3.57 #	0.984 #	<0.35 #	3.55 #
pH	1 pH Units	TM133		12 #	8.32 M	8.12 M	12.2 M	10.9 M	11.1 M
Cyanide, Total	<1 mg/kg	TM153		<1 & #	<1 & M	<1 M	<1 & M	<1 & M	<1 & M
Cyanide, Free	<1 mg/kg	TM153		<1 & #	<1 & M	<1 M	<1 & M	<1 & M	<1 & M
Arsenic	<0.6 mg/kg	TM181		12.9 #	10.6 M	10.4 M	<6 M	<6 M	9.91 M
Cadmium	<0.02 mg/kg	TM181		<0.02 #	<0.02 M	<0.02 M	0.5 M	1.06 M	<0.2 M
Chromium	<0.9 mg/kg	TM181		318 #	38.8 M	58.1 M	636 M	623 M	55.2 M
Copper	<1.4 mg/kg	TM181		8.21 #	17.6 M	17 M	<14 M	26.9 M	31.3 M
Iron	<1000 mg/kg	TM181		106000 #	38300 #	39100 #	136000 #	175000 #	174000 #
Lead	<0.7 mg/kg	TM181		21.5 #	30.6 M	27 M	17.8 M	16.3 M	165 M
Manganese	<0.13 mg/kg	TM181		26000 #	1200 M	3020 M	37700 M	37200 M	8680 M
Mercury	<0.14 mg/kg	TM181		<0.14 #	<0.14 M	<0.14 M	<1.4 M	<1.4 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		5.25 #	30.2 M	20.7 M	11.3 M	27.2 M	46.3 M
Selenium	<1 mg/kg	TM181		8.45 #	<1 #	1.45 #	10.8 #	<10 #	<10 #
Vanadium	<0.2 mg/kg	TM181		307 #	60.3 #	105 #	940 #	1180 #	231 #
Zinc	<1.9 mg/kg	TM181		66 #	126 M	113 M	<190 M	45.4 M	574 M
Sulphate, acid soluble (total)	<0.02 %	TM221					0.314	0.495	
Calcium	<21 mg/kg	TM224					247000	255000	
Magnesium	<8 mg/kg	TM224					7750	<800	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243					0.0438 M	0.289 M	
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304						<0.001 #	
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304						<0.001 #	
Additional Asbestos Components (Using TM048)		TM304						None #	
Analysts Comments		TM304						N/C	
Asbestos Quantification - Total - %	<0.001 %	TM304						<0.001 #	

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

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

Component	LOD/Units	Method	Customer Sample Ref.	Depth (m)	Sample Type	Date Sampled	Sample Time	Date Received	SDG Ref	Lab Sample No.(s)	AGS Reference
			4C-E2	0.70 - 0.70	Soil/Solid (S)	18/10/2018	00:00	20/10/2018	181020-29	18569443	
			4C-E5	0.50 - 0.50	Soil/Solid (S)	18/10/2018	00:00	20/10/2018	181020-29	18569632	
			4C-E5	1.00 - 1.00	Soil/Solid (S)	18/10/2018	00:00	20/10/2018	181020-29	18569636	
			4C-E6	0.50 - 0.50	Soil/Solid (S)	18/10/2018	00:00	20/10/2018	181020-29	18569575	
			4C-E6	1.00 - 1.00	Soil/Solid (S)	18/10/2018	00:00	20/10/2018	181020-29	18569624	
			4C-E7	0.50 - 0.50	Soil/Solid (S)	18/10/2018	00:00	20/10/2018	181020-29	18569400	
Moisture Content Ratio (% of as received sample)	%	PM024	5.1	7.7	8.5	10	7.5	12			
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12 #	<12 M	<12 M	<12 M	<12 #	<12 #			
Phenol	<0.01 mg/kg	TM062 (S)	<0.01 #	<0.01 M	<0.01 M	<0.01 M	<0.01 #	0.0113 & #			
Cresols	<0.01 mg/kg	TM062 (S)	<0.01 #	<0.01 M	<0.01 M	<0.01 M	<0.01 #	<0.01 & #			
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015 #	<0.015 M	<0.015 M	<0.015 M	<0.015 #	<0.015 & #			
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035 #	<0.035 M	<0.035 M	<0.035 M	<0.035 #	<0.035 & #			
Sulphur, Total	<0.02 %	TM132	0.189		0.185	0.125	0.262	0.307			
Sulphate, Total potential	<0.06 %	TM132	0.567		0.555	0.375	0.786	0.921			
Soil Organic Matter (SOM)	<0.35 %	TM132	1.3 #	4.86 #	3.09 #	4.29 #	0.771 #	3.28 #			
pH	1 pH Units	TM133	12.1 #	8.57 M	9.96 M	10.1 M	9.86 #	10.1 #			
Cyanide, Total	<1 mg/kg	TM153	<1 & #	<1 M	<1 M	<1 M	<1 #	<1 #			
Cyanide, Free	<1 mg/kg	TM153	<1 & #	<1 M	<1 M	<1 M	<1 #	<1 #			
Arsenic	<0.6 mg/kg	TM181	<6 #	8.8 M	8.51 M	<6 M	6.99 #	13.7 #			
Cadmium	<0.02 mg/kg	TM181	1.3 #	<0.2 M	1.68 M	1.62 M	<0.2 #	1.01 #			
Chromium	<0.9 mg/kg	TM181	359 #	26 M	<9 M	84.6 M	<9 #	<9 #			
Copper	<1.4 mg/kg	TM181	<14 #	14.9 M	17.4 M	<14 M	<14 #	23.3 #			
Iron	<1000 mg/kg	TM181	225000 #	159000 #	184000 #	193000 #	387000 #	212000 #			
Lead	<0.7 mg/kg	TM181	9.38 #	42.9 M	80.1 M	51.2 M	<7 #	42 #			
Manganese	<0.13 mg/kg	TM181	40600 #	13300 M	11600 M	12300 M	3130 #	10500 #			
Mercury	<0.14 mg/kg	TM181	<1.4 #	<1.4 M	<1.4 M	<1.4 M	<1.4 #	<1.4 #			
Nickel	<0.2 mg/kg	TM181	9.19 #	22 M	32.8 M	33.4 M	13.5 #	26.6 #			
Selenium	<1 mg/kg	TM181	<10 #	<10 #	<10 #	<10 #	<10 #	<10 #			
Vanadium	<0.2 mg/kg	TM181	1020 #	109 #	111 #	221 #	51.1 #	90.4 #			
Zinc	<1.9 mg/kg	TM181	<19 #	132 M	202 M	159 M	56.1 #	<190 #			
Sulphate, acid soluble (total)	<0.02 %	TM221	0.407		0.368	0.412	0.325	0.413			
Calcium	<21 mg/kg	TM224	316000		64800	116000	51200	49800			
Magnesium	<8 mg/kg	TM224	11800		8770	16100	8960	7810			
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243	0.046 #		0.317 M	0.141 M	0.257 #	0.471 #			

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

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

Component	LOD/Units	Method	Customer Sample Ref.	4C-E7	4C-E7	3C-E5-V	4C-E5-V	4C-E6-V	3C-F5
			Depth (m)	1.00 - 1.00	1.40 - 1.40	3.40 - 3.40	2.00 - 2.00	2.00 - 2.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018
			SDG Ref	181020-29	181020-29	181020-29	181020-29	181020-29	181020-29
			Lab Sample No.(s)	18569462	18569525	18569566	18569646	18569628	18569533
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		9.5	12	23	23	23	16
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 #	<12 M	154 M	166 M	81.7 M	<12 #
Phenol	<0.01 mg/kg	TM062 (S)		0.0111 #	0.0114 & M	<0.01 M	<0.01 & M	<0.01 M	<0.01 #
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 #	<0.01 & M	<0.01 M	<0.01 & M	<0.01 M	<0.01 #
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 #	<0.015 & M	<0.015 M	<0.015 & M	<0.015 M	<0.015 #
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 #	<0.035 & M	<0.035 M	<0.035 & M	<0.035 M	<0.035 #
Sulphur, Total	<0.02 %	TM132		0.196					0.109
Sulphate, Total potential	<0.06 %	TM132		0.588					0.327
Soil Organic Matter (SOM)	<0.35 %	TM132		1.63 #	1.24 #	1.26 #	1.08 #	1.1 #	5.02 #
pH	1 pH Units	TM133		10.5 #	10.9 M	9.1 M	7.82 M	8.23 M	8.14 #
Cyanide, Total	<1 mg/kg	TM153		<1 #	<1 M	<1 & M	<1 M	<1 & M	<1 #
Cyanide, Free	<1 mg/kg	TM153		<1 #	<1 M	<1 & M	<1 M	<1 & M	<1 #
Arsenic	<0.6 mg/kg	TM181		25.7 #	20.8 M	12.8 M	14.4 M	12.2 M	7.96 #
Cadmium	<0.02 mg/kg	TM181		1.25 #	<0.2 M	<0.02 M	<0.02 M	<0.02 M	0.902 #
Chromium	<0.9 mg/kg	TM181		<9 #	<9 M	30.9 M	34.6 M	30.8 M	39.3 #
Copper	<1.4 mg/kg	TM181		103 #	75.7 M	10.6 M	10.4 M	10 M	24.2 #
Iron	<1000 mg/kg	TM181		315000 #	395000 #	33900 #	43300 #	32200 #	21400 #
Lead	<0.7 mg/kg	TM181		98.4 #	50.7 M	20.9 M	29 M	23.4 M	50.3 #
Manganese	<0.13 mg/kg	TM181		6280 #	11300 M	892 M	315 M	735 M	3170 #
Mercury	<0.14 mg/kg	TM181		<1.4 #	<1.4 M	<0.14 M	<0.14 M	<0.14 M	<0.14 #
Nickel	<0.2 mg/kg	TM181		31.7 #	24.5 M	35.5 M	40.6 M	33.7 M	18.4 #
Selenium	<1 mg/kg	TM181		<10 #	<10 #	<1 #	<1 #	<1 #	1.18 #
Vanadium	<0.2 mg/kg	TM181		143 #	171 #	58.2 #	61.4 #	53.3 #	45.8 #
Zinc	<1.9 mg/kg	TM181		261 #	<190 M	91.7 M	123 M	102 M	181 #
Sulphate, acid soluble (total)	<0.02 %	TM221		0.433					0.0901
Calcium	<21 mg/kg	TM224		54800					114000
Magnesium	<8 mg/kg	TM224		5970					23400
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.205 #					0.0351 #

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

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

Component	LOD/Units	Method	Customer Sample Ref.	3C-F5	3C-F5	3C-F5-V	3C-G4	3C-G4	3C-G4
			Depth (m)	1.00 - 1.00	2.00 - 2.00	3.40 - 3.40	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018
			SDG Ref	181020-29	181020-29	181020-29	181020-29	181020-29	181020-29
			Lab Sample No.(s)	18569538	18569542	18569547	18569504	18569512	18569520
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		7.7	9.1	20	19	9.5	6.6
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 #	<12 M	154 M	<12 M	<12 M	<12 #
Phenol	<0.01 mg/kg	TM062 (S)		0.0108 #	0.066 & M	<0.01 M	<0.01 M	<0.01 & M	0.0107 #
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 #	0.022 & M	<0.01 M	<0.01 M	<0.01 & M	<0.01 #
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 #	<0.015 & M	<0.015 M	<0.015 M	<0.015 & M	<0.015 #
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 #	0.088 & M	<0.035 M	<0.035 M	<0.035 & M	<0.035 #
Sulphur, Total	<0.02 %	TM132		0.383				0.397	0.398
Sulphate, Total potential	<0.06 %	TM132		1.15				1.19	1.19
Soil Organic Matter (SOM)	<0.35 %	TM132		4.57 #	11.3 #	1.09 #	2.69 #	50.3 #	11 #
pH	1 pH Units	TM133		12.8 #	13 M	8.42 M	8.42 M	11.7 M	12.9 #
Cyanide, Total	<1 mg/kg	TM153		1.21 #	2.96 M	<1 M	<1 M	1.13 M	<1 #
Cyanide, Free	<1 mg/kg	TM153		<1 #	<1 M	<1 M	<1 M	<1 M	<1 #
Arsenic	<0.6 mg/kg	TM181		7.96 #	<6 M	13.5 M	12.7 M	<6 M	<6 #
Cadmium	<0.02 mg/kg	TM181		0.89 #	<0.2 M	<0.02 M	0.201 M	0.67 M	<0.2 #
Chromium	<0.9 mg/kg	TM181		592 #	430 M	34.6 M	28.7 M	166 M	680 #
Copper	<1.4 mg/kg	TM181		28.8 #	28.3 M	9.84 M	15.4 M	<14 M	17.9 #
Iron	<1000 mg/kg	TM181		163000 #	149000 #	31200 #	23800 #	57200 #	144000 #
Lead	<0.7 mg/kg	TM181		36 #	39.8 M	21.3 M	49.4 M	23.1 M	7.14 #
Manganese	<0.13 mg/kg	TM181		31300 #	26300 M	657 M	784 M	15600 M	35900 #
Mercury	<0.14 mg/kg	TM181		<1.4 #	<1.4 M	<0.14 M	<0.14 M	<1.4 M	<1.4 #
Nickel	<0.2 mg/kg	TM181		26.5 #	31.8 M	33.7 M	31.6 M	7.27 M	11.6 #
Selenium	<1 mg/kg	TM181		10 #	17.6 #	<1 #	<1 #	<10 #	18.1 #
Vanadium	<0.2 mg/kg	TM181		970 #	880 #	60.4 #	50.8 #	194 #	578 #
Zinc	<1.9 mg/kg	TM181		<190 #	118 M	86.3 M	153 M	24.8 M	37.5 #
Sulphate, acid soluble (total)	<0.02 %	TM221		0.597				0.334	0.456
Calcium	<21 mg/kg	TM224		191000				111000	237000
Magnesium	<8 mg/kg	TM224		9860				15600	9810
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.0276 #				0.0868 M	0.0236 #

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

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

Component	LOD/Units	Method	Customer Sample Ref.	3C-G5	3C-G5	3C-G5	4C-G8	4C-G8	3C-G4-V
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.50 - 0.50	1.00 - 1.00	3.10 - 3.10
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018
			SDG Ref	181020-29	181020-29	181020-29	181020-29	181020-29	181020-29
			Lab Sample No.(s)	18569447	18569451	18569455	18569415	18569420	18569529
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		6.6	5	6.9	10	11	21
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	164 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0214 M	0.021 M	0.0215 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		0.0107 M	0.0105 M	0.0108 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.214		0.191	0.218	0.146	
Sulphate, Total potential	<0.06 %	TM132		0.642		0.573	0.654	0.438	
Soil Organic Matter (SOM)	<0.35 %	TM132		2.93 #	20.2 #	7.05 #	3.62 #	4.76 #	1.09 ♦ #
pH	1 pH Units	TM133		12.3 M	12.9 M	12.6 M	11.8 M	9.55 M	8.93 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	1.17 M	<1 M	<1 & M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 & M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		<6 M	<6 M	<6 M	7.92 M	12.1 M	12.6 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	<0.2 M	0.808 M	<0.02 M	1.74 M	0.204 M
Chromium	<0.9 mg/kg	TM181		537 M	743 M	760 M	38.3 M	46.4 M	44 M
Copper	<1.4 mg/kg	TM181		<14 M	16.5 M	<14 M	9.56 M	40.3 M	11.3 M
Iron	<1000 mg/kg	TM181		152000 #	165000 #	142000 #	87500 #	218000 #	25900 #
Lead	<0.7 mg/kg	TM181		11.8 M	25 M	13.3 M	14.7 M	91.1 M	34.5 M
Manganese	<0.13 mg/kg	TM181		31000 M	40700 M	47200 M	8620 M	9290 M	791 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<1.4 M	<1.4 M	<0.14 M	<1.4 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		8.47 M	7.75 M	9.41 M	11.2 M	28.4 M	36.1 M
Selenium	<1 mg/kg	TM181		11.9 #	22.6 #	13.3 #	2.08 #	<10 #	<1 #
Vanadium	<0.2 mg/kg	TM181		364 #	635 #	865 #	169 #	120 #	64.5 #
Zinc	<1.9 mg/kg	TM181		131 M	<190 M	50 M	60.7 M	151 M	129 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.305		0.445	0.537	0.371	
Calcium	<21 mg/kg	TM224		192000		238000	219000	94400	
Magnesium	<8 mg/kg	TM224		38100		22000	17600	10900	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.052 M		0.0222 M	0.237 M	0.199 M	

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

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

Component	LOD/Units	Method	Customer Sample Ref.	3C-G5-V	4C-G8-V	3C-I3	3C-I3	3C-J3	3C-J3
			Depth (m)	3.00 - 3.00	2.60 - 2.60	0.50 - 0.50	1.50 - 1.50	0.50 - 0.50	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018
			SDG Ref	181020-29	181020-29	181020-29	181020-29	181020-29	181020-29
			Lab Sample No.(s)	18569469	18569427	18569496	18569500	18569476	18569480
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		31	23	7.8	6.1	18	10
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	188 M	<12 #	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 #	<0.01 M	<0.01 & M	<0.01 & M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	0.0109 #	<0.01 M	0.0244 & M	0.0112 & M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 #	<0.015 M	<0.015 & M	<0.015 & M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 #	<0.035 M	<0.035 & M	<0.035 & M
Sulphur, Total	<0.02 %	TM132				0.461	0.0738		0.4
Sulphate, Total potential	<0.06 %	TM132				1.38	0.221		1.2
Soil Organic Matter (SOM)	<0.35 %	TM132		4.21 ♦ #	2 ♦ #	19 #	<0.35 & #	28.3 #	2.57 #
pH	1 pH Units	TM133		8.46 M	7.71 M	12.7 #	12.4 M	8.62 M	11.6 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 #	<1 & M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 #	<1 & M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		12.5 M	13.1 M	2.93 #	<6 M	8.18 M	<6 M
Cadmium	<0.02 mg/kg	TM181		0.363 M	0.332 M	<0.02 #	<0.2 M	<0.02 M	0.765 M
Chromium	<0.9 mg/kg	TM181		41.6 M	30.9 M	192 #	554 M	57 M	416 M
Copper	<1.4 mg/kg	TM181		20.4 M	13.6 M	3.28 #	<14 M	13.5 M	<14 M
Iron	<1000 mg/kg	TM181		25200 #	26800 #	98400 #	176000 #	79400 #	97800 #
Lead	<0.7 mg/kg	TM181		34.1 M	50 M	5.52 #	<7 M	48.3 M	19.3 M
Manganese	<0.13 mg/kg	TM181		590 M	498 M	20000 #	36900 M	4630 M	25900 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 #	<1.4 M	<0.14 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		30.2 M	40.6 M	4.3 #	10.4 M	13.8 M	12 M
Selenium	<1 mg/kg	TM181		<1 #	<1 #	5.24 #	13.1 #	1.99 #	<10 #
Vanadium	<0.2 mg/kg	TM181		61.8 #	59.8 #	198 #	394 #	185 #	284 #
Zinc	<1.9 mg/kg	TM181		123 M	187 M	55.2 #	67.4 M	203 M	62.9 M
Sulphate, acid soluble (total)	<0.02 %	TM221				0.491	0.19		0.912
Calcium	<21 mg/kg	TM224				182000	205000		219000
Magnesium	<8 mg/kg	TM224				34200	41100		32100
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243				0.0697 #	0.0099 M		0.15 M

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

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

Component	LOD/Units	Method	Customer Sample Ref.	3C-J3	3C-J3-V	4C-K2	4C-K2		
			Depth (m)	2.00 - 2.00	3.40 - 3.40	0.50 - 0.50	1.00 - 1.00		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	18/10/2018	18/10/2018	18/10/2018	18/10/2018		
			Sample Time	00:00	00:00	00:00	00:00		
			Date Received	20/10/2018	20/10/2018	20/10/2018	20/10/2018		
			SDG Ref	181020-29	181020-29	181020-29	181020-29		
			Lab Sample No.(s)	18569484	18569492	18569431	18569435		
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		6	29	11	7.4		
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	185 M	<12 M	<12 M		
Phenol	<0.01 mg/kg	TM062 (S)		0.0213 M	<0.01 M	<0.01 M	<0.01 M		
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M		
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M		
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M		
Sulphur, Total	<0.02 %	TM132		1.05		0.14			
Sulphate, Total potential	<0.06 %	TM132		3.15		0.42			
Soil Organic Matter (SOM)	<0.35 %	TM132		10.1 #	2.93 ♦ #	4.97 #	3.33 #		
pH	1 pH Units	TM133		10.8 M	8.49 M	11.4 M	11.2 M		
Cyanide, Total	<1 mg/kg	TM153		<1 & M	<1 M	<1 M	<1 M		
Cyanide, Free	<1 mg/kg	TM153		<1 & M	<1 M	<1 M	<1 M		
Arsenic	<0.6 mg/kg	TM181		2.12 M	12.9 M	9.24 M	5.93 M		
Cadmium	<0.02 mg/kg	TM181		<0.02 M	0.343 M	0.0834 M	0.144 M		
Chromium	<0.9 mg/kg	TM181		76.3 M	38.7 M	51.8 M	8.4 M		
Copper	<1.4 mg/kg	TM181		2.22 M	20.5 M	27.8 M	8.04 M		
Iron	<1000 mg/kg	TM181		33200 #	31400 #	63600 #	27900 #		
Lead	<0.7 mg/kg	TM181		5.54 M	45.1 M	71.3 M	55.5 M		
Manganese	<0.13 mg/kg	TM181		13600 M	998 M	3270 M	873 M		
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M		
Nickel	<0.2 mg/kg	TM181		1.96 M	34.3 M	20.2 M	9.13 M		
Selenium	<1 mg/kg	TM181		6.09 #	<1 #	<1 #	<1 #		
Vanadium	<0.2 mg/kg	TM181		94.6 #	71 #	64.7 #	21.3 #		
Zinc	<1.9 mg/kg	TM181		28.5 M	146 M	244 M	90 M		
Sulphate, acid soluble (total)	<0.02 %	TM221		0.795		0.267			
Calcium	<21 mg/kg	TM224		211000		181000			
Magnesium	<8 mg/kg	TM224		27200		12400			
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.144 M		0.167 M			
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304				<0.001 #			
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304				<0.001 #			
Additional Asbestos Components (Using TM048)		TM304				None #			
Analysts Comments		TM304				N/C			
Asbestos Quantification - Total - %	<0.001 %	TM304				<0.001 #			

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

PAH by GCMS

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

Component	LOD/Units	Method	Customer Sample Ref.	3C-B5	3C-B5	3C-B5-V	3C-C5	3C-C5	3C-D5
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.40 - 1.40	0.50 - 0.50	1.00 - 1.00	0.80 - 0.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018
			SDG Ref	181020-29	181020-29	181020-29	181020-29	181020-29	181020-29
			Lab Sample No.(s)	18569608	18569616	18569620	18569592	18569601	18569571
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		97.1	93.7	95.5	94.4	91.3	104
Acenaphthene-d10 % recovery**	%	TM218		91.8	90.5	96.1	93.6	92.2	103
Phenanthrene-d10 % recovery**	%	TM218		90.2	90.1	97	94.1	93.3	102
Chrysene-d12 % recovery**	%	TM218		85.6	87	93.1	87.2	87.6	92.4
Perylene-d12 % recovery**	%	TM218		96.4	90.9	91.5	75.6	89	92.9
Naphthalene	<0.009 mg/kg	TM218		11.9 M	0.498 #	<0.009 M	0.387 M	0.162 M	1.33 M
Acenaphthylene	<0.012 mg/kg	TM218		4.04 M	0.131 #	<0.012 M	0.535 M	0.194 M	4.02 M
Acenaphthene	<0.008 mg/kg	TM218		0.913 M	0.156 #	<0.008 M	0.0279 M	0.0958 M	0.101 M
Fluorene	<0.01 mg/kg	TM218		7.45 M	0.123 #	<0.01 M	0.238 M	0.101 M	0.59 M
Phenanthrene	<0.015 mg/kg	TM218		101 M	1.47 #	<0.015 M	1.8 M	1.17 M	5.31 M
Anthracene	<0.016 mg/kg	TM218		17.6 M	0.372 #	<0.016 M	0.531 M	0.375 M	2.83 M
Fluoranthene	<0.017 mg/kg	TM218		197 M	3.67 #	0.0282 M	4.37 M	3.65 M	27.8 M
Pyrene	<0.015 mg/kg	TM218		133 M	3.69 #	0.0262 M	3.23 M	3.34 M	21.7 M
Benz(a)anthracene	<0.014 mg/kg	TM218		63.6 M	2.85 #	0.0224 M	2.12 M	2.68 M	14.8 M
Chrysene	<0.01 mg/kg	TM218		58.9 M	3.22 #	0.0233 M	1.48 M	3.01 M	12.2 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		88.1 M	5.31 #	0.036 M	2.36 M	4.65 M	18.9 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		28.9 M	2.06 #	<0.014 M	1.01 M	1.94 M	6.95 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		58.7 M	3.76 #	0.0244 M	1.79 M	3.51 M	14.7 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		50.6 M	2.91 #	<0.018 M	1.18 M	2.3 M	9.99 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		10.2 M	0.648 #	<0.023 M	0.334 M	0.374 M	2.69 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		42.7 M	2.59 #	<0.024 M	1.3 M	2.48 M	10.5 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		875	33.5	0.161	22.7	30	154

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

PAH by GCMS

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

Component	LOD/Units	Method	Customer Sample Ref.	3C-D5	3C-D5-V	3C-E5	3C-E5	3C-E5	4C-E2
			Depth (m)	1.60 - 1.60	2.60 - 2.60	0.50 - 0.50	1.50 - 1.50	2.00 - 2.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018
			SDG Ref	181020-29	181020-29	181020-29	181020-29	181020-29	181020-29
			Lab Sample No.(s)	18569579	18569583	18569551	18569555	18569560	18569439
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		85.8	90.2	79.6	79.2	80.7	87.7
Acenaphthene-d10 % recovery**	%	TM218		89.7	93.4	91.7	84.9	88.2	91.3
Phenanthrene-d10 % recovery**	%	TM218		87.9	95.7	96.7	87.8	90.1	92.3
Chrysene-d12 % recovery**	%	TM218		91.9	86.3	78.5	78	81.2	85.4
Perylene-d12 % recovery**	%	TM218		87	79.1	71	77.9	70	75.1
Naphthalene	<0.009 mg/kg	TM218		<0.045 #	<0.009 M	0.03 M	0.0273 M	0.0493 M	0.106 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.06 #	<0.012 M	0.0144 M	<0.012 M	0.0162 M	0.0215 M
Acenaphthene	<0.008 mg/kg	TM218		<0.04 #	<0.008 M	0.0246 M	0.00874 M	<0.008 M	0.0371 M
Fluorene	<0.01 mg/kg	TM218		<0.05 #	<0.01 M	0.016 M	<0.01 M	<0.01 M	0.0473 M
Phenanthrene	<0.015 mg/kg	TM218		0.914 #	0.0422 M	0.184 M	0.241 M	0.194 M	0.389 M
Anthracene	<0.016 mg/kg	TM218		0.142 #	<0.016 M	0.0443 M	0.0173 M	0.039 M	0.139 M
Fluoranthene	<0.017 mg/kg	TM218		2.68 #	0.102 M	0.45 M	0.375 M	0.653 M	0.641 M
Pyrene	<0.015 mg/kg	TM218		3.87 #	0.087 M	0.448 M	0.299 M	0.514 M	0.659 M
Benz(a)anthracene	<0.014 mg/kg	TM218		2.57 #	0.0483 M	0.327 M	0.221 M	0.293 M	0.354 M
Chrysene	<0.01 mg/kg	TM218		3.08 #	0.0512 M	0.349 M	0.34 M	0.401 M	0.395 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		3.87 #	0.0553 M	0.572 M	0.49 M	0.347 M	0.472 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		1.59 #	0.0207 M	0.208 M	0.171 M	0.107 M	0.194 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		1.81 #	0.0366 M	0.493 M	0.245 M	0.235 M	0.28 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		1.27 #	<0.018 M	0.402 M	0.206 M	0.159 M	0.188 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.293 #	<0.023 M	0.0859 M	0.075 M	0.0275 M	0.038 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		1.69 #	<0.024 M	0.36 M	0.368 M	0.167 M	0.206 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		23.8	0.443	4.01	3.08	3.2	4.17

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

PAH by GCMS

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

Component	LOD/Units	Method	Customer Sample Ref.	4C-E2	4C-E5	4C-E5	4C-E6	4C-E6	4C-E7
			Depth (m)	0.70 - 0.70	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018
			SDG Ref	181020-29	181020-29	181020-29	181020-29	181020-29	181020-29
			Lab Sample No.(s)	18569443	18569632	18569636	18569575	18569624	18569400
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		81	84.9	82	96.9	84.6	82.8
Acenaphthene-d10 % recovery**	%	TM218		85.4	87.6	89.7	96.7	88.5	86.8
Phenanthrene-d10 % recovery**	%	TM218		86.7	95.7	92.7	99.5	93.4	90.7
Chrysene-d12 % recovery**	%	TM218		79	93.1	83.7	99	98.6	85.6
Perylene-d12 % recovery**	%	TM218		80.6	90.7	71.9	97.8	92.8	81.6
Naphthalene	<0.009 mg/kg	TM218		0.0103 #	0.262 M	0.15 M	0.193 M	0.0261 #	0.0211 #
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 #	0.131 M	0.0716 M	0.162 M	0.0191 #	<0.012 #
Acenaphthene	<0.008 mg/kg	TM218		0.0215 #	0.0346 M	0.014 M	0.0283 M	<0.008 #	0.0144 #
Fluorene	<0.01 mg/kg	TM218		<0.01 #	0.0771 M	0.036 M	0.0836 M	0.0144 #	0.0115 #
Phenanthrene	<0.015 mg/kg	TM218		0.206 #	0.768 M	0.445 M	0.644 M	0.0914 #	0.117 #
Anthracene	<0.016 mg/kg	TM218		0.037 #	0.22 M	0.106 M	0.191 M	0.0318 #	0.0227 #
Fluoranthene	<0.017 mg/kg	TM218		0.645 #	1.33 M	0.803 M	1.14 M	0.189 #	0.194 #
Pyrene	<0.015 mg/kg	TM218		0.604 #	1.07 M	0.626 M	1.01 M	0.207 #	0.154 #
Benz(a)anthracene	<0.014 mg/kg	TM218		0.359 #	0.776 M	0.357 M	0.675 M	0.114 #	0.0693 #
Chrysene	<0.01 mg/kg	TM218		0.369 #	0.645 M	0.42 M	0.632 M	0.124 #	0.0653 #
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.478 #	0.857 M	0.517 M	0.882 M	0.172 #	0.0819 #
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.188 #	0.291 M	0.17 M	0.291 M	0.0709 #	0.0287 #
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.474 #	0.67 M	0.262 M	0.626 M	0.0947 #	0.0503 #
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.356 #	0.749 M	0.245 M	0.387 M	0.0854 #	0.0511 #
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.05 #	0.11 M	0.0425 M	0.0996 M	<0.023 #	<0.023 #
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.426 #	0.493 M	0.246 M	0.473 M	0.0715 #	0.0428 #
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		4.22	8.49	4.51	7.52	1.31	0.923

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

PAH by GCMS

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

Component	LOD/Units	Method	Customer Sample Ref.	4C-E7	4C-E7	3C-E5-V	4C-E5-V	4C-E6-V	3C-F5
			Depth (m)	1.00 - 1.00	1.40 - 1.40	3.40 - 3.40	2.00 - 2.00	2.00 - 2.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018
			SDG Ref	181020-29	181020-29	181020-29	181020-29	181020-29	181020-29
			Lab Sample No.(s)	18569462	18569525	18569566	18569646	18569628	18569533
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		83.2	81.9	80.1	96.6	79.1	89.3
Acenaphthene-d10 % recovery**	%	TM218		89.5	88	91	95.9	83.1	93.8
Phenanthrene-d10 % recovery**	%	TM218		93	89.9	96.7	97.4	85.5	95.6
Chrysene-d12 % recovery**	%	TM218		86.5	84.9	79.1	101	81.1	100
Perylene-d12 % recovery**	%	TM218		74	87.7	74.1	96.9	77.6	83
Naphthalene	<0.009 mg/kg	TM218		0.0507 #	0.0236 M	<0.009 M	<0.009 M	<0.009 M	<0.045 #
Acenaphthylene	<0.012 mg/kg	TM218		0.0629 #	<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.06 #
Acenaphthene	<0.008 mg/kg	TM218		0.0532 #	0.0316 M	<0.008 M	<0.008 M	<0.008 M	<0.04 #
Fluorene	<0.01 mg/kg	TM218		0.0582 #	0.0184 M	<0.01 M	<0.01 M	<0.01 M	<0.05 #
Phenanthrene	<0.015 mg/kg	TM218		0.739 #	0.222 M	0.188 M	<0.015 M	<0.015 M	<0.075 #
Anthracene	<0.016 mg/kg	TM218		0.112 #	0.0354 M	0.0249 M	<0.016 M	<0.016 M	<0.08 #
Fluoranthene	<0.017 mg/kg	TM218		1.16 #	0.372 M	0.206 M	<0.017 M	<0.017 M	0.334 #
Pyrene	<0.015 mg/kg	TM218		0.8 #	0.284 M	0.146 M	<0.015 M	<0.015 M	0.275 #
Benz(a)anthracene	<0.014 mg/kg	TM218		0.508 #	0.0956 M	0.0626 M	<0.014 M	<0.014 M	0.192 #
Chrysene	<0.01 mg/kg	TM218		0.453 #	0.103 M	0.0795 M	<0.01 M	<0.01 M	0.239 #
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.542 #	0.0964 M	0.101 M	<0.015 M	<0.015 M	0.208 #
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.188 #	0.0408 M	0.0386 M	<0.014 M	<0.014 M	<0.07 #
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.298 #	0.0726 M	0.0384 M	<0.015 M	<0.015 M	0.134 #
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.201 #	0.0662 M	0.0521 M	<0.018 M	<0.018 M	<0.09 #
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.0475 #	<0.023 M	<0.023 M	<0.023 M	<0.023 M	<0.115 #
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.204 #	0.075 M	0.0449 M	<0.024 M	<0.024 M	<0.12 #
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		5.47	1.54	0.982	<0.118	<0.118	1.38

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

PAH by GCMS

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

Component	LOD/Units	Method	Customer Sample Ref.	3C-F5	3C-F5	3C-F5-V	3C-G4	3C-G4	3C-G4
			Depth (m)	1.00 - 1.00	2.00 - 2.00	3.40 - 3.40	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018
			SDG Ref	181020-29	181020-29	181020-29	181020-29	181020-29	181020-29
			Lab Sample No.(s)	18569538	18569542	18569547	18569504	18569512	18569520
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		88.9	82.7	84.9	86.5	93.1	83.5
Acenaphthene-d10 % recovery**	%	TM218		90.5	87.4	86.1	84.5	96.4	92.1
Phenanthrene-d10 % recovery**	%	TM218		93.3	94.8	85.4	86.9	94.4	91.3
Chrysene-d12 % recovery**	%	TM218		87.6	98.3	83	80	76.2	85.5
Perylene-d12 % recovery**	%	TM218		99.1	92.8	80.3	81.3	66.7	73.8
Naphthalene	<0.009 mg/kg	TM218		0.231 #	0.301 M	<0.009 M	<0.009 M	0.782 M	0.292 #
Acenaphthylene	<0.012 mg/kg	TM218		0.1 #	0.411 M	<0.012 M	<0.012 M	0.289 M	0.0566 #
Acenaphthene	<0.008 mg/kg	TM218		0.107 #	0.163 M	<0.008 M	<0.008 M	0.0412 M	0.0774 #
Fluorene	<0.01 mg/kg	TM218		0.0611 #	0.107 M	<0.01 M	<0.01 M	0.429 M	0.0715 #
Phenanthrene	<0.015 mg/kg	TM218		5.58 #	18.1 M	<0.015 M	0.0632 M	1.98 M	7.44 #
Anthracene	<0.016 mg/kg	TM218		0.329 #	2.41 M	<0.016 M	<0.016 M	0.665 M	0.179 #
Fluoranthene	<0.017 mg/kg	TM218		6.74 #	21.6 M	0.0308 M	0.179 M	3.86 M	4.96 #
Pyrene	<0.015 mg/kg	TM218		5.76 #	17.2 M	0.0263 M	0.129 M	2.95 M	3.4 #
Benz(a)anthracene	<0.014 mg/kg	TM218		3.56 #	8.61 M	0.0186 M	0.0252 M	1.78 M	1.48 #
Chrysene	<0.01 mg/kg	TM218		4.05 #	8.94 M	0.0202 M	0.0268 M	1.72 M	1.9 #
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		6.68 #	11.1 M	0.0264 M	0.0296 M	2.74 M	1.94 #
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		2.87 #	5.93 M	<0.014 M	<0.014 M	0.991 M	0.726 #
Benzo(a)pyrene	<0.015 mg/kg	TM218		4.42 #	6.52 M	0.0197 M	0.0226 M	1.48 M	1.1 #
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		4.42 #	5.65 M	<0.018 M	<0.018 M	1.26 M	0.874 #
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.872 #	1.22 M	<0.023 M	<0.023 M	0.279 M	0.157 #
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		3.66 #	4.76 M	<0.024 M	<0.024 M	0.92 M	0.887 #
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		49.4	113	0.142	0.475	22.2	25.5

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

PAH by GCMS

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

Component	LOD/Units	Method	Customer Sample Ref.	3C-G5	3C-G5	3C-G5	4C-G8	4C-G8	3C-G4-V
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.50 - 0.50	1.00 - 1.00	3.10 - 3.10
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018
			SDG Ref	181020-29	181020-29	181020-29	181020-29	181020-29	181020-29
			Lab Sample No.(s)	18569447	18569451	18569455	18569415	18569420	18569529
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		80.4	77.8	80	83.7	77.2	91.5
Acenaphthene-d10 % recovery**	%	TM218		84.8	85.1	84.5	88	83	90.7
Phenanthrene-d10 % recovery**	%	TM218		86.2	87.6	87.1	90.3	85.8	88.4
Chrysene-d12 % recovery**	%	TM218		88.8	72.8	76	88.1	78.2	85.1
Perylene-d12 % recovery**	%	TM218		80.2	73.4	77.5	76.3	76.7	78.9
Naphthalene	<0.009 mg/kg	TM218		0.727 M	1.62 M	0.512 M	0.205 M	0.111 M	<0.009 M
Acenaphthylene	<0.012 mg/kg	TM218		0.307 M	1.56 M	0.364 M	0.125 M	<0.06 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		0.0265 M	0.156 M	0.162 M	<0.04 M	<0.04 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		0.62 M	1.95 M	0.32 M	0.088 M	<0.05 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		3.51 M	8.02 M	3.01 M	0.791 M	0.359 M	0.136 M
Anthracene	<0.016 mg/kg	TM218		1.24 M	2.51 M	0.414 M	0.231 M	0.13 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		5.21 M	10.1 M	3.39 M	1.72 M	0.802 M	0.179 M
Pyrene	<0.015 mg/kg	TM218		3.51 M	7.19 M	2.52 M	1.54 M	0.778 M	0.142 M
Benz(a)anthracene	<0.014 mg/kg	TM218		1.89 M	3.8 M	1.34 M	0.889 M	0.406 M	0.0961 M
Chrysene	<0.01 mg/kg	TM218		2.07 M	3.51 M	1.22 M	1.01 M	0.374 M	0.106 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		2.24 M	4.29 M	1.59 M	1.24 M	0.517 M	0.11 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.919 M	1.75 M	0.645 M	0.418 M	0.185 M	0.0496 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		1.43 M	3.65 M	1.18 M	0.703 M	0.392 M	0.0739 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		1 M	2.9 M	0.847 M	0.479 M	0.355 M	0.0466 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.226 M	0.472 M	0.149 M	<0.115 M	<0.115 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.746 M	2.59 M	0.828 M	0.578 M	0.338 M	0.0562 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		25.7	56	18.5	10	4.75	0.997

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

PAH by GCMS

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

Component	LOD/Units	Method	Customer Sample Ref.	3C-G5-V	4C-G8-V	3C-I3	3C-I3	3C-J3	3C-J3
			Depth (m)	3.00 - 3.00	2.60 - 2.60	0.50 - 0.50	1.50 - 1.50	0.50 - 0.50	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018
			SDG Ref	181020-29	181020-29	181020-29	181020-29	181020-29	181020-29
			Lab Sample No.(s)	18569469	18569427	18569496	18569500	18569476	18569480
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		90.7	88.8	97.9	79.8	91.6	96.7
Acenaphthene-d10 % recovery**	%	TM218		89.8	92.1	92	83.2	96.5	96.1
Phenanthrene-d10 % recovery**	%	TM218		89.2	92.1	85	86.5	96.4	94.1
Chrysene-d12 % recovery**	%	TM218		87.1	88.4	80.1	83.1	93	92.5
Perylene-d12 % recovery**	%	TM218		82.7	83.6	82.9	73.4	78.5	85.6
Naphthalene	<0.009 mg/kg	TM218		<0.009 M	<0.009 M	10 #	0.205 M	2.99 M	1.67 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.012 M	<0.24 #	0.0449 M	0.616 M	0.423 M
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	<0.008 M	3.6 #	<0.008 M	0.0925 M	0.0612 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	<0.01 M	1.65 #	0.0137 M	0.436 M	0.269 M
Phenanthrene	<0.015 mg/kg	TM218		0.067 M	<0.015 M	6.37 #	0.377 M	2.99 M	2.73 M
Anthracene	<0.016 mg/kg	TM218		<0.016 M	<0.016 M	0.927 #	0.0749 M	0.659 M	0.69 M
Fluoranthene	<0.017 mg/kg	TM218		0.0781 M	<0.017 M	2.41 #	0.494 M	2.96 M	3.67 M
Pyrene	<0.015 mg/kg	TM218		0.0656 M	<0.015 M	1.55 #	0.393 M	2.11 M	2.67 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.0477 M	<0.014 M	0.36 #	0.204 M	1.35 M	1.61 M
Chrysene	<0.01 mg/kg	TM218		0.0494 M	<0.01 M	0.39 #	0.26 M	1.46 M	1.36 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.0387 M	<0.015 M	0.391 #	0.266 M	1.8 M	1.5 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 M	<0.014 M	<0.28 #	0.0946 M	0.612 M	0.609 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.0271 M	<0.015 M	<0.3 #	0.168 M	0.89 M	1.16 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		<0.018 M	<0.018 M	<0.36 #	0.129 M	0.712 M	0.706 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	<0.023 M	<0.46 #	0.029 M	0.149 M	0.197 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 M	<0.024 M	<0.48 #	0.115 M	0.628 M	0.82 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		0.374	<0.118	27.7	2.87	20.4	20.1

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

PAH by GCMS

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

Component	LOD/Units	Method	Customer Sample Ref.	3C-J3	3C-J3-V	4C-K2	4C-K2		
			Depth (m)	2.00 - 2.00	3.40 - 3.40	0.50 - 0.50	1.00 - 1.00		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	18/10/2018	18/10/2018	18/10/2018	18/10/2018		
			Sample Time	00:00	00:00	00:00	00:00		
			Date Received	20/10/2018	20/10/2018	20/10/2018	20/10/2018		
			SDG Ref	181020-29	181020-29	181020-29	181020-29		
			Lab Sample No.(s)	18569484	18569492	18569431	18569435		
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		90.5	94.9	83.9	85.6		
Acenaphthene-d10 % recovery**	%	TM218		97.2	95.1	88.7	89.9		
Phenanthrene-d10 % recovery**	%	TM218		96.8	94.7	90.7	89.5		
Chrysene-d12 % recovery**	%	TM218		94.8	92.2	83.9	82.9		
Perylene-d12 % recovery**	%	TM218		86.9	90.1	70.7	83.6		
Naphthalene	<0.009 mg/kg	TM218		1.03 M	<0.009 M	0.378 M	0.0957 M		
Acenaphthylene	<0.012 mg/kg	TM218		0.279 M	<0.012 M	0.114 M	0.0392 M		
Acenaphthene	<0.008 mg/kg	TM218		0.0735 M	<0.008 M	0.0213 M	0.00876 M		
Fluorene	<0.01 mg/kg	TM218		0.315 M	<0.01 M	0.0461 M	0.02 M		
Phenanthrene	<0.015 mg/kg	TM218		2.59 M	0.0572 M	0.491 M	0.206 M		
Anthracene	<0.016 mg/kg	TM218		0.564 M	<0.016 M	0.123 M	0.0539 M		
Fluoranthene	<0.017 mg/kg	TM218		3.35 M	0.0702 M	0.883 M	0.423 M		
Pyrene	<0.015 mg/kg	TM218		2.51 M	0.0543 M	0.74 M	0.336 M		
Benz(a)anthracene	<0.014 mg/kg	TM218		1.39 M	0.033 M	0.52 M	0.203 M		
Chrysene	<0.01 mg/kg	TM218		1.5 M	0.0375 M	0.635 M	0.194 M		
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		1.83 M	0.0449 M	0.863 M	0.218 M		
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.651 M	<0.014 M	0.289 M	0.107 M		
Benzo(a)pyrene	<0.015 mg/kg	TM218		1.15 M	0.0298 M	0.458 M	0.193 M		
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.695 M	<0.018 M	0.404 M	0.158 M		
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.144 M	<0.023 M	0.0798 M	0.0311 M		
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.766 M	<0.024 M	0.434 M	0.193 M		
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		18.8	0.327	6.48	2.48		

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

TPH CWG (S)

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

Component	LOD/Units	Method	Customer Sample Ref.	3C-B5	3C-B5	3C-B5-V	3C-C5	3C-C5	3C-D5
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.40 - 1.40	0.50 - 0.50	1.00 - 1.00	0.80 - 0.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018
			SDG Ref	181020-29	181020-29	181020-29	181020-29	181020-29	181020-29
			Lab Sample No.(s)	18569608	18569616	18569620	18569592	18569601	18569571
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		73	71 &	103	57 &	90.4	83
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 M	<0.2 & #	<0.2 M	<0.2 & #	<0.2 M	<0.2 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	<0.02 &	<0.02	<0.02 &	<0.02	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02	<0.02 &	<0.02	<0.02 &	<0.02	<0.02
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02	<0.02 &	<0.02	<0.02 &	<0.02	<0.02
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02	<0.02 &	<0.02	<0.02 &	<0.02	<0.02
Aliphatics >C12-C16	<0.1 mg/kg	TM173		1.75	1.66	<0.1	2.83	2.82	1.07
Aliphatics >C16-C21	<0.1 mg/kg	TM173		8.01	12.3	<0.1	11.7	12.1	7
Aliphatics >C21-C35	<0.1 mg/kg	TM173		44.1	82.4	<0.1	53.1	87.3	24.7
Aliphatics >C35-C44	<0.1 mg/kg	TM173		18.2	31.3	<0.1	11.8	35.4	10.6
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		72.1	128	<0.1	79.5	137	43.3
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	<0.02 &	<0.02	<0.02 &	<0.02	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	<0.02 &	<0.02	<0.02 &	<0.02	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02	<0.02 &	<0.02	<0.02 &	<0.02	<0.02
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02	<0.02 &	<0.02	<0.02 &	<0.02	<0.02
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		13.2	2.54	<0.1	3.92	1.73	2.64
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		307	22.7	<0.1	37.4	14.2	30.9
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		634	133	6.66	111	106	122
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		175	47.7	0.702	26.5	44.6	43.8
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		53	15.9	<0.1	7.91	17.4	14.8
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		1130	206	7.37	179	167	200
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		1200	333	7.37	259	305	243

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

TPH CWG (S)

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

Component	LOD/Units	Method	Customer Sample Ref.	3C-D5	3C-D5-V	3C-E5	3C-E5	3C-E5	4C-E2
			Depth (m)	1.60 - 1.60	2.60 - 2.60	0.50 - 0.50	1.50 - 1.50	2.00 - 2.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018
			SDG Ref	181020-29	181020-29	181020-29	181020-29	181020-29	181020-29
			Lab Sample No.(s)	18569579	18569583	18569551	18569555	18569560	18569439
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		97	141 &	101	104	95	75 &
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 #	<0.2 & #	<0.2 M	<0.2 M	<0.2 M	<0.2 & M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	<0.02 &	<0.02	<0.02	<0.02	<0.02 &
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02	0.0224 &	<0.02	<0.02	<0.02	<0.02 &
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02	0.0251 &	<0.02	<0.02	<0.02	<0.02 &
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02	<0.02 &	<0.02	<0.02	<0.02	<0.02 &
Aliphatics >C12-C16	<0.1 mg/kg	TM173		16.7	<0.1	<0.1	<0.1	<0.1	2.01
Aliphatics >C16-C21	<0.1 mg/kg	TM173		19.3	<0.1	1.35	<0.1	<0.1	11.3
Aliphatics >C21-C35	<0.1 mg/kg	TM173		86.5	<0.1	16.5	<0.1	2.42	98
Aliphatics >C35-C44	<0.1 mg/kg	TM173		180	<0.1	8.17	<0.1	<0.1	49.4
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		303	<0.1	26	<0.1	2.42	161
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	<0.02 &	<0.02	<0.02	<0.02	<0.02 &
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	<0.02 &	<0.02	<0.02	<0.02	<0.02 &
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02	<0.02 &	<0.02	<0.02	<0.02	<0.02 &
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02	<0.02 &	<0.02	<0.02	<0.02	<0.02 &
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		5.31	<0.1	<0.1	<0.1	<0.1	1.62
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		21	<0.1	1.33	1.75	<0.1	8.37
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		131	3.72	29.3	12.5	1.44	64.5
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		219	4.04	19	6.23	<0.1	38.9
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		109	1.92	7.78	2.67	<0.1	15.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		376	7.76	49.6	20.5	1.44	113
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		679	7.76	75.6	20.5	3.86	274

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

TPH CWG (S)

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

Component	LOD/Units	Method	Customer Sample Ref.	4C-E2	4C-E5	4C-E5	4C-E6	4C-E6	4C-E7
			Depth (m)	0.70 - 0.70	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018
			SDG Ref	181020-29	181020-29	181020-29	181020-29	181020-29	181020-29
			Lab Sample No.(s)	18569443	18569632	18569636	18569575	18569624	18569400
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		100	73 &	92.2	106	112	109
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 #	<0.2 & M	<0.2 M	<0.2 M	<0.2 #	<0.2 #
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	<0.02 &	<0.02	<0.02	<0.02	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02	<0.02 &	<0.02	<0.02	<0.02	<0.02
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02	<0.02 &	<0.02	<0.02	<0.02	<0.02
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02	<0.02 &	<0.02	<0.02	<0.02	<0.02
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	<0.1	3.12	1.77	0.308	2.09
Aliphatics >C16-C21	<0.1 mg/kg	TM173		2.03	8.31	13.6	12.2	4.24	5.48
Aliphatics >C21-C35	<0.1 mg/kg	TM173		9.43	78.7	75.4	54.5	23.6	20.5
Aliphatics >C35-C44	<0.1 mg/kg	TM173		0.812	25.1	22.5	22.3	10	5.63
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		12.3	112	115	90.7	38.2	33.7
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	<0.02 &	<0.02	<0.02	<0.02	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	<0.02 &	<0.02	<0.02	<0.02	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02	<0.02 &	<0.02	<0.02	<0.02	<0.02
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02	<0.02 &	<0.02	<0.02	<0.02	<0.02
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	2	1.1	1.32	<0.1	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		4.51	11.7	5.39	12.1	0.248	2.05
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		43.6	71.4	41	50.1	0.371	15.2
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		13.2	41.9	23.8	25.3	0.242	3.42
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		4.56	16	9.43	10.2	0.111	0.909
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		61.3	127	71.3	88.8	0.86	20.7
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		73.6	239	186	180	39.1	54.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

TPH CWG (S)

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

Component	LOD/Units	Method	Customer Sample Ref.	4C-E7	4C-E7	3C-E5-V	4C-E5-V	4C-E6-V	3C-F5
			Depth (m)	1.00 - 1.00	1.40 - 1.40	3.40 - 3.40	2.00 - 2.00	2.00 - 2.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018
			SDG Ref	181020-29	181020-29	181020-29	181020-29	181020-29	181020-29
			Lab Sample No.(s)	18569462	18569525	18569566	18569646	18569628	18569533
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		91 &	107	125 &	90 &	94 &	91.3
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 & #	<0.2 M	<0.2 & M	<0.2 & M	<0.2 & M	<0.2 #
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02 &	<0.02	<0.02 &	<0.02 &	<0.02 &	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02 &	<0.02	<0.02 &	<0.02 &	<0.02 &	<0.02
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02 &	<0.02	<0.02 &	<0.02 &	<0.02 &	<0.02
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02 &	<0.02	<0.02 &	<0.02 &	<0.02 &	<0.02
Aliphatics >C12-C16	<0.1 mg/kg	TM173		0.982	2.47	<0.1	<0.1	<0.1	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		4.31	6.53	<0.1	<0.1	<0.1	<0.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		27.9	48.3	<0.1	<0.1	1.84	30.7
Aliphatics >C35-C44	<0.1 mg/kg	TM173		9.4	17.9	<0.1	<0.1	3.21	17.9
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		42.6	75.2	<0.1	<0.1	5.05	48.6
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02 &	<0.02	<0.02 &	<0.02 &	<0.02 &	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02 &	<0.02	<0.02 &	<0.02 &	<0.02 &	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02 &	<0.02	<0.02 &	<0.02 &	<0.02 &	<0.02
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02 &	<0.02	<0.02 &	<0.02 &	<0.02 &	<0.02
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	0.762	<0.1	<0.1	<0.1	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		<0.1	3.1	<0.1	<0.1	<0.1	2.78
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		4.51	21	1.68	2.55	1.2	47
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		0.614	11.2	<0.1	0.426	0.676	47.9
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		<0.1	4.12	<0.1	<0.1	<0.1	21.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		5.13	36.1	1.68	2.97	1.87	97.7
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		47.7	111	1.68	2.97	6.92	146

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

TPH CWG (S)

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

Component	LOD/Units	Method	Customer Sample Ref.	3C-F5	3C-F5	3C-F5-V	3C-G4	3C-G4	3C-G4
			Depth (m)	1.00 - 1.00	2.00 - 2.00	3.40 - 3.40	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018
			SDG Ref	181020-29	181020-29	181020-29	181020-29	181020-29	181020-29
			Lab Sample No.(s)	18569538	18569542	18569547	18569504	18569512	18569520
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		94	73	120	123	17 &	87.3
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 #	<0.2 M	<0.2 M	<0.2 M	0.506 & #	<0.2 #
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	0.0451 &	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	0.157 &	<0.02
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	0.0748 &	<0.02
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	0.0693 &	<0.02
Aliphatics >C12-C16	<0.1 mg/kg	TM173		5.15	4.79	<0.1	<0.1	12.3	6.19
Aliphatics >C16-C21	<0.1 mg/kg	TM173		10.1	13.2	<0.1	<0.1	23.4	13.7
Aliphatics >C21-C35	<0.1 mg/kg	TM173		50.7	57.2	<0.1	2.53	61	106
Aliphatics >C35-C44	<0.1 mg/kg	TM173		11.7	14.2	<0.1	0.646	11.2	56.6
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		77.6	89.4	<0.1	3.17	108	182
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	0.0209 &	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	0.0418 &	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	0.0506 &	<0.02
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	0.0462 &	<0.02
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		2.84	5.53	<0.1	<0.1	9.52	5.2
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		33	74.4	<0.1	<0.1	25.2	24.8
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		148	167	3.28	3.7	66.7	107
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		53.6	56.2	<0.1	<0.1	16.5	58.4
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		20.1	20.7	<0.1	2.5	4.58	21.7
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		237	303	3.28	3.7	118	195
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		315	393	3.28	6.87	226	377

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

TPH CWG (S)

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

Component	LOD/Units	Method	Customer Sample Ref.	3C-G5	3C-G5	3C-G5	4C-G8	4C-G8	3C-G4-V
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.50 - 0.50	1.00 - 1.00	3.10 - 3.10
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018
			SDG Ref	181020-29	181020-29	181020-29	181020-29	181020-29	181020-29
			Lab Sample No.(s)	18569447	18569451	18569455	18569415	18569420	18569529
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		20.1 &	50.4	54 &	96	89 &	106
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		0.315 & #	0.123 #	0.342 & #	<0.2 M	<0.2 & M	<0.2 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		0.0203 &	<0.01	0.0366 &	<0.02	<0.02 &	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.0857 &	0.0337	0.071 &	<0.02	<0.02 &	<0.02
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.0568 &	0.021	0.0548 &	<0.02	<0.02 &	<0.02
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.0482 &	0.0168	0.0688 &	<0.02	<0.02 &	<0.02
Aliphatics >C12-C16	<0.1 mg/kg	TM173		6.54	12.2	5.54	4.48	3.53	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		10.4	53	22.6	23.7	22.6	0.767
Aliphatics >C21-C35	<0.1 mg/kg	TM173		55.3	82.3	108	175	182	9.78
Aliphatics >C35-C44	<0.1 mg/kg	TM173		4.12	16.8	46.1	42.5	55.3	4.57
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		76.3	164	182	245	264	15.1
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02 &	<0.01	<0.02 &	<0.02	<0.02 &	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		0.0257 &	0.0126	0.0215 &	<0.02	<0.02 &	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.0375 &	0.0147	0.0366 &	<0.02	<0.02 &	<0.02
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		0.0321 &	0.0116	0.0462 &	<0.02	<0.02 &	<0.02
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		6.51	11.7	6.5	3.03	2.22	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		20.3	73.3	31.6	15	11.4	1.6
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		48.1	157	112	92.9	110	9.84
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		12.8	37.3	52.4	53.7	87	5.11
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		4.38	11.2	19.4	22.7	37.8	2.03
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		87.8	279	202	165	211	16.6
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		164	444	385	410	474	31.7

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

TPH CWG (S)

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

Component	LOD/Units	Method	Customer Sample Ref.	3C-G5-V	4C-G8-V	3C-I3	3C-I3	3C-J3	3C-J3
			Depth (m)	3.00 - 3.00	2.60 - 2.60	0.50 - 0.50	1.50 - 1.50	0.50 - 0.50	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018
			SDG Ref	181020-29	181020-29	181020-29	181020-29	181020-29	181020-29
			Lab Sample No.(s)	18569469	18569427	18569496	18569500	18569476	18569480
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		103	116	70 &	92.3	44.9 &	70.7
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 M	<0.2 M	2.98 & #	<0.2 M	<0.2 & #	<0.1 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02 &	<0.02	<0.02 &	<0.01
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02	<0.02	0.0662 &	<0.02	<0.02 &	<0.01
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02	<0.02	0.403 &	<0.02	<0.02 &	<0.01
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02	<0.02	1.33 &	<0.02	<0.02 &	<0.01
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	<0.1	58.4	0.999	6.41	9.48
Aliphatics >C16-C21	<0.1 mg/kg	TM173		0.254	<0.1	23	7.6	11.1	33.6
Aliphatics >C21-C35	<0.1 mg/kg	TM173		9.83	<0.1	297	54.7	37.7	168
Aliphatics >C35-C44	<0.1 mg/kg	TM173		10.1	<0.1	261	13.7	4.93	81.4
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		20.2	<0.1	639	77	60.2	293
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02 &	<0.02	<0.02 &	<0.01
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02 &	<0.02	<0.02 &	<0.01
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02	<0.02	0.268 &	<0.02	<0.02 &	<0.01
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02	<0.02	0.888 &	<0.02	<0.02 &	<0.01
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		0.36	<0.1	21.2	0.765	9.8	6.32
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		1.55	<0.1	41.3	4.78	26.9	32.2
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		24.5	3.41	737	30	70.6	236
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		17.2	0.963	559	18.1	18.8	144
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		7.65	<0.1	250	7.92	8.9	61.7
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		43.6	4.37	1360	53.6	126	419
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		63.8	4.37	2000	131	186	711

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

TPH CWG (S)

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

Component	LOD/Units	Method	Customer Sample Ref.	3C-J3	3C-J3-V	4C-K2	4C-K2		
			Depth (m)	2.00 - 2.00	3.40 - 3.40	0.50 - 0.50	1.00 - 1.00		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	18/10/2018	18/10/2018	18/10/2018	18/10/2018		
			Sample Time	00:00	00:00	00:00	00:00		
			Date Received	20/10/2018	20/10/2018	20/10/2018	20/10/2018		
			SDG Ref	181020-29	181020-29	181020-29	181020-29		
			Lab Sample No.(s)	18569484	18569492	18569431	18569435		
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		73 &	77	88	107		
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 & M	<0.2 M	<0.2 M	<0.2 M		
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02 &	<0.02	<0.02	<0.02		
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02 &	<0.02	<0.02	<0.02		
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02 &	<0.02	<0.02	<0.02		
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02 &	<0.02	<0.02	<0.02		
Aliphatics >C12-C16	<0.1 mg/kg	TM173		3.43	<0.1	1.29	<0.1		
Aliphatics >C16-C21	<0.1 mg/kg	TM173		17	<0.1	11.3	1.65		
Aliphatics >C21-C35	<0.1 mg/kg	TM173		107	3.04	105	37.1		
Aliphatics >C35-C44	<0.1 mg/kg	TM173		46.5	<0.1	30.3	10.1		
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		173	3.04	148	48.9		
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02 &	<0.02	<0.02	<0.02		
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02 &	<0.02	<0.02	<0.02		
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02 &	<0.02	<0.02	<0.02		
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02 &	<0.02	<0.02	<0.02		
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		3.71	<0.1	<0.1	0.444		
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		20.7	<0.1	1.82	2.35		
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		116	1.6	22.3	20.4		
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		66.5	<0.1	3.1	12.5		
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		27.3	3	<0.1	7.68		
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		207	1.6	27.2	35.7		
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		380	4.64	175	84.5		

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

VOC MS (S)

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

Component	LOD/Units	Method	Customer Sample Ref.	3C-B5	3C-B5	3C-B5-V	3C-C5	3C-C5	3C-D5
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.40 - 1.40	0.50 - 0.50	1.00 - 1.00	0.80 - 0.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018
			SDG Ref	181020-29	181020-29	181020-29	181020-29	181020-29	181020-29
			Lab Sample No.(s)	18569608	18569616	18569620	18569592	18569601	18569571
			AGS Reference						
Dibromofluoromethane**	%	TM116		103	106	107	93	109	103
Toluene-d8**	%	TM116		96.2	94.4	99.8	91.8	95.9	96.2
4-Bromofluorobenzene**	%	TM116		85.1	84.9	92.7	75.9	91.6	82.6
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 #	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 #	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 #	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 #	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 #	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		0.214 M	0.151 & #	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

VOC MS (S)

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

Component	LOD/Units	Method	Customer Sample Ref.	3C-D5	3C-D5-V	3C-E5	3C-E5	3C-E5	4C-E2
			Depth (m)	1.60 - 1.60	2.60 - 2.60	0.50 - 0.50	1.50 - 1.50	2.00 - 2.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018
			SDG Ref	181020-29	181020-29	181020-29	181020-29	181020-29	181020-29
			Lab Sample No.(s)	18569579	18569583	18569551	18569555	18569560	18569439
			AGS Reference						
Dibromofluoromethane**	%	TM116		125	113	105	99.2	107	105 &
Toluene-d8**	%	TM116		93.8	99.8	99.1	97.2	99.6	97.5 &
4-Bromofluorobenzene**	%	TM116		79.6	99.8	90	92.9	94.3	81.9 &
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.01 #	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 & M
Benzene	<0.009 mg/kg	TM116		<0.009 #	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 & M
Toluene	<0.007 mg/kg	TM116		<0.007 #	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 & M
Ethylbenzene	<0.004 mg/kg	TM116		<0.004 #	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 & M
p/m-Xylene	<0.01 mg/kg	TM116		<0.01 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 & #
o-Xylene	<0.01 mg/kg	TM116		<0.01 #	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 & M
Naphthalene	<0.013 mg/kg	TM116		<0.013 #	<0.13 M	<0.13 M	<0.13 & M	<0.13 M	<0.13 & M
Sum of BTEX	<0.04 mg/kg	TM116		<0.04	<0.4	<0.4	<0.4	<0.4	<0.4 &

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

VOC MS (S)

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

Component	LOD/Units	Method	Customer Sample Ref.	Depth (m)	Sample Type	Date Sampled	Sample Time	Date Received	SDG Ref	Lab Sample No.(s)	AGS Reference
			4C-E2	0.70 - 0.70	Soil/Solid (S)	18/10/2018	00:00	20/10/2018	181020-29	18569443	
			4C-E5	0.50 - 0.50	Soil/Solid (S)	18/10/2018	00:00	20/10/2018	181020-29	18569632	
			4C-E5	1.00 - 1.00	Soil/Solid (S)	18/10/2018	00:00	20/10/2018	181020-29	18569636	
			4C-E6	0.50 - 0.50	Soil/Solid (S)	18/10/2018	00:00	20/10/2018	181020-29	18569575	
			4C-E6	1.00 - 1.00	Soil/Solid (S)	18/10/2018	00:00	20/10/2018	181020-29	18569624	
			4C-E7	0.50 - 0.50	Soil/Solid (S)	18/10/2018	00:00	20/10/2018	181020-29	18569400	
Dibromofluoromethane**	%	TM116	108	110							
					&						
			109	108	113	110					
Toluene-d8**	%	TM116	98.7	97.9							
					&						
			98.7	97.4	98.8	99.7					
4-Bromofluorobenzene**	%	TM116	95.7	84.1							
					&						
			97.2	93.6	99.8	99					
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116	<0.1	<0.1							
			#	& M							
			<0.1 M	<0.1 M	<0.1 #	<0.1 #					
Benzene	<0.009 mg/kg	TM116	<0.09	<0.09							
			#	& M							
			<0.09 M	<0.09 M	<0.09 #	<0.09 #					
Toluene	<0.007 mg/kg	TM116	<0.07	<0.07							
			#	& M							
			<0.07 M	<0.07 M	<0.07 #	<0.07 #					
Ethylbenzene	<0.004 mg/kg	TM116	<0.04	<0.04							
			#	& M							
			<0.04 M	<0.04 M	<0.04 #	<0.04 #					
p/m-Xylene	<0.01 mg/kg	TM116	<0.1	<0.1							
			#	& #							
			<0.1 #	<0.1 M	<0.1 #	<0.1 #					
o-Xylene	<0.01 mg/kg	TM116	<0.1	<0.1							
			#	& M							
			<0.1 M	<0.1 M	<0.1 #	<0.1 #					
Naphthalene	<0.013 mg/kg	TM116	<0.13	<0.13							
			& #	& M							
			<0.13 M	<0.13 M	<0.13 #	<0.13 #					
Sum of BTEX	<0.04 mg/kg	TM116	<0.4	<0.4							
				&							
			<0.4	<0.4	<0.4	<0.4					

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

VOC MS (S)

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

Component	LOD/Units	Method	Customer Sample Ref.	4C-E7	4C-E7	3C-E5-V	4C-E5-V	4C-E6-V	3C-F5
			Depth (m)	1.00 - 1.00	1.40 - 1.40	3.40 - 3.40	2.00 - 2.00	2.00 - 2.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018
			SDG Ref	181020-29	181020-29	181020-29	181020-29	181020-29	181020-29
			Lab Sample No.(s)	18569462	18569525	18569566	18569646	18569628	18569533
			AGS Reference						
Dibromofluoromethane**	%	TM116		110 &	111	111 &	175 &	129 &	113
Toluene-d8**	%	TM116		98.9 &	99	100 &	100 &	100 &	96.5
4-Bromofluorobenzene**	%	TM116		87.9 &	95.4	90.5 &	101 &	90.9 &	91.7
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 & #	<0.1 M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 #
Benzene	<0.009 mg/kg	TM116		<0.09 & #	<0.09 M	<0.09 & M	<0.09 & M	<0.09 & M	<0.09 #
Toluene	<0.007 mg/kg	TM116		<0.07 & #	<0.07 M	<0.07 & M	<0.07 & M	<0.07 & M	<0.07 #
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 & #	<0.04 M	<0.04 & M	<0.04 & M	<0.04 & M	<0.04 #
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 & #	<0.1 #	<0.1 & #	<0.1 & #	<0.1 & #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 & #	<0.1 M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 #
Naphthalene	<0.013 mg/kg	TM116		<0.13 & #	<0.13 M	<0.13 & M	<0.13 & M	<0.13 & M	<0.13 #
Sum of BTEX	<0.04 mg/kg	TM116		<0.4 &	<0.4	<0.4 &	<0.4 &	<0.4 &	<0.4

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

VOC MS (S)

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

Component	LOD/Units	Method	Customer Sample Ref.	3C-F5	3C-F5	3C-F5-V	3C-G4	3C-G4	3C-G4
			Depth (m)	1.00 - 1.00	2.00 - 2.00	3.40 - 3.40	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018
			SDG Ref	181020-29	181020-29	181020-29	181020-29	181020-29	181020-29
			Lab Sample No.(s)	18569538	18569542	18569547	18569504	18569512	18569520
			AGS Reference						
Dibromofluoromethane**	%	TM116		104	85.7	113	112	107 &	95.8
Toluene-d8**	%	TM116		98	95.1	99.2	100	101 &	97.2
4-Bromofluorobenzene**	%	TM116		96.2	87.4	98.7	99.3	101 &	93.8
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 #	<0.1 M	<0.1 M	<0.1 M	<2 & M	<0.1 #
Benzene	<0.009 mg/kg	TM116		<0.09 #	<0.09 M	<0.09 M	<0.09 M	<1.8 & M	<0.09 #
Toluene	<0.007 mg/kg	TM116		<0.07 #	<0.07 M	<0.07 M	<0.07 M	<1.4 & M	<0.07 #
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 #	<0.04 M	<0.04 M	<0.04 M	<0.8 & M	<0.04 #
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<2 & #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 M	<0.1 M	<0.1 M	<2 & M	<0.1 #
Naphthalene	<0.013 mg/kg	TM116		<0.13 #	<0.13 M	<0.13 M	<0.13 M	<2.6 & M	<0.13 #
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<8 &	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

VOC MS (S)

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

Component	LOD/Units	Method	Customer Sample Ref.	3C-G5	3C-G5	3C-G5	4C-G8	4C-G8	3C-G4-V
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.50 - 0.50	1.00 - 1.00	3.10 - 3.10
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018
			SDG Ref	181020-29	181020-29	181020-29	181020-29	181020-29	181020-29
			Lab Sample No.(s)	18569447	18569451	18569455	18569415	18569420	18569529
			AGS Reference						
Dibromofluoromethane**	%	TM116		99.8 &	99.6	99.4 &	109	112 &	112
Toluene-d8**	%	TM116		95.6 &	96.5	95.7 &	95.5	98.7 &	99.1
4-Bromofluorobenzene**	%	TM116		109 &	69.5	79.6 &	93.4	89.6 &	94.1
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<2 & M	<0.1 M	<0.1 & M	<0.1 M	<0.1 & M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<1.8 & M	<0.09 M	<0.09 & M	<0.09 M	<0.09 & M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<1.4 & M	0.11 M	<0.07 & M	<0.07 M	<0.07 & M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.8 & M	<0.04 M	<0.04 & M	<0.04 M	<0.04 & M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<2 & #	<0.1 #	<0.1 & #	<0.1 #	<0.1 & #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<2 & M	<0.1 M	<0.1 & M	<0.1 M	<0.1 & M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<2.6 & M	0.279 M	0.288 & M	<0.13 & M	<0.13 & M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<8 &	<0.4	<0.4 &	<0.4	<0.4 &	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

VOC MS (S)

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

Component	LOD/Units	Method	Customer Sample Ref.	3C-G5-V	4C-G8-V	3C-I3	3C-I3	3C-J3	3C-J3
			Depth (m)	3.00 - 3.00	2.60 - 2.60	0.50 - 0.50	1.50 - 1.50	0.50 - 0.50	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018
			SDG Ref	181020-29	181020-29	181020-29	181020-29	181020-29	181020-29
			Lab Sample No.(s)	18569469	18569427	18569496	18569500	18569476	18569480
			AGS Reference						
Dibromofluoromethane**	%	TM116		110	109	107 &	101	99.4 &	105
Toluene-d8**	%	TM116		99.5	100	98.2 &	96.1	96.5 &	98.1
4-Bromofluorobenzene**	%	TM116		95.7	93.1	84 &	91.6	111 &	70
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 & #	<0.1 M	<2 & M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 & #	<0.09 M	<1.8 & M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 & #	<0.07 M	<1.4 & M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 & #	<0.04 M	<0.8 & M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 & #	<0.1 #	<2 & #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 & #	<0.1 M	<2 & M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	2.25 & #	<0.13 M	<2.6 & M	0.506 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4 &	<0.4	<8 &	<0.4

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

VOC MS (S)

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

Component	LOD/Units	Method	Customer Sample Ref.	3C-J3	3C-J3-V	4C-K2	4C-K2		
			Depth (m)	2.00 - 2.00	3.40 - 3.40	0.50 - 0.50	1.00 - 1.00		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	18/10/2018	18/10/2018	18/10/2018	18/10/2018		
			Sample Time	00:00	00:00	00:00	00:00		
			Date Received	20/10/2018	20/10/2018	20/10/2018	20/10/2018		
			SDG Ref	181020-29	181020-29	181020-29	181020-29		
			Lab Sample No.(s)	18569484	18569492	18569431	18569435		
			AGS Reference						
Dibromofluoromethane**	%	TM116		107	104	110	110		
Toluene-d8**	%	TM116		92	98	92	98.5		
4-Bromofluorobenzene**	%	TM116		90.2	87.8	84.5	96.7		
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M		
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M		
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M		
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M		
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #		
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M		
Naphthalene	<0.013 mg/kg	TM116		0.265 & M	<0.13 M	<0.13 & M	<0.13 M		
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4		

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

Asbestos Identification - Solid Samples

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-B5 1.00 - 1.00 SOLID 18/10/2018 00:00:00 23/10/2018 11:43:30 181020-29 18569616 TM048	05/11/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-C5 1.00 - 1.00 SOLID 18/10/2018 00:00:00 23/10/2018 09:05:55 181020-29 18569601 TM048	05/11/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-D5 0.80 - 0.80 SOLID 18/10/2018 00:00:00 23/10/2018 20:28:20 181020-29 18569571 TM048	05/11/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-E5 1.50 - 1.50 SOLID 18/10/2018 00:00:00 23/10/2018 10:53:48 181020-29 18569555 TM048	05/11/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-E5 2.00 - 2.00 SOLID 18/10/2018 00:00:00 23/10/2018 08:51:49 181020-29 18569560 TM048	05/11/2018	Marcin Magdziarek	Soil containing ACM debris	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-E2 0.70 - 0.70 SOLID 18/10/2018 00:00:00 23/10/2018 10:39:14 181020-29 18569443 TM048	05/11/2018	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 181020-29 **Client Reference:** **Report Number:** 480661
Location: Llanwern **Order Number:** LLA492 **Superseded Report:** 479955

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-E5 1.00 - 1.00 SOLID 18/10/2018 00:00:00 23/10/2018 11:11:27 181020-29 18569636 TM048	05/11/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-E6 0.50 - 0.50 SOLID 18/10/2018 00:00:00 23/10/2018 11:20:40 181020-29 18569575 TM048	05/11/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-E6 1.00 - 1.00 SOLID 18/10/2018 00:00:00 23/10/2018 10:49:19 181020-29 18569624 TM048	05/11/2018	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-E7 0.50 - 0.50 SOLID 18/10/2018 00:00:00 23/10/2018 11:18:55 181020-29 18569400 TM048	05/11/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-E7 1.00 - 1.00 SOLID 18/10/2018 00:00:00 23/10/2018 11:22:03 181020-29 18569462 TM048	05/11/2018	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-F5 0.50 - 0.50 SOLID 18/10/2018 00:00:00 23/10/2018 10:36:41 181020-29 18569533 TM048	05/11/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 181020-29 **Client Reference:** **Report Number:** 480661
Location: Llanwern **Order Number:** LLA492 **Superseded Report:** 479955

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-F5 1.00 - 1.00 SOLID 18/10/2018 00:00:00 23/10/2018 08:58:47 181020-29 18569538 TM048	05/11/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-G4 1.00 - 1.00 SOLID 18/10/2018 00:00:00 23/10/2018 11:46:30 181020-29 18569512 TM048	05/11/2018	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-G4 2.00 - 2.00 SOLID 18/10/2018 00:00:00 23/10/2018 11:40:31 181020-29 18569520 TM048	05/11/2018	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-G5 0.50 - 0.50 SOLID 18/10/2018 00:00:00 23/10/2018 09:41:25 181020-29 18569447 TM048	05/11/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-G5 1.50 - 1.50 SOLID 18/10/2018 00:00:00 23/10/2018 09:24:23 181020-29 18569455 TM048	05/11/2018	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-G8 0.50 - 0.50 SOLID 18/10/2018 00:00:00 24/10/2018 07:27:52 181020-29 18569415 TM048	05/11/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 181020-29 **Client Reference:** **Report Number:** 480661
Location: Llanwern **Order Number:** LLA492 **Superseded Report:** 479955

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-G8 1.00 - 1.00 SOLID 18/10/2018 00:00:00 23/10/2018 09:38:42 181020-29 18569420 TM048	05/11/2018	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-I3 0.50 - 0.50 SOLID 18/10/2018 00:00:00 23/10/2018 08:54:12 181020-29 18569496 TM048	05/11/2018	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-I3 1.50 - 1.50 SOLID 18/10/2018 00:00:00 24/10/2018 07:20:44 181020-29 18569500 TM048	05/11/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-J3 1.50 - 1.50 SOLID 18/10/2018 00:00:00 23/10/2018 09:44:55 181020-29 18569480 TM048	05/11/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-J3 2.00 - 2.00 SOLID 18/10/2018 00:00:00 24/10/2018 07:25:05 181020-29 18569484 TM048	05/11/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-K2 0.50 - 0.50 SOLID 18/10/2018 00:00:00 23/10/2018 11:37:42 181020-29 18569431 TM048	05/11/2018	Marcin Magdziarek	Loose fibres in soil	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

Asbestos Quantification - Full

		Additional Asbestos Components (Using TM048)	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM Evaluation - %	Asbestos Quantification - Total - %
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-E5 2.00 - 2.00 SOLID 18/10/2018 00:00:00 23/10/2018 08:52:31 181020-29 18569560 TM304	None (#)	N/C	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-K2 0.50 - 0.50 SOLID 18/10/2018 00:00:00 23/10/2018 11:38:42 181020-29 18569431 TM304	None (#)	N/C	<0.001 (#)	<0.001 (#)	<0.001 (#)

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181020-29
Lab Sample Number(s)	18569400
Sampled Date	18-Oct-2018
Customer Sample Ref.	4C-E7
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	0.867	<0.2	8.67	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000487	<0.00001	0.000487	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.000105	<0.000005	0.00105	<0.00005	-	-	-
Arsenic	0.00756	<0.0005	0.0756	<0.005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.0000817	<0.000005	0.000817	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000183	<0.000005	0.000183	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.000123	<0.000005	0.00123	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0000259	<0.000005	0.000259	<0.00005	-	-	-
Chrysene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene (diss.filt)	0.0000612	<0.000005	0.000612	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Copper	0.0083	<0.0003	0.083	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	10.70
Conductivity (µS/cm)	275.00
Temperature (°C)	19.00
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

12/11/2018 13:12:07

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181020-29
Lab Sample Number(s)	18569400
Sampled Date	18-Oct-2018
Customer Sample Ref.	4C-E7
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.000464	<0.000082	0.00464	<0.00082	-	-	-
Nickel	0.0016	<0.0004	0.016	<0.004	-	-	-
Selenium	0.00692	<0.001	0.0692	<0.01	-	-	-
Vanadium	0.0689	<0.001	0.689	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	10.70
Conductivity (µS/cm)	275.00
Temperature (°C)	19.00
Volume Leachant (Litres)	0.888

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181020-29
Lab Sample Number(s)	18569415
Sampled Date	18-Oct-2018
Customer Sample Ref.	4C-G8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000673	<0.00001	0.000673	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.0000314	<0.000005	0.000314	<0.00005	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.0000335	<0.000005	0.000335	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000241	<0.000005	0.00241	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000438	<0.000005	0.000438	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.000193	<0.000005	0.00193	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0000403	<0.000005	0.000403	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000159	<0.000005	0.000159	<0.00005	-	-	-
Pyrene (diss.filt)	0.000219	<0.000005	0.00219	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chromium	0.0117	<0.001	0.117	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Copper	0.0041	<0.0003	0.041	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	11.44
Conductivity (µS/cm)	932.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181020-29
Lab Sample Number(s)	18569415
Sampled Date	18-Oct-2018
Customer Sample Ref.	4C-G8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.000885	<0.000082	0.00885	<0.00082	-	-	-
Nickel	0.000616	<0.0004	0.00616	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0108	<0.001	0.108	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	11.44
Conductivity (µS/cm)	932.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569420
Sampled Date	18-Oct-2018
Customer Sample Ref.	4C-G8
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000377	<0.00001	0.000377	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.00000783	<0.000005	0.0000783	<0.00005	-	-	-
Arsenic	0.00124	<0.0005	0.0124	<0.005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.0000392	<0.000005	0.000392	<0.00005	-	-	-
Anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.000019	<0.000005	0.00019	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene (diss.filt)	0.0000763	<0.000005	0.000763	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chromium	0.00289	<0.001	0.0289	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Copper	0.00154	<0.0003	0.0154	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	11.27
Conductivity (µS/cm)	427.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569420
Sampled Date	18-Oct-2018
Customer Sample Ref.	4C-G8
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.00018	<0.000082	0.0018	<0.00082	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00203	<0.001	0.0203	<0.01	-	-	-
Vanadium	0.048	<0.001	0.48	<0.01	-	-	-
Zinc	0.0179	<0.001	0.179	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	11.27
Conductivity (µS/cm)	427.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569431
Sampled Date	18-Oct-2018
Customer Sample Ref.	4C-K2
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000214	<0.00001	0.000214	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Arsenic	0.00101	<0.0005	0.0101	<0.005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.0000368	<0.000005	0.000368	<0.00005	-	-	-
Anthracene (diss.filt)	0.00000779	<0.000005	0.0000779	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.0000222	<0.000005	0.000222	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene (diss.filt)	0.0000315	<0.000005	0.000315	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chromium	0.00379	<0.001	0.0379	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.0000158	<0.000005	0.000158	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.0000103	<0.000002	0.000103	<0.00002	-	-	-
Copper	0.00404	<0.0003	0.0404	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	11.07
Conductivity (µS/cm)	296.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569431
Sampled Date	18-Oct-2018
Customer Sample Ref.	4C-K2
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.000146	<0.000082	0.00146	<0.00082	-	-	-
Nickel	0.000545	<0.0004	0.00545	<0.004	-	-	-
Selenium	0.00174	<0.001	0.0174	<0.01	-	-	-
Vanadium	0.0612	<0.001	0.612	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	11.07
Conductivity (µS/cm)	296.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.99
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.6
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569435
Sampled Date	18-Oct-2018
Customer Sample Ref.	4C-K2
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Copper	0.00111	<0.0003	0.0111	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	10.49
Conductivity (µS/cm)	56.80
Temperature (°C)	18.40
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.99
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.6
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569435
Sampled Date	18-Oct-2018
Customer Sample Ref.	4C-K2
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00874	<0.001	0.0874	<0.01	-	-	-
Zinc	0.00185	<0.001	0.0185	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	10.49
Conductivity (µS/cm)	56.80
Temperature (°C)	18.40
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181020-29
Lab Sample Number(s)	18569439
Sampled Date	18-Oct-2018
Customer Sample Ref.	4C-E2
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	0.201	<0.2	2.01	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Arsenic	0.00217	<0.0005	0.0217	<0.005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.0000223	<0.000005	0.000223	<0.00005	-	-	-
Anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.0000289	<0.000005	0.000289	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene (diss.filt)	0.0000203	<0.000005	0.000203	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chromium	0.00203	<0.001	0.0203	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Copper	0.0029	<0.0003	0.029	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	11.17
Conductivity (µS/cm)	320.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181020-29
Lab Sample Number(s)	18569439
Sampled Date	18-Oct-2018
Customer Sample Ref.	4C-E2
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
Nickel	0.000653	<0.0004	0.00653	<0.004	-	-	-
Selenium	0.00197	<0.001	0.0197	<0.01	-	-	-
Vanadium	0.111	<0.001	1.11	<0.01	-	-	-
Zinc	0.00104	<0.001	0.0104	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	11.17
Conductivity (µS/cm)	320.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.37
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.9
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569443
Sampled Date	18-Oct-2018
Customer Sample Ref.	4C-E2
Depth (m)	0.70 - 0.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000428	<0.00001	0.000428	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.0000417	<0.000005	0.000417	<0.00005	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000715	<0.000005	0.00715	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000385	<0.000005	0.000385	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.0004	<0.000005	0.004	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0000186	<0.000005	0.000186	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000691	<0.000005	0.000691	<0.00005	-	-	-
Pyrene (diss.filt)	0.000612	<0.000005	0.00612	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.0000464	<0.000005	0.000464	<0.00005	-	-	-
Chromium	0.00128	<0.001	0.0128	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.0000209	<0.000005	0.000209	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.0000117	<0.000005	0.000117	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.00000864	<0.000002	0.0000864	<0.00002	-	-	-
Copper	0.00125	<0.0003	0.0125	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	0.000227	<0.0002	0.00227	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	11.77
Conductivity (µS/cm)	1,780.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.37
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.9
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569443
Sampled Date	18-Oct-2018
Customer Sample Ref.	4C-E2
Depth (m)	0.70 - 0.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.00203	<0.000082	0.0203	<0.00082	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00104	<0.001	0.0104	<0.01	-	-	-
Vanadium	0.00527	<0.001	0.0527	<0.01	-	-	-
Zinc	0.00359	<0.001	0.0359	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.484	<0.019	4.84	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	11.77
Conductivity (µS/cm)	1,780.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.07
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.4
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569447
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-G5
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chromium	0.0046	<0.001	0.046	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Copper	0.0212	<0.0003	0.212	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	0.00199	<0.0002	0.0199	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	11.76
Conductivity (µS/cm)	1,890.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.07
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.4
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569447
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-G5
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
Nickel	0.00277	<0.0004	0.0277	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00384	<0.001	0.0384	<0.01	-	-	-
Zinc	0.00503	<0.001	0.0503	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	11.76
Conductivity (µS/cm)	1,890.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

12/11/2018 13:12:07

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	5.26
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569451
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-G5
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	0.25	<0.2	2.5	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000823	<0.00001	0.000823	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.0000124	<0.000005	0.000124	<0.00005	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.000102	<0.000005	0.00102	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.0000744	<0.000005	0.000744	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000179	<0.000005	0.000179	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.000121	<0.000005	0.00121	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0000374	<0.000005	0.000374	<0.00005	-	-	-
Chrysene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene (diss.filt)	0.0000663	<0.000005	0.000663	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chromium	0.00101	<0.001	0.0101	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Copper	0.00438	<0.0003	0.0438	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	0.0101	<0.0002	0.101	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	0.00356	<0.003	0.0356	<0.03	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	12.48
Conductivity (µS/cm)	4.86
Temperature (°C)	18.50
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	5.26
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569451
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-G5
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.000514	<0.000082	0.00514	<0.00082	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.0174	<0.001	0.174	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	12.48
Conductivity (µS/cm)	4.86
Temperature (°C)	18.50
Volume Leachant (Litres)	0.895

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181020-29
Lab Sample Number(s)	18569455
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-G5
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	0.478	<0.2	4.78	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000767	<0.00001	0.000767	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.0000393	<0.000005	0.000393	<0.00005	-	-	-
Arsenic	0.00166	<0.0005	0.0166	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.000139	<0.000005	0.00139	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000121	<0.000005	0.00121	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000291	<0.000005	0.000291	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.000169	<0.000005	0.00169	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0000547	<0.000005	0.000547	<0.00005	-	-	-
Chrysene (diss.filt)	0.00000824	<0.000005	0.0000824	<0.00005	-	-	-
Pyrene (diss.filt)	0.0000899	<0.000005	0.000899	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.0000086	<0.000005	0.000086	<0.00005	-	-	-
Chromium	0.00213	<0.001	0.0213	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Copper	0.0248	<0.0003	0.248	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	11.23
Conductivity (µS/cm)	621.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181020-29
Lab Sample Number(s)	18569455
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-G5
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.000735	<0.000082	0.00735	<0.00082	-	-	-
Nickel	0.00559	<0.0004	0.0559	<0.004	-	-	-
Selenium	0.00123	<0.001	0.0123	<0.01	-	-	-
Vanadium	0.0285	<0.001	0.285	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	11.23
Conductivity (µS/cm)	621.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.5
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569462
Sampled Date	18-Oct-2018
Customer Sample Ref.	4C-E7
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	0.477	<0.2	4.77	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000597	<0.00001	0.000597	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.000217	<0.000005	0.00217	<0.00005	-	-	-
Arsenic	0.00495	<0.0005	0.0495	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.000015	<0.000005	0.00015	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000257	<0.000005	0.00257	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000571	<0.000005	0.000571	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.000252	<0.000005	0.00252	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0000343	<0.000005	0.000343	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000121	<0.000005	0.000121	<0.00005	-	-	-
Pyrene (diss.filt)	0.000175	<0.000005	0.00175	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.00000723	<0.000005	0.0000723	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.0000169	<0.000005	0.000169	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.00000929	<0.000005	0.0000929	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.00000898	<0.000002	0.0000898	<0.00002	-	-	-
Copper	0.00565	<0.0003	0.0565	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	10.86
Conductivity (µS/cm)	285.00
Temperature (°C)	19.20
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.5
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569462
Sampled Date	18-Oct-2018
Customer Sample Ref.	4C-E7
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.00112	<0.000082	0.0112	<0.00082	-	-	-
Nickel	0.000907	<0.0004	0.00907	<0.004	-	-	-
Selenium	0.00364	<0.001	0.0364	<0.01	-	-	-
Vanadium	0.0476	<0.001	0.476	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	10.86
Conductivity (µS/cm)	285.00
Temperature (°C)	19.20
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181020-29
Lab Sample Number(s)	18569476
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-J3
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000195	<0.00001	0.000195	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Arsenic	0.00148	<0.0005	0.0148	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.0000183	<0.000005	0.000183	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000134	<0.000005	0.00134	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000223	<0.000005	0.000223	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.000148	<0.000005	0.00148	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000411	<0.000005	0.000411	<0.00005	-	-	-
Pyrene (diss.filt)	0.0000917	<0.000005	0.000917	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.0000414	<0.000005	0.000414	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.0000522	<0.000005	0.000522	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.0000233	<0.000005	0.000233	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.0000273	<0.000002	0.000273	<0.00002	-	-	-
Copper	0.00209	<0.0003	0.0209	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.000012	<0.000005	0.00012	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	0.0000191	<0.000005	0.000191	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	8.67
Conductivity (µS/cm)	151.00
Temperature (°C)	18.90
Volume Leachant (Litres)	0.880

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181020-29
Lab Sample Number(s)	18569476
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-J3
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.00065	<0.000082	0.0065	<0.00082	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00113	<0.001	0.0113	<0.01	-	-	-
Vanadium	0.00698	<0.001	0.0698	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	8.67
Conductivity (µS/cm)	151.00
Temperature (°C)	18.90
Volume Leachant (Litres)	0.880

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181020-29
Lab Sample Number(s)	18569480
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-J3
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000241	<0.00001	0.000241	<0.0001	-	-	-
Naphthalene (diss.filt)	0.000429	<0.00001	0.00429	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.0000236	<0.000005	0.000236	<0.00005	-	-	-
Arsenic	0.000631	<0.0005	0.00631	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.0000991	<0.000005	0.000991	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.0000895	<0.000005	0.000895	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000349	<0.000005	0.000349	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.000178	<0.000005	0.00178	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0000581	<0.000005	0.000581	<0.00005	-	-	-
Chrysene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene (diss.filt)	0.0000744	<0.000005	0.000744	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chromium	0.00484	<0.001	0.0484	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Copper	0.0184	<0.0003	0.184	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	0.000206	<0.0002	0.00206	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	11.74
Conductivity (µS/cm)	1,310.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181020-29
Lab Sample Number(s)	18569480
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-J3
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.000987	<0.000082	0.00987	<0.00082	-	-	-
Nickel	0.00159	<0.0004	0.0159	<0.004	-	-	-
Selenium	0.00115	<0.001	0.0115	<0.01	-	-	-
Vanadium	0.00775	<0.001	0.0775	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	11.74
Conductivity (µS/cm)	1,310.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.38
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569484
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-J3
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.000526	<0.00001	0.00526	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.0000772	<0.000005	0.000772	<0.00005	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.0000726	<0.000005	0.000726	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000153	<0.000005	0.00153	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000236	<0.000005	0.000236	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.00029	<0.000005	0.0029	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0000551	<0.000005	0.000551	<0.00005	-	-	-
Chrysene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene (diss.filt)	0.000122	<0.000005	0.00122	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chromium	0.00212	<0.001	0.0212	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Copper	0.00616	<0.0003	0.0616	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	11.67
Conductivity (µS/cm)	1,170.00
Temperature (°C)	18.90
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.38
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569484
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-J3
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.00132	<0.000082	0.0132	<0.00082	-	-	-
Nickel	0.000523	<0.0004	0.00523	<0.004	-	-	-
Selenium	0.00112	<0.001	0.0112	<0.01	-	-	-
Vanadium	0.00838	<0.001	0.0838	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	11.67
Conductivity (µS/cm)	1,170.00
Temperature (°C)	18.90
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.46
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.2
Particle Size <4mm	>95%		

Case				
SDG	181020-29			
Lab Sample Number(s)	18569496			
Sampled Date	18-Oct-2018			
Customer Sample Ref.	3C-I3			
Depth (m)	0.50 - 0.50			

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	0.021	<0.01	0.21	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.021	<0.01	0.21	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.042	<0.01	0.42	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.707	<0.00001	7.07	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.0791	<0.000005	0.791	<0.00005	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.033	<0.000005	0.33	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0209	<0.000005	0.209	<0.00005	-	-	-
Chrysene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chromium	0.00385	<0.001	0.0385	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Copper	0.00828	<0.0003	0.0828	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	0.00106	<0.0002	0.0106	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	12.41
Conductivity (µS/cm)	3.60
Temperature (°C)	18.40
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.46
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.2
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569496
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-I3
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.84	<0.000082	8.4	<0.00082	-	-	-
Nickel	0.00113	<0.0004	0.0113	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00447	<0.001	0.0447	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.01	<0.01	0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	12.41
Conductivity (µS/cm)	3.60
Temperature (°C)	18.40
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.9
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569500
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-I3
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000603	<0.00001	0.000603	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Arsenic	0.000586	<0.0005	0.00586	<0.005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.0000386	<0.000005	0.000386	<0.00005	-	-	-
Anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.000054	<0.000005	0.00054	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene (diss.filt)	0.0000323	<0.000005	0.000323	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chromium	0.00746	<0.001	0.0746	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Copper	0.00765	<0.0003	0.0765	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	11.98
Conductivity (µS/cm)	1,350.00
Temperature (°C)	19.20
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.9
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569500
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-I3
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.000185	<0.000082	0.00185	<0.00082	-	-	-
Nickel	0.000866	<0.0004	0.00866	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00464	<0.001	0.0464	<0.01	-	-	-
Zinc	0.00148	<0.001	0.0148	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	11.98
Conductivity (µS/cm)	1,350.00
Temperature (°C)	19.20
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.111	**Natural Moisture Content (%)**	23.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	81
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569504
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-G4
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Arsenic	0.000722	<0.0005	0.00722	<0.005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Copper	0.00581	<0.0003	0.0581	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	8.49
Conductivity (µS/cm)	131.00
Temperature (°C)	19.30
Volume Leachant (Litres)	0.879

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.111	**Natural Moisture Content (%)**	23.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	81
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569504
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-G4
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
Nickel	0.000893	<0.0004	0.00893	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.352	<0.019	3.52	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	8.49
Conductivity (µS/cm)	131.00
Temperature (°C)	19.30
Volume Leachant (Litres)	0.879

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.5
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569512
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-G4
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Arsenic	0.00228	<0.0005	0.0228	<0.005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Copper	0.00725	<0.0003	0.0725	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	10.88
Conductivity (µS/cm)	281.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.5
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569512
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-G4
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
Nickel	0.000698	<0.0004	0.00698	<0.004	-	-	-
Selenium	0.00346	<0.001	0.0346	<0.01	-	-	-
Vanadium	0.0561	<0.001	0.561	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.595	<0.019	5.95	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	10.88
Conductivity (µS/cm)	281.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181020-29
Lab Sample Number(s)	18569520
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-G4
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.000165	<0.00001	0.00165	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.000121	<0.000005	0.00121	<0.00005	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.0000248	<0.000005	0.000248	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.00101	<0.000005	0.0101	<0.00005	-	-	-
Anthracene (diss.filt)	0.000116	<0.000005	0.00116	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.00292	<0.000005	0.0292	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0000198	<0.000005	0.000198	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000384	<0.000005	0.000384	<0.00005	-	-	-
Pyrene (diss.filt)	0.000722	<0.000005	0.00722	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.0000202	<0.000005	0.000202	<0.00005	-	-	-
Chromium	0.00159	<0.001	0.0159	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.0000136	<0.000005	0.000136	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.00000672	<0.000005	0.0000672	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.00000453	<0.000002	0.0000453	<0.00002	-	-	-
Copper	0.00978	<0.0003	0.0978	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	0.00269	<0.0002	0.0269	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	12.36
Conductivity (µS/cm)	7.16
Temperature (°C)	18.30
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181020-29
Lab Sample Number(s)	18569520
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-G4
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.00518	<0.000082	0.0518	<0.00082	-	-	-
Nickel	0.000882	<0.0004	0.00882	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.0114	<0.001	0.114	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	12.36
Conductivity (µS/cm)	7.16
Temperature (°C)	18.30
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181020-29
Lab Sample Number(s)	18569525
Sampled Date	18-Oct-2018
Customer Sample Ref.	4C-E7
Depth (m)	1.40 - 1.40

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	0.337	<0.2	3.37	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000109	<0.00001	0.000109	<0.0001	-	-	-
Naphthalene (diss.filt)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.000361	<0.000005	0.00361	<0.00005	-	-	-
Arsenic	0.00369	<0.0005	0.0369	<0.005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000412	<0.000005	0.00412	<0.00005	-	-	-
Anthracene (diss.filt)	0.000101	<0.000005	0.00101	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.000816	<0.000005	0.00816	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0000942	<0.000005	0.000942	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000136	<0.000005	0.000136	<0.00005	-	-	-
Pyrene (diss.filt)	0.00028	<0.000005	0.0028	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.00000544	<0.000005	0.0000544	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Copper	0.0102	<0.0003	0.102	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	10.79
Conductivity (µS/cm)	369.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181020-29
Lab Sample Number(s)	18569525
Sampled Date	18-Oct-2018
Customer Sample Ref.	4C-E7
Depth (m)	1.40 - 1.40

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.00208	<0.000082	0.0208	<0.00082	-	-	-
Nickel	0.000962	<0.0004	0.00962	<0.004	-	-	-
Selenium	0.00303	<0.001	0.0303	<0.01	-	-	-
Vanadium	0.0412	<0.001	0.412	<0.01	-	-	-
Zinc	0.00255	<0.001	0.0255	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	10.79
Conductivity (µS/cm)	369.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.107	**Natural Moisture Content (%)**	19
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	84
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569533
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-F5
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Arsenic	0.00356	<0.0005	0.0356	<0.005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.0000112	<0.000005	0.000112	<0.00005	-	-	-
Anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Copper	0.00582	<0.0003	0.0582	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	8.56
Conductivity (µS/cm)	112.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.883

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.107	**Natural Moisture Content (%)**	19
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	84
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569533
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-F5
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00822	<0.001	0.0822	<0.01	-	-	-
Zinc	0.00274	<0.001	0.0274	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	8.56
Conductivity (µS/cm)	112.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.883

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181020-29
Lab Sample Number(s)	18569538
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-F5
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	1.82	<0.5	18.2	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC35	1.82	<0.5	18.2	<5	-	-	-
Total Aromatics >EC12-EC35	1.82	<0.5	18.2	<5	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	1.82	<0.01	18.2	<0.1	-	-	-
Ammoniacal Nitrogen as N	0.62	<0.2	6.2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000216	<0.00001	0.000216	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000229	<0.00001	0.000229	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.000127	<0.000005	0.00127	<0.00005	-	-	-
Arsenic	0.000804	<0.0005	0.00804	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.0000151	<0.000005	0.000151	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.00486	<0.000005	0.0486	<0.00005	-	-	-
Anthracene (diss.filt)	0.0191	<0.000005	0.191	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.0186	<0.000005	0.186	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0000164	<0.000005	0.000164	<0.00005	-	-	-
Chrysene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene (diss.filt)	0.00296	<0.000005	0.0296	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.000158	<0.000005	0.00158	<0.00005	-	-	-
Chromium	0.00503	<0.001	0.0503	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.0000125	<0.000002	0.000125	<0.00002	-	-	-
Copper	0.0254	<0.0003	0.254	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	0.0000155	<0.000005	0.000155	<0.00005	-	-	-
Lead	0.00302	<0.0002	0.0302	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	0.0000217	<0.000005	0.000217	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	12.16
Conductivity (µS/cm)	6,180.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case						
SDG	181020-29					
Lab Sample Number(s)	18569538					
Sampled Date	18-Oct-2018					
Customer Sample Ref.	3C-F5					
Depth (m)	1.00 - 1.00					

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.0459	<0.000082	0.459	<0.00082	-	-	-
Nickel	0.00377	<0.0004	0.0377	<0.004	-	-	-
Selenium	0.00102	<0.001	0.0102	<0.01	-	-	-
Vanadium	0.00119	<0.001	0.0119	<0.01	-	-	-
Zinc	0.0251	<0.001	0.251	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	12.16
Conductivity (µS/cm)	6,180.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181020-29
Lab Sample Number(s)	18569542
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-F5
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC12-EC16	0.868	<0.5	8.68	<5	-	-	-
Aromatics >EC16-EC21	7.88	<0.5	78.8	<5	-	-	-
Aromatics >EC21-EC35	0.561	<0.5	5.61	<5	-	-	-
Aromatics >EC16-EC35	8.44	<0.5	84.4	<5	-	-	-
Total Aromatics >EC12-EC35	9.31	<0.5	93.1	<5	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	9.31	<0.01	93.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000171	<0.00001	0.000171	<0.0001	-	-	-
Naphthalene (diss.filt)	0.00048	<0.00001	0.0048	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.00891	<0.000005	0.0891	<0.00005	-	-	-
Anthracene (diss.filt)	11.1	<0.000005	111	<0.00005	-	-	-
Phenanthrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene (diss.filt)	0.0938	<0.000005	0.938	<0.00005	-	-	-
Pyrene (diss.filt)	0.00957	<0.000005	0.0957	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chromium	0.00494	<0.001	0.0494	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.000164	<0.000005	0.00164	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.000058	<0.000002	0.00058	<0.00002	-	-	-
Copper	0.0166	<0.0003	0.166	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	0.0000139	<0.000005	0.000139	<0.00005	-	-	-
Lead	0.00217	<0.0002	0.0217	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.0000189	<0.000005	0.000189	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	0.0000437	<0.000005	0.000437	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	12.53
Conductivity (µS/cm)	5,070.00
Temperature (°C)	19.30
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181020-29
Lab Sample Number(s)	18569542
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-F5
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	11.2	<0.000082	112	<0.00082	-	-	-
Nickel	0.00192	<0.0004	0.0192	<0.004	-	-	-
Selenium	0.00106	<0.001	0.0106	<0.01	-	-	-
Vanadium	0.00129	<0.001	0.0129	<0.01	-	-	-
Zinc	0.00346	<0.001	0.0346	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	12.53
Conductivity (µS/cm)	5,070.00
Temperature (°C)	19.30
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569551
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-E5
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Arsenic	0.00281	<0.0005	0.0281	<0.005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000032	<0.000005	0.00032	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000156	<0.000005	0.000156	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.000048	<0.000005	0.00048	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene (diss.filt)	0.0000368	<0.000005	0.000368	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Copper	0.0047	<0.0003	0.047	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	0.000205	<0.0002	0.00205	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	8.23
Conductivity (µS/cm)	123.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569551
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-E5
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.000132	<0.000082	0.00132	<0.00082	-	-	-
Nickel	0.000729	<0.0004	0.00729	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0134	<0.001	0.134	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.0585	<0.019	0.585	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	8.23
Conductivity (µS/cm)	123.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.71
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.6
Particle Size <4mm	>95%		

Case				
SDG	181020-29			
Lab Sample Number(s)	18569555			
Sampled Date	18-Oct-2018			
Customer Sample Ref.	3C-E5			
Depth (m)	1.50 - 1.50			

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	0.23	<0.2	2.3	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000171	<0.00001	0.000171	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000387	<0.00001	0.000387	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Arsenic	0.00132	<0.0005	0.0132	<0.005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000143	<0.000005	0.00143	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000186	<0.000005	0.000186	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.000248	<0.000005	0.00248	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene (diss.filt)	0.0000896	<0.000005	0.000896	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chromium	0.00667	<0.001	0.0667	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Copper	0.0346	<0.0003	0.346	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	11.82
Conductivity (µS/cm)	1,210.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.71
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.6
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569555
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-E5
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.000538	<0.000082	0.00538	<0.00082	-	-	-
Nickel	0.00351	<0.0004	0.0351	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0302	<0.001	0.302	<0.01	-	-	-
Zinc	0.00174	<0.001	0.0174	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	11.82
Conductivity (µS/cm)	1,210.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181020-29
Lab Sample Number(s)	18569560
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-E5
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	0.236	<0.2	2.36	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Arsenic	0.000896	<0.0005	0.00896	<0.005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chromium	0.00145	<0.001	0.0145	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Copper	0.0116	<0.0003	0.116	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	11.21
Conductivity (µS/cm)	447.00
Temperature (°C)	18.90
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181020-29
Lab Sample Number(s)	18569560
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-E5
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
Nickel	0.00115	<0.0004	0.0115	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.179	<0.001	1.79	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	11.21
Conductivity (µS/cm)	447.00
Temperature (°C)	18.90
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569571
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-D5
Depth (m)	0.80 - 0.80

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000538	<0.00001	0.000538	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Arsenic	0.00244	<0.0005	0.0244	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.0000602	<0.000005	0.000602	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.00033	<0.000005	0.0033	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000447	<0.000005	0.000447	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.000121	<0.000005	0.00121	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0000168	<0.000005	0.000168	<0.00005	-	-	-
Chrysene (diss.filt)	0.000139	<0.000005	0.00139	<0.00005	-	-	-
Pyrene (diss.filt)	0.000252	<0.000005	0.00252	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.000104	<0.000005	0.00104	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.000275	<0.000005	0.00275	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.000149	<0.000005	0.00149	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.000167	<0.000002	0.00167	<0.00002	-	-	-
Copper	0.00314	<0.0003	0.0314	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	0.0000415	<0.000005	0.000415	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.000186	<0.000005	0.00186	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	0.000139	<0.000005	0.00139	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	8.68
Conductivity (µS/cm)	145.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569571
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-D5
Depth (m)	0.80 - 0.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.00208	<0.000082	0.0208	<0.00082	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00572	<0.001	0.0572	<0.01	-	-	-
Zinc	0.00135	<0.001	0.0135	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	8.68
Conductivity (µS/cm)	145.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181020-29
Lab Sample Number(s)	18569575
Sampled Date	18-Oct-2018
Customer Sample Ref.	4C-E6
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000318	<0.00001	0.000318	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.000015	<0.000005	0.00015	<0.00005	-	-	-
Arsenic	0.00452	<0.0005	0.0452	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.0000196	<0.000005	0.000196	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000179	<0.000005	0.00179	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000343	<0.000005	0.000343	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.000098	<0.000005	0.00098	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0000314	<0.000005	0.000314	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000726	<0.000005	0.000726	<0.00005	-	-	-
Pyrene (diss.filt)	0.000217	<0.000005	0.00217	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.0000571	<0.000005	0.000571	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.000108	<0.000005	0.00108	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.0000516	<0.000005	0.000516	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.0000594	<0.000002	0.000594	<0.00002	-	-	-
Copper	0.00719	<0.0003	0.0719	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.0000397	<0.000005	0.000397	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	0.0000362	<0.000005	0.000362	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	9.76
Conductivity (µS/cm)	187.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181020-29
Lab Sample Number(s)	18569575
Sampled Date	18-Oct-2018
Customer Sample Ref.	4C-E6
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.00105	<0.000082	0.0105	<0.00082	-	-	-
Nickel	0.000492	<0.0004	0.00492	<0.004	-	-	-
Selenium	0.004	<0.001	0.04	<0.01	-	-	-
Vanadium	0.0983	<0.001	0.983	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	9.76
Conductivity (µS/cm)	187.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181020-29
Lab Sample Number(s)	18569579
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-D5
Depth (m)	1.60 - 1.60

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.000201	<0.00001	0.00201	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.000122	<0.000005	0.00122	<0.00005	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.00061	<0.000005	0.0061	<0.00005	-	-	-
Anthracene (diss.filt)	0.000162	<0.000005	0.00162	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.001	<0.000005	0.01	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0000244	<0.000005	0.000244	<0.00005	-	-	-
Chrysene (diss.filt)	0.000074	<0.000005	0.00074	<0.00005	-	-	-
Pyrene (diss.filt)	0.000679	<0.000005	0.00679	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.0000546	<0.000005	0.000546	<0.00005	-	-	-
Chromium	0.00204	<0.001	0.0204	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.0000272	<0.000005	0.000272	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.0000133	<0.000005	0.000133	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.0000159	<0.000002	0.000159	<0.00002	-	-	-
Copper	0.00922	<0.0003	0.0922	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	11.37
Conductivity (µS/cm)	951.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.880

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181020-29
Lab Sample Number(s)	18569579
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-D5
Depth (m)	1.60 - 1.60

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.00298	<0.000082	0.0298	<0.00082	-	-	-
Nickel	0.0012	<0.0004	0.012	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0102	<0.001	0.102	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	11.37
Conductivity (µS/cm)	951.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.880

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.111	**Natural Moisture Content (%)**	23.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	81
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569592
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-C5
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000177	<0.00001	0.000177	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Arsenic	0.00148	<0.0005	0.0148	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.00000782	<0.000005	0.0000782	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.0000693	<0.000005	0.000693	<0.00005	-	-	-
Anthracene (diss.filt)	0.000014	<0.000005	0.00014	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.0000506	<0.000005	0.000506	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.00000766	<0.000005	0.0000766	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000178	<0.000005	0.000178	<0.00005	-	-	-
Pyrene (diss.filt)	0.000057	<0.000005	0.00057	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.00000523	<0.000005	0.0000523	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.0000503	<0.000005	0.000503	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.0000171	<0.000005	0.000171	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.0000258	<0.000002	0.000258	<0.00002	-	-	-
Copper	0.00149	<0.0003	0.0149	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	0.0000144	<0.000005	0.000144	<0.00005	-	-	-
Lead	0.000264	<0.0002	0.00264	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.0000212	<0.000005	0.000212	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	0.0000188	<0.000005	0.000188	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	8.60
Conductivity (µS/cm)	184.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.879

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.111	**Natural Moisture Content (%)**	23.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	81
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569592
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-C5
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.000395	<0.000082	0.00395	<0.00082	-	-	-
Nickel	0.000513	<0.0004	0.00513	<0.004	-	-	-
Selenium	0.00171	<0.001	0.0171	<0.01	-	-	-
Vanadium	0.00347	<0.001	0.0347	<0.01	-	-	-
Zinc	0.00199	<0.001	0.0199	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.327	<0.019	3.27	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	8.60
Conductivity (µS/cm)	184.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.879

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.4
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569601
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-C5
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000167	<0.00001	0.000167	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000455	<0.00001	0.000455	<0.0001	-	-	-
Total Cyanide (W)	0.11	<0.05	1.1	<0.5	-	-	-
Acenaphthene (diss.filt)	0.0000167	<0.000005	0.000167	<0.00005	-	-	-
Arsenic	0.000822	<0.0005	0.00822	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.0000122	<0.000005	0.000122	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000081	<0.000005	0.00081	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000141	<0.000005	0.000141	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.0000631	<0.000005	0.000631	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0000145	<0.000005	0.000145	<0.00005	-	-	-
Chrysene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene (diss.filt)	0.0000803	<0.000005	0.000803	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chromium	0.00141	<0.001	0.0141	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Copper	0.0137	<0.0003	0.137	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	0.000305	<0.0002	0.00305	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	11.60
Conductivity (µS/cm)	798.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.4
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569601
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-C5
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.000327	<0.000082	0.00327	<0.00082	-	-	-
Nickel	0.00111	<0.0004	0.0111	<0.004	-	-	-
Selenium	0.00104	<0.001	0.0104	<0.01	-	-	-
Vanadium	0.0459	<0.001	0.459	<0.01	-	-	-
Zinc	0.00845	<0.001	0.0845	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.516	<0.019	5.16	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	11.60
Conductivity (µS/cm)	798.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181020-29
Lab Sample Number(s)	18569608
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-B5
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.000395	<0.00001	0.00395	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.0000436	<0.000005	0.000436	<0.00005	-	-	-
Arsenic	0.00518	<0.0005	0.0518	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.0000524	<0.000005	0.000524	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000963	<0.000005	0.00963	<0.00005	-	-	-
Anthracene (diss.filt)	0.000147	<0.000005	0.00147	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.000734	<0.000005	0.00734	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.000152	<0.000005	0.00152	<0.00005	-	-	-
Chrysene (diss.filt)	0.000203	<0.000005	0.00203	<0.00005	-	-	-
Pyrene (diss.filt)	0.000576	<0.000005	0.00576	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.000131	<0.000005	0.00131	<0.00005	-	-	-
Chromium	0.00132	<0.001	0.0132	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.000262	<0.000005	0.00262	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.000136	<0.000005	0.00136	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.000184	<0.000002	0.00184	<0.00002	-	-	-
Copper	0.00343	<0.0003	0.0343	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	0.0000444	<0.000005	0.000444	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.000187	<0.000005	0.00187	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	0.000133	<0.000005	0.00133	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	9.23
Conductivity (µS/cm)	153.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181020-29
Lab Sample Number(s)	18569608
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-B5
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.00434	<0.000082	0.0434	<0.00082	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00175	<0.001	0.0175	<0.01	-	-	-
Vanadium	0.038	<0.001	0.38	<0.01	-	-	-
Zinc	0.00121	<0.001	0.0121	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	9.23
Conductivity (µS/cm)	153.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569616
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-B5
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	0.814	<0.2	8.14	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000662	<0.00001	0.000662	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.0000189	<0.000005	0.000189	<0.00005	-	-	-
Arsenic	0.000886	<0.0005	0.00886	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.0000122	<0.000005	0.000122	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000104	<0.000005	0.00104	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000162	<0.000005	0.000162	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.0000583	<0.000005	0.000583	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0000103	<0.000005	0.000103	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000204	<0.000005	0.000204	<0.00005	-	-	-
Pyrene (diss.filt)	0.000208	<0.000005	0.00208	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.000013	<0.000005	0.00013	<0.00005	-	-	-
Chromium	0.00142	<0.001	0.0142	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.0000138	<0.000005	0.000138	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.0000104	<0.000005	0.000104	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.00000761	<0.000002	0.0000761	<0.00002	-	-	-
Copper	0.00719	<0.0003	0.0719	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	11.06
Conductivity (µS/cm)	400.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569616
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-B5
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.000559	<0.000082	0.00559	<0.00082	-	-	-
Nickel	0.000968	<0.0004	0.00968	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0655	<0.001	0.655	<0.01	-	-	-
Zinc	0.00781	<0.001	0.0781	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.199	<0.019	1.99	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	11.06
Conductivity (µS/cm)	400.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181020-29
Lab Sample Number(s)	18569624
Sampled Date	18-Oct-2018
Customer Sample Ref.	4C-E6
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Arsenic	0.00157	<0.0005	0.0157	<0.005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.0000237	<0.000005	0.000237	<0.00005	-	-	-
Anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene (diss.filt)	0.0000319	<0.000005	0.000319	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.0000141	<0.000005	0.000141	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.0000102	<0.000002	0.000102	<0.00002	-	-	-
Copper	0.00162	<0.0003	0.0162	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	10.31
Conductivity (µS/cm)	158.00
Temperature (°C)	19.20
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181020-29
Lab Sample Number(s)	18569624
Sampled Date	18-Oct-2018
Customer Sample Ref.	4C-E6
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00397	<0.001	0.0397	<0.01	-	-	-
Vanadium	0.0394	<0.001	0.394	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	10.31
Conductivity (µS/cm)	158.00
Temperature (°C)	19.20
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181020-29
Lab Sample Number(s)	18569632
Sampled Date	18-Oct-2018
Customer Sample Ref.	4C-E5
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000109	<0.00001	0.000109	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.00000963	<0.000005	0.0000963	<0.00005	-	-	-
Arsenic	0.00391	<0.0005	0.0391	<0.005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.0000409	<0.000005	0.000409	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000119	<0.000005	0.000119	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.000031	<0.000005	0.00031	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000202	<0.000005	0.000202	<0.00005	-	-	-
Pyrene (diss.filt)	0.0000364	<0.000005	0.000364	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.0000138	<0.000005	0.000138	<0.00005	-	-	-
Chromium	0.00105	<0.001	0.0105	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.0000444	<0.000005	0.000444	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.0000241	<0.000005	0.000241	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.0000267	<0.000002	0.000267	<0.00002	-	-	-
Copper	0.00152	<0.0003	0.0152	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	0.0000373	<0.000005	0.000373	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.0000178	<0.000005	0.000178	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	0.0000386	<0.000005	0.000386	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	8.99
Conductivity (µS/cm)	161.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181020-29
Lab Sample Number(s)	18569632
Sampled Date	18-Oct-2018
Customer Sample Ref.	4C-E5
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.000364	<0.000082	0.00364	<0.00082	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00409	<0.001	0.0409	<0.01	-	-	-
Vanadium	0.0379	<0.001	0.379	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	8.99
Conductivity (µS/cm)	161.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.29
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.5
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569636
Sampled Date	18-Oct-2018
Customer Sample Ref.	4C-E5
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000471	<0.00001	0.000471	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.0000104	<0.000005	0.000104	<0.00005	-	-	-
Arsenic	0.00211	<0.0005	0.0211	<0.005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.0000662	<0.000005	0.000662	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000165	<0.000005	0.000165	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.0000698	<0.000005	0.000698	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.000016	<0.000005	0.00016	<0.00005	-	-	-
Chrysene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene (diss.filt)	0.0000547	<0.000005	0.000547	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Copper	0.00533	<0.0003	0.0533	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	10.28
Conductivity (µS/cm)	304.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

12/11/2018 13:12:07

13:11:31 12/11/2018

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.29
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.5
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569636
Sampled Date	18-Oct-2018
Customer Sample Ref.	4C-E5
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.000281	<0.000082	0.00281	<0.00082	-	-	-
Nickel	0.000591	<0.0004	0.00591	<0.004	-	-	-
Selenium	0.00335	<0.001	0.0335	<0.01	-	-	-
Vanadium	0.0734	<0.001	0.734	<0.01	-	-	-
Zinc	0.00467	<0.001	0.0467	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	10.28
Conductivity (µS/cm)	304.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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Table of Results - Appendix

Method No	Reference	Description
PM001		Preparation of Samples for Metals Analysis
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM243		Mixed Anions In Soils By Kone
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only

NA = not applicable.

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

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

Test Completion Dates

Lab Sample No(s)	18569608	18569616	18569620	18569592	18569601	18569571	18569579	18569583	18569551	18569555
Customer Sample Ref.	3C-B5	3C-B5	3C-B5-V	3C-C5	3C-C5	3C-D5	3C-D5	3C-D5-V	3C-E5	3C-E5
AGS Ref.										
Depth	0.50 - 0.50	1.00 - 1.00	1.40 - 1.40	0.50 - 0.50	1.00 - 1.00	0.80 - 0.80	1.60 - 1.60	2.60 - 2.60	0.50 - 0.50	1.50 - 1.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)		27-Oct-2018			31-Oct-2018	27-Oct-2018				31-Oct-2018
Ammoniacal Nitrogen	30-Oct-2018	30-Oct-2018		30-Oct-2018	30-Oct-2018	31-Oct-2018	31-Oct-2018		31-Oct-2018	30-Oct-2018
Ammonium Soil by Titration	02-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	02-Nov-2018	02-Nov-2018	05-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018
Anions by Kone (soil)		30-Oct-2018			30-Oct-2018	30-Oct-2018				30-Oct-2018
Asbestos ID in Solid Samples		05-Nov-2018			05-Nov-2018	05-Nov-2018				05-Nov-2018
CEN 10:1 Leachate (1 Stage)	25-Oct-2018	24-Oct-2018		24-Oct-2018	24-Oct-2018	25-Oct-2018	24-Oct-2018		24-Oct-2018	25-Oct-2018
CEN Readings	27-Oct-2018	27-Oct-2018		27-Oct-2018	27-Oct-2018	30-Oct-2018	31-Oct-2018		30-Oct-2018	27-Oct-2018
Cyanide Comp/Free/Total/Thiocyanate	07-Nov-2018	06-Nov-2018	06-Nov-2018	02-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	06-Nov-2018	07-Nov-2018
Dissolved Metals by ICP-MS	01-Nov-2018	01-Nov-2018		01-Nov-2018	01-Nov-2018	01-Nov-2018	01-Nov-2018		01-Nov-2018	31-Oct-2018
EPH CWG (Aliphatic) Filtered GC (W)	30-Oct-2018	30-Oct-2018		31-Oct-2018	31-Oct-2018	05-Nov-2018	05-Nov-2018		05-Nov-2018	31-Oct-2018
EPH CWG (Aliphatic) GC (S)	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018
EPH CWG (Aromatic) Filtered GC (W)	30-Oct-2018	30-Oct-2018		31-Oct-2018	31-Oct-2018	05-Nov-2018	05-Nov-2018		05-Nov-2018	31-Oct-2018
EPH CWG (Aromatic) GC (S)	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018
GRO by GC-FID (S)	01-Nov-2018	05-Nov-2018	01-Nov-2018	05-Nov-2018	02-Nov-2018	01-Nov-2018	01-Nov-2018	05-Nov-2018	01-Nov-2018	01-Nov-2018
GRO by GC-FID (W)	30-Oct-2018	30-Oct-2018		31-Oct-2018	01-Nov-2018	31-Oct-2018	31-Oct-2018		31-Oct-2018	31-Oct-2018
Mercury Dissolved	01-Nov-2018	01-Nov-2018		01-Nov-2018	01-Nov-2018	02-Nov-2018	02-Nov-2018		02-Nov-2018	02-Nov-2018
Metals in solid samples by OES	06-Nov-2018	26-Oct-2018	02-Nov-2018	01-Nov-2018	31-Oct-2018	26-Oct-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	31-Oct-2018
PAH by GCMS	02-Nov-2018	02-Nov-2018	30-Oct-2018	25-Oct-2018	29-Oct-2018	25-Oct-2018	29-Oct-2018	29-Oct-2018	31-Oct-2018	24-Oct-2018
PAH in waters by GC-MS (diss.filt)	29-Oct-2018	29-Oct-2018		30-Oct-2018	30-Oct-2018	02-Nov-2018	02-Nov-2018		02-Nov-2018	30-Oct-2018
pH	05-Nov-2018	06-Nov-2018	05-Nov-2018	05-Nov-2018	06-Nov-2018	06-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	06-Nov-2018
pH Value of Filtered Water	30-Oct-2018	30-Oct-2018		30-Oct-2018	30-Oct-2018	01-Nov-2018	01-Nov-2018		01-Nov-2018	30-Oct-2018
Phenols by HPLC (S)	02-Nov-2018	05-Nov-2018	29-Oct-2018	05-Nov-2018	02-Nov-2018	06-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018
Sample description	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018
Total Organic Carbon	30-Oct-2018	06-Nov-2018	02-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	07-Nov-2018	06-Nov-2018
Total Sulphate		30-Oct-2018			30-Oct-2018	26-Oct-2018				30-Oct-2018
Total Sulphur		26-Oct-2018			26-Oct-2018	26-Oct-2018				26-Oct-2018
TPH CWG Filtered (W)	30-Oct-2018	30-Oct-2018		31-Oct-2018	01-Nov-2018	05-Nov-2018	05-Nov-2018		05-Nov-2018	31-Oct-2018
TPH CWG GC (S)	01-Nov-2018	05-Nov-2018	01-Nov-2018	05-Nov-2018	02-Nov-2018	01-Nov-2018	01-Nov-2018	05-Nov-2018	01-Nov-2018	02-Nov-2018
VOC MS (S)	01-Nov-2018	05-Nov-2018	01-Nov-2018	03-Nov-2018	03-Nov-2018	01-Nov-2018	02-Nov-2018	03-Nov-2018	01-Nov-2018	05-Nov-2018

Lab Sample No(s)	18569560	18569439	18569443	18569632	18569636	18569575	18569624	18569400	18569462	18569525
Customer Sample Ref.	3C-E5	4C-E2	4C-E2	4C-E5	4C-E5	4C-E6	4C-E6	4C-E7	4C-E7	4C-E7
AGS Ref.										
Depth	2.00 - 2.00	0.50 - 0.50	0.70 - 0.70	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	1.40 - 1.40
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	07-Nov-2018		07-Nov-2018		07-Nov-2018	06-Nov-2018	27-Oct-2018	31-Oct-2018	31-Oct-2018	
Ammoniacal Nitrogen	31-Oct-2018	29-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	30-Oct-2018
Ammonium Soil by Titration	05-Nov-2018	02-Nov-2018	06-Nov-2018	02-Nov-2018	02-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	02-Nov-2018	06-Nov-2018
Anions by Kone (soil)	30-Oct-2018		30-Oct-2018		30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	
Asbestos ID in Solid Samples	05-Nov-2018		05-Nov-2018		05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	
Asbestos Quantification - Full	06-Nov-2018									
CEN 10:1 Leachate (1 Stage)	24-Oct-2018	25-Oct-2018	25-Oct-2018	24-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018	24-Oct-2018	24-Oct-2018	25-Oct-2018
CEN Readings	31-Oct-2018	27-Oct-2018	27-Oct-2018	27-Oct-2018	27-Oct-2018	27-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	27-Oct-2018
Cyanide Comp/Free/Total/Thiocyanate	07-Nov-2018	07-Nov-2018	07-Nov-2018	12-Nov-2018	12-Nov-2018	06-Nov-2018	12-Nov-2018	06-Nov-2018	06-Nov-2018	02-Nov-2018
Dissolved Metals by ICP-MS	01-Nov-2018	01-Nov-2018	01-Nov-2018	01-Nov-2018	01-Nov-2018	01-Nov-2018	01-Nov-2018	01-Nov-2018	01-Nov-2018	01-Nov-2018
EPH CWG (Aliphatic) Filtered GC (W)	05-Nov-2018	30-Oct-2018	30-Oct-2018	31-Oct-2018	30-Oct-2018	31-Oct-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	31-Oct-2018
EPH CWG (Aliphatic) GC (S)	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	30-Oct-2018
EPH CWG (Aromatic) Filtered GC (W)	05-Nov-2018	30-Oct-2018	30-Oct-2018	31-Oct-2018	30-Oct-2018	31-Oct-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	31-Oct-2018
EPH CWG (Aromatic) GC (S)	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	30-Oct-2018
GRO by GC-FID (S)	01-Nov-2018	03-Nov-2018	01-Nov-2018	03-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018	03-Nov-2018	01-Nov-2018
GRO by GC-FID (W)	31-Oct-2018	30-Oct-2018	30-Oct-2018	01-Nov-2018	30-Oct-2018	30-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	30-Oct-2018
Mercury Dissolved	02-Nov-2018	01-Nov-2018	02-Nov-2018	01-Nov-2018	02-Nov-2018	01-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018	29-Oct-2018
Metals in solid samples by OES	31-Oct-2018	30-Oct-2018	31-Oct-2018	02-Nov-2018	31-Oct-2018	31-Oct-2018	26-Oct-2018	31-Oct-2018	31-Oct-2018	30-Oct-2018
PAH by GCMS	29-Oct-2018	29-Oct-2018	31-Oct-2018	26-Oct-2018	29-Oct-2018	25-Oct-2018	29-Oct-2018	26-Oct-2018	29-Oct-2018	25-Oct-2018
PAH in waters by GC-MS (diss.filt)	02-Nov-2018	29-Oct-2018	29-Oct-2018	30-Oct-2018	29-Oct-2018	30-Oct-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018	30-Oct-2018
pH	05-Nov-2018	05-Nov-2018	06-Nov-2018	05-Nov-2018	05-Nov-2018	06-Nov-2018	06-Nov-2018	05-Nov-2018	06-Nov-2018	05-Nov-2018
pH Value of Filtered Water	01-Nov-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	01-Nov-2018	01-Nov-2018	01-Nov-2018	30-Oct-2018
Phenols by HPLC (S)	02-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018	06-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018
Sample description	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018
Total Organic Carbon	06-Nov-2018	06-Nov-2018	06-Nov-2018	31-Oct-2018	06-Nov-2018	31-Oct-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018
Total Sulphate	30-Oct-2018		30-Oct-2018		30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	
Total Sulphur	26-Oct-2018		26-Oct-2018		01-Nov-2018	26-Oct-2018	25-Oct-2018	26-Oct-2018	25-Oct-2018	
TPH CWG Filtered (W)	05-Nov-2018	30-Oct-2018	30-Oct-2018	01-Nov-2018	30-Oct-2018	31-Oct-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	31-Oct-2018
TPH CWG GC (S)	01-Nov-2018	03-Nov-2018	02-Nov-2018	03-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018	03-Nov-2018	01-Nov-2018
VOC MS (S)	01-Nov-2018	04-Nov-2018	05-Nov-2018	04-Nov-2018	03-Nov-2018	03-Nov-2018	03-Nov-2018	03-Nov-2018	04-Nov-2018	01-Nov-2018

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

Lab Sample No(s)	18569566	18569646	18569628	18569533	18569538	18569542	18569547	18569504	18569512	18569520
Customer Sample Ref.	3C-E5-V	4C-E5-V	4C-E6-V	3C-F5	3C-F5	3C-F5	3C-F5-V	3C-G4	3C-G4	3C-G4
AGS Ref.										
Depth	3.40 - 3.40	2.00 - 2.00	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	3.40 - 3.40	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)				31-Oct-2018	31-Oct-2018				31-Oct-2018	31-Oct-2018
Ammoniacal Nitrogen				31-Oct-2018	31-Oct-2018	31-Oct-2018		31-Oct-2018	30-Oct-2018	30-Oct-2018
Ammonium Soil by Titration	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	06-Nov-2018	05-Nov-2018	06-Nov-2018	05-Nov-2018
Anions by Kone (soil)				30-Oct-2018	30-Oct-2018				30-Oct-2018	30-Oct-2018
Asbestos ID in Solid Samples				05-Nov-2018	05-Nov-2018				05-Nov-2018	05-Nov-2018
CEN 10:1 Leachate (1 Stage)				24-Oct-2018	25-Oct-2018	25-Oct-2018		25-Oct-2018	25-Oct-2018	24-Oct-2018
CEN Readings				30-Oct-2018	31-Oct-2018	31-Oct-2018		31-Oct-2018	27-Oct-2018	27-Oct-2018
Cyanide Comp/Free/Total/Thiocyanate	07-Nov-2018	06-Nov-2018	12-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	29-Oct-2018	06-Nov-2018	30-Oct-2018	12-Nov-2018
Dissolved Metals by ICP-MS				01-Nov-2018	01-Nov-2018	01-Nov-2018		01-Nov-2018	02-Nov-2018	01-Nov-2018
EPH CWG (Aliphatic) Filtered GC (W)				05-Nov-2018	05-Nov-2018	05-Nov-2018		05-Nov-2018	31-Oct-2018	30-Oct-2018
EPH CWG (Aliphatic) GC (S)	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	30-Oct-2018	26-Oct-2018	30-Oct-2018	26-Oct-2018
EPH CWG (Aromatic) Filtered GC (W)				05-Nov-2018	05-Nov-2018	05-Nov-2018		05-Nov-2018	31-Oct-2018	30-Oct-2018
EPH CWG (Aromatic) GC (S)	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	30-Oct-2018	26-Oct-2018	30-Oct-2018	26-Oct-2018
GRO by GC-FID (S)	03-Nov-2018	03-Nov-2018	03-Nov-2018	02-Nov-2018	02-Nov-2018	01-Nov-2018	02-Nov-2018	02-Nov-2018	05-Nov-2018	02-Nov-2018
GRO by GC-FID (W)				31-Oct-2018	31-Oct-2018	31-Oct-2018		31-Oct-2018	30-Oct-2018	30-Oct-2018
Mercury Dissolved				02-Nov-2018	01-Nov-2018	01-Nov-2018		02-Nov-2018	01-Nov-2018	01-Nov-2018
Metals in solid samples by OES	29-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	31-Oct-2018	30-Oct-2018	30-Oct-2018	29-Oct-2018	31-Oct-2018	26-Oct-2018
PAH by GCMS	31-Oct-2018	25-Oct-2018	30-Oct-2018	29-Oct-2018	05-Nov-2018	29-Oct-2018	30-Oct-2018	25-Oct-2018	05-Nov-2018	29-Oct-2018
PAH in waters by GC-MS (diss.filt)				02-Nov-2018	02-Nov-2018	02-Nov-2018		02-Nov-2018	30-Oct-2018	29-Oct-2018
pH	05-Nov-2018	05-Nov-2018	05-Nov-2018	06-Nov-2018	06-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	06-Nov-2018	06-Nov-2018
pH Value of Filtered Water				01-Nov-2018	01-Nov-2018	01-Nov-2018		01-Nov-2018	30-Oct-2018	30-Oct-2018
Phenols by HPLC (S)	05-Nov-2018	05-Nov-2018	02-Nov-2018	29-Oct-2018	29-Oct-2018	05-Nov-2018	05-Nov-2018	02-Nov-2018	05-Nov-2018	29-Oct-2018
Sample description	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	24-Oct-2018	23-Oct-2018	24-Oct-2018	23-Oct-2018
Total Organic Carbon	06-Nov-2018	31-Oct-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	07-Nov-2018	06-Nov-2018	06-Nov-2018
Total Sulphate				30-Oct-2018	30-Oct-2018				30-Oct-2018	30-Oct-2018
Total Sulphur				26-Oct-2018	26-Oct-2018				26-Oct-2018	26-Oct-2018
TPH CWG Filtered (W)				05-Nov-2018	05-Nov-2018	05-Nov-2018		05-Nov-2018	31-Oct-2018	30-Oct-2018
TPH CWG GC (S)	03-Nov-2018	03-Nov-2018	03-Nov-2018	02-Nov-2018	02-Nov-2018	01-Nov-2018	02-Nov-2018	02-Nov-2018	05-Nov-2018	02-Nov-2018
VOC MS (S)	04-Nov-2018	04-Nov-2018	04-Nov-2018	03-Nov-2018	03-Nov-2018	01-Nov-2018	03-Nov-2018	03-Nov-2018	06-Nov-2018	03-Nov-2018

Lab Sample No(s)	18569447	18569451	18569455	18569415	18569420	18569529	18569469	18569427	18569496	18569500
Customer Sample Ref.	3C-G5	3C-G5	3C-G5	4C-G8	4C-G8	3C-G4-V	3C-G5-V	4C-G8-V	3C-I3	3C-I3
AGS Ref.										
Depth	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.50 - 0.50	1.00 - 1.00	3.10 - 3.10	3.00 - 3.00	2.60 - 2.60	0.50 - 0.50	1.50 - 1.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	31-Oct-2018		07-Nov-2018	31-Oct-2018	06-Nov-2018				27-Oct-2018	31-Oct-2018
Ammoniacal Nitrogen	30-Oct-2018	29-Oct-2018	31-Oct-2018	31-Oct-2018	30-Oct-2018				30-Oct-2018	31-Oct-2018
Ammonium Soil by Titration	02-Nov-2018	05-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018	01-Nov-2018	01-Nov-2018	01-Nov-2018	05-Nov-2018	05-Nov-2018
Anions by Kone (soil)	26-Oct-2018		30-Oct-2018	01-Nov-2018	30-Oct-2018				30-Oct-2018	30-Oct-2018
Asbestos ID in Solid Samples	05-Nov-2018		05-Nov-2018	05-Nov-2018	05-Nov-2018				05-Nov-2018	05-Nov-2018
CEN 10:1 Leachate (1 Stage)	25-Oct-2018	25-Oct-2018	24-Oct-2018	25-Oct-2018	25-Oct-2018				25-Oct-2018	25-Oct-2018
CEN Readings	27-Oct-2018	27-Oct-2018	31-Oct-2018	31-Oct-2018	27-Oct-2018				27-Oct-2018	31-Oct-2018
Cyanide Comp/Free/Total/Thiocyanate	06-Nov-2018	06-Nov-2018	06-Nov-2018	07-Nov-2018	02-Nov-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018	06-Nov-2018	07-Nov-2018
Dissolved Metals by ICP-MS	01-Nov-2018	31-Oct-2018	01-Nov-2018	01-Nov-2018	01-Nov-2018				01-Nov-2018	01-Nov-2018
EPH CWG (Aliphatic) Filtered GC (W)	31-Oct-2018	31-Oct-2018	05-Nov-2018	05-Nov-2018	31-Oct-2018				31-Oct-2018	05-Nov-2018
EPH CWG (Aliphatic) GC (S)	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018
EPH CWG (Aromatic) Filtered GC (W)	31-Oct-2018	31-Oct-2018	05-Nov-2018	05-Nov-2018	31-Oct-2018				31-Oct-2018	05-Nov-2018
EPH CWG (Aromatic) GC (S)	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018
GRO by GC-FID (S)	04-Nov-2018	01-Nov-2018	05-Nov-2018	01-Nov-2018	03-Nov-2018	01-Nov-2018	02-Nov-2018	02-Nov-2018	03-Nov-2018	02-Nov-2018
GRO by GC-FID (W)	30-Oct-2018	30-Oct-2018	31-Oct-2018	31-Oct-2018	30-Oct-2018				30-Oct-2018	31-Oct-2018
Mercury Dissolved	02-Nov-2018	01-Nov-2018	02-Nov-2018	01-Nov-2018	01-Nov-2018				01-Nov-2018	01-Nov-2018
Metals in solid samples by OES	26-Oct-2018	30-Oct-2018	01-Nov-2018	26-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	26-Oct-2018	26-Oct-2018
PAH by GCMS	29-Oct-2018	31-Oct-2018	24-Oct-2018	29-Oct-2018	31-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	02-Nov-2018	29-Oct-2018
PAH in waters by GC-MS (diss.filt)	30-Oct-2018	30-Oct-2018	02-Nov-2018	02-Nov-2018	30-Oct-2018				30-Oct-2018	02-Nov-2018
pH	06-Nov-2018	05-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018	05-Nov-2018	06-Nov-2018
pH Value of Filtered Water	30-Oct-2018	30-Oct-2018	01-Nov-2018	01-Nov-2018	30-Oct-2018				30-Oct-2018	01-Nov-2018
Phenols by HPLC (S)	02-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	05-Nov-2018	02-Nov-2018
Sample description	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018
Total Organic Carbon	06-Nov-2018	31-Oct-2018	31-Oct-2018	06-Nov-2018	06-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018	06-Nov-2018	02-Nov-2018
Total Sulphate	30-Oct-2018		30-Oct-2018	30-Oct-2018	30-Oct-2018				26-Oct-2018	30-Oct-2018
Total Sulphur	25-Oct-2018		26-Oct-2018	25-Oct-2018	26-Oct-2018				26-Oct-2018	25-Oct-2018
TPH CWG Filtered (W)	31-Oct-2018	31-Oct-2018	05-Nov-2018	05-Nov-2018	31-Oct-2018				31-Oct-2018	05-Nov-2018
TPH CWG GC (S)	04-Nov-2018	01-Nov-2018	05-Nov-2018	02-Nov-2018	03-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	03-Nov-2018	02-Nov-2018
VOC MS (S)	05-Nov-2018	31-Oct-2018	04-Nov-2018	05-Nov-2018	04-Nov-2018	01-Nov-2018	01-Nov-2018	01-Nov-2018	04-Nov-2018	03-Nov-2018

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

Lab Sample No(s)	18569476	18569480	18569484	18569492	18569431	18569435
Customer Sample Ref.	3C-J3	3C-J3	3C-J3	3C-J3-V	4C-K2	4C-K2
AGS Ref.						
Depth	0.50 - 0.50	1.50 - 1.50	2.00 - 2.00	3.40 - 3.40	0.50 - 0.50	1.00 - 1.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)		07-Nov-2018	31-Oct-2018		27-Oct-2018	
Ammoniacal Nitrogen	31-Oct-2018	30-Oct-2018	31-Oct-2018		30-Oct-2018	30-Oct-2018
Ammonium Soil by Titration	06-Nov-2018	05-Nov-2018	02-Nov-2018	01-Nov-2018	05-Nov-2018	05-Nov-2018
Anions by Kone (soil)		30-Oct-2018	26-Oct-2018		30-Oct-2018	
Asbestos ID in Solid Samples		05-Nov-2018	05-Nov-2018		05-Nov-2018	
Asbestos Quantification - Full					06-Nov-2018	
CEN 10:1 Leachate (1 Stage)	25-Oct-2018	25-Oct-2018	25-Oct-2018		24-Oct-2018	25-Oct-2018
CEN Readings	31-Oct-2018	27-Oct-2018	31-Oct-2018		27-Oct-2018	27-Oct-2018
Cyanide Comp/Free/Total/Thiocyanate	06-Nov-2018	06-Nov-2018	07-Nov-2018	25-Oct-2018	12-Nov-2018	06-Nov-2018
Dissolved Metals by ICP-MS	01-Nov-2018	01-Nov-2018	01-Nov-2018		02-Nov-2018	01-Nov-2018
EPH CWG (Aliphatic) Filtered GC (W)	05-Nov-2018	31-Oct-2018	05-Nov-2018		30-Oct-2018	30-Oct-2018
EPH CWG (Aliphatic) GC (S)	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018
EPH CWG (Aromatic) Filtered GC (W)	05-Nov-2018	31-Oct-2018	05-Nov-2018		30-Oct-2018	30-Oct-2018
EPH CWG (Aromatic) GC (S)	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018
GRO by GC-FID (S)	04-Nov-2018	01-Nov-2018	03-Nov-2018	01-Nov-2018	01-Nov-2018	02-Nov-2018
GRO by GC-FID (W)	31-Oct-2018	30-Oct-2018	31-Oct-2018		30-Oct-2018	30-Oct-2018
Mercury Dissolved	02-Nov-2018	02-Nov-2018	01-Nov-2018		01-Nov-2018	02-Nov-2018
Metals in solid samples by OES	29-Oct-2018	31-Oct-2018	26-Oct-2018	31-Oct-2018	26-Oct-2018	29-Oct-2018
PAH by GCMS	29-Oct-2018	25-Oct-2018	29-Oct-2018	30-Oct-2018	29-Oct-2018	25-Oct-2018
PAH in waters by GC-MS (diss.filt)	02-Nov-2018	30-Oct-2018	02-Nov-2018		29-Oct-2018	29-Oct-2018
pH	05-Nov-2018	06-Nov-2018	06-Nov-2018	02-Nov-2018	05-Nov-2018	05-Nov-2018
pH Value of Filtered Water	01-Nov-2018	30-Oct-2018	01-Nov-2018		30-Oct-2018	30-Oct-2018
Phenols by HPLC (S)	05-Nov-2018	05-Nov-2018	02-Nov-2018	29-Oct-2018	05-Nov-2018	05-Nov-2018
Sample description	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018
Total Organic Carbon	31-Oct-2018	31-Oct-2018	06-Nov-2018	02-Nov-2018	06-Nov-2018	06-Nov-2018
Total Sulphate		30-Oct-2018	31-Oct-2018		26-Oct-2018	
Total Sulphur		26-Oct-2018	26-Oct-2018		25-Oct-2018	
TPH CWG Filtered (W)	05-Nov-2018	31-Oct-2018	05-Nov-2018		30-Oct-2018	30-Oct-2018
TPH CWG GC (S)	04-Nov-2018	01-Nov-2018	03-Nov-2018	05-Nov-2018	02-Nov-2018	02-Nov-2018
VOC MS (S)	05-Nov-2018	31-Oct-2018	05-Nov-2018	01-Nov-2018	05-Nov-2018	03-Nov-2018

Appendix

General

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

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

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

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

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

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

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

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

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

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

11. Results relate only to the items tested.

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

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

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

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

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

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

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

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

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

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

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

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

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

Sample Deviations

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

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

Asbestos

Identification of Asbestos in Bulk Materials & Soils

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

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

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

Visual Estimation Of Fibre Content

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

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

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

Unit 7-8 Hawarden Business Park
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Hawarden
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Website: www.alsenvironmental.co.uk

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

Attention: John Fitzgerald

CERTIFICATE OF ANALYSIS

Date:	15 November 2018
Customer:	H_ATKINS_LDC
Sample Delivery Group (SDG):	181030-48
Your Reference:	
Location:	Llanwern
Report No:	481246

This report has been revised and directly supersedes 480707 in its entirety.

We received 16 samples on Tuesday October 30, 2018 and 16 of these samples were scheduled for analysis which was completed on Thursday November 15, 2018. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

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

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

Approved By:



Sonia McWhan

Operations Manager

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

CERTIFICATE OF ANALYSIS

SDG:	181030-48	**Client Reference:**		**Report Number:**	481246
Location:	Llanwern	**Order Number:**	LLA501	**Superseded Report:**	480707

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
18632769	4E-B4		0.50 - 0.50	29/10/2018
18632775	4E-B4		1.00 - 1.00	29/10/2018
18632712	4E-C1		0.20 - 0.20	29/10/2018
18632782	4E-C1		0.40 - 0.40	29/10/2018
18632739	4E-C2		0.50 - 0.50	29/10/2018
18632746	4E-C2		1.00 - 1.00	29/10/2018
18632759	4E-C2-V		1.65 - 1.65	29/10/2018
18632792	4E-D1		0.50 - 0.50	29/10/2018
18632797	4E-D1		1.00 - 1.00	29/10/2018
18632721	4E-D2		0.25 - 0.25	29/10/2018
18632731	4E-D2		1.00 - 1.00	29/10/2018
18632810	4E-D1-V		1.80 - 1.80	29/10/2018
18632818	4E-E2		0.20 - 0.20	29/10/2018
18632824	4E-E2		0.50 - 0.50	29/10/2018
18632834	4E-E2		1.30 - 1.30	29/10/2018
18632842	4E-E2-V		2.60 - 2.60	29/10/2018

Maximum Sample/Coolbox Temperature (°C) : **8.2**

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

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

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

Validated

CERTIFICATE OF ANALYSIS

SDG:	181030-48	**Client Reference:**		**Report Number:**	481246
Location:	Llanwern	**Order Number:**	LLA501	**Superseded Report:**	480707

Results Legend

X Test

N No Determination Possible

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

			Lab Sample No(s)																			
			Customer Sample Reference																			
			AGS Reference																			
			Depth (m)																			
			Container	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)
			Sample Type	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 7		X						X						X						
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 13	X			X			X			X			X			X				
Ammonium Soil by Titration	All	NDPs: 0 Tests: 16		X			X			X			X			X			X			X
Anions by Kone (soil)	All	NDPs: 0 Tests: 7		X						X						X						
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 7	X						X						X							
Asbestos Quantification - Full	All	NDPs: 0 Tests: 3	X																			
Calorific Value (S)*	All	NDPs: 0 Tests: 1																				
CEN Readings	All	NDPs: 0 Tests: 13	X			X			X			X			X			X				
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 29	X	X		X	X		X	X		X	X		X	X		X	X			X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 13	X			X			X			X			X			X				
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 13	X			X			X			X			X			X				
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 16		X			X			X			X			X			X			X
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 13	X			X			X			X			X			X				
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 16		X			X			X			X			X			X			X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 16			X			X			X			X			X			X		

18632824	4E-E2		0.50 - 0.50	60g VOC (ALE215)	S																		X
				250g Amber Jar (ALE210)	S			X				X		X			X		X			
				1kg TUB	S		X						X	X	X	X		X				
18632818	4E-E2		0.20 - 0.20	60g VOC (ALE215)	S																		X
				250g Amber Jar (ALE210)	S	X		X	X					X			X		X			
				1kg TUB	S		X			X	X		X	X	X	X		X				
18632810	4E-D1-V		1.80 - 1.80	60g VOC (ALE215)	S																		X
				250g Amber Jar (ALE210)	S			X						X			X		X			
18632731	4E-D2		1.00 - 1.00	60g VOC (ALE215)	S																		X
				250g Amber Jar (ALE210)	S	X		X	X					X			X		X			
				1kg TUB	S		X			X	X		X	X	X	X		X				
18632721	4E-D2		0.25 - 0.25	60g VOC (ALE215)	S																		X
				250g Amber Jar (ALE210)	S			X						X			X		X			
				1kg TUB	S		X						X	X	X	X		X				
18632797	4E-D1		1.00 - 1.00	60g VOC (ALE215)	S																		X
				250g Amber Jar (ALE210)	S			X						X			X		X			
				1kg TUB	S		X						X	X	X	X		X				
18632792	4E-D1		0.50 - 0.50	60g VOC (ALE215)	S																		X
				250g Amber Jar (ALE210)	S	X		X	X					X			X		X			
				1kg TUB	S		X			X			X	X	X	X		X				
18632759	4E-C2-V		1.65 - 1.65	60g VOC (ALE215)	S																		X

CERTIFICATE OF ANALYSIS

SDG:	181030-48	**Client Reference:**	
Location:	Llanwern	**Order Number:**	LLA501
Report Number:	481246	**Superseded Report:**	480707

Results Legend

- X Test
- N No Determination Possible

Sample Types -

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

Lab Sample No(s)			18632769			18632775			18632712			18632782			18632739			18632746			18632759
Customer Sample Reference			4E-B4			4E-B4			4E-C1			4E-C1			4E-C2			4E-C2			4E-C2-V
AGS Reference																					
Depth (m)			0.50 - 0.50			1.00 - 1.00			0.20 - 0.20			0.40 - 0.40			0.50 - 0.50			1.00 - 1.00			1.65 - 1.65
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
GRO by GC-FID (W)	All	NDPs: 0 Tests: 13	X			X			X			X			X			X			
Mercury Dissolved	All	NDPs: 0 Tests: 13	X			X			X			X			X			X			
Metals in solid samples by OES	All	NDPs: 0 Tests: 16		X			X			X			X			X			X		X
PAH by GCMS	All	NDPs: 0 Tests: 16		X			X			X			X			X			X		X
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 13	X			X			X			X			X			X			
pH	All	NDPs: 0 Tests: 16		X			X			X			X			X			X		X
pH Value	All	NDPs: 0 Tests: 13	X			X			X			X			X			X			
Phenols by HPLC (S)	All	NDPs: 0 Tests: 16		X			X			X			X			X			X		X
Sample description	All	NDPs: 0 Tests: 16		X			X			X			X			X			X		X
Total Organic Carbon	All	NDPs: 0 Tests: 16		X			X			X			X			X			X		X
Total Sulphate	All	NDPs: 0 Tests: 7		X						X						X					
Total Sulphur	All	NDPs: 0 Tests: 7		X						X						X					
TPH CWG (W)	All	NDPs: 0 Tests: 13	X			X			X			X			X			X			
TPH CWG GC (S)	All	NDPs: 0 Tests: 16		X			X			X			X			X			X		X
VOC MS (S)	All	NDPs: 0 Tests: 16			X			X			X			X			X			X	

18632824	4E-E2		0.50 - 0.50	60g VOC (ALE215)	S																		x
				250g Amber Jar (ALE210)	S			x	x		x		x	x	x					x		
				1kg TUB	S	x	x			x		x							x			
18632818	4E-E2		0.20 - 0.20	60g VOC (ALE215)	S																		x
				250g Amber Jar (ALE210)	S			x	x		x		x	x	x	x	x			x		
				1kg TUB	S	x	x			x		x							x			
18632810	4E-D1-V		1.80 - 1.80	60g VOC (ALE215)	S																		x
				250g Amber Jar (ALE210)	S			x	x		x		x	x	x					x		
18632731	4E-D2		1.00 - 1.00	60g VOC (ALE215)	S																		x
				250g Amber Jar (ALE210)	S			x	x		x		x	x	x	x	x			x		
				1kg TUB	S	x	x			x		x							x			
18632721	4E-D2		0.25 - 0.25	60g VOC (ALE215)	S																		x
				250g Amber Jar (ALE210)	S			x	x		x		x	x	x					x		
				1kg TUB	S	x	x			x		x							x			
18632797	4E-D1		1.00 - 1.00	60g VOC (ALE215)	S																		x
				250g Amber Jar (ALE210)	S			x	x		x		x	x	x					x		
				1kg TUB	S	x	x			x		x							x			
18632792	4E-D1		0.50 - 0.50	60g VOC (ALE215)	S																		x
				250g Amber Jar (ALE210)	S			x	x		x		x	x	x	x	x			x		
				1kg TUB	S	x	x			x		x							x			
18632759	4E-C2-V		1.65 - 1.65	60g VOC (ALE215)	S																		x

CERTIFICATE OF ANALYSIS

SDG:	181030-48	**Client Reference:**		**Report Number:**	481246
Location:	Llanwern	**Order Number:**	LLA501	**Superseded Report:**	480707

Results Legend

X Test

N No Determination Possible

Sample Types -

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

Lab Sample No(s)			18632834				18632842	
Customer Sample Reference			4E-E2				4E-E2-V	
AGS Reference								
Depth (m)			1.30 - 1.30				2.60 - 2.60	
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	
Sample Type			S	S	S	S	S	
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 7		X				
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 13	X					
Ammonium Soil by Titration	All	NDPs: 0 Tests: 16		X		X		
Anions by Kone (soil)	All	NDPs: 0 Tests: 7		X				
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 7	X					
CEN Readings	All	NDPs: 0 Tests: 13	X					
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 29	X	X		X		
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 13	X					
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 13	X					
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 16		X		X		
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 13	X					
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 16		X		X		
GRO by GC-FID (S)	All	NDPs: 0 Tests: 16			X		X	
GRO by GC-FID (W)	All	NDPs: 0 Tests: 13	X					
Mercury Dissolved	All	NDPs: 0 Tests: 13	X					

Validated

CERTIFICATE OF ANALYSIS

SDG:	181030-48	**Client Reference:**		**Report Number:**	481246
Location:	Llanwern	**Order Number:**	LLA501	**Superseded Report:**	480707

Results Legend

X Test

N No Determination Possible

Sample Types -

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

Lab Sample No(s)			18632834			18632842		
Customer Sample Reference			4E-E2			4E-E2-V		
AGS Reference								
Depth (m)			1.30 - 1.30			2.60 - 2.60		
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	
Sample Type			S	S	S	S	S	
Metals in solid samples by OES	All	NDPs: 0 Tests: 16		X		X		
PAH by GCMS	All	NDPs: 0 Tests: 16		X		X		
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 13	X					
pH	All	NDPs: 0 Tests: 16		X		X		
pH Value	All	NDPs: 0 Tests: 13	X					
Phenols by HPLC (S)	All	NDPs: 0 Tests: 16		X		X		
Sample description	All	NDPs: 0 Tests: 16		X		X		
Total Organic Carbon	All	NDPs: 0 Tests: 16		X		X		
Total Sulphate	All	NDPs: 0 Tests: 7		X				
Total Sulphur	All	NDPs: 0 Tests: 7		X				
TPH CWG (W)	All	NDPs: 0 Tests: 13	X					
TPH CWG GC (S)	All	NDPs: 0 Tests: 16		X		X		
VOC MS (S)	All	NDPs: 0 Tests: 16			X		X	

CERTIFICATE OF ANALYSIS

SDG:	181030-48	**Client Reference:**		**Report Number:**	481246
Location:	Llanwern	**Order Number:**	LLA501	**Superseded Report:**	480707

Sample Descriptions

Grain Sizes

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

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
18632769	4E-B4	0.50 - 0.50	Dark Brown	Sandy Loam	Vegetation	Stones
18632775	4E-B4	1.00 - 1.00	Dark Brown	Loamy Sand	Stones	Vegetation
18632712	4E-C1	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	Brick
18632782	4E-C1	0.40 - 0.40	Dark Brown	Sandy Loam	Vegetation	Stones
18632739	4E-C2	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
18632746	4E-C2	1.00 - 1.00	Dark Brown	Loamy Sand	Stones	Brick
18632759	4E-C2-V	1.65 - 1.65	Grey	Silty Clay	Vegetation	None
18632792	4E-D1	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Concrete/Aggregate
18632797	4E-D1	1.00 - 1.00	Dark Brown	Sand	Stones	Vegetation
18632721	4E-D2	0.25 - 0.25	Dark Brown	Loamy Sand	Concrete/Aggregate	Stones
18632731	4E-D2	1.00 - 1.00	Dark Brown	Loamy Sand	Stones	Brick
18632810	4E-D1-V	1.80 - 1.80	Dark Brown	Loamy Sand	Vegetation	Stones
18632818	4E-E2	0.20 - 0.20	Dark Brown	Sandy Loam	Vegetation	Stones
18632824	4E-E2	0.50 - 0.50	Dark Brown	Sand	Stones	Vegetation
18632834	4E-E2	1.30 - 1.30	Dark Brown	Loamy Sand	Stones	Vegetation
18632842	4E-E2-V	2.60 - 2.60	Dark Brown	Silty Clay Loam	Vegetation	None

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

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

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

Validated

CERTIFICATE OF ANALYSIS

SDG:	181030-48	**Client Reference:**		**Report Number:**	481246
Location:	Llanwern	**Order Number:**	LLA501	**Superseded Report:**	480707

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

Component	LOD/Units	Method	Customer Sample Ref.	4E-B4	4E-B4	4E-C1	4E-C1	4E-C2	4E-C2
			Depth (m)	0.50 - 0.50	1.00 - 1.00	0.20 - 0.20	0.40 - 0.40	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	29/10/2018	29/10/2018	29/10/2018	29/10/2018	29/10/2018	29/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018
			SDG Ref	181030-48	181030-48	181030-48	181030-48	181030-48	181030-48
			Lab Sample No.(s)	18632769	18632775	18632712	18632782	18632739	18632746
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		7.1	5.7	6.7	7.2	9.6	10
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.192		0.284		0.282	
Sulphate, Total potential	<0.06 %	TM132		0.576		0.852		0.846	
Soil Organic Matter (SOM)	<0.35 %	TM132		7.59 #	3.28 #	36.9 #	37.1 #	37.2 #	10.7 #
pH	1 pH Units	TM133		9.45 M	9.15 M	9.04 M	9.51 M	8.98 M	11.6 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 ♦ M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 ♦ M	<1 M
Arsenic	<0.6 mg/kg	TM181		11.5 M	9.31 M	6.16 M	6.22 M	10 M	12.3 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	<0.2 M	0.388 M	<0.02 M	0.893 M	2.07 M
Chromium	<0.9 mg/kg	TM181		75.9 M	<9 M	114 M	30.8 M	20.5 M	36.8 M
Copper	<1.4 mg/kg	TM181		26.1 M	<14 M	13.2 M	17.4 M	31.8 M	67.5 M
Iron	<1000 mg/kg	TM181		210000 #	216000 #	47600 #	57700 #	80100 #	63800 #
Lead	<0.7 mg/kg	TM181		144 M	55.6 M	63.4 M	36.7 M	97.6 M	113 M
Manganese	<0.13 mg/kg	TM181		9030 M	3260 M	6110 M	3690 M	2780 M	3570 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<1.4 M	<0.14 M	<0.14 M	<1.4 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		34.1 M	20.3 M	15.7 M	13.6 M	30.2 M	35 M
Selenium	<1 mg/kg	TM181		<10 #	<10 #	3.2 #	1.85 #	<10 #	1.47 #
Vanadium	<0.2 mg/kg	TM181		168 #	98 #	132 #	65 #	45.7 #	37.6 #
Zinc	<1.9 mg/kg	TM181		467 M	236 M	542 M	260 M	332 M	395 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.184		0.21		0.13	
Calcium	<21 mg/kg	TM224		82200		151000		97700	
Magnesium	<8 mg/kg	TM224		6840		27100		14300	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.0679 M		0.0845 M		0.0521 M	
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304		<0.001 #					
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304		<0.001 #					
Additional Asbestos Components (Using TM048)		TM304		None #					
Analysts Comments		TM304		N/A					
Asbestos Quantification - Total - %	<0.001 %	TM304		<0.001 #					

Validated

CERTIFICATE OF ANALYSIS

SDG:	181030-48	**Client Reference:**		**Report Number:**	481246
Location:	Llanwern	**Order Number:**	LLA501	**Superseded Report:**	480707

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

Component	LOD/Units	Method	Customer Sample Ref.	4E-C2-V	4E-D1	4E-D1	4E-D2	4E-D2	4E-D1-V
			Depth (m)	1.65 - 1.65	0.50 - 0.50	1.00 - 1.00	0.25 - 0.25	1.00 - 1.00	1.80 - 1.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	29/10/2018	29/10/2018	29/10/2018	29/10/2018	29/10/2018	29/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018
			SDG Ref	181030-48	181030-48	181030-48	181030-48	181030-48	181030-48
			Lab Sample No.(s)	18632759	18632792	18632797	18632721	18632731	18632810
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		24	6.3	11	8.2	5.7	25
Exchangeable Ammonia as N	<12 mg/kg	TM024		341 M	15.4 M	19.2 M	<12 M	<12 M	137 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0107 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132			0.273			0.276	
Sulphate, Total potential	<0.06 %	TM132			0.819			0.828	
Soil Organic Matter (SOM)	<0.35 %	TM132		0.852 #	11.8 #	48.8 #	44 #	4.19 #	1 #
pH	1 pH Units	TM133		8.46 M	9.62 M	9.85 M	11 M	11.7 M	8.35 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	7.46 M	15.8 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		11.1 M	5.35 M	6.63 M	8.33 M	7.33 M	13.7 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	<0.02 M	<0.02 M	<0.02 M	0.342 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		25.6 M	16.5 M	32 M	126 M	732 M	28.1 M
Copper	<1.4 mg/kg	TM181		9.52 M	7.2 M	20 M	19.5 M	30 M	10.5 M
Iron	<1000 mg/kg	TM181		33400 #	32900 #	33300 #	57900 #	201000 #	34200 #
Lead	<0.7 mg/kg	TM181		22.5 M	15.7 M	30.5 M	28.8 M	24.1 M	24.5 M
Manganese	<0.13 mg/kg	TM181		1260 M	2290 M	3490 M	7680 M	45700 M	1640 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<1.4 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		32 M	7.56 M	14.7 M	13.5 M	22.2 M	36.9 M
Selenium	<1 mg/kg	TM181		<1 #	1.13 #	2.57 #	3.53 #	17.9 #	<1 #
Vanadium	<0.2 mg/kg	TM181		45.3 #	33.7 #	45.6 #	96.4 #	397 #	50.4 #
Zinc	<1.9 mg/kg	TM181		96.5 M	47.6 M	293 M	329 M	69.1 M	104 M
Sulphate, acid soluble (total)	<0.02 %	TM221			0.393			0.507	
Calcium	<21 mg/kg	TM224			171000			219000	
Magnesium	<8 mg/kg	TM224			12800			7260	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243			0.121 M			0.108 M	
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304						<0.001 #	
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304						<0.001 #	
Additional Asbestos Components (Using TM048)		TM304						None #	
Analysts Comments		TM304						N/A	
Asbestos Quantification - Total - %	<0.001 %	TM304						<0.001 #	

CERTIFICATE OF ANALYSIS

SDG:	181030-48	**Client Reference:**		**Report Number:**	481246
Location:	Llanwern	**Order Number:**	LLA501	**Superseded Report:**	480707

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

Component	LOD/Units	Method	Customer Sample Ref.	4E-E2	4E-E2	4E-E2	4E-E2-V		
			Depth (m)	0.20 - 0.20	0.50 - 0.50	1.30 - 1.30	2.60 - 2.60		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	29/10/2018	29/10/2018	29/10/2018	29/10/2018		
			Sample Time	00:00	00:00	00:00	00:00		
			Date Received	30/10/2018	30/10/2018	30/10/2018	30/10/2018		
			SDG Ref	181030-48	181030-48	181030-48	181030-48		
			Lab Sample No.(s)	18632818	18632824	18632834	18632842		
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		9.1	10	15	33		
Gross Calorific Value in Dry Matter Q(V/gr/d)	<0.5 MJ/kg	SUB			15.3				
Gross Calorific Value Original Q(V/gr/ar)	<0.5 MJ/kg	SUB			13.4				
Net Calorific Value in Dry Matter Q(V/net/d)	<0.5 MJ/kg	SUB			15.2				
Net Calorific Value in Original Q(V/net/ar)	<0.5 MJ/kg	SUB			13				
Water Analytical M (ad)	<0.5 %	SUB			1.08				
Water Gross M(ex)	<0.5 %	SUB			11.6				
Water Total M(ar)	<0.5 %	SUB			12.6				
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	353 M		
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M		
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M		
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M		
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M		
Sulphur, Total	<0.02 %	TM132		0.338		0.663			
Sulphate, Total potential	<0.06 %	TM132		1.01		1.99			
Soil Organic Matter (SOM)	<0.35 %	TM132		6.72 #	59.8 #	43.4 #	5.03 #		
pH	1 pH Units	TM133		10.8 M	11.4 M	11.3 M	7.2 M		
Cyanide, Total	<1 mg/kg	TM153		1.17 M	<1 M	<1 M	<1 M		
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M		
Arsenic	<0.6 mg/kg	TM181		14.8 M	4.96 M	7.34 M	13.3 M		
Cadmium	<0.02 mg/kg	TM181		<0.02 M	<0.02 M	0.462 M	<0.02 M		
Chromium	<0.9 mg/kg	TM181		48 M	95.8 M	187 M	35 M		
Copper	<1.4 mg/kg	TM181		36.2 M	12.8 M	15.9 M	15.3 M		
Iron	<1000 mg/kg	TM181		53900 #	57600 #	67400 #	24600 #		
Lead	<0.7 mg/kg	TM181		79.8 M	23.7 M	30.2 M	31.6 M		
Manganese	<0.13 mg/kg	TM181		4340 M	9350 M	15600 M	188 M		
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<1.4 M	<0.14 M		
Nickel	<0.2 mg/kg	TM181		17.6 M	9.88 M	14.7 M	25.1 M		
Selenium	<1 mg/kg	TM181		1.86 #	4.92 #	<10 #	<1 #		
Vanadium	<0.2 mg/kg	TM181		86.8 #	116 #	190 #	50.9 #		
Zinc	<1.9 mg/kg	TM181		454 M	77 M	107 M	112 M		
Sulphate, acid soluble (total)	<0.02 %	TM221		0.494		0.53			
Calcium	<21 mg/kg	TM224		122000		166000			

Validated

CERTIFICATE OF ANALYSIS

SDG:	181030-48	**Client Reference:**		**Report Number:**	481246
Location:	Llanwern	**Order Number:**	LLA501	**Superseded Report:**	480707

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

Component	LOD/Units	Method	Customer Sample Ref.	4E-E2	4E-E2	4E-E2	4E-E2-V		
			Depth (m)	0.20 - 0.20	0.50 - 0.50	1.30 - 1.30	2.60 - 2.60		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	29/10/2018	29/10/2018	29/10/2018	29/10/2018		
			Sample Time	00:00	00:00	00:00	00:00		
			Date Received	30/10/2018	30/10/2018	30/10/2018	30/10/2018		
			SDG Ref	181030-48	181030-48	181030-48	181030-48		
			Lab Sample No.(s)	18632818	18632824	18632834	18632842		
			AGS Reference						
Magnesium	<8 mg/kg	TM224		14600		12400			
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.4 M		0.173 M			
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304		<0.001 #					
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304		<0.001 #					
Additional Asbestos Components (Using TM048)		TM304		None #					
Analysts Comments		TM304		N/A					
Asbestos Quantification - Total - %	<0.001 %	TM304		<0.001 #					

Validated

CERTIFICATE OF ANALYSIS

SDG:	181030-48	**Client Reference:**		**Report Number:**	481246
Location:	Llanwern	**Order Number:**	LLA501	**Superseded Report:**	480707

PAH by GCMS

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

Component	LOD/Units	Method	Customer Sample Ref.	4E-B4	4E-B4	4E-C1	4E-C1	4E-C2	4E-C2
			Depth (m)	0.50 - 0.50	1.00 - 1.00	0.20 - 0.20	0.40 - 0.40	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	29/10/2018	29/10/2018	29/10/2018	29/10/2018	29/10/2018	29/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018
			SDG Ref	181030-48	181030-48	181030-48	181030-48	181030-48	181030-48
			Lab Sample No.(s)	18632769	18632775	18632712	18632782	18632739	18632746
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		86.1	87	90.3	88.6	91.1	86.2
Acenaphthene-d10 % recovery**	%	TM218		90.3	89.1	92.6	94.1	88.9	89.8
Phenanthrene-d10 % recovery**	%	TM218		98.3	95.6	96	95.2	87.3	93.7
Chrysene-d12 % recovery**	%	TM218		95.1	108	103	94.7	72.5	93
Perylene-d12 % recovery**	%	TM218		89.4	99.5	91.9	79.8	70.1	88.1
Naphthalene	<0.009 mg/kg	TM218		0.299 M	0.228 M	0.279 M	0.378 M	0.219 M	0.0772 M
Acenaphthylene	<0.012 mg/kg	TM218		0.174 M	0.142 M	0.22 M	0.157 M	0.0976 M	0.0379 M
Acenaphthene	<0.008 mg/kg	TM218		0.0296 M	0.0225 M	0.043 M	0.0491 M	0.027 M	0.012 M
Fluorene	<0.01 mg/kg	TM218		0.182 M	0.078 M	0.114 M	0.101 M	0.0528 M	0.0182 M
Phenanthrene	<0.015 mg/kg	TM218		1.29 M	0.848 M	1.47 M	1.51 M	0.685 M	0.361 M
Anthracene	<0.016 mg/kg	TM218		0.394 M	0.226 M	0.475 M	0.365 M	0.177 M	0.102 M
Fluoranthene	<0.017 mg/kg	TM218		1.84 M	1.62 M	3.03 M	2.46 M	1.23 M	1.09 M
Pyrene	<0.015 mg/kg	TM218		1.38 M	1.3 M	2.25 M	1.95 M	0.932 M	0.806 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.897 M	0.837 M	1.59 M	1.29 M	0.736 M	0.673 M
Chrysene	<0.01 mg/kg	TM218		0.946 M	0.792 M	1.51 M	1.48 M	0.705 M	0.638 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		1.29 M	1.25 M	2.37 M	1.91 M	1.12 M	0.976 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.521 M	0.436 M	0.86 M	0.675 M	0.338 M	0.338 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.804 M	0.771 M	1.44 M	1.13 M	0.623 M	0.645 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.736 M	0.726 M	1.31 M	0.89 M	0.452 M	0.554 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.161 M	0.13 M	0.288 M	0.232 M	0.124 M	0.132 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.584 M	0.549 M	1.08 M	0.742 M	0.465 M	0.415 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		11.5	9.95	18.3	15.3	7.98	6.87

CERTIFICATE OF ANALYSIS

SDG:	181030-48	**Client Reference:**		**Report Number:**	481246
Location:	Llanwern	**Order Number:**	LLA501	**Superseded Report:**	480707

PAH by GCMS

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

Component	LOD/Units	Method	Customer Sample Ref.	4E-C2-V	4E-D1	4E-D1	4E-D2	4E-D2	4E-D1-V
			Depth (m)	1.65 - 1.65	0.50 - 0.50	1.00 - 1.00	0.25 - 0.25	1.00 - 1.00	1.80 - 1.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	29/10/2018	29/10/2018	29/10/2018	29/10/2018	29/10/2018	29/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018
			SDG Ref	181030-48	181030-48	181030-48	181030-48	181030-48	181030-48
			Lab Sample No.(s)	18632759	18632792	18632797	18632721	18632731	18632810
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		87.1	86.4	87.6	86.7	88.1	88.6
Acenaphthene-d10 % recovery**	%	TM218		89.7	85.6	90.2	91.1	87.2	90.2
Phenanthrene-d10 % recovery**	%	TM218		97.3	86.8	97.2	92.6	84.8	94
Chrysene-d12 % recovery**	%	TM218		110	82.8	93.5	86.6	76.8	109
Perylene-d12 % recovery**	%	TM218		105	78.8	81.3	76.7	78.8	106
Naphthalene	<0.009 mg/kg	TM218		<0.009 M	0.229 M	0.465 M	0.36 M	0.186 M	<0.009 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	0.132 M	0.192 M	0.18 M	0.0808 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	0.0258 M	0.111 M	0.0434 M	0.0631 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	0.078 M	0.256 M	0.285 M	<0.05 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		<0.015 M	0.605 M	2.74 M	4.08 M	0.968 M	<0.015 M
Anthracene	<0.016 mg/kg	TM218		<0.016 M	0.223 M	0.735 M	0.773 M	0.212 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		<0.017 M	1.18 M	4.71 M	5.47 M	3.1 M	<0.017 M
Pyrene	<0.015 mg/kg	TM218		<0.015 M	0.918 M	3.93 M	3.79 M	2.88 M	<0.015 M
Benz(a)anthracene	<0.014 mg/kg	TM218		<0.014 M	0.648 M	3.13 M	2.32 M	1.63 M	<0.014 M
Chrysene	<0.01 mg/kg	TM218		<0.01 M	0.679 M	3 M	2.25 M	1.91 M	<0.01 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		<0.015 M	1.04 M	4.41 M	3.28 M	2.98 M	<0.015 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 M	0.293 M	1.38 M	1.15 M	0.94 M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		<0.015 M	0.614 M	2.93 M	1.95 M	1.88 M	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		<0.018 M	0.388 M	2.54 M	1.74 M	1.34 M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	0.119 M	0.574 M	0.37 M	0.288 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 M	0.458 M	1.98 M	1.3 M	1.53 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		<0.118	7.64	33.1	29.4	20	<0.118

CERTIFICATE OF ANALYSIS

SDG:	181030-48	**Client Reference:**		**Report Number:**	481246
Location:	Llanwern	**Order Number:**	LLA501	**Superseded Report:**	480707

PAH by GCMS

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

Component	LOD/Units	Method	Customer Sample Ref.	4E-E2	4E-E2	4E-E2	4E-E2-V		
			Depth (m)	0.20 - 0.20	0.50 - 0.50	1.30 - 1.30	2.60 - 2.60		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	29/10/2018	29/10/2018	29/10/2018	29/10/2018		
			Sample Time	00:00	00:00	00:00	00:00		
			Date Received	30/10/2018	30/10/2018	30/10/2018	30/10/2018		
			SDG Ref	181030-48	181030-48	181030-48	181030-48		
			Lab Sample No.(s)	18632818	18632824	18632834	18632842		
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		87.6	85.6	91.4	83.6		
Acenaphthene-d10 % recovery**	%	TM218		91.5	89.6	89.3	87.8		
Phenanthrene-d10 % recovery**	%	TM218		101	93.2	87.1	93.9		
Chrysene-d12 % recovery**	%	TM218		105	86.8	72.7	96.6		
Perylene-d12 % recovery**	%	TM218		98.5	72.1	71.8	95.8		
Naphthalene	<0.009 mg/kg	TM218		0.301 M	0.143 M	0.105 M	<0.009 M		
Acenaphthylene	<0.012 mg/kg	TM218		0.198 M	0.0565 M	0.0444 M	<0.012 M		
Acenaphthene	<0.008 mg/kg	TM218		0.0638 M	0.0359 M	0.0283 M	<0.008 M		
Fluorene	<0.01 mg/kg	TM218		0.209 M	0.0569 M	0.0469 M	<0.01 M		
Phenanthrene	<0.015 mg/kg	TM218		2.31 M	0.814 M	0.596 M	<0.015 M		
Anthracene	<0.016 mg/kg	TM218		0.668 M	0.187 M	0.201 M	<0.016 M		
Fluoranthene	<0.017 mg/kg	TM218		4.04 M	1.34 M	1.14 M	<0.017 M		
Pyrene	<0.015 mg/kg	TM218		2.91 M	1.3 M	0.93 M	<0.015 M		
Benz(a)anthracene	<0.014 mg/kg	TM218		1.84 M	0.942 M	0.632 M	<0.014 M		
Chrysene	<0.01 mg/kg	TM218		1.72 M	1.02 M	0.698 M	<0.01 M		
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		2.35 M	1.49 M	0.952 M	<0.015 M		
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.843 M	0.594 M	0.297 M	<0.014 M		
Benzo(a)pyrene	<0.015 mg/kg	TM218		1.4 M	0.908 M	0.591 M	<0.015 M		
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		1.23 M	0.741 M	0.408 M	<0.018 M		
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.275 M	0.175 M	0.0983 M	<0.023 M		
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.879 M	0.603 M	0.458 M	<0.024 M		
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		21.2	10.4	7.22	<0.118		

CERTIFICATE OF ANALYSIS

SDG:	181030-48	**Client Reference:**		**Report Number:**	481246
Location:	Llanwern	**Order Number:**	LLA501	**Superseded Report:**	480707

TPH CWG (S)

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

Component	LOD/Units	Method	Customer Sample Ref.	4E-B4	4E-B4	4E-C1	4E-C1	4E-C2	4E-C2
			Depth (m)	0.50 - 0.50	1.00 - 1.00	0.20 - 0.20	0.40 - 0.40	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	29/10/2018	29/10/2018	29/10/2018	29/10/2018	29/10/2018	29/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018
			SDG Ref	181030-48	181030-48	181030-48	181030-48	181030-48	181030-48
			Lab Sample No.(s)	18632769	18632775	18632712	18632782	18632739	18632746
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		78	99	60	41.4	58	81
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 M	<0.2 M	<0.2 #	<0.2 #	<0.2 #	<0.2 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02	0.0361	<0.02	<0.02	<0.02	<0.02
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02	0.035	<0.02	<0.02	<0.02	<0.02
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02	0.0552	<0.02	<0.02	<0.02	<0.02
Aliphatics >C12-C16	<0.1 mg/kg	TM173		0.132	2.13	1.86	3.69	3.11	2.48
Aliphatics >C16-C21	<0.1 mg/kg	TM173		4.21	9.81	11.9	22.2	13.6	10.8
Aliphatics >C21-C35	<0.1 mg/kg	TM173		49.6	82.2	52.3	66.6	52.5	40.6
Aliphatics >C35-C44	<0.1 mg/kg	TM173		17.7	35.8	25.2	19.9	24.2	20.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		71.7	130	91.3	112	93.5	74
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02	0.0233	<0.02	<0.02	<0.02	<0.02
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02	0.0371	<0.02	<0.02	<0.02	<0.02
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		2.49	2.8	7.28	8.07	5.84	2.72
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		10.7	11.3	28.1	46.6	26.1	12.7
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		52.3	61.1	108	122	96	69.3
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		28.4	44.9	61	39.1	49.8	42.9
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		11.4	19.7	27.1	14.8	21.1	17.3
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		94	120	204	216	178	128
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		166	250	295	328	271	202

Validated

CERTIFICATE OF ANALYSIS

SDG:	181030-48	**Client Reference:**		**Report Number:**	481246
Location:	Llanwern	**Order Number:**	LLA501	**Superseded Report:**	480707

TPH CWG (S)

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

Component	LOD/Units	Method	Customer Sample Ref.	4E-C2-V	4E-D1	4E-D1	4E-D2	4E-D2	4E-D1-V
			Depth (m)	1.65 - 1.65	0.50 - 0.50	1.00 - 1.00	0.25 - 0.25	1.00 - 1.00	1.80 - 1.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	29/10/2018	29/10/2018	29/10/2018	29/10/2018	29/10/2018	29/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018
			SDG Ref	181030-48	181030-48	181030-48	181030-48	181030-48	181030-48
			Lab Sample No.(s)	18632759	18632792	18632797	18632721	18632731	18632810
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		107	53	29.3	79	96	103
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 M	<0.2 #	<0.2 #	<0.2 M	<0.2 M	<0.2 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	6.9	5.84	3.5	7.19	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		<0.1	26.7	22.1	20.8	59.4	<0.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		<0.1	70.4	64.3	65.3	118	<0.1
Aliphatics >C35-C44	<0.1 mg/kg	TM173		<0.1	25.9	18.1	20.5	43.3	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		<0.1	130	110	110	228	<0.1
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	7.07	15.2	9.33	4.25	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		<0.1	20.1	89	66	38.2	1.38
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		3.49	82.9	292	161	150	6.82
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		0.173	44.9	78.3	54.2	60.6	1.06
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		<0.1	19.1	21.2	20.7	18.6	<0.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		3.66	155	474	290	253	9.25
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		3.66	285	585	400	481	9.25

Validated

CERTIFICATE OF ANALYSIS

SDG:	181030-48	**Client Reference:**		**Report Number:**	481246
Location:	Llanwern	**Order Number:**	LLA501	**Superseded Report:**	480707

TPH CWG (S)

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

Component	LOD/Units	Method	Customer Sample Ref.	4E-E2	4E-E2	4E-E2	4E-E2-V		
			Depth (m)	0.20 - 0.20	0.50 - 0.50	1.30 - 1.30	2.60 - 2.60		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	29/10/2018	29/10/2018	29/10/2018	29/10/2018		
			Sample Time	00:00	00:00	00:00	00:00		
			Date Received	30/10/2018	30/10/2018	30/10/2018	30/10/2018		
			SDG Ref	181030-48	181030-48	181030-48	181030-48		
			Lab Sample No.(s)	18632818	18632824	18632834	18632842		
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		80	64	93	95.2		
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 M	<0.2 #	<0.2 M	<0.2 M		
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02		
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02		
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02		
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02		
Aliphatics >C12-C16	<0.1 mg/kg	TM173		2.26	5.52	7.21	<0.1		
Aliphatics >C16-C21	<0.1 mg/kg	TM173		22.7	28.9	26.2	<0.1		
Aliphatics >C21-C35	<0.1 mg/kg	TM173		123	77.6	111	4.89		
Aliphatics >C35-C44	<0.1 mg/kg	TM173		36.3	12	38.1	<0.1		
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		184	124	182	4.89		
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02		
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02		
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02		
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02		
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		4.35	6.9	6.88	<0.1		
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		18	29.6	34.2	1.3		
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		78.7	118	155	39.8		
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		36.5	34.2	62.5	8.98		
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		14.1	11.8	24.1	2.98		
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		138	189	258	50.1		
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		322	313	440	55		

Validated

CERTIFICATE OF ANALYSIS

SDG:	181030-48	**Client Reference:**		**Report Number:**	481246
Location:	Llanwern	**Order Number:**	LLA501	**Superseded Report:**	480707

VOC MS (S)

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

Component	LOD/Units	Method	Customer Sample Ref.	4E-B4	4E-B4	4E-C1	4E-C1	4E-C2	4E-C2
			Depth (m)	0.50 - 0.50	1.00 - 1.00	0.20 - 0.20	0.40 - 0.40	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	29/10/2018	29/10/2018	29/10/2018	29/10/2018	29/10/2018	29/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018
			SDG Ref	181030-48	181030-48	181030-48	181030-48	181030-48	181030-48
			Lab Sample No.(s)	18632769	18632775	18632712	18632782	18632739	18632746
			AGS Reference						
Dibromofluoromethane**	%	TM116		105	104	98.7	107	104	106
Toluene-d8**	%	TM116		99.5	97.5	95	90.2	95.8	100
4-Bromofluorobenzene**	%	TM116		88.2	86.4	80.3	74	75	92.7
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	0.167 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181030-48	**Client Reference:**		**Report Number:**	481246
Location:	Llanwern	**Order Number:**	LLA501	**Superseded Report:**	480707

VOC MS (S)

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

Component	LOD/Units	Method	Customer Sample Ref.	4E-C2-V	4E-D1	4E-D1	4E-D2	4E-D2	4E-D1-V
			Depth (m)	1.65 - 1.65	0.50 - 0.50	1.00 - 1.00	0.25 - 0.25	1.00 - 1.00	1.80 - 1.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	29/10/2018	29/10/2018	29/10/2018	29/10/2018	29/10/2018	29/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018
			SDG Ref	181030-48	181030-48	181030-48	181030-48	181030-48	181030-48
			Lab Sample No.(s)	18632759	18632792	18632797	18632721	18632731	18632810
			AGS Reference						
Dibromofluoromethane**	%	TM116		105	103	95.6	106	114	107
Toluene-d8**	%	TM116		98.4	94.8	91.7	98.3	100	98.6
4-Bromofluorobenzene**	%	TM116		96	82.1	73.5	83.1	95.2	95.9
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.2 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.18 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.14 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.08 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.2 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.2 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.26 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.8	<0.4	<0.4	<0.4

CERTIFICATE OF ANALYSIS

SDG:	181030-48	**Client Reference:**		**Report Number:**	481246
Location:	Llanwern	**Order Number:**	LLA501	**Superseded Report:**	480707

VOC MS (S)

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

Component	LOD/Units	Method	Customer Sample Ref.	4E-E2	4E-E2	4E-E2	4E-E2-V		
			Depth (m)	0.20 - 0.20	0.50 - 0.50	1.30 - 1.30	2.60 - 2.60		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	29/10/2018	29/10/2018	29/10/2018	29/10/2018		
			Sample Time	00:00	00:00	00:00	00:00		
			Date Received	30/10/2018	30/10/2018	30/10/2018	30/10/2018		
			SDG Ref	181030-48	181030-48	181030-48	181030-48		
			Lab Sample No.(s)	18632818	18632824	18632834	18632842		
			AGS Reference						
Dibromofluoromethane**	%	TM116		107	109	111	110		
Toluene-d8**	%	TM116		99.7	95.5	99.9	95.1		
4-Bromofluorobenzene**	%	TM116		90.9	72.7	95.8	92.1		
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M		
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M		
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M		
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M		
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #		
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M		
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M		
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4		

CERTIFICATE OF ANALYSIS

SDG:	181030-48	**Client Reference:**		**Report Number:**	481246
Location:	Llanwern	**Order Number:**	LLA501	**Superseded Report:**	480707

Asbestos Identification - Solid Samples

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-B4 0.50 - 0.50 SOLID 29/10/2018 00:00:00 31/10/2018 10:44:45 181030-48 18632769 TM048	08/11/2018	Lucy Caroe	Soil containing ACM debris	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-C1 0.20 - 0.20 SOLID 29/10/2018 00:00:00 31/10/2018 08:42:13 181030-48 18632712 TM048	09/11/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-C2 0.50 - 0.50 SOLID 29/10/2018 00:00:00 31/10/2018 08:40:21 181030-48 18632739 TM048	09/11/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-D1 0.50 - 0.50 SOLID 29/10/2018 00:00:00 31/10/2018 10:46:29 181030-48 18632792 TM048	08/11/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-D2 1.00 - 1.00 SOLID 29/10/2018 00:00:00 31/10/2018 10:48:43 181030-48 18632731 TM048	08/11/2018	Lucy Caroe	Soil containing Fibre bundles	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-E2 0.20 - 0.20 SOLID 29/10/2018 00:00:00 31/10/2018 06:46:52 181030-48 18632818 TM048	08/11/2018	Lucy Caroe	Fibre bundles in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG:	181030-48	**Client Reference:**		**Report Number:**	481246
Location:	Llanwern	**Order Number:**	LLA501	**Superseded Report:**	480707

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-E2 1.30 - 1.30 SOLID 29/10/2018 00:00:00 31/10/2018 06:49:32 181030-48 18632834 TM048	08/11/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	181030-48	**Client Reference:**		**Report Number:**	481246
Location:	Llanwern	**Order Number:**	LLA501	**Superseded Report:**	480707

Asbestos Quantification - Full

		Additional Asbestos Components (Using TM048)	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM Evaluation - %	Asbestos Quantification - Total - %
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-B4 0.50 - 0.50 SOLID 29/10/2018 00:00:00 31/10/2018 10:45:00 181030-48 18632769 TM304	None (#)	N/A	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-D2 1.00 - 1.00 SOLID 29/10/2018 00:00:00 31/10/2018 10:49:12 181030-48 18632731 TM304	None (#)	N/A	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-E2 0.20 - 0.20 SOLID 29/10/2018 00:00:00 31/10/2018 06:47:39 181030-48 18632818 TM304	None (#)	N/A	<0.001 (#)	<0.001 (#)	<0.001 (#)

CERTIFICATE OF ANALYSIS

SDG:	181030-48	**Client Reference:**		**Report Number:**	481246
Location:	Llanwern	**Order Number:**	LLA501	**Superseded Report:**	480707

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.18
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.3
Particle Size <4mm	>95%		

Case	
SDG	181030-48
Lab Sample Number(s)	18632712
Sampled Date	29-Oct-2018
Customer Sample Ref.	4E-C1
Depth (m)	0.20 - 0.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00297	<0.0005	0.0297	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00232	<0.001	0.0232	<0.01	-	-	-
Copper	0.00191	<0.0003	0.0191	<0.003	-	-	-
Lead	0.000626	<0.0002	0.00626	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000449	<0.0004	0.00449	<0.004	-	-	-
Selenium	0.00179	<0.001	0.0179	<0.01	-	-	-
Vanadium	0.0218	<0.001	0.218	<0.01	-	-	-
Zinc	0.00169	<0.001	0.0169	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.0389	<0.019	0.389	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.000191	<0.00005	0.00191	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	0.00019	<0.00005	0.0019	<0.0005	-	-	-
Pyrene by GCMS	0.000159	<0.00005	0.00159	<0.0005	-	-	-
Benz(a)anthracene by GCMS	0.000144	<0.00005	0.00144	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000259	<0.00005	0.00259	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000177	<0.00005	0.00177	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	0.000145	<0.00002	0.00145	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.000129	<0.00005	0.00129	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	0.000148	<0.00005	0.00148	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000132	<0.00005	0.00132	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.00167	<0.00082	0.0167	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	11.29
Conductivity (µS/cm)	631.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

15/11/2018 13:25:54

13:25:16 15/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181030-48	**Client Reference:**		**Report Number:**	481246
Location:	Llanwern	**Order Number:**	LLA501	**Superseded Report:**	480707

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.18
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.3
Particle Size <4mm	>95%		

Case	
SDG	181030-48
Lab Sample Number(s)	18632712
Sampled Date	29-Oct-2018
Customer Sample Ref.	4E-C1
Depth (m)	0.20 - 0.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	11.29
Conductivity (µS/cm)	631.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

15/11/2018 13:25:54

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CERTIFICATE OF ANALYSIS

SDG:	181030-48	**Client Reference:**		**Report Number:**	481246
Location:	Llanwern	**Order Number:**	LLA501	**Superseded Report:**	480707

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.93
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.8
Particle Size <4mm	>95%		

Case	
SDG	181030-48
Lab Sample Number(s)	18632721
Sampled Date	29-Oct-2018
Customer Sample Ref.	4E-D2
Depth (m)	0.25 - 0.25

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	0.981	<0.05	9.81	<0.5	-	-	-
Arsenic	0.0035	<0.0005	0.035	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00323	<0.001	0.0323	<0.01	-	-	-
Copper	0.0057	<0.0003	0.057	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00096	<0.0004	0.0096	<0.004	-	-	-
Selenium	0.00144	<0.001	0.0144	<0.01	-	-	-
Vanadium	0.0737	<0.001	0.737	<0.01	-	-	-
Zinc	0.00619	<0.001	0.0619	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.262	<0.019	2.62	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.000221	<0.00005	0.00221	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	0.000193	<0.00005	0.00193	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	0.0000643	<0.00005	0.000643	<0.0005	-	-	-
Pyrene by GCMS	0.000154	<0.00005	0.00154	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000194	<0.00005	0.00194	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000114	<0.00005	0.00114	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	0.0001	<0.00002	0.001	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000517	<0.00005	0.000517	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000127	<0.00005	0.00127	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.00122	<0.00082	0.0122	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	10.81
Conductivity (µS/cm)	276.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

15/11/2018 13:25:54

13:25:16 15/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181030-48	**Client Reference:**		**Report Number:**	481246
Location:	Llanwern	**Order Number:**	LLA501	**Superseded Report:**	480707

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.93
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.8
Particle Size <4mm	>95%		

Case	
SDG	181030-48
Lab Sample Number(s)	18632721
Sampled Date	29-Oct-2018
Customer Sample Ref.	4E-D2
Depth (m)	0.25 - 0.25

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	10.81
Conductivity (µS/cm)	276.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

15/11/2018 13:25:54

13:25:16 15/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181030-48	**Client Reference:**		**Report Number:**	481246
Location:	Llanwern	**Order Number:**	LLA501	**Superseded Report:**	480707

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181030-48
Lab Sample Number(s)	18632731
Sampled Date	29-Oct-2018
Customer Sample Ref.	4E-D2
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000771	<0.0005	0.00771	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0171	<0.001	0.171	<0.01	-	-	-
Copper	0.000647	<0.0003	0.00647	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00108	<0.001	0.0108	<0.01	-	-	-
Vanadium	0.0171	<0.001	0.171	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.0247	<0.019	0.247	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00569	<0.0001	0.0569	<0.001	-	-	-
Acenaphthene by GCMS	0.000563	<0.00005	0.00563	<0.0005	-	-	-
Acenaphthylene by GCMS	0.00152	<0.00005	0.0152	<0.0005	-	-	-
Fluoranthene by GCMS	0.00573	<0.00005	0.0573	<0.0005	-	-	-
Anthracene by GCMS	0.00156	<0.00005	0.0156	<0.0005	-	-	-
Phenanthrene by GCMS	0.0125	<0.00005	0.125	<0.0005	-	-	-
Fluorene by GCMS	0.0034	<0.00005	0.034	<0.0005	-	-	-
Chrysene by GCMS	0.000215	<0.00005	0.00215	<0.0005	-	-	-
Pyrene by GCMS	0.00431	<0.00005	0.0431	<0.0005	-	-	-
Benz(a)anthracene by GCMS	0.000193	<0.00005	0.00193	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000115	<0.00005	0.00115	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000671	<0.00005	0.000671	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	0.0000378	<0.00002	0.000378	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.0359	<0.00082	0.359	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	11.46
Conductivity (µS/cm)	982.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181030-48	**Client Reference:**		**Report Number:**	481246
Location:	Llanwern	**Order Number:**	LLA501	**Superseded Report:**	480707

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181030-48
Lab Sample Number(s)	18632731
Sampled Date	29-Oct-2018
Customer Sample Ref.	4E-D2
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	0.019	<0.01	0.19	<0.1	-	-	-
Aromatics >EC16-EC21	0.041	<0.01	0.41	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.06	<0.01	0.6	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.06	<0.01	0.6	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	11.46
Conductivity (µS/cm)	982.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

15/11/2018 13:25:54

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CERTIFICATE OF ANALYSIS

SDG:	181030-48	**Client Reference:**		**Report Number:**	481246
Location:	Llanwern	**Order Number:**	LLA501	**Superseded Report:**	480707

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181030-48
Lab Sample Number(s)	18632739
Sampled Date	29-Oct-2018
Customer Sample Ref.	4E-C2
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00306	<0.0005	0.0306	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0025	<0.001	0.025	<0.01	-	-	-
Copper	0.0026	<0.0003	0.026	<0.003	-	-	-
Lead	0.000733	<0.0002	0.00733	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00238	<0.001	0.0238	<0.01	-	-	-
Vanadium	0.0166	<0.001	0.166	<0.01	-	-	-
Zinc	0.00134	<0.001	0.0134	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.000318	<0.00005	0.00318	<0.0005	-	-	-
Anthracene by GCMS	0.0000954	<0.00005	0.000954	<0.0005	-	-	-
Phenanthrene by GCMS	0.000214	<0.00005	0.00214	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	0.00022	<0.00005	0.0022	<0.0005	-	-	-
Pyrene by GCMS	0.000237	<0.00005	0.00237	<0.0005	-	-	-
Benz(a)anthracene by GCMS	0.000183	<0.00005	0.00183	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000344	<0.00005	0.00344	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000243	<0.00005	0.00243	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	0.000154	<0.00002	0.00154	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.000253	<0.00005	0.00253	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	0.000209	<0.00005	0.00209	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000224	<0.00005	0.00224	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.00269	<0.00082	0.0269	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	9.16
Conductivity (µS/cm)	99.20
Temperature (°C)	18.30
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181030-48	**Client Reference:**		**Report Number:**	481246
Location:	Llanwern	**Order Number:**	LLA501	**Superseded Report:**	480707

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181030-48
Lab Sample Number(s)	18632739
Sampled Date	29-Oct-2018
Customer Sample Ref.	4E-C2
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	9.16
Conductivity (µS/cm)	99.20
Temperature (°C)	18.30
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181030-48	**Client Reference:**		**Report Number:**	481246
Location:	Llanwern	**Order Number:**	LLA501	**Superseded Report:**	480707

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181030-48
Lab Sample Number(s)	18632746
Sampled Date	29-Oct-2018
Customer Sample Ref.	4E-C2
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000603	<0.0005	0.00603	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0137	<0.001	0.137	<0.01	-	-	-
Copper	0.00461	<0.0003	0.0461	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000487	<0.0004	0.00487	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0215	<0.001	0.215	<0.01	-	-	-
Zinc	0.00314	<0.001	0.0314	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	11.29
Conductivity (µS/cm)	631.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

15/11/2018 13:25:54

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CERTIFICATE OF ANALYSIS

SDG:	181030-48	**Client Reference:**		**Report Number:**	481246
Location:	Llanwern	**Order Number:**	LLA501	**Superseded Report:**	480707

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181030-48
Lab Sample Number(s)	18632746
Sampled Date	29-Oct-2018
Customer Sample Ref.	4E-C2
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	11.29
Conductivity (µS/cm)	631.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181030-48	**Client Reference:**		**Report Number:**	481246
Location:	Llanwern	**Order Number:**	LLA501	**Superseded Report:**	480707

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.64
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.9
Particle Size <4mm	>95%		

Case	
SDG	181030-48
Lab Sample Number(s)	18632769
Sampled Date	29-Oct-2018
Customer Sample Ref.	4E-B4
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00628	<0.0005	0.0628	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00127	<0.0003	0.0127	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.0028	<0.001	0.028	<0.01	-	-	-
Vanadium	0.0948	<0.001	0.948	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	9.70
Conductivity (µS/cm)	111.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181030-48	**Client Reference:**		**Report Number:**	481246
Location:	Llanwern	**Order Number:**	LLA501	**Superseded Report:**	480707

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.64
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.9
Particle Size <4mm	>95%		

Case	
SDG	181030-48
Lab Sample Number(s)	18632769
Sampled Date	29-Oct-2018
Customer Sample Ref.	4E-B4
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	9.70
Conductivity (µS/cm)	111.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181030-48	**Client Reference:**		**Report Number:**	481246
Location:	Llanwern	**Order Number:**	LLA501	**Superseded Report:**	480707

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.04
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.3
Particle Size <4mm	>95%		

Case	
SDG	181030-48
Lab Sample Number(s)	18632775
Sampled Date	29-Oct-2018
Customer Sample Ref.	4E-B4
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00467	<0.0005	0.0467	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00206	<0.0003	0.0206	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00248	<0.001	0.0248	<0.01	-	-	-
Vanadium	0.106	<0.001	1.06	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.000208	<0.00005	0.00208	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	0.000161	<0.00005	0.00161	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	0.000183	<0.00005	0.00183	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000205	<0.00005	0.00205	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000168	<0.00005	0.00168	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	0.000107	<0.00002	0.00107	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.00011	<0.00005	0.0011	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000613	<0.00005	0.000613	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000105	<0.00005	0.00105	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.00131	<0.00082	0.0131	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	9.81
Conductivity (µS/cm)	130.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181030-48	**Client Reference:**		**Report Number:**	481246
Location:	Llanwern	**Order Number:**	LLA501	**Superseded Report:**	480707

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.04
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.3
Particle Size <4mm	>95%		

Case	
SDG	181030-48
Lab Sample Number(s)	18632775
Sampled Date	29-Oct-2018
Customer Sample Ref.	4E-B4
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	0.015	<0.01	0.15	<0.1	-	-	-
Aliphatics >C21-C35	0.043	<0.01	0.43	<0.1	-	-	-
Total Aliphatics >C12-C35	0.058	<0.01	0.58	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.058	<0.01	0.58	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	0.058	<0.01	0.58	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	9.81
Conductivity (µS/cm)	130.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

15/11/2018 13:25:54

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CERTIFICATE OF ANALYSIS

SDG:	181030-48	**Client Reference:**		**Report Number:**	481246
Location:	Llanwern	**Order Number:**	LLA501	**Superseded Report:**	480707

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.76
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.8
Particle Size <4mm	>95%		

Case				
SDG	181030-48			
Lab Sample Number(s)	18632782			
Sampled Date	29-Oct-2018			
Customer Sample Ref.	4E-C1			
Depth (m)	0.40 - 0.40			

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.464	<0.2	4.64	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00265	<0.0005	0.0265	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00263	<0.001	0.0263	<0.01	-	-	-
Copper	0.00169	<0.0003	0.0169	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00199	<0.001	0.0199	<0.01	-	-	-
Vanadium	0.0211	<0.001	0.211	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.000314	<0.00005	0.00314	<0.0005	-	-	-
Anthracene by GCMS	0.0000911	<0.00005	0.000911	<0.0005	-	-	-
Phenanthrene by GCMS	0.000268	<0.00005	0.00268	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	0.000252	<0.00005	0.00252	<0.0005	-	-	-
Pyrene by GCMS	0.00026	<0.00005	0.0026	<0.0005	-	-	-
Benz(a)anthracene by GCMS	0.00019	<0.00005	0.0019	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000366	<0.00005	0.00366	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000227	<0.00005	0.00227	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	0.000161	<0.00002	0.00161	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.000177	<0.00005	0.00177	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	0.000187	<0.00005	0.00187	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000203	<0.00005	0.00203	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.0027	<0.00082	0.027	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	8.80
Conductivity (µS/cm)	121.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181030-48	**Client Reference:**		**Report Number:**	481246
Location:	Llanwern	**Order Number:**	LLA501	**Superseded Report:**	480707

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.76
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.8
Particle Size <4mm	>95%		

Case	
SDG	181030-48
Lab Sample Number(s)	18632782
Sampled Date	29-Oct-2018
Customer Sample Ref.	4E-C1
Depth (m)	0.40 - 0.40

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	8.80
Conductivity (µS/cm)	121.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181030-48	**Client Reference:**		**Report Number:**	481246
Location:	Llanwern	**Order Number:**	LLA501	**Superseded Report:**	480707

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.72
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.7
Particle Size <4mm	>95%		

Case	
SDG	181030-48
Lab Sample Number(s)	18632792
Sampled Date	29-Oct-2018
Customer Sample Ref.	4E-D1
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000112	<0.00001	0.000112	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00551	<0.0005	0.0551	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00428	<0.0003	0.0428	<0.003	-	-	-
Lead	0.000459	<0.0002	0.00459	<0.002	-	-	-
Manganese	0.00733	<0.003	0.0733	<0.03	-	-	-
Nickel	0.000883	<0.0004	0.00883	<0.004	-	-	-
Selenium	0.00416	<0.001	0.0416	<0.01	-	-	-
Vanadium	0.152	<0.001	1.52	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.211	<0.019	2.11	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.000158	<0.00005	0.00158	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	0.000113	<0.00005	0.00113	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000132	<0.00005	0.00132	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	10.11
Conductivity (µS/cm)	166.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181030-48	**Client Reference:**		**Report Number:**	481246
Location:	Llanwern	**Order Number:**	LLA501	**Superseded Report:**	480707

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.72
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.7
Particle Size <4mm	>95%		

Case	
SDG	181030-48
Lab Sample Number(s)	18632792
Sampled Date	29-Oct-2018
Customer Sample Ref.	4E-D1
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	10.11
Conductivity (µS/cm)	166.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181030-48	**Client Reference:**		**Report Number:**	481246
Location:	Llanwern	**Order Number:**	LLA501	**Superseded Report:**	480707

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181030-48
Lab Sample Number(s)	18632797
Sampled Date	29-Oct-2018
Customer Sample Ref.	4E-D1
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.302	<0.2	3.02	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00557	<0.0005	0.0557	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00227	<0.0003	0.0227	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000659	<0.0004	0.00659	<0.004	-	-	-
Selenium	0.00316	<0.001	0.0316	<0.01	-	-	-
Vanadium	0.0497	<0.001	0.497	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.000232	<0.00005	0.00232	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	0.000169	<0.00005	0.00169	<0.0005	-	-	-
Pyrene by GCMS	0.000189	<0.00005	0.00189	<0.0005	-	-	-
Benz(a)anthracene by GCMS	0.000107	<0.00005	0.00107	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000231	<0.00005	0.00231	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000157	<0.00005	0.00157	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	0.000133	<0.00002	0.00133	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.000112	<0.00005	0.00112	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	0.000115	<0.00005	0.00115	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000116	<0.00005	0.00116	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.00156	<0.00082	0.0156	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	10.19
Conductivity (µS/cm)	133.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181030-48	**Client Reference:**		**Report Number:**	481246
Location:	Llanwern	**Order Number:**	LLA501	**Superseded Report:**	480707

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181030-48
Lab Sample Number(s)	18632797
Sampled Date	29-Oct-2018
Customer Sample Ref.	4E-D1
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	10.19
Conductivity (µS/cm)	133.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181030-48	**Client Reference:**		**Report Number:**	481246
Location:	Llanwern	**Order Number:**	LLA501	**Superseded Report:**	480707

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181030-48
Lab Sample Number(s)	18632818
Sampled Date	29-Oct-2018
Customer Sample Ref.	4E-E2
Depth (m)	0.20 - 0.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00316	<0.0005	0.0316	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00329	<0.001	0.0329	<0.01	-	-	-
Copper	0.00945	<0.0003	0.0945	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00102	<0.0004	0.0102	<0.004	-	-	-
Selenium	0.00169	<0.001	0.0169	<0.01	-	-	-
Vanadium	0.0543	<0.001	0.543	<0.01	-	-	-
Zinc	0.0016	<0.001	0.016	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.236	<0.019	2.36	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	0.000132	<0.00005	0.00132	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.000129	<0.00005	0.00129	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	0.00012	<0.00005	0.0012	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	11.04
Conductivity (µS/cm)	494.00
Temperature (°C)	18.00
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181030-48	**Client Reference:**		**Report Number:**	481246
Location:	Llanwern	**Order Number:**	LLA501	**Superseded Report:**	480707

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181030-48
Lab Sample Number(s)	18632818
Sampled Date	29-Oct-2018
Customer Sample Ref.	4E-E2
Depth (m)	0.20 - 0.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	11.04
Conductivity (µS/cm)	494.00
Temperature (°C)	18.00
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181030-48	**Client Reference:**		**Report Number:**	481246
Location:	Llanwern	**Order Number:**	LLA501	**Superseded Report:**	480707

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181030-48
Lab Sample Number(s)	18632824
Sampled Date	29-Oct-2018
Customer Sample Ref.	4E-E2
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00196	<0.0005	0.0196	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00271	<0.001	0.0271	<0.01	-	-	-
Copper	0.000932	<0.0003	0.00932	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000439	<0.0004	0.00439	<0.004	-	-	-
Selenium	0.00229	<0.001	0.0229	<0.01	-	-	-
Vanadium	0.0656	<0.001	0.656	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	11.01
Conductivity (µS/cm)	406.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181030-48	**Client Reference:**		**Report Number:**	481246
Location:	Llanwern	**Order Number:**	LLA501	**Superseded Report:**	480707

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

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

Case	
SDG	181030-48
Lab Sample Number(s)	18632824
Sampled Date	29-Oct-2018
Customer Sample Ref.	4E-E2
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	11.01
Conductivity (µS/cm)	406.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181030-48	**Client Reference:**		**Report Number:**	481246
Location:	Llanwern	**Order Number:**	LLA501	**Superseded Report:**	480707

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	181030-48
Lab Sample Number(s)	18632834
Sampled Date	29-Oct-2018
Customer Sample Ref.	4E-E2
Depth (m)	1.30 - 1.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00134	<0.0005	0.0134	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00203	<0.001	0.0203	<0.01	-	-	-
Copper	0.00194	<0.0003	0.0194	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000539	<0.0004	0.00539	<0.004	-	-	-
Selenium	0.00173	<0.001	0.0173	<0.01	-	-	-
Vanadium	0.0343	<0.001	0.343	<0.01	-	-	-
Zinc	0.00185	<0.001	0.0185	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	11.15
Conductivity (µS/cm)	504.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181030-48	**Client Reference:**		**Report Number:**	481246
Location:	Llanwern	**Order Number:**	LLA501	**Superseded Report:**	480707

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	181030-48
Lab Sample Number(s)	18632834
Sampled Date	29-Oct-2018
Customer Sample Ref.	4E-E2
Depth (m)	1.30 - 1.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	11.15
Conductivity (µS/cm)	504.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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Table of Results - Appendix

Method No	Reference	Description
ASB_PREP		
PM001		Preparation of Samples for Metals Analysis
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
SUB		Subcontracted Test
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM243		Mixed Anions In Soils By Kone
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only

NA = not applicable.

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

CERTIFICATE OF ANALYSIS

SDG:	181030-48	**Client Reference:**		**Report Number:**	481246
Location:	Llanwern	**Order Number:**	LLA501	**Superseded Report:**	480707

Test Completion Dates

Lab Sample No(s)	18632769	18632775	18632712	18632782	18632739	18632746	18632759	18632792	18632797	18632721
Customer Sample Ref.	4E-B4	4E-B4	4E-C1	4E-C1	4E-C2	4E-C2	4E-C2-V	4E-D1	4E-D1	4E-D2
AGS Ref.										
Depth	0.50 - 0.50	1.00 - 1.00	0.20 - 0.20	0.40 - 0.40	0.50 - 0.50	1.00 - 1.00	1.65 - 1.65	0.50 - 0.50	1.00 - 1.00	0.25 - 0.25
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	07-Nov-2018		07-Nov-2018		07-Nov-2018			07-Nov-2018		
Ammoniacal Nitrogen	12-Nov-2018	12-Nov-2018	13-Nov-2018	12-Nov-2018	13-Nov-2018	13-Nov-2018		12-Nov-2018	12-Nov-2018	13-Nov-2018
Ammonium Soil by Titration	13-Nov-2018	09-Nov-2018	09-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018
Anions by Kone (soil)	09-Nov-2018		09-Nov-2018		08-Nov-2018			09-Nov-2018		
Asbestos ID in Solid Samples	08-Nov-2018		09-Nov-2018		09-Nov-2018			08-Nov-2018		
Asbestos Quantification - Full	09-Nov-2018									
CEN 10:1 Leachate (1 Stage)	01-Nov-2018	01-Nov-2018	01-Nov-2018	01-Nov-2018	01-Nov-2018	01-Nov-2018		01-Nov-2018	01-Nov-2018	01-Nov-2018
CEN Readings	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018		06-Nov-2018	06-Nov-2018	06-Nov-2018
Cyanide Comp/Free/Total/Thiocyanate	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018
Dissolved Metals by ICP-MS	12-Nov-2018	08-Nov-2018	08-Nov-2018	08-Nov-2018	08-Nov-2018	08-Nov-2018		12-Nov-2018	12-Nov-2018	08-Nov-2018
EPH CWG (Aliphatic) Aqueous GC (W)	08-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018		08-Nov-2018	08-Nov-2018	07-Nov-2018
EPH CWG (Aliphatic) GC (S)	02-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018
EPH CWG (Aromatic) Aqueous GC (W)	08-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018		08-Nov-2018	08-Nov-2018	07-Nov-2018
EPH CWG (Aromatic) GC (S)	02-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018
GRO by GC-FID (S)	08-Nov-2018	08-Nov-2018	09-Nov-2018	12-Nov-2018	09-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018	12-Nov-2018	09-Nov-2018
GRO by GC-FID (W)	08-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018		08-Nov-2018	08-Nov-2018	07-Nov-2018
Mercury Dissolved	13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018		13-Nov-2018	13-Nov-2018	13-Nov-2018
Metals in solid samples by OES	08-Nov-2018	12-Nov-2018	08-Nov-2018	09-Nov-2018	07-Nov-2018	09-Nov-2018	09-Nov-2018	07-Nov-2018	12-Nov-2018	12-Nov-2018
PAH by GCMS	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	02-Nov-2018	05-Nov-2018	05-Nov-2018	06-Nov-2018	05-Nov-2018	05-Nov-2018
PAH Spec MS - Aqueous (W)	07-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018		07-Nov-2018	07-Nov-2018	07-Nov-2018
pH	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018
pH Value	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018		12-Nov-2018	12-Nov-2018	12-Nov-2018
Phenols by HPLC (S)	09-Nov-2018	09-Nov-2018	12-Nov-2018	09-Nov-2018	09-Nov-2018	12-Nov-2018	09-Nov-2018	09-Nov-2018	12-Nov-2018	09-Nov-2018
Sample description	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018
Total Organic Carbon	13-Nov-2018	13-Nov-2018	13-Nov-2018	12-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	12-Nov-2018	13-Nov-2018	13-Nov-2018
Total Sulphate	07-Nov-2018		05-Nov-2018		07-Nov-2018			07-Nov-2018		
Total Sulphur	02-Nov-2018		07-Nov-2018		07-Nov-2018			02-Nov-2018		
TPH CWG (W)	08-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018		08-Nov-2018	08-Nov-2018	07-Nov-2018
TPH CWG GC (S)	08-Nov-2018	08-Nov-2018	09-Nov-2018	12-Nov-2018	09-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018	12-Nov-2018	09-Nov-2018
VOC MS (S)	09-Nov-2018	09-Nov-2018	09-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018

Lab Sample No(s)	18632731	18632810	18632818	18632824	18632834	18632842
Customer Sample Ref.	4E-D2	4E-D1-V	4E-E2	4E-E2	4E-E2	4E-E2-V
AGS Ref.						
Depth	1.00 - 1.00	1.80 - 1.80	0.20 - 0.20	0.50 - 0.50	1.30 - 1.30	2.60 - 2.60
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	08-Nov-2018		07-Nov-2018		07-Nov-2018	
Ammoniacal Nitrogen	12-Nov-2018		12-Nov-2018	12-Nov-2018	12-Nov-2018	
Ammonium Soil by Titration	13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018
Anions by Kone (soil)	08-Nov-2018		08-Nov-2018		08-Nov-2018	
Asbestos ID in Solid Samples	08-Nov-2018		08-Nov-2018		08-Nov-2018	
Asbestos Quantification - Full	09-Nov-2018		09-Nov-2018			
Calorific Value (S)*				12-Nov-2018		
CEN 10:1 Leachate (1 Stage)	01-Nov-2018		01-Nov-2018	01-Nov-2018	01-Nov-2018	
CEN Readings	06-Nov-2018		06-Nov-2018	06-Nov-2018	06-Nov-2018	
Cyanide Comp/Free/Total/Thiocyanate	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018
Dissolved Metals by ICP-MS	12-Nov-2018		12-Nov-2018	12-Nov-2018	12-Nov-2018	
EPH CWG (Aliphatic) Aqueous GC (W)	08-Nov-2018		08-Nov-2018	08-Nov-2018	08-Nov-2018	
EPH CWG (Aliphatic) GC (S)	02-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018
EPH CWG (Aromatic) Aqueous GC (W)	08-Nov-2018		08-Nov-2018	08-Nov-2018	08-Nov-2018	
EPH CWG (Aromatic) GC (S)	02-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018
GRO by GC-FID (S)	08-Nov-2018	09-Nov-2018	08-Nov-2018	09-Nov-2018	08-Nov-2018	09-Nov-2018
GRO by GC-FID (W)	08-Nov-2018		09-Nov-2018	08-Nov-2018	08-Nov-2018	
Mercury Dissolved	13-Nov-2018		13-Nov-2018	13-Nov-2018	13-Nov-2018	
Metals in solid samples by OES	07-Nov-2018	09-Nov-2018	07-Nov-2018	12-Nov-2018	07-Nov-2018	09-Nov-2018
PAH by GCMS	02-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	02-Nov-2018	05-Nov-2018
PAH Spec MS - Aqueous (W)	07-Nov-2018		07-Nov-2018	07-Nov-2018	08-Nov-2018	
pH	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018
pH Value	12-Nov-2018		12-Nov-2018	12-Nov-2018	12-Nov-2018	
Phenols by HPLC (S)	09-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	09-Nov-2018	09-Nov-2018
Sample description	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018
Total Organic Carbon	13-Nov-2018	13-Nov-2018	13-Nov-2018	12-Nov-2018	13-Nov-2018	13-Nov-2018
Total Sulphate	07-Nov-2018		07-Nov-2018		07-Nov-2018	
Total Sulphur	07-Nov-2018		08-Nov-2018		08-Nov-2018	
TPH CWG (W)	08-Nov-2018		09-Nov-2018	08-Nov-2018	08-Nov-2018	
TPH CWG GC (S)	08-Nov-2018	09-Nov-2018	08-Nov-2018	09-Nov-2018	08-Nov-2018	09-Nov-2018
VOC MS (S)	09-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	08-Nov-2018

CERTIFICATE OF ANALYSIS

Work Order	: **PR18B5429**	Issue Date	: 12-Nov-2018
Customer	: **ALS Life Sciences Ltd**	Laboratory	: ALS Czech Republic, s.r.o.
Contact	: Reporting	Contact	: Client Service
Address	: Unit 7-8 Hawarden Business Park Manor Road, Hawarden CH5 3US Deeside United Kingdom	Address	: Na Harfe 336/9 Prague 9 - Vysocany Czech Republic 190 00
E-mail	: euhdnsubconresults@ALSGlobal.com	E-mail	: customer.support@alsglobal.com
Telephone	: ----	Telephone	: +420 226 226 228
Project	: 181030-48	Page	: 1 of 2
Order number	: 181030-48	Date Samples Received	: 02-Nov-2018
		Quote number	: PR2018ALSAL-GB0001 (CZ-256-17-1008)
Site	: ----	Date of test	: 04-Nov-2018 - 12-Nov-2018
Sampled by	: client	QC Level	: ALS CR Standard Quality Control Schedule

General Comments

This report shall not be reproduced except in full, without prior written approval from the laboratory.
The laboratory declares that the test results relate only to the listed samples.
The IC determination of chlorides, fluorides, sulfates and nitrates, as needed for the calculation of reported results, was performed using an accredited method of a subcontractor.

Responsible for accuracy

Testing Laboratory No. 1163
Accredited by CAI according to
CSN EN ISO/IEC 17025:2005

Signatories		*Position*
Zdeněk Jirák		Environmental Business Unit Manager

L 1163

Analytical Results

Sub-Matrix: **INDUSTRIAL SOLID**			Client sample ID	**18637607 4E-E2**		----		----	
			Laboratory sample ID	*PR18B5429-001*		----		----	
			Client sampling date / time	29-Oct-2018 00:00		----		----	
Parameter	*Method*	*LOR*	*Unit*	**Result**	**MU**	**Result**	**MU**	**Result**	**MU**
Physical Parameters									
Gross Calorific Value in Dry Matter Q(V/gr/d)	I-CV-CALS	0.50	MJ/kg DW	**15.3**	± 10.2%	----	----	----	----
Gross Calorific Value Original Q(V/gr/ar)	I-CV-CALS	0.50	MJ/kg	**13.4**	± 10.3%	----	----	----	----
Net Calorific Value in Dry Matter Q(V/net/d)	I-CV-CALS	0.50	MJ/kg DW	**15.2**	± 10.2%	----	----	----	----
Net Calorific Value Original Q(V/net/ar)	I-CV-CALS	0.50	MJ/kg	**13.0**	± 10.3%	----	----	----	----
Water Analytical M(ad)	I-WA-GR	0.50	%	**1.08**	± 36.8%	----	----	----	----
Water Gross M(ex)	I-WG-GR	0.50	%	**11.6**	± 20.2%	----	----	----	----
Water Total M(ar)	I-WT-CC	0.50	%	**12.6**	----	----	----	----	----

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, delivery date in brackets without a time component will be displayed instead. Measurement uncertainty is expressed as expanded measurement uncertainty with coverage factor k = 2, representing 95% confidence level.
Key: LOR = Limit of reporting; MU = Measurement Uncertainty

The end of result part of the certificate of analysis

Brief Method Summaries

Analytical Methods	*Method Descriptions*
Location of test performance: Bendlova 1687/7 Ceska Lipa Czech Republic 470 01	
I-CV-CALS	CZ_SOP_D06_07_124.A (CSN ISO 1928, CSN EN ISO 18125, CSN EN 15400, CSN EN 15170, CSN DIN 51900-1, CSN DIN 51900-2, CSN DIN 51900-3, CSN P CEN/TS 16023) Determination of gross calorific value by calorimetric method and calculation of net calorific value and emission factor by calculation from measured values.
I-WA-GR	CZ_SOP_D06_07_041 (CSN 44 1377, CSN EN ISO 18134-1, CSN EN ISO 18134-2, CSN EN ISO 18134-3, CSN P CEN/TS 15414-1, CSN P CEN/TS 15414-2, CSN EN 15414-3, CSN EN12880, CSN EN14346, CSN EN 15002) Determination of analytical water and gross water by gravimetry and determination of total water by calculation from measured values.
I-WG-GR	CZ_SOP_D06_07_041 (CSN 44 1377, CSN EN ISO 18134-1, CSN EN ISO 18134-2, CSN EN ISO 18134-3, CSN P CEN/TS 15414-1, CSN P CEN/TS 15414-2, CSN EN 15414-3, CSN EN12880, CSN EN14346, CSN EN 15002) Determination of analytical water and gross water by gravimetry and determination of total water by calculation from measured values.
I-WT-CC	CZ_SOP_D06_07_041 (CSN 44 1377, CSN EN ISO 18134-1, CSN EN ISO 18134-2, CSN EN ISO 18134-3, CSN P CEN/TS 15414-1, CSN P CEN/TS 15414-2, CSN EN 15414-3, CSN EN12880, CSN EN14346, CSN EN 15002) Determination of analytical water and gross water by gravimetry and determination of total water by calculation from measured values.

Preparation Methods	*Method Descriptions*
Location of test performance: Bendlova 1687/7 Ceska Lipa Czech Republic 470 01	
I-PPBURN	CZ_SOP_D06_07_124.A (CSN ISO 1928, CSN EN 14918, CSN EN 15400, CSN EN 15170) Determination of gross calorific value by calorimetric method and calculation of net calorific value.
* S-PPHOM.07	CZ_SOP_D06_07_P01 Preparation of solid samples for analysis (crushing, milling and pulverizing).
* S-PPHOM0.3	CZ_SOP_D06_07_P01 Preparation of solid samples for analysis (crushing, milling and pulverizing).

A `*` symbol preceding any method indicates laboratory or subcontractor non-accredited test. In the case when a procedure belonging to an accredited method was used for non-accredited matrix, would apply that the reported results are non-accredited. Please refer to General Comment section on front page for information. If the report contains subcontracted analysis, those are made in a subcontracted laboratory outside the laboratories ALS Czech Republic, s.r.o.
The calculation methods of summation parameters are available on request in the client service.

Appendix

General

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

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

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

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

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

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

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

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

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

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

11. Results relate only to the items tested.

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

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

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

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

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

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

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

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

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

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

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

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

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

Sample Deviations

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

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

Asbestos

Identification of Asbestos in Bulk Materials & Soils

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

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

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

Visual Estimation Of Fibre Content

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

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

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

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Hawarden
Deeside
CH5 3US
Tel: (01244) 528700
Fax: (01244) 528701
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Website: www.alsenvironmental.co.uk

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

Attention: John Fitzgerald

CERTIFICATE OF ANALYSIS

Date:	15 November 2018
Customer:	H_ATKINS_LDC
Sample Delivery Group (SDG):	181031-51
Your Reference:	
Location:	Llanwern
Report No:	481247

This report has been revised and directly supersedes 480708 in its entirety.

We received 28 samples on Wednesday October 31, 2018 and 28 of these samples were scheduled for analysis which was completed on Thursday November 15, 2018. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

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

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

Approved By:



Sonia McWhan

Operations Manager

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

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
18639087	4E-C4		0.50 - 0.50	30/10/2018
18639150	4E-C4		1.00 - 1.00	30/10/2018
18639228	4E-C4-V		2.25 - 2.25	30/10/2018
18639237	4E-D4		0.50 - 0.50	30/10/2018
18639243	4E-D4		1.20 - 1.20	30/10/2018
18639248	4E-D4-V		2.10 - 2.10	30/10/2018
18639252	4E-E4		0.50 - 0.50	30/10/2018
18639257	4E-E4		1.00 - 1.00	30/10/2018
18639262	4E-E4		1.50 - 1.50	30/10/2018
18639127	4E-E5		0.20 - 0.20	30/10/2018
18639132	4E-E5		0.80 - 0.80	30/10/2018
18639144	4E-E6		0.25 - 0.25	30/10/2018
18639155	4E-E6		0.80 - 0.80	30/10/2018
18639201	4E-E7		0.30 - 0.30	30/10/2018
18639205	4E-E7		0.80 - 0.80	30/10/2018
18639218	4E-E4-V		2.10 - 2.10	30/10/2018
18639137	4E-E5-V		1.95 - 1.95	30/10/2018
18639169	4E-E6-V		1.80 - 1.80	30/10/2018
18639212	4E-E7-V		1.75 - 1.75	30/10/2018
18639092	4E-F4		0.50 - 0.50	30/10/2018
18639099	4E-F4		1.00 - 1.00	30/10/2018
18639174	4E-F6		0.30 - 0.30	30/10/2018
18639180	4E-F6		0.80 - 0.80	30/10/2018
18639105	4E-F4-V		2.10 - 2.10	30/10/2018
18639188	4E-F6-V		1.55 - 1.55	30/10/2018
18639109	4E-G4		0.50 - 0.50	30/10/2018
18639115	4E-G4		1.00 - 1.00	30/10/2018
18639121	4E-G4-V		1.90 - 1.90	30/10/2018

Maximum Sample/Coolbox Temperature (°C) : **6.8**

ISO5667-3 Water quality - Sampling - Part3 -

During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

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

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

Validated

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

Results Legend

X Test

N No Determination Possible

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

			Lab Sample No(s)	18639087			18639150			18639228		18639237			18639243			18639248		18639252		
			Customer Sample Reference	4E-C4			4E-C4			4E-C4-V		4E-D4			4E-D4			4E-D4-V		4E-E4		
			AGS Reference																			
			Depth (m)	0.50 - 0.50			1.00 - 1.00			2.25 - 2.25		0.50 - 0.50			1.20 - 1.20			2.10 - 2.10		0.50 - 0.50		
			Container	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
			Sample Type	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 10			X								X								X	
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 19		X			X					X			X					X		
Ammonium Soil by Titration	All	NDPs: 0 Tests: 28			X			X		X			X			X		X			X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 10			X								X								X	
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 10		X								X								X		
Asbestos Quantification - Full	All	NDPs: 0 Tests: 2																				
Calorific Value (S)*	All	NDPs: 0 Tests: 1																				
CEN Readings	All	NDPs: 0 Tests: 19		X			X					X			X					X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 47		X	X		X	X		X		X	X		X	X		X		X	X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 19		X			X					X			X					X		
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 19		X			X					X			X					X		
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 28			X			X		X			X			X		X			X	
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 19		X			X					X			X					X		
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 28			X			X		X			X			X		X			X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 28				X			X		X			X			X		X			X

18639201	4E-E7		0.30 - 0.30	60g VOC (ALE215)	S																		X
				250g Amber Jar (ALE210)	S	X		X	X					X			X			X		X	
				1kg TUB	S		X			X	X		X	X	X	X		X				
18639155	4E-E6		0.80 - 0.80	60g VOC (ALE215)	S																		X
				250g Amber Jar (ALE210)	S			X						X			X			X			
				1kg TUB	S		X						X	X	X	X		X				
18639144	4E-E6		0.25 - 0.25	60g VOC (ALE215)	S																		X
				250g Amber Jar (ALE210)	S	X		X	X					X			X			X			
				1kg TUB	S		X			X	X		X	X	X	X		X				
18639132	4E-E5		0.80 - 0.80	60g VOC (ALE215)	S																		X
				250g Amber Jar (ALE210)	S			X						X			X			X			
				1kg TUB	S		X						X	X	X	X		X				
18639127	4E-E5		0.20 - 0.20	60g VOC (ALE215)	S																		X
				250g Amber Jar (ALE210)	S	X		X	X					X			X			X			
				1kg TUB	S		X			X			X	X	X	X		X				
18639262	4E-E4		1.50 - 1.50	60g VOC (ALE215)	S																		X
				250g Amber Jar (ALE210)	S	X		X	X					X			X			X			
				1kg TUB	S		X			X			X	X	X	X		X				
18639257	4E-E4		1.00 - 1.00	60g VOC (ALE215)	S																		X
				250g Amber Jar (ALE210)	S			X				X		X			X			X			
				1kg TUB	S		X						X	X	X	X		X				

Validated

CERTIFICATE OF ANALYSIS

SDG: 181031-51 **Client Reference:** **Report Number:** 481247
Location: Llanwern **Order Number:** LLA502 **Superseded Report:** 480708

Results Legend

X Test

N No Determination Possible

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

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
GRO by GC-FID (W)	All	NDPs: 0 Tests: 19	18639087	4E-C4		0.50 - 0.50	1kg TUB	S
			18639150	4E-C4		1.00 - 1.00	1kg TUB	S
			18639228	4E-C4-V		2.25 - 2.25	1kg TUB	S
			18639237	4E-D4		0.50 - 0.50	1kg TUB	S
			18639243	4E-D4		1.20 - 1.20	1kg TUB	S
			18639248	4E-D4-V		2.10 - 2.10	1kg TUB	S
			18639252	4E-E4		0.50 - 0.50	1kg TUB	S
Mercury Dissolved	All	NDPs: 0 Tests: 19	18639087	4E-C4		0.50 - 0.50	1kg TUB	S
			18639150	4E-C4		1.00 - 1.00	1kg TUB	S
			18639228	4E-C4-V		2.25 - 2.25	1kg TUB	S
			18639237	4E-D4		0.50 - 0.50	1kg TUB	S
			18639243	4E-D4		1.20 - 1.20	1kg TUB	S
			18639248	4E-D4-V		2.10 - 2.10	1kg TUB	S
			18639252	4E-E4		0.50 - 0.50	1kg TUB	S
Metals in solid samples by OES	All	NDPs: 0 Tests: 28	18639087	4E-C4		0.50 - 0.50	250g Amber Jar (ALE210)	S
			18639150	4E-C4		1.00 - 1.00	250g Amber Jar (ALE210)	S
			18639228	4E-C4-V		2.25 - 2.25	250g Amber Jar (ALE210)	S
			18639237	4E-D4		0.50 - 0.50	250g Amber Jar (ALE210)	S
			18639243	4E-D4		1.20 - 1.20	250g Amber Jar (ALE210)	S
			18639248	4E-D4-V		2.10 - 2.10	250g Amber Jar (ALE210)	S
			18639252	4E-E4		0.50 - 0.50	250g Amber Jar (ALE210)	S
PAH by GCMS	All	NDPs: 0 Tests: 28	18639087	4E-C4		0.50 - 0.50	250g Amber Jar (ALE210)	S
			18639150	4E-C4		1.00 - 1.00	250g Amber Jar (ALE210)	S
			18639228	4E-C4-V		2.25 - 2.25	250g Amber Jar (ALE210)	S
			18639237	4E-D4		0.50 - 0.50	250g Amber Jar (ALE210)	S
			18639243	4E-D4		1.20 - 1.20	250g Amber Jar (ALE210)	S
			18639248	4E-D4-V		2.10 - 2.10	250g Amber Jar (ALE210)	S
			18639252	4E-E4		0.50 - 0.50	250g Amber Jar (ALE210)	S
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 19	18639087	4E-C4		0.50 - 0.50	1kg TUB	S
			18639150	4E-C4		1.00 - 1.00	1kg TUB	S
			18639228	4E-C4-V		2.25 - 2.25	1kg TUB	S
			18639237	4E-D4		0.50 - 0.50	1kg TUB	S
			18639243	4E-D4		1.20 - 1.20	1kg TUB	S
			18639248	4E-D4-V		2.10 - 2.10	1kg TUB	S
			18639252	4E-E4		0.50 - 0.50	1kg TUB	S
pH	All	NDPs: 0 Tests: 28	18639087	4E-C4		0.50 - 0.50	250g Amber Jar (ALE210)	S
			18639150	4E-C4		1.00 - 1.00	250g Amber Jar (ALE210)	S
			18639228	4E-C4-V		2.25 - 2.25	250g Amber Jar (ALE210)	S
			18639237	4E-D4		0.50 - 0.50	250g Amber Jar (ALE210)	S
			18639243	4E-D4		1.20 - 1.20	250g Amber Jar (ALE210)	S
			18639248	4E-D4-V		2.10 - 2.10	250g Amber Jar (ALE210)	S
			18639252	4E-E4		0.50 - 0.50	250g Amber Jar (ALE210)	S
pH Value	All	NDPs: 0 Tests: 19	18639087	4E-C4		0.50 - 0.50	1kg TUB	S
			18639150	4E-C4		1.00 - 1.00	1kg TUB	S
			18639228	4E-C4-V		2.25 - 2.25	1kg TUB	S
			18639237	4E-D4		0.50 - 0.50	1kg TUB	S
			18639243	4E-D4		1.20 - 1.20	1kg TUB	S
			18639248	4E-D4-V		2.10 - 2.10	1kg TUB	S
			18639252	4E-E4		0.50 - 0.50	1kg TUB	S
Phenols by HPLC (S)	All	NDPs: 0 Tests: 28	18639087	4E-C4		0.50 - 0.50	250g Amber Jar (ALE210)	S
			18639150	4E-C4		1.00 - 1.00	250g Amber Jar (ALE210)	S
			18639228	4E-C4-V		2.25 - 2.25	250g Amber Jar (ALE210)	S
			18639237	4E-D4		0.50 - 0.50	250g Amber Jar (ALE210)	S
			18639243	4E-D4		1.20 - 1.20	250g Amber Jar (ALE210)	S
			18639248	4E-D4-V		2.10 - 2.10	250g Amber Jar (ALE210)	S
			18639252	4E-E4		0.50 - 0.50	250g Amber Jar (ALE210)	S
Sample description	All	NDPs: 0 Tests: 28	18639087	4E-C4		0.50 - 0.50	250g Amber Jar (ALE210)	S
			18639150	4E-C4		1.00 - 1.00	250g Amber Jar (ALE210)	S
			18639228	4E-C4-V		2.25 - 2.25	250g Amber Jar (ALE210)	S
			18639237	4E-D4		0.50 - 0.50	250g Amber Jar (ALE210)	S
			18639243	4E-D4		1.20 - 1.20	250g Amber Jar (ALE210)	S
			18639248	4E-D4-V		2.10 - 2.10	250g Amber Jar (ALE210)	S
			18639252	4E-E4		0.50 - 0.50	250g Amber Jar (ALE210)	S
Total Organic Carbon	All	NDPs: 0 Tests: 28	18639087	4E-C4		0.50 - 0.50	250g Amber Jar (ALE210)	S
			18639150	4E-C4		1.00 - 1.00	250g Amber Jar (ALE210)	S
			18639228	4E-C4-V		2.25 - 2.25	250g Amber Jar (ALE210)	S
			18639237	4E-D4		0.50 - 0.50	250g Amber Jar (ALE210)	S
			18639243	4E-D4		1.20 - 1.20	250g Amber Jar (ALE210)	S
			18639248	4E-D4-V		2.10 - 2.10	250g Amber Jar (ALE210)	S
			18639252	4E-E4		0.50 - 0.50	250g Amber Jar (ALE210)	S
Total Sulphate	All	NDPs: 0 Tests: 10	18639087	4E-C4		0.50 - 0.50	250g Amber Jar (ALE210)	S
			18639237	4E-D4		0.50 - 0.50	250g Amber Jar (ALE210)	S
			18639252	4E-E4		0.50 - 0.50	250g Amber Jar (ALE210)	S
Total Sulphur	All	NDPs: 0 Tests: 10	18639087	4E-C4		0.50 - 0.50	250g Amber Jar (ALE210)	S
			18639237	4E-D4		0.50 - 0.50	250g Amber Jar (ALE210)	S
			18639252	4E-E4		0.50 - 0.50	250g Amber Jar (ALE210)	S
TPH CWG (W)	All	NDPs: 0 Tests: 19	18639087	4E-C4		0.50 - 0.50	1kg TUB	S
			18639150	4E-C4		1.00 - 1.00	1kg TUB	S
			18639228	4E-C4-V		2.25 - 2.25	1kg TUB	S
			18639237	4E-D4		0.50 - 0.50	1kg TUB	S
			18639243	4E-D4		1.20 - 1.20	1kg TUB	S
			18639248	4E-D4-V		2.10 - 2.10	1kg TUB	S
			18639252	4E-E4		0.50 - 0.50	1kg TUB	S
TPH CWG GC (S)	All	NDPs: 0 Tests: 28	18639087	4E-C4		0.50 - 0.50	250g Amber Jar (ALE210)	S
			18639150	4E-C4		1.00 - 1.00	250g Amber Jar (ALE210)	S
			18639228	4E-C4-V		2.25 - 2.25	250g Amber Jar (ALE210)	S
			18639237	4E-D4		0.50 - 0.50	250g Amber Jar (ALE210)	S
			18639243	4E-D4		1.20 - 1.20	250g Amber Jar (ALE210)	S
			18639248	4E-D4-V		2.10 - 2.10	250g Amber Jar (ALE210)	S
			18639252	4E-E4		0.50 - 0.50	250g Amber Jar (ALE210)	S
VOC MS (S)	All	NDPs: 0 Tests: 28	18639087	4E-C4		0.50 - 0.50	60g VOC (ALE215)	S
			18639150	4E-C4		1.00 - 1.00	60g VOC (ALE215)	S
			18639228	4E-C4-V		2.25 - 2.25	60g VOC (ALE215)	S
			18639237	4E-D4		0.50 - 0.50	60g VOC (ALE215)	S
			18639243	4E-D4		1.20 - 1.20	60g VOC (ALE215)	S
			18639248	4E-D4-V		2.10 - 2.10	60g VOC (ALE215)	S
			18639252	4E-E4		0.50 - 0.50	60g VOC (ALE215)	S

18639201	4E-E7		0.30 - 0.30	60g VOC (ALE215)	S																		x
				250g Amber Jar (ALE210)	S			x	x		x		x	x	x	x	x		x				
				1kg TUB	S	x	x			x		x							x				
18639155	4E-E6		0.80 - 0.80	60g VOC (ALE215)	S																		x
				250g Amber Jar (ALE210)	S			x	x		x		x	x	x						x		
				1kg TUB	S	x	x			x		x							x				
18639144	4E-E6		0.25 - 0.25	60g VOC (ALE215)	S																		x
				250g Amber Jar (ALE210)	S			x	x		x		x	x	x	x	x		x				
				1kg TUB	S	x	x			x		x							x				
18639132	4E-E5		0.80 - 0.80	60g VOC (ALE215)	S																		x
				250g Amber Jar (ALE210)	S			x	x		x		x	x	x						x		
				1kg TUB	S	x	x			x		x							x				
18639127	4E-E5		0.20 - 0.20	60g VOC (ALE215)	S																		x
				250g Amber Jar (ALE210)	S			x	x		x		x	x	x	x	x		x				
				1kg TUB	S	x	x			x		x							x				
18639262	4E-E4		1.50 - 1.50	60g VOC (ALE215)	S																		x
				250g Amber Jar (ALE210)	S			x	x		x		x	x	x	x	x		x				
				1kg TUB	S	x	x			x		x							x				
18639257	4E-E4		1.00 - 1.00	60g VOC (ALE215)	S																		x
				250g Amber Jar (ALE210)	S			x	x		x		x	x	x						x		
				1kg TUB	S	x	x			x		x							x				

Validated

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
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Lab Sample No(s)			18639205		18639218		18639137		18639169		18639212		18639092			18639099		18639174	
Customer Sample Reference			4E-E7		4E-E4-V		4E-E5-V		4E-E6-V		4E-E7-V		4E-F4			4E-F4		4E-F6	
AGS Reference																			
Depth (m)			0.80 - 0.80		2.10 - 2.10		1.95 - 1.95		1.80 - 1.80		1.75 - 1.75		0.50 - 0.50			1.00 - 1.00		0.30 - 0.30	
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 10															X				
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 19	X										X			X			X		
Ammonium Soil by Titration	All	NDPs: 0 Tests: 28		X		X		X		X		X		X			X				X
Anions by Kone (soil)	All	NDPs: 0 Tests: 10															X				
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 10														X					
CEN Readings	All	NDPs: 0 Tests: 19	X										X			X			X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 47	X	X		X		X		X		X		X	X		X	X		X	X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 19	X										X			X			X		
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 19	X										X			X			X		
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 28		X		X		X		X		X		X			X				X
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 19	X										X			X			X		
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 28		X		X		X		X		X		X			X				X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 28			X		X		X		X				X			X			
GRO by GC-FID (W)	All	NDPs: 0 Tests: 19	X										X			X			X		
Mercury Dissolved	All	NDPs: 0 Tests: 19	X										X			X			X		

18639121	4E-G4-V		1.90 - 1.90	60g VOC (ALE215)	S														X			
				250g Amber Jar (ALE210)	S			X				X			X		X					
18639115	4E-G4		1.00 - 1.00	60g VOC (ALE215)	S														X			
				250g Amber Jar (ALE210)	S	X		X	X			X			X		X					
				1kg TUB	S		X			X	X	X	X	X		X				X	X	
18639109	4E-G4		0.50 - 0.50	60g VOC (ALE215)	S														X			
				250g Amber Jar (ALE210)	S			X				X			X		X					
				1kg TUB	S		X				X	X	X	X		X				X	X	
18639188	4E-F6-V		1.55 - 1.55	60g VOC (ALE215)	S														X			
				250g Amber Jar (ALE210)	S			X				X			X		X					
18639105	4E-F4-V		2.10 - 2.10	60g VOC (ALE215)	S														X			
				250g Amber Jar (ALE210)	S			X				X			X		X					
18639180	4E-F6		0.80 - 0.80	60g VOC (ALE215)	S														X			
				250g Amber Jar (ALE210)	S	X		X	X			X			X		X					
				1kg TUB	S		X			X	X	X	X	X		X				X	X	
18639174	4E-F6		0.30 - 0.30	60g VOC (ALE215)	S														X			

Validated

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

Results Legend

X Test

N No Determination Possible

Sample Types -

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

Lab Sample No(s)			18639205		18639218		18639137		18639169		18639212		18639092			18639099		18639174	
Customer Sample Reference			4E-E7		4E-E4-V		4E-E5-V		4E-E6-V		4E-E7-V		4E-F4			4E-F4		4E-F6	
AGS Reference																			
Depth (m)			0.80 - 0.80		2.10 - 2.10		1.95 - 1.95		1.80 - 1.80		1.75 - 1.75		0.50 - 0.50			1.00 - 1.00		0.30 - 0.30	
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Metals in solid samples by OES	All	NDPs: 0 Tests: 28		X		X		X		X		X			X			X		X
PAH by GCMS	All	NDPs: 0 Tests: 28		X		X		X		X		X			X			X		X
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 19	X											X			X			X	
pH	All	NDPs: 0 Tests: 28		X		X		X		X		X			X			X			X
pH Value	All	NDPs: 0 Tests: 19	X											X			X			X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 28		X		X		X		X		X			X			X			X
Sample description	All	NDPs: 0 Tests: 28		X		X		X		X		X			X			X			X
Total Organic Carbon	All	NDPs: 0 Tests: 28		X		X		X		X		X			X			X			X
Total Sulphate	All	NDPs: 0 Tests: 10																X			
Total Sulphur	All	NDPs: 0 Tests: 10																X			
TPH CWG (W)	All	NDPs: 0 Tests: 19	X											X			X			X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 28		X		X		X		X		X			X			X			X
VOC MS (S)	All	NDPs: 0 Tests: 28			X		X		X		X		X			X			X		

18639121	4E-G4-V		1.90 - 1.90	60g VOC (ALE215)	S		
				250g Amber Jar (ALE210)	S	X	
18639115	4E-G4		1.00 - 1.00	60g VOC (ALE215)	S		X
				250g Amber Jar (ALE210)	S	X	
				1kg TUB	S		X
18639109	4E-G4		0.50 - 0.50	60g VOC (ALE215)	S		X
				250g Amber Jar (ALE210)	S	X	
				1kg TUB	S		X
18639188	4E-F6-V		1.55 - 1.55	60g VOC (ALE215)	S		X
				250g Amber Jar (ALE210)	S	X	
18639105	4E-F4-V		2.10 - 2.10	60g VOC (ALE215)	S		X
				250g Amber Jar (ALE210)	S	X	
18639180	4E-F6		0.80 - 0.80	60g VOC (ALE215)	S		X
				250g Amber Jar (ALE210)	S	X	
				1kg TUB	S		X
18639174	4E-F6		0.30 - 0.30	60g VOC (ALE215)	S		X

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

Sample Descriptions

Grain Sizes

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

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
18639087	4E-C4	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	None
18639150	4E-C4	1.00 - 1.00	Dark Brown	Sandy Loam	Stones	Vegetation
18639228	4E-C4-V	2.25 - 2.25	Dark Brown	Silty Clay	None	Vegetation
18639237	4E-D4	0.50 - 0.50	Dark Brown	Sandy Loam	Vegetation	Stones
18639243	4E-D4	1.20 - 1.20	Dark Brown	Sandy Loam	Vegetation	Stones
18639248	4E-D4-V	2.10 - 2.10	Dark Brown	Silty Clay	None	None
18639252	4E-E4	0.50 - 0.50	Black	Sand	Stones	Vegetation
18639257	4E-E4	1.00 - 1.00	Dark Brown	Sandy Loam	Vegetation	Stones
18639262	4E-E4	1.50 - 1.50	Dark Brown	Sandy Loam	Vegetation	Stones
18639127	4E-E5	0.20 - 0.20	Dark Brown	Sandy Loam	Vegetation	Stones
18639132	4E-E5	0.80 - 0.80	Dark Brown	Sandy Loam	Stones	Brick
18639144	4E-E6	0.25 - 0.25	Dark Brown	Sandy Loam	Vegetation	Stones
18639155	4E-E6	0.80 - 0.80	Dark Brown	Sand	Vegetation	Stones
18639201	4E-E7	0.30 - 0.30	Dark Brown	Sandy Loam	Stones	None
18639205	4E-E7	0.80 - 0.80	Dark Brown	Sandy Loam	Stones	None
18639218	4E-E4-V	2.10 - 2.10	Dark Brown	Sandy Clay Loam	Vegetation	Stones
18639137	4E-E5-V	1.95 - 1.95	Grey	Silty Clay Loam	None	None
18639169	4E-E6-V	1.80 - 1.80	Grey	Clay	None	None
18639212	4E-E7-V	1.75 - 1.75	Dark Brown	Silty Clay Loam	None	None
18639092	4E-F4	0.50 - 0.50	Dark Brown	Sandy Loam	Vegetation	Stones
18639099	4E-F4	1.00 - 1.00	Dark Brown	Sandy Loam	Vegetation	Stones
18639174	4E-F6	0.30 - 0.30	Grey	Sandy Loam	Stones	None
18639180	4E-F6	0.80 - 0.80	Dark Brown	Sandy Loam	Vegetation	Stones
18639105	4E-F4-V	2.10 - 2.10	Dark Brown	Clay	Vegetation	Stones
18639188	4E-F6-V	1.55 - 1.55	Dark Brown	Sandy Clay	Vegetation	Stones
18639109	4E-G4	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	None
18639115	4E-G4	1.00 - 1.00	Dark Brown	Sandy Loam	Vegetation	Stones
18639121	4E-G4-V	1.90 - 1.90	Dark Brown	Loamy Sand	Vegetation	Stones

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

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

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

Validated

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

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

Component	LOD/Units	Method	Customer Sample Ref.	4E-C4	4E-C4	4E-C4-V	4E-D4	4E-D4	4E-D4-V
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.25 - 2.25	0.50 - 0.50	1.20 - 1.20	2.10 - 2.10
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			SDG Ref	181031-51	181031-51	181031-51	181031-51	181031-51	181031-51
			Lab Sample No.(s)	18639087	18639150	18639228	18639237	18639243	18639248
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		5.2	6.8	26	20	13	23
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	194 M	<12 M	<12 M	164 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0107 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.196			0.225		
Sulphate, Total potential	<0.06 %	TM132		0.588			0.675		
Soil Organic Matter (SOM)	<0.35 %	TM132		7.28 #	2.64 #	1.48 #	29 #	8.4 #	1.15 #
pH	1 pH Units	TM133		11.2 M	12.6 M	6.54 M	8.35 M	11.8 M	8.06 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		9.76 M	12.8 M	16.1 M	10.4 M	8.56 M	15.2 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	<0.2 M	<0.02 M	<0.02 M	<0.02 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		150 M	388 M	46.6 M	16.2 M	480 M	36.4 M
Copper	<1.4 mg/kg	TM181		<14 M	286 M	14.2 M	14.7 M	23.9 M	10.6 M
Iron	<1000 mg/kg	TM181		160000 #	223000 #	49700 #	51700 #	151000 #	41500 #
Lead	<0.7 mg/kg	TM181		38.2 M	31.2 M	29.3 M	23.5 M	19.6 M	27.8 M
Manganese	<0.13 mg/kg	TM181		11200 M	28300 M	1260 M	3220 M	35900 M	866 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<1.4 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		17.1 M	36.3 M	43.7 M	18.4 M	14.4 M	43 M
Selenium	<1 mg/kg	TM181		<10 #	16.4 #	<1 #	1.72 #	13.1 #	<1 #
Vanadium	<0.2 mg/kg	TM181		179 #	405 #	71.4 #	52.3 #	443 #	61.6 #
Zinc	<1.9 mg/kg	TM181		164 M	122 M	129 M	109 M	92.3 M	117 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.28			0.202		
Calcium	<21 mg/kg	TM224		138000			98100		
Magnesium	<8 mg/kg	TM224		9150			6120		
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.0774 M			0.336 M		

Validated

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-E4	4E-E4	4E-E4	4E-E5	4E-E5	4E-E6
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.20 - 0.20	0.80 - 0.80	0.25 - 0.25
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			SDG Ref	181031-51	181031-51	181031-51	181031-51	181031-51	181031-51
			Lab Sample No.(s)	18639252	18639257	18639262	18639127	18639132	18639144
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		6.6	14	12	12	10	7.9
Gross Calorific Value in Dry Matter Q(V/gr/d)	<0.5 MJ/kg	SUB			11.2				
Gross Calorific Value Original Q(V/gr/ar)	<0.5 MJ/kg	SUB			9.84				
Net Calorific Value in Dry Matter Q(V/net/d)	<0.5 MJ/kg	SUB			11				
Net Calorific Value in Original Q(V/net/ar)	<0.5 MJ/kg	SUB			9.34				
Water Analytical M (ad)	<0.5 %	SUB			0.95				
Water Gross M(ex)	<0.5 %	SUB			11.6				
Water Total M(ar)	<0.5 %	SUB			12.5				
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.285		0.29	0.304		0.631
Sulphate, Total potential	<0.06 %	TM132		0.855		0.87	0.912		1.89
Soil Organic Matter (SOM)	<0.35 %	TM132		32.2 #	45.2 #	31.7 #	7.36 #	27.8 #	1.52 #
pH	1 pH Units	TM133		8.94 M	8.86 M	10.9 M	12.1 M	12.2 M	11.8 M
Cyanide, Total	<1 mg/kg	TM153		20.9 M	18.5 M	12.7 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		2.02 M	1.52 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		10.5 M	12.1 M	11.2 M	<6 M	<6 M	10.3 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	<0.02 M	<0.02 M	<0.2 M	<0.2 M	<0.2 M
Chromium	<0.9 mg/kg	TM181		34 M	37.7 M	69.8 M	454 M	369 M	220 M
Copper	<1.4 mg/kg	TM181		17.9 M	26.2 M	21.1 M	19 M	<14 M	26.7 M
Iron	<1000 mg/kg	TM181		43800 #	41500 #	43600 #	130000 #	92900 #	125000 #
Lead	<0.7 mg/kg	TM181		33 M	24.7 M	58.6 M	16.6 M	21.8 M	20 M
Manganese	<0.13 mg/kg	TM181		3750 M	4240 M	5570 M	28800 M	22300 M	18000 M
Mercury	<0.14 mg/kg	TM181		1.61 M	2.17 M	0.757 M	<1.4 M	<1.4 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		13.3 M	15.5 M	18 M	13.5 M	6.83 M	22.5 M
Selenium	<1 mg/kg	TM181		2.36 #	2.91 #	3.3 #	19.3 #	12 #	13.3 #
Vanadium	<0.2 mg/kg	TM181		59.2 #	92.1 #	84.3 #	508 #	335 #	249 #
Zinc	<1.9 mg/kg	TM181		97.9 M	103 M	156 M	43.3 M	45.1 M	56.1 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.21		0.261	0.729		0.796
Calcium	<21 mg/kg	TM224		74600		133000	224000		193000

Validated

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-E4	4E-E4	4E-E4	4E-E5	4E-E5	4E-E6
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.20 - 0.20	0.80 - 0.80	0.25 - 0.25
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			SDG Ref	181031-51	181031-51	181031-51	181031-51	181031-51	181031-51
			Lab Sample No.(s)	18639252	18639257	18639262	18639127	18639132	18639144
			AGS Reference						
Magnesium	<8 mg/kg	TM224		7220		13500	12600		14000
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.111 M		0.187 M	0.244 M		0.174 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304							0.0174 #
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304							0.0017 #
Additional Asbestos Components (Using TM048)		TM304							None #
Analysts Comments		TM304							N/A
Asbestos Quantification - Total - %	<0.001 %	TM304							0.0191 #

Validated

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-E6	4E-E7	4E-E7	4E-E4-V	4E-E5-V	4E-E6-V
			Depth (m)	0.80 - 0.80	0.30 - 0.30	0.80 - 0.80	2.10 - 2.10	1.95 - 1.95	1.80 - 1.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			SDG Ref	181031-51	181031-51	181031-51	181031-51	181031-51	181031-51
			Lab Sample No.(s)	18639155	18639201	18639205	18639218	18639137	18639169
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		10	6.1	3.8	23	32	24
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	205 M	190 M	102 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0444 M	<0.01 M	0.0104 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		0.0111 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		0.0555 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132			0.153				
Sulphate, Total potential	<0.06 %	TM132			0.459				
Soil Organic Matter (SOM)	<0.35 %	TM132		1.14 #	2.1 #	1.19 #	1.05 #	5.78 #	1.23 #
pH	1 pH Units	TM133		12.2 M	9.95 M	12.6 M	8.12 M	6.64 M	7.63 M
Cyanide, Total	<1 mg/kg	TM153		3.56 M	<1 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		8.95 M	13.4 M	5.77 M	12.4 M	13.1 M	13.6 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	<0.2 M	<0.02 M	<0.02 M	<0.02 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		297 M	60.5 M	466 M	31.7 M	37.7 M	33.7 M
Copper	<1.4 mg/kg	TM181		24.8 M	17.1 M	12.5 M	10.3 M	16.3 M	11.8 M
Iron	<1000 mg/kg	TM181		185000 #	114000 #	188000 #	40000 #	34400 #	41300 #
Lead	<0.7 mg/kg	TM181		2.92 M	74.8 M	<0.7 M	22.7 M	45.1 M	24.5 M
Manganese	<0.13 mg/kg	TM181		32400 M	4850 M	49400 M	1390 M	267 M	736 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<1.4 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		14.2 M	21.1 M	5.87 M	34 M	27.7 M	38.8 M
Selenium	<1 mg/kg	TM181		10.2 #	<10 #	13.9 #	<1 #	<1 #	<1 #
Vanadium	<0.2 mg/kg	TM181		360 #	95 #	439 #	53.6 #	57.8 #	56.5 #
Zinc	<1.9 mg/kg	TM181		53.8 M	239 M	14.6 M	103 M	129 M	107 M
Sulphate, acid soluble (total)	<0.02 %	TM221			0.303				
Calcium	<21 mg/kg	TM224			153000				
Magnesium	<8 mg/kg	TM224			9950				
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243			0.0991 M				
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304			<0.001 #				
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304			<0.001 #				
Additional Asbestos Components (Using TM048)		TM304			None #				
Analysts Comments		TM304			N/A				
Asbestos Quantification - Total - %	<0.001 %	TM304			<0.001 #				

Validated

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-E7-V	4E-F4	4E-F4	4E-F6	4E-F6	4E-F4-V
			Depth (m)	1.75 - 1.75	0.50 - 0.50	1.00 - 1.00	0.30 - 0.30	0.80 - 0.80	2.10 - 2.10
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			SDG Ref	181031-51	181031-51	181031-51	181031-51	181031-51	181031-51
			Lab Sample No.(s)	18639212	18639092	18639099	18639174	18639180	18639105
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		32	7.2	8.5	8.8	8.8	22
Exchangeable Ammonia as N	<12 mg/kg	TM024		378 M	<12 M	<12 M	<12 M	<12 M	89.8 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132				0.221		0.505	
Sulphate, Total potential	<0.06 %	TM132				0.663		1.52	
Soil Organic Matter (SOM)	<0.35 %	TM132		5.65 #	28.1 #	30.5 #	1.25 #	0.972 #	1.33 #
pH	1 pH Units	TM133		7.18 M	10.1 M	9.64 M	12.7 M	12.1 M	7.97 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	1.06 M	1.84 M	<1 M	1.02 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		14 M	11.7 M	9.29 M	4.75 M	<6 M	12.3 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	<0.02 M	<0.02 M	<0.02 M	<0.2 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		35.9 M	108 M	59 M	352 M	439 M	29.8 M
Copper	<1.4 mg/kg	TM181		22.5 M	18.5 M	18.7 M	12.4 M	<14 M	11.1 M
Iron	<1000 mg/kg	TM181		39900 #	36200 #	37500 #	129000 #	112000 #	37400 #
Lead	<0.7 mg/kg	TM181		39.1 M	45.6 M	33.2 M	0.992 M	10.5 M	24.5 M
Manganese	<0.13 mg/kg	TM181		349 M	5510 M	5380 M	29500 M	32200 M	1220 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<1.4 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		30.4 M	12.9 M	11.6 M	6.38 M	8.31 M	32.6 M
Selenium	<1 mg/kg	TM181		<1 #	3.27 #	3.11 #	10.8 #	21.1 #	<1 #
Vanadium	<0.2 mg/kg	TM181		58 #	112 #	128 #	283 #	379 #	52.7 #
Zinc	<1.9 mg/kg	TM181		165 M	116 M	96.3 M	30.9 M	30.2 M	102 M
Sulphate, acid soluble (total)	<0.02 %	TM221				0.133		0.539	
Calcium	<21 mg/kg	TM224				192000		253000	
Magnesium	<8 mg/kg	TM224				35200		8910	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243				0.0796 M		0.127 M	

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-F6-V	4E-G4	4E-G4	4E-G4-V		
			Depth (m)	1.55 - 1.55	0.50 - 0.50	1.00 - 1.00	1.90 - 1.90		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	30/10/2018	30/10/2018	30/10/2018	30/10/2018		
			Sample Time	00:00	00:00	00:00	00:00		
			Date Received	31/10/2018	31/10/2018	31/10/2018	31/10/2018		
			SDG Ref	181031-51	181031-51	181031-51	181031-51		
			Lab Sample No.(s)	18639188	18639109	18639115	18639121		
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		31	6	5.9	22		
Exchangeable Ammonia as N	<12 mg/kg	TM024		216 M	<12 M	<12 M	68 M		
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M		
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M		
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M		
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M		
Sulphur, Total	<0.02 %	TM132				0.247			
Sulphate, Total potential	<0.06 %	TM132				0.741			
Soil Organic Matter (SOM)	<0.35 %	TM132		3.78 #	22.8 #	28.3 #	0.953 #		
pH	1 pH Units	TM133		6.87 M	10.1 M	9.46 M	8.63 M		
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	1.98 M	<1 M		
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M		
Arsenic	<0.6 mg/kg	TM181		11.9 M	10.8 M	10.9 M	14.2 M		
Cadmium	<0.02 mg/kg	TM181		<0.02 M	0.129 M	<0.02 M	<0.02 M		
Chromium	<0.9 mg/kg	TM181		41.4 M	38.9 M	36.2 M	30.3 M		
Copper	<1.4 mg/kg	TM181		13.7 M	31.2 M	107 M	12.2 M		
Iron	<1000 mg/kg	TM181		39800 #	38700 #	52300 #	38300 #		
Lead	<0.7 mg/kg	TM181		32 M	72.6 M	112 M	23.8 M		
Manganese	<0.13 mg/kg	TM181		639 M	3590 M	2860 M	1710 M		
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M		
Nickel	<0.2 mg/kg	TM181		30.3 M	28.1 M	33 M	35.1 M		
Selenium	<1 mg/kg	TM181		<1 #	2.25 #	1.6 #	<1 #		
Vanadium	<0.2 mg/kg	TM181		65.9 #	87.9 #	64.4 #	52.9 #		
Zinc	<1.9 mg/kg	TM181		114 M	151 M	864 M	104 M		
Sulphate, acid soluble (total)	<0.02 %	TM221				0.231			
Calcium	<21 mg/kg	TM224				114000			
Magnesium	<8 mg/kg	TM224				9950			
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243				0.141 M			

Validated

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-C4	4E-C4	4E-C4-V	4E-D4	4E-D4	4E-D4-V
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.25 - 2.25	0.50 - 0.50	1.20 - 1.20	2.10 - 2.10
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			SDG Ref	181031-51	181031-51	181031-51	181031-51	181031-51	181031-51
			Lab Sample No.(s)	18639087	18639150	18639228	18639237	18639243	18639248
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		87.7	85.3	93.1	86.3	94.2	92.1
Acenaphthene-d10 % recovery**	%	TM218		81.4	77.6	98.5	86.7	99.8	94.7
Phenanthrene-d10 % recovery**	%	TM218		78	81.9	97	85.8	97.6	92.7
Chrysene-d12 % recovery**	%	TM218		75.7	76.5	84	74.7	83.6	80.8
Perylene-d12 % recovery**	%	TM218		77	79.6	81	70.2	79.3	76.8
Naphthalene	<0.009 mg/kg	TM218		0.922 M	0.471 M	0.0156 M	0.136 M	0.102 M	<0.009 M
Acenaphthylene	<0.012 mg/kg	TM218		0.234 M	0.112 M	<0.012 M	0.0516 M	0.0778 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		<0.04 M	0.0609 M	<0.008 M	0.0285 M	0.0739 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		0.0945 M	0.0881 M	<0.01 M	0.075 M	0.0665 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		1.74 M	2.34 M	0.0452 M	0.549 M	0.904 M	<0.015 M
Anthracene	<0.016 mg/kg	TM218		0.404 M	0.503 M	<0.016 M	0.158 M	0.232 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		3.08 M	6.33 M	0.0694 M	0.738 M	2.53 M	<0.017 M
Pyrene	<0.015 mg/kg	TM218		2.43 M	4.32 M	0.0569 M	0.594 M	2.36 M	<0.015 M
Benz(a)anthracene	<0.014 mg/kg	TM218		1.62 M	3.05 M	0.0336 M	0.456 M	1.65 M	<0.014 M
Chrysene	<0.01 mg/kg	TM218		1.55 M	3.27 M	0.0416 M	0.463 M	1.95 M	<0.01 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		2.62 M	4.82 M	0.0623 M	0.658 M	3.17 M	<0.015 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.808 M	1.69 M	0.03 M	0.181 M	1.15 M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		1.62 M	3.06 M	0.0387 M	0.397 M	2.15 M	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		1.01 M	1.88 M	0.0323 M	0.242 M	1.75 M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.311 M	0.598 M	<0.023 M	0.0958 M	0.401 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		1.19 M	2.04 M	0.0355 M	0.315 M	1.69 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		19.6	34.6	0.461	5.14	20.3	<0.118

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-E4	4E-E4	4E-E4	4E-E5	4E-E5	4E-E6
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.20 - 0.20	0.80 - 0.80	0.25 - 0.25
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			SDG Ref	181031-51	181031-51	181031-51	181031-51	181031-51	181031-51
			Lab Sample No.(s)	18639252	18639257	18639262	18639127	18639132	18639144
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		86.3	85	93.6	86.6	94.9	89.1
Acenaphthene-d10 % recovery**	%	TM218		82.8	81.7	99.3	80.9	94.4	81.1
Phenanthrene-d10 % recovery**	%	TM218		78.1	77.5	95.4	82	98.8	82.2
Chrysene-d12 % recovery**	%	TM218		72.8	73.1	77.6	78	91.4	76
Perylene-d12 % recovery**	%	TM218		71.3	70.7	75.6	80.5	77.9	79.3
Naphthalene	<0.009 mg/kg	TM218		2.46 M	2.24 M	1.55 M	0.0596 M	0.102 M	<0.045 M
Acenaphthylene	<0.012 mg/kg	TM218		0.8 M	1.39 M	0.571 M	<0.012 M	<0.012 M	0.155 M
Acenaphthene	<0.008 mg/kg	TM218		0.221 M	0.396 M	0.192 M	0.047 M	0.0583 M	<0.04 M
Fluorene	<0.01 mg/kg	TM218		0.488 M	1.11 M	0.464 M	0.0266 M	0.0265 M	<0.05 M
Phenanthrene	<0.015 mg/kg	TM218		5.81 M	10.3 M	5.03 M	0.513 M	0.803 M	0.361 M
Anthracene	<0.016 mg/kg	TM218		1.45 M	2.83 M	1.36 M	0.112 M	0.145 M	<0.08 M
Fluoranthene	<0.017 mg/kg	TM218		10.7 M	16.6 M	7.72 M	1.21 M	1.35 M	1.22 M
Pyrene	<0.015 mg/kg	TM218		8.71 M	13.1 M	6.06 M	1.1 M	1.23 M	1.35 M
Benz(a)anthracene	<0.014 mg/kg	TM218		6.21 M	8.9 M	4.25 M	0.787 M	0.853 M	1.25 M
Chrysene	<0.01 mg/kg	TM218		6.2 M	7.02 M	4.12 M	0.799 M	0.828 M	1.56 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		9.9 M	12.9 M	6.61 M	1.29 M	1.06 M	2.73 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		3.52 M	3.69 M	2.16 M	0.458 M	0.462 M	1.09 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		6.78 M	8.46 M	4.06 M	0.918 M	0.887 M	1.96 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		4.16 M	4.8 M	3.58 M	0.504 M	0.546 M	1.2 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		1.34 M	1.49 M	1.02 M	0.172 M	0.146 M	0.376 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		4.93 M	5.81 M	3.45 M	0.635 M	0.608 M	1.48 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		73.6	101	52.2	8.63	9.11	14.7

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-E6	4E-E7	4E-E7	4E-E4-V	4E-E5-V	4E-E6-V
			Depth (m)	0.80 - 0.80	0.30 - 0.30	0.80 - 0.80	2.10 - 2.10	1.95 - 1.95	1.80 - 1.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			SDG Ref	181031-51	181031-51	181031-51	181031-51	181031-51	181031-51
			Lab Sample No.(s)	18639155	18639201	18639205	18639218	18639137	18639169
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		87.8	82.4	76.6	94	79.7	81.4
Acenaphthene-d10 % recovery**	%	TM218		84.6	84.6	81.4	98.3	82.8	84.3
Phenanthrene-d10 % recovery**	%	TM218		87.1	87.1	81.7	97.4	85.8	86.1
Chrysene-d12 % recovery**	%	TM218		84.6	76.8	81.2	82.3	79.5	84.9
Perylene-d12 % recovery**	%	TM218		80.3	70.7	77.1	77.7	76.4	82.6
Naphthalene	<0.009 mg/kg	TM218		0.0454 M	0.293 M	2 M	0.0272 M	<0.009 M	<0.009 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	0.116 M	<0.06 M	<0.012 M	<0.012 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		0.0292 M	0.0186 M	0.255 M	<0.008 M	<0.008 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	0.0597 M	0.107 M	0.0344 M	<0.01 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		0.185 M	0.659 M	2.93 M	0.0718 M	<0.015 M	<0.015 M
Anthracene	<0.016 mg/kg	TM218		0.0302 M	0.188 M	0.484 M	0.0258 M	<0.016 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		0.745 M	1.02 M	7.16 M	0.024 M	<0.017 M	<0.017 M
Pyrene	<0.015 mg/kg	TM218		0.777 M	0.727 M	6.84 M	0.0201 M	<0.015 M	<0.015 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.712 M	0.551 M	5.4 M	<0.014 M	<0.014 M	<0.014 M
Chrysene	<0.01 mg/kg	TM218		0.831 M	0.512 M	6.03 M	<0.01 M	<0.01 M	<0.01 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		1.46 M	0.511 M	8.32 M	<0.015 M	<0.015 M	<0.015 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.496 M	0.234 M	3.3 M	<0.014 M	<0.014 M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		1.02 M	0.464 M	6.2 M	<0.015 M	<0.015 M	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.554 M	0.333 M	5.77 M	<0.018 M	<0.018 M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.181 M	0.0828 M	0.822 M	<0.023 M	<0.023 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.71 M	0.365 M	4.05 M	<0.024 M	<0.024 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		7.77	6.13	59.7	0.203	<0.118	<0.118

Validated

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-E7-V	4E-F4	4E-F4	4E-F6	4E-F6	4E-F4-V
			Depth (m)	1.75 - 1.75	0.50 - 0.50	1.00 - 1.00	0.30 - 0.30	0.80 - 0.80	2.10 - 2.10
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			SDG Ref	181031-51	181031-51	181031-51	181031-51	181031-51	181031-51
			Lab Sample No.(s)	18639212	18639092	18639099	18639174	18639180	18639105
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		78.5	87.7	91	82.2	90.4	84.9
Acenaphthene-d10 % recovery**	%	TM218		83.2	89.5	86.3	85.1	81.3	81.4
Phenanthrene-d10 % recovery**	%	TM218		85.6	85.9	81	86	81.4	75.8
Chrysene-d12 % recovery**	%	TM218		77.4	74.5	72.3	77.2	70.8	71.6
Perylene-d12 % recovery**	%	TM218		74.3	72.8	72.4	73.5	72.3	70.7
Naphthalene	<0.009 mg/kg	TM218		0.545 M	0.382 M	0.429 M	0.0503 M	<0.045 M	<0.009 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	0.148 M	0.124 M	<0.012 M	<0.06 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		0.0282 M	0.028 M	0.132 M	<0.008 M	<0.04 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	0.0688 M	0.122 M	<0.01 M	<0.05 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		0.024 M	0.698 M	1.55 M	0.22 M	0.176 M	<0.015 M
Anthracene	<0.016 mg/kg	TM218		<0.016 M	0.177 M	0.461 M	0.0206 M	<0.08 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		0.0335 M	1.27 M	3.12 M	0.624 M	0.648 M	<0.017 M
Pyrene	<0.015 mg/kg	TM218		0.0253 M	0.999 M	2.6 M	0.546 M	0.711 M	<0.015 M
Benz(a)anthracene	<0.014 mg/kg	TM218		<0.014 M	0.737 M	1.94 M	0.249 M	0.519 M	<0.014 M
Chrysene	<0.01 mg/kg	TM218		0.0162 M	0.716 M	1.88 M	0.287 M	0.565 M	<0.01 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		<0.015 M	1.31 M	2.96 M	0.34 M	1.17 M	<0.015 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 M	0.457 M	1.03 M	0.15 M	0.394 M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		<0.015 M	0.788 M	2.21 M	0.255 M	0.745 M	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		<0.018 M	0.531 M	1.48 M	0.183 M	0.497 M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	0.189 M	0.427 M	0.0451 M	0.148 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 M	0.679 M	1.63 M	0.206 M	0.604 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		0.672	9.17	22.1	3.18	6.17	<0.118

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-F6-V	4E-G4	4E-G4	4E-G4-V		
			Depth (m)	1.55 - 1.55	0.50 - 0.50	1.00 - 1.00	1.90 - 1.90		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	30/10/2018	30/10/2018	30/10/2018	30/10/2018		
			Sample Time	00:00	00:00	00:00	00:00		
			Date Received	31/10/2018	31/10/2018	31/10/2018	31/10/2018		
			SDG Ref	181031-51	181031-51	181031-51	181031-51		
			Lab Sample No.(s)	18639188	18639109	18639115	18639121		
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		83.1	87.2	86.9	81.9		
Acenaphthene-d10 % recovery**	%	TM218		80.1	77.2	88.3	79.9		
Phenanthrene-d10 % recovery**	%	TM218		73.7	83.3	78.7	76		
Chrysene-d12 % recovery**	%	TM218		70.2	74	74.4	73.3		
Perylene-d12 % recovery**	%	TM218		72.8	71.8	72.9	72.6		
Naphthalene	<0.009 mg/kg	TM218		0.0978 M	0.561 M	0.621 M	<0.009 M		
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	0.236 M	0.446 M	<0.012 M		
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	0.0494 M	0.088 M	<0.008 M		
Fluorene	<0.01 mg/kg	TM218		<0.01 M	0.123 M	0.365 M	<0.01 M		
Phenanthrene	<0.015 mg/kg	TM218		<0.015 M	1.54 M	2.81 M	<0.015 M		
Anthracene	<0.016 mg/kg	TM218		<0.016 M	0.475 M	0.779 M	<0.016 M		
Fluoranthene	<0.017 mg/kg	TM218		<0.017 M	3.33 M	5.18 M	<0.017 M		
Pyrene	<0.015 mg/kg	TM218		<0.015 M	2.64 M	3.98 M	<0.015 M		
Benz(a)anthracene	<0.014 mg/kg	TM218		<0.014 M	2.17 M	2.96 M	<0.014 M		
Chrysene	<0.01 mg/kg	TM218		<0.01 M	2.02 M	2.96 M	<0.01 M		
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		<0.015 M	3.58 M	5.19 M	<0.015 M		
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 M	1.59 M	1.67 M	<0.014 M		
Benzo(a)pyrene	<0.015 mg/kg	TM218		<0.015 M	2.29 M	3.48 M	<0.015 M		
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		<0.018 M	1.55 M	2.79 M	<0.018 M		
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	0.488 M	0.824 M	<0.023 M		
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 M	2 M	3.61 M	<0.024 M		
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		<0.118	24.6	37.8	<0.118		

Validated

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-C4	4E-C4	4E-C4-V	4E-D4	4E-D4	4E-D4-V
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.25 - 2.25	0.50 - 0.50	1.20 - 1.20	2.10 - 2.10
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			SDG Ref	181031-51	181031-51	181031-51	181031-51	181031-51	181031-51
			Lab Sample No.(s)	18639087	18639150	18639228	18639237	18639243	18639248
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		95	100	110	72.4	93	91
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.1 M	<0.1 M	<0.1 M	<0.2 M	<0.1 M	<0.1 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.02	<0.01	<0.01
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.02	<0.01	<0.01
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.02	<0.01	<0.01
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.02	<0.01	<0.01
Aliphatics >C12-C16	<0.1 mg/kg	TM173		3.7	4.04	<0.1	1.61	8.13	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		35.9	21.7	1.14	19	29.4	<0.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		64.9	83.4	1.79	80.5	65.9	<0.1
Aliphatics >C35-C44	<0.1 mg/kg	TM173		16.2	27.7	<0.1	14.8	7.3	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		121	137	2.93	116	111	<0.1
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.02	<0.01	<0.01
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.02	<0.01	<0.01
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.02	<0.01	<0.01
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.02	<0.01	<0.01
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		2.98	0.856	0.23	5.57	2.76	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		29.3	13.3	1.42	22.6	18.4	<0.1
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		91.2	79.2	6.09	107	96.4	<0.1
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		33.6	33.6	3.1	31.6	35.7	<0.1
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		13	12.6	1.28	11.1	12.9	<0.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		157	127	10.8	166	153	<0.1
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		278	264	13.8	282	264	<0.1

Validated

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-E4	4E-E4	4E-E4	4E-E5	4E-E5	4E-E6
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.20 - 0.20	0.80 - 0.80	0.25 - 0.25
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			SDG Ref	181031-51	181031-51	181031-51	181031-51	181031-51	181031-51
			Lab Sample No.(s)	18639252	18639257	18639262	18639127	18639132	18639144
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		41	45.2	57.3	96.5	98	101
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 #	<0.2 #	<0.2 #	0.579 M	0.322 M	1.77 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.01	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	0.0463	0.0155	0.0391
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	0.0328	0.0155	0.0467
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	0.276	0.164	0.981
Aliphatics >C12-C16	<0.1 mg/kg	TM173		5.28	3.06	4.72	5.34	1.38	23.5
Aliphatics >C16-C21	<0.1 mg/kg	TM173		20.9	21.4	21.6	28.6	11.1	109
Aliphatics >C21-C35	<0.1 mg/kg	TM173		51.3	33.7	43	61.1	35.4	119
Aliphatics >C35-C44	<0.1 mg/kg	TM173		7.89	4.55	8.94	18.7	8.93	52.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		85.5	62.7	78.3	114	56.9	304
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.01	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.01	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	0.0215	<0.01	0.0315
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	0.184	0.11	0.654
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		10.4	6.3	7.22	2.3	2.16	5.66
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		86.9	39.7	55	16.2	17.1	45.8
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		358	149	189	80.3	73.3	136
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		84.7	36.3	53.5	30.4	25.3	86.9
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		24.8	12.5	18.2	12.1	9.41	39.9
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		540	232	305	129	118	275
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		626	294	383	244	175	580

Validated

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-E6	4E-E7	4E-E7	4E-E4-V	4E-E5-V	4E-E6-V
			Depth (m)	0.80 - 0.80	0.30 - 0.30	0.80 - 0.80	2.10 - 2.10	1.95 - 1.95	1.80 - 1.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			SDG Ref	181031-51	181031-51	181031-51	181031-51	181031-51	181031-51
			Lab Sample No.(s)	18639155	18639201	18639205	18639218	18639137	18639169
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		109	70	94.2	106	104	73.6
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		0.111 M	<0.2 M	2.86 M	1.31 M	<0.1 M	<0.2 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.02	<0.02	<0.02	<0.01	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.0111	<0.02	0.0561	0.0715	<0.01	<0.02
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01	<0.02	0.619	0.195	<0.01	<0.02
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.0477	<0.02	0.74	0.542	<0.01	<0.02
Aliphatics >C12-C16	<0.1 mg/kg	TM173		1.25	0.683	8.03	70.9	<0.1	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		7.31	3.8	13	67.6	<0.1	<0.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		28.8	41.6	73.8	14.1	5.27	<0.1
Aliphatics >C35-C44	<0.1 mg/kg	TM173		16	16.3	20.4	<0.1	<0.1	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		53.4	62.4	115	153	5.27	<0.1
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.02	0.156	<0.02	<0.01	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.02	0.373	<0.02	<0.01	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01	<0.02	0.412	0.13	<0.01	<0.02
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		0.0311	<0.02	0.494	0.361	<0.01	<0.02
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		1.7	1.97	3.21	21.8	<0.1	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		8.59	8.5	34.8	26.2	0.268	<0.1
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		68.6	45.3	216	9.14	25.1	<0.1
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		50.5	28.7	76.5	1.62	3.81	<0.1
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		22.9	12.3	27.6	1.2	0.831	<0.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		129	84.5	330	58.8	29.2	<0.1
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		183	147	448	213	34.4	<0.1

Validated

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-E7-V	4E-F4	4E-F4	4E-F6	4E-F6	4E-F4-V
			Depth (m)	1.75 - 1.75	0.50 - 0.50	1.00 - 1.00	0.30 - 0.30	0.80 - 0.80	2.10 - 2.10
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			SDG Ref	181031-51	181031-51	181031-51	181031-51	181031-51	181031-51
			Lab Sample No.(s)	18639212	18639092	18639099	18639174	18639180	18639105
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		100	88	103	110	94.4	111
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		4.2 M	<0.1 M	<0.1 M	<0.2 M	<0.2 M	<0.2 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		0.0311	<0.01	<0.01	<0.02	<0.02	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.124	<0.01	<0.01	<0.02	<0.02	<0.02
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.891	<0.01	<0.01	<0.02	<0.02	<0.02
Aliphatics >C10-C12	<0.01 mg/kg	TM089		1.53	<0.01	<0.01	<0.02	<0.02	<0.02
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	1.15	1.09	0.718	14.5	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		<0.1	12.2	12.2	5.58	75.1	<0.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		5.15	27.1	31.4	18.2	63.1	<0.1
Aliphatics >C35-C44	<0.1 mg/kg	TM173		<0.1	5.28	3.78	8.55	36.3	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		5.15	45.7	48.4	33	189	<0.1
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	<0.01	<0.01	<0.02	<0.02	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	<0.01	<0.01	<0.02	<0.02	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.593	<0.01	<0.01	<0.02	<0.02	<0.02
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		1.02	<0.01	<0.01	<0.02	<0.02	<0.02
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	1.69	3.5	0.197	3.18	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		<0.1	12	29.6	4.06	25.8	<0.1
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		50.5	48.4	118	24.4	85.4	0.282
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		7.63	15.9	32.8	14.5	51.3	<0.1
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		1.88	5.74	10.6	5.98	22.6	<0.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		58.2	77.9	184	43.1	166	0.282
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		67.5	124	232	76.1	355	0.282

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-F6-V	4E-G4	4E-G4	4E-G4-V		
			Depth (m)	1.55 - 1.55	0.50 - 0.50	1.00 - 1.00	1.90 - 1.90		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	30/10/2018	30/10/2018	30/10/2018	30/10/2018		
			Sample Time	00:00	00:00	00:00	00:00		
			Date Received	31/10/2018	31/10/2018	31/10/2018	31/10/2018		
			SDG Ref	181031-51	181031-51	181031-51	181031-51		
			Lab Sample No.(s)	18639188	18639109	18639115	18639121		
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		77	91.1	73.2	94.6		
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.1 M	<0.2 M	<0.2 M	<0.2 M		
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.02	<0.02	<0.02		
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.01	<0.02	<0.02	<0.02		
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01	<0.02	<0.02	<0.02		
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01	<0.02	<0.02	<0.02		
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	0.233	1.25	<0.1		
Aliphatics >C16-C21	<0.1 mg/kg	TM173		<0.1	9.83	10.3	<0.1		
Aliphatics >C21-C35	<0.1 mg/kg	TM173		1.71	46.5	64.8	<0.1		
Aliphatics >C35-C44	<0.1 mg/kg	TM173		<0.1	17.4	29.7	<0.1		
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		1.71	73.9	106	<0.1		
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.02	<0.02	<0.02		
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.02	<0.02	<0.02		
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01	<0.02	<0.02	<0.02		
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01	<0.02	<0.02	<0.02		
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	3.58	1.6	<0.1		
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		<0.1	56.6	16.3	<0.1		
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		11.3	174	93.1	1.53		
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		1.67	64.5	43.7	2.26		
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		0.523	23.8	17.3	2.05		
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		13	299	155	3.78		
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		14.7	373	261	3.78		

Validated

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-C4	4E-C4	4E-C4-V	4E-D4	4E-D4	4E-D4-V
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.25 - 2.25	0.50 - 0.50	1.20 - 1.20	2.10 - 2.10
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			SDG Ref	181031-51	181031-51	181031-51	181031-51	181031-51	181031-51
			Lab Sample No.(s)	18639087	18639150	18639228	18639237	18639243	18639248
			AGS Reference						
Dibromofluoromethane**	%	TM116		120	118	117	103	117	122
Toluene-d8**	%	TM116		96.4	97.1	99.9	97.1	98.1	99.1
4-Bromofluorobenzene**	%	TM116		97.7	98	104	83.9	94.6	106
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-E4	4E-E4	4E-E4	4E-E5	4E-E5	4E-E6
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.20 - 0.20	0.80 - 0.80	0.25 - 0.25
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			SDG Ref	181031-51	181031-51	181031-51	181031-51	181031-51	181031-51
			Lab Sample No.(s)	18639252	18639257	18639262	18639127	18639132	18639144
			AGS Reference						
Dibromofluoromethane**	%	TM116		85.9	103	95.8	104	118	122
Toluene-d8**	%	TM116		89.7	90.8	95.3	99.8	98.1	95.7
4-Bromofluorobenzene**	%	TM116		69.3	66.6	78.2	95.5	94.3	100
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		0.159 M	0.367 M	0.183 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-E6	4E-E7	4E-E7	4E-E4-V	4E-E5-V	4E-E6-V
			Depth (m)	0.80 - 0.80	0.30 - 0.30	0.80 - 0.80	2.10 - 2.10	1.95 - 1.95	1.80 - 1.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			SDG Ref	181031-51	181031-51	181031-51	181031-51	181031-51	181031-51
			Lab Sample No.(s)	18639155	18639201	18639205	18639218	18639137	18639169
			AGS Reference						
Dibromofluoromethane**	%	TM116		118	100	123	126	119	128
Toluene-d8**	%	TM116		99	97.4	106	108	100	107
4-Bromofluorobenzene**	%	TM116		107	85.2	106	108	104	106
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	0.102 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-E7-V	4E-F4	4E-F4	4E-F6	4E-F6	4E-F4-V
			Depth (m)	1.75 - 1.75	0.50 - 0.50	1.00 - 1.00	0.30 - 0.30	0.80 - 0.80	2.10 - 2.10
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			SDG Ref	181031-51	181031-51	181031-51	181031-51	181031-51	181031-51
			Lab Sample No.(s)	18639212	18639092	18639099	18639174	18639180	18639105
			AGS Reference						
Dibromofluoromethane**	%	TM116		107	115	114	106	105	122
Toluene-d8**	%	TM116		97.5	95.7	95.9	101	99.2	99.3
4-Bromofluorobenzene**	%	TM116		94.6	87.2	84.9	97.3	96	103
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		0.436 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-F6-V	4E-G4	4E-G4	4E-G4-V		
			Depth (m)	1.55 - 1.55	0.50 - 0.50	1.00 - 1.00	1.90 - 1.90		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	30/10/2018	30/10/2018	30/10/2018	30/10/2018		
			Sample Time	00:00	00:00	00:00	00:00		
			Date Received	31/10/2018	31/10/2018	31/10/2018	31/10/2018		
			SDG Ref	181031-51	181031-51	181031-51	181031-51		
			Lab Sample No.(s)	18639188	18639109	18639115	18639121		
			AGS Reference						
Dibromofluoromethane**	%	TM116		121	102	101	120		
Toluene-d8**	%	TM116		97.2	98.2	96.9	105		
4-Bromofluorobenzene**	%	TM116		99.8	88.9	83.8	107		
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M		
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M		
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M		
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M		
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #		
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M		
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M		
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4		

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

Asbestos Identification - Solid Samples

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-C4 0.50 - 0.50 SOLID 30/10/2018 00:00:00 01/11/2018 12:45:39 181031-51 18639087 TM048	09/11/2018	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-D4 0.50 - 0.50 SOLID 30/10/2018 00:00:00 31/10/2018 15:41:36 181031-51 18639237 TM048	09/11/2018	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-E4 0.50 - 0.50 SOLID 30/10/2018 00:00:00 31/10/2018 20:36:09 181031-51 18639252 TM048	09/11/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-E4 1.50 - 1.50 SOLID 30/10/2018 00:00:00 31/10/2018 20:37:46 181031-51 18639262 TM048	09/11/2018	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-E5 0.20 - 0.20 SOLID 30/10/2018 00:00:00 31/10/2018 15:01:45 181031-51 18639127 TM048	09/11/2018	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-E6 0.25 - 0.25 SOLID 30/10/2018 00:00:00 31/10/2018 20:55:32 181031-51 18639144 TM048	09/11/2018	Lucy Caroe	Soil containing debris typical of AIB	Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG: 181031-51 **Client Reference:** **Report Number:** 481247
Location: Llanwern **Order Number:** LLA502 **Superseded Report:** 480708

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-E7 0.30 - 0.30 SOLID 30/10/2018 00:00:00 31/10/2018 16:18:53 181031-51 18639201 TM048	09/11/2018	Lucy Caroe	Fibre bundles in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-F4 1.00 - 1.00 SOLID 30/10/2018 00:00:00 31/10/2018 20:53:41 181031-51 18639099 TM048	09/11/2018	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-F6 0.80 - 0.80 SOLID 30/10/2018 00:00:00 31/10/2018 17:46:34 181031-51 18639180 TM048	09/11/2018	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-G4 1.00 - 1.00 SOLID 30/10/2018 00:00:00 31/10/2018 14:58:03 181031-51 18639115 TM048	09/11/2018	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

Asbestos Quantification - Full

		Additional Asbestos Components (Using TM048)	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM Evaluation - %	Asbestos Quantification - Total - %
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-E6 0.25 - 0.25 SOLID 30/10/2018 00:00:00 31/10/2018 20:57:06 181031-51 18639144 TM304	None (#)	N/A	0.0174 (#)	0.0017 (#)	0.0191 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-E7 0.30 - 0.30 SOLID 30/10/2018 00:00:00 31/10/2018 16:20:58 181031-51 18639201 TM304	None (#)	N/A	<0.001 (#)	<0.001 (#)	<0.001 (#)

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.49
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.8
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639087
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-C4
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000185	<0.00001	0.000185	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000878	<0.0005	0.00878	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00381	<0.001	0.0381	<0.01	-	-	-
Copper	0.00459	<0.0003	0.0459	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00102	<0.0004	0.0102	<0.004	-	-	-
Selenium	0.00182	<0.001	0.0182	<0.01	-	-	-
Vanadium	0.0634	<0.001	0.634	<0.01	-	-	-
Zinc	0.00147	<0.001	0.0147	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000283	<0.0001	0.00283	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	11.01
Conductivity (µS/cm)	411.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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13:30:42 15/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.49
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.8
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639087
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-C4
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	11.01
Conductivity (µS/cm)	411.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

15/11/2018 13:32:09

13:30:42 15/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.76
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.8
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639092
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-F4
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000107	<0.00001	0.000107	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00942	<0.0005	0.0942	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00295	<0.001	0.0295	<0.01	-	-	-
Copper	0.000876	<0.0003	0.00876	<0.003	-	-	-
Lead	0.00098	<0.0002	0.0098	<0.002	-	-	-
Manganese	0.00358	<0.003	0.0358	<0.03	-	-	-
Nickel	0.000444	<0.0004	0.00444	<0.004	-	-	-
Selenium	0.00249	<0.001	0.0249	<0.01	-	-	-
Vanadium	0.0435	<0.001	0.435	<0.01	-	-	-
Zinc	0.00117	<0.001	0.0117	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.667	<0.019	6.67	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	9.91
Conductivity (µS/cm)	103.00
Temperature (°C)	19.10
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.76
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.8
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639092
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-F4
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	9.91
Conductivity (µS/cm)	103.00
Temperature (°C)	19.10
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.29
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.5
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639099
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-F4
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00351	<0.0005	0.0351	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00459	<0.001	0.0459	<0.01	-	-	-
Copper	0.00258	<0.0003	0.0258	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00338	<0.001	0.0338	<0.01	-	-	-
Vanadium	0.0542	<0.001	0.542	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.242	<0.019	2.42	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00017	<0.00005	0.0017	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000145	<0.00005	0.00145	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	0.0000741	<0.00002	0.000741	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.000134	<0.00005	0.00134	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000885	<0.00005	0.000885	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000113	<0.00005	0.00113	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	10.62
Conductivity (µS/cm)	222.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.29
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.5
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639099
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-F4
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	10.62
Conductivity (µS/cm)	222.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.38
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639109
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-G4
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00429	<0.0005	0.0429	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00634	<0.001	0.0634	<0.01	-	-	-
Copper	0.00363	<0.0003	0.0363	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.0027	<0.001	0.027	<0.01	-	-	-
Vanadium	0.0424	<0.001	0.424	<0.01	-	-	-
Zinc	0.00247	<0.001	0.0247	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.194	<0.019	1.94	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.000274	<0.00005	0.00274	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	0.000208	<0.00005	0.00208	<0.0005	-	-	-
Pyrene by GCMS	0.000219	<0.00005	0.00219	<0.0005	-	-	-
Benz(a)anthracene by GCMS	0.000177	<0.00005	0.00177	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000403	<0.00005	0.00403	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000252	<0.00005	0.00252	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	0.000176	<0.00002	0.00176	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.000194	<0.00005	0.00194	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	0.000259	<0.00005	0.00259	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000198	<0.00005	0.00198	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.00236	<0.00082	0.0236	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	10.60
Conductivity (µS/cm)	299.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

15/11/2018 13:32:09

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CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.38
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639109
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-G4
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	10.60
Conductivity (µS/cm)	299.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.27
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.1
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639115
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-G4
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000115	<0.00001	0.000115	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00356	<0.0005	0.0356	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0076	<0.001	0.076	<0.01	-	-	-
Copper	0.00974	<0.0003	0.0974	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000888	<0.0004	0.00888	<0.004	-	-	-
Selenium	0.00246	<0.001	0.0246	<0.01	-	-	-
Vanadium	0.0475	<0.001	0.475	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.266	<0.019	2.66	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	10.93
Conductivity (µS/cm)	293.00
Temperature (°C)	19.10
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.27
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.1
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639115
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-G4
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	10.93
Conductivity (µS/cm)	293.00
Temperature (°C)	19.10
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639127
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-E5
Depth (m)	0.20 - 0.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.000013	<0.00001	0.00013	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000722	<0.0005	0.00722	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00342	<0.001	0.0342	<0.01	-	-	-
Copper	0.00354	<0.0003	0.0354	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000936	<0.0004	0.00936	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0169	<0.001	0.169	<0.01	-	-	-
Zinc	0.00125	<0.001	0.0125	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	11.71
Conductivity (µS/cm)	962.00
Temperature (°C)	19.10
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639127
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-E5
Depth (m)	0.20 - 0.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	11.71
Conductivity (µS/cm)	962.00
Temperature (°C)	19.10
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639132
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-E5
Depth (m)	0.80 - 0.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00739	<0.001	0.0739	<0.01	-	-	-
Copper	0.00303	<0.0003	0.0303	<0.003	-	-	-
Lead	0.000444	<0.0002	0.00444	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000862	<0.0004	0.00862	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00278	<0.001	0.0278	<0.01	-	-	-
Zinc	0.00348	<0.001	0.0348	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.000104	<0.00005	0.00104	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	0.0000981	<0.00005	0.000981	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	0.0000935	<0.00005	0.000935	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	11.88
Conductivity (µS/cm)	1,650.00
Temperature (°C)	19.10
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639132
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-E5
Depth (m)	0.80 - 0.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	11.88
Conductivity (µS/cm)	1,650.00
Temperature (°C)	19.10
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.58
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.1
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639144
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-E6
Depth (m)	0.25 - 0.25

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000565	<0.00001	0.000565	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000645	<0.0005	0.00645	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0114	<0.001	0.114	<0.01	-	-	-
Copper	0.00332	<0.0003	0.0332	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00139	<0.001	0.0139	<0.01	-	-	-
Vanadium	0.0138	<0.001	0.138	<0.01	-	-	-
Zinc	0.00207	<0.001	0.0207	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	11.42
Conductivity (µS/cm)	942.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.58
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.1
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639144
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-E6
Depth (m)	0.25 - 0.25

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	11.42
Conductivity (µS/cm)	942.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.2
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639150
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-C4
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0267	<0.001	0.267	<0.01	-	-	-
Copper	0.00438	<0.0003	0.0438	<0.003	-	-	-
Lead	0.00206	<0.0002	0.0206	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000599	<0.0004	0.00599	<0.004	-	-	-
Selenium	0.00173	<0.001	0.0173	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00419	<0.001	0.0419	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00068	<0.0001	0.0068	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.0022	<0.00005	0.022	<0.0005	-	-	-
Anthracene by GCMS	0.000643	<0.00005	0.00643	<0.0005	-	-	-
Phenanthrene by GCMS	0.00472	<0.00005	0.0472	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	0.000167	<0.00005	0.00167	<0.0005	-	-	-
Pyrene by GCMS	0.00132	<0.00005	0.0132	<0.0005	-	-	-
Benz(a)anthracene by GCMS	0.000178	<0.00005	0.00178	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.0099	<0.00082	0.099	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	12.34
Conductivity (µS/cm)	3,760.00
Temperature (°C)	19.00
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.2
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639150
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-C4
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	12.34
Conductivity (µS/cm)	3,760.00
Temperature (°C)	19.00
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

15/11/2018 13:32:09

13:30:42 15/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639155
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-E6
Depth (m)	0.80 - 0.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000101	<0.00001	0.000101	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0012	<0.0005	0.012	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0059	<0.001	0.059	<0.01	-	-	-
Copper	0.000404	<0.0003	0.00404	<0.003	-	-	-
Lead	0.000307	<0.0002	0.00307	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00175	<0.001	0.0175	<0.01	-	-	-
Zinc	0.00388	<0.001	0.0388	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	0.0000515	<0.00005	0.000515	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.000108	<0.00005	0.00108	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	0.000135	<0.00005	0.00135	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	0.0000924	<0.00005	0.000924	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	11.71
Conductivity (µS/cm)	1,990.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639155
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-E6
Depth (m)	0.80 - 0.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	11.71
Conductivity (µS/cm)	1,990.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.65
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.2
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639174
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-F6
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00258	<0.0005	0.0258	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00653	<0.001	0.0653	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	0.000634	<0.0002	0.00634	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00132	<0.001	0.0132	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.0012	<0.001	0.012	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000238	<0.0001	0.00238	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.000509	<0.00005	0.00509	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	0.000271	<0.00005	0.00271	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	0.0001	<0.00005	0.001	<0.0005	-	-	-
Pyrene by GCMS	0.000548	<0.00005	0.00548	<0.0005	-	-	-
Benz(a)anthracene by GCMS	0.000115	<0.00005	0.00115	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000129	<0.00005	0.00129	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000137	<0.00005	0.00137	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000966	<0.00005	0.000966	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.00214	<0.00082	0.0214	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	12.11
Conductivity (µS/cm)	5,520.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.65
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.2
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639174
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-F6
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	12.11
Conductivity (µS/cm)	5,520.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.65
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.2
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639180
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-F6
Depth (m)	0.80 - 0.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00235	<0.0005	0.0235	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00376	<0.001	0.0376	<0.01	-	-	-
Copper	0.000997	<0.0003	0.00997	<0.003	-	-	-
Lead	0.002	<0.0002	0.02	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00605	<0.001	0.0605	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000196	<0.0001	0.00196	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.000573	<0.00005	0.00573	<0.0005	-	-	-
Anthracene by GCMS	0.0000808	<0.00005	0.000808	<0.0005	-	-	-
Phenanthrene by GCMS	0.000553	<0.00005	0.00553	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	0.000156	<0.00005	0.00156	<0.0005	-	-	-
Pyrene by GCMS	0.000491	<0.00005	0.00491	<0.0005	-	-	-
Benz(a)anthracene by GCMS	0.00013	<0.00005	0.0013	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000175	<0.00005	0.00175	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00019	<0.00005	0.0019	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	0.0000999	<0.00002	0.000999	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.000134	<0.00005	0.00134	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000566	<0.00005	0.000566	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00012	<0.00005	0.0012	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.00295	<0.00082	0.0295	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	11.97
Conductivity (µS/cm)	5,160.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

15/11/2018 13:32:09

13:30:42 15/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.65
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.2
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639180
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-F6
Depth (m)	0.80 - 0.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	11.97
Conductivity (µS/cm)	5,160.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

15/11/2018 13:32:09

13:30:42 15/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.9
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639201
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-E7
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.331	<0.2	3.31	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00375	<0.0005	0.0375	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00156	<0.001	0.0156	<0.01	-	-	-
Copper	0.00166	<0.0003	0.0166	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00113	<0.001	0.0113	<0.01	-	-	-
Vanadium	0.0779	<0.001	0.779	<0.01	-	-	-
Zinc	0.00131	<0.001	0.0131	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.000204	<0.00005	0.00204	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	0.000135	<0.00005	0.00135	<0.0005	-	-	-
Pyrene by GCMS	0.000148	<0.00005	0.00148	<0.0005	-	-	-
Benz(a)anthracene by GCMS	0.000114	<0.00005	0.00114	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000297	<0.00005	0.00297	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000196	<0.00005	0.00196	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	0.000144	<0.00002	0.00144	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.00017	<0.00005	0.0017	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	0.000137	<0.00005	0.00137	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000165	<0.00005	0.00165	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.00171	<0.00082	0.0171	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	10.21
Conductivity (µS/cm)	142.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

15/11/2018 13:32:09

13:30:42 15/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.9
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639201
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-E7
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	10.21
Conductivity (µS/cm)	142.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

15/11/2018 13:32:09

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CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	3.95
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	96.2
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639205
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-E7
Depth (m)	0.80 - 0.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00207	<0.0005	0.0207	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00953	<0.001	0.0953	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	0.00206	<0.0002	0.0206	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00545	<0.001	0.0545	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0026	<0.0001	0.026	<0.001	-	-	-
Acenaphthene by GCMS	0.000258	<0.00005	0.00258	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.00465	<0.00005	0.0465	<0.0005	-	-	-
Anthracene by GCMS	0.000241	<0.00005	0.00241	<0.0005	-	-	-
Phenanthrene by GCMS	0.00481	<0.00005	0.0481	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	0.000407	<0.00005	0.00407	<0.0005	-	-	-
Pyrene by GCMS	0.00331	<0.00005	0.0331	<0.0005	-	-	-
Benz(a)anthracene by GCMS	0.000223	<0.00005	0.00223	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000149	<0.00005	0.00149	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000155	<0.00005	0.00155	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.0168	<0.00082	0.168	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	12.32
Conductivity (µS/cm)	4,140.00
Temperature (°C)	19.00
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	3.95
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	96.2
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639205
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-E7
Depth (m)	0.80 - 0.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	0.021	<0.01	0.21	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.021	<0.01	0.21	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.039	<0.01	0.39	<0.1	-	-	-
Toluene by GC	0.006	<0.004	0.06	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	12.32
Conductivity (µS/cm)	4,140.00
Temperature (°C)	19.00
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.113	**Natural Moisture Content (%)**	25
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	80
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639237
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-D4
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000106	<0.00001	0.000106	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00652	<0.0005	0.0652	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00103	<0.001	0.0103	<0.01	-	-	-
Copper	0.00366	<0.0003	0.0366	<0.003	-	-	-
Lead	0.000226	<0.0002	0.00226	<0.002	-	-	-
Manganese	0.00593	<0.003	0.0593	<0.03	-	-	-
Nickel	0.00111	<0.0004	0.0111	<0.004	-	-	-
Selenium	0.00184	<0.001	0.0184	<0.01	-	-	-
Vanadium	0.0655	<0.001	0.655	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.365	<0.019	3.65	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.000272	<0.00005	0.00272	<0.0005	-	-	-
Anthracene by GCMS	0.0000689	<0.00005	0.000689	<0.0005	-	-	-
Phenanthrene by GCMS	0.000206	<0.00005	0.00206	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	0.000253	<0.00005	0.00253	<0.0005	-	-	-
Pyrene by GCMS	0.000213	<0.00005	0.00213	<0.0005	-	-	-
Benz(a)anthracene by GCMS	0.000169	<0.00005	0.00169	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000345	<0.00005	0.00345	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000318	<0.00005	0.00318	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	0.000167	<0.00002	0.00167	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.000217	<0.00005	0.00217	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	0.000245	<0.00005	0.00245	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000257	<0.00005	0.00257	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.00273	<0.00082	0.0273	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	7.09
Conductivity (µS/cm)	216.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.878

Mcerts Certification does not apply to leachates

15/11/2018 13:32:09

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CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.113	**Natural Moisture Content (%)**	25
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	80
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639237
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-D4
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	7.09
Conductivity (µS/cm)	216.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.878

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639243
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-D4
Depth (m)	1.20 - 1.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00844	<0.001	0.0844	<0.01	-	-	-
Copper	0.0154	<0.0003	0.154	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.0027	<0.0004	0.027	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00859	<0.001	0.0859	<0.01	-	-	-
Zinc	0.00726	<0.001	0.0726	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	11.46
Conductivity (µS/cm)	993.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639243
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-D4
Depth (m)	1.20 - 1.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	11.46
Conductivity (µS/cm)	993.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	7.07
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.4
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639252
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-E4
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000234	<0.00001	0.000234	<0.0001	-	-	-
Total Cyanide (W)	0.262	<0.05	2.62	<0.5	-	-	-
Arsenic	0.00334	<0.0005	0.0334	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00393	<0.001	0.0393	<0.01	-	-	-
Copper	0.00173	<0.0003	0.0173	<0.003	-	-	-
Lead	0.00067	<0.0002	0.0067	<0.002	-	-	-
Manganese	0.0032	<0.003	0.032	<0.03	-	-	-
Nickel	0.000599	<0.0004	0.00599	<0.004	-	-	-
Selenium	0.00156	<0.001	0.0156	<0.01	-	-	-
Vanadium	0.0168	<0.001	0.168	<0.01	-	-	-
Zinc	0.00184	<0.001	0.0184	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.173	<0.019	1.73	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000333	<0.0001	0.00333	<0.001	-	-	-
Acenaphthene by GCMS	0.00015	<0.00005	0.0015	<0.0005	-	-	-
Acenaphthylene by GCMS	0.000236	<0.00005	0.00236	<0.0005	-	-	-
Fluoranthene by GCMS	0.002	<0.00005	0.02	<0.0005	-	-	-
Anthracene by GCMS	0.000285	<0.00005	0.00285	<0.0005	-	-	-
Phenanthrene by GCMS	0.00099	<0.00005	0.0099	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	0.00145	<0.00005	0.0145	<0.0005	-	-	-
Pyrene by GCMS	0.00163	<0.00005	0.0163	<0.0005	-	-	-
Benz(a)anthracene by GCMS	0.000959	<0.00005	0.00959	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00254	<0.00005	0.0254	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00111	<0.00005	0.0111	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	0.00148	<0.00002	0.0148	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.000419	<0.00005	0.00419	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	0.00176	<0.00005	0.0176	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00114	<0.00005	0.0114	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.0165	<0.00082	0.165	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	9.11
Conductivity (µS/cm)	103.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	7.07
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.4
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639252
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-E4
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	0.025	<0.01	0.25	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.025	<0.01	0.25	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.025	<0.01	0.25	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	9.11
Conductivity (µS/cm)	103.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639257
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-E4
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000351	<0.00001	0.000351	<0.0001	-	-	-
Total Cyanide (W)	0.371	<0.05	3.71	<0.5	-	-	-
Arsenic	0.00247	<0.0005	0.0247	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00319	<0.001	0.0319	<0.01	-	-	-
Copper	0.00166	<0.0003	0.0166	<0.003	-	-	-
Lead	0.000386	<0.0002	0.00386	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00143	<0.001	0.0143	<0.01	-	-	-
Vanadium	0.0128	<0.001	0.128	<0.01	-	-	-
Zinc	0.00102	<0.001	0.0102	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.206	<0.019	2.06	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.000284	<0.00005	0.00284	<0.0005	-	-	-
Anthracene by GCMS	0.0000534	<0.00005	0.000534	<0.0005	-	-	-
Phenanthrene by GCMS	0.000226	<0.00005	0.00226	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	0.000108	<0.00005	0.00108	<0.0005	-	-	-
Pyrene by GCMS	0.000228	<0.00005	0.00228	<0.0005	-	-	-
Benz(a)anthracene by GCMS	0.0000612	<0.00005	0.000612	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000314	<0.00005	0.00314	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000183	<0.00005	0.00183	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	0.000146	<0.00002	0.00146	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	0.000171	<0.00005	0.00171	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000185	<0.00005	0.00185	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.00196	<0.00082	0.0196	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	9.03
Conductivity (µS/cm)	112.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639257
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-E4
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	9.03
Conductivity (µS/cm)	112.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639262
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-E4
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000231	<0.00001	0.000231	<0.0001	-	-	-
Total Cyanide (W)	0.861	<0.05	8.61	<0.5	-	-	-
Arsenic	0.00303	<0.0005	0.0303	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00244	<0.001	0.0244	<0.01	-	-	-
Copper	0.0111	<0.0003	0.111	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00397	<0.0004	0.0397	<0.004	-	-	-
Selenium	0.0023	<0.001	0.023	<0.01	-	-	-
Vanadium	0.0413	<0.001	0.413	<0.01	-	-	-
Zinc	0.00136	<0.001	0.0136	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.297	<0.019	2.97	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000127	<0.00005	0.00127	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00012	<0.00005	0.0012	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	0.0000612	<0.00002	0.000612	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000634	<0.00005	0.000634	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000966	<0.00005	0.000966	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	11.03
Conductivity (µS/cm)	440.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	181031-51
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Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-E4
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
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Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

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Table of Results - Appendix

Method No	Reference	Description
ASB_PREP		
PM001		Preparation of Samples for Metals Analysis
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
SUB		Subcontracted Test
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM243		Mixed Anions In Soils By Kone
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

Test Completion Dates

Lab Sample No(s)	18639087	18639150	18639228	18639237	18639243	18639248	18639252	18639257	18639262	18639127
Customer Sample Ref.	4E-C4	4E-C4	4E-C4-V	4E-D4	4E-D4	4E-D4-V	4E-E4	4E-E4	4E-E4	4E-E5
AGS Ref.										
Depth	0.50 - 0.50	1.00 - 1.00	2.25 - 2.25	0.50 - 0.50	1.20 - 1.20	2.10 - 2.10	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.20 - 0.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	07-Nov-2018			14-Nov-2018			07-Nov-2018		14-Nov-2018	14-Nov-2018
Ammoniacal Nitrogen	13-Nov-2018	13-Nov-2018		13-Nov-2018	13-Nov-2018		13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018
Ammonium Soil by Titration	14-Nov-2018	15-Nov-2018	14-Nov-2018	15-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	15-Nov-2018	15-Nov-2018	14-Nov-2018
Anions by Kone (soil)	09-Nov-2018			09-Nov-2018			09-Nov-2018		09-Nov-2018	09-Nov-2018
Asbestos ID in Solid Samples	09-Nov-2018			09-Nov-2018			09-Nov-2018		09-Nov-2018	09-Nov-2018
Calorific Value (S)*								12-Nov-2018		
CEN 10:1 Leachate (1 Stage)	02-Nov-2018	02-Nov-2018		01-Nov-2018	01-Nov-2018		02-Nov-2018	01-Nov-2018	01-Nov-2018	01-Nov-2018
CEN Readings	06-Nov-2018	07-Nov-2018		07-Nov-2018	06-Nov-2018		06-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018
Cyanide Comp/Free/Total/Thiocyanate	15-Nov-2018	14-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018
Dissolved Metals by ICP-MS	13-Nov-2018	13-Nov-2018		13-Nov-2018	13-Nov-2018		13-Nov-2018	13-Nov-2018	13-Nov-2018	09-Nov-2018
EPH CWG (Aliphatic) Aqueous GC (W)	08-Nov-2018	08-Nov-2018		08-Nov-2018	08-Nov-2018		08-Nov-2018	08-Nov-2018	08-Nov-2018	08-Nov-2018
EPH CWG (Aliphatic) GC (S)	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	02-Nov-2018	05-Nov-2018	05-Nov-2018
EPH CWG (Aromatic) Aqueous GC (W)	08-Nov-2018	08-Nov-2018		08-Nov-2018	08-Nov-2018		08-Nov-2018	08-Nov-2018	08-Nov-2018	08-Nov-2018
EPH CWG (Aromatic) GC (S)	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	02-Nov-2018	05-Nov-2018	05-Nov-2018
GRO by GC-FID (S)	08-Nov-2018	08-Nov-2018	08-Nov-2018	12-Nov-2018	08-Nov-2018	08-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	09-Nov-2018
GRO by GC-FID (W)	08-Nov-2018	08-Nov-2018		08-Nov-2018	08-Nov-2018		08-Nov-2018	08-Nov-2018	08-Nov-2018	07-Nov-2018
Mercury Dissolved	14-Nov-2018	14-Nov-2018		14-Nov-2018	14-Nov-2018		14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018
Metals in solid samples by OES	08-Nov-2018	12-Nov-2018	09-Nov-2018	09-Nov-2018	12-Nov-2018	09-Nov-2018	07-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018
PAH by GCMS	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018
PAH Spec MS - Aqueous (W)	08-Nov-2018	08-Nov-2018		07-Nov-2018	08-Nov-2018		07-Nov-2018	07-Nov-2018	07-Nov-2018	08-Nov-2018
pH	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018
pH Value	13-Nov-2018	13-Nov-2018		13-Nov-2018	13-Nov-2018		13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018
Phenols by HPLC (S)	09-Nov-2018	13-Nov-2018	09-Nov-2018	12-Nov-2018	12-Nov-2018	09-Nov-2018	09-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018
Sample description	31-Oct-2018	01-Nov-2018	01-Nov-2018	31-Oct-2018	31-Oct-2018	01-Nov-2018	01-Nov-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018
Total Organic Carbon	13-Nov-2018	13-Nov-2018	13-Nov-2018	14-Nov-2018	14-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018
Total Sulphate	07-Nov-2018			07-Nov-2018			07-Nov-2018		07-Nov-2018	07-Nov-2018
Total Sulphur	08-Nov-2018			13-Nov-2018			08-Nov-2018		08-Nov-2018	02-Nov-2018
TPH CWG (W)	08-Nov-2018	08-Nov-2018		08-Nov-2018	08-Nov-2018		08-Nov-2018	08-Nov-2018	08-Nov-2018	08-Nov-2018
TPH CWG GC (S)	08-Nov-2018	08-Nov-2018	08-Nov-2018	12-Nov-2018	08-Nov-2018	08-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	09-Nov-2018
VOC MS (S)	08-Nov-2018	08-Nov-2018	08-Nov-2018	09-Nov-2018	08-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018

Lab Sample No(s)	18639132	18639144	18639155	18639201	18639205	18639218	18639137	18639169	18639212	18639092
Customer Sample Ref.	4E-E5	4E-E6	4E-E6	4E-E7	4E-E7	4E-E4-V	4E-E5-V	4E-E6-V	4E-E7-V	4E-F4
AGS Ref.										
Depth	0.80 - 0.80	0.25 - 0.25	0.80 - 0.80	0.30 - 0.30	0.80 - 0.80	2.10 - 2.10	1.95 - 1.95	1.80 - 1.80	1.75 - 1.75	0.50 - 0.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)		14-Nov-2018		14-Nov-2018						
Ammoniacal Nitrogen	13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018					13-Nov-2018
Ammonium Soil by Titration	14-Nov-2018	14-Nov-2018	15-Nov-2018	14-Nov-2018	15-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018
Anions by Kone (soil)		09-Nov-2018		09-Nov-2018						
Asbestos ID in Solid Samples		09-Nov-2018		09-Nov-2018						
Asbestos Quantification - Full		14-Nov-2018		14-Nov-2018						
CEN 10:1 Leachate (1 Stage)	01-Nov-2018	01-Nov-2018	01-Nov-2018	01-Nov-2018	01-Nov-2018					01-Nov-2018
CEN Readings	07-Nov-2018	07-Nov-2018	06-Nov-2018	03-Nov-2018	07-Nov-2018					07-Nov-2018
Cyanide Comp/Free/Total/Thiocyanate	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018
Dissolved Metals by ICP-MS	13-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018					09-Nov-2018
EPH CWG (Aliphatic) Aqueous GC (W)	08-Nov-2018	08-Nov-2018	08-Nov-2018	07-Nov-2018	07-Nov-2018					08-Nov-2018
EPH CWG (Aliphatic) GC (S)	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	02-Nov-2018	05-Nov-2018	05-Nov-2018
EPH CWG (Aromatic) Aqueous GC (W)	08-Nov-2018	08-Nov-2018	08-Nov-2018	07-Nov-2018	07-Nov-2018					08-Nov-2018
EPH CWG (Aromatic) GC (S)	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	02-Nov-2018	05-Nov-2018	05-Nov-2018
GRO by GC-FID (S)	08-Nov-2018	09-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018	08-Nov-2018
GRO by GC-FID (W)	08-Nov-2018	08-Nov-2018	08-Nov-2018	08-Nov-2018	07-Nov-2018					07-Nov-2018
Mercury Dissolved	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018					14-Nov-2018
Metals in solid samples by OES	06-Nov-2018	09-Nov-2018	12-Nov-2018	09-Nov-2018	12-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	12-Nov-2018
PAH by GCMS	08-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	02-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018
PAH Spec MS - Aqueous (W)	07-Nov-2018	08-Nov-2018	08-Nov-2018	07-Nov-2018	07-Nov-2018					08-Nov-2018
pH	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018
pH Value	13-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018					13-Nov-2018
Phenols by HPLC (S)	09-Nov-2018	12-Nov-2018	12-Nov-2018	09-Nov-2018	09-Nov-2018	12-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018
Sample description	01-Nov-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018
Total Organic Carbon	14-Nov-2018	14-Nov-2018	13-Nov-2018	14-Nov-2018	14-Nov-2018	13-Nov-2018	13-Nov-2018	14-Nov-2018	13-Nov-2018	14-Nov-2018
Total Sulphate		07-Nov-2018		07-Nov-2018						
Total Sulphur		02-Nov-2018		02-Nov-2018						
TPH CWG (W)	08-Nov-2018	08-Nov-2018	08-Nov-2018	08-Nov-2018	07-Nov-2018					08-Nov-2018
TPH CWG GC (S)	08-Nov-2018	09-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018	08-Nov-2018
VOC MS (S)	08-Nov-2018	08-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018	08-Nov-2018

Validated

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

Lab Sample No(s)	18639099	18639174	18639180	18639105	18639188	18639109	18639115	18639121
Customer Sample Ref.	4E-F4	4E-F6	4E-F6	4E-F4-V	4E-F6-V	4E-G4	4E-G4	4E-G4-V
AGS Ref.								
Depth	1.00 - 1.00	0.30 - 0.30	0.80 - 0.80	2.10 - 2.10	1.55 - 1.55	0.50 - 0.50	1.00 - 1.00	1.90 - 1.90
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	14-Nov-2018		14-Nov-2018				14-Nov-2018	
Ammoniacal Nitrogen	13-Nov-2018	13-Nov-2018	13-Nov-2018			13-Nov-2018	13-Nov-2018	
Ammonium Soil by Titration	14-Nov-2018	14-Nov-2018	14-Nov-2018	15-Nov-2018	14-Nov-2018	15-Nov-2018	14-Nov-2018	15-Nov-2018
Anions by Kone (soil)	09-Nov-2018		09-Nov-2018				09-Nov-2018	
Asbestos ID in Solid Samples	09-Nov-2018		09-Nov-2018				09-Nov-2018	
CEN 10:1 Leachate (1 Stage)	01-Nov-2018	01-Nov-2018	01-Nov-2018			01-Nov-2018	01-Nov-2018	
CEN Readings	06-Nov-2018	07-Nov-2018	06-Nov-2018			07-Nov-2018	07-Nov-2018	
Cyanide Comp/Free/Total/Thiocyanate	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018
Dissolved Metals by ICP-MS	09-Nov-2018	09-Nov-2018	09-Nov-2018			09-Nov-2018	09-Nov-2018	
EPH CWG (Aliphatic) Aqueous GC (W)	07-Nov-2018	07-Nov-2018	07-Nov-2018			07-Nov-2018	08-Nov-2018	
EPH CWG (Aliphatic) GC (S)	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018
EPH CWG (Aromatic) Aqueous GC (W)	07-Nov-2018	07-Nov-2018	07-Nov-2018			07-Nov-2018	08-Nov-2018	
EPH CWG (Aromatic) GC (S)	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018
GRO by GC-FID (S)	08-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	08-Nov-2018	09-Nov-2018	12-Nov-2018	09-Nov-2018
GRO by GC-FID (W)	08-Nov-2018	07-Nov-2018	08-Nov-2018			07-Nov-2018	07-Nov-2018	
Mercury Dissolved	14-Nov-2018	14-Nov-2018	14-Nov-2018			14-Nov-2018	14-Nov-2018	
Metals in solid samples by OES	09-Nov-2018	12-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018
PAH by GCMS	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018
PAH Spec MS - Aqueous (W)	07-Nov-2018	07-Nov-2018	07-Nov-2018			07-Nov-2018	08-Nov-2018	
pH	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018
pH Value	12-Nov-2018	12-Nov-2018	12-Nov-2018			13-Nov-2018	13-Nov-2018	
Phenols by HPLC (S)	09-Nov-2018	09-Nov-2018	09-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	09-Nov-2018
Sample description	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018
Total Organic Carbon	13-Nov-2018	14-Nov-2018	13-Nov-2018	14-Nov-2018	13-Nov-2018	13-Nov-2018	14-Nov-2018	13-Nov-2018
Total Sulphate	07-Nov-2018		07-Nov-2018				07-Nov-2018	
Total Sulphur	02-Nov-2018		08-Nov-2018				08-Nov-2018	
TPH CWG (W)	08-Nov-2018	07-Nov-2018	08-Nov-2018			07-Nov-2018	08-Nov-2018	
TPH CWG GC (S)	08-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	08-Nov-2018	09-Nov-2018	12-Nov-2018	09-Nov-2018
VOC MS (S)	08-Nov-2018	09-Nov-2018	09-Nov-2018	08-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018

CERTIFICATE OF ANALYSIS

Work Order	: **PR18B5431**	Issue Date	: 12-Nov-2018
Customer	: **ALS Life Sciences Ltd**	Laboratory	: ALS Czech Republic, s.r.o.
Contact	: Reporting	Contact	: Client Service
Address	: Unit 7-8 Hawarden Business Park Manor Road, Hawarden CH5 3US Deeside United Kingdom	Address	: Na Harfe 336/9 Prague 9 - Vysocany Czech Republic 190 00
E-mail	: euhdnsubconresults@ALSGlobal.com	E-mail	: customer.support@alsglobal.com
Telephone	: ----	Telephone	: +420 226 226 228
Project	: 181031-51	Page	: 1 of 2
Order number	: 181031-51	Date Samples Received	: 02-Nov-2018
		Quote number	: PR2018ALSAL-GB0001 (CZ-256-17-1008)
Site	: ----	Date of test	: 04-Nov-2018 - 12-Nov-2018
Sampled by	: client	QC Level	: ALS CR Standard Quality Control Schedule

General Comments

This report shall not be reproduced except in full, without prior written approval from the laboratory.
The laboratory declares that the test results relate only to the listed samples.
The IC determination of chlorides, fluorides, sulfates and nitrates, as needed for the calculation of reported results, was performed using an accredited method of a subcontractor.

Responsible for accuracy

Testing Laboratory No. 1163
Accredited by CAI according to
CSN EN ISO/IEC 17025:2005

Signatories		*Position*
Zdeněk Jirák		Environmental Business Unit Manager

L 1163

Analytical Results

Sub-Matrix: **INDUSTRIAL SOLID**			Client sample ID	**18641709 4E-E4**		----		----	
			Laboratory sample ID	PR18B5431-001		----		----	
			Client sampling date / time	30-Oct-2018 00:00		----		----	
Parameter	*Method*	*LOR*	*Unit*	**Result**	**MU**	**Result**	**MU**	**Result**	**MU**
Physical Parameters									
Gross Calorific Value in Dry Matter Q(V/gr/d)	I-CV-CALS	0.50	MJ/kg DW	**11.2**	± 10.4%	----	----	----	----
Gross Calorific Value Original Q(V/gr/ar)	I-CV-CALS	0.50	MJ/kg	**9.84**	± 10.6%	----	----	----	----
Net Calorific Value in Dry Matter Q(V/net/d)	I-CV-CALS	0.50	MJ/kg DW	**11.0**	± 10.4%	----	----	----	----
Net Calorific Value Original Q(V/net/ar)	I-CV-CALS	0.50	MJ/kg	**9.34**	± 10.6%	----	----	----	----
Water Analytical M(ad)	I-WA-GR	0.50	%	**0.95**	± 40.3%	----	----	----	----
Water Gross M(ex)	I-WG-GR	0.50	%	**11.6**	± 20.2%	----	----	----	----
Water Total M(ar)	I-WT-CC	0.50	%	**12.5**	----	----	----	----	----

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, delivery date in brackets without a time component will be displayed instead. Measurement uncertainty is expressed as expanded measurement uncertainty with coverage factor k = 2, representing 95% confidence level.
Key: LOR = Limit of reporting; MU = Measurement Uncertainty

The end of result part of the certificate of analysis

Brief Method Summaries

Analytical Methods	*Method Descriptions*
Location of test performance: Bendlova 1687/7 Ceska Lipa Czech Republic 470 01	
I-CV-CALS	CZ_SOP_D06_07_124.A (CSN ISO 1928, CSN EN ISO 18125, CSN EN 15400, CSN EN 15170, CSN DIN 51900-1, CSN DIN 51900-2, CSN DIN 51900-3, CSN P CEN/TS 16023) Determination of gross calorific value by calorimetric method and calculation of net calorific value and emission factor by calculation from measured values.
I-WA-GR	CZ_SOP_D06_07_041 (CSN 44 1377, CSN EN ISO 18134-1, CSN EN ISO 18134-2, CSN EN ISO 18134-3, CSN P CEN/TS 15414-1, CSN P CEN/TS 15414-2, CSN EN 15414-3, CSN EN12880, CSN EN14346, CSN EN 15002) Determination of analytical water and gross water by gravimetry and determination of total water by calculation from measured values.
I-WG-GR	CZ_SOP_D06_07_041 (CSN 44 1377, CSN EN ISO 18134-1, CSN EN ISO 18134-2, CSN EN ISO 18134-3, CSN P CEN/TS 15414-1, CSN P CEN/TS 15414-2, CSN EN 15414-3, CSN EN12880, CSN EN14346, CSN EN 15002) Determination of analytical water and gross water by gravimetry and determination of total water by calculation from measured values.
I-WT-CC	CZ_SOP_D06_07_041 (CSN 44 1377, CSN EN ISO 18134-1, CSN EN ISO 18134-2, CSN EN ISO 18134-3, CSN P CEN/TS 15414-1, CSN P CEN/TS 15414-2, CSN EN 15414-3, CSN EN12880, CSN EN14346, CSN EN 15002) Determination of analytical water and gross water by gravimetry and determination of total water by calculation from measured values.

Preparation Methods	*Method Descriptions*
Location of test performance: Bendlova 1687/7 Ceska Lipa Czech Republic 470 01	
I-PPBURN	CZ_SOP_D06_07_124.A (CSN ISO 1928, CSN EN 14918, CSN EN 15400, CSN EN 15170) Determination of gross calorific value by calorimetric method and calculation of net calorific value.
* S-PPHOM.07	CZ_SOP_D06_07_P01 Preparation of solid samples for analysis (crushing, milling and pulverizing).
* S-PPHOM0.3	CZ_SOP_D06_07_P01 Preparation of solid samples for analysis (crushing, milling and pulverizing).

A `*` symbol preceding any method indicates laboratory or subcontractor non-accredited test. In the case when a procedure belonging to an accredited method was used for non-accredited matrix, would apply that the reported results are non-accredited. Please refer to General Comment section on front page for information. If the report contains subcontracted analysis, those are made in a subcontracted laboratory outside the laboratories ALS Czech Republic, s.r.o.
The calculation methods of summation parameters are available on request in the client service.

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP - No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals - total metals must be requested separately.

11. Results relate only to the items tested.

12. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** - Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

24. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Holding time exceeded before sample received**
5	**Samples exceeded holding time before presevation was performed**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to sampled on date**
&	**Sample Holding Time exceeded - Late arrival of instructions.**

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Hawarden
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Website: www.alsenvironmental.co.uk

Atkins Global Ltd
Project Jonah site office
Llan Coed House
Suite 24
Coed Darcy
Llandarcy
SA10 6HJ

Attention: John Fitzgerald

CERTIFICATE OF ANALYSIS

Date:	16 November 2018
Customer:	H_ATKINS_LDC
Sample Delivery Group (SDG):	181101-44
Your Reference:	
Location:	Llanwern
Report No:	481388

This report has been revised and directly supersedes 481387 in its entirety.

We received 24 samples on Thursday November 01, 2018 and 24 of these samples were scheduled for analysis which was completed on Friday November 16, 2018. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

Approved By:



Sonia McWhan

Operations Manager

ALS Life Sciences Limited. Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291.

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
18646138	4E-A8		0.50 - 0.50	31/10/2018
18646160	4E-A8		1.00 - 1.00	31/10/2018
18646164	4E-A8V		1.70 - 1.70	31/10/2018
18646172	4E-B8		0.50 - 0.50	31/10/2018
18646181	4E-B8		1.00 - 1.00	31/10/2018
18646104	4E-B9		0.50 - 0.50	31/10/2018
18646112	4E-B9		1.00 - 1.00	31/10/2018
18646122	4E-B9		1.50 - 1.50	31/10/2018
18646189	4E-B8V		2.60 - 2.60	31/10/2018
18646130	4E-B9V		2.20 - 2.20	31/10/2018
18646094	4E-C9		0.50 - 0.50	31/10/2018
18646061	4E-D9		0.50 - 0.50	31/10/2018
18646072	4E-D9		1.00 - 1.00	31/10/2018
18646082	4E-D9V		2.00 - 2.00	31/10/2018
18646043	4E-E8		0.50 - 0.50	31/10/2018
18646154	4E-E8		1.00 - 1.00	31/10/2018
18646203	4E-E9		0.50 - 0.50	31/10/2018
18646208	4E-E9		1.00 - 1.00	31/10/2018
18646213	4E-E9		1.50 - 1.50	31/10/2018
18646197	4E-E8V		2.00 - 2.00	31/10/2018
18646221	4E-E9V		2.10 - 2.10	31/10/2018
18646227	4E-F9A		0.50 - 0.50	31/10/2018
18646235	4E-F9A		1.00 - 1.00	31/10/2018
18646052	4E-F9AV		2.00 - 2.00	31/10/2018

Maximum Sample/Coolbox Temperature (°C) : **9.9**

ISO5667-3 Water quality - Sampling - Part3 -

During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)																	
			18646138			18646160			18646164		18646172			18646181			18646104			18646112	
			Customer Sample Reference																	
			4E-A8			4E-A8			4E-A8V		4E-B8			4E-B8			4E-B9			4E-B9	
			AGS Reference																	
			Depth (m)			0.50 - 0.50			1.00 - 1.00		1.70 - 1.70			0.50 - 0.50			1.00 - 1.00			0.50 - 0.50	
			Container	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
			Sample Type	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 10					X					X						X			X	
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 17	X			X					X			X			X			X		
Ammonium Soil by Titration	All	NDPs: 0 Tests: 24		X			X		X			X			X			X			X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 10					X					X						X			X	
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 10				X					X						X			X		
Asbestos Quantification - Full	All	NDPs: 0 Tests: 3				X														X		
CEN Readings	All	NDPs: 0 Tests: 17	X			X					X			X			X			X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 41	X	X		X	X		X		X	X		X	X		X	X		X	X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 17	X			X					X			X			X			X		
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 17	X			X					X			X			X			X		
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 24		X			X		X			X			X			X			X	
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 17	X			X					X			X			X			X		
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 24		X			X		X			X			X			X			X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 24			X			X		X			X			X			X				
GRO by GC-FID (W)	All	NDPs: 0 Tests: 17	X			X					X			X			X			X		

18646043	4E-E8		0.50 - 0.50	250g Amber Jar (ALE210)	S	X		X	X				X			X		X		
				1kg TUB	S		X			X		X	X	X	X		X			X
18646082	4E-D9V		2.00 - 2.00	60g VOC (ALE215)	S														X	
				250g Amber Jar (ALE210)	S			X					X			X		X		
18646072	4E-D9		1.00 - 1.00	60g VOC (ALE215)	S														X	
				250g Amber Jar (ALE210)	S			X					X			X		X		
				1kg TUB	S		X					X	X	X	X		X			X
18646061	4E-D9		0.50 - 0.50	60g VOC (ALE215)	S														X	
				250g Amber Jar (ALE210)	S	X		X	X				X			X		X		
				1kg TUB	S		X			X	X	X	X	X	X		X			X
18646094	4E-C9		0.50 - 0.50	60g VOC (ALE215)	S														X	
				250g Amber Jar (ALE210)	S	X		X	X				X			X		X		
				1kg TUB	S		X			X		X	X	X	X		X			X
18646130	4E-B9V		2.20 - 2.20	60g VOC (ALE215)	S														X	
				250g Amber Jar (ALE210)	S			X					X			X		X		
18646189	4E-B8V		2.60 - 2.60	60g VOC (ALE215)	S														X	
				250g Amber Jar (ALE210)	S			X					X			X		X		
18646122	4E-B9		1.50 - 1.50	60g VOC (ALE215)	S														X	
				250g Amber Jar (ALE210)	S			X					X			X		X		
				1kg TUB	S		X					X	X	X	X		X			X
18646112	4E-B9		1.00 - 1.00	60g VOC (ALE215)	S														X	

Validated

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18646138			18646160			18646164		18646172			18646181			18646104			18646112	
Customer Sample Reference			4E-A8			4E-A8			4E-A8V		4E-B8			4E-B8			4E-B9			4E-B9	
AGS Reference																					
Depth (m)			0.50 - 0.50			1.00 - 1.00			1.70 - 1.70		0.50 - 0.50			1.00 - 1.00			0.50 - 0.50			1.00 - 1.00	
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Mercury Dissolved	All	NDPs: 0 Tests: 17	X			X					X			X			X			X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 24		X			X		X			X			X			X			X
PAH by GCMS	All	NDPs: 0 Tests: 24		X			X		X			X			X			X			X
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 17	X			X					X			X			X			X	
pH	All	NDPs: 0 Tests: 24		X			X		X			X			X			X			X
pH Value	All	NDPs: 0 Tests: 17	X			X					X			X			X			X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 24		X			X		X			X			X			X			X
Sample description	All	NDPs: 0 Tests: 24		X			X		X			X			X			X			X
Total Organic Carbon	All	NDPs: 0 Tests: 24		X			X		X			X			X			X			X
Total Sulphate	All	NDPs: 0 Tests: 10					X					X						X			X
Total Sulphur	All	NDPs: 0 Tests: 10					X					X						X			X
TPH CWG (W)	All	NDPs: 0 Tests: 17	X			X					X			X			X			X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 24		X			X		X			X			X			X			X
VOC MS (S)	All	NDPs: 0 Tests: 24			X			X		X			X			X			X		

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18646043	4E-E8		0.50 - 0.50	250g Amber Jar (ALE210)	S		x	x		x		x	x	x	x	x		x				
				1kg TUB	S	x			x		x						x					
18646082	4E-D9V		2.00 - 2.00	60g VOC (ALE215)	S																x	
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x					x			
18646072	4E-D9		1.00 - 1.00	60g VOC (ALE215)	S																x	
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x					x			
				1kg TUB	S	x			x		x						x					
18646061	4E-D9		0.50 - 0.50	60g VOC (ALE215)	S																x	
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x	x	x		x				
				1kg TUB	S	x			x		x						x					
18646094	4E-C9		0.50 - 0.50	60g VOC (ALE215)	S																x	
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x	x	x		x				
				1kg TUB	S	x			x		x						x					
18646130	4E-B9V		2.20 - 2.20	60g VOC (ALE215)	S																x	
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x					x			
18646189	4E-B8V		2.60 - 2.60	60g VOC (ALE215)	S																x	
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x					x			
18646122	4E-B9		1.50 - 1.50	60g VOC (ALE215)	S																x	
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x					x			
				1kg TUB	S	x			x		x						x					
18646112	4E-B9		1.00 - 1.00	60g VOC (ALE215)	S																x	

Validated

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18646043	18646154			18646203			18646208			18646213			18646197		18646221		18646227	
Customer Sample Reference			4E-E8	4E-E8			4E-E9			4E-E9			4E-E9			4E-E8V		4E-E9V		4E-F9A	
AGS Reference																					
Depth (m)			0.50 - 0.50	1.00 - 1.00			0.50 - 0.50			1.00 - 1.00			1.50 - 1.50			2.00 - 2.00		2.10 - 2.10		0.50 - 0.50	
Container			60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 10						X						X							
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 17		X			X			X			X							X	
Ammonium Soil by Titration	All	NDPs: 0 Tests: 24			X			X			X			X		X		X			X
Anions by Kone (soil)	All	NDPs: 0 Tests: 10						X						X							
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 10					X						X								
CEN Readings	All	NDPs: 0 Tests: 17		X			X			X			X							X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 41		X	X		X	X		X	X		X	X		X		X		X	X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 17		X			X			X			X							X	
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 17		X			X			X			X							X	
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 24			X			X			X			X		X		X			X
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 17		X			X			X			X							X	
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 24			X			X			X			X		X		X			X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 24	X			X			X			X			X		X		X			
GRO by GC-FID (W)	All	NDPs: 0 Tests: 17		X			X			X			X							X	
Mercury Dissolved	All	NDPs: 0 Tests: 17		X			X			X			X							X	

18646052	4E-F9AV		2.00 - 2.00	60g VOC (ALE215)	S													X		
				250g Amber Jar (ALE210)	S			X				X			X		X			
18646235	4E-F9A		1.00 - 1.00	60g VOC (ALE215)	S													X		
				250g Amber Jar (ALE210)	S	X		X	X			X			X		X			
				1kg TUB	S		X			X	X	X	X	X		X			X	X
18646227	4E-F9A		0.50 - 0.50	60g VOC (ALE215)	S													X		

Validated

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18646043	18646154			18646203			18646208			18646213			18646197		18646221	18646227
Customer Sample Reference			4E-E8	4E-E8			4E-E9			4E-E9			4E-E9			4E-E8V		4E-E9V	4E-F9A
AGS Reference																			
Depth (m)			0.50 - 0.50	1.00 - 1.00			0.50 - 0.50			1.00 - 1.00			1.50 - 1.50			2.00 - 2.00		2.10 - 2.10	0.50 - 0.50
Container			60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Metals in solid samples by OES	All	NDPs: 0 Tests: 24			X			X			X			X		X		X			X
PAH by GCMS	All	NDPs: 0 Tests: 24			X			X			X			X		X		X			X
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 17		X			X			X			X							X	
pH	All	NDPs: 0 Tests: 24			X			X			X			X		X		X			X
pH Value	All	NDPs: 0 Tests: 17		X			X			X			X							X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 24			X			X			X			X		X		X			X
Sample description	All	NDPs: 0 Tests: 24			X			X			X			X		X		X			X
Total Organic Carbon	All	NDPs: 0 Tests: 24			X			X			X			X		X		X			X
Total Sulphate	All	NDPs: 0 Tests: 10						X						X							
Total Sulphur	All	NDPs: 0 Tests: 10						X						X							
TPH CWG (W)	All	NDPs: 0 Tests: 17		X			X			X			X							X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 24			X			X			X			X		X		X			X
VOC MS (S)	All	NDPs: 0 Tests: 24	X			X			X			X			X		X		X			

18646052	4E-F9AV		2.00 - 2.00	60g VOC (ALE215)	S																		X
				250g Amber Jar (ALE210)	S		X		X			X			X		X		X				X		
18646235	4E-F9A		1.00 - 1.00	60g VOC (ALE215)	S																		X
				250g Amber Jar (ALE210)	S		X		X			X			X		X		X		X		X		
				1kg TUB	S					X			X									X			
18646227	4E-F9A		0.50 - 0.50	60g VOC (ALE215)	S																		X

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
18646138	4E-A8	0.50 - 0.50	Dark Brown	Sand	Stones	Vegetation
18646160	4E-A8	1.00 - 1.00	Dark Brown	Loamy Sand	Stones	Concrete/Aggregate
18646164	4E-A8V	1.70 - 1.70	Dark Brown	Silty Clay	Vegetation	None
18646172	4E-B8	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
18646181	4E-B8	1.00 - 1.00	Dark Brown	Loamy Sand	Stones	Vegetation
18646104	4E-B9	0.50 - 0.50	Dark Brown	Sandy Loam	Vegetation	Stones
18646112	4E-B9	1.00 - 1.00	Dark Brown	Sandy Loam	Vegetation	Stones
18646122	4E-B9	1.50 - 1.50	Dark Brown	Sand	Vegetation	Stones
18646189	4E-B8V	2.60 - 2.60	Dark Brown	Clay Loam	Vegetation	None
18646130	4E-B9V	2.20 - 2.20	Dark Brown	Silty Clay	Vegetation	None
18646094	4E-C9	0.50 - 0.50	Dark Brown	Sandy Loam	Vegetation	Stones
18646061	4E-D9	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
18646072	4E-D9	1.00 - 1.00	Dark Brown	Sand	Vegetation	Stones
18646082	4E-D9V	2.00 - 2.00	Dark Brown	Silty Clay	Vegetation	None
18646043	4E-E8	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
18646154	4E-E8	1.00 - 1.00	Dark Brown	Sandy Loam	Vegetation	Stones
18646203	4E-E9	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
18646208	4E-E9	1.00 - 1.00	Dark Brown	Sand	Stones	Vegetation
18646213	4E-E9	1.50 - 1.50	Dark Brown	Sandy Loam	Vegetation	Stones
18646197	4E-E8V	2.00 - 2.00	Dark Brown	Silty Clay	Vegetation	None
18646221	4E-E9V	2.10 - 2.10	Grey	Clay	Vegetation	Stones
18646227	4E-F9A	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
18646235	4E-F9A	1.00 - 1.00	Dark Brown	Loamy Sand	Stones	Vegetation
18646052	4E-F9AV	2.00 - 2.00	Dark Brown	Loamy Sand	Vegetation	Stones

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-A8	4E-A8	4E-A8V	4E-B8	4E-B8	4E-B9
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.70 - 1.70	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			SDG Ref	181101-44	181101-44	181101-44	181101-44	181101-44	181101-44
			Lab Sample No.(s)	18646138	18646160	18646164	18646172	18646181	18646104
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		7.5	7.7	23	4.2	6.8	10
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	76.4 M	117 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0325 M	<0.01 M	0.0104 M	0.0107 M	0.0336 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0217 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	0.0217 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	0.0759 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132			0.559		0.186		0.409
Sulphate, Total potential	<0.06 %	TM132			1.68		0.558		1.23
Soil Organic Matter (SOM)	<0.35 %	TM132		51.4 #	4.91 #	0.905 #	1.68 #	1.7 #	8.29 #
pH	1 pH Units	TM133		10.8 M	12.5 M	8.14 M	12.8 M	12.8 M	12.8 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		<6 M	5.52 M	18.9 M	<6 M	8.97 M	7.07 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	<0.02 M	0.3 M	<0.2 M	<0.2 M	<0.2 M
Chromium	<0.9 mg/kg	TM181		<9 M	115 M	27 M	987 M	825 M	220 M
Copper	<1.4 mg/kg	TM181		<14 M	11.1 M	12.1 M	16.2 M	33.4 M	19.4 M
Iron	<1000 mg/kg	TM181		133000 #	66500 #	38900 #	172000 #	194000 #	123000 #
Lead	<0.7 mg/kg	TM181		41.9 M	48.9 M	28.8 M	16.5 M	11.1 M	48.8 M
Manganese	<0.13 mg/kg	TM181		2070 M	13100 M	1750 M	31900 M	33200 M	19000 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<0.14 M	<0.14 M	<1.4 M	<1.4 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		37.5 M	7.78 M	42.1 M	8.78 M	21.7 M	21.9 M
Selenium	<1 mg/kg	TM181		<10 #	6.07 #	<1 #	21.1 #	17.1 #	12.3 #
Vanadium	<0.2 mg/kg	TM181		163 #	117 #	54.2 #	499 #	456 #	269 #
Zinc	<1.9 mg/kg	TM181		145 M	201 M	116 M	55.3 M	75.5 M	113 M
Sulphate, acid soluble (total)	<0.02 %	TM221			0.533		0.315		1.01
Calcium	<21 mg/kg	TM224			191000		271000		223000
Magnesium	<8 mg/kg	TM224			16600		7450		9730
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243			0.178 M		<0.004 M		0.442 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304			<0.001 #				
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304			<0.001 #				
Additional Asbestos Components (Using TM048)		TM304			None #				
Analysts Comments		TM304			N/A				
Asbestos Quantification - Total - %	<0.001 %	TM304			<0.001 #				

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-B9	4E-B9	4E-B8V	4E-B9V	4E-C9	4E-D9
			Depth (m)	1.00 - 1.00	1.50 - 1.50	2.60 - 2.60	2.20 - 2.20	0.50 - 0.50	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			SDG Ref	181101-44	181101-44	181101-44	181101-44	181101-44	181101-44
			Lab Sample No.(s)	18646112	18646122	18646189	18646130	18646094	18646061
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		11	13	32	24	5.7	8.8
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	65.2 M	193 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0112 M	0.0115 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0115 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.834				0.289	0.852
Sulphate, Total potential	<0.06 %	TM132		2.5				0.867	2.56
Soil Organic Matter (SOM)	<0.35 %	TM132		5.28 #	17.6 #	1.3 #	1.91 #	4.84 #	4.05 #
pH	1 pH Units	TM133		12.6 M	12.8 M	8.12 M	8.02 M	11.2 M	9.94 M
Cyanide, Total	<1 mg/kg	TM153		15.1 M	<1 M	<1 M	1.58 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		7.42 M	8.69 M	24 M	17.1 M	10.5 M	3.68 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	<0.2 M	0.238 M	<0.02 M	<0.2 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		255 M	150 M	30.1 M	36.6 M	76.4 M	53.4 M
Copper	<1.4 mg/kg	TM181		23.5 M	37 M	11.1 M	12.9 M	34.6 M	2.48 M
Iron	<1000 mg/kg	TM181		118000 #	135000 #	42000 #	35000 #	198000 #	36000 #
Lead	<0.7 mg/kg	TM181		48.7 M	75.1 M	30.8 M	29.8 M	77.3 M	11.5 M
Manganese	<0.13 mg/kg	TM181		21800 M	15900 M	397 M	367 M	11200 M	12000 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<1.4 M	<0.14 M	<0.14 M	<1.4 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		25.6 M	26.5 M	39.1 M	39.9 M	39.8 M	4.31 M
Selenium	<1 mg/kg	TM181		<10 #	<10 #	<1 #	<1 #	<10 #	5.93 #
Vanadium	<0.2 mg/kg	TM181		258 #	200 #	64.2 #	60.6 #	113 #	115 #
Zinc	<1.9 mg/kg	TM181		169 M	188 M	137 M	123 M	238 M	58.8 M
Sulphate, acid soluble (total)	<0.02 %	TM221		1.27				0.325	0.868
Calcium	<21 mg/kg	TM224		196000				133000	203000
Magnesium	<8 mg/kg	TM224		16400				24000	33500
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.604 M				0.0794 M	0.79 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304		<0.001 #					<0.001 #
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304		<0.001 #					<0.001 #
Additional Asbestos Components (Using TM048)		TM304		None #					None #
Analysts Comments		TM304		N/A					N/A
Asbestos Quantification - Total - %	<0.001 %	TM304		<0.001 #					<0.001 #

Validated

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-D9	4E-D9V	4E-E8	4E-E8	4E-E9	4E-E9
			Depth (m)	1.00 - 1.00	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			SDG Ref	181101-44	181101-44	181101-44	181101-44	181101-44	181101-44
			Lab Sample No.(s)	18646072	18646082	18646043	18646154	18646203	18646208
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		11	31	6.6	7.5	7.4	4.5
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	171 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0112 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132				0.115		0.671	
Sulphate, Total potential	<0.06 %	TM132				0.345		2.01	
Soil Organic Matter (SOM)	<0.35 %	TM132		1.23 #	3.29 #	3.93 #	1.49 #	4.88 #	0.803 #
pH	1 pH Units	TM133		12.7 M	8.04 M	10.6 M	11.1 M	11 M	12.6 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		<6 M	13.3 M	7.54 M	16.3 M	4.66 M	<6 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	<0.02 M	<0.2 M	<0.2 M	<0.02 M	<0.2 M
Chromium	<0.9 mg/kg	TM181		567 M	35.7 M	46.1 M	864 M	62.5 M	677 M
Copper	<1.4 mg/kg	TM181		15.4 M	13.7 M	16.5 M	59.4 M	8.23 M	14.3 M
Iron	<1000 mg/kg	TM181		106000 #	27400 #	144000 #	2390000 #	64800 #	181000 #
Lead	<0.7 mg/kg	TM181		21 M	30.5 M	69.2 M	17.1 M	22.6 M	<7 M
Manganese	<0.13 mg/kg	TM181		37700 M	721 M	6740 M	408000 M	13500 M	43600 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<0.14 M	<1.4 M	<1.4 M	<0.14 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		9.49 M	36.4 M	21.5 M	49.2 M	6.74 M	7.52 M
Selenium	<1 mg/kg	TM181		22 #	<1 #	<10 #	35.7 #	5.56 #	25.3 #
Vanadium	<0.2 mg/kg	TM181		397 #	58.1 #	104 #	614 #	70.3 #	486 #
Zinc	<1.9 mg/kg	TM181		60.3 M	128 M	249 M	86.6 M	115 M	29.2 M
Sulphate, acid soluble (total)	<0.02 %	TM221				0.255		0.589	
Calcium	<21 mg/kg	TM224				173000		193000	
Magnesium	<8 mg/kg	TM224				12900		26100	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243				0.0641 M		0.11 M	

Validated

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-E9	4E-E8V	4E-E9V	4E-F9A	4E-F9A	4E-F9AV
			Depth (m)	1.50 - 1.50	2.00 - 2.00	2.10 - 2.10	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			SDG Ref	181101-44	181101-44	181101-44	181101-44	181101-44	181101-44
			Lab Sample No.(s)	18646213	18646197	18646221	18646227	18646235	18646052
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		8.2	37	23	7.3	4.6	25
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	322 M	152 M	<12 M	<12 M	177 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0109 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.739				0.395	
Sulphate, Total potential	<0.06 %	TM132		2.22				1.19	
Soil Organic Matter (SOM)	<0.35 %	TM132		1.14 #	6 #	1.13 #	7.78 #	<0.35 #	2.78 #
pH	1 pH Units	TM133		12.3 M	8.06 M	8.14 M	10.7 M	12.3 M	7.79 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		<6 M	14.9 M	17.3 M	<6 M	<6 M	13 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	<0.02 M	<0.02 M	<0.2 M	<0.2 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		361 M	51 M	25.6 M	106 M	734 M	37.2 M
Copper	<1.4 mg/kg	TM181		17.2 M	16.8 M	16.6 M	18.2 M	19.3 M	12.8 M
Iron	<1000 mg/kg	TM181		114000 #	33500 #	27400 #	91900 #	186000 #	38500 #
Lead	<0.7 mg/kg	TM181		14.3 M	41.7 M	22.3 M	17.3 M	<7 M	27.6 M
Manganese	<0.13 mg/kg	TM181		35500 M	1390 M	432 M	10100 M	134000 M	825 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<0.14 M	<0.14 M	<1.4 M	<1.4 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		49.6 M	25.8 M	30.3 M	16 M	9.16 M	34.9 M
Selenium	<1 mg/kg	TM181		17.9 #	<1 #	<1 #	<10 #	26.8 #	<1 #
Vanadium	<0.2 mg/kg	TM181		348 #	66.9 #	44.2 #	99.4 #	540 #	62.6 #
Zinc	<1.9 mg/kg	TM181		54.9 M	128 M	83.9 M	64.3 M	<19 M	107 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.923				0.574	
Calcium	<21 mg/kg	TM224		242000				288000	
Magnesium	<8 mg/kg	TM224		21600				9480	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.0942 M				0.0639 M	

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-A8	4E-A8	4E-A8V	4E-B8	4E-B8	4E-B9
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.70 - 1.70	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			SDG Ref	181101-44	181101-44	181101-44	181101-44	181101-44	181101-44
			Lab Sample No.(s)	18646138	18646160	18646164	18646172	18646181	18646104
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		92.5	83.8	94.1	82	96.6	84.4
Acenaphthene-d10 % recovery**	%	TM218		95	81.5	87.6	87	82.8	88.7
Phenanthrene-d10 % recovery**	%	TM218		92.6	89.8	90.2	91.4	85.9	92.3
Chrysene-d12 % recovery**	%	TM218		77.7	92.5	87.7	97.1	86.3	96.9
Perylene-d12 % recovery**	%	TM218		70.4	83.3	86.1	89.3	82.1	88.6
Naphthalene	<0.009 mg/kg	TM218		0.556 M	0.29 M	0.0259 M	0.0326 M	0.0513 M	0.193 M
Acenaphthylene	<0.012 mg/kg	TM218		0.206 M	0.184 M	<0.012 M	<0.012 M	<0.012 M	0.0176 M
Acenaphthene	<0.008 mg/kg	TM218		0.0245 M	<0.04 M	<0.008 M	0.0213 M	0.0254 M	0.0491 M
Fluorene	<0.01 mg/kg	TM218		0.193 M	0.252 M	<0.01 M	0.013 M	0.0117 M	0.0327 M
Phenanthrene	<0.015 mg/kg	TM218		1.33 M	2.83 M	0.0333 M	0.291 M	0.431 M	0.955 M
Anthracene	<0.016 mg/kg	TM218		0.478 M	0.59 M	<0.016 M	0.0537 M	0.0686 M	0.12 M
Fluoranthene	<0.017 mg/kg	TM218		2.16 M	3.38 M	0.0686 M	0.752 M	1.11 M	1.33 M
Pyrene	<0.015 mg/kg	TM218		1.68 M	2.27 M	0.0474 M	0.689 M	0.946 M	1.15 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.987 M	1.21 M	0.0255 M	0.495 M	0.629 M	0.628 M
Chrysene	<0.01 mg/kg	TM218		0.929 M	1.05 M	0.0222 M	0.605 M	0.815 M	0.611 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		1.36 M	1.23 M	0.0282 M	0.464 M	1.4 M	0.832 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.509 M	0.491 M	<0.014 M	0.297 M	0.524 M	0.353 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.817 M	1.04 M	0.0198 M	0.593 M	0.74 M	0.651 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.567 M	0.815 M	<0.018 M	0.513 M	0.593 M	0.634 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.124 M	0.187 M	<0.023 M	0.119 M	0.135 M	0.144 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.515 M	0.783 M	<0.024 M	0.544 M	0.627 M	0.679 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		12.4	16.6	0.271	5.48	8.1	8.38

Validated

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-B9	4E-B9	4E-B8V	4E-B9V	4E-C9	4E-D9
			Depth (m)	1.00 - 1.00	1.50 - 1.50	2.60 - 2.60	2.20 - 2.20	0.50 - 0.50	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			SDG Ref	181101-44	181101-44	181101-44	181101-44	181101-44	181101-44
			Lab Sample No.(s)	18646112	18646122	18646189	18646130	18646094	18646061
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		94	84.1	92.7	90.7	85.8	85.4
Acenaphthene-d10 % recovery**	%	TM218		95.1	97.1	86.3	86.3	92.6	91.6
Phenanthrene-d10 % recovery**	%	TM218		91	92.8	88.1	89.1	97.9	93.5
Chrysene-d12 % recovery**	%	TM218		76.6	78.2	83.5	85	96.1	97.8
Perylene-d12 % recovery**	%	TM218		86.1	71.5	81.2	85.1	83.1	85.1
Naphthalene	<0.009 mg/kg	TM218		0.47 M	1.76 M	0.0553 M	0.118 M	0.146 M	<0.045 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	0.112 M	<0.012 M	0.0342 M	0.0412 M	<0.06 M
Acenaphthene	<0.008 mg/kg	TM218		0.164 M	0.766 M	<0.008 M	0.0657 M	0.0978 M	<0.04 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	0.236 M	<0.01 M	0.0538 M	0.26 M	<0.05 M
Phenanthrene	<0.015 mg/kg	TM218		1.87 M	4.05 M	0.0446 M	0.193 M	0.769 M	0.132 M
Anthracene	<0.016 mg/kg	TM218		0.278 M	0.504 M	<0.016 M	0.0589 M	0.0823 M	<0.08 M
Fluoranthene	<0.017 mg/kg	TM218		2.78 M	3.72 M	0.0708 M	0.297 M	0.332 M	0.262 M
Pyrene	<0.015 mg/kg	TM218		2.29 M	2.9 M	0.0519 M	0.253 M	0.419 M	0.218 M
Benz(a)anthracene	<0.014 mg/kg	TM218		1.49 M	1.3 M	0.0235 M	0.113 M	0.113 M	0.114 M
Chrysene	<0.01 mg/kg	TM218		1.59 M	1.33 M	0.0277 M	0.128 M	0.15 M	0.112 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		2.37 M	1.16 M	0.0308 M	0.179 M	0.158 M	0.138 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.723 M	0.519 M	<0.014 M	0.0575 M	0.0609 M	<0.07 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		1.76 M	1.18 M	<0.015 M	0.105 M	0.1 M	0.13 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		1.13 M	1.04 M	<0.018 M	0.064 M	0.0931 M	0.123 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.252 M	0.206 M	<0.023 M	<0.023 M	<0.023 M	<0.115 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		1.25 M	0.944 M	<0.024 M	0.08 M	0.109 M	0.155 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		18.4	21.7	0.304	1.8	2.93	1.38

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-D9	4E-D9V	4E-E8	4E-E8	4E-E9	4E-E9
			Depth (m)	1.00 - 1.00	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			SDG Ref	181101-44	181101-44	181101-44	181101-44	181101-44	181101-44
			Lab Sample No.(s)	18646072	18646082	18646043	18646154	18646203	18646208
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		85	93.9	96.3	93.1	86.4	106
Acenaphthene-d10 % recovery**	%	TM218		88.9	86.4	90.8	91.7	89.4	85.2
Phenanthrene-d10 % recovery**	%	TM218		92.3	93.4	90.4	91.5	93.9	92.8
Chrysene-d12 % recovery**	%	TM218		77.9	91.2	81.4	81.5	96.2	96.9
Perylene-d12 % recovery**	%	TM218		72.8	87.7	83.1	88.8	86.8	95.2
Naphthalene	<0.009 mg/kg	TM218		0.0114 M	0.325 M	0.415 M	0.152 M	0.083 M	0.24 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	0.0689 M	0.145 M	0.0329 M	<0.06 M	<0.06 M
Acenaphthene	<0.008 mg/kg	TM218		0.0102 M	0.0384 M	0.0623 M	0.0792 M	0.0619 M	<0.04 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	0.0199 M	0.207 M	0.0507 M	<0.05 M	<0.05 M
Phenanthrene	<0.015 mg/kg	TM218		0.347 M	0.168 M	1.42 M	0.873 M	0.545 M	0.943 M
Anthracene	<0.016 mg/kg	TM218		0.0753 M	0.0535 M	0.289 M	0.156 M	0.179 M	0.113 M
Fluoranthene	<0.017 mg/kg	TM218		0.74 M	0.387 M	1.73 M	2.15 M	1.86 M	2.43 M
Pyrene	<0.015 mg/kg	TM218		0.589 M	0.331 M	1.24 M	2.68 M	2.47 M	2.55 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.219 M	0.168 M	0.829 M	1.46 M	1.2 M	1.87 M
Chrysene	<0.01 mg/kg	TM218		0.259 M	0.173 M	0.681 M	1.7 M	1.17 M	1.92 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.269 M	0.227 M	1.15 M	2.44 M	1.23 M	3.36 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.137 M	0.0953 M	0.355 M	0.762 M	0.479 M	1.34 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.235 M	0.161 M	0.664 M	1.54 M	1.02 M	2.23 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.15 M	0.1 M	0.479 M	1.1 M	0.756 M	1.35 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.0358 M	<0.023 M	0.134 M	0.254 M	0.143 M	0.397 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.209 M	0.107 M	0.518 M	1.15 M	0.669 M	1.61 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		3.29	2.42	10.3	16.6	11.9	20.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-E9	4E-E8V	4E-E9V	4E-F9A	4E-F9A	4E-F9AV
			Depth (m)	1.50 - 1.50	2.00 - 2.00	2.10 - 2.10	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			SDG Ref	181101-44	181101-44	181101-44	181101-44	181101-44	181101-44
			Lab Sample No.(s)	18646213	18646197	18646221	18646227	18646235	18646052
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		90.4	103	91.8	84.5	84.9	97.1
Acenaphthene-d10 % recovery**	%	TM218		93.8	97.1	97.4	91.1	91.3	94.8
Phenanthrene-d10 % recovery**	%	TM218		98	99.8	101	96.1	96.5	97.7
Chrysene-d12 % recovery**	%	TM218		85.8	93.1	90.4	94.4	93.4	86.2
Perylene-d12 % recovery**	%	TM218		78.9	92.6	82.2	88.6	90.6	91.9
Naphthalene	<0.009 mg/kg	TM218		0.709 M	0.983 M	0.524 M	0.117 M	0.229 M	0.639 M
Acenaphthylene	<0.012 mg/kg	TM218		0.0132 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		0.0385 M	0.029 M	0.0198 M	0.0211 M	0.0137 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		0.0189 M	0.0277 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		1.28 M	0.279 M	0.0379 M	0.111 M	0.259 M	<0.015 M
Anthracene	<0.016 mg/kg	TM218		0.105 M	<0.016 M	<0.016 M	0.0222 M	0.0291 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		2.71 M	0.293 M	0.0497 M	0.239 M	0.987 M	<0.017 M
Pyrene	<0.015 mg/kg	TM218		2.72 M	0.24 M	0.0442 M	0.253 M	0.987 M	<0.015 M
Benz(a)anthracene	<0.014 mg/kg	TM218		1.33 M	0.111 M	<0.014 M	0.195 M	0.756 M	<0.014 M
Chrysene	<0.01 mg/kg	TM218		1.5 M	0.128 M	0.017 M	0.215 M	0.818 M	<0.01 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		1.65 M	0.161 M	<0.015 M	0.22 M	0.944 M	<0.015 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.79 M	0.066 M	<0.014 M	0.0965 M	0.458 M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		1.44 M	0.0986 M	<0.015 M	0.214 M	0.921 M	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		1.13 M	0.0661 M	<0.018 M	0.2 M	0.748 M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.212 M	<0.023 M	<0.023 M	0.0358 M	0.137 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		1.3 M	0.0748 M	<0.024 M	0.18 M	0.681 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		16.9	2.56	0.693	2.12	7.97	0.639

Validated

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-A8	4E-A8	4E-A8V	4E-B8	4E-B8	4E-B9
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.70 - 1.70	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			SDG Ref	181101-44	181101-44	181101-44	181101-44	181101-44	181101-44
			Lab Sample No.(s)	18646138	18646160	18646164	18646172	18646181	18646104
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		71	84	103	100	102	92
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 M	4.36 M	<0.2 M	<0.2 M	<0.2 M	5.18 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	0.0336	<0.02	<0.02	<0.02	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02	0.137	<0.02	<0.02	<0.02	0.0627
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02	0.444	<0.02	<0.02	<0.02	0.495
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02	2.04	<0.02	<0.02	<0.02	2.52
Aliphatics >C12-C16	<0.1 mg/kg	TM173		5.47	34.2	<0.1	0.617	<0.1	110
Aliphatics >C16-C21	<0.1 mg/kg	TM173		23.9	79.4	<0.1	0.203	<0.1	255
Aliphatics >C21-C35	<0.1 mg/kg	TM173		131	404	<0.1	17.4	37.1	1140
Aliphatics >C35-C44	<0.1 mg/kg	TM173		27.3	91.4	<0.1	3.88	6.78	225
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		188	609	<0.1	22.1	43.9	1730
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	0.065
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	0.0314	<0.02	<0.02	<0.02	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02	0.296	<0.02	<0.02	<0.02	0.33
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02	1.36	<0.02	<0.02	<0.02	1.68
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		3.33	22.4	<0.1	1.04	1.65	23.5
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		15.9	213	<0.1	7.05	9.49	75.1
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		65.3	449	2.3	46	66.9	313
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		28.9	123	3.01	15.8	26.4	90.5
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		12.2	40.7	1.66	5.9	9.22	30.9
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		113	808	5.32	69.9	104	502
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		301	1420	5.32	92.1	148	2240

Validated

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-B9	4E-B9	4E-B8V	4E-B9V	4E-C9	4E-D9
			Depth (m)	1.00 - 1.00	1.50 - 1.50	2.60 - 2.60	2.20 - 2.20	0.50 - 0.50	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			SDG Ref	181101-44	181101-44	181101-44	181101-44	181101-44	181101-44
			Lab Sample No.(s)	18646112	18646122	18646189	18646130	18646094	18646061
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		90	127	123	102	91	84
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		13.7 M	26.8 M	2.19 M	<0.2 M	4.12 M	0.292 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	0.0495	0.0219	<0.02	<0.02	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.0616	0.198	0.0876	<0.02	0.07	<0.02
Aliphatics >C8-C10	<0.01 mg/kg	TM089		1.14	3	0.299	<0.02	0.373	<0.02
Aliphatics >C10-C12	<0.01 mg/kg	TM089		7.01	11.6	0.945	<0.02	2.05	0.154
Aliphatics >C12-C16	<0.1 mg/kg	TM173		177	292	<0.1	<0.1	120	7.49
Aliphatics >C16-C21	<0.1 mg/kg	TM173		210	469	2.5	<0.1	290	20.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		1100	2220	21.3	<0.1	2010	275
Aliphatics >C35-C44	<0.1 mg/kg	TM173		237	472	0.638	<0.1	590	150
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		1720	3450	24.5	<0.1	3010	453
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		0.0358	1.73	<0.02	<0.02	<0.02	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	0.398	<0.02	<0.02	<0.02	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.758	2	0.2	<0.02	0.249	<0.02
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		4.67	7.75	0.629	<0.02	1.36	0.102
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		41.6	72.4	1.08	<0.1	43	2.4
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		71.3	152	2.64	0.428	95.3	15.5
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		295	561	10.7	2.07	377	294
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		110	149	3.55	3.3	160	294
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		43.3	50.7	1.53	1.96	58.7	135
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		518	935	18	5.8	675	606
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		2250	4410	44.6	5.8	3690	1060

Validated

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-D9	4E-D9V	4E-E8	4E-E8	4E-E9	4E-E9
			Depth (m)	1.00 - 1.00	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			SDG Ref	181101-44	181101-44	181101-44	181101-44	181101-44	181101-44
			Lab Sample No.(s)	18646072	18646082	18646043	18646154	18646203	18646208
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		98.4	88	71	93.5	93	101
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		0.242 M	2.5 M	0.387 M	2.56 M	1.2 M	5.51 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	0.0187	<0.02	<0.01	<0.02	0.023
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.0246	0.0518	0.045	0.0281	0.0367	0.0513
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02	0.753	0.0364	0.0562	0.04	0.627
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.108	0.657	0.16	1.45	0.638	2.31
Aliphatics >C12-C16	<0.1 mg/kg	TM173		6.17	0.107	2.54	13.8	<0.1	1.66
Aliphatics >C16-C21	<0.1 mg/kg	TM173		20.5	11.1	11.3	31.8	25.9	3.03
Aliphatics >C21-C35	<0.1 mg/kg	TM173		133	4.58	82.3	254	118	44.4
Aliphatics >C35-C44	<0.1 mg/kg	TM173		61.7	<0.1	26.3	124	51.3	29.9
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		222	15.8	122	424	196	79
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	0.0504	<0.02	<0.01	<0.02	0.196
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	0.0259	<0.02	0.013	<0.02	0.349
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02	0.503	0.0246	0.0378	0.0259	0.418
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		0.0717	0.438	0.107	0.964	0.426	1.54
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		3	0.472	3.68	4.93	3.43	0.565
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		29.9	8.99	11.6	30.2	25.6	12.9
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		165	5.72	52.9	208	111	99.3
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		115	<0.1	26.8	139	74.7	60.9
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		51.1	<0.1	11	55.6	32	25.3
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		313	15.2	95	382	215	174
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		535	33.5	218	809	412	258

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-E9	4E-E8V	4E-E9V	4E-F9A	4E-F9A	4E-F9AV
			Depth (m)	1.50 - 1.50	2.00 - 2.00	2.10 - 2.10	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			SDG Ref	181101-44	181101-44	181101-44	181101-44	181101-44	181101-44
			Lab Sample No.(s)	18646213	18646197	18646221	18646227	18646235	18646052
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		101	106	101	103	104	97.5
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		6.41 M	1.98 M	2.69 M	<0.1 M	0.947 M	2.39 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		0.0283	0.0143	0.0494	<0.01	<0.02	0.0201
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.0523	0.0445	0.0806	<0.01	0.0304	0.0884
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.384	0.159	0.209	<0.01	0.0933	0.423
Aliphatics >C10-C12	<0.01 mg/kg	TM089		3.28	0.984	1.28	<0.01	0.405	0.945
Aliphatics >C12-C16	<0.1 mg/kg	TM173		12.9	23.6	<0.1	<0.1	1.14	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		36.3	27.9	<0.1	1.06	0.612	<0.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		173	5.03	<0.1	46	13.9	<0.1
Aliphatics >C35-C44	<0.1 mg/kg	TM173		92.2	<0.1	<0.1	7.73	4.65	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		314	56.5	<0.1	54.8	20.3	<0.1
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		0.0871	<0.01	0.0702	<0.01	0.0252	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		0.142	<0.01	<0.02	<0.01	0.0566	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.256	0.105	0.14	<0.01	0.0618	0.283
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		2.18	0.657	0.853	<0.01	0.269	0.63
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		3.23	9.37	<0.1	<0.1	<0.1	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		24.4	17.5	<0.1	6.22	3.41	<0.1
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		145	8.02	<0.1	29.3	22.5	1.47
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		103	<0.1	<0.1	14	13.7	<0.1
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		44.1	0.197	<0.1	5.25	6.11	<0.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		275	34.9	<0.1	49.6	39.7	1.47
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		596	93.3	2.68	104	60.9	3.86

Validated

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-A8	4E-A8	4E-A8V	4E-B8	4E-B8	4E-B9
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.70 - 1.70	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			SDG Ref	181101-44	181101-44	181101-44	181101-44	181101-44	181101-44
			Lab Sample No.(s)	18646138	18646160	18646164	18646172	18646181	18646104
			AGS Reference						
Dibromofluoromethane**	%	TM116		109	105	106	104	80	104
Toluene-d8**	%	TM116		92.8	97.8	101	101	95.9	94.8
4-Bromofluorobenzene**	%	TM116		75.8	93.1	100	94	95	92.7
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	0.691 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-B9	4E-B9	4E-B8V	4E-B9V	4E-C9	4E-D9
			Depth (m)	1.00 - 1.00	1.50 - 1.50	2.60 - 2.60	2.20 - 2.20	0.50 - 0.50	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			SDG Ref	181101-44	181101-44	181101-44	181101-44	181101-44	181101-44
			Lab Sample No.(s)	18646112	18646122	18646189	18646130	18646094	18646061
			AGS Reference						
Dibromofluoromethane**	%	TM116		107	104	108	109	110	117
Toluene-d8**	%	TM116		97.3	91.3	101	97.2	94.5	90.1
4-Bromofluorobenzene**	%	TM116		93.5	86.4	100	95.7	86.6	82.6
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	0.869 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	0.193 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	0.16 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	0.119 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		0.229 M	0.835 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	1.34	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-D9	4E-D9V	4E-E8	4E-E8	4E-E9	4E-E9
			Depth (m)	1.00 - 1.00	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			SDG Ref	181101-44	181101-44	181101-44	181101-44	181101-44	181101-44
			Lab Sample No.(s)	18646072	18646082	18646043	18646154	18646203	18646208
			AGS Reference						
Dibromofluoromethane**	%	TM116		91.3	105	102	116	105	99.1
Toluene-d8**	%	TM116		93.1	96.6	96.7	84.3	99	95.8
4-Bromofluorobenzene**	%	TM116		96	94.7	82.4	71.6	93.7	94.9
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	0.0991 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	0.101 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	0.189 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	1.25 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-E9	4E-E8V	4E-E9V	4E-F9A	4E-F9A	4E-F9AV
			Depth (m)	1.50 - 1.50	2.00 - 2.00	2.10 - 2.10	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			SDG Ref	181101-44	181101-44	181101-44	181101-44	181101-44	181101-44
			Lab Sample No.(s)	18646213	18646197	18646221	18646227	18646235	18646052
			AGS Reference						
Dibromofluoromethane**	%	TM116		109	111	107	106	107	107
Toluene-d8**	%	TM116		98.9	95.2	97.2	97.3	101	97
4-Bromofluorobenzene**	%	TM116		95.9	94.1	94.9	98.2	99.2	95.7
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	0.171 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		0.077 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	0.706 M	0.402 M	<0.13 M	<0.13 M	1.64 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

Asbestos Identification - Solid Samples

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-A8 1.00 - 1.00 SOLID 31/10/2018 00:00:00 01/11/2018 17:52:01 181101-44 18646160 TM048	09/11/2018	Marcin Magdziarek	Fibre bundles in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-B8 0.50 - 0.50 SOLID 31/10/2018 00:00:00 01/11/2018 17:55:55 181101-44 18646172 TM048	09/11/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-B9 0.50 - 0.50 SOLID 31/10/2018 00:00:00 01/11/2018 12:23:15 181101-44 18646104 TM048	06/11/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-B9 1.00 - 1.00 SOLID 31/10/2018 00:00:00 01/11/2018 12:27:38 181101-44 18646112 TM048	09/11/2018	Renata Bozhkov	Loose fibres in soil.	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-C9 0.50 - 0.50 SOLID 31/10/2018 00:00:00 02/11/2018 06:19:21 181101-44 18646094 TM048	13/11/2018	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-D9 0.50 - 0.50 SOLID 31/10/2018 00:00:00 01/11/2018 12:05:06 181101-44 18646061 TM048	09/11/2018	Barbara Urbanek-Walsh	Fibre bundles in soil.	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Client Reference:** **Report Number:** 481388
Location: Llanwern **Order Number:** LLA503 **Superseded Report:** 481387

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-E8 0.50 - 0.50 SOLID 31/10/2018 00:00:00 01/11/2018 12:18:55 181101-44 18646043 TM048	09/11/2018	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-E9 0.50 - 0.50 SOLID 31/10/2018 00:00:00 01/11/2018 12:54:55 181101-44 18646203 TM048	09/11/2018	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-E9 1.50 - 1.50 SOLID 31/10/2018 00:00:00 01/11/2018 12:51:25 181101-44 18646213 TM048	09/11/2018	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-F9A 1.00 - 1.00 SOLID 31/10/2018 00:00:00 01/11/2018 12:00:28 181101-44 18646235 TM048	09/11/2018	Renata Bozhkov	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

Asbestos Quantification - Full

		Additional Asbestos Components (Using TM048)	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM Evaluation - %	Asbestos Quantification - Total - %
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-A8 1.00 - 1.00 SOLID 31/10/2018 00:00:00 01/11/2018 17:53:28 181101-44 18646160 TM304	None (#)	N/A	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-B9 1.00 - 1.00 SOLID 31/10/2018 00:00:00 01/11/2018 12:28:49 181101-44 18646112 TM304	None (#)	N/A	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-D9 0.50 - 0.50 SOLID 31/10/2018 00:00:00 01/11/2018 12:06:06 181101-44 18646061 TM304	None (#)	N/A	<0.001 (#)	<0.001 (#)	<0.001 (#)

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	7.07
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.4
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646043
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-E8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00199	<0.0005	0.0199	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00185	<0.0003	0.0185	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00147	<0.001	0.0147	<0.01	-	-	-
Vanadium	0.0968	<0.001	0.968	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	10.79
Conductivity (µS/cm)	235.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates
16/11/2018 10:00:36

10:00:03 16/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	7.07
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.4
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646043
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-E8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	10.79
Conductivity (µS/cm)	235.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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10:00:03 16/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.65
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.2
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646061
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-D9
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0116	<0.001	0.116	<0.01	-	-	-
Copper	0.00365	<0.0003	0.0365	<0.003	-	-	-
Lead	0.000615	<0.0002	0.00615	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000565	<0.0004	0.00565	<0.004	-	-	-
Selenium	0.00177	<0.001	0.0177	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00496	<0.001	0.0496	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000204	<0.00001	0.00204	<0.0001	-	-	-
Acenaphthene by GCMS	0.000103	<0.000005	0.00103	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.00105	<0.000005	0.0105	<0.00005	-	-	-
Anthracene by GCMS	0.000127	<0.000005	0.00127	<0.00005	-	-	-
Phenanthrene by GCMS	0.00161	<0.000005	0.0161	<0.00005	-	-	-
Fluorene by GCMS	0.0000233	<0.000005	0.000233	<0.00005	-	-	-
Chrysene by GCMS	0.0000465	<0.000005	0.000465	<0.00005	-	-	-
Pyrene by GCMS	0.000621	<0.000005	0.00621	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000287	<0.000005	0.000287	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000154	<0.000005	0.000154	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00383	<0.000082	0.0383	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	11.82
Conductivity (µS/cm)	273.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

16/11/2018 10:00:36

10:00:03 16/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.65
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.2
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646061
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-D9
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	11.82
Conductivity (µS/cm)	273.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

16/11/2018 10:00:36

10:00:03 16/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646072
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-D9
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000132	<0.00001	0.000132	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00567	<0.001	0.0567	<0.01	-	-	-
Vanadium	0.082	<0.001	0.82	<0.01	-	-	-
Zinc	0.00186	<0.001	0.0186	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	9.92
Conductivity (µS/cm)	449.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

16/11/2018 10:00:36

10:00:03 16/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646072
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-D9
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	9.92
Conductivity (µS/cm)	449.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

16/11/2018 10:00:36

10:00:03 16/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	6.04
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.3
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646094
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-C9
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00252	<0.0005	0.0252	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00507	<0.0003	0.0507	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000479	<0.0004	0.00479	<0.004	-	-	-
Selenium	0.00554	<0.001	0.0554	<0.01	-	-	-
Vanadium	0.103	<0.001	1.03	<0.01	-	-	-
Zinc	0.00105	<0.001	0.0105	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000565	<0.0001	0.00565	<0.001	-	-	-
Acenaphthene by GCMS	0.000302	<0.00005	0.00302	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.0000803	<0.00005	0.000803	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	0.00058	<0.00005	0.0058	<0.0005	-	-	-
Fluorene by GCMS	0.000553	<0.00005	0.00553	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	0.0000757	<0.00005	0.000757	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.00216	<0.00082	0.0216	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	10.56
Conductivity (µS/cm)	254.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

16/11/2018 10:00:36

10:00:03 16/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	6.04
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.3
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646094
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-C9
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.011	<0.01	0.11	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	0.034	<0.01	0.34	<0.1	-	-	-
Aromatics >EC16-EC21	0.02	<0.01	0.2	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.054	<0.01	0.54	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.087	<0.01	0.87	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	10.56
Conductivity (µS/cm)	254.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646104
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-B9
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00306	<0.0003	0.0306	<0.003	-	-	-
Lead	0.0283	<0.0002	0.283	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000445	<0.0004	0.00445	<0.004	-	-	-
Selenium	0.00112	<0.001	0.0112	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.0131	<0.001	0.131	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0006	<0.0001	0.006	<0.001	-	-	-
Acenaphthene by GCMS	0.000177	<0.00005	0.00177	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	0.000206	<0.00005	0.00206	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.000983	<0.00082	0.00983	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.123	<0.05	1.23	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	12.04
Conductivity (µS/cm)	701.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

16/11/2018 10:00:36

10:00:03 16/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646104
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-B9
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	0.012	<0.01	0.12	<0.1	-	-	-
Aliphatics >C10-C12	0.054	<0.01	0.54	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	0.036	<0.01	0.36	<0.1	-	-	-
Aromatics >EC12-EC16	0.047	<0.01	0.47	<0.1	-	-	-
Aromatics >EC16-EC21	0.032	<0.01	0.32	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.079	<0.01	0.79	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.201	<0.01	2.01	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	12.04
Conductivity (µS/cm)	701.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

16/11/2018 10:00:36

10:00:03 16/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646112
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-B9
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00162	<0.001	0.0162	<0.01	-	-	-
Copper	0.00683	<0.0003	0.0683	<0.003	-	-	-
Lead	0.0164	<0.0002	0.164	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00253	<0.0004	0.0253	<0.004	-	-	-
Selenium	0.00139	<0.001	0.0139	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.023	<0.001	0.23	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00045	<0.0001	0.0045	<0.001	-	-	-
Acenaphthene by GCMS	0.0000595	<0.00005	0.000595	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.0000959	<0.00005	0.000959	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	0.000287	<0.00005	0.00287	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	0.0000636	<0.00005	0.000636	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.000957	<0.00082	0.00957	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.074	<0.05	0.74	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	12.06
Conductivity (µS/cm)	706.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

16/11/2018 10:00:36

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CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646112
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-B9
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.031	<0.01	0.31	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	0.021	<0.01	0.21	<0.1	-	-	-
Aromatics >EC12-EC16	0.05	<0.01	0.5	<0.1	-	-	-
Aromatics >EC16-EC21	0.042	<0.01	0.42	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.092	<0.01	0.92	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.166	<0.01	1.66	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	12.06
Conductivity (µS/cm)	706.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646122
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-B9
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00208	<0.001	0.0208	<0.01	-	-	-
Copper	0.00389	<0.0003	0.0389	<0.003	-	-	-
Lead	0.0578	<0.0002	0.578	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00235	<0.0004	0.0235	<0.004	-	-	-
Selenium	0.00133	<0.001	0.0133	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.0137	<0.001	0.137	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00782	<0.0001	0.0782	<0.001	-	-	-
Acenaphthene by GCMS	0.00296	<0.00005	0.0296	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.000707	<0.00005	0.00707	<0.0005	-	-	-
Anthracene by GCMS	0.000369	<0.00005	0.00369	<0.0005	-	-	-
Phenanthrene by GCMS	0.00314	<0.00005	0.0314	<0.0005	-	-	-
Fluorene by GCMS	0.00065	<0.00005	0.0065	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	0.000413	<0.00005	0.00413	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.0161	<0.00082	0.161	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.367	<0.05	3.67	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	0.012	<0.01	0.12	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	12.08
Conductivity (µS/cm)	742.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646122
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-B9
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	0.023	<0.01	0.23	<0.1	-	-	-
Aliphatics >C10-C12	0.095	<0.01	0.95	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	0.105	<0.01	1.05	<0.1	-	-	-
Aromatics >C7-C8	0.022	<0.01	0.22	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	0.042	<0.01	0.42	<0.1	-	-	-
Aromatics >EC10-EC12	0.064	<0.01	0.64	<0.1	-	-	-
Aromatics >EC12-EC16	0.055	<0.01	0.55	<0.1	-	-	-
Aromatics >EC16-EC21	0.062	<0.01	0.62	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.117	<0.01	1.17	<0.1	-	-	-
Benzene by GC	0.105	<0.007	1.05	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.484	<0.01	4.84	<0.1	-	-	-
Toluene by GC	0.022	<0.004	0.22	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	0.015	<0.008	0.15	<0.08	-	-	-
o Xylene by GC	0.008	<0.003	0.08	<0.03	-	-	-
Sum m&p and o Xylene by GC	0.023	<0.011	0.23	<0.11	-	-	-
Sum of BTEX by GC	0.15	<0.028	1.5	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	12.08
Conductivity (µS/cm)	742.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

16/11/2018 10:00:36

10:00:03 16/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.11
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.5
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646138
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-A8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00191	<0.0005	0.0191	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00194	<0.0003	0.0194	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00217	<0.001	0.0217	<0.01	-	-	-
Vanadium	0.0733	<0.001	0.733	<0.01	-	-	-
Zinc	0.00145	<0.001	0.0145	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.000164	<0.00005	0.00164	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	0.000127	<0.00005	0.00127	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	0.000155	<0.00005	0.00155	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000136	<0.00005	0.00136	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000897	<0.00005	0.000897	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	0.000116	<0.00002	0.00116	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	10.81
Conductivity (µS/cm)	296.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates
16/11/2018 10:00:36

10:00:03 16/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.11
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.5
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646138
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-A8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	10.81
Conductivity (µS/cm)	296.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.11
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.5
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646154
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-E8
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000111	<0.00001	0.000111	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00751	<0.001	0.0751	<0.01	-	-	-
Copper	0.00209	<0.0003	0.0209	<0.003	-	-	-
Lead	0.000575	<0.0002	0.00575	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00527	<0.001	0.0527	<0.01	-	-	-
Zinc	0.00183	<0.001	0.0183	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000801	<0.0001	0.00801	<0.001	-	-	-
Acenaphthene by GCMS	0.000117	<0.00005	0.00117	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.0014	<0.00005	0.014	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	0.0016	<0.00005	0.016	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	0.0000544	<0.00005	0.000544	<0.0005	-	-	-
Pyrene by GCMS	0.00179	<0.00005	0.0179	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.00576	<0.00082	0.0576	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.225	<0.05	2.25	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	11.62
Conductivity (µS/cm)	1,360.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.11
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.5
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646154
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-E8
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.121	<0.01	1.21	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	0.081	<0.01	0.81	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.225	<0.01	2.25	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	11.62
Conductivity (µS/cm)	1,360.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.34
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.3
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646160
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-A8
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000506	<0.0005	0.00506	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00171	<0.001	0.0171	<0.01	-	-	-
Copper	0.0179	<0.0003	0.179	<0.003	-	-	-
Lead	0.00227	<0.0002	0.0227	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.0023	<0.0004	0.023	<0.004	-	-	-
Selenium	0.0018	<0.001	0.018	<0.01	-	-	-
Vanadium	0.00776	<0.001	0.0776	<0.01	-	-	-
Zinc	0.0229	<0.001	0.229	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00206	<0.0001	0.0206	<0.001	-	-	-
Acenaphthene by GCMS	0.000597	<0.00005	0.00597	<0.0005	-	-	-
Acenaphthylene by GCMS	0.0000675	<0.00005	0.000675	<0.0005	-	-	-
Fluoranthene by GCMS	0.00138	<0.00005	0.0138	<0.0005	-	-	-
Anthracene by GCMS	0.000686	<0.00005	0.00686	<0.0005	-	-	-
Phenanthrene by GCMS	0.00451	<0.00005	0.0451	<0.0005	-	-	-
Fluorene by GCMS	0.00104	<0.00005	0.0104	<0.0005	-	-	-
Chrysene by GCMS	0.000115	<0.00005	0.00115	<0.0005	-	-	-
Pyrene by GCMS	0.000863	<0.00005	0.00863	<0.0005	-	-	-
Benz(a)anthracene by GCMS	0.0000989	<0.00005	0.000989	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000106	<0.00005	0.00106	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000683	<0.00005	0.000683	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.0116	<0.00082	0.116	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	11.72
Conductivity (µS/cm)	1,760.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates
16/11/2018 10:00:36

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CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.34
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.3
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646160
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-A8
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	0.096	<0.01	0.96	<0.1	-	-	-
Aliphatics >C21-C35	0.088	<0.01	0.88	<0.1	-	-	-
Total Aliphatics >C12-C35	0.184	<0.01	1.84	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.184	<0.01	1.84	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	0.184	<0.01	1.84	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	11.72
Conductivity (µS/cm)	1,760.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

16/11/2018 10:00:36

10:00:03 16/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.38
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.8
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646172
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-B8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0168	<0.001	0.168	<0.01	-	-	-
Copper	0.00564	<0.0003	0.0564	<0.003	-	-	-
Lead	0.00287	<0.0002	0.0287	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00863	<0.001	0.0863	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.000292	<0.00005	0.00292	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	0.000168	<0.00005	0.00168	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	0.000274	<0.00005	0.00274	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000819	<0.00005	0.000819	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000573	<0.00005	0.000573	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.000874	<0.00082	0.00874	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	12.08
Conductivity (µS/cm)	710.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates

16/11/2018 10:00:36

10:00:03 16/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.38
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.8
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646172
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-B8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	12.08
Conductivity (µS/cm)	710.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.2
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646181
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-B8
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0196	<0.001	0.196	<0.01	-	-	-
Copper	0.0046	<0.0003	0.046	<0.003	-	-	-
Lead	0.00342	<0.0002	0.0342	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00545	<0.001	0.0545	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000244	<0.0001	0.00244	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.00158	<0.00005	0.0158	<0.0005	-	-	-
Anthracene by GCMS	0.000102	<0.00005	0.00102	<0.0005	-	-	-
Phenanthrene by GCMS	0.00133	<0.00005	0.0133	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	0.000138	<0.00005	0.00138	<0.0005	-	-	-
Pyrene by GCMS	0.00109	<0.00005	0.0109	<0.0005	-	-	-
Benz(a)anthracene by GCMS	0.000111	<0.00005	0.00111	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000126	<0.00005	0.00126	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000709	<0.00005	0.000709	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.00479	<0.00082	0.0479	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	12.12
Conductivity (µS/cm)	763.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.2
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646181
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-B8
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	12.12
Conductivity (µS/cm)	763.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.99
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.6
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646203
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-E9
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000115	<0.00001	0.000115	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.000344	<0.0003	0.00344	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00639	<0.001	0.0639	<0.01	-	-	-
Vanadium	0.013	<0.001	0.13	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000104	<0.0001	0.00104	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	0.000166	<0.00005	0.00166	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	10.72
Conductivity (µS/cm)	314.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates
16/11/2018 10:00:36

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CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.99
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.6
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646203
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-E9
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	10.72
Conductivity (µS/cm)	314.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

16/11/2018 10:00:36

10:00:03 16/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.71
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.5
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646208
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-E9
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00439	<0.001	0.0439	<0.01	-	-	-
Copper	0.00192	<0.0003	0.0192	<0.003	-	-	-
Lead	0.000737	<0.0002	0.00737	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00124	<0.001	0.0124	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00832	<0.001	0.0832	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00079	<0.0001	0.0079	<0.001	-	-	-
Acenaphthene by GCMS	0.0000937	<0.00005	0.000937	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.0024	<0.00005	0.024	<0.0005	-	-	-
Anthracene by GCMS	0.000173	<0.00005	0.00173	<0.0005	-	-	-
Phenanthrene by GCMS	0.00171	<0.00005	0.0171	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	0.00101	<0.00005	0.0101	<0.0005	-	-	-
Pyrene by GCMS	0.00224	<0.00005	0.0224	<0.0005	-	-	-
Benz(a)anthracene by GCMS	0.000772	<0.00005	0.00772	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00122	<0.00005	0.0122	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000668	<0.00005	0.00668	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	0.000979	<0.00002	0.00979	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.000177	<0.00005	0.00177	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	0.000703	<0.00005	0.00703	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000476	<0.00005	0.00476	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.0134	<0.00082	0.134	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.19	<0.05	1.9	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	0.01	<0.01	0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	11.93
Conductivity (µS/cm)	376.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates

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10:00:03 16/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.71
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.5
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646208
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-E9
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.089	<0.01	0.89	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	0.012	<0.01	0.12	<0.1	-	-	-
Aromatics >EC10-EC12	0.059	<0.01	0.59	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	0.044	<0.01	0.44	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.044	<0.01	0.44	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.234	<0.01	2.34	<0.1	-	-	-
Toluene by GC	0.005	<0.004	0.05	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	11.93
Conductivity (µS/cm)	376.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.93
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.8
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646213
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-E9
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00397	<0.001	0.0397	<0.01	-	-	-
Copper	0.00168	<0.0003	0.0168	<0.003	-	-	-
Lead	0.000576	<0.0002	0.00576	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00116	<0.001	0.0116	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00418	<0.001	0.0418	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000217	<0.0001	0.00217	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.000243	<0.00005	0.00243	<0.0005	-	-	-
Anthracene by GCMS	0.000445	<0.00005	0.00445	<0.0005	-	-	-
Phenanthrene by GCMS	0.000369	<0.00005	0.00369	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	0.000195	<0.00005	0.00195	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.00147	<0.00082	0.0147	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.227	<0.05	2.27	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	11.86
Conductivity (µS/cm)	307.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.93
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.8
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646213
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-E9
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.121	<0.01	1.21	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	0.081	<0.01	0.81	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	0.014	<0.01	0.14	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.014	<0.01	0.14	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.241	<0.01	2.41	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	11.86
Conductivity (µS/cm)	307.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.87
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.7
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646227
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-F9A
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00666	<0.001	0.0666	<0.01	-	-	-
Vanadium	0.0176	<0.001	0.176	<0.01	-	-	-
Zinc	0.00225	<0.001	0.0225	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000181	<0.0001	0.00181	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.000103	<0.00005	0.00103	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	0.000117	<0.00005	0.00117	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00011	<0.00005	0.0011	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000618	<0.00005	0.000618	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	0.0000707	<0.00002	0.000707	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	10.79
Conductivity (µS/cm)	342.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.87
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.7
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646227
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-F9A
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	10.79
Conductivity (µS/cm)	342.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

16/11/2018 10:00:36

10:00:03 16/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	4.82
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.4
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646235
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-F9A
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00513	<0.001	0.0513	<0.01	-	-	-
Copper	0.00229	<0.0003	0.0229	<0.003	-	-	-
Lead	0.00104	<0.0002	0.0104	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00781	<0.001	0.0781	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000922	<0.00001	0.00922	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000356	<0.000005	0.000356	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.00201	<0.000005	0.0201	<0.00005	-	-	-
Anthracene by GCMS	0.0000347	<0.000005	0.000347	<0.00005	-	-	-
Phenanthrene by GCMS	0.00094	<0.000005	0.0094	<0.00005	-	-	-
Fluorene by GCMS	0.00000809	<0.000005	0.0000809	<0.00005	-	-	-
Chrysene by GCMS	0.000201	<0.000005	0.00201	<0.00005	-	-	-
Pyrene by GCMS	0.00179	<0.000005	0.0179	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.00017	<0.000005	0.0017	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000673	<0.000005	0.000673	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000212	<0.000005	0.000212	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000204	<0.000002	0.000204	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00622	<0.000082	0.0622	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	11.87
Conductivity (µS/cm)	341.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates

16/11/2018 10:00:36

10:00:03 16/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	4.82
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.4
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646235
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-F9A
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.011	<0.01	0.11	<0.1	-	-	-
Toluene by GC	0.004	<0.004	0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	11.87
Conductivity (µS/cm)	341.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates

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Table of Results - Appendix

Method No	Reference	Description
PM001		Preparation of Samples for Metals Analysis
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM243		Mixed Anions In Soils By Kone
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

Test Completion Dates

Lab Sample No(s)	18646138	18646160	18646164	18646172	18646181	18646104	18646112	18646122	18646189	18646130
Customer Sample Ref.	4E-A8	4E-A8	4E-A8V	4E-B8	4E-B8	4E-B9	4E-B9	4E-B9	4E-B8V	4E-B9V
AGS Ref.										
Depth	0.50 - 0.50	1.00 - 1.00	1.70 - 1.70	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	2.60 - 2.60	2.20 - 2.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)		14-Nov-2018		15-Nov-2018		14-Nov-2018	14-Nov-2018			
Ammoniacal Nitrogen	13-Nov-2018	13-Nov-2018		13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018		
Ammonium Soil by Titration	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018
Anions by Kone (soil)		15-Nov-2018		09-Nov-2018		15-Nov-2018	15-Nov-2018			
Asbestos ID in Solid Samples		09-Nov-2018		09-Nov-2018		06-Nov-2018	09-Nov-2018			
Asbestos Quantification - Full		15-Nov-2018					15-Nov-2018			
CEN 10:1 Leachate (1 Stage)	03-Nov-2018	03-Nov-2018		03-Nov-2018	03-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018		
CEN Readings	10-Nov-2018	10-Nov-2018		10-Nov-2018	10-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018		
Cyanide Comp/Free/Total/Thiocyanate	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	14-Nov-2018	14-Nov-2018
Dissolved Metals by ICP-MS	13-Nov-2018	13-Nov-2018		13-Nov-2018	13-Nov-2018	12-Nov-2018	12-Nov-2018	13-Nov-2018		
EPH CWG (Aliphatic) Aqueous GC (W)	13-Nov-2018	13-Nov-2018		13-Nov-2018	13-Nov-2018	08-Nov-2018	08-Nov-2018	09-Nov-2018		
EPH CWG (Aliphatic) GC (S)	06-Nov-2018	07-Nov-2018	06-Nov-2018	06-Nov-2018	08-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	08-Nov-2018	06-Nov-2018
EPH CWG (Aromatic) Aqueous GC (W)	13-Nov-2018	13-Nov-2018		13-Nov-2018	13-Nov-2018	08-Nov-2018	08-Nov-2018	09-Nov-2018		
EPH CWG (Aromatic) GC (S)	06-Nov-2018	07-Nov-2018	06-Nov-2018	06-Nov-2018	08-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	08-Nov-2018	06-Nov-2018
GRO by GC-FID (S)	12-Nov-2018	09-Nov-2018	09-Nov-2018	12-Nov-2018	09-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018
GRO by GC-FID (W)	10-Nov-2018	10-Nov-2018		10-Nov-2018	10-Nov-2018	08-Nov-2018	08-Nov-2018	08-Nov-2018		
Mercury Dissolved	09-Nov-2018	09-Nov-2018		09-Nov-2018	09-Nov-2018	14-Nov-2018	14-Nov-2018	15-Nov-2018		
Metals in solid samples by OES	15-Nov-2018	09-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	09-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	16-Nov-2018
PAH by GCMS	13-Nov-2018	09-Nov-2018	07-Nov-2018	09-Nov-2018	07-Nov-2018	09-Nov-2018	02-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018
PAH Spec MS - Aqueous (W)	12-Nov-2018	12-Nov-2018		12-Nov-2018	12-Nov-2018	08-Nov-2018	08-Nov-2018	08-Nov-2018		
pH	12-Nov-2018	12-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	12-Nov-2018	13-Nov-2018
pH Value	13-Nov-2018	13-Nov-2018		13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018		
Phenols by HPLC (S)	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018
Sample description	02-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018	01-Nov-2018	01-Nov-2018	01-Nov-2018	02-Nov-2018	02-Nov-2018
Total Organic Carbon	14-Nov-2018	14-Nov-2018	14-Nov-2018	15-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018
Total Sulphate		14-Nov-2018		14-Nov-2018		14-Nov-2018	14-Nov-2018			
Total Sulphur		14-Nov-2018		13-Nov-2018		13-Nov-2018	14-Nov-2018			
TPH CWG (W)	13-Nov-2018	13-Nov-2018		13-Nov-2018	13-Nov-2018	08-Nov-2018	08-Nov-2018	09-Nov-2018		
TPH CWG GC (S)	12-Nov-2018	09-Nov-2018	09-Nov-2018	12-Nov-2018	09-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018
VOC MS (S)	14-Nov-2018	13-Nov-2018	12-Nov-2018	09-Nov-2018	08-Nov-2018	09-Nov-2018	12-Nov-2018	09-Nov-2018	12-Nov-2018	08-Nov-2018

Lab Sample No(s)	18646094	18646061	18646072	18646082	18646043	18646154	18646203	18646208	18646213	18646197
Customer Sample Ref.	4E-C9	4E-D9	4E-D9	4E-D9V	4E-E8	4E-E8	4E-E9	4E-E9	4E-E9	4E-E8V
AGS Ref.										
Depth	0.50 - 0.50	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	2.00 - 2.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	14-Nov-2018	15-Nov-2018			14-Nov-2018		14-Nov-2018		15-Nov-2018	
Ammoniacal Nitrogen	13-Nov-2018	14-Nov-2018	13-Nov-2018		13-Nov-2018	14-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	
Ammonium Soil by Titration	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018
Anions by Kone (soil)	15-Nov-2018	15-Nov-2018			15-Nov-2018		15-Nov-2018		15-Nov-2018	
Asbestos ID in Solid Samples	13-Nov-2018	09-Nov-2018			09-Nov-2018		09-Nov-2018		09-Nov-2018	
Asbestos Quantification - Full		15-Nov-2018								
CEN 10:1 Leachate (1 Stage)	02-Nov-2018	03-Nov-2018	02-Nov-2018		03-Nov-2018	02-Nov-2018	03-Nov-2018	03-Nov-2018	02-Nov-2018	
CEN Readings	09-Nov-2018	10-Nov-2018	09-Nov-2018		09-Nov-2018	09-Nov-2018	10-Nov-2018	10-Nov-2018	09-Nov-2018	
Cyanide Comp/Free/Total/Thiocyanate	14-Nov-2018	14-Nov-2018	15-Nov-2018	14-Nov-2018	14-Nov-2018	15-Nov-2018	14-Nov-2018	14-Nov-2018	15-Nov-2018	14-Nov-2018
Dissolved Metals by ICP-MS	13-Nov-2018	13-Nov-2018	12-Nov-2018		13-Nov-2018	12-Nov-2018	13-Nov-2018	13-Nov-2018	12-Nov-2018	
EPH CWG (Aliphatic) Aqueous GC (W)	09-Nov-2018	14-Nov-2018	08-Nov-2018		13-Nov-2018	09-Nov-2018	13-Nov-2018	13-Nov-2018	08-Nov-2018	
EPH CWG (Aliphatic) GC (S)	05-Nov-2018	06-Nov-2018	05-Nov-2018	07-Nov-2018	07-Nov-2018	05-Nov-2018	08-Nov-2018	06-Nov-2018	05-Nov-2018	08-Nov-2018
EPH CWG (Aromatic) Aqueous GC (W)	09-Nov-2018	14-Nov-2018	08-Nov-2018		13-Nov-2018	09-Nov-2018	13-Nov-2018	13-Nov-2018	08-Nov-2018	
EPH CWG (Aromatic) GC (S)	05-Nov-2018	06-Nov-2018	05-Nov-2018	07-Nov-2018	07-Nov-2018	05-Nov-2018	08-Nov-2018	06-Nov-2018	05-Nov-2018	08-Nov-2018
GRO by GC-FID (S)	08-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018	08-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018	08-Nov-2018	08-Nov-2018
GRO by GC-FID (W)	08-Nov-2018	10-Nov-2018	08-Nov-2018		10-Nov-2018	08-Nov-2018	10-Nov-2018	10-Nov-2018	08-Nov-2018	
Mercury Dissolved	15-Nov-2018	15-Nov-2018	14-Nov-2018		09-Nov-2018	14-Nov-2018	09-Nov-2018	09-Nov-2018	14-Nov-2018	
Metals in solid samples by OES	15-Nov-2018	15-Nov-2018	15-Nov-2018	12-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	13-Nov-2018	15-Nov-2018	16-Nov-2018
PAH by GCMS	09-Nov-2018	09-Nov-2018	08-Nov-2018	07-Nov-2018	07-Nov-2018	02-Nov-2018	07-Nov-2018	07-Nov-2018	08-Nov-2018	07-Nov-2018
PAH Spec MS - Aqueous (W)	08-Nov-2018	14-Nov-2018	08-Nov-2018		12-Nov-2018	08-Nov-2018	12-Nov-2018	12-Nov-2018	08-Nov-2018	
pH	13-Nov-2018	12-Nov-2018	13-Nov-2018	12-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018
pH Value	13-Nov-2018	12-Nov-2018	13-Nov-2018		13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	
Phenols by HPLC (S)	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	13-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018
Sample description	01-Nov-2018	02-Nov-2018	01-Nov-2018	02-Nov-2018	02-Nov-2018	01-Nov-2018	02-Nov-2018	02-Nov-2018	01-Nov-2018	02-Nov-2018
Total Organic Carbon	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018
Total Sulphate	14-Nov-2018	14-Nov-2018			14-Nov-2018		12-Nov-2018		14-Nov-2018	
Total Sulphur	14-Nov-2018	14-Nov-2018			13-Nov-2018		13-Nov-2018		13-Nov-2018	
TPH CWG (W)	09-Nov-2018	14-Nov-2018	08-Nov-2018		13-Nov-2018	09-Nov-2018	13-Nov-2018	13-Nov-2018	08-Nov-2018	
TPH CWG GC (S)	08-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018	08-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018	08-Nov-2018	08-Nov-2018
VOC MS (S)	09-Nov-2018	09-Nov-2018	08-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	08-Nov-2018	09-Nov-2018	08-Nov-2018

Validated

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

Lab Sample No(s)	18646221	18646227	18646235	18646052
Customer Sample Ref.	4E-E9V	4E-F9A	4E-F9A	4E-F9AV
AGS Ref.				
Depth	2.10 - 2.10	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)			15-Nov-2018	
Ammoniacal Nitrogen		13-Nov-2018	14-Nov-2018	
Ammonium Soil by Titration	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018
Anions by Kone (soil)			15-Nov-2018	
Asbestos ID in Solid Samples			09-Nov-2018	
CEN 10:1 Leachate (1 Stage)		03-Nov-2018	03-Nov-2018	
CEN Readings		10-Nov-2018	10-Nov-2018	
Cyanide Comp/Free/Total/Thiocyanate	15-Nov-2018	15-Nov-2018	14-Nov-2018	15-Nov-2018
Dissolved Metals by ICP-MS		13-Nov-2018	14-Nov-2018	
EPH CWG (Aliphatic) Aqueous GC (W)		13-Nov-2018	13-Nov-2018	
EPH CWG (Aliphatic) GC (S)	05-Nov-2018	08-Nov-2018	06-Nov-2018	05-Nov-2018
EPH CWG (Aromatic) Aqueous GC (W)		13-Nov-2018	13-Nov-2018	
EPH CWG (Aromatic) GC (S)	05-Nov-2018	08-Nov-2018	06-Nov-2018	05-Nov-2018
GRO by GC-FID (S)	09-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018
GRO by GC-FID (W)		10-Nov-2018	10-Nov-2018	
Mercury Dissolved		09-Nov-2018	14-Nov-2018	
Metals in solid samples by OES	14-Nov-2018	15-Nov-2018	15-Nov-2018	14-Nov-2018
PAH by GCMS	08-Nov-2018	07-Nov-2018	07-Nov-2018	02-Nov-2018
PAH Spec MS - Aqueous (W)		12-Nov-2018	14-Nov-2018	
pH	13-Nov-2018	12-Nov-2018	13-Nov-2018	13-Nov-2018
pH Value		13-Nov-2018	13-Nov-2018	
Phenols by HPLC (S)	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018
Sample description	01-Nov-2018	02-Nov-2018	02-Nov-2018	01-Nov-2018
Total Organic Carbon	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018
Total Sulphate			14-Nov-2018	
Total Sulphur			13-Nov-2018	
TPH CWG (W)		13-Nov-2018	13-Nov-2018	
TPH CWG GC (S)	09-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018
VOC MS (S)	08-Nov-2018	08-Nov-2018	09-Nov-2018	08-Nov-2018

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP - No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals - total metals must be requested separately.

11. Results relate only to the items tested.

12. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** - Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

24. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Holding time exceeded before sample received**
5	**Samples exceeded holding time before presevation was performed**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to sampled on date**
&	**Sample Holding Time exceeded - Late arrival of instructions.**

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Atkins Global Ltd
Project Jonah site office
Llan Coed House
Suite 24
Coed Darcy
Llandarcy
SA10 6HJ

Attention: John Fitzgerald

CERTIFICATE OF ANALYSIS

Date:	22 November 2018
Customer:	H_ATKINS_LDC
Sample Delivery Group (SDG):	181102-43
Your Reference:	
Location:	Llanwern
Report No:	482241

We received 22 samples on Friday November 02, 2018 and 22 of these samples were scheduled for analysis which was completed on Tuesday November 20, 2018. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

Approved By:



Sonia McWhan

Operations Manager

ALS Life Sciences Limited. Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291.

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
18653991	4E-A7		0.40 - 0.40	01/11/2018
18653998	4E-A7		0.90 - 0.90	01/11/2018
18654006	4E-A7V		2.10 - 2.10	01/11/2018
18654016	4E-B7		0.50 - 0.50	01/11/2018
18654023	4E-B7V		1.60 - 1.60	01/11/2018
18654030	4E-C7		0.50 - 0.50	01/11/2018
18654036	4E-C7		1.00 - 1.00	01/11/2018
18653975	4E-C8		0.50 - 0.50	01/11/2018
18654060	4E-C8		1.00 - 1.00	01/11/2018
18654042	4E-C7V		1.80 - 1.80	01/11/2018
18654118	4E-D7		0.50 - 0.50	01/11/2018
18654083	4E-D8		0.50 - 0.50	01/11/2018
18654090	4E-D8		0.90 - 0.90	01/11/2018
18653985	4E-D7V		1.90 - 1.90	01/11/2018
18654098	4E-D8V		1.70 - 1.70	01/11/2018
18654049	4E-E1		0.50 - 0.50	01/11/2018
18654065	4E-E1		1.00 - 1.00	01/11/2018
18654071	4E-E1		2.00 - 2.00	01/11/2018
18654079	4E-E1V		2.50 - 2.50	01/11/2018
18654103	4E-F8		0.50 - 0.50	01/11/2018
18654109	4E-F8		0.90 - 0.90	01/11/2018
18654114	4E-F8V		1.50 - 1.50	01/11/2018

Maximum Sample/Coolbox Temperature (°C) :

ISO5667-3 Water quality - Sampling - Part3 -

During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

8.4

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18653991			18653998			18654006		18654016			18654023		18654030			18654036
Customer Sample Reference			4E-A7			4E-A7			4E-A7V		4E-B7			4E-B7V		4E-C7			4E-C7
AGS Reference																			
Depth (m)			0.40 - 0.40			0.90 - 0.90			2.10 - 2.10		0.50 - 0.50			1.60 - 1.60		0.50 - 0.50			1.00 - 1.00
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 9					X					X					X				
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 15	X			X					X					X			X		
Ammonium Soil by Titration	All	NDPs: 0 Tests: 22		X			X		X			X		X			X			X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 9					X					X					X				
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 9				X					X					X					
Asbestos Quantification - Full	All	NDPs: 0 Tests: 1																			
CEN Readings	All	NDPs: 0 Tests: 15	X			X					X					X			X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 37	X	X		X	X		X		X	X		X		X	X		X	X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 15	X			X					X					X			X		
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 15	X			X					X					X			X		
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 22		X			X		X			X		X			X			X	
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 15	X			X					X					X			X		
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 22		X			X		X			X		X			X			X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 22			X			X		X			X		X			X			X
GRO by GC-FID (W)	All	NDPs: 0 Tests: 15	X			X					X					X			X		

18654098	4E-D8V		1.70 - 1.70	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S			X					X				X			X			
18653985	4E-D7V		1.90 - 1.90	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S			X					X				X			X			
18654090	4E-D8		0.90 - 0.90	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S	X		X	X				X				X			X			
				1kg TUB	S		X			X	X	X	X	X	X			X					X
18654083	4E-D8		0.50 - 0.50	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S			X					X				X			X			
				1kg TUB	S		X					X	X	X	X			X					X
18654118	4E-D7		0.50 - 0.50	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S	X		X	X				X				X			X			
				1kg TUB	S		X			X		X	X	X	X			X					X
18654042	4E-C7V		1.80 - 1.80	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S			X					X				X			X			
18654060	4E-C8		1.00 - 1.00	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S			X					X				X			X			
				1kg TUB	S		X					X	X	X	X			X					X
18653975	4E-C8		0.50 - 0.50	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S	X		X	X				X				X			X			
				1kg TUB	S		X			X		X	X	X	X			X					X

Validated

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18653991			18653998			18654006		18654016			18654023		18654030			18654036		
Customer Sample Reference			4E-A7			4E-A7			4E-A7V		4E-B7			4E-B7V		4E-C7			4E-C7		
AGS Reference																					
Depth (m)			0.40 - 0.40			0.90 - 0.90			2.10 - 2.10		0.50 - 0.50			1.60 - 1.60		0.50 - 0.50			1.00 - 1.00		
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Mercury Dissolved	All	NDPs: 0 Tests: 15	X			X					X					X			X		
Metals in solid samples by OES	All	NDPs: 0 Tests: 22		X			X		X			X		X			X			X	
PAH by GCMS	All	NDPs: 0 Tests: 22		X			X		X			X		X			X			X	
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 15	X			X					X					X			X		
pH	All	NDPs: 0 Tests: 22		X			X		X			X		X			X			X	
pH Value	All	NDPs: 0 Tests: 15	X			X					X					X			X		
Phenols by HPLC (S)	All	NDPs: 0 Tests: 22		X			X		X			X		X			X			X	
Sample description	All	NDPs: 0 Tests: 22		X			X		X			X		X			X			X	
Total Organic Carbon	All	NDPs: 0 Tests: 22		X			X		X			X		X			X			X	
Total Sulphate	All	NDPs: 0 Tests: 9					X					X					X				
Total Sulphur	All	NDPs: 0 Tests: 9					X					X					X				
TPH CWG (W)	All	NDPs: 0 Tests: 15	X			X					X					X			X		
TPH CWG GC (S)	All	NDPs: 0 Tests: 22		X			X		X			X		X			X			X	
VOC MS (S)	All	NDPs: 0 Tests: 22			X			X		X			X		X			X			X

18654098	4E-D8V		1.70 - 1.70	60g VOC (ALE215)	S		
				250g Amber Jar (ALE210)	S	X	
18653985	4E-D7V		1.90 - 1.90	60g VOC (ALE215)	S		X
				250g Amber Jar (ALE210)	S	X	
18654090	4E-D8		0.90 - 0.90	60g VOC (ALE215)	S		X
				250g Amber Jar (ALE210)	S	X	
				1kg TUB	S		X
18654083	4E-D8		0.50 - 0.50	60g VOC (ALE215)	S		X
				250g Amber Jar (ALE210)	S	X	
				1kg TUB	S		X
18654118	4E-D7		0.50 - 0.50	60g VOC (ALE215)	S		X
				250g Amber Jar (ALE210)	S	X	
				1kg TUB	S		X
18654042	4E-C7V		1.80 - 1.80	60g VOC (ALE215)	S		X
				250g Amber Jar (ALE210)	S	X	
18654060	4E-C8		1.00 - 1.00	60g VOC (ALE215)	S		X
				250g Amber Jar (ALE210)	S	X	
				1kg TUB	S		X
18653975	4E-C8		0.50 - 0.50	60g VOC (ALE215)	S	X	
				250g Amber Jar (ALE210)	S		X
				1kg TUB	S		X

Validated

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
			18654049	4E-E1		0.50 - 0.50	1kg TUB	S
			18654049	4E-E1		0.50 - 0.50	250g Amber Jar (ALE210)	S
			18654049	4E-E1		0.50 - 0.50	60g VOC (ALE215)	S
			18654065	4E-E1		1.00 - 1.00	1kg TUB	S
			18654065	4E-E1		1.00 - 1.00	250g Amber Jar (ALE210)	S
			18654065	4E-E1		1.00 - 1.00	60g VOC (ALE215)	S
			18654071	4E-E1		2.00 - 2.00	1kg TUB	S
			18654071	4E-E1		2.00 - 2.00	250g Amber Jar (ALE210)	S
			18654071	4E-E1		2.00 - 2.00	60g VOC (ALE215)	S
			18654079	4E-E1V		2.50 - 2.50	1kg TUB	S
			18654079	4E-E1V		2.50 - 2.50	60g VOC (ALE215)	S
			18654103	4E-F8		0.50 - 0.50	1kg TUB	S
			18654103	4E-F8		0.50 - 0.50	250g Amber Jar (ALE210)	S
			18654103	4E-F8		0.50 - 0.50	60g VOC (ALE215)	S
			18654109	4E-F8		0.90 - 0.90	1kg TUB	S
			18654109	4E-F8		0.90 - 0.90	250g Amber Jar (ALE210)	S
			18654109	4E-F8		0.90 - 0.90	60g VOC (ALE215)	S
			18654114	4E-F8V		1.50 - 1.50	250g Amber Jar (ALE210)	S
			18654114	4E-F8V		1.50 - 1.50	60g VOC (ALE215)	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 9		X				
				X				
				X				
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 15	X			X		
			X			X		
			X			X		
Ammonium Soil by Titration	All	NDPs: 0 Tests: 22		X			X	
				X			X	
				X			X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 9		X				
				X				
				X				
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 9	X			X		
			X			X		
			X			X		
CEN Readings	All	NDPs: 0 Tests: 15	X			X		
			X			X		
			X			X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 37	X	X		X	X	
			X	X		X	X	
			X	X		X	X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 15	X			X		
			X			X		
			X			X		
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 15	X			X		
			X			X		
			X			X		
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 22		X			X	
				X			X	
				X			X	
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 15	X			X		
			X			X		
			X			X		
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 22		X			X	
				X			X	
				X			X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 22			X			X
					X			X
					X			X
GRO by GC-FID (W)	All	NDPs: 0 Tests: 15	X			X		
			X			X		
			X			X		
Mercury Dissolved	All	NDPs: 0 Tests: 15	X			X		
			X			X		
			X			X		

Validated

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18654049			18654065			18654071			18654079		18654103			18654109			18654114	
Customer Sample Reference			4E-E1			4E-E1			4E-E1			4E-E1V		4E-F8			4E-F8			4E-F8V	
AGS Reference																					
Depth (m)			0.50 - 0.50			1.00 - 1.00			2.00 - 2.00			2.50 - 2.50		0.50 - 0.50			0.90 - 0.90			1.50 - 1.50	
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Metals in solid samples by OES	All	NDPs: 0 Tests: 22		X			X			X		X			X			X		X	
PAH by GCMS	All	NDPs: 0 Tests: 22		X			X			X		X			X			X		X	
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 15	X			X			X					X			X				
pH	All	NDPs: 0 Tests: 22		X			X			X		X			X			X		X	
pH Value	All	NDPs: 0 Tests: 15	X			X			X					X			X				
Phenols by HPLC (S)	All	NDPs: 0 Tests: 22		X			X			X		X			X			X		X	
Sample description	All	NDPs: 0 Tests: 22		X			X			X		X			X			X		X	
Total Organic Carbon	All	NDPs: 0 Tests: 22		X			X			X		X			X			X		X	
Total Sulphate	All	NDPs: 0 Tests: 9		X						X					X						
Total Sulphur	All	NDPs: 0 Tests: 9		X						X					X						
TPH CWG (W)	All	NDPs: 0 Tests: 15	X			X			X					X			X				
TPH CWG GC (S)	All	NDPs: 0 Tests: 22		X			X			X		X			X			X		X	
VOC MS (S)	All	NDPs: 0 Tests: 22			X			X			X		X			X			X			X

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
18653991	4E-A7	0.40 - 0.40	Dark Brown	Sandy Loam	Vegetation	Stones
18653998	4E-A7	0.90 - 0.90	Dark Brown	Stone/Soil	Stones	None
18654006	4E-A7V	2.10 - 2.10	Dark Brown	Silty Clay	Stones	Vegetation
18654016	4E-B7	0.50 - 0.50	Dark Brown	Stone/Soil	Stones	None
18654023	4E-B7V	1.60 - 1.60	Dark Brown	Silty Clay Loam	Stones	Vegetation
18654030	4E-C7	0.50 - 0.50	Dark Brown	Sand	Stones	None
18654036	4E-C7	1.00 - 1.00	Dark Brown	Sand	Stones	Vegetation
18653975	4E-C8	0.50 - 0.50	Black	Sand	Stones	N/A
18654060	4E-C8	1.00 - 1.00	Dark Brown	Stone/Soil	Stones	None
18654042	4E-C7V	1.80 - 1.80	Dark Brown	Clay	Stones	None
18654118	4E-D7	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
18654083	4E-D8	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	None
18654090	4E-D8	0.90 - 0.90	Dark Brown	Sandy Loam	Stones	None
18653985	4E-D7V	1.90 - 1.90	Dark Brown	Sandy Loam	Vegetation	Stones
18654098	4E-D8V	1.70 - 1.70	Grey	Clay	Vegetation	None
18654049	4E-E1	0.50 - 0.50	Black	Sand	Stones	Crushed Brick
18654065	4E-E1	1.00 - 1.00	Dark Brown	Loamy Sand	Stones	None
18654071	4E-E1	2.00 - 2.00	Dark Brown	Stone/Soil	Stones	Vegetation
18654079	4E-E1V	2.50 - 2.50	Dark Brown	Loamy Sand	Vegetation	Stones
18654103	4E-F8	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	None
18654109	4E-F8	0.90 - 0.90	Dark Brown	Sand	Stones	None
18654114	4E-F8V	1.50 - 1.50	Dark Brown	Clay	Vegetation	Stones

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-A7	4E-A7	4E-A7V	4E-B7	4E-B7V	4E-C7
			Depth (m)	0.40 - 0.40	0.90 - 0.90	2.10 - 2.10	0.50 - 0.50	1.60 - 1.60	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018
			SDG Ref	181102-43	181102-43	181102-43	181102-43	181102-43	181102-43
			Lab Sample No.(s)	18653991	18653998	18654006	18654016	18654023	18654030
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		9.4	14	28	7.2	24	7.7
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 #	218 M	21 #	130 M	13.6 M
Phenol	<0.01 mg/kg	TM062 (S)		0.011 M	<0.01 #	<0.01 M	0.0108 #	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 #	0.0139 M	<0.01 #	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		0.055 M	<0.015 #	<0.015 M	<0.015 #	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		0.066 M	<0.035 #	<0.035 M	<0.035 #	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132			0.189		0.506		0.311
Sulphate, Total potential	<0.06 %	TM132			0.567		1.52		0.933
Soil Organic Matter (SOM)	<0.35 %	TM132		6.81 #	8.45 #	3.22 #	1.56 #	1.61 #	6.84 #
pH	1 pH Units	TM133		10.3 M	11.6 #	8.09 M	12.7 #	7.89 M	10.4 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 #	<1 M	<1 #	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 #	<1 M	<1 #	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		13.6 M	<6 #	12.9 M	10.5 #	19.1 M	15.3 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	<0.2 #	0.37 M	<0.2 #	0.316 M	<0.2 M
Chromium	<0.9 mg/kg	TM181		188 M	359 #	38.2 M	775 #	40.8 M	63.2 M
Copper	<1.4 mg/kg	TM181		25.1 M	20 #	14.6 M	34.4 #	11.4 M	25.3 M
Iron	<1000 mg/kg	TM181		183000 #	134000 #	37600 #	220000 #	38200 #	174000 #
Lead	<0.7 mg/kg	TM181		86.7 M	36 #	33.3 M	31.2 #	29.4 M	116 M
Manganese	<0.13 mg/kg	TM181		11500 M	26600 #	854 M	33000 #	523 M	11400 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<1.4 #	<0.14 M	<1.4 #	<0.14 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		21.6 M	14.6 #	34.2 M	26.4 #	39.3 M	31.6 M
Selenium	<1 mg/kg	TM181		<10 #	10.9 #	<1 #	22 #	<1 #	<10 #
Vanadium	<0.2 mg/kg	TM181		276 #	419 #	64 #	591 #	66.9 #	226 #
Zinc	<1.9 mg/kg	TM181		346 M	85.9 #	115 M	97.6 #	108 M	422 M
Sulphate, acid soluble (total)	<0.02 %	TM221			0.549		0.671		0.381
Calcium	<21 mg/kg	TM224			160000		233000		143000
Magnesium	<8 mg/kg	TM224			4470		12100		12000
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243			0.133 #		0.104 #		0.196 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-C7	4E-C8	4E-C8	4E-C7V	4E-D7	4E-D8
			Depth (m)	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	1.80 - 1.80	0.50 - 0.50	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018
			SDG Ref	181102-43	181102-43	181102-43	181102-43	181102-43	181102-43
			Lab Sample No.(s)	18654036	18653975	18654060	18654042	18654118	18654083
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		13	7.3	13	38	15	7.6
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 #	269 M	28.2 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 #	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 #	<0.01 M	<0.01 M	0.0108 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 #	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 #	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132			0.673			0.131	
Sulphate, Total potential	<0.06 %	TM132			2.02			0.393	
Soil Organic Matter (SOM)	<0.35 %	TM132		27.1 #	84.8 #	9.86 #	9.19 #	2.78 #	21.6 #
pH	1 pH Units	TM133		11.4 M	8.9 M	10.8 #	8.25 M	10.3 M	11.2 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 #	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 #	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		9.98 M	4.99 M	8.49 #	15.5 M	12.2 M	8.99 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	<0.02 M	1.14 #	<0.02 M	<0.2 M	1.11 M
Chromium	<0.9 mg/kg	TM181		168 M	3.33 M	161 #	115 M	<9 M	190 M
Copper	<1.4 mg/kg	TM181		24.9 M	13.7 M	22.1 #	23.3 M	<14 M	22.3 M
Iron	<1000 mg/kg	TM181		152000 #	48100 #	88300 #	68100 #	77100 #	110000 #
Lead	<0.7 mg/kg	TM181		91.6 M	29.2 M	46 #	45.3 M	94.4 M	43.7 M
Manganese	<0.13 mg/kg	TM181		7850 M	3070 M	12700 #	6170 M	1940 M	11500 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<0.14 M	<0.14 #	<0.14 M	<1.4 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		24.2 M	12 M	15.4 #	22.1 M	14.3 M	14.9 M
Selenium	<1 mg/kg	TM181		<10 #	2.17 #	5.34 #	2.88 #	<10 #	2.91 #
Vanadium	<0.2 mg/kg	TM181		140 #	17.7 #	177 #	108 #	43.7 #	138 #
Zinc	<1.9 mg/kg	TM181		323 M	112 M	183 #	149 M	270 M	165 M
Sulphate, acid soluble (total)	<0.02 %	TM221			0.396			0.296	
Calcium	<21 mg/kg	TM224			104000			196000	
Magnesium	<8 mg/kg	TM224			14000			16800	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243			0.0695 M			0.15 M	

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-D8	4E-D7V	4E-D8V	4E-E1	4E-E1	4E-E1
			Depth (m)	0.90 - 0.90	1.90 - 1.90	1.70 - 1.70	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018
			SDG Ref	181102-43	181102-43	181102-43	181102-43	181102-43	181102-43
			Lab Sample No.(s)	18654090	18653985	18654098	18654049	18654065	18654071
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		5.7	31	25	12	8.9	11
Exchangeable Ammonia as N	<12 mg/kg	TM024		19.1 M	262 M	92.4 M	<12 M	<12 M	<12 #
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 #
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 #
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 #
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 #
Sulphur, Total	<0.02 %	TM132		0.233			0.383		0.3
Sulphate, Total potential	<0.06 %	TM132		0.699			1.15		0.9
Soil Organic Matter (SOM)	<0.35 %	TM132		12.3 #	5.07 #	1.55 #	10.7 #	19.3 #	6.6 #
pH	1 pH Units	TM133		12.4 M	7.87 M	7.99 M	9.42 M	11.2 M	11.5 #
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 #
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 #
Arsenic	<0.6 mg/kg	TM181		8.83 M	15 M	20.7 M	7.22 M	8.25 M	6.69 #
Cadmium	<0.02 mg/kg	TM181		<0.2 M	<0.2 M	0.394 M	<0.02 M	0.877 M	<0.02 #
Chromium	<0.9 mg/kg	TM181		732 M	39.8 M	55.9 M	37 M	115 M	143 #
Copper	<1.4 mg/kg	TM181		36.5 M	<14 M	12.7 M	14.6 M	29.2 M	15.4 #
Iron	<1000 mg/kg	TM181		228000 #	42200 #	46000 #	41600 #	64500 #	84900 #
Lead	<0.7 mg/kg	TM181		11.4 M	39.8 M	27.7 M	29.2 M	35.4 M	26.2 #
Manganese	<0.13 mg/kg	TM181		42500 M	1300 M	1500 M	3000 M	10400 M	17100 #
Mercury	<0.14 mg/kg	TM181		<1.4 M	<1.4 M	<0.14 M	<0.14 M	<0.14 M	<0.14 #
Nickel	<0.2 mg/kg	TM181		26.3 M	29.4 M	38.1 M	17.1 M	16 M	10.1 #
Selenium	<1 mg/kg	TM181		18 #	<10 #	<1 #	1.44 #	4.09 #	5.45 #
Vanadium	<0.2 mg/kg	TM181		507 #	63.9 #	81 #	47 #	155 #	247 #
Zinc	<1.9 mg/kg	TM181		45.5 M	106 M	103 M	128 M	130 M	83.5 #
Sulphate, acid soluble (total)	<0.02 %	TM221		0.32			0.548		0.42
Calcium	<21 mg/kg	TM224		232000			123000		171000
Magnesium	<8 mg/kg	TM224		13700			17000		2470
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.0476 M			0.137 M		0.168 #
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304		<0.001 #					
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304		<0.001 #					
Additional Asbestos Components (Using TM048)		TM304		None #					
Analysts Comments		TM304		N/A					
Asbestos Quantification - Total - %	<0.001 %	TM304		<0.001 #					

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-E1V	4E-F8	4E-F8	4E-F8V		
			Depth (m)	2.50 - 2.50	0.50 - 0.50	0.90 - 0.90	1.50 - 1.50		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	01/11/2018	01/11/2018	01/11/2018	01/11/2018		
			Sample Time	00:00	00:00	00:00	00:00		
			Date Received	02/11/2018	02/11/2018	02/11/2018	02/11/2018		
			SDG Ref	181102-43	181102-43	181102-43	181102-43		
			Lab Sample No.(s)	18654079	18654103	18654109	18654114		
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		18	7	6.1	24		
Exchangeable Ammonia as N	<12 mg/kg	TM024		227 M	<12 M	<12 M	321 M		
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0215 M	0.0106 M	<0.01 M		
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M		
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M		
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M		
Sulphur, Total	<0.02 %	TM132			0.141				
Sulphate, Total potential	<0.06 %	TM132			0.423				
Soil Organic Matter (SOM)	<0.35 %	TM132		1.81 #	0.722 #	0.76 #	1.23 #		
pH	1 pH Units	TM133		8.36 M	12.7 M	12.4 M	8 M		
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M		
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M		
Arsenic	<0.6 mg/kg	TM181		14 M	<6 M	<6 M	13.2 M		
Cadmium	<0.02 mg/kg	TM181		0.428 M	<0.2 M	<0.2 M	<0.02 M		
Chromium	<0.9 mg/kg	TM181		34.4 M	528 M	824 M	34 M		
Copper	<1.4 mg/kg	TM181		12.1 M	18 M	14.8 M	11.3 M		
Iron	<1000 mg/kg	TM181		37200 #	150000 #	184000 #	36000 #		
Lead	<0.7 mg/kg	TM181		28.7 M	19.7 M	<7 M	28.6 M		
Manganese	<0.13 mg/kg	TM181		1600 M	26700 M	44000 M	803 M		
Mercury	<0.14 mg/kg	TM181		<0.14 M	<1.4 M	<1.4 M	<0.14 M		
Nickel	<0.2 mg/kg	TM181		35.7 M	12.8 M	4.68 M	43.7 M		
Selenium	<1 mg/kg	TM181		<1 #	20.7 #	25.1 #	<1 #		
Vanadium	<0.2 mg/kg	TM181		59.9 #	380 #	542 #	59.5 #		
Zinc	<1.9 mg/kg	TM181		113 M	89.1 M	25.6 M	115 M		
Sulphate, acid soluble (total)	<0.02 %	TM221			0.37				
Calcium	<21 mg/kg	TM224			235000				
Magnesium	<8 mg/kg	TM224			9850				
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243			0.0212 M				

Validated

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-A7	4E-A7	4E-A7V	4E-B7	4E-B7V	4E-C7
			Depth (m)	0.40 - 0.40	0.90 - 0.90	2.10 - 2.10	0.50 - 0.50	1.60 - 1.60	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018
			SDG Ref	181102-43	181102-43	181102-43	181102-43	181102-43	181102-43
			Lab Sample No.(s)	18653991	18653998	18654006	18654016	18654023	18654030
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		93.2	89.5	88.4	94.5	86.9	86
Acenaphthene-d10 % recovery**	%	TM218		82.2	98.9	88.7	95.4	88.7	90.1
Phenanthrene-d10 % recovery**	%	TM218		103	104	90.8	101	90.7	98.8
Chrysene-d12 % recovery**	%	TM218		98.9	102	92.7	100	90.7	103
Perylene-d12 % recovery**	%	TM218		87.1	95.3	91	92.8	89.1	97.4
Naphthalene	<0.009 mg/kg	TM218		0.181 M	0.0312 #	<0.009 M	0.0621 #	<0.009 M	0.0956 M
Acenaphthylene	<0.012 mg/kg	TM218		0.0927 M	<0.012 #	<0.012 M	0.0154 #	<0.012 M	0.0431 M
Acenaphthene	<0.008 mg/kg	TM218		0.00918 M	0.244 #	<0.008 M	0.0444 #	<0.008 M	0.0173 M
Fluorene	<0.01 mg/kg	TM218		0.0784 M	0.0957 #	<0.01 M	0.0211 #	<0.01 M	0.029 M
Phenanthrene	<0.015 mg/kg	TM218		0.511 M	0.583 #	<0.015 M	0.427 #	<0.015 M	0.291 M
Anthracene	<0.016 mg/kg	TM218		0.144 M	0.0602 #	<0.016 M	0.0662 #	<0.016 M	0.0747 M
Fluoranthene	<0.017 mg/kg	TM218		0.781 M	0.33 #	<0.017 M	1.24 #	<0.017 M	0.492 M
Pyrene	<0.015 mg/kg	TM218		0.798 M	0.564 #	<0.015 M	1.39 #	<0.015 M	0.388 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.315 M	0.116 #	<0.014 M	0.923 #	<0.014 M	0.247 M
Chrysene	<0.01 mg/kg	TM218		0.307 M	0.311 #	<0.01 M	1.02 #	<0.01 M	0.256 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.352 M	0.389 #	<0.015 M	1.09 #	<0.015 M	0.267 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.157 M	0.14 #	<0.014 M	0.624 #	<0.014 M	0.106 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.291 M	0.131 #	<0.015 M	1.16 #	<0.015 M	0.238 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.217 M	0.174 #	<0.018 M	0.743 #	<0.018 M	0.157 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.0566 M	0.0382 #	<0.023 M	0.178 #	<0.023 M	0.0467 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.265 M	0.208 #	<0.024 M	0.895 #	<0.024 M	0.206 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		4.56	3.42	<0.118	9.91	<0.118	2.95

Validated

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-C7	4E-C8	4E-C8	4E-C7V	4E-D7	4E-D8
			Depth (m)	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	1.80 - 1.80	0.50 - 0.50	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018
			SDG Ref	181102-43	181102-43	181102-43	181102-43	181102-43	181102-43
			Lab Sample No.(s)	18654036	18653975	18654060	18654042	18654118	18654083
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		0	91.4	88.1	86.9	93.6	90.5
Acenaphthene-d10 % recovery**	%	TM218		0	92	89.7	88.9	87.4	89.7
Phenanthrene-d10 % recovery**	%	TM218		88.4	93.9	99.2	89.6	86.8	89.4
Chrysene-d12 % recovery**	%	TM218		77.2	91.7	104	92.7	81.2	90.6
Perylene-d12 % recovery**	%	TM218		69.5	82.2	98.8	90.3	80.4	84.5
Naphthalene	<0.009 mg/kg	TM218		<0.009 ♦ M	0.123 M	0.0792 #	0.213 M	0.116 M	0.0666 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 ♦ M	<0.06 M	0.0439 #	<0.012 M	0.0359 M	0.0312 M
Acenaphthene	<0.008 mg/kg	TM218		<0.008 ♦ M	<0.04 M	0.0174 #	0.0216 M	<0.008 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		<0.01 ♦ M	0.0779 M	0.0192 #	<0.01 M	0.0155 M	0.0147 M
Phenanthrene	<0.015 mg/kg	TM218		0.376 ♦ M	0.79 M	0.277 #	0.0871 M	0.15 M	0.18 M
Anthracene	<0.016 mg/kg	TM218		0.0938 ♦ M	0.144 M	0.069 #	<0.016 M	0.0411 M	0.0473 M
Fluoranthene	<0.017 mg/kg	TM218		0.576 ♦ M	0.894 M	0.815 #	0.175 M	0.195 M	0.368 M
Pyrene	<0.015 mg/kg	TM218		0.43 ♦ M	0.703 M	0.806 #	0.224 M	0.171 M	0.372 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.192 ♦ M	0.381 M	0.7 #	0.142 M	0.0983 M	0.289 M
Chrysene	<0.01 mg/kg	TM218		0.574 ♦ M	0.398 M	0.699 #	0.153 M	0.11 M	0.34 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.376 ♦ M	0.545 M	0.932 #	0.155 M	0.16 M	0.64 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 ♦ M	0.174 M	0.372 #	0.0746 M	0.0491 M	0.226 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.209 ♦ M	0.288 M	0.898 #	0.154 M	0.0817 M	0.303 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.19 ♦ M	0.203 M	0.528 #	0.106 M	0.063 M	0.269 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.0336 ♦ M	<0.115 M	0.153 #	<0.023 M	<0.023 M	0.0778 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.167 ♦ M	0.256 M	0.664 #	0.106 M	0.0688 M	0.32 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		3.22	4.98	7.07	1.61	1.35	3.54

Validated

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-D8	4E-D7V	4E-D8V	4E-E1	4E-E1	4E-E1
			Depth (m)	0.90 - 0.90	1.90 - 1.90	1.70 - 1.70	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018
			SDG Ref	181102-43	181102-43	181102-43	181102-43	181102-43	181102-43
			Lab Sample No.(s)	18654090	18653985	18654098	18654049	18654065	18654071
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		86.8	96.2	91.2	91.9	88.7	89
Acenaphthene-d10 % recovery**	%	TM218		92.5	96.1	92.9	95.3	89.8	91.4
Phenanthrene-d10 % recovery**	%	TM218		100	101	94.1	97.2	94.9	98.5
Chrysene-d12 % recovery**	%	TM218		104	98.7	97.7	88.7	92	104
Perylene-d12 % recovery**	%	TM218		99.4	91.8	97	73	89.4	99.2
Naphthalene	<0.009 mg/kg	TM218		0.0439 M	1.33 M	0.545 M	0.325 M	0.715 M	0.176 #
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.012 M	<0.012 M	0.133 M	0.616 M	0.231 #
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	0.0505 M	0.113 M	<0.04 M	0.0572 M	0.0312 #
Fluorene	<0.01 mg/kg	TM218		<0.01 M	0.0178 M	0.0476 M	0.121 M	0.607 M	0.284 #
Phenanthrene	<0.015 mg/kg	TM218		0.183 M	0.141 M	0.513 M	1.37 M	6.7 M	2.35 #
Anthracene	<0.016 mg/kg	TM218		0.0277 M	<0.016 M	0.0289 M	0.362 M	1.59 M	0.434 #
Fluoranthene	<0.017 mg/kg	TM218		0.642 M	0.216 M	0.766 M	2.55 M	10.4 M	4.25 #
Pyrene	<0.015 mg/kg	TM218		0.689 M	0.192 M	0.664 M	1.96 M	8.01 M	2.67 #
Benz(a)anthracene	<0.014 mg/kg	TM218		0.583 M	0.103 M	0.16 M	1.15 M	4.96 M	1.78 #
Chrysene	<0.01 mg/kg	TM218		0.727 M	0.115 M	0.185 M	1.08 M	4.27 M	1.68 #
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		1.33 M	0.107 M	0.0787 M	1.2 M	5.49 M	1.91 #
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.451 M	0.0548 M	0.0357 M	0.553 M	1.96 M	0.685 #
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.76 M	0.103 M	0.0392 M	1 M	4.09 M	1.16 #
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.566 M	0.0774 M	<0.018 M	0.665 M	3.36 M	0.679 #
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.142 M	<0.023 M	<0.023 M	0.177 M	0.686 M	0.216 #
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.661 M	0.0861 M	<0.024 M	0.718 M	2.82 M	0.792 #
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		6.8	2.6	3.17	13.4	56.3	19.3

Validated

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-E1V	4E-F8	4E-F8	4E-F8V		
			Depth (m)	2.50 - 2.50	0.50 - 0.50	0.90 - 0.90	1.50 - 1.50		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	01/11/2018	01/11/2018	01/11/2018	01/11/2018		
			Sample Time	00:00	00:00	00:00	00:00		
			Date Received	02/11/2018	02/11/2018	02/11/2018	02/11/2018		
			SDG Ref	181102-43	181102-43	181102-43	181102-43		
			Lab Sample No.(s)	18654079	18654103	18654109	18654114		
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		96.8	92.4	88.6	92.9		
Acenaphthene-d10 % recovery**	%	TM218		96.2	92.8	91.2	93.2		
Phenanthrene-d10 % recovery**	%	TM218		101	99.7	99.4	98.6		
Chrysene-d12 % recovery**	%	TM218		97.9	97.2	105	94.5		
Perylene-d12 % recovery**	%	TM218		84.3	90.3	96.5	84.5		
Naphthalene	<0.009 mg/kg	TM218		0.0174 M	0.143 M	0.222 M	<0.009 M		
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	0.0304 M	0.0185 M	<0.012 M		
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	0.175 M	0.104 M	<0.008 M		
Fluorene	<0.01 mg/kg	TM218		<0.01 M	0.0756 M	0.0273 M	<0.01 M		
Phenanthrene	<0.015 mg/kg	TM218		0.0667 M	4.45 M	2.49 M	<0.015 M		
Anthracene	<0.016 mg/kg	TM218		<0.016 M	0.468 M	0.246 M	<0.016 M		
Fluoranthene	<0.017 mg/kg	TM218		0.107 M	7.66 M	3.69 M	<0.017 M		
Pyrene	<0.015 mg/kg	TM218		0.0834 M	7.01 M	3.28 M	<0.015 M		
Benz(a)anthracene	<0.014 mg/kg	TM218		0.0421 M	4.53 M	2.15 M	<0.014 M		
Chrysene	<0.01 mg/kg	TM218		0.0397 M	4.67 M	2.31 M	<0.01 M		
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.0398 M	5.95 M	3.39 M	<0.015 M		
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 M	2.49 M	1.4 M	<0.014 M		
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.0319 M	5.18 M	2.24 M	<0.015 M		
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.0231 M	3.52 M	1.38 M	<0.018 M		
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	0.774 M	0.366 M	<0.023 M		
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 M	3.64 M	1.57 M	<0.024 M		
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		0.451	50.8	24.9	<0.118		

Validated

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-A7	4E-A7	4E-A7V	4E-B7	4E-B7V	4E-C7
			Depth (m)	0.40 - 0.40	0.90 - 0.90	2.10 - 2.10	0.50 - 0.50	1.60 - 1.60	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018
			SDG Ref	181102-43	181102-43	181102-43	181102-43	181102-43	181102-43
			Lab Sample No.(s)	18653991	18653998	18654006	18654016	18654023	18654030
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		76.8	103	104	98	98	75
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		22.3 M	361 #	5.4 M	0.355 #	<0.2 M	<0.2 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.2	<0.02	<0.02	<0.02	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.172	3.32	0.0945	0.0377	<0.02	0.0314
Aliphatics >C8-C10	<0.01 mg/kg	TM089		2.5	46.7	0.62	0.0237	<0.02	0.0238
Aliphatics >C10-C12	<0.01 mg/kg	TM089		10.8	168	2.55	0.163	<0.02	<0.02
Aliphatics >C12-C16	<0.1 mg/kg	TM173		260	471	2.24	5.04	<0.1	2.48
Aliphatics >C16-C21	<0.1 mg/kg	TM173		351	579	4.26	21.3	<0.1	17
Aliphatics >C21-C35	<0.1 mg/kg	TM173		2980	2980	20.3	136	<0.1	143
Aliphatics >C35-C44	<0.1 mg/kg	TM173		513	381	5.07	39.3	<0.1	92.4
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		4100	4410	31.8	202	<0.1	255
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	<0.2	<0.02	<0.02	<0.02	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	<0.2	<0.02	<0.02	<0.02	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		1.67	31.1	0.413	<0.02	<0.02	<0.02
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		7.19	112	1.7	0.109	<0.02	<0.02
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		77.4	177	<0.1	1.71	0.174	4.01
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		108	170	1.97	10.9	<0.1	14.2
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		425	561	24.3	90.5	0.286	97.9
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		86.1	178	13.3	38.7	0.525	116
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		29.5	67	5.5	13.9	0.379	55
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		696	1090	39.5	142	0.986	232
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		4820	5850	76.8	344	0.986	488

Validated

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-C7	4E-C8	4E-C8	4E-C7V	4E-D7	4E-D8
			Depth (m)	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	1.80 - 1.80	0.50 - 0.50	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018
			SDG Ref	181102-43	181102-43	181102-43	181102-43	181102-43	181102-43
			Lab Sample No.(s)	18654036	18653975	18654060	18654042	18654118	18654083
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		74	46	88.8	123	115	70
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 M	<0.1 #	<0.2 #	3.42 M	<0.2 M	0.529 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	<0.01	<0.02	0.0697	<0.02	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02	<0.01	<0.02	0.219	<0.02	0.0606
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02	<0.01	<0.02	0.481	<0.02	0.0412
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02	<0.01	<0.02	1.32	<0.02	0.231
Aliphatics >C12-C16	<0.1 mg/kg	TM173		2.39	7.26	<0.1	1.15	<0.1	2.36
Aliphatics >C16-C21	<0.1 mg/kg	TM173		21.9	42.4	0.808	3.98	9.87	10.5
Aliphatics >C21-C35	<0.1 mg/kg	TM173		80.3	241	109	17.1	158	81.7
Aliphatics >C35-C44	<0.1 mg/kg	TM173		15.3	71.6	32.6	14.9	37.1	28.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		120	362	142	37.2	205	123
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	<0.01	<0.02	0.0956	<0.02	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	<0.01	<0.02	0.0308	<0.02	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02	<0.01	<0.02	0.321	<0.02	0.0271
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02	<0.01	<0.02	0.881	<0.02	0.154
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		2.92	7.02	2.65	1.63	<0.1	2.16
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		9.06	25.1	12.2	5.65	1.25	7.2
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		42	144	153	55.3	17.7	51.7
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		17.3	82.1	94.9	10.8	1.63	36.9
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		7.23	36.3	38.8	2.82	<0.1	16.8
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		71.3	258	263	73.4	20.6	98
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		191	620	405	114	226	221

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-D8	4E-D7V	4E-D8V	4E-E1	4E-E1	4E-E1
			Depth (m)	0.90 - 0.90	1.90 - 1.90	1.70 - 1.70	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018
			SDG Ref	181102-43	181102-43	181102-43	181102-43	181102-43	181102-43
			Lab Sample No.(s)	18654090	18653985	18654098	18654049	18654065	18654071
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		97	91.9	112	51.3	87	76
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		2.68 M	0.581 M	3.15 M	<0.1 #	<0.2 M	<0.2 #
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	<0.02	0.0532	<0.01	<0.02	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.0435	0.0526	0.161	<0.01	0.0549	0.0418
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.0498	0.092	0.557	<0.01	0.0373	0.0237
Aliphatics >C10-C12	<0.01 mg/kg	TM089		1.52	0.209	1.19	<0.01	0.0461	0.0203
Aliphatics >C12-C16	<0.1 mg/kg	TM173		2.84	1.31	<0.1	5.78	2.61	2.01
Aliphatics >C16-C21	<0.1 mg/kg	TM173		15.8	2.88	<0.1	23.7	39.4	12.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		79.5	14.7	2.43	94.5	77.6	45.5
Aliphatics >C35-C44	<0.1 mg/kg	TM173		27.5	1.14	<0.1	43.7	16.7	14.2
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		126	20.1	2.43	168	136	73.7
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	<0.02	0.0213	<0.01	<0.02	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.01	<0.02	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.0329	0.0613	0.371	<0.01	0.0253	<0.02
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		1.02	0.139	0.793	<0.01	0.0307	<0.02
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		1.92	0.53	<0.1	6.88	10.1	4.05
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		9.26	1.63	<0.1	28.9	114	29.6
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		71.8	16.1	4.96	133	292	93.2
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		43	3.55	5.54	79.5	84.9	29.2
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		18	1.16	2.43	33.5	28.5	10.2
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		126	21.8	10.5	249	501	156
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		254	42.4	16.1	417	637	230

Validated

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-E1V	4E-F8	4E-F8	4E-F8V		
			Depth (m)	2.50 - 2.50	0.50 - 0.50	0.90 - 0.90	1.50 - 1.50		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	01/11/2018	01/11/2018	01/11/2018	01/11/2018		
			Sample Time	00:00	00:00	00:00	00:00		
			Date Received	02/11/2018	02/11/2018	02/11/2018	02/11/2018		
			SDG Ref	181102-43	181102-43	181102-43	181102-43		
			Lab Sample No.(s)	18654079	18654103	18654109	18654114		
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		101	101	106	95		
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 M	1.08 M	3.4 M	1.11 M		
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	0.0354		
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02	0.0645	0.0596	0.128		
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02	0.123	0.565	0.365		
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02	0.421	0.965	0.199		
Aliphatics >C12-C16	<0.1 mg/kg	TM173		0.59	<0.1	2.78	<0.1		
Aliphatics >C16-C21	<0.1 mg/kg	TM173		<0.1	5.14	9.32	<0.1		
Aliphatics >C21-C35	<0.1 mg/kg	TM173		2.43	68.4	64.4	0.225		
Aliphatics >C35-C44	<0.1 mg/kg	TM173		<0.1	14.2	14	<0.1		
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		3.02	87.8	90.5	0.225		
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	0.0333	0.218	<0.02		
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	0.0688	0.561	<0.02		
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02	0.0817	0.377	0.244		
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02	0.282	0.644	0.132		
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	2.3	6.74	<0.1		
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		0.299	28.9	30.6	0.5		
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		5.4	153	135	4.84		
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		1.76	56.1	55.2	3.24		
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		<0.1	19.2	18.8	1.07		
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		7.46	240	228	8.58		
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		10.5	329	322	9.91		

Validated

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-A7	4E-A7	4E-A7V	4E-B7	4E-B7V	4E-C7
			Depth (m)	0.40 - 0.40	0.90 - 0.90	2.10 - 2.10	0.50 - 0.50	1.60 - 1.60	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018
			SDG Ref	181102-43	181102-43	181102-43	181102-43	181102-43	181102-43
			Lab Sample No.(s)	18653991	18653998	18654006	18654016	18654023	18654030
			AGS Reference						
Dibromofluoromethane**	%	TM116		107	105	105	106	104	101
Toluene-d8**	%	TM116		95.8	91.8	99.9	99.4	99.7	99
4-Bromofluorobenzene**	%	TM116		89.5	86.2	98.8	97.5	97.9	91.5
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 #	<0.1 M	<0.1 #	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 #	<0.09 M	<0.09 #	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	0.135 #	<0.07 M	<0.07 #	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	0.102 #	<0.04 M	<0.04 #	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	0.211 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	0.232 #	<0.1 M	<0.1 #	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 #	<0.13 M	<0.13 #	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	0.68	<0.4	<0.4	<0.4	<0.4

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-C7	4E-C8	4E-C8	4E-C7V	4E-D7	4E-D8
			Depth (m)	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	1.80 - 1.80	0.50 - 0.50	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018
			SDG Ref	181102-43	181102-43	181102-43	181102-43	181102-43	181102-43
			Lab Sample No.(s)	18654036	18653975	18654060	18654042	18654118	18654083
			AGS Reference						
Dibromofluoromethane**	%	TM116		102	95.6	104	103	111	101
Toluene-d8**	%	TM116		98.9	95.5	98.1	98.8	98.6	98.6
4-Bromofluorobenzene**	%	TM116		92.2	79	94.1	95	91.9	90
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.01 #	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.009 #	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.007 #	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.004 #	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.01 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.01 #	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 #	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.04	<0.4	<0.4	<0.4

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-D8	4E-D7V	4E-D8V	4E-E1	4E-E1	4E-E1
			Depth (m)	0.90 - 0.90	1.90 - 1.90	1.70 - 1.70	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018
			SDG Ref	181102-43	181102-43	181102-43	181102-43	181102-43	181102-43
			Lab Sample No.(s)	18654090	18653985	18654098	18654049	18654065	18654071
			AGS Reference						
Dibromofluoromethane**	%	TM116		109	112	110	97.8	107	99.7
Toluene-d8**	%	TM116		95.6	99.3	99.9	97	96	97.9
4-Bromofluorobenzene**	%	TM116		92.6	97.5	97.9	81.6	90	87.3
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 #
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 #
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 #
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 #
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 #
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	1.15 M	<0.13 M	0.258 M	<0.13 #
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-E1V	4E-F8	4E-F8	4E-F8V		
			Depth (m)	2.50 - 2.50	0.50 - 0.50	0.90 - 0.90	1.50 - 1.50		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	01/11/2018	01/11/2018	01/11/2018	01/11/2018		
			Sample Time	00:00	00:00	00:00	00:00		
			Date Received	02/11/2018	02/11/2018	02/11/2018	02/11/2018		
			SDG Ref	181102-43	181102-43	181102-43	181102-43		
			Lab Sample No.(s)	18654079	18654103	18654109	18654114		
			AGS Reference						
Dibromofluoromethane**	%	TM116		103	101	103	103		
Toluene-d8**	%	TM116		101	99.3	99.4	100		
4-Bromofluorobenzene**	%	TM116		98.7	96.9	99.3	99.1		
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M		
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M		
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	0.121 M	<0.07 M		
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M		
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #		
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M		
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M		
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4		

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

Asbestos Identification - Solid Samples

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-A7 0.90 - 0.90 SOLID 01/11/2018 00:00:00 07/11/2018 07:59:42 181102-43 18653998 TM048	08/11/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-B7 0.50 - 0.50 SOLID 01/11/2018 00:00:00 03/11/2018 10:37:54 181102-43 18654016 TM048	14/11/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-C7 0.50 - 0.50 SOLID 01/11/2018 00:00:00 03/11/2018 10:41:52 181102-43 18654030 TM048	13/11/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-C8 0.50 - 0.50 SOLID 01/11/2018 00:00:00 02/11/2018 17:13:18 181102-43 18653975 TM048	14/11/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-D7 0.50 - 0.50 SOLID 01/11/2018 00:00:00 07/11/2018 07:55:52 181102-43 18654118 TM048	09/11/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-D8 0.90 - 0.90 SOLID 01/11/2018 00:00:00 03/11/2018 07:52:58 181102-43 18654090 TM048	13/11/2018	Lucy Caroe	Loose fibres in soil	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 181102-43 **Client Reference:** **Report Number:** 482241
Location: Llanwern **Order Number:** LLA505 **Superseded Report:**

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-E1 0.50 - 0.50 SOLID 01/11/2018 00:00:00 02/11/2018 17:15:31 181102-43 18654049 TM048	14/11/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-E1 2.00 - 2.00 SOLID 01/11/2018 00:00:00 03/11/2018 09:14:56 181102-43 18654071 TM048	09/11/2018	Renata Bozhkov	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-F8 0.50 - 0.50 SOLID 01/11/2018 00:00:00 07/11/2018 07:53:21 181102-43 18654103 TM048	09/11/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

Asbestos Quantification - Full

		Additional Asbestos Components (Using TM048)	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM Evaluation - %	Asbestos Quantification - Total - %
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-D8 0.90 - 0.90 SOLID 01/11/2018 00:00:00 03/11/2018 07:52:36 181102-43 18654090 TM304	None (#)	N/A	<0.001 (#)	<0.001 (#)	<0.001 (#)

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.87
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.7
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18653975
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-C8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00128	<0.0005	0.0128	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.000637	<0.0003	0.00637	<0.003	-	-	-
Lead	0.000216	<0.0002	0.00216	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000721	<0.0004	0.00721	<0.004	-	-	-
Selenium	0.00139	<0.001	0.0139	<0.01	-	-	-
Vanadium	0.00756	<0.001	0.0756	<0.01	-	-	-
Zinc	0.0192	<0.001	0.192	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.244	<0.019	2.44	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000176	<0.00001	0.000176	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.00000931	<0.000005	0.0000931	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.00000691	<0.000005	0.0000691	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000105	<0.000005	0.000105	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000237	<0.000002	0.0000237	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	9.03
Conductivity (µS/cm)	128.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

22/11/2018 17:10:59

17:10:21 22/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.87
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.7
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18653975
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-C8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	9.03
Conductivity (µS/cm)	128.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.6
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18653991
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-A7
Depth (m)	0.40 - 0.40

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00195	<0.0005	0.0195	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0015	<0.001	0.015	<0.01	-	-	-
Copper	0.00216	<0.0003	0.0216	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00206	<0.001	0.0206	<0.01	-	-	-
Vanadium	0.151	<0.001	1.51	<0.01	-	-	-
Zinc	0.00232	<0.001	0.0232	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00011	<0.00001	0.0011	<0.0001	-	-	-
Acenaphthene by GCMS	0.000136	<0.000005	0.00136	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000459	<0.000005	0.000459	<0.00005	-	-	-
Fluoranthene by GCMS	0.000133	<0.000005	0.00133	<0.00005	-	-	-
Anthracene by GCMS	0.000038	<0.000005	0.00038	<0.00005	-	-	-
Phenanthrene by GCMS	0.000224	<0.000005	0.00224	<0.00005	-	-	-
Fluorene by GCMS	0.000248	<0.000005	0.00248	<0.00005	-	-	-
Chrysene by GCMS	0.0000149	<0.000005	0.000149	<0.00005	-	-	-
Pyrene by GCMS	0.000128	<0.000005	0.00128	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000116	<0.000005	0.000116	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000022	<0.000005	0.00022	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000931	<0.000005	0.0000931	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000129	<0.000002	0.000129	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000097	<0.000005	0.000097	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00000846	<0.000005	0.0000846	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00115	<0.000082	0.0115	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.137	<0.05	1.37	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	08-Nov-2018
pH (pH Units)	10.25
Conductivity (µS/cm)	202.00
Temperature (°C)	19.00
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.6
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18653991
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-A7
Depth (m)	0.40 - 0.40

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	0.014	<0.01	0.14	<0.1	-	-	-
Aliphatics >C10-C12	0.061	<0.01	0.61	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	0.01	<0.01	0.1	<0.1	-	-	-
Aromatics >EC10-EC12	0.041	<0.01	0.41	<0.1	-	-	-
Aromatics >EC12-EC16	0.064	<0.01	0.64	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.064	<0.01	0.64	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.202	<0.01	2.02	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	08-Nov-2018
pH (pH Units)	10.25
Conductivity (µS/cm)	202.00
Temperature (°C)	19.00
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18653998
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-A7
Depth (m)	0.90 - 0.90

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.388	<0.2	3.88	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000129	<0.00001	0.000129	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00154	<0.001	0.0154	<0.01	-	-	-
Copper	0.00249	<0.0003	0.0249	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00105	<0.001	0.0105	<0.01	-	-	-
Vanadium	0.0554	<0.001	0.554	<0.01	-	-	-
Zinc	0.00498	<0.001	0.0498	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000552	<0.00001	0.00552	<0.0001	-	-	-
Acenaphthene by GCMS	0.000269	<0.000005	0.00269	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000594	<0.000005	0.000594	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000549	<0.000005	0.000549	<0.00005	-	-	-
Anthracene by GCMS	0.0000182	<0.000005	0.000182	<0.00005	-	-	-
Phenanthrene by GCMS	0.000492	<0.000005	0.00492	<0.00005	-	-	-
Fluorene by GCMS	0.000496	<0.000005	0.00496	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.000108	<0.000005	0.00108	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00205	<0.000082	0.0205	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	5.79	<0.05	57.9	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	0.066	<0.01	0.66	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	11.19
Conductivity (µS/cm)	625.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18653998
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-A7
Depth (m)	0.90 - 0.90

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	0.863	<0.01	8.63	<0.1	-	-	-
Aliphatics >C10-C12	2.56	<0.01	25.6	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	0.03	<0.01	0.3	<0.1	-	-	-
Total Aliphatics >C12-C35	0.03	<0.01	0.3	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	0.591	<0.01	5.91	<0.1	-	-	-
Aromatics >EC10-EC12	1.71	<0.01	17.1	<0.1	-	-	-
Aromatics >EC12-EC16	0.093	<0.01	0.93	<0.1	-	-	-
Aromatics >EC16-EC21	0.028	<0.01	0.28	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.121	<0.01	1.21	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	5.94	<0.01	59.4	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	0.013	<0.003	0.13	<0.03	-	-	-
Sum m&p and o Xylene by GC	0.013	<0.011	0.13	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	0.03	<0.01	0.3	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	11.19
Conductivity (µS/cm)	625.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.76
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.8
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654016
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-B7
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00266	<0.0005	0.0266	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0103	<0.001	0.103	<0.01	-	-	-
Copper	0.00444	<0.0003	0.0444	<0.003	-	-	-
Lead	0.00572	<0.0002	0.0572	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000651	<0.0004	0.00651	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.0109	<0.001	0.109	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000244	<0.0001	0.00244	<0.001	-	-	-
Acenaphthene by GCMS	0.000143	<0.00005	0.00143	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.000561	<0.00005	0.00561	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	0.00064	<0.00005	0.0064	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	0.000145	<0.00005	0.00145	<0.0005	-	-	-
Pyrene by GCMS	0.000571	<0.00005	0.00571	<0.0005	-	-	-
Benz(a)anthracene by GCMS	0.0000958	<0.00005	0.000958	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000999	<0.00005	0.000999	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000915	<0.00005	0.000915	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000682	<0.00005	0.000682	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.00266	<0.00082	0.0266	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	07-Nov-2018
pH (pH Units)	12.18
Conductivity (µS/cm)	7,190.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.76
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.8
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654016
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-B7
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	07-Nov-2018
pH (pH Units)	12.18
Conductivity (µS/cm)	7,190.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.34
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.3
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654030
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-C7
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000416	<0.00001	0.000416	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00132	<0.0005	0.0132	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00103	<0.0003	0.0103	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00354	<0.001	0.0354	<0.01	-	-	-
Vanadium	0.231	<0.001	2.31	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	07-Nov-2018
pH (pH Units)	10.79
Conductivity (µS/cm)	325.00
Temperature (°C)	18.90
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.34
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.3
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654030
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-C7
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	07-Nov-2018
pH (pH Units)	10.79
Conductivity (µS/cm)	325.00
Temperature (°C)	18.90
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654036
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-C7
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0016	<0.0005	0.016	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00225	<0.001	0.0225	<0.01	-	-	-
Copper	0.0038	<0.0003	0.038	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000623	<0.0004	0.00623	<0.004	-	-	-
Selenium	0.00127	<0.001	0.0127	<0.01	-	-	-
Vanadium	0.0247	<0.001	0.247	<0.01	-	-	-
Zinc	0.00188	<0.001	0.0188	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	07-Nov-2018
pH (pH Units)	11.37
Conductivity (µS/cm)	489.00
Temperature (°C)	19.00
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654036
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-C7
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	07-Nov-2018
pH (pH Units)	11.37
Conductivity (µS/cm)	489.00
Temperature (°C)	19.00
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654049
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-E1
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.496	<0.2	4.96	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00608	<0.0005	0.0608	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00371	<0.0003	0.0371	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000426	<0.0004	0.00426	<0.004	-	-	-
Selenium	0.00227	<0.001	0.0227	<0.01	-	-	-
Vanadium	0.0478	<0.001	0.478	<0.01	-	-	-
Zinc	0.00292	<0.001	0.0292	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000155	<0.00001	0.000155	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000749	<0.000005	0.0000749	<0.00005	-	-	-
Fluoranthene by GCMS	0.000126	<0.000005	0.00126	<0.00005	-	-	-
Anthracene by GCMS	0.0000145	<0.000005	0.000145	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000657	<0.000005	0.000657	<0.00005	-	-	-
Fluorene by GCMS	0.00000704	<0.000005	0.0000704	<0.00005	-	-	-
Chrysene by GCMS	0.0000732	<0.000005	0.000732	<0.00005	-	-	-
Pyrene by GCMS	0.000104	<0.000005	0.00104	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000044	<0.000005	0.00044	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000119	<0.000005	0.00119	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000556	<0.000005	0.000556	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000613	<0.000002	0.000613	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000165	<0.000005	0.000165	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000519	<0.000005	0.000519	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000489	<0.000005	0.000489	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000811	<0.000082	0.00811	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	08-Nov-2018
pH (pH Units)	8.54
Conductivity (µS/cm)	194.00
Temperature (°C)	18.90
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654049
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-E1
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	0.014	<0.01	0.14	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	0.014	<0.01	0.14	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.014	<0.01	0.14	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	0.014	<0.01	0.14	<0.1	-	-	-

Leach Test Information

Date Prepared	08-Nov-2018
pH (pH Units)	8.54
Conductivity (µS/cm)	194.00
Temperature (°C)	18.90
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654060
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-C8
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000607	<0.0005	0.00607	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.000595	<0.0003	0.00595	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00305	<0.001	0.0305	<0.01	-	-	-
Vanadium	0.104	<0.001	1.04	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000213	<0.00001	0.000213	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000779	<0.000005	0.0000779	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000018	<0.000005	0.00018	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000139	<0.000005	0.000139	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000206	<0.000005	0.000206	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	11.10
Conductivity (µS/cm)	372.00
Temperature (°C)	19.00
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654060
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-C8
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	11.10
Conductivity (µS/cm)	372.00
Temperature (°C)	19.00
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.77
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.1
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654065
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-E1
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000114	<0.00001	0.000114	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00146	<0.0005	0.0146	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00224	<0.001	0.0224	<0.01	-	-	-
Copper	0.00547	<0.0003	0.0547	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.001	<0.0004	0.01	<0.004	-	-	-
Selenium	0.00215	<0.001	0.0215	<0.01	-	-	-
Vanadium	0.0604	<0.001	0.604	<0.01	-	-	-
Zinc	0.00205	<0.001	0.0205	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000909	<0.00001	0.00909	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000404	<0.000005	0.000404	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000126	<0.000005	0.00126	<0.00005	-	-	-
Fluoranthene by GCMS	0.000619	<0.000005	0.00619	<0.00005	-	-	-
Anthracene by GCMS	0.000151	<0.000005	0.00151	<0.00005	-	-	-
Phenanthrene by GCMS	0.00144	<0.000005	0.0144	<0.00005	-	-	-
Fluorene by GCMS	0.000256	<0.000005	0.00256	<0.00005	-	-	-
Chrysene by GCMS	0.0000314	<0.000005	0.000314	<0.00005	-	-	-
Pyrene by GCMS	0.000505	<0.000005	0.00505	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000274	<0.000005	0.000274	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000112	<0.000005	0.000112	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000556	<0.000005	0.0000556	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000432	<0.000002	0.0000432	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00413	<0.000082	0.0413	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	08-Nov-2018
pH (pH Units)	11.01
Conductivity (µS/cm)	439.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.77
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.1
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654065
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-E1
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	08-Nov-2018
pH (pH Units)	11.01
Conductivity (µS/cm)	439.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654071
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-E1
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.76	<0.2	7.6	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00112	<0.0005	0.0112	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00472	<0.0003	0.0472	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00116	<0.0004	0.0116	<0.004	-	-	-
Selenium	0.00151	<0.001	0.0151	<0.01	-	-	-
Vanadium	0.0572	<0.001	0.572	<0.01	-	-	-
Zinc	0.00365	<0.001	0.0365	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000645	<0.00001	0.00645	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000998	<0.000005	0.000998	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000642	<0.000005	0.00642	<0.00005	-	-	-
Fluoranthene by GCMS	0.00145	<0.000005	0.0145	<0.00005	-	-	-
Anthracene by GCMS	0.000233	<0.000005	0.00233	<0.00005	-	-	-
Phenanthrene by GCMS	0.00223	<0.000005	0.0223	<0.00005	-	-	-
Fluorene by GCMS	0.000762	<0.000005	0.00762	<0.00005	-	-	-
Chrysene by GCMS	0.0000352	<0.000005	0.000352	<0.00005	-	-	-
Pyrene by GCMS	0.000758	<0.000005	0.00758	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000251	<0.000005	0.000251	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00688	<0.000082	0.0688	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	11.15
Conductivity (µS/cm)	542.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654071
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-E1
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	11.15
Conductivity (µS/cm)	542.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.23
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.4
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654083
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-D8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00131	<0.0005	0.0131	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00418	<0.001	0.0418	<0.01	-	-	-
Copper	0.000417	<0.0003	0.00417	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00162	<0.001	0.0162	<0.01	-	-	-
Vanadium	0.0547	<0.001	0.547	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.00000533	<0.000005	0.0000533	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.00000987	<0.000005	0.0000987	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00000673	<0.000005	0.0000673	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	10.66
Conductivity (µS/cm)	238.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.23
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.4
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654083
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-D8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	10.66
Conductivity (µS/cm)	238.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.04
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.3
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654090
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-D8
Depth (m)	0.90 - 0.90

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0225	<0.001	0.225	<0.01	-	-	-
Copper	0.00277	<0.0003	0.0277	<0.003	-	-	-
Lead	0.00191	<0.0002	0.0191	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00191	<0.001	0.0191	<0.01	-	-	-
Zinc	0.00256	<0.001	0.0256	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000942	<0.00001	0.000942	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000223	<0.000005	0.00223	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.000144	<0.000005	0.00144	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.00021	<0.000005	0.0021	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000671	<0.000082	0.00671	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	11.74
Conductivity (µS/cm)	1,740.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.04
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.3
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654090
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-D8
Depth (m)	0.90 - 0.90

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	11.74
Conductivity (µS/cm)	1,740.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.53
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654103
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-F8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00149	<0.0005	0.0149	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00337	<0.001	0.0337	<0.01	-	-	-
Copper	0.00598	<0.0003	0.0598	<0.003	-	-	-
Lead	0.00132	<0.0002	0.0132	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00105	<0.0004	0.0105	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00104	<0.001	0.0104	<0.01	-	-	-
Zinc	0.00364	<0.001	0.0364	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000339	<0.00001	0.00339	<0.0001	-	-	-
Acenaphthene by GCMS	0.000368	<0.000005	0.00368	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000435	<0.000005	0.000435	<0.00005	-	-	-
Fluoranthene by GCMS	0.0021	<0.000005	0.021	<0.00005	-	-	-
Anthracene by GCMS	0.000301	<0.000005	0.00301	<0.00005	-	-	-
Phenanthrene by GCMS	0.00502	<0.000005	0.0502	<0.00005	-	-	-
Fluorene by GCMS	0.000041	<0.000005	0.00041	<0.00005	-	-	-
Chrysene by GCMS	0.000082	<0.000005	0.00082	<0.00005	-	-	-
Pyrene by GCMS	0.00159	<0.000005	0.0159	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000673	<0.000005	0.000673	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000283	<0.000005	0.000283	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000905	<0.000005	0.0000905	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000813	<0.000002	0.0000813	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.01	<0.000082	0.1	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	12.27
Conductivity (µS/cm)	418.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.53
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654103
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-F8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	12.27
Conductivity (µS/cm)	418.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.9
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654109
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-F8
Depth (m)	0.90 - 0.90

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.461	<0.2	4.61	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00105	<0.0005	0.0105	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00485	<0.001	0.0485	<0.01	-	-	-
Copper	0.00417	<0.0003	0.0417	<0.003	-	-	-
Lead	0.000815	<0.0002	0.00815	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00682	<0.001	0.0682	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000638	<0.00001	0.00638	<0.0001	-	-	-
Acenaphthene by GCMS	0.000451	<0.000005	0.00451	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000119	<0.000005	0.00119	<0.00005	-	-	-
Fluoranthene by GCMS	0.00607	<0.000005	0.0607	<0.00005	-	-	-
Anthracene by GCMS	0.000617	<0.000005	0.00617	<0.00005	-	-	-
Phenanthrene by GCMS	0.0104	<0.000005	0.104	<0.00005	-	-	-
Fluorene by GCMS	0.00015	<0.000005	0.0015	<0.00005	-	-	-
Chrysene by GCMS	0.000429	<0.000005	0.00429	<0.00005	-	-	-
Pyrene by GCMS	0.00461	<0.000005	0.0461	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000342	<0.000005	0.00342	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000794	<0.000005	0.000794	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000464	<0.000005	0.000464	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000024	<0.000002	0.00024	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0239	<0.000082	0.239	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	11.91
Conductivity (µS/cm)	283.00
Temperature (°C)	19.30
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.9
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654109
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-F8
Depth (m)	0.90 - 0.90

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	0.032	<0.01	0.32	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.032	<0.01	0.32	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.049	<0.01	0.49	<0.1	-	-	-
Toluene by GC	0.007	<0.004	0.07	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	11.91
Conductivity (µS/cm)	283.00
Temperature (°C)	19.30
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654118
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-D7
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00234	<0.0005	0.0234	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00181	<0.0003	0.0181	<0.003	-	-	-
Lead	0.000259	<0.0002	0.00259	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000476	<0.0004	0.00476	<0.004	-	-	-
Selenium	0.00326	<0.001	0.0326	<0.01	-	-	-
Vanadium	0.0631	<0.001	0.631	<0.01	-	-	-
Zinc	0.00166	<0.001	0.0166	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.589	<0.019	5.89	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000249	<0.00001	0.000249	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000022	<0.000005	0.00022	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000151	<0.000005	0.000151	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.000026	<0.000005	0.00026	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00000613	<0.000005	0.0000613	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0000941	<0.000082	0.000941	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	08-Nov-2018
pH (pH Units)	10.51
Conductivity (µS/cm)	232.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

22/11/2018 17:10:59

17:10:21 22/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654118
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-D7
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	08-Nov-2018
pH (pH Units)	10.51
Conductivity (µS/cm)	232.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

22/11/2018 17:10:59

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Table of Results - Appendix

Method No	Reference	Description
PM001		Preparation of Samples for Metals Analysis
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM243		Mixed Anions In Soils By Kone
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

Test Completion Dates

Lab Sample No(s)	18653991	18653998	18654006	18654016	18654023	18654030	18654036	18653975	18654060	18654042
Customer Sample Ref.	4E-A7	4E-A7	4E-A7V	4E-B7	4E-B7V	4E-C7	4E-C7	4E-C8	4E-C8	4E-C7V
AGS Ref.										
Depth	0.40 - 0.40	0.90 - 0.90	2.10 - 2.10	0.50 - 0.50	1.60 - 1.60	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	1.80 - 1.80
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)		14-Nov-2018		15-Nov-2018		16-Nov-2018		14-Nov-2018		
Ammoniacal Nitrogen	15-Nov-2018	15-Nov-2018		15-Nov-2018		15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	
Ammonium Soil by Titration	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018
Anions by Kone (soil)		15-Nov-2018		15-Nov-2018		09-Nov-2018		15-Nov-2018		
Asbestos ID in Solid Samples		08-Nov-2018		14-Nov-2018		13-Nov-2018		14-Nov-2018		
CEN 10:1 Leachate (1 Stage)	08-Nov-2018	03-Nov-2018		07-Nov-2018		07-Nov-2018	07-Nov-2018	03-Nov-2018	03-Nov-2018	
CEN Readings	13-Nov-2018	10-Nov-2018		09-Nov-2018		09-Nov-2018	09-Nov-2018	10-Nov-2018	10-Nov-2018	
Cyanide Comp/Free/Total/Thiocyanate	16-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018
Dissolved Metals by ICP-MS	15-Nov-2018	15-Nov-2018		15-Nov-2018		15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	
EPH CWG (Aliphatic) Aqueous GC (W)	14-Nov-2018	13-Nov-2018		13-Nov-2018		12-Nov-2018	13-Nov-2018	14-Nov-2018	15-Nov-2018	
EPH CWG (Aliphatic) GC (S)	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	16-Nov-2018	16-Nov-2018
EPH CWG (Aromatic) Aqueous GC (W)	14-Nov-2018	13-Nov-2018		13-Nov-2018		12-Nov-2018	13-Nov-2018	14-Nov-2018	15-Nov-2018	
EPH CWG (Aromatic) GC (S)	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018
GRO by GC-FID (S)	12-Nov-2018	13-Nov-2018	10-Nov-2018	10-Nov-2018	10-Nov-2018	10-Nov-2018	10-Nov-2018	12-Nov-2018	12-Nov-2018	10-Nov-2018
GRO by GC-FID (W)	13-Nov-2018	12-Nov-2018		12-Nov-2018		12-Nov-2018	09-Nov-2018	12-Nov-2018	12-Nov-2018	
Mercury Dissolved	16-Nov-2018	16-Nov-2018		16-Nov-2018		16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	
Metals in solid samples by OES	16-Nov-2018	15-Nov-2018	16-Nov-2018	15-Nov-2018	16-Nov-2018	15-Nov-2018	12-Nov-2018	14-Nov-2018	19-Nov-2018	15-Nov-2018
PAH by GCMS	08-Nov-2018	08-Nov-2018	07-Nov-2018	08-Nov-2018	07-Nov-2018	09-Nov-2018	16-Nov-2018	08-Nov-2018	09-Nov-2018	07-Nov-2018
PAH Spec MS - Aqueous (W)	14-Nov-2018	14-Nov-2018		12-Nov-2018		09-Nov-2018	12-Nov-2018	14-Nov-2018	13-Nov-2018	
pH	14-Nov-2018	14-Nov-2018	13-Nov-2018	14-Nov-2018	13-Nov-2018	14-Nov-2018	13-Nov-2018	14-Nov-2018	13-Nov-2018	13-Nov-2018
pH Value	14-Nov-2018	13-Nov-2018		14-Nov-2018		14-Nov-2018	14-Nov-2018	13-Nov-2018	14-Nov-2018	
Phenols by HPLC (S)	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	12-Nov-2018	13-Nov-2018	14-Nov-2018	06-Nov-2018	14-Nov-2018	12-Nov-2018
Sample description	07-Nov-2018	02-Nov-2018	02-Nov-2018	03-Nov-2018	03-Nov-2018	03-Nov-2018	03-Nov-2018	02-Nov-2018	02-Nov-2018	03-Nov-2018
Total Organic Carbon	15-Nov-2018	15-Nov-2018	16-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	16-Nov-2018	15-Nov-2018	15-Nov-2018
Total Sulphate		07-Nov-2018		13-Nov-2018		12-Nov-2018		13-Nov-2018		
Total Sulphur		13-Nov-2018		07-Nov-2018		14-Nov-2018		07-Nov-2018		
TPH CWG (W)	14-Nov-2018	13-Nov-2018		13-Nov-2018		12-Nov-2018	13-Nov-2018	14-Nov-2018	15-Nov-2018	
TPH CWG GC (S)	12-Nov-2018	13-Nov-2018	10-Nov-2018	10-Nov-2018	10-Nov-2018	10-Nov-2018	10-Nov-2018	12-Nov-2018	16-Nov-2018	16-Nov-2018
VOC MS (S)	14-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	13-Nov-2018	12-Nov-2018

Lab Sample No(s)	18654118	18654083	18654090	18653985	18654098	18654049	18654065	18654071	18654079	18654103
Customer Sample Ref.	4E-D7	4E-D8	4E-D8	4E-D7V	4E-D8V	4E-E1	4E-E1	4E-E1	4E-E1V	4E-F8
AGS Ref.										
Depth	0.50 - 0.50	0.50 - 0.50	0.90 - 0.90	1.90 - 1.90	1.70 - 1.70	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	2.50 - 2.50	0.50 - 0.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	16-Nov-2018		16-Nov-2018			19-Nov-2018		14-Nov-2018		16-Nov-2018
Ammoniacal Nitrogen	15-Nov-2018	15-Nov-2018	15-Nov-2018			15-Nov-2018	15-Nov-2018	15-Nov-2018		15-Nov-2018
Ammonium Soil by Titration	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018
Anions by Kone (soil)	09-Nov-2018		15-Nov-2018			20-Nov-2018		15-Nov-2018		15-Nov-2018
Asbestos ID in Solid Samples	09-Nov-2018		13-Nov-2018			14-Nov-2018		09-Nov-2018		09-Nov-2018
Asbestos Quantification - Full			16-Nov-2018							
CEN 10:1 Leachate (1 Stage)	08-Nov-2018	03-Nov-2018	03-Nov-2018			08-Nov-2018	08-Nov-2018	03-Nov-2018		03-Nov-2018
CEN Readings	10-Nov-2018	10-Nov-2018	10-Nov-2018			13-Nov-2018	10-Nov-2018	10-Nov-2018		10-Nov-2018
Cyanide Comp/Free/Total/Thiocyanate	15-Nov-2018	15-Nov-2018	15-Nov-2018	16-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	16-Nov-2018	15-Nov-2018
Dissolved Metals by ICP-MS	15-Nov-2018	15-Nov-2018	13-Nov-2018			15-Nov-2018	15-Nov-2018	15-Nov-2018		15-Nov-2018
EPH CWG (Aliphatic) Aqueous GC (W)	14-Nov-2018	14-Nov-2018	14-Nov-2018			14-Nov-2018	15-Nov-2018	14-Nov-2018		14-Nov-2018
EPH CWG (Aliphatic) GC (S)	16-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	16-Nov-2018	16-Nov-2018	09-Nov-2018	16-Nov-2018
EPH CWG (Aromatic) Aqueous GC (W)	14-Nov-2018	14-Nov-2018	14-Nov-2018			14-Nov-2018	15-Nov-2018	14-Nov-2018		14-Nov-2018
EPH CWG (Aromatic) GC (S)	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018
GRO by GC-FID (S)	12-Nov-2018	10-Nov-2018	10-Nov-2018	12-Nov-2018	10-Nov-2018	12-Nov-2018	10-Nov-2018	10-Nov-2018	13-Nov-2018	10-Nov-2018
GRO by GC-FID (W)	12-Nov-2018	12-Nov-2018	12-Nov-2018			13-Nov-2018	14-Nov-2018	12-Nov-2018		12-Nov-2018
Mercury Dissolved	16-Nov-2018	16-Nov-2018	16-Nov-2018			16-Nov-2018	16-Nov-2018	16-Nov-2018		16-Nov-2018
Metals in solid samples by OES	15-Nov-2018	19-Nov-2018	15-Nov-2018	14-Nov-2018	16-Nov-2018	20-Nov-2018	19-Nov-2018	15-Nov-2018	16-Nov-2018	15-Nov-2018
PAH by GCMS	12-Nov-2018	08-Nov-2018	08-Nov-2018	08-Nov-2018	07-Nov-2018	08-Nov-2018	07-Nov-2018	09-Nov-2018	08-Nov-2018	08-Nov-2018
PAH Spec MS - Aqueous (W)	14-Nov-2018	14-Nov-2018	14-Nov-2018			13-Nov-2018	13-Nov-2018	14-Nov-2018		14-Nov-2018
pH	14-Nov-2018	13-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	13-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018
pH Value	14-Nov-2018	14-Nov-2018	12-Nov-2018			13-Nov-2018	14-Nov-2018	12-Nov-2018		14-Nov-2018
Phenols by HPLC (S)	12-Nov-2018	12-Nov-2018	12-Nov-2018	15-Nov-2018	13-Nov-2018	14-Nov-2018	12-Nov-2018	14-Nov-2018	12-Nov-2018	14-Nov-2018
Sample description	03-Nov-2018	02-Nov-2018	02-Nov-2018	07-Nov-2018	02-Nov-2018	03-Nov-2018	03-Nov-2018	02-Nov-2018	07-Nov-2018	02-Nov-2018
Total Organic Carbon	16-Nov-2018	15-Nov-2018	16-Nov-2018	15-Nov-2018	15-Nov-2018	16-Nov-2018	15-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018
Total Sulphate	12-Nov-2018		13-Nov-2018			16-Nov-2018		13-Nov-2018		13-Nov-2018
Total Sulphur	13-Nov-2018		07-Nov-2018			16-Nov-2018		07-Nov-2018		07-Nov-2018
TPH CWG (W)	14-Nov-2018	14-Nov-2018	14-Nov-2018			14-Nov-2018	15-Nov-2018	14-Nov-2018		14-Nov-2018
TPH CWG GC (S)	16-Nov-2018	10-Nov-2018	10-Nov-2018	12-Nov-2018	10-Nov-2018	12-Nov-2018	16-Nov-2018	16-Nov-2018	13-Nov-2018	16-Nov-2018
VOC MS (S)	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	14-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018

Validated

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

Lab Sample No(s)	18654109	18654114
Customer Sample Ref.	4E-F8	4E-F8V
AGS Ref.		
Depth	0.90 - 0.90	1.50 - 1.50
Type	Soil/Solid (S)	Soil/Solid (S)
Ammoniacal Nitrogen	15-Nov-2018	
Ammonium Soil by Titration	16-Nov-2018	16-Nov-2018
CEN 10:1 Leachate (1 Stage)	03-Nov-2018	
CEN Readings	10-Nov-2018	
Cyanide Comp/Free/Total/Thiocyanate	16-Nov-2018	15-Nov-2018
Dissolved Metals by ICP-MS	15-Nov-2018	
EPH CWG (Aliphatic) Aqueous GC (W)	15-Nov-2018	
EPH CWG (Aliphatic) GC (S)	09-Nov-2018	09-Nov-2018
EPH CWG (Aromatic) Aqueous GC (W)	15-Nov-2018	
EPH CWG (Aromatic) GC (S)	09-Nov-2018	09-Nov-2018
GRO by GC-FID (S)	10-Nov-2018	10-Nov-2018
GRO by GC-FID (W)	12-Nov-2018	
Mercury Dissolved	16-Nov-2018	
Metals in solid samples by OES	16-Nov-2018	16-Nov-2018
PAH by GCMS	08-Nov-2018	08-Nov-2018
PAH Spec MS - Aqueous (W)	13-Nov-2018	
pH	14-Nov-2018	14-Nov-2018
pH Value	13-Nov-2018	
Phenols by HPLC (S)	13-Nov-2018	13-Nov-2018
Sample description	02-Nov-2018	07-Nov-2018
Total Organic Carbon	16-Nov-2018	16-Nov-2018
TPH CWG (W)	15-Nov-2018	
TPH CWG GC (S)	10-Nov-2018	10-Nov-2018
VOC MS (S)	12-Nov-2018	12-Nov-2018

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP - No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals - total metals must be requested separately.

11. Results relate only to the items tested.

12. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** - Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

24. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Holding time exceeded before sample received**
5	**Samples exceeded holding time before presevation was performed**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to sampled on date**
&	**Sample Holding Time exceeded - Late arrival of instructions.**

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Website: www.alsenvironmental.co.uk

Atkins Global Ltd
Project Jonah site office
Llan Coed House
Suite 24
Coed Darcy
Llandarcy
SA10 6HJ

Attention: John Fitzgerald

CERTIFICATE OF ANALYSIS

Date:	19 November 2018
Customer:	H_ATKINS_LDC
Sample Delivery Group (SDG):	181103-16
Your Reference:	
Location:	Llanwern
Report No:	481753

This report has been revised and directly supersedes 481519 in its entirety.

We received 11 samples on Saturday November 03, 2018 and 11 of these samples were scheduled for analysis which was completed on Monday November 19, 2018. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

Approved By:



Sonia McWhan

Operations Manager

ALS Life Sciences Limited. Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291.

CERTIFICATE OF ANALYSIS

SDG:	181103-16	**Client Reference:**		**Report Number:**	481753
Location:	Llanwern	**Order Number:**	LLA507	**Superseded Report:**	481519

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
18660967	4G-B1		0.20 - 0.20	02/11/2018
18660982	4G-B1		0.70 - 0.70	02/11/2018
18661014	4G-B2		0.70 - 0.70	02/11/2018
18661019	4G-B2		1.30 - 1.30	02/11/2018
18660990	4G-B1-V		1.90 - 1.90	02/11/2018
18660995	4G-C1		0.40 - 0.40	02/11/2018
18661004	4G-C1		1.00 - 1.00	02/11/2018
18661027	4G-C2		0.50 - 0.50	02/11/2018
18660971	4G-C2		1.00 - 1.00	02/11/2018
18661009	4G-C1-V		2.20 - 2.20	02/11/2018
18660978	4G-C2-V		2.30 - 2.30	02/11/2018

Maximum Sample/Coolbox Temperature (°C) : **9.0**

ISO5667-3 Water quality - Sampling - Part3 -
During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	181103-16	**Client Reference:**		**Report Number:**	481753
Location:	Llanwern	**Order Number:**	LLA507	**Superseded Report:**	481519

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	18660967			18660982			18661014			18661019			18660990		18660995			18661004	
			Customer Sample Reference	4G-B1			4G-B1			4G-B2			4G-B2			4G-B1-V		4G-C1			4G-C1	
			AGS Reference																			
			Depth (m)	0.20 - 0.20			0.70 - 0.70			0.70 - 0.70			1.30 - 1.30			1.90 - 1.90		0.40 - 0.40			1.00 - 1.00	
			Container	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
			Sample Type	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 4			X									X								X
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 8		X			X			X			X					X			X	
Ammonium Soil by Titration	All	NDPs: 0 Tests: 11			X			X			X			X			X			X			X
Anions by Kone (soil)	All	NDPs: 0 Tests: 4			X									X									X
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 4		X									X								X		
Asbestos Quantification - Full	All	NDPs: 0 Tests: 1																			X		
CEN Readings	All	NDPs: 0 Tests: 8		X			X			X			X					X			X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 19		X	X		X	X		X	X		X	X		X		X	X		X	X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 8		X			X			X			X					X			X		
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 8		X			X			X			X					X			X		
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 11			X			X			X			X			X			X			X
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 8		X			X			X			X					X			X		
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 11			X			X			X			X			X			X			X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 11				X			X			X			X		X			X			
GRO by GC-FID (W)	All	NDPs: 0 Tests: 8		X			X			X			X					X			X		

18660978	4G-C2-V		2.30 - 2.30	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S				X						X				X			X		
18661009	4G-C1-V		2.20 - 2.20	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S				X						X				X			X		
18660971	4G-C2		1.00 - 1.00	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S	X			X	X					X				X			X		
				1kg TUB	S		X				X		X		X	X	X			X				X
18661027	4G-C2		0.50 - 0.50	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S				X						X				X			X		
				1kg TUB	S		X						X		X	X	X			X				X
18661004	4G-C1		1.00 - 1.00	60g VOC (ALE215)	S																	X	

CERTIFICATE OF ANALYSIS

Validated

SDG: 181103-16	**Client Reference:**	**Report Number:** 481753	
Location: Llanwern	**Order Number:** LLA507	**Superseded Report:** 481519	

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18660967			18660982			18661014			18661019			18660990		18660995			18661004	
Customer Sample Reference			4G-B1			4G-B1			4G-B2			4G-B2			4G-B1-V		4G-C1			4G-C1	
AGS Reference																					
Depth (m)			0.20 - 0.20			0.70 - 0.70			0.70 - 0.70			1.30 - 1.30			1.90 - 1.90		0.40 - 0.40			1.00 - 1.00	
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Mercury Dissolved	All	NDPs: 0 Tests: 8	X			X			X			X					X			X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 11		X			X			X			X		X			X			X
PAH by GCMS	All	NDPs: 0 Tests: 11		X			X			X			X		X			X			X
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 8	X			X			X			X					X			X	
pH	All	NDPs: 0 Tests: 11		X			X			X			X		X			X			X
pH Value	All	NDPs: 0 Tests: 8	X			X			X			X					X			X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 11		X			X			X			X		X			X			X
Sample description	All	NDPs: 0 Tests: 11		X			X			X			X		X			X			X
Total Organic Carbon	All	NDPs: 0 Tests: 11		X			X			X			X		X			X			X
Total Sulphate	All	NDPs: 0 Tests: 4		X									X								X
Total Sulphur	All	NDPs: 0 Tests: 4		X									X								X
TPH CWG (W)	All	NDPs: 0 Tests: 8	X			X			X			X					X			X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 11		X			X			X			X		X			X			X
VOC MS (S)	All	NDPs: 0 Tests: 11			X			X			X			X		X			X		

17:17:34 19/11/2018

18660978	4G-C2-V		2.30 - 2.30	60g VOC (ALE215)	S														X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X				X	
18661009	4G-C1-V		2.20 - 2.20	60g VOC (ALE215)	S														X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X				X	
18660971	4G-C2		1.00 - 1.00	60g VOC (ALE215)	S														X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X	X	X		X	
				1kg TUB	S	X			X		X						X		
18661027	4G-C2		0.50 - 0.50	60g VOC (ALE215)	S														X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X				X	
				1kg TUB	S	X			X		X						X		
18661004	4G-C1		1.00 - 1.00	60g VOC (ALE215)	S														X

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
18660967	4G-B1	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	Crushed Brick
18660982	4G-B1	0.70 - 0.70	Dark Brown	Sandy Loam	Stones	N/A
18661014	4G-B2	0.70 - 0.70	Black	Sand	Stones	None
18661019	4G-B2	1.30 - 1.30	Light Brown	Loamy Sand	Stones	None
18660990	4G-B1-V	1.90 - 1.90	Dark Brown	Clay	None	None
18660995	4G-C1	0.40 - 0.40	Dark Brown	Sandy Loam	Glass & Stones	Crushed Brick
18661004	4G-C1	1.00 - 1.00	Dark Brown	Sandy Loam	Stones	N/A
18660971	4G-C2	1.00 - 1.00	Dark Brown	Sandy Loam	Stones	N/A
18661027	4G-C2	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	Concrete/Aggregate
18661009	4G-C1-V	2.20 - 2.20	Dark Brown	Clay	None	None
18660978	4G-C2-V	2.30 - 2.30	Grey	Clay	None	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	181103-16	**Client Reference:**		**Report Number:**	481753
Location:	Llanwern	**Order Number:**	LLA507	**Superseded Report:**	481519

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4G-B1	4G-B1	4G-B2	4G-B2	4G-B1-V	4G-C1
			Depth (m)	0.20 - 0.20	0.70 - 0.70	0.70 - 0.70	1.30 - 1.30	1.90 - 1.90	0.40 - 0.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	03/11/2018	03/11/2018	03/11/2018	03/11/2018	03/11/2018	03/11/2018
			SDG Ref	181103-16	181103-16	181103-16	181103-16	181103-16	181103-16
			Lab Sample No.(s)	18660967	18660982	18661014	18661019	18660990	18660995
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		10	8	7.4	9	33	7.3
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	19.9 M	<12 M	<12 M	720 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.0108 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.2			0.0558		
Sulphate, Total potential	<0.06 %	TM132		0.6			0.167		
Soil Organic Matter (SOM)	<0.35 %	TM132		4.43 #	19.8 #	14.3 #	<0.35 #	4.24 #	8.29 #
pH	1 pH Units	TM133		9.52 M	10.6 M	9.72 M	11.4 M	7.56 M	11.6 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	1.95 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		8.77 M	8.72 M	21.6 M	7.76 M	16.3 M	9.5 M
Cadmium	<0.02 mg/kg	TM181		0.372 M	<0.2 M	<0.2 M	<0.02 M	0.462 M	1.11 M
Chromium	<0.9 mg/kg	TM181		81.3 M	112 M	<9 M	<0.9 M	38.3 M	139 M
Copper	<1.4 mg/kg	TM181		25.9 M	18.9 M	15.7 M	3.21 M	18.9 M	17.7 M
Iron	<1000 mg/kg	TM181		59600 #	221000 #	339000 #	49700 #	38500 #	101000 #
Lead	<0.7 mg/kg	TM181		106 M	134 M	9.11 M	9.73 M	33.2 M	44.7 M
Manganese	<0.13 mg/kg	TM181		4370 M	9310 M	10200 M	467 M	428 M	12100 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<1.4 M	<1.4 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		24.4 M	44.9 M	31.1 M	6.59 M	31.2 M	30.1 M
Selenium	<1 mg/kg	TM181		<10 #	<10 #	<10 #	<1 #	<1 #	3.67 #
Vanadium	<0.2 mg/kg	TM181		89.2 #	137 #	128 #	17.9 #	62.7 #	142 #
Zinc	<1.9 mg/kg	TM181		435 M	221 M	68.5 M	25.9 M	139 M	202 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.26			0.0713		
Calcium	<21 mg/kg	TM224		147000			273000		
Magnesium	<8 mg/kg	TM224		27500			4540		
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.112 M			0.12 M		

Validated

CERTIFICATE OF ANALYSIS

SDG:	181103-16	**Client Reference:**		**Report Number:**	481753
Location:	Llanwern	**Order Number:**	LLA507	**Superseded Report:**	481519

Results Legend	
#	ISO17025 accredited.
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aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4G-C1	4G-C2	4G-C2	4G-C1-V	4G-C2-V
			Depth (m)	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	2.20 - 2.20	2.30 - 2.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00
			Date Received	03/11/2018	03/11/2018	03/11/2018	03/11/2018	03/11/2018
			SDG Ref	181103-16	181103-16	181103-16	181103-16	181103-16
			Lab Sample No.(s)	18661004	18661027	18660971	18661009	18660978
			AGS Reference					
Moisture Content Ratio (% of as received sample)	%	PM024		10	11	8.1	24	24
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	274 M	136 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		0.0111 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.208		0.115		
Sulphate, Total potential	<0.06 %	TM132		0.624		0.345		
Soil Organic Matter (SOM)	<0.35 %	TM132		28.1 #	4.48 #	<0.35 #	1.2 #	0.957 #
pH	1 pH Units	TM133		10.7 M	11.3 M	11.4 M	7.87 M	7.84 M
Cyanide, Total	<1 mg/kg	TM153		<2 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		<6 M	11.7 M	7.34 M	11.3 M	14.5 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	<0.02 M	<0.2 M	0.362 M	0.377 M
Chromium	<0.9 mg/kg	TM181		30.3 M	116 M	114 M	34.4 M	31.7 M
Copper	<1.4 mg/kg	TM181		16.4 M	15.6 M	<14 M	10.8 M	11.7 M
Iron	<1000 mg/kg	TM181		88200 #	90200 #	260000 #	40000 #	38700 #
Lead	<0.7 mg/kg	TM181		49.8 M	42.5 M	<7 M	27.7 M	23.9 M
Manganese	<0.13 mg/kg	TM181		3850 M	10700 M	13700 M	1310 M	1380 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<0.14 M	<1.4 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		39.5 M	14.6 M	27.6 M	41.1 M	36.9 M
Selenium	<1 mg/kg	TM181		<10 #	4.15 #	<10 #	<1 #	<1 #
Vanadium	<0.2 mg/kg	TM181		41.3 #	163 #	591 #	59.2 #	56 #
Zinc	<1.9 mg/kg	TM181		92.5 M	471 M	28.1 M	108 M	101 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.166		0.231		
Calcium	<21 mg/kg	TM224		97000		103000		
Magnesium	<8 mg/kg	TM224		18600		3890		
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.0411 M		0.0672 M		
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304		0.0074 #				
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304		<0.001 #				
Additional Asbestos Components (Using TM048)		TM304		Chrysotile #				
Analysts Comments		TM304		Loose fibres in soil				
Asbestos Quantification - Total - %	<0.001 %	TM304		0.0077 #				

Validated

CERTIFICATE OF ANALYSIS

SDG:	181103-16	**Client Reference:**		**Report Number:**	481753
Location:	Llanwern	**Order Number:**	LLA507	**Superseded Report:**	481519

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4G-B1	4G-B1	4G-B2	4G-B2	4G-B1-V	4G-C1
			Depth (m)	0.20 - 0.20	0.70 - 0.70	0.70 - 0.70	1.30 - 1.30	1.90 - 1.90	0.40 - 0.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	03/11/2018	03/11/2018	03/11/2018	03/11/2018	03/11/2018	03/11/2018
			SDG Ref	181103-16	181103-16	181103-16	181103-16	181103-16	181103-16
			Lab Sample No.(s)	18660967	18660982	18661014	18661019	18660990	18660995
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		91.2	94.5	94.3	91.1	94.6	88.3
Acenaphthene-d10 % recovery**	%	TM218		92.7	95.6	93.2	91.3	96.3	89.8
Phenanthrene-d10 % recovery**	%	TM218		99.7	100	95.8	92.9	102	99.4
Chrysene-d12 % recovery**	%	TM218		99.1	95.9	86.4	93.2	101	105
Perylene-d12 % recovery**	%	TM218		91.5	82.3	70.1	88.2	93.6	99.9
Naphthalene	<0.009 mg/kg	TM218		0.361 M	1.22 M	0.171 M	0.029 M	<0.009 M	0.469 M
Acenaphthylene	<0.012 mg/kg	TM218		0.816 M	0.589 M	0.0511 M	<0.012 M	<0.012 M	0.195 M
Acenaphthene	<0.008 mg/kg	TM218		0.0707 M	0.105 M	0.0108 M	<0.008 M	<0.008 M	0.0557 M
Fluorene	<0.01 mg/kg	TM218		1.04 M	0.381 M	0.0507 M	0.0128 M	<0.01 M	0.153 M
Phenanthrene	<0.015 mg/kg	TM218		6.03 M	3.91 M	0.557 M	0.0982 M	<0.015 M	1.34 M
Anthracene	<0.016 mg/kg	TM218		1.56 M	1.29 M	0.113 M	0.0259 M	<0.016 M	0.437 M
Fluoranthene	<0.017 mg/kg	TM218		6.24 M	7.21 M	0.668 M	0.133 M	<0.017 M	2.5 M
Pyrene	<0.015 mg/kg	TM218		4.16 M	5.65 M	0.511 M	0.101 M	<0.015 M	2.02 M
Benz(a)anthracene	<0.014 mg/kg	TM218		2.34 M	3.66 M	0.287 M	0.0587 M	<0.014 M	1.3 M
Chrysene	<0.01 mg/kg	TM218		1.81 M	3.45 M	0.278 M	0.0555 M	<0.01 M	1.22 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		2.39 M	5.11 M	0.328 M	0.0591 M	<0.015 M	1.11 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.817 M	2 M	0.104 M	0.0213 M	<0.014 M	0.569 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		1.86 M	3.79 M	0.216 M	0.0476 M	<0.015 M	1.1 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		1.38 M	2.95 M	0.175 M	0.0398 M	<0.018 M	0.697 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.301 M	0.7 M	0.0484 M	<0.023 M	<0.023 M	0.203 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		1.28 M	3.08 M	0.194 M	0.0392 M	<0.024 M	0.812 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		32.4	45.1	3.76	0.72	<0.118	14.2

Validated

CERTIFICATE OF ANALYSIS

SDG:	181103-16	**Client Reference:**		**Report Number:**	481753
Location:	Llanwern	**Order Number:**	LLA507	**Superseded Report:**	481519

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4G-C1	4G-C2	4G-C2	4G-C1-V	4G-C2-V
			Depth (m)	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	2.20 - 2.20	2.30 - 2.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00
			Date Received	03/11/2018	03/11/2018	03/11/2018	03/11/2018	03/11/2018
			SDG Ref	181103-16	181103-16	181103-16	181103-16	181103-16
			Lab Sample No.(s)	18661004	18661027	18660971	18661009	18660978
			AGS Reference					
Naphthalene-d8 % recovery**	%	TM218		88.8	87.5	87.8	95.1	86.8
Acenaphthene-d10 % recovery**	%	TM218		90.8	84.4	90.4	94.2	89.9
Phenanthrene-d10 % recovery**	%	TM218		97.7	95.4	97.6	98.6	95.3
Chrysene-d12 % recovery**	%	TM218		104	100	102	91.8	98.1
Perylene-d12 % recovery**	%	TM218		102	94.1	98.2	82.4	88.7
Naphthalene	<0.009 mg/kg	TM218		0.855 M	0.523 M	0.0501 M	<0.009 M	0.0167 M
Acenaphthylene	<0.012 mg/kg	TM218		0.488 M	0.297 M	0.0155 M	<0.012 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		0.148 M	<0.04 M	0.0202 M	<0.008 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		0.363 M	0.15 M	0.0161 M	<0.01 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		4.99 M	1.23 M	0.244 M	<0.015 M	<0.015 M
Anthracene	<0.016 mg/kg	TM218		1.32 M	0.345 M	0.064 M	<0.016 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		9.72 M	2.55 M	0.55 M	<0.017 M	<0.017 M
Pyrene	<0.015 mg/kg	TM218		7.88 M	2.33 M	0.599 M	<0.015 M	<0.015 M
Benz(a)anthracene	<0.014 mg/kg	TM218		5.81 M	1.47 M	0.408 M	<0.014 M	<0.014 M
Chrysene	<0.01 mg/kg	TM218		4.83 M	1.48 M	0.481 M	<0.01 M	<0.01 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		7.74 M	2.29 M	0.718 M	<0.015 M	<0.015 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		2.75 M	0.644 M	0.292 M	<0.014 M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		5.58 M	1.32 M	0.465 M	<0.015 M	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		3.73 M	0.817 M	0.296 M	<0.018 M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		1.26 M	0.244 M	0.077 M	<0.023 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		3.95 M	1.04 M	0.361 M	<0.024 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		61.4	16.7	4.66	<0.118	<0.118

Validated

CERTIFICATE OF ANALYSIS

SDG:	181103-16	**Client Reference:**		**Report Number:**	481753
Location:	Llanwern	**Order Number:**	LLA507	**Superseded Report:**	481519

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4G-B1	4G-B1	4G-B2	4G-B2	4G-B1-V	4G-C1
			Depth (m)	0.20 - 0.20	0.70 - 0.70	0.70 - 0.70	1.30 - 1.30	1.90 - 1.90	0.40 - 0.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	03/11/2018	03/11/2018	03/11/2018	03/11/2018	03/11/2018	03/11/2018
			SDG Ref	181103-16	181103-16	181103-16	181103-16	181103-16	181103-16
			Lab Sample No.(s)	18660967	18660982	18661014	18661019	18660990	18660995
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		87	32	86	101	99	57
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 M	0.267 #	<0.2 M	<0.2 M	<0.2 M	0.283 #
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02	0.0652	<0.02	<0.02	0.042	0.0755
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02	0.0576	<0.02	<0.02	0.0405	0.054
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02	0.0489	<0.02	<0.02	0.0405	0.0583
Aliphatics >C12-C16	<0.1 mg/kg	TM173		1.78	0.281	<0.1	4.97	<0.1	2.61
Aliphatics >C16-C21	<0.1 mg/kg	TM173		9.08	26	4.52	20.6	0.861	29.4
Aliphatics >C21-C35	<0.1 mg/kg	TM173		90.1	46.8	42.6	48.3	10.1	145
Aliphatics >C35-C44	<0.1 mg/kg	TM173		34.4	3.82	3.13	13.1	12.1	29.4
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		135	76.9	50.2	87	23	207
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02	0.038	<0.02	<0.02	0.027	0.0356
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02	0.0326	<0.02	<0.02	0.027	0.0388
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		3.14	12.1	0.928	0.795	<0.1	7.37
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		11.5	93.2	10.9	4.69	0.543	28.9
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		73.7	245	26.6	9.07	35.7	107
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		45.3	67.6	1.5	1.61	5.18	48.8
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		18.8	22	<0.1	0.533	1.58	19
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		134	418	40	16.2	41.4	192
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		269	495	90.2	103	64.6	399

Validated

CERTIFICATE OF ANALYSIS

SDG:	181103-16	**Client Reference:**		**Report Number:**	481753
Location:	Llanwern	**Order Number:**	LLA507	**Superseded Report:**	481519

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4G-C1	4G-C2	4G-C2	4G-C1-V	4G-C2-V
			Depth (m)	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	2.20 - 2.20	2.30 - 2.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00
			Date Received	03/11/2018	03/11/2018	03/11/2018	03/11/2018	03/11/2018
			SDG Ref	181103-16	181103-16	181103-16	181103-16	181103-16
			Lab Sample No.(s)	18661004	18661027	18660971	18661009	18660978
			AGS Reference					
GRO Surrogate % recovery**	%	TM089		113	77	87	108	106
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 M	<0.2 M	<0.2 M	<0.2 M	<0.2 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C12-C16	<0.1 mg/kg	TM173		8.85	4.2	<0.1	0.243	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		33.2	42.4	5.33	0.376	<0.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		131	167	43.1	2.8	<0.1
Aliphatics >C35-C44	<0.1 mg/kg	TM173		42.5	48.7	9.87	10.4	0.462
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		215	262	58.3	13.8	0.462
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		21.4	7.44	2.01	<0.1	0.363
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		103	54.1	8.83	<0.1	0.866
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		431	168	52.6	4.53	10.8
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		128	70.3	26.9	0.892	7.35
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		38.9	27.5	9.92	<0.1	3.43
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		683	300	90.3	5.43	19.4
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		899	562	149	19.2	19.8

Validated

CERTIFICATE OF ANALYSIS

SDG:	181103-16	**Client Reference:**		**Report Number:**	481753
Location:	Llanwern	**Order Number:**	LLA507	**Superseded Report:**	481519

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4G-B1	4G-B1	4G-B2	4G-B2	4G-B1-V	4G-C1
			Depth (m)	0.20 - 0.20	0.70 - 0.70	0.70 - 0.70	1.30 - 1.30	1.90 - 1.90	0.40 - 0.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	03/11/2018	03/11/2018	03/11/2018	03/11/2018	03/11/2018	03/11/2018
			SDG Ref	181103-16	181103-16	181103-16	181103-16	181103-16	181103-16
			Lab Sample No.(s)	18660967	18660982	18661014	18661019	18660990	18660995
			AGS Reference						
Dibromofluoromethane**	%	TM116		106	90.9	106	108	113	99.1
Toluene-d8**	%	TM116		96.4	89.9	96.2	101	96.6	92.9
4-Bromofluorobenzene**	%	TM116		96.1	70.2	85.1	102	94.6	82.5
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.2 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.18 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.14 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.08 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.2 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.2 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.26 M	<0.13 M	<0.13 M	<0.13 M	0.155 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.8	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181103-16	**Client Reference:**		**Report Number:**	481753
Location:	Llanwern	**Order Number:**	LLA507	**Superseded Report:**	481519

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4G-C1	4G-C2	4G-C2	4G-C1-V	4G-C2-V	
			Depth (m)	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	2.20 - 2.20	2.30 - 2.30	
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	
			Date Sampled	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018	
			Sample Time	00:00	00:00	00:00	00:00	00:00	
			Date Received	03/11/2018	03/11/2018	03/11/2018	03/11/2018	03/11/2018	
			SDG Ref	181103-16	181103-16	181103-16	181103-16	181103-16	
			Lab Sample No.(s)	18661004	18661027	18660971	18661009	18660978	
			AGS Reference						
Dibromofluoromethane**	%	TM116		101	106	106	108	118	
Toluene-d8**	%	TM116		96.6	101	99	102	95.9	
4-Bromofluorobenzene**	%	TM116		79.9	95	85.9	103	97.1	
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	

CERTIFICATE OF ANALYSIS

SDG:	181103-16	**Client Reference:**		**Report Number:**	481753
Location:	Llanwern	**Order Number:**	LLA507	**Superseded Report:**	481519

Asbestos Identification - Solid Samples

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4G-B1 0.20 - 0.20 SOLID 02/11/2018 00:00:00 03/11/2018 10:11:46 181103-16 18660967 TM048	14/11/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4G-B2 1.30 - 1.30 SOLID 02/11/2018 00:00:00 03/11/2018 09:29:42 181103-16 18661019 TM048	09/11/2018	Renata Bozhkov	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4G-C1 1.00 - 1.00 SOLID 02/11/2018 00:00:00 03/11/2018 10:48:02 181103-16 18661004 TM048	14/11/2018	Andrzej Ferfecki	loose fibres in soil	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4G-C2 1.00 - 1.00 SOLID 02/11/2018 00:00:00 03/11/2018 09:32:27 181103-16 18660971 TM048	09/11/2018	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	181103-16	**Client Reference:**		**Report Number:**	481753
Location:	Llanwern	**Order Number:**	LLA507	**Superseded Report:**	481519

Asbestos Quantification - Full

		Additional Asbestos Components (Using TM048)	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM Evaluation - %	Asbestos Quantification - Total - %
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4G-C1 1.00 - 1.00 SOLID 02/11/2018 00:00:00 03/11/2018 10:47:41 181103-16 18661004 TM304	Chrysotile (#)	Loose fibres in soil	0.0074 (#)	<0.001 (#)	0.0077 (#)

CERTIFICATE OF ANALYSIS

SDG:	181103-16	**Client Reference:**		**Report Number:**	481753
Location:	Llanwern	**Order Number:**	LLA507	**Superseded Report:**	481519

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	181103-16
Lab Sample Number(s)	18660967
Sampled Date	02-Nov-2018
Customer Sample Ref.	4G-B1
Depth (m)	0.20 - 0.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00521	<0.0005	0.0521	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00169	<0.0003	0.0169	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00196	<0.001	0.0196	<0.01	-	-	-
Vanadium	0.0739	<0.001	0.739	<0.01	-	-	-
Zinc	0.00167	<0.001	0.0167	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	07-Nov-2018
pH (pH Units)	9.57
Conductivity (µS/cm)	128.00
Temperature (°C)	19.00
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181103-16	**Client Reference:**		**Report Number:**	481753
Location:	Llanwern	**Order Number:**	LLA507	**Superseded Report:**	481519

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	181103-16
Lab Sample Number(s)	18660967
Sampled Date	02-Nov-2018
Customer Sample Ref.	4G-B1
Depth (m)	0.20 - 0.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	07-Nov-2018
pH (pH Units)	9.57
Conductivity (µS/cm)	128.00
Temperature (°C)	19.00
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181103-16	**Client Reference:**		**Report Number:**	481753
Location:	Llanwern	**Order Number:**	LLA507	**Superseded Report:**	481519

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.81
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.9
Particle Size <4mm	>95%		

Case	
SDG	181103-16
Lab Sample Number(s)	18660971
Sampled Date	02-Nov-2018
Customer Sample Ref.	4G-C2
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000101	<0.00001	0.000101	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000598	<0.0005	0.00598	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00238	<0.001	0.0238	<0.01	-	-	-
Copper	0.00228	<0.0003	0.0228	<0.003	-	-	-
Lead	0.000984	<0.0002	0.00984	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00145	<0.001	0.0145	<0.01	-	-	-
Vanadium	0.0758	<0.001	0.758	<0.01	-	-	-
Zinc	0.00373	<0.001	0.0373	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000905	<0.00001	0.000905	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000192	<0.000005	0.000192	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000713	<0.000005	0.0000713	<0.00005	-	-	-
Fluoranthene by GCMS	0.000146	<0.000005	0.00146	<0.00005	-	-	-
Anthracene by GCMS	0.0000131	<0.000005	0.000131	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000675	<0.000005	0.000675	<0.00005	-	-	-
Fluorene by GCMS	0.00000823	<0.000005	0.0000823	<0.00005	-	-	-
Chrysene by GCMS	0.0000199	<0.000005	0.000199	<0.00005	-	-	-
Pyrene by GCMS	0.000187	<0.000005	0.00187	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000105	<0.000005	0.000105	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000106	<0.000005	0.000106	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000528	<0.000005	0.0000528	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000532	<0.000002	0.0000532	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000591	<0.000082	0.00591	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	08-Nov-2018
pH (pH Units)	11.70
Conductivity (µS/cm)	836.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181103-16	**Client Reference:**		**Report Number:**	481753
Location:	Llanwern	**Order Number:**	LLA507	**Superseded Report:**	481519

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.81
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.9
Particle Size <4mm	>95%		

Case	
SDG	181103-16
Lab Sample Number(s)	18660971
Sampled Date	02-Nov-2018
Customer Sample Ref.	4G-C2
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	0.039	<0.01	0.39	<0.1	-	-	-
Total Aliphatics >C12-C35	0.039	<0.01	0.39	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.039	<0.01	0.39	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	0.039	<0.01	0.39	<0.1	-	-	-

Leach Test Information

Date Prepared	08-Nov-2018
pH (pH Units)	11.70
Conductivity (µS/cm)	836.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181103-16	**Client Reference:**		**Report Number:**	481753
Location:	Llanwern	**Order Number:**	LLA507	**Superseded Report:**	481519

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.7
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92
Particle Size <4mm	>95%		

Case	
SDG	181103-16
Lab Sample Number(s)	18660982
Sampled Date	02-Nov-2018
Customer Sample Ref.	4G-B1
Depth (m)	0.70 - 0.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	0.066	<0.05	0.66	<0.5	-	-	-
Arsenic	0.00188	<0.0005	0.0188	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00348	<0.001	0.0348	<0.01	-	-	-
Copper	0.00292	<0.0003	0.0292	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00126	<0.001	0.0126	<0.01	-	-	-
Vanadium	0.0654	<0.001	0.654	<0.01	-	-	-
Zinc	0.0083	<0.001	0.083	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.493	<0.019	4.93	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	07-Nov-2018
pH (pH Units)	10.68
Conductivity (µS/cm)	217.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181103-16	**Client Reference:**		**Report Number:**	481753
Location:	Llanwern	**Order Number:**	LLA507	**Superseded Report:**	481519

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.7
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92
Particle Size <4mm	>95%		

Case	
SDG	181103-16
Lab Sample Number(s)	18660982
Sampled Date	02-Nov-2018
Customer Sample Ref.	4G-B1
Depth (m)	0.70 - 0.70

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	07-Nov-2018
pH (pH Units)	10.68
Conductivity (µS/cm)	217.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181103-16	**Client Reference:**		**Report Number:**	481753
Location:	Llanwern	**Order Number:**	LLA507	**Superseded Report:**	481519

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.87
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.7
Particle Size <4mm	>95%		

Case	
SDG	181103-16
Lab Sample Number(s)	18660995
Sampled Date	02-Nov-2018
Customer Sample Ref.	4G-C1
Depth (m)	0.40 - 0.40

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000102	<0.00001	0.000102	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0016	<0.0005	0.016	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00285	<0.0003	0.0285	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00072	<0.0004	0.0072	<0.004	-	-	-
Selenium	0.00196	<0.001	0.0196	<0.01	-	-	-
Vanadium	0.0991	<0.001	0.991	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	07-Nov-2018
pH (pH Units)	10.96
Conductivity (µS/cm)	324.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181103-16	**Client Reference:**		**Report Number:**	481753
Location:	Llanwern	**Order Number:**	LLA507	**Superseded Report:**	481519

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.87
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.7
Particle Size <4mm	>95%		

Case	
SDG	181103-16
Lab Sample Number(s)	18660995
Sampled Date	02-Nov-2018
Customer Sample Ref.	4G-C1
Depth (m)	0.40 - 0.40

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	07-Nov-2018
pH (pH Units)	10.96
Conductivity (µS/cm)	324.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181103-16	**Client Reference:**		**Report Number:**	481753
Location:	Llanwern	**Order Number:**	LLA507	**Superseded Report:**	481519

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	181103-16
Lab Sample Number(s)	18661004
Sampled Date	02-Nov-2018
Customer Sample Ref.	4G-C1
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.648	<0.2	6.48	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00206	<0.0005	0.0206	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.000849	<0.0003	0.00849	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00199	<0.001	0.0199	<0.01	-	-	-
Vanadium	0.0689	<0.001	0.689	<0.01	-	-	-
Zinc	0.00339	<0.001	0.0339	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.241	<0.019	2.41	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	07-Nov-2018
pH (pH Units)	10.31
Conductivity (µS/cm)	144.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181103-16	**Client Reference:**		**Report Number:**	481753
Location:	Llanwern	**Order Number:**	LLA507	**Superseded Report:**	481519

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	181103-16
Lab Sample Number(s)	18661004
Sampled Date	02-Nov-2018
Customer Sample Ref.	4G-C1
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	07-Nov-2018
pH (pH Units)	10.31
Conductivity (µS/cm)	144.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181103-16	**Client Reference:**		**Report Number:**	481753
Location:	Llanwern	**Order Number:**	LLA507	**Superseded Report:**	481519

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	7.99
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.6
Particle Size <4mm	>95%		

Case	
SDG	181103-16
Lab Sample Number(s)	18661014
Sampled Date	02-Nov-2018
Customer Sample Ref.	4G-B2
Depth (m)	0.70 - 0.70

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.449	<0.2	4.49	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00618	<0.0005	0.0618	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00111	<0.0003	0.0111	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00109	<0.001	0.0109	<0.01	-	-	-
Vanadium	0.0235	<0.001	0.235	<0.01	-	-	-
Zinc	0.0025	<0.001	0.025	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000141	<0.00001	0.000141	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000848	<0.000005	0.000848	<0.00005	-	-	-
Anthracene by GCMS	0.00000996	<0.000005	0.0000996	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000487	<0.000005	0.000487	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	0.0000426	<0.000005	0.000426	<0.00005	-	-	-
Pyrene by GCMS	0.0000733	<0.000005	0.000733	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000259	<0.000005	0.000259	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000688	<0.000005	0.000688	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000311	<0.000005	0.000311	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000021	<0.000002	0.00021	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000322	<0.000005	0.000322	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000298	<0.000005	0.000298	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000482	<0.000082	0.00482	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	08-Nov-2018
pH (pH Units)	10.31
Conductivity (µS/cm)	113.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181103-16	**Client Reference:**		**Report Number:**	481753
Location:	Llanwern	**Order Number:**	LLA507	**Superseded Report:**	481519

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	7.99
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.6
Particle Size <4mm	>95%		

Case	
SDG	181103-16
Lab Sample Number(s)	18661014
Sampled Date	02-Nov-2018
Customer Sample Ref.	4G-B2
Depth (m)	0.70 - 0.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	08-Nov-2018
pH (pH Units)	10.31
Conductivity (µS/cm)	113.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181103-16	**Client Reference:**		**Report Number:**	481753
Location:	Llanwern	**Order Number:**	LLA507	**Superseded Report:**	481519

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.89
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91
Particle Size <4mm	>95%		

Case	
SDG	181103-16
Lab Sample Number(s)	18661019
Sampled Date	02-Nov-2018
Customer Sample Ref.	4G-B2
Depth (m)	1.30 - 1.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.596	<0.2	5.96	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000602	<0.0005	0.00602	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00158	<0.0003	0.0158	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000445	<0.0004	0.00445	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.02	<0.001	0.2	<0.01	-	-	-
Zinc	0.0027	<0.001	0.027	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000737	<0.00001	0.000737	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000217	<0.000005	0.000217	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000138	<0.000005	0.000138	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000518	<0.000005	0.000518	<0.00005	-	-	-
Anthracene by GCMS	0.0000146	<0.000005	0.000146	<0.00005	-	-	-
Phenanthrene by GCMS	0.000173	<0.000005	0.00173	<0.00005	-	-	-
Fluorene by GCMS	0.0000435	<0.000005	0.000435	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000331	<0.000005	0.000331	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000425	<0.000082	0.00425	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	08-Nov-2018
pH (pH Units)	11.33
Conductivity (µS/cm)	455.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181103-16	**Client Reference:**		**Report Number:**	481753
Location:	Llanwern	**Order Number:**	LLA507	**Superseded Report:**	481519

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.89
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91
Particle Size <4mm	>95%		

Case	
SDG	181103-16
Lab Sample Number(s)	18661019
Sampled Date	02-Nov-2018
Customer Sample Ref.	4G-B2
Depth (m)	1.30 - 1.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	08-Nov-2018
pH (pH Units)	11.33
Conductivity (µS/cm)	455.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181103-16	**Client Reference:**		**Report Number:**	481753
Location:	Llanwern	**Order Number:**	LLA507	**Superseded Report:**	481519

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181103-16
Lab Sample Number(s)	18661027
Sampled Date	02-Nov-2018
Customer Sample Ref.	4G-C2
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00197	<0.0005	0.0197	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0021	<0.001	0.021	<0.01	-	-	-
Copper	0.0065	<0.0003	0.065	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000785	<0.0004	0.00785	<0.004	-	-	-
Selenium	0.00239	<0.001	0.0239	<0.01	-	-	-
Vanadium	0.0641	<0.001	0.641	<0.01	-	-	-
Zinc	0.00451	<0.001	0.0451	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000922	<0.00001	0.000922	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000422	<0.000005	0.000422	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000663	<0.000005	0.000663	<0.00005	-	-	-
Fluoranthene by GCMS	0.000217	<0.000005	0.00217	<0.00005	-	-	-
Anthracene by GCMS	0.0000365	<0.000005	0.000365	<0.00005	-	-	-
Phenanthrene by GCMS	0.000168	<0.000005	0.00168	<0.00005	-	-	-
Fluorene by GCMS	0.0000626	<0.000005	0.000626	<0.00005	-	-	-
Chrysene by GCMS	0.0000254	<0.000005	0.000254	<0.00005	-	-	-
Pyrene by GCMS	0.000293	<0.000005	0.00293	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000227	<0.000005	0.000227	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000022	<0.000005	0.00022	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000088	<0.000005	0.000088	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000989	<0.000002	0.0000989	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00107	<0.000082	0.0107	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	08-Nov-2018
pH (pH Units)	11.18
Conductivity (µS/cm)	395.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181103-16	**Client Reference:**		**Report Number:**	481753
Location:	Llanwern	**Order Number:**	LLA507	**Superseded Report:**	481519

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181103-16
Lab Sample Number(s)	18661027
Sampled Date	02-Nov-2018
Customer Sample Ref.	4G-C2
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	08-Nov-2018
pH (pH Units)	11.18
Conductivity (µS/cm)	395.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

19/11/2018 17:17:50

17:17:34 19/11/2018

Table of Results - Appendix

Method No	Reference	Description
ASB_PREP		
PM001		Preparation of Samples for Metals Analysis
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM243		Mixed Anions In Soils By Kone
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	181103-16	**Client Reference:**		**Report Number:**	481753
Location:	Llanwern	**Order Number:**	LLA507	**Superseded Report:**	481519

Test Completion Dates

Lab Sample No(s)	18660967	18660982	18661014	18661019	18660990	18660995	18661004	18660971	18661027	18661009
Customer Sample Ref.	4G-B1	4G-B1	4G-B2	4G-B2	4G-B1-V	4G-C1	4G-C1	4G-C2	4G-C2	4G-C1-V
AGS Ref.										
Depth	0.20 - 0.20	0.70 - 0.70	0.70 - 0.70	1.30 - 1.30	1.90 - 1.90	0.40 - 0.40	1.00 - 1.00	1.00 - 1.00	0.50 - 0.50	2.20 - 2.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	16-Nov-2018			16-Nov-2018			14-Nov-2018	16-Nov-2018		
Ammoniacal Nitrogen	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018		15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	
Ammonium Soil by Titration	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018
Anions by Kone (soil)	09-Nov-2018			09-Nov-2018			15-Nov-2018	09-Nov-2018		
Asbestos ID in Solid Samples	14-Nov-2018			09-Nov-2018			14-Nov-2018	09-Nov-2018		
Asbestos Quantification - Full							16-Nov-2018			
CEN 10:1 Leachate (1 Stage)	07-Nov-2018	07-Nov-2018	08-Nov-2018	08-Nov-2018		07-Nov-2018	07-Nov-2018	08-Nov-2018	08-Nov-2018	
CEN Readings	09-Nov-2018	09-Nov-2018	10-Nov-2018	10-Nov-2018		09-Nov-2018	09-Nov-2018	10-Nov-2018	10-Nov-2018	
Cyanide Comp/Free/Total/Thiocyanate	16-Nov-2018	16-Nov-2018	15-Nov-2018	15-Nov-2018	16-Nov-2018	15-Nov-2018	19-Nov-2018	16-Nov-2018	16-Nov-2018	15-Nov-2018
Dissolved Metals by ICP-MS	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018		15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	
EPH CWG (Aliphatic) Aqueous GC (W)	12-Nov-2018	12-Nov-2018	14-Nov-2018	14-Nov-2018		12-Nov-2018	12-Nov-2018	14-Nov-2018	14-Nov-2018	
EPH CWG (Aliphatic) GC (S)	09-Nov-2018	08-Nov-2018	08-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	08-Nov-2018	16-Nov-2018	16-Nov-2018
EPH CWG (Aromatic) Aqueous GC (W)	12-Nov-2018	12-Nov-2018	14-Nov-2018	14-Nov-2018		12-Nov-2018	12-Nov-2018	14-Nov-2018	14-Nov-2018	
EPH CWG (Aromatic) GC (S)	09-Nov-2018	08-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018
GRO by GC-FID (S)	10-Nov-2018	13-Nov-2018	10-Nov-2018	09-Nov-2018	10-Nov-2018	13-Nov-2018	12-Nov-2018	12-Nov-2018	09-Nov-2018	12-Nov-2018
GRO by GC-FID (W)	12-Nov-2018	12-Nov-2018	12-Nov-2018	13-Nov-2018		12-Nov-2018	12-Nov-2018	13-Nov-2018	12-Nov-2018	
Mercury Dissolved	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018		16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	
Metals in solid samples by OES	13-Nov-2018	19-Nov-2018	19-Nov-2018	13-Nov-2018	16-Nov-2018	19-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	16-Nov-2018
PAH by GCMS	09-Nov-2018	08-Nov-2018	08-Nov-2018	16-Nov-2018	08-Nov-2018	09-Nov-2018	08-Nov-2018	08-Nov-2018	08-Nov-2018	08-Nov-2018
PAH Spec MS - Aqueous (W)	09-Nov-2018	09-Nov-2018	14-Nov-2018	14-Nov-2018		09-Nov-2018	09-Nov-2018	14-Nov-2018	14-Nov-2018	
pH	14-Nov-2018	14-Nov-2018	13-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	15-Nov-2018	14-Nov-2018
pH Value	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018		14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	
Phenols by HPLC (S)	12-Nov-2018	13-Nov-2018	13-Nov-2018	12-Nov-2018	13-Nov-2018	13-Nov-2018	12-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018
Sample description	03-Nov-2018	03-Nov-2018	03-Nov-2018	03-Nov-2018	03-Nov-2018	03-Nov-2018	03-Nov-2018	03-Nov-2018	03-Nov-2018	03-Nov-2018
Total Organic Carbon	16-Nov-2018	15-Nov-2018	16-Nov-2018	16-Nov-2018	15-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	15-Nov-2018
Total Sulphate	13-Nov-2018			12-Nov-2018			13-Nov-2018	14-Nov-2018		
Total Sulphur	14-Nov-2018			13-Nov-2018			07-Nov-2018	13-Nov-2018		
TPH CWG (W)	12-Nov-2018	12-Nov-2018	14-Nov-2018	14-Nov-2018		12-Nov-2018	12-Nov-2018	14-Nov-2018	14-Nov-2018	
TPH CWG GC (S)	10-Nov-2018	13-Nov-2018	10-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	12-Nov-2018	16-Nov-2018	16-Nov-2018
VOC MS (S)	12-Nov-2018	14-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	14-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018

Lab Sample No(s)	18660978
Customer Sample Ref.	4G-C2-V
AGS Ref.	
Depth	2.30 - 2.30
Type	Soil/Solid (S)
Ammonium Soil by Titration	16-Nov-2018
Cyanide Comp/Free/Total/Thiocyanate	16-Nov-2018
EPH CWG (Aliphatic) GC (S)	16-Nov-2018
EPH CWG (Aromatic) GC (S)	09-Nov-2018
GRO by GC-FID (S)	10-Nov-2018
Metals in solid samples by OES	16-Nov-2018
PAH by GCMS	09-Nov-2018
pH	14-Nov-2018
Phenols by HPLC (S)	12-Nov-2018
Sample description	03-Nov-2018
Total Organic Carbon	16-Nov-2018
TPH CWG GC (S)	16-Nov-2018
VOC MS (S)	12-Nov-2018

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP - No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals - total metals must be requested separately.

11. Results relate only to the items tested.

12. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** - Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

24. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Holding time exceeded before sample received**
5	**Samples exceeded holding time before presevation was performed**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to sampled on date**
&	**Sample Holding Time exceeded - Late arrival of instructions.**

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Atkins Global Ltd
Project Jonah site office
Llan Coed House
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Coed Darcy
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SA10 6HJ

Attention: John Fitzgerald

CERTIFICATE OF ANALYSIS

Date:	20 November 2018
Customer:	H_ATKINS_LDC
Sample Delivery Group (SDG):	181106-25
Your Reference:	
Location:	Llanwern
Report No:	481875

We received 20 samples on Tuesday November 06, 2018 and 20 of these samples were scheduled for analysis which was completed on Tuesday November 20, 2018. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

Approved By:



Sonia McWhan

Operations Manager

ALS Life Sciences Limited. Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291.

CERTIFICATE OF ANALYSIS

SDG:	181106-25	**Client Reference:**		**Report Number:**	481875
Location:	Llanwern	**Order Number:**	LLA508	**Superseded Report:**	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
18673542	4G-A6		0.50 - 0.50	05/11/2018
18673546	4G-A6		0.70 - 0.70	05/11/2018
18673558	4G-A6-V		2.80 - 2.80	05/11/2018
18673562	4G-B3		0.50 - 0.50	05/11/2018
18673517	4G-B4		0.30 - 0.30	05/11/2018
18673521	4G-B4		0.60 - 0.60	05/11/2018
18673497	4G-B5		0.50 - 0.50	05/11/2018
18673509	4G-B5		1.00 - 1.00	05/11/2018
18673527	4G-B6		0.50 - 0.50	05/11/2018
18673532	4G-B6		0.90 - 0.90	05/11/2018
18673513	4G-B5-V		2.10 - 2.10	05/11/2018
18673538	4G-B6-V		1.80 - 1.80	05/11/2018
18673492	4G-C3		0.50 - 0.50	05/11/2018
18673554	4G-C3		1.00 - 1.00	05/11/2018
18673566	4G-C4		0.30 - 0.30	05/11/2018
18673570	4G-C4		0.80 - 0.80	05/11/2018
18673578	4G-C5		0.70 - 0.70	05/11/2018
18673584	4G-C5		1.20 - 1.20	05/11/2018
18673574	4G-C4-V		2.10 - 2.10	05/11/2018
18673593	4G-C5-V		1.90 - 1.90	05/11/2018

Maximum Sample/Coolbox Temperature (°C) : **10.0**

ISO5667-3 Water quality - Sampling - Part3 -

During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	181106-25	**Client Reference:**		**Report Number:**	481875
Location:	Llanwern	**Order Number:**	LLA508	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)																	
			18673542			18673546			18673558		18673562			18673517			18673521			18673497	
			Customer Sample Reference																	
			4G-A6			4G-A6			4G-A6-V		4G-B3			4G-B4			4G-B4			4G-B5	
			AGS Reference																	
			Depth (m)																	
			0.50 - 0.50			0.70 - 0.70			2.80 - 2.80		0.50 - 0.50			0.30 - 0.30			0.60 - 0.60			0.50 - 0.50	
			Container																	
			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
			Sample Type																	
			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 8					X					X			X						
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 15	X			X					X			X			X			X	
Ammonium Soil by Titration	All	NDPs: 0 Tests: 20		X			X		X			X			X			X			X
Anions by Kone (soil)	All	NDPs: 0 Tests: 8					X					X			X						
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 8				X					X			X							
Asbestos Quantification - Full	All	NDPs: 0 Tests: 3									X			X							
CEN Readings	All	NDPs: 0 Tests: 15	X			X					X			X			X			X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 35	X	X		X	X		X		X	X		X	X		X	X		X	X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 15	X			X					X			X			X			X	
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 15	X			X					X			X			X			X	
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 20		X			X		X			X			X			X			X
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 15	X			X					X			X			X			X	
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 20		X			X		X			X			X			X			X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 20			X			X		X			X			X			X		
GRO by GC-FID (W)	All	NDPs: 0 Tests: 15	X			X					X			X			X			X	

18673566	4G-C4		0.30 - 0.30	1kg TUB	S			x						x		x		x			x				x
18673554	4G-C3		1.00 - 1.00	60g VOC (ALE215)	S																			x	
				250g Amber Jar (ALE210)	S					x						x					x			x		
				1kg TUB	S			x						x		x		x			x				x
18673492	4G-C3		0.50 - 0.50	60g VOC (ALE215)	S																			x	
				250g Amber Jar (ALE210)	S		x			x		x				x					x			x		
				1kg TUB	S			x						x		x		x			x				x
18673538	4G-B6-V		1.80 - 1.80	60g VOC (ALE215)	S																			x	
				250g Amber Jar (ALE210)	S					x						x					x			x		
18673513	4G-B5-V		2.10 - 2.10	60g VOC (ALE215)	S																			x	
				250g Amber Jar (ALE210)	S					x						x					x			x		
18673532	4G-B6		0.90 - 0.90	60g VOC (ALE215)	S																			x	
				250g Amber Jar (ALE210)	S		x			x		x				x					x			x		
				1kg TUB	S			x				x		x		x		x			x				x
18673527	4G-B6		0.50 - 0.50	60g VOC (ALE215)	S																			x	
				250g Amber Jar (ALE210)	S					x						x					x			x		
				1kg TUB	S			x						x		x		x			x				x
18673509	4G-B5		1.00 - 1.00	60g VOC (ALE215)	S																			x	
				250g Amber Jar (ALE210)	S		x			x		x				x					x			x		
				1kg TUB	S			x				x		x		x		x			x				x
18673497	4G-B5		0.50 - 0.50	60g VOC (ALE215)	S																			x	

Validated

CERTIFICATE OF ANALYSIS

SDG:	181106-25	**Client Reference:**		**Report Number:**	481875
Location:	Llanwern	**Order Number:**	LLA508	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18673542			18673546			18673558		18673562			18673517			18673521			18673497
Customer Sample Reference			4G-A6			4G-A6			4G-A6-V		4G-B3			4G-B4			4G-B4			4G-B5
AGS Reference																				
Depth (m)			0.50 - 0.50			0.70 - 0.70			2.80 - 2.80		0.50 - 0.50			0.30 - 0.30			0.60 - 0.60			0.50 - 0.50
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Mercury Dissolved	All	NDPs: 0 Tests: 15	X			X					X			X			X			X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 20		X			X		X			X			X			X			X
PAH by GCMS	All	NDPs: 0 Tests: 20		X			X		X			X			X			X			X
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 15	X			X					X			X			X			X	
pH	All	NDPs: 0 Tests: 20		X			X		X			X			X			X			X
pH Value	All	NDPs: 0 Tests: 15	X			X					X			X			X			X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 20		X			X		X			X			X			X			X
Sample description	All	NDPs: 0 Tests: 20		X			X		X			X			X			X			X
Total Organic Carbon	All	NDPs: 0 Tests: 20		X			X		X			X			X			X			X
Total Sulphate	All	NDPs: 0 Tests: 8					X					X			X						
Total Sulphur	All	NDPs: 0 Tests: 8					X					X			X						
TPH CWG (W)	All	NDPs: 0 Tests: 15	X			X					X			X			X			X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 20		X			X		X			X			X			X			X
VOC MS (S)	All	NDPs: 0 Tests: 20			X			X		X			X			X			X		

18673566	4G-C4		0.30 - 0.30	1kg TUB	S	X			X		X						X		
18673554	4G-C3		1.00 - 1.00	60g VOC (ALE215)	S														X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X				X	
				1kg TUB	S	X			X		X						X		
18673492	4G-C3		0.50 - 0.50	60g VOC (ALE215)	S														X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X	X	X		X	
				1kg TUB	S	X			X		X						X		
18673538	4G-B6-V		1.80 - 1.80	60g VOC (ALE215)	S														X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X				X	
18673513	4G-B5-V		2.10 - 2.10	60g VOC (ALE215)	S														X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X				X	
18673532	4G-B6		0.90 - 0.90	60g VOC (ALE215)	S														X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X	X	X		X	
				1kg TUB	S	X			X		X						X		
18673527	4G-B6		0.50 - 0.50	60g VOC (ALE215)	S														X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X				X	
				1kg TUB	S	X			X		X						X		
18673509	4G-B5		1.00 - 1.00	60g VOC (ALE215)	S														X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X	X	X		X	
				1kg TUB	S	X			X		X						X		
18673497	4G-B5		0.50 - 0.50	60g VOC (ALE215)	S														X

Validated

CERTIFICATE OF ANALYSIS

SDG:	181106-25	**Client Reference:**		**Report Number:**	481875
Location:	Llanwern	**Order Number:**	LLA508	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18673566		18673570			18673578			18673584			18673574		18673593	
Customer Sample Reference			4G-C4		4G-C4			4G-C5			4G-C5			4G-C4-V		4G-C5-V	
AGS Reference																	
Depth (m)			0.30 - 0.30		0.80 - 0.80			0.70 - 0.70			1.20 - 1.20			2.10 - 2.10		1.90 - 1.90	
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 8				X						X					
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 15			X			X			X						
Ammonium Soil by Titration	All	NDPs: 0 Tests: 20	X			X			X			X		X		X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 8				X						X					
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 8			X						X						
Asbestos Quantification - Full	All	NDPs: 0 Tests: 3									X						
CEN Readings	All	NDPs: 0 Tests: 15			X			X			X						
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 35	X		X	X		X	X		X	X		X		X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 15			X			X			X						
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 15			X			X			X						
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 20	X			X			X			X		X		X	
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 15			X			X			X						
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 20	X			X			X			X		X		X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 20		X			X			X			X		X		X
GRO by GC-FID (W)	All	NDPs: 0 Tests: 15			X			X			X						

Validated

CERTIFICATE OF ANALYSIS

SDG:	181106-25	**Client Reference:**		**Report Number:**	481875
Location:	Llanwern	**Order Number:**	LLA508	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18673566		18673570			18673578			18673584			18673574		18673593	
Customer Sample Reference			4G-C4		4G-C4			4G-C5			4G-C5			4G-C4-V		4G-C5-V	
AGS Reference																	
Depth (m)			0.30 - 0.30		0.80 - 0.80			0.70 - 0.70			1.20 - 1.20			2.10 - 2.10		1.90 - 1.90	
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Mercury Dissolved	All	NDPs: 0 Tests: 15			X			X			X						
Metals in solid samples by OES	All	NDPs: 0 Tests: 20	X			X			X			X		X		X	
PAH by GCMS	All	NDPs: 0 Tests: 20	X			X			X			X		X		X	
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 15			X			X			X						
pH	All	NDPs: 0 Tests: 20	X			X			X			X		X		X	
pH Value	All	NDPs: 0 Tests: 15			X			X			X						
Phenols by HPLC (S)	All	NDPs: 0 Tests: 20	X			X			X			X		X		X	
Sample description	All	NDPs: 0 Tests: 20	X			X			X			X		X		X	
Total Organic Carbon	All	NDPs: 0 Tests: 20	X			X			X			X		X		X	
Total Sulphate	All	NDPs: 0 Tests: 8				X						X					
Total Sulphur	All	NDPs: 0 Tests: 8				X						X					
TPH CWG (W)	All	NDPs: 0 Tests: 15			X			X			X						
TPH CWG GC (S)	All	NDPs: 0 Tests: 20	X			X			X			X		X		X	
VOC MS (S)	All	NDPs: 0 Tests: 20		X			X			X			X		X		X

CERTIFICATE OF ANALYSIS

SDG:	181106-25	**Client Reference:**		**Report Number:**	481875
Location:	Llanwern	**Order Number:**	LLA508	**Superseded Report:**	

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
18673542	4G-A6	0.50 - 0.50	Dark Brown	Sand	Stones	None
18673546	4G-A6	0.70 - 0.70	Dark Brown	Sandy Clay	Stones	None
18673558	4G-A6-V	2.80 - 2.80	Dark Brown	Loamy Sand	Vegetation	None
18673562	4G-B3	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
18673517	4G-B4	0.30 - 0.30	Dark Brown	Loamy Sand	Stones	Vegetation
18673521	4G-B4	0.60 - 0.60	Dark Brown	Loamy Sand	Stones	Vegetation
18673497	4G-B5	0.50 - 0.50	Dark Brown	Sand	Stones	Vegetation
18673509	4G-B5	1.00 - 1.00	Dark Brown	Loamy Sand	Stones	None
18673527	4G-B6	0.50 - 0.50	Dark Brown	Sandy Loam	Vegetation	Stones
18673532	4G-B6	0.90 - 0.90	Dark Brown	Sandy Loam	Vegetation	Stones
18673513	4G-B5-V	2.10 - 2.10	Dark Brown	Silty Clay	None	None
18673538	4G-B6-V	1.80 - 1.80	Dark Brown	Sandy Loam	Vegetation	Stones
18673492	4G-C3	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
18673554	4G-C3	1.00 - 1.00	Dark Brown	Loamy Sand	Stones	Vegetation
18673566	4G-C4	0.30 - 0.30	Black	Loamy Sand	Stones	Vegetation
18673570	4G-C4	0.80 - 0.80	Dark Brown	Sandy Loam	Stones	Vegetation
18673578	4G-C5	0.70 - 0.70	Black	Sand	Stones	None
18673584	4G-C5	1.20 - 1.20	Dark Brown	Loamy Sand	Stones	Vegetation
18673574	4G-C4-V	2.10 - 2.10	Black	Sandy Clay	Stones	Vegetation
18673593	4G-C5-V	1.90 - 1.90	Dark Brown	Sandy Loam	Vegetation	Stones

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	181106-25	**Client Reference:**		**Report Number:**	481875
Location:	Llanwern	**Order Number:**	LLA508	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4G-A6	4G-A6	4G-A6-V	4G-B3	4G-B4	4G-B4
			Depth (m)	0.50 - 0.50	0.70 - 0.70	2.80 - 2.80	0.50 - 0.50	0.30 - 0.30	0.60 - 0.60
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/11/2018	05/11/2018	05/11/2018	05/11/2018	05/11/2018	05/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	06/11/2018	06/11/2018	06/11/2018	06/11/2018	06/11/2018	06/11/2018
			SDG Ref	181106-25	181106-25	181106-25	181106-25	181106-25	181106-25
			Lab Sample No.(s)	18673542	18673546	18673558	18673562	18673517	18673521
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		14	14	72	7.7	8.6	6.9
Exchangeable Ammonia as N	<12 mg/kg	TM024		22.7 M	<12 M	97.3 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132			0.208		0.31	0.414	
Sulphate, Total potential	<0.06 %	TM132			0.624		0.93	1.24	
Soil Organic Matter (SOM)	<0.35 %	TM132		5.69 #	3.22 #	59.8 #	<0.35 #	0.378 #	3.65 #
pH	1 pH Units	TM133		11.9 M	11.6 M	6.85 M	11 M	10.9 M	9.26 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		13.8 M	<6 M	10.2 M	8.77 M	8.77 M	27.1 M
Cadmium	<0.02 mg/kg	TM181		1.19 M	<0.2 M	0.222 M	<0.2 M	<0.02 M	1.15 M
Chromium	<0.9 mg/kg	TM181		240 M	533 M	3.2 M	22.5 M	56.3 M	6.54 M
Copper	<1.4 mg/kg	TM181		32.3 M	15.9 M	15.6 M	17.6 M	10.9 M	31.3 M
Iron	<1000 mg/kg	TM181		165000 #	159000 #	13200 #	131000 #	53600 #	105000 #
Lead	<0.7 mg/kg	TM181		30.1 M	14.3 M	4.61 M	46.4 M	59.6 M	39.1 M
Manganese	<0.13 mg/kg	TM181		23700 M	30100 M	292 M	3380 M	67.6 M	3760 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<1.4 M	<0.14 M	<1.4 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		22.3 M	12.7 M	9.29 M	26.7 M	10.9 M	26.5 M
Selenium	<1 mg/kg	TM181		6.38 #	15.5 #	1.55 #	<10 #	3.23 #	<1 #
Vanadium	<0.2 mg/kg	TM181		430 #	985 #	10.5 #	64.8 #	90.7 #	43 #
Zinc	<1.9 mg/kg	TM181		99.3 M	50.6 M	47.1 M	200 M	233 M	130 M
Sulphate, acid soluble (total)	<0.02 %	TM221			0.316		0.381	1.59	
Calcium	<21 mg/kg	TM224			157000		131000	83100	
Magnesium	<8 mg/kg	TM224			8180		7540	12700	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243			0.0858 M		0.169 M	0.172 M	
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304					<0.001 #	0.0047 #	
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304					<0.001 #	<0.001 #	
Additional Asbestos Components (Using TM048)		TM304					None #	None #	
Analysts Comments		TM304					N/A	N/A	
Asbestos Quantification - Total - %	<0.001 %	TM304					<0.001 #	0.0047 #	

Validated

CERTIFICATE OF ANALYSIS

SDG:	181106-25	**Client Reference:**		**Report Number:**	481875
Location:	Llanwern	**Order Number:**	LLA508	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4G-B5	4G-B5	4G-B6	4G-B6	4G-B5-V	4G-B6-V
			Depth (m)	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	0.90 - 0.90	2.10 - 2.10	1.80 - 1.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/11/2018	05/11/2018	05/11/2018	05/11/2018	05/11/2018	05/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	06/11/2018	06/11/2018	06/11/2018	06/11/2018	06/11/2018	06/11/2018
			SDG Ref	181106-25	181106-25	181106-25	181106-25	181106-25	181106-25
			Lab Sample No.(s)	18673497	18673509	18673527	18673532	18673513	18673538
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		7.7	7.1	9.7	9.4	21	24
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	15.6 M	<12 M	<12 M	200 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0323 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132			0.177		0.667		
Sulphate, Total potential	<0.06 %	TM132			0.531		2		
Soil Organic Matter (SOM)	<0.35 %	TM132		9.03 #	1.08 #	6.47 #	4.26 #	0.926 #	1.86 #
pH	1 pH Units	TM133		8.81 M	12.3 M	10.5 M	11.9 M	8.16 M	7.58 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		8.81 M	<6 M	10.7 M	<6 M	141 M	11.8 M
Cadmium	<0.02 mg/kg	TM181		0.245 M	<0.2 M	0.932 M	<0.2 M	0.408 M	0.317 M
Chromium	<0.9 mg/kg	TM181		21.7 M	763 M	79.1 M	421 M	26.9 M	38.6 M
Copper	<1.4 mg/kg	TM181		26.5 M	28.3 M	23 M	16.1 M	66 M	11.5 M
Iron	<1000 mg/kg	TM181		25000 #	207000 #	58700 #	115000 #	31500 #	33400 #
Lead	<0.7 mg/kg	TM181		25.2 M	19.4 M	54.8 M	18.3 M	29.4 M	28 M
Manganese	<0.13 mg/kg	TM181		1110 M	4310 M	6010 M	2070 M	1050 M	688 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<1.4 M	<0.14 M	<1.4 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		24.5 M	12 M	17.5 M	12.2 M	33 M	36.1 M
Selenium	<1 mg/kg	TM181		<1 #	24.3 #	2.33 #	12 #	<1 #	<1 #
Vanadium	<0.2 mg/kg	TM181		40.4 #	702 #	113 #	286 #	48.4 #	62.5 #
Zinc	<1.9 mg/kg	TM181		45.1 M	51.8 M	332 M	75.2 M	130 M	97.7 M
Sulphate, acid soluble (total)	<0.02 %	TM221			0.454		1.2		
Calcium	<21 mg/kg	TM224			168000		190000		
Magnesium	<8 mg/kg	TM224			23000		11600		
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243			0.041 M		0.177 M		

Validated

CERTIFICATE OF ANALYSIS

SDG:	181106-25	**Client Reference:**		**Report Number:**	481875
Location:	Llanwern	**Order Number:**	LLA508	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4G-C3	4G-C3	4G-C4	4G-C4	4G-C5	4G-C5
			Depth (m)	0.50 - 0.50	1.00 - 1.00	0.30 - 0.30	0.80 - 0.80	0.70 - 0.70	1.20 - 1.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/11/2018	05/11/2018	05/11/2018	05/11/2018	05/11/2018	05/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	06/11/2018	06/11/2018	06/11/2018	06/11/2018	06/11/2018	06/11/2018
			SDG Ref	181106-25	181106-25	181106-25	181106-25	181106-25	181106-25
			Lab Sample No.(s)	18673492	18673554	18673566	18673570	18673578	18673584
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		7.7	9.5	16	11	13	11
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	20.3 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0108 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		0.0217 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.233			0.26		0.291
Sulphate, Total potential	<0.06 %	TM132		0.699			0.78		0.873
Soil Organic Matter (SOM)	<0.35 %	TM132		1.81 #	3.83 #	10.1 #	1.31 #	34.1 #	12.6 #
pH	1 pH Units	TM133		10.9 M	11.3 M	11.3 M	11.2 M	11.4 M	12 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	1.27 M	1.02 M	1.64 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		11.6 M	9.95 M	9.69 M	9.25 M	10.9 M	6.62 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	0.775 M	0.702 M	<0.02 M	<0.02 M	0.0249 M
Chromium	<0.9 mg/kg	TM181		256 M	99.4 M	104 M	12.6 M	14.4 M	25.6 M
Copper	<1.4 mg/kg	TM181		21.6 M	22 M	32.8 M	14.1 M	20 M	8.24 M
Iron	<1000 mg/kg	TM181		91600 #	49500 #	49100 #	48100 #	35600 #	17200 #
Lead	<0.7 mg/kg	TM181		40.1 M	41.4 M	54.6 M	27.4 M	38.1 M	21.6 M
Manganese	<0.13 mg/kg	TM181		1230 M	9570 M	10300 M	2020 M	2070 M	2930 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<0.14 M	0.268 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		12.2 M	11.5 M	24.7 M	17.6 M	13.4 M	7.55 M
Selenium	<1 mg/kg	TM181		<10 #	3.69 #	3.92 #	<1 #	1.5 #	2.04 #
Vanadium	<0.2 mg/kg	TM181		226 #	124 #	170 #	33.5 #	38.7 #	52.4 #
Zinc	<1.9 mg/kg	TM181		202 M	338 M	165 M	145 M	173 M	46.7 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.427			0.812		1.37
Calcium	<21 mg/kg	TM224		187000			121000		212000
Magnesium	<8 mg/kg	TM224		9200			30400		8010
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.204 M			0.261 M		0.215 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304							<0.001 #
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304							<0.001 #
Additional Asbestos Components (Using TM048)		TM304							None #
Analysts Comments		TM304							N/C
Asbestos Quantification - Total - %	<0.001 %	TM304							<0.001 #

Validated

CERTIFICATE OF ANALYSIS

SDG:	181106-25	**Client Reference:**		**Report Number:**	481875
Location:	Llanwern	**Order Number:**	LLA508	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4G-C4-V	4G-C5-V				
			Depth (m)	2.10 - 2.10	1.90 - 1.90				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	05/11/2018	05/11/2018				
			Sample Time	00:00	00:00				
			Date Received	06/11/2018	06/11/2018				
			SDG Ref	181106-25	181106-25				
			Lab Sample No.(s)	18673574	18673593				
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		24	23				
Exchangeable Ammonia as N	<12 mg/kg	TM024		134 M	79.3 M				
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M				
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M				
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M				
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M				
Soil Organic Matter (SOM)	<0.35 %	TM132		4.5 #	1.3 #				
pH	1 pH Units	TM133		7 M	8.12 M				
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M				
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M				
Arsenic	<0.6 mg/kg	TM181		10.8 M	13.4 M				
Cadmium	<0.02 mg/kg	TM181		0.409 M	0.363 M				
Chromium	<0.9 mg/kg	TM181		40.1 M	33.2 M				
Copper	<1.4 mg/kg	TM181		24.8 M	11.4 M				
Iron	<1000 mg/kg	TM181		29900 #	34400 #				
Lead	<0.7 mg/kg	TM181		27 M	23.8 M				
Manganese	<0.13 mg/kg	TM181		535 M	1270 M				
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M				
Nickel	<0.2 mg/kg	TM181		37.8 M	35.8 M				
Selenium	<1 mg/kg	TM181		<1 #	<1 #				
Vanadium	<0.2 mg/kg	TM181		63.4 #	58.7 #				
Zinc	<1.9 mg/kg	TM181		119 M	103 M				

Validated

CERTIFICATE OF ANALYSIS

SDG:	181106-25	**Client Reference:**		**Report Number:**	481875
Location:	Llanwern	**Order Number:**	LLA508	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4G-A6	4G-A6	4G-A6-V	4G-B3	4G-B4	4G-B4
			Depth (m)	0.50 - 0.50	0.70 - 0.70	2.80 - 2.80	0.50 - 0.50	0.30 - 0.30	0.60 - 0.60
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/11/2018	05/11/2018	05/11/2018	05/11/2018	05/11/2018	05/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	06/11/2018	06/11/2018	06/11/2018	06/11/2018	06/11/2018	06/11/2018
			SDG Ref	181106-25	181106-25	181106-25	181106-25	181106-25	181106-25
			Lab Sample No.(s)	18673542	18673546	18673558	18673562	18673517	18673521
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		97.9	98.5	90.7	91.3	86.6	95.7
Acenaphthene-d10 % recovery**	%	TM218		98.1	97.5	87.2	85.2	92.5	97.6
Phenanthrene-d10 % recovery**	%	TM218		99.8	100	92.7	91.4	100	96.7
Chrysene-d12 % recovery**	%	TM218		101	102	87	91	101	94.3
Perylene-d12 % recovery**	%	TM218		96.4	95.7	85.2	91.5	94	83.5
Naphthalene	<0.009 mg/kg	TM218		0.0835 M	0.0332 M	<0.09 M	0.115 M	0.22 M	0.0337 M
Acenaphthylene	<0.012 mg/kg	TM218		0.0272 M	<0.012 M	<0.12 M	0.0476 M	0.116 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		0.0511 M	0.0303 M	<0.08 M	0.00961 M	0.0447 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		0.033 M	0.0139 M	<0.1 M	0.0261 M	0.0936 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		0.464 M	0.276 M	<0.15 M	0.234 M	0.778 M	0.0976 M
Anthracene	<0.016 mg/kg	TM218		0.111 M	0.0463 M	<0.16 M	0.0686 M	0.261 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		1.79 M	1.2 M	<0.17 M	0.431 M	1.67 M	0.145 M
Pyrene	<0.015 mg/kg	TM218		1.84 M	1.26 M	<0.15 M	0.358 M	1.33 M	0.127 M
Benz(a)anthracene	<0.014 mg/kg	TM218		1.46 M	1.04 M	<0.14 M	0.287 M	0.846 M	0.0943 M
Chrysene	<0.01 mg/kg	TM218		1.47 M	1.14 M	<0.1 M	0.296 M	0.779 M	0.107 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		1.62 M	1.07 M	<0.15 M	0.532 M	0.658 M	0.122 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.914 M	0.695 M	<0.14 M	0.197 M	0.398 M	0.0515 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		1.96 M	1.39 M	<0.15 M	0.347 M	0.742 M	0.113 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		1.34 M	0.875 M	<0.18 M	0.254 M	0.474 M	0.0935 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.283 M	0.207 M	<0.23 M	0.0736 M	0.132 M	0.0266 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		1.32 M	0.946 M	<0.24 M	0.279 M	0.556 M	0.101 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		14.8	10.2	<1.18	3.56	9.1	1.11

Validated

CERTIFICATE OF ANALYSIS

SDG:	181106-25	**Client Reference:**		**Report Number:**	481875
Location:	Llanwern	**Order Number:**	LLA508	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4G-B5	4G-B5	4G-B6	4G-B6	4G-B5-V	4G-B6-V
			Depth (m)	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	0.90 - 0.90	2.10 - 2.10	1.80 - 1.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/11/2018	05/11/2018	05/11/2018	05/11/2018	05/11/2018	05/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	06/11/2018	06/11/2018	06/11/2018	06/11/2018	06/11/2018	06/11/2018
			SDG Ref	181106-25	181106-25	181106-25	181106-25	181106-25	181106-25
			Lab Sample No.(s)	18673497	18673509	18673527	18673532	18673513	18673538
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		86.9	86.5	85.7	97	99.3	93.1
Acenaphthene-d10 % recovery**	%	TM218		83.5	91.9	89.9	96.3	97	89.4
Phenanthrene-d10 % recovery**	%	TM218		82	98.6	99.2	95.6	97.8	89.7
Chrysene-d12 % recovery**	%	TM218		79.3	104	101	97.2	99.3	90.5
Perylene-d12 % recovery**	%	TM218		74.2	99.7	94.7	90.9	92.9	92.6
Naphthalene	<0.009 mg/kg	TM218		0.136 M	0.0272 M	0.243 M	0.141 M	<0.009 M	<0.009 M
Acenaphthylene	<0.012 mg/kg	TM218		0.0501 M	<0.012 M	0.21 M	0.0648 M	<0.012 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		0.00892 M	0.0342 M	0.0287 M	0.0184 M	<0.008 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		0.0357 M	0.0126 M	0.126 M	0.0337 M	<0.01 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		0.306 M	0.616 M	0.999 M	0.393 M	<0.015 M	<0.015 M
Anthracene	<0.016 mg/kg	TM218		0.0824 M	0.0602 M	0.374 M	0.119 M	<0.016 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		0.445 M	1.52 M	2.13 M	0.966 M	<0.017 M	<0.017 M
Pyrene	<0.015 mg/kg	TM218		0.379 M	1.45 M	1.67 M	0.88 M	<0.015 M	<0.015 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.328 M	1.22 M	1.15 M	0.662 M	<0.014 M	<0.014 M
Chrysene	<0.01 mg/kg	TM218		0.305 M	1.29 M	1.05 M	0.714 M	<0.01 M	<0.01 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.519 M	1.61 M	1.24 M	0.747 M	<0.015 M	<0.015 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.201 M	0.718 M	0.47 M	0.373 M	<0.014 M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.316 M	1.63 M	1.13 M	0.775 M	<0.015 M	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.227 M	0.96 M	0.729 M	0.614 M	<0.018 M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.0744 M	0.264 M	0.209 M	0.135 M	<0.023 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.24 M	1.11 M	0.862 M	0.638 M	<0.024 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		3.65	12.5	12.6	7.27	<0.118	<0.118

Validated

CERTIFICATE OF ANALYSIS

SDG:	181106-25	**Client Reference:**		**Report Number:**	481875
Location:	Llanwern	**Order Number:**	LLA508	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4G-C3	4G-C3	4G-C4	4G-C4	4G-C5	4G-C5
			Depth (m)	0.50 - 0.50	1.00 - 1.00	0.30 - 0.30	0.80 - 0.80	0.70 - 0.70	1.20 - 1.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/11/2018	05/11/2018	05/11/2018	05/11/2018	05/11/2018	05/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	06/11/2018	06/11/2018	06/11/2018	06/11/2018	06/11/2018	06/11/2018
			SDG Ref	181106-25	181106-25	181106-25	181106-25	181106-25	181106-25
			Lab Sample No.(s)	18673492	18673554	18673566	18673570	18673578	18673584
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		85.7	86.5	91.2	87.9	93.3	85.4
Acenaphthene-d10 % recovery**	%	TM218		90.8	77.7	89.4	86.8	93.6	89.7
Phenanthrene-d10 % recovery**	%	TM218		101	84.6	87.4	87.5	94	97.4
Chrysene-d12 % recovery**	%	TM218		101	92.7	89.1	91.1	93.8	100
Perylene-d12 % recovery**	%	TM218		95.8	93.5	91.7	94.4	87.5	94.3
Naphthalene	<0.009 mg/kg	TM218		0.303 M	<0.09 M	0.131 M	0.0492 M	0.909 M	0.224 M
Acenaphthylene	<0.012 mg/kg	TM218		0.212 M	<0.12 M	0.0289 M	0.0145 M	0.218 M	0.0659 M
Acenaphthene	<0.008 mg/kg	TM218		0.0515 M	<0.08 M	0.0221 M	<0.008 M	0.0441 M	0.00959 M
Fluorene	<0.01 mg/kg	TM218		0.16 M	<0.1 M	0.0358 M	<0.01 M	0.157 M	0.0343 M
Phenanthrene	<0.015 mg/kg	TM218		1.41 M	0.276 M	0.388 M	0.13 M	1.92 M	0.517 M
Anthracene	<0.016 mg/kg	TM218		0.4 M	<0.16 M	0.104 M	0.0347 M	0.472 M	0.215 M
Fluoranthene	<0.017 mg/kg	TM218		3.04 M	0.391 M	0.785 M	0.288 M	3.24 M	1.07 M
Pyrene	<0.015 mg/kg	TM218		2.61 M	0.449 M	0.707 M	0.271 M	2.67 M	0.882 M
Benz(a)anthracene	<0.014 mg/kg	TM218		1.71 M	0.218 M	0.646 M	0.245 M	1.92 M	0.646 M
Chrysene	<0.01 mg/kg	TM218		1.54 M	0.261 M	0.647 M	0.261 M	1.72 M	0.632 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		2.04 M	0.378 M	1.2 M	0.505 M	2.94 M	0.762 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.898 M	<0.14 M	0.465 M	0.167 M	0.959 M	0.292 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		1.85 M	0.261 M	0.906 M	0.364 M	1.8 M	0.656 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		1.15 M	<0.18 M	0.589 M	0.24 M	1.3 M	0.447 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.349 M	<0.23 M	0.164 M	0.0673 M	0.361 M	0.126 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		1.34 M	<0.24 M	0.684 M	0.278 M	1.37 M	0.503 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		19.1	2.23	7.5	2.92	22	7.08

Validated

CERTIFICATE OF ANALYSIS

SDG:	181106-25	**Client Reference:**		**Report Number:**	481875
Location:	Llanwern	**Order Number:**	LLA508	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4G-C4-V	4G-C5-V				
			Depth (m)	2.10 - 2.10	1.90 - 1.90				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	05/11/2018	05/11/2018				
			Sample Time	00:00	00:00				
			Date Received	06/11/2018	06/11/2018				
			SDG Ref	181106-25	181106-25				
			Lab Sample No.(s)	18673574	18673593				
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		99.3	98.7				
Acenaphthene-d10 % recovery**	%	TM218		97.6	97.3				
Phenanthrene-d10 % recovery**	%	TM218		94.6	95.8				
Chrysene-d12 % recovery**	%	TM218		100	98				
Perylene-d12 % recovery**	%	TM218		89	87				
Naphthalene	<0.009 mg/kg	TM218		<0.009 M	<0.009 M				
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.012 M				
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	<0.008 M				
Fluorene	<0.01 mg/kg	TM218		<0.01 M	<0.01 M				
Phenanthrene	<0.015 mg/kg	TM218		<0.015 M	<0.015 M				
Anthracene	<0.016 mg/kg	TM218		<0.016 M	<0.016 M				
Fluoranthene	<0.017 mg/kg	TM218		<0.017 M	<0.017 M				
Pyrene	<0.015 mg/kg	TM218		<0.015 M	<0.015 M				
Benz(a)anthracene	<0.014 mg/kg	TM218		<0.014 M	<0.014 M				
Chrysene	<0.01 mg/kg	TM218		<0.01 M	<0.01 M				
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		<0.015 M	<0.015 M				
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 M	<0.014 M				
Benzo(a)pyrene	<0.015 mg/kg	TM218		<0.015 M	<0.015 M				
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		<0.018 M	<0.018 M				
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	<0.023 M				
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 M	<0.024 M				
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		<0.118	<0.118				

Validated

CERTIFICATE OF ANALYSIS

SDG:	181106-25	**Client Reference:**		**Report Number:**	481875
Location:	Llanwern	**Order Number:**	LLA508	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4G-A6	4G-A6	4G-A6-V	4G-B3	4G-B4	4G-B4
			Depth (m)	0.50 - 0.50	0.70 - 0.70	2.80 - 2.80	0.50 - 0.50	0.30 - 0.30	0.60 - 0.60
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/11/2018	05/11/2018	05/11/2018	05/11/2018	05/11/2018	05/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	06/11/2018	06/11/2018	06/11/2018	06/11/2018	06/11/2018	06/11/2018
			SDG Ref	181106-25	181106-25	181106-25	181106-25	181106-25	181106-25
			Lab Sample No.(s)	18673542	18673546	18673558	18673562	18673517	18673521
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		88	126	78.2	75	92	85.6
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 M	<0.2 M	<0.2 M	<0.2 M	<0.2 M	<0.2 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C12-C16	<0.1 mg/kg	TM173		2.03	1.5	0.546	<0.1	2.89	1.18
Aliphatics >C16-C21	<0.1 mg/kg	TM173		8.87	3.86	<0.1	6.48	11.6	6.52
Aliphatics >C21-C35	<0.1 mg/kg	TM173		53.5	21.9	42.8	39.3	79.1	23.3
Aliphatics >C35-C44	<0.1 mg/kg	TM173		25.2	15.1	<0.1	7.93	24.9	8.51
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		89.6	42.3	43.3	53.7	118	39.5
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		1.41	<0.1	2.52	7.26	1.74	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		12.4	5.95	8	72.8	10.1	1.17
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		98	57	159	3310	49.4	19.4
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		41	20	32.5	74.4	24.8	15.8
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		15	6.7	11.9	24.6	9.64	6.88
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		153	82.9	202	3470	86.1	36.3
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		242	125	245	3520	205	75.8

Validated

CERTIFICATE OF ANALYSIS

SDG:	181106-25	**Client Reference:**		**Report Number:**	481875
Location:	Llanwern	**Order Number:**	LLA508	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4G-B5	4G-B5	4G-B6	4G-B6	4G-B5-V	4G-B6-V
			Depth (m)	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	0.90 - 0.90	2.10 - 2.10	1.80 - 1.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/11/2018	05/11/2018	05/11/2018	05/11/2018	05/11/2018	05/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	06/11/2018	06/11/2018	06/11/2018	06/11/2018	06/11/2018	06/11/2018
			SDG Ref	181106-25	181106-25	181106-25	181106-25	181106-25	181106-25
			Lab Sample No.(s)	18673497	18673509	18673527	18673532	18673513	18673538
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		65	92	84.5	80.9	99.8	98
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 #	<0.2 M	<0.2 M	<0.2 M	<0.2 M	<0.2 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C12-C16	<0.1 mg/kg	TM173		1.67	1.61	15	2.03	<0.1	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		4.36	7.42	13.4	9.5	<0.1	<0.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		11.9	51.5	121	74.1	<0.1	2.07
Aliphatics >C35-C44	<0.1 mg/kg	TM173		1.46	8.9	91.6	47.5	<0.1	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		19.4	69.4	241	133	<0.1	2.07
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		1.18	0.435	5.94	2.16	<0.1	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		5.16	13.2	13.9	10.7	0.34	<0.1
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		18.6	108	229	108	3.05	5.95
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		6.72	35.5	228	74.8	0.95	0.607
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		2.43	12.6	90.1	32.3	<0.1	<0.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		31.6	157	476	196	4.34	6.55
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		51.1	226	717	329	4.34	8.62

Validated

CERTIFICATE OF ANALYSIS

SDG:	181106-25	**Client Reference:**		**Report Number:**	481875
Location:	Llanwern	**Order Number:**	LLA508	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4G-C3	4G-C3	4G-C4	4G-C4	4G-C5	4G-C5
			Depth (m)	0.50 - 0.50	1.00 - 1.00	0.30 - 0.30	0.80 - 0.80	0.70 - 0.70	1.20 - 1.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/11/2018	05/11/2018	05/11/2018	05/11/2018	05/11/2018	05/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	06/11/2018	06/11/2018	06/11/2018	06/11/2018	06/11/2018	06/11/2018
			SDG Ref	181106-25	181106-25	181106-25	181106-25	181106-25	181106-25
			Lab Sample No.(s)	18673492	18673554	18673566	18673570	18673578	18673584
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		73.6	94.2	38.4	88	18.4	83.9
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 M	<0.2 M	<0.2 #	<0.2 M	0.576 #	<0.2 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	0.0357	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	0.194	<0.02
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	0.115	<0.02
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	0.0656	<0.02
Aliphatics >C12-C16	<0.1 mg/kg	TM173		2.58	1.93	0.267	0.918	5.99	1.21
Aliphatics >C16-C21	<0.1 mg/kg	TM173		18.4	17.6	3.07	8.81	27.1	7.45
Aliphatics >C21-C35	<0.1 mg/kg	TM173		198	399	18.7	14.9	151	21.3
Aliphatics >C35-C44	<0.1 mg/kg	TM173		37.4	46.3	3.25	3.77	43.5	2.38
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		256	465	25.2	28.4	227	32.3
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	0.0449	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	0.0759	<0.02
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	0.0437	<0.02
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		4.04	1.7	1.11	0.302	8.94	2.07
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		21.4	10.9	6.46	2.02	35.4	10.2
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		133	152	41.3	19.5	135	32.8
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		63	40.7	14.2	14.3	40.7	9.99
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		25.4	15.7	5.18	6.23	13.7	3.64
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		222	205	63.1	36.1	220	55.1
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		478	670	88.4	64.5	448	87.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181106-25	**Client Reference:**		**Report Number:**	481875
Location:	Llanwern	**Order Number:**	LLA508	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4G-C4-V	4G-C5-V				
			Depth (m)	2.10 - 2.10	1.90 - 1.90				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	05/11/2018	05/11/2018				
			Sample Time	00:00	00:00				
			Date Received	06/11/2018	06/11/2018				
			SDG Ref	181106-25	181106-25				
			Lab Sample No.(s)	18673574	18673593				
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		90	103				
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 M	<0.2 M				
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	<0.02				
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02	<0.02				
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02	<0.02				
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02	<0.02				
Aliphatics >C12-C16	<0.1 mg/kg	TM173		0.443	<0.1				
Aliphatics >C16-C21	<0.1 mg/kg	TM173		<0.1	<0.1				
Aliphatics >C21-C35	<0.1 mg/kg	TM173		1.22	<0.1				
Aliphatics >C35-C44	<0.1 mg/kg	TM173		<0.1	<0.1				
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		1.67	<0.1				
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	<0.02				
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	<0.02				
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02	<0.02				
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02	<0.02				
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	<0.1				
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		0.212	<0.1				
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		7.47	3.2				
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		1.11	<0.1				
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		<0.1	<0.1				
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		8.8	3.2				
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		10.5	3.2				

Validated

CERTIFICATE OF ANALYSIS

SDG:	181106-25	**Client Reference:**		**Report Number:**	481875
Location:	Llanwern	**Order Number:**	LLA508	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4G-A6	4G-A6	4G-A6-V	4G-B3	4G-B4	4G-B4
			Depth (m)	0.50 - 0.50	0.70 - 0.70	2.80 - 2.80	0.50 - 0.50	0.30 - 0.30	0.60 - 0.60
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/11/2018	05/11/2018	05/11/2018	05/11/2018	05/11/2018	05/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	06/11/2018	06/11/2018	06/11/2018	06/11/2018	06/11/2018	06/11/2018
			SDG Ref	181106-25	181106-25	181106-25	181106-25	181106-25	181106-25
			Lab Sample No.(s)	18673542	18673546	18673558	18673562	18673517	18673521
			AGS Reference						
Dibromofluoromethane**	%	TM116		112	108	112	105	108	109
Toluene-d8**	%	TM116		98.7	99.8	93.6	113	101	97.8
4-Bromofluorobenzene**	%	TM116		91.2	108	74.4	94.6	97.5	85.2
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181106-25	**Client Reference:**		**Report Number:**	481875
Location:	Llanwern	**Order Number:**	LLA508	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4G-B5	4G-B5	4G-B6	4G-B6	4G-B5-V	4G-B6-V
			Depth (m)	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	0.90 - 0.90	2.10 - 2.10	1.80 - 1.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/11/2018	05/11/2018	05/11/2018	05/11/2018	05/11/2018	05/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	06/11/2018	06/11/2018	06/11/2018	06/11/2018	06/11/2018	06/11/2018
			SDG Ref	181106-25	181106-25	181106-25	181106-25	181106-25	181106-25
			Lab Sample No.(s)	18673497	18673509	18673527	18673532	18673513	18673538
			AGS Reference						
Dibromofluoromethane**	%	TM116		105	107	104	104	110	111
Toluene-d8**	%	TM116		96.9	115	108	101	99	98.6
4-Bromofluorobenzene**	%	TM116		80.1	100	91.9	93.7	91.9	96.7
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	0.534 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181106-25	**Client Reference:**		**Report Number:**	481875
Location:	Llanwern	**Order Number:**	LLA508	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4G-C3	4G-C3	4G-C4	4G-C4	4G-C5	4G-C5
			Depth (m)	0.50 - 0.50	1.00 - 1.00	0.30 - 0.30	0.80 - 0.80	0.70 - 0.70	1.20 - 1.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/11/2018	05/11/2018	05/11/2018	05/11/2018	05/11/2018	05/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	06/11/2018	06/11/2018	06/11/2018	06/11/2018	06/11/2018	06/11/2018
			SDG Ref	181106-25	181106-25	181106-25	181106-25	181106-25	181106-25
			Lab Sample No.(s)	18673492	18673554	18673566	18673570	18673578	18673584
			AGS Reference						
Dibromofluoromethane**	%	TM116		109	108	97.1	108	84.2	103
Toluene-d8**	%	TM116		97	96.8	93.6	98.5	77.4	94.5
4-Bromofluorobenzene**	%	TM116		83.1	86.7	70	109	64.7	80
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	0.108 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	0.364 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181106-25	**Client Reference:**		**Report Number:**	481875
Location:	Llanwern	**Order Number:**	LLA508	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4G-C4-V	4G-C5-V				
			Depth (m)	2.10 - 2.10	1.90 - 1.90				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	05/11/2018	05/11/2018				
			Sample Time	00:00	00:00				
			Date Received	06/11/2018	06/11/2018				
			SDG Ref	181106-25	181106-25				
			Lab Sample No.(s)	18673574	18673593				
			AGS Reference						
Dibromofluoromethane**	%	TM116		108	133				
Toluene-d8**	%	TM116		101	91.2				
4-Bromofluorobenzene**	%	TM116		99.8	103				
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M				
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M				
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M				
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M				
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #				
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M				
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M				
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4				

CERTIFICATE OF ANALYSIS

SDG:	181106-25	**Client Reference:**		**Report Number:**	481875
Location:	Llanwern	**Order Number:**	LLA508	**Superseded Report:**	

Asbestos Identification - Solid Samples

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4G-A6 0.70 - 0.70 SOLID 05/11/2018 00:00:00 06/11/2018 14:50:01 181106-25 18673546 TM048	09/11/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4G-B3 0.50 - 0.50 SOLID 05/11/2018 00:00:00 06/11/2018 16:19:11 181106-25 18673562 TM048	14/11/2018	Lucy Caroe	Soil containing ACM debris	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4G-B4 0.30 - 0.30 SOLID 05/11/2018 00:00:00 07/11/2018 08:02:05 181106-25 18673517 TM048	14/11/2018	James Richards	Fibre bundles in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4G-B5 1.00 - 1.00 SOLID 05/11/2018 00:00:00 06/11/2018 17:14:40 181106-25 18673509 TM048	14/11/2018	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4G-B6 0.90 - 0.90 SOLID 05/11/2018 00:00:00 06/11/2018 13:49:41 181106-25 18673532 TM048	09/11/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4G-C3 0.50 - 0.50 SOLID 05/11/2018 00:00:00 06/11/2018 16:20:52 181106-25 18673492 TM048	14/11/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG:	181106-25	**Client Reference:**		**Report Number:**	481875
Location:	Llanwern	**Order Number:**	LLA508	**Superseded Report:**	

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4G-C4 0.80 - 0.80 SOLID 05/11/2018 00:00:00 06/11/2018 15:38:49 181106-25 18673570 TM048	09/11/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4G-C5 1.20 - 1.20 SOLID 05/11/2018 00:00:00 06/11/2018 14:42:56 181106-25 18673584 TM048	09/11/2018	Barbara Urbanek-Walsh	Loose fibres in soil.	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	181106-25	**Client Reference:**		**Report Number:**	481875
Location:	Llanwern	**Order Number:**	LLA508	**Superseded Report:**	

Asbestos Quantification - Full

		Additional Asbestos Components (Using TM048)	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM Evaluation - %	Asbestos Quantification - Total - %
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4G-B3 0.50 - 0.50 SOLID 05/11/2018 00:00:00 06/11/2018 16:19:57 181106-25 18673562 TM304	None (#)	N/A	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4G-B4 0.30 - 0.30 SOLID 05/11/2018 00:00:00 07/11/2018 08:03:05 181106-25 18673517 TM304	None (#)	N/A	0.0047 (#)	<0.001 (#)	0.0047 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4G-C5 1.20 - 1.20 SOLID 05/11/2018 00:00:00 06/11/2018 14:45:43 181106-25 18673584 TM304	None (#)	N/C	<0.001 (#)	<0.001 (#)	<0.001 (#)

CERTIFICATE OF ANALYSIS

SDG:	181106-25	**Client Reference:**		**Report Number:**	481875
Location:	Llanwern	**Order Number:**	LLA508	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.34
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.3
Particle Size <4mm	>95%		

Case	
SDG	181106-25
Lab Sample Number(s)	18673492
Sampled Date	05-Nov-2018
Customer Sample Ref.	4G-C3
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00141	<0.0005	0.0141	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00196	<0.001	0.0196	<0.01	-	-	-
Copper	0.00519	<0.0003	0.0519	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000593	<0.0004	0.00593	<0.004	-	-	-
Selenium	0.00134	<0.001	0.0134	<0.01	-	-	-
Vanadium	0.0728	<0.001	0.728	<0.01	-	-	-
Zinc	0.0147	<0.001	0.147	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000372	<0.00001	0.00372	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000837	<0.000005	0.000837	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000035	<0.000005	0.00035	<0.00005	-	-	-
Fluoranthene by GCMS	0.000216	<0.000005	0.00216	<0.00005	-	-	-
Anthracene by GCMS	0.0000482	<0.000005	0.000482	<0.00005	-	-	-
Phenanthrene by GCMS	0.000294	<0.000005	0.00294	<0.00005	-	-	-
Fluorene by GCMS	0.00015	<0.000005	0.0015	<0.00005	-	-	-
Chrysene by GCMS	0.0000172	<0.000005	0.000172	<0.00005	-	-	-
Pyrene by GCMS	0.0002	<0.000005	0.002	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000106	<0.000005	0.000106	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00000998	<0.000005	0.0000998	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000527	<0.000002	0.0000527	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00144	<0.000082	0.0144	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Nov-2018
pH (pH Units)	10.83
Conductivity (µS/cm)	372.00
Temperature (°C)	17.40
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181106-25	**Client Reference:**		**Report Number:**	481875
Location:	Llanwern	**Order Number:**	LLA508	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.34
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.3
Particle Size <4mm	>95%		

Case	
SDG	181106-25
Lab Sample Number(s)	18673492
Sampled Date	05-Nov-2018
Customer Sample Ref.	4G-C3
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Nov-2018
pH (pH Units)	10.83
Conductivity (µS/cm)	372.00
Temperature (°C)	17.40
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181106-25	**Client Reference:**		**Report Number:**	481875
Location:	Llanwern	**Order Number:**	LLA508	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.34
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.3
Particle Size <4mm	>95%		

Case	
SDG	181106-25
Lab Sample Number(s)	18673497
Sampled Date	05-Nov-2018
Customer Sample Ref.	4G-B5
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.217	<0.2	2.17	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0104	<0.0005	0.104	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.000409	<0.0003	0.00409	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00156	<0.001	0.0156	<0.01	-	-	-
Vanadium	0.0353	<0.001	0.353	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000739	<0.0001	0.00739	<0.001	-	-	-
Acenaphthene by GCMS	0.0000578	<0.00005	0.000578	<0.0005	-	-	-
Acenaphthylene by GCMS	0.000297	<0.00005	0.00297	<0.0005	-	-	-
Fluoranthene by GCMS	0.00384	<0.00005	0.0384	<0.0005	-	-	-
Anthracene by GCMS	0.000776	<0.00005	0.00776	<0.0005	-	-	-
Phenanthrene by GCMS	0.00289	<0.00005	0.0289	<0.0005	-	-	-
Fluorene by GCMS	0.000245	<0.00005	0.00245	<0.0005	-	-	-
Chrysene by GCMS	0.00255	<0.00005	0.0255	<0.0005	-	-	-
Pyrene by GCMS	0.00293	<0.00005	0.0293	<0.0005	-	-	-
Benz(a)anthracene by GCMS	0.00194	<0.00005	0.0194	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00284	<0.00005	0.0284	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00195	<0.00005	0.0195	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	0.00205	<0.00002	0.0205	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.000423	<0.00005	0.00423	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	0.00152	<0.00005	0.0152	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00133	<0.00005	0.0133	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.0264	<0.00082	0.264	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Nov-2018
pH (pH Units)	8.43
Conductivity (µS/cm)	99.80
Temperature (°C)	18.80
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181106-25	**Client Reference:**		**Report Number:**	481875
Location:	Llanwern	**Order Number:**	LLA508	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.34
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.3
Particle Size <4mm	>95%		

Case	
SDG	181106-25
Lab Sample Number(s)	18673497
Sampled Date	05-Nov-2018
Customer Sample Ref.	4G-B5
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.1	<0.1	<1	<1	-	-	-
Aliphatics >C16-C21	<0.1	<0.1	<1	<1	-	-	-
Aliphatics >C21-C35	<0.1	<0.1	<1	<1	-	-	-
Total Aliphatics >C12-C35	<0.1	<0.1	<1	<1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.1	<0.1	<1	<1	-	-	-
Aromatics >EC16-EC21	<0.1	<0.1	<1	<1	-	-	-
Aromatics >EC21-EC35	<0.1	<0.1	<1	<1	-	-	-
Total Aromatics >EC12-EC35	<0.1	<0.1	<1	<1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.1	<0.1	<1	<1	-	-	-

Leach Test Information

Date Prepared	09-Nov-2018
pH (pH Units)	8.43
Conductivity (µS/cm)	99.80
Temperature (°C)	18.80
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181106-25	**Client Reference:**		**Report Number:**	481875
Location:	Llanwern	**Order Number:**	LLA508	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.64
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.9
Particle Size <4mm	>95%		

Case	
SDG	181106-25
Lab Sample Number(s)	18673509
Sampled Date	05-Nov-2018
Customer Sample Ref.	4G-B5
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00285	<0.001	0.0285	<0.01	-	-	-
Copper	0.00169	<0.0003	0.0169	<0.003	-	-	-
Lead	0.0017	<0.0002	0.017	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00583	<0.001	0.0583	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000997	<0.00001	0.000997	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000586	<0.000005	0.000586	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000796	<0.000005	0.0000796	<0.00005	-	-	-
Fluoranthene by GCMS	0.000756	<0.000005	0.00756	<0.00005	-	-	-
Anthracene by GCMS	0.0000534	<0.000005	0.000534	<0.00005	-	-	-
Phenanthrene by GCMS	0.000697	<0.000005	0.00697	<0.00005	-	-	-
Fluorene by GCMS	0.0000187	<0.000005	0.000187	<0.00005	-	-	-
Chrysene by GCMS	0.0000577	<0.000005	0.000577	<0.00005	-	-	-
Pyrene by GCMS	0.000626	<0.000005	0.00626	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000267	<0.000005	0.000267	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000238	<0.000005	0.000238	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00001	<0.000005	0.0001	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000824	<0.000002	0.0000824	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00244	<0.000082	0.0244	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Nov-2018
pH (pH Units)	11.93
Conductivity (µS/cm)	440.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181106-25	**Client Reference:**		**Report Number:**	481875
Location:	Llanwern	**Order Number:**	LLA508	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.64
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.9
Particle Size <4mm	>95%		

Case	
SDG	181106-25
Lab Sample Number(s)	18673509
Sampled Date	05-Nov-2018
Customer Sample Ref.	4G-B5
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Nov-2018
pH (pH Units)	11.93
Conductivity (µS/cm)	440.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181106-25	**Client Reference:**		**Report Number:**	481875
Location:	Llanwern	**Order Number:**	LLA508	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.41
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.4
Particle Size <4mm	>95%		

Case	
SDG	181106-25
Lab Sample Number(s)	18673517
Sampled Date	05-Nov-2018
Customer Sample Ref.	4G-B4
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00153	<0.0005	0.0153	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0011	<0.001	0.011	<0.01	-	-	-
Copper	0.00397	<0.0003	0.0397	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000467	<0.0004	0.00467	<0.004	-	-	-
Selenium	0.00128	<0.001	0.0128	<0.01	-	-	-
Vanadium	0.0825	<0.001	0.825	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000106	<0.00001	0.00106	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000492	<0.000005	0.000492	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000151	<0.000005	0.000151	<0.00005	-	-	-
Fluoranthene by GCMS	0.000162	<0.000005	0.00162	<0.00005	-	-	-
Anthracene by GCMS	0.000023	<0.000005	0.00023	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000698	<0.000005	0.000698	<0.00005	-	-	-
Fluorene by GCMS	0.000021	<0.000005	0.00021	<0.00005	-	-	-
Chrysene by GCMS	0.0000253	<0.000005	0.000253	<0.00005	-	-	-
Pyrene by GCMS	0.000181	<0.000005	0.00181	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000153	<0.000005	0.000153	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000126	<0.000005	0.000126	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000692	<0.000005	0.0000692	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000726	<0.000002	0.0000726	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000694	<0.000082	0.00694	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Nov-2018
pH (pH Units)	10.73
Conductivity (µS/cm)	287.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181106-25	**Client Reference:**		**Report Number:**	481875
Location:	Llanwern	**Order Number:**	LLA508	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.41
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.4
Particle Size <4mm	>95%		

Case	
SDG	181106-25
Lab Sample Number(s)	18673517
Sampled Date	05-Nov-2018
Customer Sample Ref.	4G-B4
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Nov-2018
pH (pH Units)	10.73
Conductivity (µS/cm)	287.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181106-25	**Client Reference:**		**Report Number:**	481875
Location:	Llanwern	**Order Number:**	LLA508	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.41
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.1
Particle Size <4mm	>95%		

Case	
SDG	181106-25
Lab Sample Number(s)	18673521
Sampled Date	05-Nov-2018
Customer Sample Ref.	4G-B4
Depth (m)	0.60 - 0.60

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0135	<0.0005	0.135	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00148	<0.001	0.0148	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00171	<0.001	0.0171	<0.01	-	-	-
Vanadium	0.0572	<0.001	0.572	<0.01	-	-	-
Zinc	0.00104	<0.001	0.0104	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000135	<0.000005	0.000135	<0.00005	-	-	-
Anthracene by GCMS	0.0000128	<0.000005	0.000128	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000171	<0.000005	0.000171	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	0.00000612	<0.000005	0.0000612	<0.00005	-	-	-
Pyrene by GCMS	0.0000106	<0.000005	0.000106	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000169	<0.000005	0.000169	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000669	<0.000005	0.0000669	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000799	<0.000002	0.0000799	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0000916	<0.000082	0.000916	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Nov-2018
pH (pH Units)	9.44
Conductivity (µS/cm)	106.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181106-25	**Client Reference:**		**Report Number:**	481875
Location:	Llanwern	**Order Number:**	LLA508	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.41
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.1
Particle Size <4mm	>95%		

Case	
SDG	181106-25
Lab Sample Number(s)	18673521
Sampled Date	05-Nov-2018
Customer Sample Ref.	4G-B4
Depth (m)	0.60 - 0.60

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Nov-2018
pH (pH Units)	9.44
Conductivity (µS/cm)	106.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181106-25	**Client Reference:**		**Report Number:**	481875
Location:	Llanwern	**Order Number:**	LLA508	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.7
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.3
Particle Size <4mm	>95%		

Case	
SDG	181106-25
Lab Sample Number(s)	18673527
Sampled Date	05-Nov-2018
Customer Sample Ref.	4G-B6
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00293	<0.0005	0.0293	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0015	<0.001	0.015	<0.01	-	-	-
Copper	0.00353	<0.0003	0.0353	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.0021	<0.001	0.021	<0.01	-	-	-
Vanadium	0.0738	<0.001	0.738	<0.01	-	-	-
Zinc	0.00319	<0.001	0.0319	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000448	<0.00001	0.000448	<0.0001	-	-	-
Acenaphthene by GCMS	0.000013	<0.000005	0.00013	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000181	<0.000005	0.000181	<0.00005	-	-	-
Fluoranthene by GCMS	0.000115	<0.000005	0.00115	<0.00005	-	-	-
Anthracene by GCMS	0.000029	<0.000005	0.00029	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000688	<0.000005	0.000688	<0.00005	-	-	-
Fluorene by GCMS	0.0000194	<0.000005	0.000194	<0.00005	-	-	-
Chrysene by GCMS	0.0000384	<0.000005	0.000384	<0.00005	-	-	-
Pyrene by GCMS	0.0001	<0.000005	0.001	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000268	<0.000005	0.000268	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000466	<0.000005	0.000466	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000233	<0.000005	0.000233	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000274	<0.000002	0.000274	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000165	<0.000005	0.000165	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000017	<0.000005	0.00017	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000604	<0.000082	0.00604	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	08-Nov-2018
pH (pH Units)	10.23
Conductivity (µS/cm)	197.00
Temperature (°C)	17.50
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181106-25	**Client Reference:**		**Report Number:**	481875
Location:	Llanwern	**Order Number:**	LLA508	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.7
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.3
Particle Size <4mm	>95%		

Case	
SDG	181106-25
Lab Sample Number(s)	18673527
Sampled Date	05-Nov-2018
Customer Sample Ref.	4G-B6
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	08-Nov-2018
pH (pH Units)	10.23
Conductivity (µS/cm)	197.00
Temperature (°C)	17.50
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181106-25	**Client Reference:**		**Report Number:**	481875
Location:	Llanwern	**Order Number:**	LLA508	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.6
Particle Size <4mm	>95%		

Case	
SDG	181106-25
Lab Sample Number(s)	18673532
Sampled Date	05-Nov-2018
Customer Sample Ref.	4G-B6
Depth (m)	0.90 - 0.90

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.000023	<0.00001	0.00023	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00603	<0.001	0.0603	<0.01	-	-	-
Copper	0.00171	<0.0003	0.0171	<0.003	-	-	-
Lead	0.000954	<0.0002	0.00954	<0.002	-	-	-
Manganese	0.0259	<0.003	0.259	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00543	<0.001	0.0543	<0.01	-	-	-
Zinc	0.0133	<0.001	0.133	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.669	<0.019	6.69	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000282	<0.00001	0.000282	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000262	<0.000005	0.000262	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000145	<0.000005	0.000145	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.000031	<0.000005	0.00031	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0000999	<0.000082	0.000999	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Nov-2018
pH (pH Units)	11.71
Conductivity (µS/cm)	1,280.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.891

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CERTIFICATE OF ANALYSIS

SDG:	181106-25	**Client Reference:**		**Report Number:**	481875
Location:	Llanwern	**Order Number:**	LLA508	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.6
Particle Size <4mm	>95%		

Case	
SDG	181106-25
Lab Sample Number(s)	18673532
Sampled Date	05-Nov-2018
Customer Sample Ref.	4G-B6
Depth (m)	0.90 - 0.90

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Nov-2018
pH (pH Units)	11.71
Conductivity (µS/cm)	1,280.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181106-25	**Client Reference:**		**Report Number:**	481875
Location:	Llanwern	**Order Number:**	LLA508	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	181106-25
Lab Sample Number(s)	18673542
Sampled Date	05-Nov-2018
Customer Sample Ref.	4G-A6
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.61	<0.2	6.1	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000117	<0.00001	0.000117	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00199	<0.0005	0.0199	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00297	<0.001	0.0297	<0.01	-	-	-
Copper	0.00988	<0.0003	0.0988	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00181	<0.0004	0.0181	<0.004	-	-	-
Selenium	0.00114	<0.001	0.0114	<0.01	-	-	-
Vanadium	0.0298	<0.001	0.298	<0.01	-	-	-
Zinc	0.00524	<0.001	0.0524	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000539	<0.00001	0.000539	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000514	<0.000005	0.000514	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000109	<0.000005	0.000109	<0.00005	-	-	-
Fluoranthene by GCMS	0.000249	<0.000005	0.00249	<0.00005	-	-	-
Anthracene by GCMS	0.0000252	<0.000005	0.000252	<0.00005	-	-	-
Phenanthrene by GCMS	0.000167	<0.000005	0.00167	<0.00005	-	-	-
Fluorene by GCMS	0.0000272	<0.000005	0.000272	<0.00005	-	-	-
Chrysene by GCMS	0.0000254	<0.000005	0.000254	<0.00005	-	-	-
Pyrene by GCMS	0.000206	<0.000005	0.00206	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000161	<0.000005	0.000161	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00000947	<0.000005	0.0000947	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000472	<0.000002	0.0000472	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000846	<0.000082	0.00846	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Nov-2018
pH (pH Units)	11.58
Conductivity (µS/cm)	715.00
Temperature (°C)	17.70
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181106-25	**Client Reference:**		**Report Number:**	481875
Location:	Llanwern	**Order Number:**	LLA508	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	181106-25
Lab Sample Number(s)	18673542
Sampled Date	05-Nov-2018
Customer Sample Ref.	4G-A6
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Nov-2018
pH (pH Units)	11.58
Conductivity (µS/cm)	715.00
Temperature (°C)	17.70
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181106-25	**Client Reference:**		**Report Number:**	481875
Location:	Llanwern	**Order Number:**	LLA508	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	181106-25
Lab Sample Number(s)	18673546
Sampled Date	05-Nov-2018
Customer Sample Ref.	4G-A6
Depth (m)	0.70 - 0.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	1.74	<0.2	17.4	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00649	<0.0005	0.0649	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00162	<0.001	0.0162	<0.01	-	-	-
Copper	0.0183	<0.0003	0.183	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.00395	<0.003	0.0395	<0.03	-	-	-
Nickel	0.00272	<0.0004	0.0272	<0.004	-	-	-
Selenium	0.00616	<0.001	0.0616	<0.01	-	-	-
Vanadium	0.104	<0.001	1.04	<0.01	-	-	-
Zinc	0.00266	<0.001	0.0266	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.56	<0.019	5.6	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000333	<0.00001	0.000333	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000232	<0.000005	0.000232	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000115	<0.000005	0.00115	<0.00005	-	-	-
Anthracene by GCMS	0.0000152	<0.000005	0.000152	<0.00005	-	-	-
Phenanthrene by GCMS	0.000119	<0.000005	0.00119	<0.00005	-	-	-
Fluorene by GCMS	0.0000121	<0.000005	0.000121	<0.00005	-	-	-
Chrysene by GCMS	0.00000586	<0.000005	0.0000586	<0.00005	-	-	-
Pyrene by GCMS	0.0000969	<0.000005	0.000969	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00042	<0.000082	0.0042	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	10-Nov-2018
pH (pH Units)	11.44
Conductivity (µS/cm)	542.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181106-25	**Client Reference:**		**Report Number:**	481875
Location:	Llanwern	**Order Number:**	LLA508	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	181106-25
Lab Sample Number(s)	18673546
Sampled Date	05-Nov-2018
Customer Sample Ref.	4G-A6
Depth (m)	0.70 - 0.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	10-Nov-2018
pH (pH Units)	11.44
Conductivity (µS/cm)	542.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181106-25	**Client Reference:**		**Report Number:**	481875
Location:	Llanwern	**Order Number:**	LLA508	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.5
Particle Size <4mm	>95%		

Case	
SDG	181106-25
Lab Sample Number(s)	18673554
Sampled Date	05-Nov-2018
Customer Sample Ref.	4G-C3
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00149	<0.0005	0.0149	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00238	<0.001	0.0238	<0.01	-	-	-
Copper	0.00507	<0.0003	0.0507	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00049	<0.0004	0.0049	<0.004	-	-	-
Selenium	0.00128	<0.001	0.0128	<0.01	-	-	-
Vanadium	0.0735	<0.001	0.735	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000111	<0.00001	0.00111	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000714	<0.000005	0.000714	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000313	<0.000005	0.000313	<0.00005	-	-	-
Fluoranthene by GCMS	0.000153	<0.000005	0.00153	<0.00005	-	-	-
Anthracene by GCMS	0.0000362	<0.000005	0.000362	<0.00005	-	-	-
Phenanthrene by GCMS	0.000163	<0.000005	0.00163	<0.00005	-	-	-
Fluorene by GCMS	0.0000559	<0.000005	0.000559	<0.00005	-	-	-
Chrysene by GCMS	0.0000138	<0.000005	0.000138	<0.00005	-	-	-
Pyrene by GCMS	0.000147	<0.000005	0.00147	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.00000722	<0.000005	0.0000722	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000107	<0.000005	0.000107	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000717	<0.000002	0.0000717	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000807	<0.000082	0.00807	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Nov-2018
pH (pH Units)	10.79
Conductivity (µS/cm)	331.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181106-25	**Client Reference:**		**Report Number:**	481875
Location:	Llanwern	**Order Number:**	LLA508	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.5
Particle Size <4mm	>95%		

Case	
SDG	181106-25
Lab Sample Number(s)	18673554
Sampled Date	05-Nov-2018
Customer Sample Ref.	4G-C3
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Nov-2018
pH (pH Units)	10.79
Conductivity (µS/cm)	331.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181106-25	**Client Reference:**		**Report Number:**	481875
Location:	Llanwern	**Order Number:**	LLA508	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.34
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.3
Particle Size <4mm	>95%		

Case	
SDG	181106-25
Lab Sample Number(s)	18673562
Sampled Date	05-Nov-2018
Customer Sample Ref.	4G-B3
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00291	<0.0005	0.0291	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00221	<0.001	0.0221	<0.01	-	-	-
Copper	0.00157	<0.0003	0.0157	<0.003	-	-	-
Lead	0.000463	<0.0002	0.00463	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00131	<0.001	0.0131	<0.01	-	-	-
Vanadium	0.074	<0.001	0.74	<0.01	-	-	-
Zinc	0.00165	<0.001	0.0165	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.0506	<0.019	0.506	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000279	<0.00001	0.000279	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000369	<0.000005	0.000369	<0.00005	-	-	-
Anthracene by GCMS	0.00000661	<0.000005	0.0000661	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000236	<0.000005	0.000236	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	0.0000169	<0.000005	0.000169	<0.00005	-	-	-
Pyrene by GCMS	0.0000302	<0.000005	0.000302	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000104	<0.000005	0.000104	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000241	<0.000005	0.000241	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000122	<0.000005	0.000122	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000138	<0.000002	0.000138	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000115	<0.000005	0.000115	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000133	<0.000005	0.000133	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000227	<0.000082	0.00227	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Nov-2018
pH (pH Units)	10.57
Conductivity (µS/cm)	229.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181106-25	**Client Reference:**		**Report Number:**	481875
Location:	Llanwern	**Order Number:**	LLA508	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.34
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.3
Particle Size <4mm	>95%		

Case	
SDG	181106-25
Lab Sample Number(s)	18673562
Sampled Date	05-Nov-2018
Customer Sample Ref.	4G-B3
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Nov-2018
pH (pH Units)	10.57
Conductivity (µS/cm)	229.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181106-25	**Client Reference:**		**Report Number:**	481875
Location:	Llanwern	**Order Number:**	LLA508	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.107	**Natural Moisture Content (%)**	19
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	84
Particle Size <4mm	>95%		

Case	
SDG	181106-25
Lab Sample Number(s)	18673566
Sampled Date	05-Nov-2018
Customer Sample Ref.	4G-C4
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000101	<0.00001	0.000101	<0.0001	-	-	-
Total Cyanide (W)	1.29	<0.05	12.9	<0.5	-	-	-
Arsenic	0.00278	<0.0005	0.0278	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00271	<0.001	0.0271	<0.01	-	-	-
Copper	0.0036	<0.0003	0.036	<0.003	-	-	-
Lead	0.000565	<0.0002	0.00565	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00194	<0.001	0.0194	<0.01	-	-	-
Vanadium	0.0486	<0.001	0.486	<0.01	-	-	-
Zinc	0.00759	<0.001	0.0759	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.544	<0.019	5.44	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000163	<0.00001	0.000163	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000665	<0.000005	0.0000665	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000949	<0.000005	0.000949	<0.00005	-	-	-
Anthracene by GCMS	0.0000114	<0.000005	0.000114	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000441	<0.000005	0.000441	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	0.0000557	<0.000005	0.000557	<0.00005	-	-	-
Pyrene by GCMS	0.0000774	<0.000005	0.000774	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000441	<0.000005	0.000441	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00009	<0.000005	0.0009	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000408	<0.000005	0.000408	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000479	<0.000002	0.000479	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.00000968	<0.000005	0.0000968	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000488	<0.000005	0.000488	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000035	<0.000005	0.00035	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000623	<0.000082	0.00623	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Nov-2018
pH (pH Units)	9.61
Conductivity (µS/cm)	213.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.883

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181106-25	**Client Reference:**		**Report Number:**	481875
Location:	Llanwern	**Order Number:**	LLA508	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.107	**Natural Moisture Content (%)**	19
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	84
Particle Size <4mm	>95%		

Case	
SDG	181106-25
Lab Sample Number(s)	18673566
Sampled Date	05-Nov-2018
Customer Sample Ref.	4G-C4
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Nov-2018
pH (pH Units)	9.61
Conductivity (µS/cm)	213.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.883

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181106-25	**Client Reference:**		**Report Number:**	481875
Location:	Llanwern	**Order Number:**	LLA508	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181106-25
Lab Sample Number(s)	18673570
Sampled Date	05-Nov-2018
Customer Sample Ref.	4G-C4
Depth (m)	0.80 - 0.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00118	<0.0005	0.0118	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00424	<0.001	0.0424	<0.01	-	-	-
Copper	0.00119	<0.0003	0.0119	<0.003	-	-	-
Lead	0.000478	<0.0002	0.00478	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0509	<0.001	0.509	<0.01	-	-	-
Zinc	0.0156	<0.001	0.156	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.39	<0.019	3.9	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000104	<0.00001	0.000104	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000118	<0.000005	0.000118	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.00000802	<0.000005	0.0000802	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000123	<0.000005	0.000123	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00000694	<0.000005	0.0000694	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000617	<0.000002	0.0000617	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Nov-2018
pH (pH Units)	10.88
Conductivity (µS/cm)	399.00
Temperature (°C)	17.70
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181106-25	**Client Reference:**		**Report Number:**	481875
Location:	Llanwern	**Order Number:**	LLA508	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181106-25
Lab Sample Number(s)	18673570
Sampled Date	05-Nov-2018
Customer Sample Ref.	4G-C4
Depth (m)	0.80 - 0.80

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Nov-2018
pH (pH Units)	10.88
Conductivity (µS/cm)	399.00
Temperature (°C)	17.70
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181106-25	**Client Reference:**		**Report Number:**	481875
Location:	Llanwern	**Order Number:**	LLA508	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	181106-25
Lab Sample Number(s)	18673578
Sampled Date	05-Nov-2018
Customer Sample Ref.	4G-C5
Depth (m)	0.70 - 0.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000277	<0.00001	0.000277	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00971	<0.001	0.0971	<0.01	-	-	-
Copper	0.00501	<0.0003	0.0501	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000935	<0.0004	0.00935	<0.004	-	-	-
Selenium	0.00124	<0.001	0.0124	<0.01	-	-	-
Vanadium	0.00659	<0.001	0.0659	<0.01	-	-	-
Zinc	0.00259	<0.001	0.0259	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000339	<0.00001	0.000339	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000616	<0.000005	0.0000616	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000638	<0.000005	0.0000638	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000239	<0.000005	0.000239	<0.00005	-	-	-
Anthracene by GCMS	0.0000059	<0.000005	0.000059	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000213	<0.000005	0.000213	<0.00005	-	-	-
Fluorene by GCMS	0.00000501	<0.000005	0.0000501	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000258	<0.000005	0.000258	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000128	<0.000082	0.00128	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Nov-2018
pH (pH Units)	11.37
Conductivity (µS/cm)	818.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	181106-25	**Client Reference:**		**Report Number:**	481875
Location:	Llanwern	**Order Number:**	LLA508	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	181106-25
Lab Sample Number(s)	18673578
Sampled Date	05-Nov-2018
Customer Sample Ref.	4G-C5
Depth (m)	0.70 - 0.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Nov-2018
pH (pH Units)	11.37
Conductivity (µS/cm)	818.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181106-25	**Client Reference:**		**Report Number:**	481875
Location:	Llanwern	**Order Number:**	LLA508	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181106-25
Lab Sample Number(s)	18673584
Sampled Date	05-Nov-2018
Customer Sample Ref.	4G-C5
Depth (m)	1.20 - 1.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.277	<0.2	2.77	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000215	<0.00001	0.000215	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0167	<0.001	0.167	<0.01	-	-	-
Copper	0.00308	<0.0003	0.0308	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000606	<0.0004	0.00606	<0.004	-	-	-
Selenium	0.0013	<0.001	0.013	<0.01	-	-	-
Vanadium	0.00426	<0.001	0.0426	<0.01	-	-	-
Zinc	0.00385	<0.001	0.0385	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000195	<0.00001	0.000195	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000348	<0.000005	0.000348	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000176	<0.000005	0.000176	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.000042	<0.000005	0.00042	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00000619	<0.000005	0.0000619	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000415	<0.000002	0.0000415	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000124	<0.000082	0.00124	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Nov-2018
pH (pH Units)	11.47
Conductivity (µS/cm)	1,060.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181106-25	**Client Reference:**		**Report Number:**	481875
Location:	Llanwern	**Order Number:**	LLA508	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181106-25
Lab Sample Number(s)	18673584
Sampled Date	05-Nov-2018
Customer Sample Ref.	4G-C5
Depth (m)	1.20 - 1.20

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Nov-2018
pH (pH Units)	11.47
Conductivity (µS/cm)	1,060.00
Temperature (°C)	18.20
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Table of Results - Appendix

Method No	Reference	Description
PM001		Preparation of Samples for Metals Analysis
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM243		Mixed Anions In Soils By Kone
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	181106-25	**Client Reference:**		**Report Number:**	481875
Location:	Llanwern	**Order Number:**	LLA508	**Superseded Report:**	

Test Completion Dates

Lab Sample No(s)	18673542	18673546	18673558	18673562	18673517	18673521	18673497	18673509	18673527	18673532
Customer Sample Ref.	4G-A6	4G-A6	4G-A6-V	4G-B3	4G-B4	4G-B4	4G-B5	4G-B5	4G-B6	4G-B6
AGS Ref.										
Depth	0.50 - 0.50	0.70 - 0.70	2.80 - 2.80	0.50 - 0.50	0.30 - 0.30	0.60 - 0.60	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	0.90 - 0.90
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)		15-Nov-2018		16-Nov-2018	16-Nov-2018			16-Nov-2018		16-Nov-2018
Ammoniacal Nitrogen	19-Nov-2018	19-Nov-2018		19-Nov-2018	19-Nov-2018	20-Nov-2018	20-Nov-2018	19-Nov-2018	19-Nov-2018	19-Nov-2018
Ammonium Soil by Titration	19-Nov-2018	19-Nov-2018	19-Nov-2018	19-Nov-2018	19-Nov-2018	19-Nov-2018	19-Nov-2018	19-Nov-2018	19-Nov-2018	19-Nov-2018
Anions by Kone (soil)		15-Nov-2018		20-Nov-2018	20-Nov-2018			20-Nov-2018		20-Nov-2018
Asbestos ID in Solid Samples		09-Nov-2018		14-Nov-2018	14-Nov-2018			14-Nov-2018		09-Nov-2018
Asbestos Quantification - Full				20-Nov-2018	20-Nov-2018					
CEN 10:1 Leachate (1 Stage)	09-Nov-2018	10-Nov-2018		09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	08-Nov-2018	09-Nov-2018
CEN Readings	14-Nov-2018	15-Nov-2018		15-Nov-2018	15-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	14-Nov-2018	15-Nov-2018
Cyanide Comp/Free/Total/Thiocyanate	20-Nov-2018	19-Nov-2018	19-Nov-2018	19-Nov-2018	19-Nov-2018	19-Nov-2018	19-Nov-2018	19-Nov-2018	20-Nov-2018	20-Nov-2018
Dissolved Metals by ICP-MS	20-Nov-2018	20-Nov-2018		20-Nov-2018	20-Nov-2018	20-Nov-2018	20-Nov-2018	20-Nov-2018	20-Nov-2018	20-Nov-2018
EPH CWG (Aliphatic) Aqueous GC (W)	16-Nov-2018	16-Nov-2018		16-Nov-2018	16-Nov-2018	15-Nov-2018	15-Nov-2018	14-Nov-2018	16-Nov-2018	16-Nov-2018
EPH CWG (Aliphatic) GC (S)	09-Nov-2018	20-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018
EPH CWG (Aromatic) Aqueous GC (W)	16-Nov-2018	16-Nov-2018		16-Nov-2018	16-Nov-2018	15-Nov-2018	15-Nov-2018	14-Nov-2018	16-Nov-2018	16-Nov-2018
EPH CWG (Aromatic) GC (S)	09-Nov-2018	20-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018
GRO by GC-FID (S)	16-Nov-2018	15-Nov-2018	16-Nov-2018	15-Nov-2018	15-Nov-2018	17-Nov-2018	16-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018
GRO by GC-FID (W)	15-Nov-2018	17-Nov-2018		15-Nov-2018	17-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	17-Nov-2018	15-Nov-2018
Mercury Dissolved	19-Nov-2018	20-Nov-2018		19-Nov-2018	19-Nov-2018	20-Nov-2018	20-Nov-2018	20-Nov-2018	19-Nov-2018	19-Nov-2018
Metals in solid samples by OES	19-Nov-2018	19-Nov-2018	14-Nov-2018	13-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	19-Nov-2018	16-Nov-2018
PAH by GCMS	09-Nov-2018	20-Nov-2018	14-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018
PAH Spec MS - Aqueous (W)	16-Nov-2018	16-Nov-2018		16-Nov-2018	16-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	16-Nov-2018	16-Nov-2018
pH	19-Nov-2018	20-Nov-2018	13-Nov-2018	20-Nov-2018	19-Nov-2018	19-Nov-2018	19-Nov-2018	20-Nov-2018	19-Nov-2018	20-Nov-2018
pH Value	16-Nov-2018	16-Nov-2018		15-Nov-2018	15-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	15-Nov-2018	16-Nov-2018
Phenols by HPLC (S)	16-Nov-2018	16-Nov-2018	14-Nov-2018	14-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018
Sample description	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018
Total Organic Carbon	20-Nov-2018	20-Nov-2018	20-Nov-2018	20-Nov-2018	20-Nov-2018	20-Nov-2018	20-Nov-2018	20-Nov-2018	20-Nov-2018	20-Nov-2018
Total Sulphate		14-Nov-2018		14-Nov-2018	14-Nov-2018			14-Nov-2018		14-Nov-2018
Total Sulphur		16-Nov-2018		19-Nov-2018	19-Nov-2018			15-Nov-2018		15-Nov-2018
TPH CWG (W)	16-Nov-2018	17-Nov-2018		16-Nov-2018	17-Nov-2018	15-Nov-2018	15-Nov-2018	14-Nov-2018	17-Nov-2018	16-Nov-2018
TPH CWG GC (S)	16-Nov-2018	20-Nov-2018	16-Nov-2018	15-Nov-2018	15-Nov-2018	17-Nov-2018	16-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018
VOC MS (S)	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	15-Nov-2018	15-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018

Lab Sample No(s)	18673513	18673538	18673492	18673554	18673566	18673570	18673578	18673584	18673574	18673593
Customer Sample Ref.	4G-B5-V	4G-B6-V	4G-C3	4G-C3	4G-C4	4G-C4	4G-C5	4G-C5	4G-C4-V	4G-C5-V
AGS Ref.										
Depth	2.10 - 2.10	1.80 - 1.80	0.50 - 0.50	1.00 - 1.00	0.30 - 0.30	0.80 - 0.80	0.70 - 0.70	1.20 - 1.20	2.10 - 2.10	1.90 - 1.90
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)			16-Nov-2018			16-Nov-2018		16-Nov-2018		
Ammoniacal Nitrogen			19-Nov-2018	19-Nov-2018	19-Nov-2018	19-Nov-2018	19-Nov-2018	19-Nov-2018		
Ammonium Soil by Titration	19-Nov-2018	19-Nov-2018	19-Nov-2018	19-Nov-2018	19-Nov-2018	19-Nov-2018	19-Nov-2018	19-Nov-2018	19-Nov-2018	19-Nov-2018
Anions by Kone (soil)			20-Nov-2018			09-Nov-2018		09-Nov-2018		
Asbestos ID in Solid Samples			14-Nov-2018			09-Nov-2018		09-Nov-2018		
Asbestos Quantification - Full								20-Nov-2018		
CEN 10:1 Leachate (1 Stage)			09-Nov-2018	09-Nov-2018	17-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018		
CEN Readings			14-Nov-2018	15-Nov-2018	15-Nov-2018	14-Nov-2018	13-Nov-2018	15-Nov-2018		
Cyanide Comp/Free/Total/Thiocyanate	19-Nov-2018	19-Nov-2018	19-Nov-2018	19-Nov-2018	20-Nov-2018	19-Nov-2018	20-Nov-2018	19-Nov-2018	19-Nov-2018	20-Nov-2018
Dissolved Metals by ICP-MS			20-Nov-2018	20-Nov-2018	20-Nov-2018	20-Nov-2018	20-Nov-2018	20-Nov-2018		
EPH CWG (Aliphatic) Aqueous GC (W)			16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	15-Nov-2018	16-Nov-2018		
EPH CWG (Aliphatic) GC (S)	08-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018
EPH CWG (Aromatic) Aqueous GC (W)			16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	15-Nov-2018	16-Nov-2018		
EPH CWG (Aromatic) GC (S)	08-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018
GRO by GC-FID (S)	17-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	17-Nov-2018	15-Nov-2018	16-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018
GRO by GC-FID (W)			15-Nov-2018	17-Nov-2018	19-Nov-2018	17-Nov-2018	15-Nov-2018	17-Nov-2018		
Mercury Dissolved			19-Nov-2018	19-Nov-2018	19-Nov-2018	20-Nov-2018	20-Nov-2018	19-Nov-2018		
Metals in solid samples by OES	16-Nov-2018	16-Nov-2018	16-Nov-2018	19-Nov-2018	20-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	16-Nov-2018	16-Nov-2018
PAH by GCMS	09-Nov-2018	08-Nov-2018	09-Nov-2018	08-Nov-2018	08-Nov-2018	08-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018
PAH Spec MS - Aqueous (W)			16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	14-Nov-2018	16-Nov-2018		
pH	19-Nov-2018	19-Nov-2018	20-Nov-2018	19-Nov-2018	19-Nov-2018	20-Nov-2018	19-Nov-2018	20-Nov-2018	20-Nov-2018	19-Nov-2018
pH Value			16-Nov-2018	15-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018		
Phenols by HPLC (S)	14-Nov-2018	16-Nov-2018	16-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	16-Nov-2018
Sample description	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018
Total Organic Carbon	20-Nov-2018	20-Nov-2018	20-Nov-2018	20-Nov-2018	20-Nov-2018	20-Nov-2018	20-Nov-2018	20-Nov-2018	20-Nov-2018	20-Nov-2018
Total Sulphate			14-Nov-2018			14-Nov-2018		14-Nov-2018		
Total Sulphur			16-Nov-2018			20-Nov-2018		20-Nov-2018		
TPH CWG (W)			16-Nov-2018	17-Nov-2018	19-Nov-2018	17-Nov-2018	15-Nov-2018	17-Nov-2018		
TPH CWG GC (S)	17-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	17-Nov-2018	15-Nov-2018	16-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018
VOC MS (S)	15-Nov-2018	16-Nov-2018	15-Nov-2018	15-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	15-Nov-2018	15-Nov-2018	16-Nov-2018

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP - No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals - total metals must be requested separately.

11. Results relate only to the items tested.

12. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** - Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

24. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Holding time exceeded before sample received**
5	**Samples exceeded holding time before presevation was performed**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to sampled on date**
&	**Sample Holding Time exceeded - Late arrival of instructions.**

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

ALS

				Customer Sample ID	4G-A4	4G-A4	4G-B8	4G-B8
				Depth	0.20-0.20	1.00-1.00	0.40-0.40	0.80-0.80
SDG(s):	181107-11			**AGS Id**				
Customer:	Atkins Global Ltd Llandarcy (7158)			**Sample Type**	SOLID	SOLID	SOLID	SOLID
Client Reference / Location:	Llanwern			**Sampled Date**	11/6/2018	11/6/2018	11/6/2018	11/6/2018
Order no:	LLA510			**Sample Received Date**	11/7/2018	11/7/2018	11/7/2018	11/7/2018
				Final Instruction Date	11/7/2018	11/7/2018	11/7/2018	11/7/2018
All results expressed on a dry weight basis				**Report Completed Date**	11/26/2018	11/26/2018	11/26/2018	11/26/2018
				SDG	181107-11	181107-11	181107-11	181107-11
				Lab Sample Number	18681162	18681166	18681237	18681241
				Sample Temperature	8.6	8.6	8.6	8.6
Analysis	**Test**	**Method**	**Units**	**LOD**				
Waste Acceptance Crit								
	CEN 10:1 - Temperature	PM115	°C		18.3	18	18.2	18.3
	CEN 10:1 - pH	PM115	pH Units		10.83	10.92	10.14	11.96
	CEN 10:1 - Conductivity @ 20 deg.C	PM115	µS/cm		340	453	139	1690
Inorganics								
	CEN 10:1 - Ammoniacal Nitrogen as N	TM099	mg/kg	<2	2.71	3.6	<2	<2
	CEN 10:1 - Ammoniacal Nitrogen as N	TM099	mg/l	<0.2	0.271	0.36	<0.2	<0.2
	CEN 10:1 - pH	TM256	pH Units	<1	10.65	10.98	10.75	12.1
	CEN 10:1 - Cyanide, Total	TM227	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
	CEN 10:1 - Cyanide, Total	TM227	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05
Filtered (Dissolved) Me								
	CEN 10:1 - Mercury (diss.filt)	TM183	mg/kg	<0.0001	<0.0001	0.000276	0.000118	<0.0001
	CEN 10:1 - Mercury (diss.filt)	TM183	mg/l	<0.00001	<0.00001	0.0000276	0.0000118	<0.00001
	CEN 10:1 - Arsenic (diss.filt)	TM152	mg/kg	<0.005	0.0467	0.0996	0.0126	<0.005
	CEN 10:1 - Arsenic (diss.filt)	TM152	mg/l	<0.0005	0.00467	0.00996	0.00126	<0.0005
	CEN 10:1 - Cadmium (diss.filt)	TM152	mg/kg	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008
	CEN 10:1 - Cadmium (diss.filt)	TM152	mg/l	<0.00008	<0.00008	<0.00008	<0.00008	<0.00008
	CEN 10:1 - Chromium (diss.filt)	TM152	mg/kg	<0.01	0.0124	0.0187	0.148	0.0656
	CEN 10:1 - Chromium (diss.filt)	TM152	mg/l	<0.001	0.00124	0.00187	0.0148	0.00656

CEN 10:1 - Copper (diss.filt)	TM152	mg/kg	<0.003	0.0885	0.256	0.0301	0.0197
CEN 10:1 - Copper (diss.filt)	TM152	mg/l	<0.0003	0.00885	0.0256	0.00301	0.00197
CEN 10:1 - Lead (diss.filt)	TM152	mg/kg	<0.002	<0.002	0.0195	<0.002	0.00317
CEN 10:1 - Lead (diss.filt)	TM152	mg/l	<0.0002	<0.0002	0.00195	<0.0002	0.000317
CEN 10:1 - Manganese (diss.filt)	TM152	mg/kg	<0.03	<0.03	0.179	<0.03	<0.03
CEN 10:1 - Manganese (diss.filt)	TM152	mg/l	<0.003	<0.003	0.0179	<0.003	<0.003
CEN 10:1 - Nickel (diss.filt)	TM152	mg/kg	<0.004	0.00901	0.0468	<0.004	<0.004
CEN 10:1 - Nickel (diss.filt)	TM152	mg/l	<0.0004	0.000901	0.00468	<0.0004	<0.0004
CEN 10:1 - Selenium (diss.filt)	TM152	mg/kg	<0.01	0.0452	0.113	<0.01	<0.01
CEN 10:1 - Selenium (diss.filt)	TM152	mg/l	<0.001	0.00452	0.0113	<0.001	<0.001
CEN 10:1 - Vanadium (diss.filt)	TM152	mg/kg	<0.01	1.48	5.35	0.535	0.0221
CEN 10:1 - Vanadium (diss.filt)	TM152	mg/l	<0.001	0.148	0.535	0.0535	0.00221
CEN 10:1 - Zinc (diss.filt)	TM152	mg/kg	<0.01	0.0808	0.139	0.0362	0.0247
CEN 10:1 - Zinc (diss.filt)	TM152	mg/l	<0.001	0.00808	0.0139	0.00362	0.00247
CEN 10:1 - Iron (Dis.Filt)	TM152	mg/kg	<0.19	2	1.79	<0.19	<0.19
CEN 10:1 - Iron (Dis.Filt)	TM152	mg/l	<0.019	0.2	0.179	<0.019	<0.019
TPH Criteria Working C							
CEN 10:1 - GRO Surrogate % recovery**	TM245	%		95	105	94	102
CEN 10:1 - GRO >C5-C12	TM245	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
CEN 10:1 - GRO >C5-C12	TM245	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05
CEN 10:1 - Methyl tertiary butyl ether (MTBE)	TM245	mg/kg	<0.03	<0.03	<0.03	<0.03	<0.03
CEN 10:1 - Methyl tertiary butyl ether (MTBE)	TM245	mg/l	<0.003	<0.003	<0.003	<0.003	<0.003
CEN 10:1 - Benzene	TM245	mg/kg	<0.07	<0.07	<0.07	<0.07	<0.07
CEN 10:1 - Benzene	TM245	mg/l	<0.007	<0.007	<0.007	<0.007	<0.007
CEN 10:1 - Toluene	TM245	mg/kg	<0.04	<0.04	<0.04	<0.04	<0.04
CEN 10:1 - Toluene	TM245	mg/l	<0.004	<0.004	<0.004	<0.004	<0.004
CEN 10:1 - Ethylbenzene	TM245	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
CEN 10:1 - Ethylbenzene	TM245	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005
CEN 10:1 - m,p-Xylene	TM245	mg/kg	<0.08	<0.08	<0.08	<0.08	<0.08
CEN 10:1 - m,p-Xylene	TM245	mg/l	<0.008	<0.008	<0.008	<0.008	<0.008
CEN 10:1 - o-Xylene	TM245	mg/kg	<0.03	<0.03	<0.03	<0.03	<0.03
CEN 10:1 - o-Xylene	TM245	mg/l	<0.003	<0.003	<0.003	<0.003	<0.003

CEN 10:1 - Sum of detected Xylenes	TM245	mg/kg	<0.11	<0.11	<0.11	<0.11	<0.11
CEN 10:1 - Sum of detected Xylenes	TM245	mg/l	<0.011	<0.011	<0.011	<0.011	<0.011
CEN 10:1 - Sum of detected BTEX	TM245	mg/kg	<0.28	<0.28	<0.28	<0.28	<0.28
CEN 10:1 - Sum of detected BTEX	TM245	mg/l	<0.028	<0.028	<0.028	<0.028	<0.028
CEN 10:1 - Aliphatics >C5-C6	TM245	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
CEN 10:1 - Aliphatics >C5-C6	TM245	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01
CEN 10:1 - Aliphatics >C6-C8	TM245	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
CEN 10:1 - Aliphatics >C6-C8	TM245	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01
CEN 10:1 - Aliphatics >C8-C10	TM245	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
CEN 10:1 - Aliphatics >C8-C10	TM245	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01
CEN 10:1 - Aliphatics >C10-C12	TM245	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
CEN 10:1 - Aliphatics >C10-C12	TM245	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01
CEN 10:1 - Aliphatics >C12-C16 (aq)	TM174	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
CEN 10:1 - Aliphatics >C12-C16 (aq)	TM174	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01
CEN 10:1 - Aliphatics >C16-C21 (aq)	TM174	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
CEN 10:1 - Aliphatics >C16-C21 (aq)	TM174	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01
CEN 10:1 - Aliphatics >C21-C35 (aq)	TM174	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
CEN 10:1 - Aliphatics >C21-C35 (aq)	TM174	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01
CEN 10:1 - Total Aliphatics >C12-C35 (aq)	TM174	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
CEN 10:1 - Total Aliphatics >C12-C35 (aq)	TM174	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01
CEN 10:1 - Aromatics >EC5-EC7	TM245	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
CEN 10:1 - Aromatics >EC5-EC7	TM245	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01
CEN 10:1 - Aromatics >EC7-EC8	TM245	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
CEN 10:1 - Aromatics >EC7-EC8	TM245	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01
CEN 10:1 - Aromatics >EC8-EC10	TM245	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
CEN 10:1 - Aromatics >EC8-EC10	TM245	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01
CEN 10:1 - Aromatics >EC10-EC12	TM245	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
CEN 10:1 - Aromatics >EC10-EC12	TM245	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01
CEN 10:1 - Aromatics >EC12-EC16 (aq)	TM174	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
CEN 10:1 - Aromatics >EC12-EC16 (aq)	TM174	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01
CEN 10:1 - Aromatics >EC16-EC21 (aq)	TM174	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
CEN 10:1 - Aromatics >EC16-EC21 (aq)	TM174	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01

CEN 10:1 - Aromatics >EC21-EC35 (aq)	TM174	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
CEN 10:1 - Aromatics >EC21-EC35 (aq)	TM174	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01
CEN 10:1 - Total Aromatics >EC12-EC35 (aq)	TM174	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
CEN 10:1 - Total Aromatics >EC12-EC35 (aq)	TM174	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01
CEN 10:1 - Total Aliphatics & Aromatics >C5-35 (aq)	TM174	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
CEN 10:1 - Total Aliphatics & Aromatics >C5-35 (aq)	TM174	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01
Polyaromatic Hydrocar							
CEN 10:1 - Naphthalene (aq)	TM178	mg/kg	<0.0001	0.000582	0.000268	0.000964	0.00269
CEN 10:1 - Naphthalene (aq)	TM178	mg/l	<0.00001	0.0000582	0.0000268	0.0000964	0.000269
CEN 10:1 - Acenaphthene (aq)	TM178	mg/kg	<0.00005	0.00013	0.000155	0.0000963	0.000764
CEN 10:1 - Acenaphthene (aq)	TM178	mg/l	<0.000005	0.000013	0.0000155	0.00000963	0.0000764
CEN 10:1 - Acenaphthylene (aq)	TM178	mg/kg	<0.00005	0.000198	0.0000603	0.000391	0.000491
CEN 10:1 - Acenaphthylene (aq)	TM178	mg/l	<0.000005	0.0000198	0.00000603	0.0000391	0.0000491
CEN 10:1 - Fluoranthene (aq)	TM178	mg/kg	<0.00005	0.00324	0.00148	0.00154	0.0103
CEN 10:1 - Fluoranthene (aq)	TM178	mg/l	<0.000005	0.000324	0.000148	0.000154	0.00103
CEN 10:1 - Anthracene (aq)	TM178	mg/kg	<0.00005	0.000389	0.0001	0.000371	0.00128
CEN 10:1 - Anthracene (aq)	TM178	mg/l	<0.000005	0.0000389	0.00001	0.0000371	0.000128
CEN 10:1 - Phenanthrene (aq)	TM178	mg/kg	<0.00005	0.00159	0.000688	0.000955	0.0132
CEN 10:1 - Phenanthrene (aq)	TM178	mg/l	<0.000005	0.000159	0.0000688	0.0000955	0.00132
CEN 10:1 - Fluorene (aq)	TM178	mg/kg	<0.00005	0.00024	0.000158	0.000257	0.00101
CEN 10:1 - Fluorene (aq)	TM178	mg/l	<0.000005	0.000024	0.0000158	0.0000257	0.000101
CEN 10:1 - Chrysene (aq)	TM178	mg/kg	<0.00005	0.00132	0.000787	0.000517	0.000581
CEN 10:1 - Chrysene (aq)	TM178	mg/l	<0.000005	0.000132	0.0000787	0.0000517	0.0000581
CEN 10:1 - Pyrene (aq)	TM178	mg/kg	<0.00005	0.00271	0.00137	0.00117	0.00705
CEN 10:1 - Pyrene (aq)	TM178	mg/l	<0.000005	0.000271	0.000137	0.000117	0.000705
CEN 10:1 - Benzo(a)anthracene (aq)	TM178	mg/kg	<0.00005	0.00106	0.000317	0.00037	0.000269
CEN 10:1 - Benzo(a)anthracene (aq)	TM178	mg/l	<0.000005	0.000106	0.0000317	0.000037	0.0000269
CEN 10:1 - Benzo(b)fluoranthene (aq)	TM178	mg/kg	<0.00005	0.00175	0.00134	0.000469	0.000106
CEN 10:1 - Benzo(b)fluoranthene (aq)	TM178	mg/l	<0.000005	0.000175	0.000134	0.0000469	0.0000106
CEN 10:1 - Benzo(k)fluoranthene (aq)	TM178	mg/kg	<0.00005	0.000875	0.000687	0.000318	0.0000779
CEN 10:1 - Benzo(k)fluoranthene (aq)	TM178	mg/l	<0.000005	0.0000875	0.0000687	0.0000318	0.00000779
CEN 10:1 - Benzo(a)pyrene (aq)	TM178	mg/kg	<0.00002	0.000996	0.000718	0.000231	0.0000512

CEN 10:1 - Benzo(a)pyrene (aq)	TM178	mg/l	<0.000002	0.0000996	0.0000718	0.0000231	0.00000512
CEN 10:1 - Dibenzo(a,h)anthracene (aq)	TM178	mg/kg	<0.00005	0.000233	0.000176	0.0000563	<0.00005
CEN 10:1 - Dibenzo(a,h)anthracene (aq)	TM178	mg/l	<0.000005	0.0000233	0.0000176	0.00000563	<0.000005
CEN 10:1 - Benzo(g,h,i)perylene (aq)	TM178	mg/kg	<0.00005	0.00084	0.000761	0.000443	<0.00005
CEN 10:1 - Benzo(g,h,i)perylene (aq)	TM178	mg/l	<0.000005	0.000084	0.0000761	0.0000443	<0.000005
CEN 10:1 - Indeno(1,2,3-cd)pyrene (aq)	TM178	mg/kg	<0.00005	0.000689	0.000559	0.00027	<0.00005
CEN 10:1 - Indeno(1,2,3-cd)pyrene (aq)	TM178	mg/l	<0.000005	0.0000689	0.0000559	0.000027	<0.000005
CEN 10:1 - PAH, Total Detected USEPA 16 (aq)	TM178	mg/kg	<0.00082	0.0168	0.00963	0.00842	0.0379
CEN 10:1 - PAH, Total Detected USEPA 16 (aq)	TM178	mg/l	<0.000082	0.00168	0.000963	0.000842	0.00379
EPH CWG (Speciated)							
CEN 10:1 - Aliphatics >C16-C35 Aqueous	TM174	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
CEN 10:1 - Aliphatics >C16-C35 Aqueous	TM174	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01

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Manor Road (off Manor Lane)
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Tel: (01244) 528700
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Atkins Global Ltd
Project Jonah site office
Llan Coed House
Suite 24
Coed Darcy
Llandarcy
SA10 6HJ

Attention: John Fitzgerald

CERTIFICATE OF ANALYSIS

Date:	06 December 2018
Customer:	H_ATKINS_LDC
Sample Delivery Group (SDG):	181121-47
Your Reference:	
Location:	Llanwern
Report No:	484278

We received 13 samples on Wednesday November 21, 2018 and 13 of these samples were scheduled for analysis which was completed on Thursday December 06, 2018. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

Approved By:



Sonia McWhan

Operations Manager

ALS Life Sciences Limited. Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291.

CERTIFICATE OF ANALYSIS

SDG:	181121-47	**Client Reference:**		**Report Number:**	484278
Location:	Llanwern	**Order Number:**	LLA523	**Superseded Report:**	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
18786527	4G-A7		0.50 - 0.50	20/11/2018
18786511	4G-A8		0.40 - 0.40	20/11/2018
18786517	4G-A8		0.70 - 0.70	20/11/2018
18786535	4G-A7-V		1.80 - 1.80	20/11/2018
18786522	4G-A8-V		2.10 - 2.10	20/11/2018
18786500	4G-B9		0.50 - 0.50	20/11/2018
18786505	4G-B9-V		1.60 - 1.60	20/11/2018
18786553	4G-D7		0.30 - 0.30	20/11/2018
18786557	4G-D7		0.60 - 0.60	20/11/2018
18786495	4G-D7-V		1.70 - 1.70	20/11/2018
18786486	4G-F8		0.50 - 0.50	20/11/2018
18786540	4G-F8		1.00 - 1.00	20/11/2018
18786545	4G-F8-V		2.60 - 2.60	20/11/2018

Maximum Sample/Coolbox Temperature (°C) : **9.2**

ISO5667-3 Water quality - Sampling - Part3 -

During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	181121-47	**Client Reference:**		**Report Number:**	484278
Location:	Llanwern	**Order Number:**	LLA523	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	18786527			18786511			18786517		18786535		18786522		18786500		18786505	18786553
			Customer Sample Reference	4G-A7			4G-A8			4G-A8		4G-A7-V		4G-A8-V		4G-B9		4G-B9-V	4G-D7
			AGS Reference																	
			Depth (m)	0.50 - 0.50			0.40 - 0.40			0.70 - 0.70		1.80 - 1.80		2.10 - 2.10		0.50 - 0.50		1.60 - 1.60	0.30 - 0.30
			Container	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB
			Sample Type	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 5			X			X									X				
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 8		X			X			X						X					X
Ammonium Soil by Titration	All	NDPs: 0 Tests: 13			X			X			X		X		X		X		X		
Anions by Kone (soil)	All	NDPs: 0 Tests: 5			X			X									X				
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 5		X			X									X					X
CEN Readings	All	NDPs: 0 Tests: 8		X			X			X						X					X
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 21		X	X		X	X		X	X		X		X		X	X		X		X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 8		X			X			X						X					X
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 8		X			X			X						X					X
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 13			X			X			X		X		X		X		X		
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 8		X			X			X						X					X
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 13			X			X			X		X		X		X		X		
GRO by GC-FID (S)	All	NDPs: 0 Tests: 13				X			X			X		X		X		X		X		
GRO by GC-FID (W)	All	NDPs: 0 Tests: 8		X			X			X						X					X
Mercury Dissolved	All	NDPs: 0 Tests: 8		X			X			X						X					X

18786545	4G-F8-V		2.60 - 2.60	60g VOC (ALE215)	S																X			
				250g Amber Jar (ALE210)	S				X				X				X			X				
18786540	4G-F8		1.00 - 1.00	60g VOC (ALE215)	S																X			
				250g Amber Jar (ALE210)	S				X				X				X			X				
				1kg TUB	S			X				X	X		X	X			X				X	X
18786486	4G-F8		0.50 - 0.50	60g VOC (ALE215)	S																X			
				250g Amber Jar (ALE210)	S	X			X	X			X				X			X				
				1kg TUB	S			X			X	X	X		X	X			X				X	X
18786495	4G-D7-V		1.70 - 1.70	60g VOC (ALE215)	S																X			
				250g Amber Jar (ALE210)	S				X				X				X			X				
18786557	4G-D7		0.60 - 0.60	60g VOC (ALE215)	S																X			
				250g Amber Jar (ALE210)	S				X				X				X			X				
				1kg TUB	S			X				X	X		X	X			X				X	X
18786553	4G-D7		0.30 - 0.30	60g VOC (ALE215)	S																X			
				250g Amber Jar (ALE210)	S	X			X	X			X				X			X				

Validated

CERTIFICATE OF ANALYSIS

SDG:	181121-47	**Client Reference:**		**Report Number:**	484278
Location:	Llanwern	**Order Number:**	LLA523	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18786527			18786511			18786517			18786535		18786522		18786500			18786505		18786553
Customer Sample Reference			4G-A7			4G-A8			4G-A8			4G-A7-V		4G-A8-V		4G-B9			4G-B9-V		4G-D7
AGS Reference																					
Depth (m)			0.50 - 0.50			0.40 - 0.40			0.70 - 0.70			1.80 - 1.80		2.10 - 2.10		0.50 - 0.50			1.60 - 1.60		0.30 - 0.30
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Metals in solid samples by OES	All	NDPs: 0 Tests: 13		X			X			X		X		X			X		X		
PAH by GCMS	All	NDPs: 0 Tests: 13		X			X			X		X		X			X		X		
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 8	X			X			X							X					X
pH	All	NDPs: 0 Tests: 13		X			X			X		X		X			X		X		
pH Value	All	NDPs: 0 Tests: 8	X			X			X							X					X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 13		X			X			X		X		X			X		X		
Sample description	All	NDPs: 0 Tests: 13		X			X			X		X		X			X		X		
Total Organic Carbon	All	NDPs: 0 Tests: 13		X			X			X		X		X			X		X		
Total Sulphate	All	NDPs: 0 Tests: 5		X			X										X				
Total Sulphur	All	NDPs: 0 Tests: 5		X			X										X				
TPH CWG (W)	All	NDPs: 0 Tests: 8	X			X			X							X					X
TPH CWG GC (S)	All	NDPs: 0 Tests: 13		X			X			X		X		X			X		X		
VOC MS (S)	All	NDPs: 0 Tests: 13			X			X			X		X		X			X		X	

18786545	4G-F8-V		2.60 - 2.60	60g VOC (ALE215)	S
				250g Amber Jar (ALE210)	S
18786540	4G-F8		1.00 - 1.00	60g VOC (ALE215)	S
				250g Amber Jar (ALE210)	S
				1kg TUB	S
18786486	4G-F8		0.50 - 0.50	60g VOC (ALE215)	S
				250g Amber Jar (ALE210)	S
				1kg TUB	S
18786495	4G-D7-V		1.70 - 1.70	60g VOC (ALE215)	S
				250g Amber Jar (ALE210)	S
18786557	4G-D7		0.60 - 0.60	60g VOC (ALE215)	S
				250g Amber Jar (ALE210)	S
				1kg TUB	S
18786553	4G-D7		0.30 - 0.30	60g VOC (ALE215)	S
				250g Amber Jar (ALE210)	S

CERTIFICATE OF ANALYSIS

SDG:	181121-47	**Client Reference:**		**Report Number:**	484278
Location:	Llanwern	**Order Number:**	LLA523	**Superseded Report:**	

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
18786527	4G-A7	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	None
18786511	4G-A8	0.40 - 0.40	Light Brown	Loamy Sand	Stones	Vegetation
18786517	4G-A8	0.70 - 0.70	Dark Brown	Sand	Stones	None
18786535	4G-A7-V	1.80 - 1.80	Grey	Clay	None	None
18786522	4G-A8-V	2.10 - 2.10	Grey	Clay	None	None
18786500	4G-B9	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	N/A
18786505	4G-B9-V	1.60 - 1.60	Dark Brown	Silty Clay Loam	Stones	Vegetation
18786553	4G-D7	0.30 - 0.30	Dark Brown	Sandy Loam	Stones	None
18786557	4G-D7	0.60 - 0.60	Dark Brown	Sand	Stones	None
18786495	4G-D7-V	1.70 - 1.70	Dark Brown	Silty Clay	Vegetation	None
18786486	4G-F8	0.50 - 0.50	Dark Brown	Sand	Stones	None
18786540	4G-F8	1.00 - 1.00	Dark Brown	Sandy Loam	Vegetation	Stones
18786545	4G-F8-V	2.60 - 2.60	Dark Brown	Clay	None	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	181121-47	**Client Reference:**		**Report Number:**	484278
Location:	Llanwern	**Order Number:**	LLA523	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4G-A7	4G-A8	4G-A8	4G-A7-V	4G-A8-V	4G-B9
			Depth (m)	0.50 - 0.50	0.40 - 0.40	0.70 - 0.70	1.80 - 1.80	2.10 - 2.10	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	20/11/2018	20/11/2018	20/11/2018	20/11/2018	20/11/2018	20/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	21/11/2018	21/11/2018	21/11/2018	21/11/2018	21/11/2018	21/11/2018
			SDG Ref	181121-47	181121-47	181121-47	181121-47	181121-47	181121-47
			Lab Sample No.(s)	18786527	18786511	18786517	18786535	18786522	18786500
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		9.2	8.2	4.6	22	28	7.6
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	59.7 M	202 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.159	0.389				0.498
Sulphate, Total potential	<0.06 %	TM132		0.477	1.17				1.49
Soil Organic Matter (SOM)	<0.35 %	TM132		24.8 #	6.1 #	10.8 #	1.56 #	4.14 #	9.64 #
pH	1 pH Units	TM133		10.7 M	10.1 M	11.4 M	8.76 M	7.48 M	11.7 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		6.83 M	7.85 M	2.33 M	12.4 M	11 M	7.56 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	0.686 M	0.604 M	0.267 M	0.264 M	1.84 M
Chromium	<0.9 mg/kg	TM181		33 M	245 M	49.4 M	74.3 M	33.1 M	403 M
Copper	<1.4 mg/kg	TM181		10.7 M	19.2 M	4.82 M	12 M	14.7 M	62.8 M
Iron	<1000 mg/kg	TM181		43400 #	91800 #	26700 #	38300 #	22300 #	196000 #
Lead	<0.7 mg/kg	TM181		32.4 M	37.2 M	28.5 M	24.8 M	29.7 M	30.4 M
Manganese	<0.13 mg/kg	TM181		4350 M	15700 M	2950 M	2710 M	328 M	3380 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<1.4 M	<0.14 M	<0.14 M	<0.14 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		13.1 M	18.9 M	2.88 M	36 M	30.9 M	24.3 M
Selenium	<1 mg/kg	TM181		1.3 #	<10 #	<1 #	1.04 #	<1 #	15.6 #
Vanadium	<0.2 mg/kg	TM181		58.8 #	225 #	38.8 #	89.4 #	54.1 #	453 #
Zinc	<1.9 mg/kg	TM181		114 M	112 M	109 M	97.8 M	108 M	69.1 M
Sulphate, acid soluble (total)	<0.02 %	TM221		<0.02	0.731				0.0292
Calcium	<21 mg/kg	TM224		136000	175000				190000
Magnesium	<8 mg/kg	TM224		14000	19900				10300
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.125 M	0.0917 M				0.103 M

CERTIFICATE OF ANALYSIS

SDG:	181121-47	**Client Reference:**		**Report Number:**	484278
Location:	Llanwern	**Order Number:**	LLA523	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4G-B9-V	4G-D7	4G-D7	4G-D7-V	4G-F8	4G-F8
			Depth (m)	1.60 - 1.60	0.30 - 0.30	0.60 - 0.60	1.70 - 1.70	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	20/11/2018	20/11/2018	20/11/2018	20/11/2018	20/11/2018	20/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	21/11/2018	21/11/2018	21/11/2018	21/11/2018	21/11/2018	21/11/2018
			SDG Ref	181121-47	181121-47	181121-47	181121-47	181121-47	181121-47
			Lab Sample No.(s)	18786505	18786553	18786557	18786495	18786486	18786540
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		22	5.8	21	18	4.4	7.2
Exchangeable Ammonia as N	<12 mg/kg	TM024		113 M	<12 M	<12 M	47.1 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132			0.187			0.0711	
Sulphate, Total potential	<0.06 %	TM132			0.561			0.213	
Soil Organic Matter (SOM)	<0.35 %	TM132		0.85 #	7.57 #	>100 #	0.8 #	12.2 #	2.78 #
pH	1 pH Units	TM133		8.48 M	11.4 M	8.55 M	7.99 M	10.3 M	9.7 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	1.38 M	7.38 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		8.08 M	6.99 M	8.13 M	15.1 M	11.9 M	10 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	1.39 M	0.678 M	<0.02 M	<0.2 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		25.9 M	210 M	10.3 M	27.7 M	<9 M	3.57 M
Copper	<1.4 mg/kg	TM181		7.73 M	52.3 M	22.6 M	9.05 M	21.7 M	11.4 M
Iron	<1000 mg/kg	TM181		23600 #	161000 #	18100 #	32600 #	337000 #	149000 #
Lead	<0.7 mg/kg	TM181		20 M	151 M	63 M	22.4 M	21.6 M	24 M
Manganese	<0.13 mg/kg	TM181		650 M	17900 M	1610 M	954 M	4030 M	3670 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<1.4 M	0.59 M	<0.14 M	<1.4 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		31.1 M	36.5 M	10.9 M	32.6 M	27 M	13.9 M
Selenium	<1 mg/kg	TM181		<1 #	<10 #	2.02 #	<1 #	<10 #	<1 #
Vanadium	<0.2 mg/kg	TM181		43.3 #	1080 #	31.2 #	46.8 #	47.1 #	68.9 #
Zinc	<1.9 mg/kg	TM181		83.5 M	440 M	285 M	95.2 M	136 M	59.5 M
Sulphate, acid soluble (total)	<0.02 %	TM221			<0.02			0.0319	
Calcium	<21 mg/kg	TM224			144000			44900	
Magnesium	<8 mg/kg	TM224			9380			5890	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243			0.0581 M			0.0188 M	

Validated

CERTIFICATE OF ANALYSIS

SDG:	181121-47	**Client Reference:**		**Report Number:**	484278
Location:	Llanwern	**Order Number:**	LLA523	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Customer Sample Ref.	4G-F8-V
Depth (m)	2.60 - 2.60
Sample Type	Soil/Solid (S)
Date Sampled	20/11/2018
Sample Time	00:00
Date Received	21/11/2018
SDG Ref	181121-47
Lab Sample No.(s)	18786545
AGS Reference	

Component	LOD/Units	Method	
Moisture Content Ratio (% of as received sample)	%	PM024	23
Exchangeable Ammonia as N	<12 mg/kg	TM024	140 M
Phenol	<0.01 mg/kg	TM062 (S)	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132	1.21 #
pH	1 pH Units	TM133	6.96 M
Cyanide, Total	<1 mg/kg	TM153	<1 M
Cyanide, Free	<1 mg/kg	TM153	<1 M
Arsenic	<0.6 mg/kg	TM181	16.5 M
Cadmium	<0.02 mg/kg	TM181	<0.02 M
Chromium	<0.9 mg/kg	TM181	34.4 M
Copper	<1.4 mg/kg	TM181	11 M
Iron	<1000 mg/kg	TM181	33500 #
Lead	<0.7 mg/kg	TM181	28.5 M
Manganese	<0.13 mg/kg	TM181	459 M
Mercury	<0.14 mg/kg	TM181	<0.14 M
Nickel	<0.2 mg/kg	TM181	40.2 M
Selenium	<1 mg/kg	TM181	<1 #
Vanadium	<0.2 mg/kg	TM181	58.9 #
Zinc	<1.9 mg/kg	TM181	104 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	181121-47	**Client Reference:**		**Report Number:**	484278
Location:	Llanwern	**Order Number:**	LLA523	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4G-A7	4G-A8	4G-A8	4G-A7-V	4G-A8-V	4G-B9
			Depth (m)	0.50 - 0.50	0.40 - 0.40	0.70 - 0.70	1.80 - 1.80	2.10 - 2.10	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	20/11/2018	20/11/2018	20/11/2018	20/11/2018	20/11/2018	20/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	21/11/2018	21/11/2018	21/11/2018	21/11/2018	21/11/2018	21/11/2018
			SDG Ref	181121-47	181121-47	181121-47	181121-47	181121-47	181121-47
			Lab Sample No.(s)	18786527	18786511	18786517	18786535	18786522	18786500
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		73.8	71	86.8	88.1	68.9	84.1
Acenaphthene-d10 % recovery**	%	TM218		73.6	68.2	87.4	83	71.2	90
Phenanthrene-d10 % recovery**	%	TM218		74.5	72.8	89.6	81.4	69.7	98.2
Chrysene-d12 % recovery**	%	TM218		71	72.7	85.4	86.3	72.8	90.8
Perylene-d12 % recovery**	%	TM218		72.2	75.1	84.1	94.8	74.4	95.2
Naphthalene	<0.009 mg/kg	TM218		0.105 M	0.167 M	0.0268 M	<0.009 M	<0.009 M	0.0951 M
Acenaphthylene	<0.012 mg/kg	TM218		0.0402 M	<0.12 M	<0.012 M	<0.012 M	<0.012 M	0.0328 M
Acenaphthene	<0.008 mg/kg	TM218		0.0159 M	<0.08 M	0.0113 M	<0.008 M	<0.008 M	0.124 M
Fluorene	<0.01 mg/kg	TM218		0.0223 M	<0.1 M	0.0178 M	<0.01 M	<0.01 M	0.0574 M
Phenanthrene	<0.015 mg/kg	TM218		0.239 M	0.432 M	0.186 M	<0.015 M	<0.015 M	1.13 M
Anthracene	<0.016 mg/kg	TM218		0.0897 M	0.254 M	0.0357 M	<0.016 M	<0.016 M	0.247 M
Fluoranthene	<0.017 mg/kg	TM218		0.497 M	1.06 M	0.221 M	0.0387 M	<0.017 M	3.18 M
Pyrene	<0.015 mg/kg	TM218		0.408 M	0.903 M	0.216 M	0.0401 M	<0.015 M	3.43 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.333 M	0.486 M	0.178 M	0.0383 M	<0.014 M	2.57 M
Chrysene	<0.01 mg/kg	TM218		0.375 M	0.608 M	0.189 M	0.0441 M	<0.01 M	2.73 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.582 M	0.95 M	0.355 M	0.0658 M	<0.015 M	4.91 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.219 M	0.318 M	0.0971 M	0.0198 M	<0.014 M	1.73 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.371 M	0.58 M	0.214 M	0.0669 M	<0.015 M	3.19 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.19 M	0.328 M	0.149 M	0.0378 M	<0.018 M	2.58 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.0599 M	<0.23 M	0.0391 M	<0.023 M	<0.023 M	0.539 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.25 M	0.435 M	0.158 M	0.0502 M	<0.024 M	2.24 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		3.8	6.52	2.09	0.402	<0.118	28.8

Validated

CERTIFICATE OF ANALYSIS

SDG:	181121-47	**Client Reference:**		**Report Number:**	484278
Location:	Llanwern	**Order Number:**	LLA523	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4G-B9-V	4G-D7	4G-D7	4G-D7-V	4G-F8	4G-F8
			Depth (m)	1.60 - 1.60	0.30 - 0.30	0.60 - 0.60	1.70 - 1.70	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	20/11/2018	20/11/2018	20/11/2018	20/11/2018	20/11/2018	20/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	21/11/2018	21/11/2018	21/11/2018	21/11/2018	21/11/2018	21/11/2018
			SDG Ref	181121-47	181121-47	181121-47	181121-47	181121-47	181121-47
			Lab Sample No.(s)	18786505	18786553	18786557	18786495	18786486	18786540
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		86.4	73.2	70.2	85.8	77.5	81
Acenaphthene-d10 % recovery**	%	TM218		83.4	74	70.6	82.8	75.7	85.5
Phenanthrene-d10 % recovery**	%	TM218		83.8	73.5	66.9	84	75.5	94.7
Chrysene-d12 % recovery**	%	TM218		84.9	70.8	39.1	89	73.2	83.2
Perylene-d12 % recovery**	%	TM218		89.7	70.5	29	94	75.1	85.7
Naphthalene	<0.009 mg/kg	TM218		<0.009 M	0.341 M	1.08 M	<0.009 M	0.0352 M	0.0191 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	0.219 M	0.186 M	<0.012 M	0.0204 M	0.0136 M
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	0.0306 M	0.0102 M	<0.008 M	0.009 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	0.131 M	0.0175 M	<0.01 M	0.0124 M	0.0155 M
Phenanthrene	<0.015 mg/kg	TM218		<0.015 M	1.5 M	0.215 M	<0.015 M	0.148 M	0.132 M
Anthracene	<0.016 mg/kg	TM218		<0.016 M	0.409 M	0.108 M	<0.016 M	0.062 M	0.0313 M
Fluoranthene	<0.017 mg/kg	TM218		<0.017 M	2.68 M	0.315 M	<0.017 M	0.275 M	0.172 M
Pyrene	<0.015 mg/kg	TM218		<0.015 M	2.35 M	0.249 M	<0.015 M	0.201 M	0.136 M
Benz(a)anthracene	<0.014 mg/kg	TM218		<0.014 M	1.41 M	0.238 M	<0.014 M	0.161 M	0.0908 M
Chrysene	<0.01 mg/kg	TM218		<0.01 M	1.51 M	0.313 M	<0.01 M	0.179 M	0.0961 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		<0.015 M	2.33 M	0.614 M	<0.015 M	0.27 M	0.151 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 M	0.833 M	0.189 M	<0.014 M	0.093 M	0.0463 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		<0.015 M	1.36 M	0.337 M	<0.015 M	0.144 M	0.0883 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		<0.018 M	0.735 M	0.309 M	<0.018 M	0.0919 M	0.0694 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	0.213 M	0.0852 M	<0.023 M	0.0286 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 M	0.94 M	0.413 M	<0.024 M	0.116 M	0.0773 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		<0.118	17	4.68	<0.118	1.85	1.14

CERTIFICATE OF ANALYSIS

SDG:	181121-47	**Client Reference:**		**Report Number:**	484278
Location:	Llanwern	**Order Number:**	LLA523	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

		Customer Sample Ref.	4G-F8-V
		Depth (m)	2.60 - 2.60
		Sample Type	Soil/Solid (S)
		Date Sampled	20/11/2018
		Sample Time	00:00
		Date Received	21/11/2018
		SDG Ref	181121-47
		Lab Sample No.(s)	18786545
		AGS Reference	
Component	**LOD/Units**	**Method**	
Naphthalene-d8 % recovery**	%	TM218	71.4
Acenaphthene-d10 % recovery**	%	TM218	73.4
Phenanthrene-d10 % recovery**	%	TM218	69.7
Chrysene-d12 % recovery**	%	TM218	70.8
Perylene-d12 % recovery**	%	TM218	74
Naphthalene	<0.009 mg/kg	TM218	<0.009 M
Acenaphthylene	<0.012 mg/kg	TM218	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218	<0.008 M
Fluorene	<0.01 mg/kg	TM218	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218	<0.015 M
Anthracene	<0.016 mg/kg	TM218	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218	<0.017 M
Pyrene	<0.015 mg/kg	TM218	<0.015 M
Benz(a)anthracene	<0.014 mg/kg	TM218	<0.014 M
Chrysene	<0.01 mg/kg	TM218	<0.01 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218	<0.015 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218	<0.118

CERTIFICATE OF ANALYSIS

SDG:	181121-47	**Client Reference:**		**Report Number:**	484278
Location:	Llanwern	**Order Number:**	LLA523	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4G-A7	4G-A8	4G-A8	4G-A7-V	4G-A8-V	4G-B9
			Depth (m)	0.50 - 0.50	0.40 - 0.40	0.70 - 0.70	1.80 - 1.80	2.10 - 2.10	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	20/11/2018	20/11/2018	20/11/2018	20/11/2018	20/11/2018	20/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	21/11/2018	21/11/2018	21/11/2018	21/11/2018	21/11/2018	21/11/2018
			SDG Ref	181121-47	181121-47	181121-47	181121-47	181121-47	181121-47
			Lab Sample No.(s)	18786527	18786511	18786517	18786535	18786522	18786500
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		82.6	74.7	93	97.3	81	88
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 M	<0.2 M	<0.2 M	<0.2 M	<0.2 M	<0.2 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C12-C16	<0.1 mg/kg	TM173		0.793	2.71	0.593	<0.1	0.156	1.85
Aliphatics >C16-C21	<0.1 mg/kg	TM173		4.98	26.9	5.21	<0.1	<0.1	9.2
Aliphatics >C21-C35	<0.1 mg/kg	TM173		60.5	167	24.7	<0.1	0.692	60.7
Aliphatics >C35-C44	<0.1 mg/kg	TM173		17.2	45.8	4.74	<0.1	0.235	13.7
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		83.5	242	35.2	<0.1	1.08	85.4
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		1.82	2.11	0.867	<0.1	0.122	1.44
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		7.24	11.8	6.21	<0.1	<0.1	17.7
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		50.3	109	16.8	4.61	3.67	130
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		22.5	60.2	4.96	0.547	0.395	42.1
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		10.5	27.9	1.75	<0.1	<0.1	17.8
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		81.8	183	28.9	5.16	4.18	192
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		165	425	64.1	5.16	5.27	277

Validated

CERTIFICATE OF ANALYSIS

SDG:	181121-47	**Client Reference:**		**Report Number:**	484278
Location:	Llanwern	**Order Number:**	LLA523	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4G-B9-V	4G-D7	4G-D7	4G-D7-V	4G-F8	4G-F8
			Depth (m)	1.60 - 1.60	0.30 - 0.30	0.60 - 0.60	1.70 - 1.70	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	20/11/2018	20/11/2018	20/11/2018	20/11/2018	20/11/2018	20/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	21/11/2018	21/11/2018	21/11/2018	21/11/2018	21/11/2018	21/11/2018
			SDG Ref	181121-47	181121-47	181121-47	181121-47	181121-47	181121-47
			Lab Sample No.(s)	18786505	18786553	18786557	18786495	18786486	18786540
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		93	78.8	82.2	95.9	97	90.4
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 M	<0.2 M	<0.2 M	<0.2 M	<0.2 M	<0.2 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	3.42	10.8	<0.1	<0.1	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		<0.1	26.3	373	<0.1	<0.1	3.02
Aliphatics >C21-C35	<0.1 mg/kg	TM173		<0.1	99.7	127	<0.1	13.9	12
Aliphatics >C35-C44	<0.1 mg/kg	TM173		<0.1	26.6	19.3	<0.1	1.25	3.42
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		<0.1	156	531	<0.1	15.2	18.5
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	3.13	5.52	<0.1	<0.1	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		<0.1	24.3	72.5	<0.1	<0.1	0.971
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		<0.1	86.5	190	2.55	6.57	8.16
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		<0.1	30.5	48.3	<0.1	5.17	3.63
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		<0.1	10.7	13.3	<0.1	2.77	1.75
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		<0.1	144	317	2.55	11.7	12.8
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		<0.1	300	848	2.55	26.9	31.2

Validated

CERTIFICATE OF ANALYSIS

SDG:	181121-47	**Client Reference:**		**Report Number:**	484278
Location:	Llanwern	**Order Number:**	LLA523	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref. 4G-F8-V				
			Depth (m) 2.60 - 2.60				
			Sample Type Soil/Solid (S)				
			Date Sampled 20/11/2018				
			Sample Time 00:00				
			Date Received 21/11/2018				
			SDG Ref 181121-47				
			Lab Sample No.(s) 18786545				
			AGS Reference				
GRO Surrogate % recovery**	%	TM089	101				
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089	<0.2 M				
Aliphatics >C5-C6	<0.01 mg/kg	TM089	<0.02				
Aliphatics >C6-C8	<0.01 mg/kg	TM089	<0.02				
Aliphatics >C8-C10	<0.01 mg/kg	TM089	<0.02				
Aliphatics >C10-C12	<0.01 mg/kg	TM089	<0.02				
Aliphatics >C12-C16	<0.1 mg/kg	TM173	<0.1				
Aliphatics >C16-C21	<0.1 mg/kg	TM173	<0.1				
Aliphatics >C21-C35	<0.1 mg/kg	TM173	<0.1				
Aliphatics >C35-C44	<0.1 mg/kg	TM173	<0.1				
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173	<0.1				
Aromatics >EC5-EC7	<0.01 mg/kg	TM089	<0.02				
Aromatics >EC7-EC8	<0.01 mg/kg	TM089	<0.02				
Aromatics >EC8-EC10	<0.01 mg/kg	TM089	<0.02				
Aromatics >EC10-EC12	<0.01 mg/kg	TM089	<0.02				
Aromatics >EC12-EC16	<0.1 mg/kg	TM173	<0.1				
Aromatics >EC16-EC21	<0.1 mg/kg	TM173	<0.1				
Aromatics >EC21-EC35	<0.1 mg/kg	TM173	<0.1				
Aromatics >EC35-EC44	<0.1 mg/kg	TM173	<0.1				
Aromatics >EC40-EC44	<0.1 mg/kg	TM173	<0.1				
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173	<0.1				
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173	<0.1				

Validated

CERTIFICATE OF ANALYSIS

SDG:	181121-47	**Client Reference:**		**Report Number:**	484278
Location:	Llanwern	**Order Number:**	LLA523	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4G-A7	4G-A8	4G-A8	4G-A7-V	4G-A8-V	4G-B9
			Depth (m)	0.50 - 0.50	0.40 - 0.40	0.70 - 0.70	1.80 - 1.80	2.10 - 2.10	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	20/11/2018	20/11/2018	20/11/2018	20/11/2018	20/11/2018	20/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	21/11/2018	21/11/2018	21/11/2018	21/11/2018	21/11/2018	21/11/2018
			SDG Ref	181121-47	181121-47	181121-47	181121-47	181121-47	181121-47
			Lab Sample No.(s)	18786527	18786511	18786517	18786535	18786522	18786500
			AGS Reference						
Dibromofluoromethane**	%	TM116		107	109	109	108	108	108
Toluene-d8**	%	TM116		101	98.2	102	97.5	101	100
4-Bromofluorobenzene**	%	TM116		81.1	76.5	85.6	100	85.2	82
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181121-47	**Client Reference:**		**Report Number:**	484278
Location:	Llanwern	**Order Number:**	LLA523	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4G-B9-V	4G-D7	4G-D7	4G-D7-V	4G-F8	4G-F8
			Depth (m)	1.60 - 1.60	0.30 - 0.30	0.60 - 0.60	1.70 - 1.70	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	20/11/2018	20/11/2018	20/11/2018	20/11/2018	20/11/2018	20/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	21/11/2018	21/11/2018	21/11/2018	21/11/2018	21/11/2018	21/11/2018
			SDG Ref	181121-47	181121-47	181121-47	181121-47	181121-47	181121-47
			Lab Sample No.(s)	18786505	18786553	18786557	18786495	18786486	18786540
			AGS Reference						
Dibromofluoromethane**	%	TM116		108	105	112	108	109	110
Toluene-d8**	%	TM116		102	99.7	101	103	102	103
4-Bromofluorobenzene**	%	TM116		85.2	75.1	79.2	85.8	86.2	85
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	0.296 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	0.201 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181121-47	**Client Reference:**		**Report Number:**	484278
Location:	Llanwern	**Order Number:**	LLA523	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Customer Sample Ref.	4G-F8-V
Depth (m)	2.60 - 2.60
Sample Type	Soil/Solid (S)
Date Sampled	20/11/2018
Sample Time	00:00
Date Received	21/11/2018
SDG Ref	181121-47
Lab Sample No.(s)	18786545
AGS Reference	

Component	LOD/Units	Method	
Dibromofluoromethane**	%	TM116	110
Toluene-d8**	%	TM116	101
4-Bromofluorobenzene**	%	TM116	86.1
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116	<0.1 M
Benzene	<0.009 mg/kg	TM116	<0.09 M
Toluene	<0.007 mg/kg	TM116	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116	<0.1 #
o-Xylene	<0.01 mg/kg	TM116	<0.1 M
Naphthalene	<0.013 mg/kg	TM116	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116	<0.4

CERTIFICATE OF ANALYSIS

SDG:	181121-47	**Client Reference:**		**Report Number:**	484278
Location:	Llanwern	**Order Number:**	LLA523	**Superseded Report:**	

Asbestos Identification - Solid Samples

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4G-A7 0.50 - 0.50 SOLID 20/11/2018 00:00:00 21/11/2018 20:45:23 181121-47 18786527 TM048	03/12/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4G-A8 0.40 - 0.40 SOLID 20/11/2018 00:00:00 21/11/2018 16:12:14 181121-47 18786511 TM048	03/12/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4G-B9 0.50 - 0.50 SOLID 20/11/2018 00:00:00 21/11/2018 20:48:03 181121-47 18786500 TM048	03/12/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4G-D7 0.30 - 0.30 SOLID 20/11/2018 00:00:00 21/11/2018 13:26:46 181121-47 18786553 TM048	03/12/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4G-F8 0.50 - 0.50 SOLID 20/11/2018 00:00:00 22/11/2018 20:36:54 181121-47 18786486 TM048	03/12/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	181121-47	**Client Reference:**		**Report Number:**	484278
Location:	Llanwern	**Order Number:**	LLA523	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.6
Particle Size <4mm	>95%		

Case	
SDG	181121-47
Lab Sample Number(s)	18786486
Sampled Date	20-Nov-2018
Customer Sample Ref.	4G-F8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0074	<0.0005	0.074	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.000552	<0.0003	0.00552	<0.003	-	-	-
Lead	0.00146	<0.0002	0.0146	<0.002	-	-	-
Manganese	0.0141	<0.003	0.141	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0357	<0.001	0.357	<0.01	-	-	-
Zinc	0.00731	<0.001	0.0731	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.403	<0.019	4.03	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.00002	<0.000005	0.0002	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000189	<0.000005	0.000189	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000178	<0.000005	0.000178	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000179	<0.000005	0.000179	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000588	<0.000005	0.0000588	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000768	<0.000002	0.0000768	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0000881	<0.000082	0.000881	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	22-Nov-2018
pH (pH Units)	9.69
Conductivity (µS/cm)	97.80
Temperature (°C)	18.10
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates
06/12/2018 16:59:30

16:59:11 06/12/2018

CERTIFICATE OF ANALYSIS

SDG:	181121-47	**Client Reference:**		**Report Number:**	484278
Location:	Llanwern	**Order Number:**	LLA523	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.6
Particle Size <4mm	>95%		

Case	
SDG	181121-47
Lab Sample Number(s)	18786486
Sampled Date	20-Nov-2018
Customer Sample Ref.	4G-F8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	22-Nov-2018
pH (pH Units)	9.69
Conductivity (µS/cm)	97.80
Temperature (°C)	18.10
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181121-47	**Client Reference:**		**Report Number:**	484278
Location:	Llanwern	**Order Number:**	LLA523	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.23
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.4
Particle Size <4mm	>95%		

Case	
SDG	181121-47
Lab Sample Number(s)	18786500
Sampled Date	20-Nov-2018
Customer Sample Ref.	4G-B9
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000515	<0.0005	0.00515	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0116	<0.001	0.116	<0.01	-	-	-
Copper	0.00211	<0.0003	0.0211	<0.003	-	-	-
Lead	0.0143	<0.0002	0.143	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.012	<0.001	0.12	<0.01	-	-	-
Zinc	0.00679	<0.001	0.0679	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000039	<0.00001	0.00039	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000297	<0.000005	0.000297	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000207	<0.000005	0.00207	<0.00005	-	-	-
Anthracene by GCMS	0.000023	<0.000005	0.00023	<0.00005	-	-	-
Phenanthrene by GCMS	0.000108	<0.000005	0.00108	<0.00005	-	-	-
Fluorene by GCMS	0.00000812	<0.000005	0.0000812	<0.00005	-	-	-
Chrysene by GCMS	0.0000328	<0.000005	0.000328	<0.00005	-	-	-
Pyrene by GCMS	0.000283	<0.000005	0.00283	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000016	<0.000005	0.00016	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00000756	<0.000005	0.0000756	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000331	<0.000002	0.0000331	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000758	<0.000082	0.00758	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	23-Nov-2018
pH (pH Units)	11.36
Conductivity (µS/cm)	1,090.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	181121-47	**Client Reference:**		**Report Number:**	484278
Location:	Llanwern	**Order Number:**	LLA523	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.23
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.4
Particle Size <4mm	>95%		

Case	
SDG	181121-47
Lab Sample Number(s)	18786500
Sampled Date	20-Nov-2018
Customer Sample Ref.	4G-B9
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	23-Nov-2018
pH (pH Units)	11.36
Conductivity (µS/cm)	1,090.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181121-47	**Client Reference:**		**Report Number:**	484278
Location:	Llanwern	**Order Number:**	LLA523	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.93
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.8
Particle Size <4mm	>95%		

Case	
SDG	181121-47
Lab Sample Number(s)	18786511
Sampled Date	20-Nov-2018
Customer Sample Ref.	4G-A8
Depth (m)	0.40 - 0.40

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	5.95	<0.2	59.5	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000116	<0.00001	0.000116	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000901	<0.0005	0.00901	<0.005	-	-	-
Cadmium	0.000191	<0.00008	0.00191	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00215	<0.0003	0.0215	<0.003	-	-	-
Lead	0.0156	<0.0002	0.156	<0.002	-	-	-
Manganese	0.321	<0.003	3.21	<0.03	-	-	-
Nickel	0.000775	<0.0004	0.00775	<0.004	-	-	-
Selenium	0.00327	<0.001	0.0327	<0.01	-	-	-
Vanadium	0.0591	<0.001	0.591	<0.01	-	-	-
Zinc	0.0449	<0.001	0.449	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.428	<0.019	4.28	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000287	<0.00001	0.000287	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000938	<0.000005	0.000938	<0.00005	-	-	-
Anthracene by GCMS	0.0000101	<0.000005	0.000101	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000609	<0.000005	0.000609	<0.00005	-	-	-
Fluorene by GCMS	0.00000948	<0.000005	0.0000948	<0.00005	-	-	-
Chrysene by GCMS	0.0000269	<0.000005	0.000269	<0.00005	-	-	-
Pyrene by GCMS	0.0000791	<0.000005	0.000791	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000245	<0.000005	0.000245	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000451	<0.000005	0.000451	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000219	<0.000005	0.000219	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000185	<0.000002	0.000185	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000257	<0.000005	0.000257	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000023	<0.000005	0.00023	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000468	<0.000082	0.00468	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	22-Nov-2018
pH (pH Units)	10.23
Conductivity (µS/cm)	142.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181121-47	**Client Reference:**		**Report Number:**	484278
Location:	Llanwern	**Order Number:**	LLA523	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.93
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.8
Particle Size <4mm	>95%		

Case	
SDG	181121-47
Lab Sample Number(s)	18786511
Sampled Date	20-Nov-2018
Customer Sample Ref.	4G-A8
Depth (m)	0.40 - 0.40

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	22-Nov-2018
pH (pH Units)	10.23
Conductivity (µS/cm)	142.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181121-47	**Client Reference:**		**Report Number:**	484278
Location:	Llanwern	**Order Number:**	LLA523	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.82
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.4
Particle Size <4mm	>95%		

Case	
SDG	181121-47
Lab Sample Number(s)	18786517
Sampled Date	20-Nov-2018
Customer Sample Ref.	4G-A8
Depth (m)	0.70 - 0.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000814	<0.0005	0.00814	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00249	<0.001	0.0249	<0.01	-	-	-
Copper	0.00252	<0.0003	0.0252	<0.003	-	-	-
Lead	0.000278	<0.0002	0.00278	<0.002	-	-	-
Manganese	0.0051	<0.003	0.051	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00103	<0.001	0.0103	<0.01	-	-	-
Vanadium	0.0247	<0.001	0.247	<0.01	-	-	-
Zinc	0.00127	<0.001	0.0127	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000011	<0.000005	0.00011	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.00000947	<0.000005	0.0000947	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.00000824	<0.000005	0.0000824	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	22-Nov-2018
pH (pH Units)	11.04
Conductivity (µS/cm)	575.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181121-47	**Client Reference:**		**Report Number:**	484278
Location:	Llanwern	**Order Number:**	LLA523	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.82
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.4
Particle Size <4mm	>95%		

Case	
SDG	181121-47
Lab Sample Number(s)	18786517
Sampled Date	20-Nov-2018
Customer Sample Ref.	4G-A8
Depth (m)	0.70 - 0.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	22-Nov-2018
pH (pH Units)	11.04
Conductivity (µS/cm)	575.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181121-47	**Client Reference:**		**Report Number:**	484278
Location:	Llanwern	**Order Number:**	LLA523	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.8
Particle Size <4mm	>95%		

Case	
SDG	181121-47
Lab Sample Number(s)	18786527
Sampled Date	20-Nov-2018
Customer Sample Ref.	4G-A7
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00208	<0.0005	0.0208	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00407	<0.0003	0.0407	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000784	<0.0004	0.00784	<0.004	-	-	-
Selenium	0.00127	<0.001	0.0127	<0.01	-	-	-
Vanadium	0.0572	<0.001	0.572	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000253	<0.00001	0.000253	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000418	<0.000005	0.000418	<0.00005	-	-	-
Anthracene by GCMS	0.00000933	<0.000005	0.0000933	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000271	<0.000005	0.000271	<0.00005	-	-	-
Fluorene by GCMS	0.00000584	<0.000005	0.0000584	<0.00005	-	-	-
Chrysene by GCMS	0.0000133	<0.000005	0.000133	<0.00005	-	-	-
Pyrene by GCMS	0.0000287	<0.000005	0.000287	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000166	<0.000005	0.000166	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000152	<0.000005	0.000152	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000121	<0.000005	0.000121	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000876	<0.000002	0.0000876	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00000864	<0.000005	0.0000864	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000213	<0.000082	0.00213	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	23-Nov-2018
pH (pH Units)	10.71
Conductivity (µS/cm)	257.00
Temperature (°C)	17.40
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181121-47	**Client Reference:**		**Report Number:**	484278
Location:	Llanwern	**Order Number:**	LLA523	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.8
Particle Size <4mm	>95%		

Case	
SDG	181121-47
Lab Sample Number(s)	18786527
Sampled Date	20-Nov-2018
Customer Sample Ref.	4G-A7
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.016	<0.01	0.16	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	23-Nov-2018
pH (pH Units)	10.71
Conductivity (µS/cm)	257.00
Temperature (°C)	17.40
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181121-47	**Client Reference:**		**Report Number:**	484278
Location:	Llanwern	**Order Number:**	LLA523	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.76
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.8
Particle Size <4mm	>95%		

Case	
SDG	181121-47
Lab Sample Number(s)	18786540
Sampled Date	20-Nov-2018
Customer Sample Ref.	4G-F8
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00433	<0.0005	0.0433	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00291	<0.001	0.0291	<0.01	-	-	-
Vanadium	0.0261	<0.001	0.261	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000019	<0.000005	0.00019	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000163	<0.000005	0.000163	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000152	<0.000005	0.000152	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	24-Nov-2018
pH (pH Units)	9.83
Conductivity (µS/cm)	92.30
Temperature (°C)	18.10
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181121-47	**Client Reference:**		**Report Number:**	484278
Location:	Llanwern	**Order Number:**	LLA523	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.76
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.8
Particle Size <4mm	>95%		

Case	
SDG	181121-47
Lab Sample Number(s)	18786540
Sampled Date	20-Nov-2018
Customer Sample Ref.	4G-F8
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	24-Nov-2018
pH (pH Units)	9.83
Conductivity (µS/cm)	92.30
Temperature (°C)	18.10
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

06/12/2018 16:59:30

16:59:11 06/12/2018

CERTIFICATE OF ANALYSIS

SDG:	181121-47	**Client Reference:**		**Report Number:**	484278
Location:	Llanwern	**Order Number:**	LLA523	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	6.16
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.2
Particle Size <4mm	>95%		

Case	
SDG	181121-47
Lab Sample Number(s)	18786553
Sampled Date	20-Nov-2018
Customer Sample Ref.	4G-D7
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00151	<0.0005	0.0151	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00293	<0.001	0.0293	<0.01	-	-	-
Copper	0.00263	<0.0003	0.0263	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00214	<0.001	0.0214	<0.01	-	-	-
Vanadium	0.221	<0.001	2.21	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000118	<0.00001	0.000118	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000981	<0.000005	0.0000981	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000886	<0.000005	0.0000886	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000853	<0.000005	0.000853	<0.00005	-	-	-
Anthracene by GCMS	0.00000738	<0.000005	0.0000738	<0.00005	-	-	-
Phenanthrene by GCMS	0.00000867	<0.000005	0.0000867	<0.00005	-	-	-
Fluorene by GCMS	0.00000843	<0.000005	0.0000843	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.000127	<0.000005	0.00127	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000267	<0.000082	0.00267	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	22-Nov-2018
pH (pH Units)	11.24
Conductivity (µS/cm)	412.00
Temperature (°C)	17.30
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates
06/12/2018 16:59:30

16:59:11 06/12/2018

CERTIFICATE OF ANALYSIS

SDG:	181121-47	**Client Reference:**		**Report Number:**	484278
Location:	Llanwern	**Order Number:**	LLA523	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	6.16
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.2
Particle Size <4mm	>95%		

Case	
SDG	181121-47
Lab Sample Number(s)	18786553
Sampled Date	20-Nov-2018
Customer Sample Ref.	4G-D7
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	22-Nov-2018
pH (pH Units)	11.24
Conductivity (µS/cm)	412.00
Temperature (°C)	17.30
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181121-47	**Client Reference:**		**Report Number:**	484278
Location:	Llanwern	**Order Number:**	LLA523	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.114	**Natural Moisture Content (%)**	26.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	79
Particle Size <4mm	>95%		

Case	
SDG	181121-47
Lab Sample Number(s)	18786557
Sampled Date	20-Nov-2018
Customer Sample Ref.	4G-D7
Depth (m)	0.60 - 0.60

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000145	<0.00001	0.000145	<0.0001	-	-	-
Total Cyanide (W)	0.06	<0.05	0.6	<0.5	-	-	-
Arsenic	0.00323	<0.0005	0.0323	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00138	<0.0003	0.0138	<0.003	-	-	-
Lead	0.000822	<0.0002	0.00822	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000497	<0.0004	0.00497	<0.004	-	-	-
Selenium	0.00215	<0.001	0.0215	<0.01	-	-	-
Vanadium	0.00447	<0.001	0.0447	<0.01	-	-	-
Zinc	0.002	<0.001	0.02	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.919	<0.019	9.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000239	<0.00001	0.000239	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000244	<0.000005	0.000244	<0.00005	-	-	-
Fluoranthene by GCMS	0.000145	<0.000005	0.00145	<0.00005	-	-	-
Anthracene by GCMS	0.0000259	<0.000005	0.000259	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000311	<0.000005	0.000311	<0.00005	-	-	-
Fluorene by GCMS	0.00000531	<0.000005	0.0000531	<0.00005	-	-	-
Chrysene by GCMS	0.0000612	<0.000005	0.000612	<0.00005	-	-	-
Pyrene by GCMS	0.000114	<0.000005	0.00114	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000403	<0.000005	0.000403	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000159	<0.000005	0.00159	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000722	<0.000005	0.000722	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000891	<0.000002	0.000891	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000275	<0.000005	0.000275	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000227	<0.000005	0.00227	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000126	<0.000005	0.00126	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00117	<0.000082	0.0117	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	22-Nov-2018
pH (pH Units)	8.87
Conductivity (µS/cm)	81.20
Temperature (°C)	15.90
Volume Leachant (Litres)	0.876

Mcerts Certification does not apply to leachates

06/12/2018 16:59:30

16:59:11 06/12/2018

CERTIFICATE OF ANALYSIS

SDG:	181121-47	**Client Reference:**		**Report Number:**	484278
Location:	Llanwern	**Order Number:**	LLA523	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.114	**Natural Moisture Content (%)**	26.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	79
Particle Size <4mm	>95%		

Case	
SDG	181121-47
Lab Sample Number(s)	18786557
Sampled Date	20-Nov-2018
Customer Sample Ref.	4G-D7
Depth (m)	0.60 - 0.60

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	22-Nov-2018
pH (pH Units)	8.87
Conductivity (µS/cm)	81.20
Temperature (°C)	15.90
Volume Leachant (Litres)	0.876

Mcerts Certification does not apply to leachates

06/12/2018 16:59:30

16:59:11 06/12/2018

Table of Results - Appendix

Method No	Reference	Description
PM001		Preparation of Samples for Metals Analysis
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM243		Mixed Anions In Soils By Kone
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	181121-47	**Client Reference:**		**Report Number:**	484278
Location:	Llanwern	**Order Number:**	LLA523	**Superseded Report:**	

Test Completion Dates

Lab Sample No(s)	18786527	18786511	18786517	18786535	18786522	18786500	18786505	18786553	18786557	18786495
Customer Sample Ref.	4G-A7	4G-A8	4G-A8	4G-A7-V	4G-A8-V	4G-B9	4G-B9-V	4G-D7	4G-D7	4G-D7-V
AGS Ref.										
Depth	0.50 - 0.50	0.40 - 0.40	0.70 - 0.70	1.80 - 1.80	2.10 - 2.10	0.50 - 0.50	1.60 - 1.60	0.30 - 0.30	0.60 - 0.60	1.70 - 1.70
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	28-Nov-2018	28-Nov-2018				28-Nov-2018		28-Nov-2018		
Ammoniacal Nitrogen	30-Nov-2018	30-Nov-2018	30-Nov-2018			30-Nov-2018		30-Nov-2018	30-Nov-2018	
Ammonium Soil by Titration	05-Dec-2018	04-Dec-2018	04-Dec-2018	04-Dec-2018	04-Dec-2018	04-Dec-2018	04-Dec-2018	04-Dec-2018	04-Dec-2018	04-Dec-2018
Anions by Kone (soil)	04-Dec-2018	04-Dec-2018				04-Dec-2018		04-Dec-2018		
Asbestos ID in Solid Samples	03-Dec-2018	03-Dec-2018				03-Dec-2018		03-Dec-2018		
CEN 10:1 Leachate (1 Stage)	23-Nov-2018	04-Dec-2018	22-Nov-2018			23-Nov-2018		23-Nov-2018	23-Nov-2018	
CEN Readings	24-Nov-2018	28-Nov-2018	28-Nov-2018			28-Nov-2018		24-Nov-2018	24-Nov-2018	
Cyanide Comp/Free/Total/Thiocyanate	05-Dec-2018	05-Dec-2018	05-Dec-2018	05-Dec-2018	05-Dec-2018	05-Dec-2018	05-Dec-2018	05-Dec-2018	05-Dec-2018	05-Dec-2018
Dissolved Metals by ICP-MS	04-Dec-2018	04-Dec-2018	04-Dec-2018			04-Dec-2018		04-Dec-2018	04-Dec-2018	
EPH CWG (Aliphatic) Aqueous GC (W)	03-Dec-2018	03-Dec-2018	01-Dec-2018			01-Dec-2018		03-Dec-2018	03-Dec-2018	
EPH CWG (Aliphatic) GC (S)	03-Dec-2018	03-Dec-2018	03-Dec-2018	26-Nov-2018	04-Dec-2018	03-Dec-2018	04-Dec-2018	26-Nov-2018	03-Dec-2018	26-Nov-2018
EPH CWG (Aromatic) Aqueous GC (W)	03-Dec-2018	03-Dec-2018	01-Dec-2018			01-Dec-2018		03-Dec-2018	03-Dec-2018	
EPH CWG (Aromatic) GC (S)	03-Dec-2018	03-Dec-2018	03-Dec-2018	26-Nov-2018	04-Dec-2018	03-Dec-2018	04-Dec-2018	26-Nov-2018	03-Dec-2018	26-Nov-2018
GRO by GC-FID (S)	04-Dec-2018	04-Dec-2018	04-Dec-2018	04-Dec-2018	04-Dec-2018	04-Dec-2018	04-Dec-2018	04-Dec-2018	04-Dec-2018	04-Dec-2018
GRO by GC-FID (W)	04-Dec-2018	04-Dec-2018	04-Dec-2018			04-Dec-2018		04-Dec-2018	04-Dec-2018	
Mercury Dissolved	03-Dec-2018	03-Dec-2018	03-Dec-2018			03-Dec-2018		03-Dec-2018	03-Dec-2018	
Metals in solid samples by OES	27-Nov-2018	29-Nov-2018	28-Nov-2018	28-Nov-2018	28-Nov-2018	27-Nov-2018	04-Dec-2018	29-Nov-2018	28-Nov-2018	04-Dec-2018
PAH by GCMS	04-Dec-2018	04-Dec-2018	04-Dec-2018	03-Dec-2018	04-Dec-2018	04-Dec-2018	03-Dec-2018	04-Dec-2018	04-Dec-2018	03-Dec-2018
PAH Spec MS - Aqueous (W)	03-Dec-2018	03-Dec-2018	03-Dec-2018			03-Dec-2018		03-Dec-2018	03-Dec-2018	
pH	04-Dec-2018	04-Dec-2018	03-Dec-2018	03-Dec-2018	03-Dec-2018	04-Dec-2018	03-Dec-2018	04-Dec-2018	03-Dec-2018	03-Dec-2018
pH Value	29-Nov-2018	29-Nov-2018	29-Nov-2018			29-Nov-2018		29-Nov-2018	29-Nov-2018	
Phenols by HPLC (S)	05-Dec-2018	05-Dec-2018	05-Dec-2018	05-Dec-2018	05-Dec-2018	05-Dec-2018	05-Dec-2018	05-Dec-2018	05-Dec-2018	05-Dec-2018
Sample description	21-Nov-2018	21-Nov-2018	21-Nov-2018	21-Nov-2018	21-Nov-2018	21-Nov-2018	21-Nov-2018	21-Nov-2018	21-Nov-2018	21-Nov-2018
Total Organic Carbon	05-Dec-2018	06-Dec-2018	05-Dec-2018	05-Dec-2018	05-Dec-2018	05-Dec-2018	28-Nov-2018	05-Dec-2018	05-Dec-2018	04-Dec-2018
Total Sulphate	05-Dec-2018	05-Dec-2018				05-Dec-2018		05-Dec-2018		
Total Sulphur	04-Dec-2018	30-Nov-2018				04-Dec-2018		29-Nov-2018		
TPH CWG (W)	04-Dec-2018	04-Dec-2018	04-Dec-2018			04-Dec-2018		04-Dec-2018	04-Dec-2018	
TPH CWG GC (S)	04-Dec-2018	04-Dec-2018	04-Dec-2018	04-Dec-2018	04-Dec-2018	04-Dec-2018	04-Dec-2018	04-Dec-2018	04-Dec-2018	04-Dec-2018
VOC MS (S)	04-Dec-2018	04-Dec-2018	04-Dec-2018	04-Dec-2018	04-Dec-2018	04-Dec-2018	04-Dec-2018	04-Dec-2018	04-Dec-2018	04-Dec-2018

Lab Sample No(s)	18786486	18786540	18786545
Customer Sample Ref.	4G-F8	4G-F8	4G-F8-V
AGS Ref.			
Depth	0.50 - 0.50	1.00 - 1.00	2.60 - 2.60
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	06-Dec-2018		
Ammoniacal Nitrogen	30-Nov-2018	30-Nov-2018	
Ammonium Soil by Titration	04-Dec-2018	04-Dec-2018	04-Dec-2018
Anions by Kone (soil)	05-Dec-2018		
Asbestos ID in Solid Samples	03-Dec-2018		
CEN 10:1 Leachate (1 Stage)	22-Nov-2018	24-Nov-2018	
CEN Readings	28-Nov-2018	28-Nov-2018	
Cyanide Comp/Free/Total/Thiocyanate	05-Dec-2018	05-Dec-2018	05-Dec-2018
Dissolved Metals by ICP-MS	04-Dec-2018	04-Dec-2018	
EPH CWG (Aliphatic) Aqueous GC (W)	03-Dec-2018	03-Dec-2018	
EPH CWG (Aliphatic) GC (S)	03-Dec-2018	03-Dec-2018	26-Nov-2018
EPH CWG (Aromatic) Aqueous GC (W)	03-Dec-2018	03-Dec-2018	
EPH CWG (Aromatic) GC (S)	03-Dec-2018	03-Dec-2018	26-Nov-2018
GRO by GC-FID (S)	04-Dec-2018	04-Dec-2018	05-Dec-2018
GRO by GC-FID (W)	04-Dec-2018	04-Dec-2018	
Mercury Dissolved	03-Dec-2018	03-Dec-2018	
Metals in solid samples by OES	03-Dec-2018	04-Dec-2018	04-Dec-2018
PAH by GCMS	05-Dec-2018	04-Dec-2018	04-Dec-2018
PAH Spec MS - Aqueous (W)	03-Dec-2018	03-Dec-2018	
pH	04-Dec-2018	03-Dec-2018	03-Dec-2018
pH Value	29-Nov-2018	29-Nov-2018	
Phenols by HPLC (S)	05-Dec-2018	05-Dec-2018	05-Dec-2018
Sample description	21-Nov-2018	23-Nov-2018	21-Nov-2018
Total Organic Carbon	06-Dec-2018	05-Dec-2018	06-Dec-2018
Total Sulphate	04-Dec-2018		
Total Sulphur	03-Dec-2018		
TPH CWG (W)	04-Dec-2018	04-Dec-2018	
TPH CWG GC (S)	04-Dec-2018	04-Dec-2018	05-Dec-2018
VOC MS (S)	04-Dec-2018	04-Dec-2018	04-Dec-2018

Appendix

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP - No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals - total metals must be requested separately.

11. Results relate only to the items tested.

12. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** - Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

General

21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

24. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Holding time exceeded before sample received**
5	**Samples exceeded holding time before presevation was performed**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to sampled on date**
&	**Sample Holding Time exceeded - Late arrival of instructions.**

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Hawarden
Deeside
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Atkins Global Ltd
Project Jonah site office
Llan Coed House
Suite 24
Coed Darcy
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SA10 6HJ

Attention: John Fitzgerald

CERTIFICATE OF ANALYSIS

Date of report Generation:	14 January 2019
Customer:	H_ATKINS_LDC
Sample Delivery Group (SDG):	181207-13
Your Reference:	
Location:	Llanwern
Report No:	488369

We received 12 samples on Friday December 07, 2018 and 12 of these samples were scheduled for analysis which was completed on Monday January 14, 2019. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.
The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan

Operations Manager

ALS Life Sciences Limited. Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291.

CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
18900743	W54-01		0.00 - 0.00	06/12/2018
18900773	W54-02		0.00 - 0.00	06/12/2018
18900785	W54-03		0.00 - 0.00	06/12/2018
18900789	W54-04		0.00 - 0.00	06/12/2018
18900793	W55-01		0.00 - 0.00	06/12/2018
18900799	W55-02		0.00 - 0.00	06/12/2018
18900805	W55-03		0.00 - 0.00	06/12/2018
18900820	W55-04		0.00 - 0.00	06/12/2018
18900833	W56-01		0.00 - 0.00	06/12/2018
18900748	W56-02		0.00 - 0.00	06/12/2018
18900754	W56-03		0.00 - 0.00	06/12/2018
18900763	W56-04		0.00 - 0.00	06/12/2018

Maximum Sample/Coolbox Temperature (°C) : **9.4**

ISO5667-3 Water quality - Sampling - Part3 -

During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)																			
			18900743			18900773			18900785			18900789			18900793			18900799			18900805	
			Customer Sample Reference																			
			W54-01			W54-02			W54-03			W54-04			W55-01			W55-02			W55-03	
			AGS Reference																			
			Depth (m)																			
			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00	
			Container																			
			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	
			Sample Type																			
			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 6		X						X						X						
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 12	X			X			X			X			X			X			X	
Ammonium Soil by Titration	All	NDPs: 0 Tests: 12		X			X			X			X			X			X				
Anions by Kone (soil)	All	NDPs: 0 Tests: 6		X						X						X						
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 6	X						X						X						X	
Asbestos Quantification - Full	All	NDPs: 0 Tests: 1																				
CEN Readings	All	NDPs: 0 Tests: 12	X			X			X			X			X			X			X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 24	X	X		X	X		X	X		X	X		X	X		X	X		X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 12	X			X			X			X			X			X			X	
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 12	X			X			X			X			X			X			X	
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 12		X			X			X			X			X			X				
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 12	X			X			X			X			X			X			X	
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 12		X			X			X			X			X			X				
GRO by GC-FID (S)	All	NDPs: 0 Tests: 12			X			X			X			X			X			X		
GRO by GC-FID (W)	All	NDPs: 0 Tests: 12	X			X			X			X			X			X			X	

18900763	W56-04		0.00 - 0.00	60g VOC (ALE215)	S														X	
				250g Amber Jar (ALE210)	S			X					X			X		X		
				1kg TUB	S		X					X	X	X	X		X			X
18900754	W56-03		0.00 - 0.00	60g VOC (ALE215)	S														X	
				250g Amber Jar (ALE210)	S	X		X	X				X			X		X		
				1kg TUB	S		X			X	X	X	X	X	X		X			X
18900748	W56-02		0.00 - 0.00	60g VOC (ALE215)	S														X	
				250g Amber Jar (ALE210)	S			X					X			X		X		
				1kg TUB	S		X					X	X	X	X		X			X
18900833	W56-01		0.00 - 0.00	60g VOC (ALE215)	S														X	
				250g Amber Jar (ALE210)	S	X		X	X				X			X		X		
				1kg TUB	S		X			X		X	X	X	X		X			X
18900820	W55-04		0.00 - 0.00	60g VOC (ALE215)	S														X	
				250g Amber Jar (ALE210)	S			X					X			X		X		
				1kg TUB	S		X					X	X	X	X		X			X
18900805	W55-03		0.00 - 0.00	60g VOC (ALE215)	S														X	
				250g Amber Jar (ALE210)	S	X		X	X				X			X		X		

Validated

CERTIFICATE OF ANALYSIS

SDG: 181207-13	**Client Reference:**		**Report Number:** 488369	
Location: Llanwern	**Order Number:** LLA534		**Superseded Report:**	

Results Legend

- X Test
- N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)					18900743			18900773			18900785			18900789			18900793			18900799	18900805
Customer Sample Reference					W54-01			W54-02			W54-03			W54-04			W55-01			W55-02	W55-03
AGS Reference																					
Depth (m)					0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00	0.00 - 0.00
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Mercury Dissolved	All	NDPs: 0 Tests: 12	X			X			X			X			X			X			X
Metals in solid samples by OES	All	NDPs: 0 Tests: 12		X			X			X			X			X			X		
PAH by GCMS	All	NDPs: 0 Tests: 12		X			X			X			X			X			X		
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 12	X			X			X			X			X			X			X
pH	All	NDPs: 0 Tests: 12		X			X			X			X			X			X		
pH Value	All	NDPs: 0 Tests: 12	X			X			X			X			X			X			X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 12		X			X			X			X			X			X		
Sample description	All	NDPs: 0 Tests: 12		X			X			X			X			X			X		
Total Organic Carbon	All	NDPs: 0 Tests: 12		X			X			X			X			X			X		
Total Sulphate	All	NDPs: 0 Tests: 6		X						X						X					
Total Sulphur	All	NDPs: 0 Tests: 6		X						X						X					
TPH CWG (W)	All	NDPs: 0 Tests: 12	X			X			X			X			X			X			X
TPH CWG GC (S)	All	NDPs: 0 Tests: 12		X			X			X			X			X			X		
VOC MS (S)	All	NDPs: 0 Tests: 12			X			X			X			X			X			X	

14:03:52 14/01/2019

18900763	W56-04		0.00 - 0.00	60g VOC (ALE215)	S														X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X				X	
				1kg TUB	S	X			X		X						X		
18900754	W56-03		0.00 - 0.00	60g VOC (ALE215)	S														X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X	X	X		X	
				1kg TUB	S	X			X		X						X		
18900748	W56-02		0.00 - 0.00	60g VOC (ALE215)	S														X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X				X	
				1kg TUB	S	X			X		X						X		
18900833	W56-01		0.00 - 0.00	60g VOC (ALE215)	S														X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X	X	X		X	
				1kg TUB	S	X			X		X						X		
18900820	W55-04		0.00 - 0.00	60g VOC (ALE215)	S														X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X				X	
				1kg TUB	S	X			X		X						X		
18900805	W55-03		0.00 - 0.00	60g VOC (ALE215)	S														X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X	X	X		X	

CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
18900743	W54-01	0.00 - 0.00	Dark Brown	Sandy Loam	Vegetation	Stones
18900773	W54-02	0.00 - 0.00	Dark Brown	Sandy Loam	Vegetation	Stones
18900785	W54-03	0.00 - 0.00	Dark Brown	Sandy Loam	Vegetation	Stones
18900789	W54-04	0.00 - 0.00	Dark Brown	Sandy Loam	Vegetation	Stones
18900793	W55-01	0.00 - 0.00	Dark Brown	Sandy Loam	Vegetation	Stones
18900799	W55-02	0.00 - 0.00	Dark Brown	Sandy Loam	Vegetation	Stones
18900805	W55-03	0.00 - 0.00	Dark Brown	Sandy Loam	Vegetation	Stones
18900820	W55-04	0.00 - 0.00	Dark Brown	Sandy Loam	Vegetation	Stones
18900833	W56-01	0.00 - 0.00	Dark Brown	Sandy Loam	Vegetation	Stones
18900748	W56-02	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	Vegetation
18900754	W56-03	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	Vegetation
18900763	W56-04	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	Vegetation

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W54-01	W54-02	W54-03	W54-04	W55-01	W55-02
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/12/2018	06/12/2018	06/12/2018	06/12/2018	06/12/2018	06/12/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	07/12/2018	07/12/2018	07/12/2018	07/12/2018	07/12/2018	07/12/2018
			SDG Ref	181207-13	181207-13	181207-13	181207-13	181207-13	181207-13
			Lab Sample No.(s)	18900743	18900773	18900785	18900789	18900793	18900799
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		19	15	17	14	13	14
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 ♦ M	0.0118 ♦ M	<0.01 ♦ M	<0.01 ♦ M	<0.01 ♦ M	<0.01 ♦ M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 ♦ M	0.0354 ♦ M	<0.01 ♦ M	<0.01 ♦ M	0.0115 ♦ M	<0.01 ♦ M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 ♦ M	0.0236 ♦ M	<0.015 ♦ M	<0.015 ♦ M	<0.015 ♦ M	<0.015 ♦ M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 ♦ M	0.0708 ♦ M	<0.035 ♦ M	<0.035 ♦ M	<0.035 ♦ M	<0.035 ♦ M
Sulphur, Total	<0.02 %	TM132		0.313		0.29		0.147	
Sulphate, Total potential	<0.06 %	TM132		0.939		0.87		0.441	
Soil Organic Matter (SOM)	<0.35 %	TM132		34.5 #	93.4 #	43.3 #	16.1 #	66.4 #	40.5 #
pH	1 pH Units	TM133		8.58 M	8.77 M	8.92 M	8.81 M	9.08 M	9.22 M
Cyanide, Total	<1 mg/kg	TM153		<1 ♦ M	<1 ♦ M	<1 ♦ M	<1 ♦ M	<1 ♦ M	<1 ♦ M
Cyanide, Free	<1 mg/kg	TM153		<1 ♦ M	<1 ♦ M	<1 ♦ M	<1 ♦ M	<1 ♦ M	<1 ♦ M
Arsenic	<0.6 mg/kg	TM181		7.68 M	6.12 M	5.63 M	9.36 M	7.32 M	7.68 M
Cadmium	<0.02 mg/kg	TM181		0.235 M	0.0827 M	0.0684 M	0.264 M	0.156 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		101 M	157 M	207 M	94.6 M	233 M	196 M
Copper	<1.4 mg/kg	TM181		15.3 M	20.1 M	11.9 M	11.8 M	11.7 M	15.1 M
Iron	<1000 mg/kg	TM181		45300 #	63700 #	50900 #	39300 #	45000 #	86500 #
Lead	<0.7 mg/kg	TM181		31.7 M	39.6 M	23.8 M	22.1 M	33.8 M	35.4 M
Manganese	<0.13 mg/kg	TM181		6100 M	8880 M	10000 M	6450 M	6980 M	12000 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		18.9 M	17.2 M	12.6 M	14.7 M	15 M	17.6 M
Selenium	<1 mg/kg	TM181		5.48 #	5.55 #	7.45 #	4.92 #	5.32 #	6.63 #
Vanadium	<0.2 mg/kg	TM181		181 #	185 #	243 #	139 #	117 #	246 #
Zinc	<1.9 mg/kg	TM181		139 M	129 M	111 M	159 M	96.3 M	117 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.157		0.211		0.0586	
Calcium	<21 mg/kg	TM224		82500		98500		81200	
Magnesium	<8 mg/kg	TM224		13500		14200		19800	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.0453 M		0.081 M		0.014 M	

Validated

CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W55-03	W55-04	W56-01	W56-02	W56-03	W56-04
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/12/2018	06/12/2018	06/12/2018	06/12/2018	06/12/2018	06/12/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	07/12/2018	07/12/2018	07/12/2018	07/12/2018	07/12/2018	07/12/2018
			SDG Ref	181207-13	181207-13	181207-13	181207-13	181207-13	181207-13
			Lab Sample No.(s)	18900805	18900820	18900833	18900748	18900754	18900763
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		16	18	7.4	8.4	9.2	21
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 ♦ M	<0.01 ♦ M	0.0108 ♦ M	<0.01 ♦ M	<0.01 ♦ M	<0.01 ♦ M
Cresols	<0.01 mg/kg	TM062 (S)		0.0118 ♦ M	<0.01 ♦ M	0.0108 ♦ M	<0.01 ♦ M	<0.01 ♦ M	0.0126 ♦ M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 ♦ M	<0.015 ♦ M	<0.015 ♦ M	<0.015 ♦ M	<0.015 ♦ M	0.0252 ♦ M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 ♦ M	<0.035 ♦ M	<0.035 ♦ M	<0.035 ♦ M	<0.035 ♦ M	<0.035 ♦ M
Sulphur, Total	<0.02 %	TM132		0.283		0.423		0.253	
Sulphate, Total potential	<0.06 %	TM132		0.849		1.27		0.759	
Soil Organic Matter (SOM)	<0.35 %	TM132		29.7 #	35 #	13.4 #	45.9 #	32.8 #	76.7 #
pH	1 pH Units	TM133		8.68 M	8.99 M	8.95 M	8.76 M	9.21 M	8.93 M
Cyanide, Total	<1 mg/kg	TM153		<1 ♦ M	<1 ♦ M	<1 ♦ M	<1 ♦ M	<1 ♦ M	<1 ♦ M
Cyanide, Free	<1 mg/kg	TM153		<1 ♦ M	<1 ♦ M	<1 ♦ M	<1 ♦ M	<1 ♦ M	<1 ♦ M
Arsenic	<0.6 mg/kg	TM181		9.38 M	7.71 M	5.28 M	5.04 M	7.7 M	6.67 M
Cadmium	<0.02 mg/kg	TM181		0.291 M	0.0323 M	<0.02 M	0.166 M	0.224 M	0.141 M
Chromium	<0.9 mg/kg	TM181		197 M	202 M	337 M	160 M	52.3 M	111 M
Copper	<1.4 mg/kg	TM181		16.2 M	14.6 M	13.4 M	11.5 M	13.2 M	17.2 M
Iron	<1000 mg/kg	TM181		83000 #	82600 #	110000 #	76100 #	34600 #	69900 #
Lead	<0.7 mg/kg	TM181		39.4 M	37.4 M	30.9 M	32.9 M	44.3 M	31.3 M
Manganese	<0.13 mg/kg	TM181		9700 M	13800 M	22600 M	14400 M	6490 M	9470 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		24.3 M	15.1 M	10.1 M	12.1 M	13.2 M	15.9 M
Selenium	<1 mg/kg	TM181		6.85 #	7.79 #	10.9 #	7.98 #	4.65 #	6.02 #
Vanadium	<0.2 mg/kg	TM181		285 #	336 #	414 #	191 #	81 #	151 #
Zinc	<1.9 mg/kg	TM181		188 M	137 M	107 M	110 M	116 M	118 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.153		0.537		1.13	
Calcium	<21 mg/kg	TM224		102000		181000		119000	
Magnesium	<8 mg/kg	TM224		15600		19300		13700	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.0387 M		0.562 M		0.0686 M	
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304						<0.001 #	
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304						<0.001 #	
Additional Asbestos Components (Using TM048)		TM304						None #	
Analysts Comments		TM304						N/A	
Asbestos Quantification - Total - %	<0.001 %	TM304						<0.001 #	

Validated

CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W54-01	W54-02	W54-03	W54-04	W55-01	W55-02
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/12/2018	06/12/2018	06/12/2018	06/12/2018	06/12/2018	06/12/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	07/12/2018	07/12/2018	07/12/2018	07/12/2018	07/12/2018	07/12/2018
			SDG Ref	181207-13	181207-13	181207-13	181207-13	181207-13	181207-13
			Lab Sample No.(s)	18900743	18900773	18900785	18900789	18900793	18900799
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		97	84.7	98.2	94.1	76.7	92.2
Acenaphthene-d10 % recovery**	%	TM218		94.1	93.8	99.1	94.1	84.4	91.2
Phenanthrene-d10 % recovery**	%	TM218		92.4	81.2	87.5	91.7	84	86.1
Chrysene-d12 % recovery**	%	TM218		87.2	89.7	86.7	88.1	86.9	79.9
Perylene-d12 % recovery**	%	TM218		86.4	90.6	89.1	91.7	83.1	86.4
Naphthalene	<0.009 mg/kg	TM218		0.549 M	38.3 M	3.75 M	1.18 M	6.08 M	3.21 M
Acenaphthylene	<0.012 mg/kg	TM218		0.537 M	51.2 M	6.05 M	1.81 M	5.21 M	2.77 M
Acenaphthene	<0.008 mg/kg	TM218		0.0462 M	16.5 M	0.488 M	0.171 M	0.419 M	0.505 M
Fluorene	<0.01 mg/kg	TM218		0.219 M	135 M	7.71 M	2.19 M	2.48 M	2.32 M
Phenanthrene	<0.015 mg/kg	TM218		2.11 M	379 M	48.3 M	11.5 M	19.1 M	13.9 M
Anthracene	<0.016 mg/kg	TM218		0.876 M	155 M	20.3 M	3.8 M	11.1 M	5.57 M
Fluoranthene	<0.017 mg/kg	TM218		7.02 M	374 M	98 M	17.6 M	54.5 M	24.3 M
Pyrene	<0.015 mg/kg	TM218		4.76 M	302 M	74.5 M	12.6 M	39.5 M	19.2 M
Benz(a)anthracene	<0.014 mg/kg	TM218		3.1 M	206 M	38.5 M	7.94 M	22.2 M	12.2 M
Chrysene	<0.01 mg/kg	TM218		3.1 M	166 M	35.9 M	7.13 M	20.1 M	10.7 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		4.48 M	212 M	47.4 M	9.76 M	34 M	13.7 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		1.77 M	81.5 M	17.1 M	3.39 M	6.48 M	7.54 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		2.76 M	147 M	31.4 M	6.32 M	20 M	10.3 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		1.81 M	80.5 M	18.1 M	3.67 M	15 M	5.97 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.542 M	24.1 M	5.15 M	1.1 M	3.59 M	1.65 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		2.26 M	88.3 M	21.2 M	4.16 M	12.4 M	6.86 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		35.9	2460	474	94.3	272	141

Validated

CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W55-03	W55-04	W56-01	W56-02	W56-03	W56-04
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/12/2018	06/12/2018	06/12/2018	06/12/2018	06/12/2018	06/12/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	07/12/2018	07/12/2018	07/12/2018	07/12/2018	07/12/2018	07/12/2018
			SDG Ref	181207-13	181207-13	181207-13	181207-13	181207-13	181207-13
			Lab Sample No.(s)	18900805	18900820	18900833	18900748	18900754	18900763
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		97.2	91.6	95.4	91.4	91.9	72.7
Acenaphthene-d10 % recovery**	%	TM218		95.4	92.1	97.1	90.5	92.8	82.5
Phenanthrene-d10 % recovery**	%	TM218		93.5	88.8	93.2	88.6	86.9	82.9
Chrysene-d12 % recovery**	%	TM218		88	84	85.2	82.1	80.6	78.4
Perylene-d12 % recovery**	%	TM218		95.5	80.9	88.2	82.7	82.8	89.7
Naphthalene	<0.009 mg/kg	TM218		0.983 M	1.06 M	3.08 M	5.22 M	5.31 M	7.93 M
Acenaphthylene	<0.012 mg/kg	TM218		1.73 M	0.643 M	9.89 M	4.94 M	5.08 M	6.2 M
Acenaphthene	<0.008 mg/kg	TM218		0.0954 M	0.0692 M	0.89 M	0.431 M	0.345 M	0.905 M
Fluorene	<0.01 mg/kg	TM218		1.69 M	0.314 M	15.5 M	3.65 M	3.59 M	3.2 M
Phenanthrene	<0.015 mg/kg	TM218		9.64 M	2.34 M	58.3 M	19.9 M	22.6 M	18.9 M
Anthracene	<0.016 mg/kg	TM218		4.94 M	1.01 M	16.6 M	11.1 M	12 M	10.5 M
Fluoranthene	<0.017 mg/kg	TM218		19.6 M	5.99 M	69.3 M	47.4 M	51.6 M	59.4 M
Pyrene	<0.015 mg/kg	TM218		14.7 M	4.51 M	48.1 M	35.4 M	38.2 M	45.7 M
Benz(a)anthracene	<0.014 mg/kg	TM218		9.11 M	3.11 M	24.7 M	20.7 M	23.5 M	24.9 M
Chrysene	<0.01 mg/kg	TM218		8.47 M	3.05 M	22.2 M	18.6 M	21.1 M	24.2 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		12.3 M	4.36 M	29.8 M	27.9 M	31.5 M	34.8 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		5.06 M	1.46 M	10.8 M	9.23 M	12.2 M	12.7 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		8.04 M	2.55 M	18.5 M	17.7 M	19.2 M	23.3 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		4.82 M	1.53 M	10.7 M	10.2 M	11.3 M	18.4 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		1.37 M	0.491 M	3.16 M	2.9 M	3.36 M	3.96 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		5.5 M	1.86 M	12 M	11.9 M	12.9 M	14.2 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		108	34.4	354	247	274	309

Validated

CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W54-01	W54-02	W54-03	W54-04	W55-01	W55-02
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/12/2018	06/12/2018	06/12/2018	06/12/2018	06/12/2018	06/12/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	07/12/2018	07/12/2018	07/12/2018	07/12/2018	07/12/2018	07/12/2018
			SDG Ref	181207-13	181207-13	181207-13	181207-13	181207-13	181207-13
			Lab Sample No.(s)	18900743	18900773	18900785	18900789	18900793	18900799
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		55.3 ♦	20.3 ♦	44.4 ♦	45.9 ♦	31.7 ♦	29.7 ♦
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 ♦	<0.2 ♦	<0.2 ♦	<0.2 ♦	<0.2 ♦	<0.2 ♦
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02 ♦	0.0271 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02 ♦	0.026 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02 ♦	0.033 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦
Aliphatics >C12-C16	<0.1 mg/kg	TM173		3.67	15	3.84	3.35	6.94	5.29
Aliphatics >C16-C21	<0.1 mg/kg	TM173		15	29.1	15.7	8.69	14.2	13.6
Aliphatics >C21-C35	<0.1 mg/kg	TM173		51.1	117	118	23.7	35.3	41.7
Aliphatics >C35-C44	<0.1 mg/kg	TM173		10.4	20.6	54.1	3.87	6.34	11
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		80.2	181	192	39.6	62.8	71.7
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02 ♦	0.0224 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		13.3	69.9	21.2	5.88	196	13.5
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		151	411	111	38.5	1150	113
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		335	915	399	123	1530	297
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		89.5	226	160	33.3	339	76.9
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		30.8	75.1	58	10.8	108	24.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		588	1620	692	200	3220	500
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		669	1800	883	240	3280	572

Validated

CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W55-03	W55-04	W56-01	W56-02	W56-03	W56-04
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/12/2018	06/12/2018	06/12/2018	06/12/2018	06/12/2018	06/12/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	07/12/2018	07/12/2018	07/12/2018	07/12/2018	07/12/2018	07/12/2018
			SDG Ref	181207-13	181207-13	181207-13	181207-13	181207-13	181207-13
			Lab Sample No.(s)	18900805	18900820	18900833	18900748	18900754	18900763
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		31.5 ♦	31.9	74.1	22.9	30.1	26.3 ♦
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 ♦	<0.2 M	<0.2 M	<0.2 M	<0.2 M	<0.2 ♦
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02 ♦	<0.02	<0.02	<0.02	<0.02	<0.02 ♦
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02 ♦	<0.02	<0.02	<0.02	<0.02	<0.02 ♦
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02 ♦	<0.02	<0.02	<0.02	<0.02	<0.02 ♦
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02 ♦	<0.02	<0.02	<0.02	<0.02	<0.02 ♦
Aliphatics >C12-C16	<0.1 mg/kg	TM173		3.92	11.1	6.27	10.5	10.2	18.2
Aliphatics >C16-C21	<0.1 mg/kg	TM173		13.4	16.7	19.5	17.6	19.9	31.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		32.6	71.4	43.6	54.3	44.4	78.9
Aliphatics >C35-C44	<0.1 mg/kg	TM173		6.91	21.4	10.2	11.3	12.2	15.9
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		56.8	121	79.7	93.7	86.7	144
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02 ♦	<0.02	<0.02	<0.02	<0.02	<0.02 ♦
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02 ♦	<0.02	<0.02	<0.02	<0.02	<0.02 ♦
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02 ♦	<0.02	<0.02	<0.02	<0.02	<0.02 ♦
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02 ♦	<0.02	<0.02	<0.02	<0.02	<0.02 ♦
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		8.25	15.3	20.7	33.6	24.5	162
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		75.9	48	163	287	205	1070
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		219	139	309	691	523	1640
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		60.3	43.9	74.8	166	122	376
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		19	15.2	24.8	51.2	38.9	121
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		364	246	567	1180	874	3250
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		421	366	647	1270	961	3390

Validated

CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W54-01	W54-02	W54-03	W54-04	W55-01	W55-02
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/12/2018	06/12/2018	06/12/2018	06/12/2018	06/12/2018	06/12/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	07/12/2018	07/12/2018	07/12/2018	07/12/2018	07/12/2018	07/12/2018
			SDG Ref	181207-13	181207-13	181207-13	181207-13	181207-13	181207-13
			Lab Sample No.(s)	18900743	18900773	18900785	18900789	18900793	18900799
			AGS Reference						
Dibromofluoromethane**	%	TM116		105 ♦	104 ♦	107 ♦	107 ♦	103 ♦	106 ♦
Toluene-d8**	%	TM116		94.7 ♦	101 ♦	97.1 ♦	93.5 ♦	99.3 ♦	102 ♦
4-Bromofluorobenzene**	%	TM116		75.2 ♦	96.4 ♦	78.6 ♦	71.9 ♦	87.4 ♦	98.8 ♦
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 ♦ M	<2 ♦ M	<0.1 ♦ M	<0.1 ♦ M	<0.2 ♦ M	<2 ♦ M
Benzene	<0.009 mg/kg	TM116		<0.09 ♦ M	<1.8 ♦ M	<0.09 ♦ M	<0.09 ♦ M	<0.18 ♦ M	<1.8 ♦ M
Toluene	<0.007 mg/kg	TM116		<0.07 ♦ M	<1.4 ♦ M	<0.07 ♦ M	<0.07 ♦ M	<0.14 ♦ M	<1.4 ♦ M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 ♦ M	<0.8 ♦ M	<0.04 ♦ M	<0.04 ♦ M	<0.08 ♦ M	<0.8 ♦ M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 ♦ #	<2 ♦ #	<0.1 ♦ #	<0.1 ♦ #	<0.2 ♦ #	<2 ♦ #
o-Xylene	<0.01 mg/kg	TM116		<0.1 ♦ M	<2 ♦ M	<0.1 ♦ M	<0.1 ♦ M	<0.2 ♦ M	<2 ♦ M
Naphthalene	<0.013 mg/kg	TM116		0.189 ♦ M	<2.6 ♦ M	0.401 ♦ M	0.193 ♦ M	<0.26 ♦ M	<2.6 ♦ M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4 ♦	<8 ♦	<0.4 ♦	<0.4 ♦	<0.8 ♦	<8 ♦

Validated

CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W55-03	W55-04	W56-01	W56-02	W56-03	W56-04
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/12/2018	06/12/2018	06/12/2018	06/12/2018	06/12/2018	06/12/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	07/12/2018	07/12/2018	07/12/2018	07/12/2018	07/12/2018	07/12/2018
			SDG Ref	181207-13	181207-13	181207-13	181207-13	181207-13	181207-13
			Lab Sample No.(s)	18900805	18900820	18900833	18900748	18900754	18900763
			AGS Reference						
Dibromofluoromethane**	%	TM116		102 ♦	116 ♦	101 ♦	116 ♦	117 ♦	107 ♦
Toluene-d8**	%	TM116		100 ♦	103 ♦	95.5 ♦	103 ♦	103 ♦	100 ♦
4-Bromofluorobenzene**	%	TM116		95 ♦	102 ♦	73.9 ♦	102 ♦	102 ♦	98.9 ♦
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<2 ♦ M	<2 ♦ M	<0.2 ♦ M	<2 ♦ M	<2 ♦ M	<2 ♦ M
Benzene	<0.009 mg/kg	TM116		<1.8 ♦ M	<1.8 ♦ M	<0.18 ♦ M	<1.8 ♦ M	<1.8 ♦ M	<1.8 ♦ M
Toluene	<0.007 mg/kg	TM116		<1.4 ♦ M	<1.4 ♦ M	<0.14 ♦ M	<1.4 ♦ M	<1.4 ♦ M	<1.4 ♦ M
Ethylbenzene	<0.004 mg/kg	TM116		<0.8 ♦ M	<0.8 ♦ M	<0.08 ♦ M	<0.8 ♦ M	<0.8 ♦ M	<0.8 ♦ M
p/m-Xylene	<0.01 mg/kg	TM116		<2 ♦ #	<2 ♦ #	<0.2 ♦ #	<2 ♦ #	<2 ♦ #	<2 ♦ #
o-Xylene	<0.01 mg/kg	TM116		<2 ♦ M	<2 ♦ M	<0.2 ♦ M	<2 ♦ M	<2 ♦ M	<2 ♦ M
Naphthalene	<0.013 mg/kg	TM116		<2.6 ♦ M	<2.6 ♦ M	0.441 ♦ M	6.09 ♦ M	6.41 ♦ M	<2.6 ♦ M
Sum of BTEX	<0.04 mg/kg	TM116		<8 ♦	<8 ♦	<0.8 ♦	<8 ♦	<8 ♦	<8 ♦

CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

Asbestos Identification - Solid Samples

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W54-01 0.00 - 0.00 SOLID 06/12/2018 00:00:00 07/12/2018 07:44:00 181207-13 18900743 TM048	19/12/2018	Renata Bozhkov	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W54-03 0.00 - 0.00 SOLID 06/12/2018 00:00:00 07/12/2018 07:44:00 181207-13 18900785 TM048	19/12/2018	Renata Bozhkov	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W55-01 0.00 - 0.00 SOLID 06/12/2018 00:00:00 07/12/2018 07:44:00 181207-13 18900793 TM048	19/12/2018	Renata Bozhkov	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W55-03 0.00 - 0.00 SOLID 06/12/2018 00:00:00 07/12/2018 07:44:00 181207-13 18900805 TM048	20/12/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W56-01 0.00 - 0.00 SOLID 06/12/2018 00:00:00 07/12/2018 07:44:00 181207-13 18900833 TM048	20/12/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W56-03 0.00 - 0.00 SOLID 06/12/2018 00:00:00 07/12/2018 07:44:00 181207-13 18900754 TM048	20/12/2018	Lucy Caroe	Fibre bundles in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Asbestos Quantification - Full

Validated

CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

		Additional Asbestos Components	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM Evaluation	Asbestos Quantification - Total - %
Cust. Sample Ref.	W56-03	None (#)	N/A	<0.001 (#)	<0.001 (#)	<0.001 (#)
Depth (m)	0.00 - 0.00					
Sample Type	SOLID					
Date Sampled	06/12/2018 00:00:00					
Date Receieved	07/12/2018 07:44:00					
SDG	181207-13					
Original Sample	18900754					
Method Number	TM304					

CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.111	**Natural Moisture Content (%)**	23.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	81
Particle Size <4mm	>95%		

Case	
SDG	181207-13
Lab Sample Number(s)	18900743
Sampled Date	06-Dec-2018
Customer Sample Ref.	W54-01
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00606	<0.0005	0.0606	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00104	<0.001	0.0104	<0.01	-	-	-
Copper	0.00217	<0.0003	0.0217	<0.003	-	-	-
Lead	0.000908	<0.0002	0.00908	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000837	<0.0004	0.00837	<0.004	-	-	-
Selenium	0.00146	<0.001	0.0146	<0.01	-	-	-
Vanadium	0.0451	<0.001	0.451	<0.01	-	-	-
Zinc	0.01	<0.001	0.1	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.291	<0.019	2.91	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000296	<0.00001	0.000296	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000876	<0.000005	0.0000876	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000017	<0.000005	0.00017	<0.00005	-	-	-
Fluoranthene by GCMS	0.000188	<0.000005	0.00188	<0.00005	-	-	-
Anthracene by GCMS	0.0000336	<0.000005	0.000336	<0.00005	-	-	-
Phenanthrene by GCMS	0.000122	<0.000005	0.00122	<0.00005	-	-	-
Fluorene by GCMS	0.000019	<0.000005	0.00019	<0.00005	-	-	-
Chrysene by GCMS	0.000107	<0.000005	0.00107	<0.00005	-	-	-
Pyrene by GCMS	0.000135	<0.000005	0.00135	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000937	<0.000005	0.000937	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000159	<0.000005	0.00159	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000622	<0.000005	0.000622	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000739	<0.000002	0.000739	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000187	<0.000005	0.000187	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000103	<0.000005	0.00103	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000704	<0.000005	0.000704	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00124	<0.000082	0.0124	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Dec-2018
pH (pH Units)	8.54
Conductivity (µS/cm)	113.00
Temperature (°C)	17.30
Volume Leachant (Litres)	0.879

Mcerts Certification does not apply to leachates

14/01/2019 14:04:30

14:03:52 14/01/2019

CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.111	**Natural Moisture Content (%)**	23.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	81
Particle Size <4mm	>95%		

Case	
SDG	181207-13
Lab Sample Number(s)	18900743
Sampled Date	06-Dec-2018
Customer Sample Ref.	W54-01
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Dec-2018
pH (pH Units)	8.54
Conductivity (µS/cm)	113.00
Temperature (°C)	17.30
Volume Leachant (Litres)	0.879

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.17
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.6
Particle Size <4mm	>95%		

Case	
SDG	181207-13
Lab Sample Number(s)	18900748
Sampled Date	06-Dec-2018
Customer Sample Ref.	W56-02
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00434	<0.0005	0.0434	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00126	<0.001	0.0126	<0.01	-	-	-
Copper	0.00235	<0.0003	0.0235	<0.003	-	-	-
Lead	0.00182	<0.0002	0.0182	<0.002	-	-	-
Manganese	0.00975	<0.003	0.0975	<0.03	-	-	-
Nickel	0.000757	<0.0004	0.00757	<0.004	-	-	-
Selenium	0.0011	<0.001	0.011	<0.01	-	-	-
Vanadium	0.0426	<0.001	0.426	<0.01	-	-	-
Zinc	0.00275	<0.001	0.0275	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.122	<0.019	1.22	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000136	<0.00001	0.00136	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000243	<0.000005	0.000243	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000928	<0.000005	0.000928	<0.00005	-	-	-
Fluoranthene by GCMS	0.000675	<0.000005	0.00675	<0.00005	-	-	-
Anthracene by GCMS	0.0000992	<0.000005	0.000992	<0.00005	-	-	-
Phenanthrene by GCMS	0.000218	<0.000005	0.00218	<0.00005	-	-	-
Fluorene by GCMS	0.0000555	<0.000005	0.000555	<0.00005	-	-	-
Chrysene by GCMS	0.000285	<0.000005	0.00285	<0.00005	-	-	-
Pyrene by GCMS	0.000501	<0.000005	0.00501	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000276	<0.000005	0.00276	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000423	<0.000005	0.00423	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000156	<0.000005	0.00156	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000246	<0.000002	0.00246	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000491	<0.000005	0.000491	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000241	<0.000005	0.00241	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000184	<0.000005	0.00184	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00366	<0.000082	0.0366	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Dec-2018
pH (pH Units)	9.19
Conductivity (µS/cm)	82.50
Temperature (°C)	17.40
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.17
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.6
Particle Size <4mm	>95%		

Case	
SDG	181207-13
Lab Sample Number(s)	18900748
Sampled Date	06-Dec-2018
Customer Sample Ref.	W56-02
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Dec-2018
pH (pH Units)	9.19
Conductivity (µS/cm)	82.50
Temperature (°C)	17.40
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.8
Particle Size <4mm	>95%		

Case	
SDG	181207-13
Lab Sample Number(s)	18900754
Sampled Date	06-Dec-2018
Customer Sample Ref.	W56-03
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00448	<0.0005	0.0448	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00138	<0.001	0.0138	<0.01	-	-	-
Copper	0.0024	<0.0003	0.024	<0.003	-	-	-
Lead	0.000754	<0.0002	0.00754	<0.002	-	-	-
Manganese	0.00737	<0.003	0.0737	<0.03	-	-	-
Nickel	0.000823	<0.0004	0.00823	<0.004	-	-	-
Selenium	0.00107	<0.001	0.0107	<0.01	-	-	-
Vanadium	0.0359	<0.001	0.359	<0.01	-	-	-
Zinc	0.002	<0.001	0.02	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.942	<0.019	9.42	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000117	<0.00001	0.00117	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000185	<0.000005	0.000185	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000694	<0.000005	0.000694	<0.00005	-	-	-
Fluoranthene by GCMS	0.000475	<0.000005	0.00475	<0.00005	-	-	-
Anthracene by GCMS	0.0000773	<0.000005	0.000773	<0.00005	-	-	-
Phenanthrene by GCMS	0.000225	<0.000005	0.00225	<0.00005	-	-	-
Fluorene by GCMS	0.000037	<0.000005	0.00037	<0.00005	-	-	-
Chrysene by GCMS	0.000229	<0.000005	0.00229	<0.00005	-	-	-
Pyrene by GCMS	0.000371	<0.000005	0.00371	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000228	<0.000005	0.00228	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000345	<0.000005	0.00345	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000124	<0.000005	0.00124	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000186	<0.000002	0.00186	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000393	<0.000005	0.000393	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000194	<0.000005	0.00194	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000148	<0.000005	0.00148	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00288	<0.000082	0.0288	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Dec-2018
pH (pH Units)	9.29
Conductivity (µS/cm)	75.60
Temperature (°C)	17.50
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.8
Particle Size <4mm	>95%		

Case	
SDG	181207-13
Lab Sample Number(s)	18900754
Sampled Date	06-Dec-2018
Customer Sample Ref.	W56-03
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Dec-2018
pH (pH Units)	9.29
Conductivity (µS/cm)	75.60
Temperature (°C)	17.50
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.114	**Natural Moisture Content (%)**	26.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	79
Particle Size <4mm	>95%		

Case	
SDG	181207-13
Lab Sample Number(s)	18900763
Sampled Date	06-Dec-2018
Customer Sample Ref.	W56-04
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00422	<0.0005	0.0422	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00147	<0.001	0.0147	<0.01	-	-	-
Copper	0.000881	<0.0003	0.00881	<0.003	-	-	-
Lead	0.00164	<0.0002	0.0164	<0.002	-	-	-
Manganese	0.0133	<0.003	0.133	<0.03	-	-	-
Nickel	0.000795	<0.0004	0.00795	<0.004	-	-	-
Selenium	0.00171	<0.001	0.0171	<0.01	-	-	-
Vanadium	0.0459	<0.001	0.459	<0.01	-	-	-
Zinc	0.00342	<0.001	0.0342	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.145	<0.019	1.45	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000123	<0.00001	0.00123	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000241	<0.000005	0.000241	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000846	<0.000005	0.000846	<0.00005	-	-	-
Fluoranthene by GCMS	0.000681	<0.000005	0.00681	<0.00005	-	-	-
Anthracene by GCMS	0.000101	<0.000005	0.00101	<0.00005	-	-	-
Phenanthrene by GCMS	0.000274	<0.000005	0.00274	<0.00005	-	-	-
Fluorene by GCMS	0.0000472	<0.000005	0.000472	<0.00005	-	-	-
Chrysene by GCMS	0.000323	<0.000005	0.00323	<0.00005	-	-	-
Pyrene by GCMS	0.000511	<0.000005	0.00511	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000325	<0.000005	0.00325	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000476	<0.000005	0.00476	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000172	<0.000005	0.00172	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000257	<0.000002	0.00257	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000527	<0.000005	0.000527	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000262	<0.000005	0.00262	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000198	<0.000005	0.00198	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00391	<0.000082	0.0391	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Dec-2018
pH (pH Units)	9.21
Conductivity (µS/cm)	83.90
Temperature (°C)	17.20
Volume Leachant (Litres)	0.876

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.114	**Natural Moisture Content (%)**	26.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	79
Particle Size <4mm	>95%		

Case	
SDG	181207-13
Lab Sample Number(s)	18900763
Sampled Date	06-Dec-2018
Customer Sample Ref.	W56-04
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Dec-2018
pH (pH Units)	9.21
Conductivity (µS/cm)	83.90
Temperature (°C)	17.20
Volume Leachant (Litres)	0.876

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	181207-13
Lab Sample Number(s)	18900773
Sampled Date	06-Dec-2018
Customer Sample Ref.	W54-02
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00361	<0.0005	0.0361	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00174	<0.001	0.0174	<0.01	-	-	-
Copper	0.00328	<0.0003	0.0328	<0.003	-	-	-
Lead	0.00167	<0.0002	0.0167	<0.002	-	-	-
Manganese	0.015	<0.003	0.15	<0.03	-	-	-
Nickel	0.00101	<0.0004	0.0101	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0613	<0.001	0.613	<0.01	-	-	-
Zinc	0.00208	<0.001	0.0208	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.132	<0.019	1.32	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000545	<0.00001	0.000545	<0.0001	-	-	-
Acenaphthene by GCMS	0.000028	<0.000005	0.00028	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000111	<0.000005	0.00111	<0.00005	-	-	-
Fluoranthene by GCMS	0.000704	<0.000005	0.00704	<0.00005	-	-	-
Anthracene by GCMS	0.000112	<0.000005	0.00112	<0.00005	-	-	-
Phenanthrene by GCMS	0.000303	<0.000005	0.00303	<0.00005	-	-	-
Fluorene by GCMS	0.0000644	<0.000005	0.000644	<0.00005	-	-	-
Chrysene by GCMS	0.000413	<0.000005	0.00413	<0.00005	-	-	-
Pyrene by GCMS	0.000538	<0.000005	0.00538	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000371	<0.000005	0.00371	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000578	<0.000005	0.00578	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000259	<0.000005	0.00259	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000361	<0.000002	0.00361	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000658	<0.000005	0.000658	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000285	<0.000005	0.00285	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000239	<0.000005	0.00239	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00449	<0.000082	0.0449	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Dec-2018
pH (pH Units)	9.20
Conductivity (µS/cm)	88.10
Temperature (°C)	17.50
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	181207-13
Lab Sample Number(s)	18900773
Sampled Date	06-Dec-2018
Customer Sample Ref.	W54-02
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.019	<0.01	0.19	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Dec-2018
pH (pH Units)	9.20
Conductivity (µS/cm)	88.10
Temperature (°C)	17.50
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.108	**Natural Moisture Content (%)**	20.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	83
Particle Size <4mm	>95%		

Case	
SDG	181207-13
Lab Sample Number(s)	18900785
Sampled Date	06-Dec-2018
Customer Sample Ref.	W54-03
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00468	<0.0005	0.0468	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00246	<0.001	0.0246	<0.01	-	-	-
Copper	0.00577	<0.0003	0.0577	<0.003	-	-	-
Lead	0.00111	<0.0002	0.0111	<0.002	-	-	-
Manganese	0.0194	<0.003	0.194	<0.03	-	-	-
Nickel	0.00173	<0.0004	0.0173	<0.004	-	-	-
Selenium	0.00126	<0.001	0.0126	<0.01	-	-	-
Vanadium	0.0682	<0.001	0.682	<0.01	-	-	-
Zinc	0.00238	<0.001	0.0238	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.123	<0.019	1.23	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000312	<0.00001	0.00312	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000239	<0.000005	0.000239	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000193	<0.000005	0.00193	<0.00005	-	-	-
Fluoranthene by GCMS	0.00126	<0.000005	0.0126	<0.00005	-	-	-
Anthracene by GCMS	0.000219	<0.000005	0.00219	<0.00005	-	-	-
Phenanthrene by GCMS	0.000575	<0.000005	0.00575	<0.00005	-	-	-
Fluorene by GCMS	0.0000885	<0.000005	0.000885	<0.00005	-	-	-
Chrysene by GCMS	0.000585	<0.000005	0.00585	<0.00005	-	-	-
Pyrene by GCMS	0.00106	<0.000005	0.0106	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000575	<0.000005	0.00575	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00092	<0.000005	0.0092	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000394	<0.000005	0.00394	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000577	<0.000002	0.00577	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.000107	<0.000005	0.00107	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000476	<0.000005	0.00476	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000361	<0.000005	0.00361	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00773	<0.000082	0.0773	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Dec-2018
pH (pH Units)	9.39
Conductivity (µS/cm)	108.00
Temperature (°C)	17.10
Volume Leachant (Litres)	0.882

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.108	**Natural Moisture Content (%)**	20.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	83
Particle Size <4mm	>95%		

Case	
SDG	181207-13
Lab Sample Number(s)	18900785
Sampled Date	06-Dec-2018
Customer Sample Ref.	W54-03
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.012	<0.01	0.12	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Dec-2018
pH (pH Units)	9.39
Conductivity (µS/cm)	108.00
Temperature (°C)	17.10
Volume Leachant (Litres)	0.882

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	181207-13
Lab Sample Number(s)	18900789
Sampled Date	06-Dec-2018
Customer Sample Ref.	W54-04
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00869	<0.0005	0.0869	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0012	<0.001	0.012	<0.01	-	-	-
Copper	0.00217	<0.0003	0.0217	<0.003	-	-	-
Lead	0.00234	<0.0002	0.0234	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000897	<0.0004	0.00897	<0.004	-	-	-
Selenium	0.00235	<0.001	0.0235	<0.01	-	-	-
Vanadium	0.0378	<0.001	0.378	<0.01	-	-	-
Zinc	0.0104	<0.001	0.104	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.0339	<0.019	0.339	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000541	<0.00001	0.000541	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000113	<0.000005	0.000113	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000369	<0.000005	0.000369	<0.00005	-	-	-
Fluoranthene by GCMS	0.000439	<0.000005	0.00439	<0.00005	-	-	-
Anthracene by GCMS	0.0000979	<0.000005	0.000979	<0.00005	-	-	-
Phenanthrene by GCMS	0.00028	<0.000005	0.0028	<0.00005	-	-	-
Fluorene by GCMS	0.0000305	<0.000005	0.000305	<0.00005	-	-	-
Chrysene by GCMS	0.000126	<0.000005	0.00126	<0.00005	-	-	-
Pyrene by GCMS	0.000312	<0.000005	0.00312	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000101	<0.000005	0.00101	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000195	<0.000005	0.00195	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000107	<0.000005	0.00107	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000108	<0.000002	0.00108	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000273	<0.000005	0.000273	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000979	<0.000005	0.000979	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000658	<0.000005	0.000658	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00209	<0.000082	0.0209	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Dec-2018
pH (pH Units)	8.31
Conductivity (µS/cm)	108.00
Temperature (°C)	17.10
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	181207-13
Lab Sample Number(s)	18900789
Sampled Date	06-Dec-2018
Customer Sample Ref.	W54-04
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Dec-2018
pH (pH Units)	8.31
Conductivity (µS/cm)	108.00
Temperature (°C)	17.10
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.104	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	181207-13
Lab Sample Number(s)	18900793
Sampled Date	06-Dec-2018
Customer Sample Ref.	W55-01
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00505	<0.0005	0.0505	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00121	<0.001	0.0121	<0.01	-	-	-
Copper	0.00109	<0.0003	0.0109	<0.003	-	-	-
Lead	0.000292	<0.0002	0.00292	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000442	<0.0004	0.00442	<0.004	-	-	-
Selenium	0.00172	<0.001	0.0172	<0.01	-	-	-
Vanadium	0.0495	<0.001	0.495	<0.01	-	-	-
Zinc	0.00406	<0.001	0.0406	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.0216	<0.019	0.216	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00137	<0.00001	0.0137	<0.0001	-	-	-
Acenaphthene by GCMS	0.000153	<0.000005	0.00153	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00112	<0.000005	0.0112	<0.00005	-	-	-
Fluoranthene by GCMS	0.00704	<0.000005	0.0704	<0.00005	-	-	-
Anthracene by GCMS	0.000795	<0.000005	0.00795	<0.00005	-	-	-
Phenanthrene by GCMS	0.00201	<0.000005	0.0201	<0.00005	-	-	-
Fluorene by GCMS	0.000415	<0.000005	0.00415	<0.00005	-	-	-
Chrysene by GCMS	0.00257	<0.000005	0.0257	<0.00005	-	-	-
Pyrene by GCMS	0.00549	<0.000005	0.0549	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.00301	<0.000005	0.0301	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00554	<0.000005	0.0554	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00204	<0.000005	0.0204	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00355	<0.000002	0.0355	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.000603	<0.000005	0.00603	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.00298	<0.000005	0.0298	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00236	<0.000005	0.0236	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.041	<0.000082	0.41	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Dec-2018
pH (pH Units)	8.85
Conductivity (µS/cm)	80.60
Temperature (°C)	17.40
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.104	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	181207-13
Lab Sample Number(s)	18900793
Sampled Date	06-Dec-2018
Customer Sample Ref.	W55-01
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	0.015	<0.01	0.15	<0.1	-	-	-
Aromatics >EC21-EC35	0.041	<0.01	0.41	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.056	<0.01	0.56	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.057	<0.01	0.57	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Dec-2018
pH (pH Units)	8.85
Conductivity (µS/cm)	80.60
Temperature (°C)	17.40
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	181207-13
Lab Sample Number(s)	18900799
Sampled Date	06-Dec-2018
Customer Sample Ref.	W55-02
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	11.4	<0.2	114	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00419	<0.0005	0.0419	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00204	<0.001	0.0204	<0.01	-	-	-
Copper	0.00327	<0.0003	0.0327	<0.003	-	-	-
Lead	0.00113	<0.0002	0.0113	<0.002	-	-	-
Manganese	0.00828	<0.003	0.0828	<0.03	-	-	-
Nickel	0.000848	<0.0004	0.00848	<0.004	-	-	-
Selenium	0.00104	<0.001	0.0104	<0.01	-	-	-
Vanadium	0.0493	<0.001	0.493	<0.01	-	-	-
Zinc	0.00899	<0.001	0.0899	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.711	<0.019	7.11	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000937	<0.00001	0.000937	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000109	<0.000005	0.000109	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000498	<0.000005	0.000498	<0.00005	-	-	-
Fluoranthene by GCMS	0.000359	<0.000005	0.00359	<0.00005	-	-	-
Anthracene by GCMS	0.00005	<0.000005	0.0005	<0.00005	-	-	-
Phenanthrene by GCMS	0.000159	<0.000005	0.00159	<0.00005	-	-	-
Fluorene by GCMS	0.0000262	<0.000005	0.000262	<0.00005	-	-	-
Chrysene by GCMS	0.000174	<0.000005	0.00174	<0.00005	-	-	-
Pyrene by GCMS	0.000274	<0.000005	0.00274	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000172	<0.000005	0.00172	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000278	<0.000005	0.00278	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000961	<0.000005	0.000961	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000149	<0.000002	0.00149	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000323	<0.000005	0.000323	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000168	<0.000005	0.00168	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000122	<0.000005	0.00122	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00221	<0.000082	0.0221	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Dec-2018
pH (pH Units)	8.18
Conductivity (µS/cm)	121.00
Temperature (°C)	17.00
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	181207-13
Lab Sample Number(s)	18900799
Sampled Date	06-Dec-2018
Customer Sample Ref.	W55-02
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.018	<0.01	0.18	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Dec-2018
pH (pH Units)	8.18
Conductivity (µS/cm)	121.00
Temperature (°C)	17.00
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.107	**Natural Moisture Content (%)**	19
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	84
Particle Size <4mm	>95%		

Case	
SDG	181207-13
Lab Sample Number(s)	18900805
Sampled Date	06-Dec-2018
Customer Sample Ref.	W55-03
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00747	<0.0005	0.0747	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00159	<0.001	0.0159	<0.01	-	-	-
Copper	0.00629	<0.0003	0.0629	<0.003	-	-	-
Lead	0.00148	<0.0002	0.0148	<0.002	-	-	-
Manganese	0.0184	<0.003	0.184	<0.03	-	-	-
Nickel	0.00145	<0.0004	0.0145	<0.004	-	-	-
Selenium	0.00147	<0.001	0.0147	<0.01	-	-	-
Vanadium	0.0763	<0.001	0.763	<0.01	-	-	-
Zinc	0.00217	<0.001	0.0217	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.192	<0.019	1.92	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000334	<0.00001	0.000334	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000503	<0.000005	0.0000503	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000234	<0.000005	0.000234	<0.00005	-	-	-
Fluoranthene by GCMS	0.000227	<0.000005	0.00227	<0.00005	-	-	-
Anthracene by GCMS	0.0000344	<0.000005	0.000344	<0.00005	-	-	-
Phenanthrene by GCMS	0.000106	<0.000005	0.00106	<0.00005	-	-	-
Fluorene by GCMS	0.0000128	<0.000005	0.000128	<0.00005	-	-	-
Chrysene by GCMS	0.000123	<0.000005	0.00123	<0.00005	-	-	-
Pyrene by GCMS	0.000172	<0.000005	0.00172	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000847	<0.000005	0.000847	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000266	<0.000005	0.00266	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000116	<0.000005	0.00116	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000137	<0.000002	0.00137	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000371	<0.000005	0.000371	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.00016	<0.000005	0.0016	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000122	<0.000005	0.00122	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00166	<0.000082	0.0166	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Dec-2018
pH (pH Units)	9.04
Conductivity (µS/cm)	104.00
Temperature (°C)	17.70
Volume Leachant (Litres)	0.883

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.107	**Natural Moisture Content (%)**	19
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	84
Particle Size <4mm	>95%		

Case	
SDG	181207-13
Lab Sample Number(s)	18900805
Sampled Date	06-Dec-2018
Customer Sample Ref.	W55-03
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	0.013	<0.01	0.13	<0.1	-	-	-
Total Aliphatics >C12-C35	0.013	<0.01	0.13	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.013	<0.01	0.13	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	0.013	<0.01	0.13	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Dec-2018
pH (pH Units)	9.04
Conductivity (µS/cm)	104.00
Temperature (°C)	17.70
Volume Leachant (Litres)	0.883

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	181207-13
Lab Sample Number(s)	18900820
Sampled Date	06-Dec-2018
Customer Sample Ref.	W55-04
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00558	<0.0005	0.0558	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00146	<0.001	0.0146	<0.01	-	-	-
Copper	0.00357	<0.0003	0.0357	<0.003	-	-	-
Lead	0.0016	<0.0002	0.016	<0.002	-	-	-
Manganese	0.0197	<0.003	0.197	<0.03	-	-	-
Nickel	0.00126	<0.0004	0.0126	<0.004	-	-	-
Selenium	0.00128	<0.001	0.0128	<0.01	-	-	-
Vanadium	0.0925	<0.001	0.925	<0.01	-	-	-
Zinc	0.00316	<0.001	0.0316	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.158	<0.019	1.58	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000662	<0.00001	0.000662	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000881	<0.000005	0.0000881	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000395	<0.000005	0.000395	<0.00005	-	-	-
Fluoranthene by GCMS	0.000404	<0.000005	0.00404	<0.00005	-	-	-
Anthracene by GCMS	0.0000819	<0.000005	0.000819	<0.00005	-	-	-
Phenanthrene by GCMS	0.000268	<0.000005	0.00268	<0.00005	-	-	-
Fluorene by GCMS	0.0000267	<0.000005	0.000267	<0.00005	-	-	-
Chrysene by GCMS	0.000229	<0.000005	0.00229	<0.00005	-	-	-
Pyrene by GCMS	0.000239	<0.000005	0.00239	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000163	<0.000005	0.00163	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000253	<0.000005	0.00253	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000118	<0.000005	0.00118	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000124	<0.000002	0.00124	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000284	<0.000005	0.000284	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000122	<0.000005	0.00122	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000874	<0.000005	0.000874	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00226	<0.000082	0.0226	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Dec-2018
pH (pH Units)	8.73
Conductivity (µS/cm)	102.00
Temperature (°C)	17.20
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	181207-13
Lab Sample Number(s)	18900820
Sampled Date	06-Dec-2018
Customer Sample Ref.	W55-04
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.014	<0.01	0.14	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Dec-2018
pH (pH Units)	8.73
Conductivity (µS/cm)	102.00
Temperature (°C)	17.20
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

14/01/2019 14:04:30

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CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.99
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.6
Particle Size <4mm	>95%		

Case	
SDG	181207-13
Lab Sample Number(s)	18900833
Sampled Date	06-Dec-2018
Customer Sample Ref.	W56-01
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00456	<0.0005	0.0456	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00114	<0.001	0.0114	<0.01	-	-	-
Copper	0.00223	<0.0003	0.0223	<0.003	-	-	-
Lead	0.000448	<0.0002	0.00448	<0.002	-	-	-
Manganese	0.00379	<0.003	0.0379	<0.03	-	-	-
Nickel	0.000579	<0.0004	0.00579	<0.004	-	-	-
Selenium	0.00136	<0.001	0.0136	<0.01	-	-	-
Vanadium	0.0897	<0.001	0.897	<0.01	-	-	-
Zinc	0.00619	<0.001	0.0619	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.23	<0.019	2.3	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000153	<0.00001	0.00153	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000059	<0.000005	0.00059	<0.00005	-	-	-
Fluoranthene by GCMS	0.000315	<0.000005	0.00315	<0.00005	-	-	-
Anthracene by GCMS	0.0000842	<0.000005	0.000842	<0.00005	-	-	-
Phenanthrene by GCMS	0.000242	<0.000005	0.00242	<0.00005	-	-	-
Fluorene by GCMS	0.0000291	<0.000005	0.000291	<0.00005	-	-	-
Chrysene by GCMS	0.000182	<0.000005	0.00182	<0.00005	-	-	-
Pyrene by GCMS	0.000278	<0.000005	0.00278	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.00012	<0.000005	0.0012	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000302	<0.000005	0.00302	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000128	<0.000005	0.00128	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000166	<0.000002	0.00166	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000487	<0.000005	0.000487	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000167	<0.000005	0.00167	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00013	<0.000005	0.0013	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0024	<0.000082	0.024	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Dec-2018
pH (pH Units)	8.39
Conductivity (µS/cm)	128.00
Temperature (°C)	17.30
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

14/01/2019 14:04:30

14:03:52 14/01/2019

CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.99
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.6
Particle Size <4mm	>95%		

Case	
SDG	181207-13
Lab Sample Number(s)	18900833
Sampled Date	06-Dec-2018
Customer Sample Ref.	W56-01
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Dec-2018
pH (pH Units)	8.39
Conductivity (µS/cm)	128.00
Temperature (°C)	17.30
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

14/01/2019 14:04:30

14:03:52 14/01/2019

Table of Results - Appendix

Method No	Reference	Description
PM001		Preparation of Samples for Metals Analysis
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM243		Mixed Anions In Soils By Kone
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

Test Completion Dates

Lab Sample No(s)	18900743	18900773	18900785	18900789	18900793	18900799	18900805	18900820	18900833	18900748
Customer Sample Ref.	W54-01	W54-02	W54-03	W54-04	W55-01	W55-02	W55-03	W55-04	W56-01	W56-02
AGS Ref.										
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	13-Dec-2018		13-Dec-2018		13-Dec-2018		13-Dec-2018		17-Dec-2018	
Ammoniacal Nitrogen	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018
Ammonium Soil by Titration	19-Dec-2018	18-Dec-2018	19-Dec-2018	20-Dec-2018	20-Dec-2018	20-Dec-2018	20-Dec-2018	20-Dec-2018	20-Dec-2018	20-Dec-2018
Anions by Kone (soil)	18-Dec-2018		18-Dec-2018		19-Dec-2018		19-Dec-2018		18-Dec-2018	
Asbestos ID in Solid Samples	19-Dec-2018		19-Dec-2018		19-Dec-2018		20-Dec-2018		20-Dec-2018	
CEN 10:1 Leachate (1 Stage)	19-Dec-2018	19-Dec-2018	19-Dec-2018	19-Dec-2018	19-Dec-2018	19-Dec-2018	19-Dec-2018	19-Dec-2018	19-Dec-2018	19-Dec-2018
CEN Readings	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018	20-Dec-2018
Cyanide Comp/Free/Total/Thiocyanate	22-Dec-2018	31-Dec-2018	22-Dec-2018	14-Jan-2019	22-Dec-2018	14-Jan-2019	22-Dec-2018	22-Dec-2018	14-Jan-2019	22-Dec-2018
Dissolved Metals by ICP-MS	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018
EPH CWG (Aliphatic) Aqueous GC (W)	27-Dec-2018	28-Dec-2018	27-Dec-2018	27-Dec-2018	27-Dec-2018	27-Dec-2018	27-Dec-2018	28-Dec-2018	27-Dec-2018	27-Dec-2018
EPH CWG (Aliphatic) GC (S)	20-Dec-2018	20-Dec-2018	19-Dec-2018	20-Dec-2018	20-Dec-2018	20-Dec-2018	20-Dec-2018	19-Dec-2018	20-Dec-2018	20-Dec-2018
EPH CWG (Aromatic) Aqueous GC (W)	27-Dec-2018	28-Dec-2018	27-Dec-2018	27-Dec-2018	27-Dec-2018	27-Dec-2018	27-Dec-2018	28-Dec-2018	27-Dec-2018	27-Dec-2018
EPH CWG (Aromatic) GC (S)	20-Dec-2018	20-Dec-2018	19-Dec-2018	20-Dec-2018	21-Dec-2018	20-Dec-2018	20-Dec-2018	19-Dec-2018	20-Dec-2018	20-Dec-2018
GRO by GC-FID (S)	31-Dec-2018	31-Dec-2018	31-Dec-2018	31-Dec-2018	31-Dec-2018	31-Dec-2018	31-Dec-2018	22-Dec-2018	22-Dec-2018	22-Dec-2018
GRO by GC-FID (W)	28-Dec-2018	31-Dec-2018	31-Dec-2018	31-Dec-2018	28-Dec-2018	31-Dec-2018	28-Dec-2018	31-Dec-2018	28-Dec-2018	28-Dec-2018
Mercury Dissolved	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018
Metals in solid samples by OES	13-Dec-2018	19-Dec-2018	13-Dec-2018	19-Dec-2018	13-Dec-2018	19-Dec-2018	13-Dec-2018	19-Dec-2018	17-Dec-2018	19-Dec-2018
PAH by GCMS	20-Dec-2018	20-Dec-2018	20-Dec-2018	20-Dec-2018	20-Dec-2018	20-Dec-2018	20-Dec-2018	20-Dec-2018	20-Dec-2018	20-Dec-2018
PAH Spec MS - Aqueous (W)	21-Dec-2018	27-Dec-2018	27-Dec-2018	27-Dec-2018	27-Dec-2018	21-Dec-2018	27-Dec-2018	27-Dec-2018	27-Dec-2018	21-Dec-2018
pH	20-Dec-2018	18-Dec-2018	20-Dec-2018	18-Dec-2018	20-Dec-2018	18-Dec-2018	20-Dec-2018	18-Dec-2018	20-Dec-2018	18-Dec-2018
pH Value	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018
Phenols by HPLC (S)	02-Jan-2019	03-Jan-2019	02-Jan-2019	03-Jan-2019	02-Jan-2019	03-Jan-2019	03-Jan-2019	02-Jan-2019	03-Jan-2019	03-Jan-2019
Sample description	07-Dec-2018	07-Dec-2018	07-Dec-2018	07-Dec-2018	07-Dec-2018	07-Dec-2018	07-Dec-2018	07-Dec-2018	07-Dec-2018	07-Dec-2018
Total Organic Carbon	27-Dec-2018	27-Dec-2018	27-Dec-2018	27-Dec-2018	27-Dec-2018	27-Dec-2018	27-Dec-2018	27-Dec-2018	27-Dec-2018	27-Dec-2018
Total Sulphate	17-Dec-2018		17-Dec-2018		17-Dec-2018		17-Dec-2018		17-Dec-2018	
Total Sulphur	13-Dec-2018		13-Dec-2018		13-Dec-2018		13-Dec-2018		14-Dec-2018	
TPH CWG (W)	28-Dec-2018	31-Dec-2018	31-Dec-2018	31-Dec-2018	28-Dec-2018	31-Dec-2018	28-Dec-2018	31-Dec-2018	28-Dec-2018	28-Dec-2018
TPH CWG GC (S)	31-Dec-2018	31-Dec-2018	31-Dec-2018	31-Dec-2018	31-Dec-2018	31-Dec-2018	31-Dec-2018	22-Dec-2018	22-Dec-2018	22-Dec-2018
VOC MS (S)	28-Dec-2018	31-Dec-2018	28-Dec-2018	28-Dec-2018	31-Dec-2018	02-Jan-2019	31-Dec-2018	28-Dec-2018	28-Dec-2018	28-Dec-2018

Lab Sample No(s)	18900754	18900763
Customer Sample Ref.	W56-03	W56-04
AGS Ref.		
Depth	0.00 - 0.00	0.00 - 0.00
Type	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	19-Dec-2018	
Ammoniacal Nitrogen	21-Dec-2018	21-Dec-2018
Ammonium Soil by Titration	20-Dec-2018	18-Dec-2018
Anions by Kone (soil)	19-Dec-2018	
Asbestos ID in Solid Samples	20-Dec-2018	
Asbestos Quantification - Full	20-Dec-2018	
CEN 10:1 Leachate (1 Stage)	19-Dec-2018	19-Dec-2018
CEN Readings	20-Dec-2018	20-Dec-2018
Cyanide Comp/Free/Total/Thiocyanate	22-Dec-2018	22-Dec-2018
Dissolved Metals by ICP-MS	21-Dec-2018	21-Dec-2018
EPH CWG (Aliphatic) Aqueous GC (W)	27-Dec-2018	27-Dec-2018
EPH CWG (Aliphatic) GC (S)	12-Dec-2018	19-Dec-2018
EPH CWG (Aromatic) Aqueous GC (W)	27-Dec-2018	27-Dec-2018
EPH CWG (Aromatic) GC (S)	12-Dec-2018	20-Dec-2018
GRO by GC-FID (S)	22-Dec-2018	31-Dec-2018
GRO by GC-FID (W)	28-Dec-2018	02-Jan-2019
Mercury Dissolved	21-Dec-2018	21-Dec-2018
Metals in solid samples by OES	19-Dec-2018	19-Dec-2018
PAH by GCMS	20-Dec-2018	20-Dec-2018
PAH Spec MS - Aqueous (W)	21-Dec-2018	21-Dec-2018
pH	20-Dec-2018	18-Dec-2018
pH Value	21-Dec-2018	21-Dec-2018
Phenols by HPLC (S)	02-Jan-2019	04-Jan-2019
Sample description	07-Dec-2018	07-Dec-2018
Total Organic Carbon	28-Dec-2018	27-Dec-2018
Total Sulphate	17-Dec-2018	
Total Sulphur	14-Dec-2018	
TPH CWG (W)	28-Dec-2018	02-Jan-2019
TPH CWG GC (S)	22-Dec-2018	31-Dec-2018
VOC MS (S)	28-Dec-2018	02-Jan-2019

Appendix

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP - No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals - total metals must be requested separately.

11. Results relate only to the items tested.

12. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** - Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

General

21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

24. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Holding time exceeded before sample received**
5	**Samples exceeded holding time before presevation was performed**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to sampled on date**
&	**Sample Holding Time exceeded - Late arrival of instructions.**

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Rodgers Leask
Office 225
2430/2440
Aztec West
Almondsbury
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BS32 4QA

Attention: Elliot Thomas

CERTIFICATE OF ANALYSIS

Date of report Generation:	10 February 2021
Customer:	Rodgers Leask
Sample Delivery Group (SDG):	210130-32
Your Reference:	P18-669
Location:	Llanwern
Report No:	586352

We received 24 samples on Saturday January 30, 2021 and 24 of these samples were scheduled for analysis which was completed on Wednesday February 10, 2021. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.
The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan

Operations Manager

CERTIFICATE OF ANALYSIS

SDG:	210130-32	**Client Reference:**	P18-669	**Report Number:**	586352
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
23638988	AJ27-1		0.70 - 0.70	29/01/2021
23638943	AJ29-1		0.70 - 0.70	28/01/2021
23638959	AJ29-2		1.50 - 1.50	28/01/2021
23638993	AJ30-1		0.40 - 0.40	28/01/2021
23638999	AJ30-2		1.50 - 1.50	28/01/2021
23638980	AK27-1		0.80 - 0.80	29/01/2021
23638976	AK28-1		1.00 - 1.00	29/01/2021
23639025	AK30-1		0.20 - 0.20	28/01/2021
23639030	AK30-2		1.00 - 1.00	28/01/2021
23639015	AK31-1		0.10 - 0.10	28/01/2021
23639020	AK31-2		1.10 - 1.10	28/01/2021
23639060	AK32-1		1.00 - 1.00	28/01/2021
23639067	AK33-1		0.20 - 0.20	29/01/2021
23639071	AK34-1		0.80 - 0.80	29/01/2021
23639077	AK34-2		1.60 - 1.60	29/01/2021
23638964	AL28-1		0.50 - 0.50	29/01/2021
23638970	AL28-2		1.20 - 1.20	29/01/2021
23638954	AL29-1		0.80 - 0.80	29/01/2021
23639034	AL30-1		0.50 - 0.50	28/01/2021
23639007	AL30-2		2.00 - 2.00	28/01/2021
23639041	AL31-1		0.50 - 0.50	28/01/2021
23639045	AL31-2		1.50 - 1.50	28/01/2021
23639051	AL32-1		0.50 - 0.50	28/01/2021
23638948	AL33-1		0.80 - 0.80	29/01/2021

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	210130-32	**Client Reference:**	P18-669	**Report Number:**	586352
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			23638988		23638943		23638959		23638993		23638999		23638980		23638976		23639025				
Customer Sample Reference			AJ27-1		AJ29-1		AJ29-2		AJ30-1		AJ30-2		AK27-1		AK28-1		AK30-1				
AGS Reference																					
Depth (m)			0.70 - 0.70		0.70 - 0.70		1.50 - 1.50		0.40 - 0.40		1.50 - 1.50		0.80 - 0.80		1.00 - 1.00		0.20 - 0.20				
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 24	X			X		X			X		X			X		X			X
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 12			X					X					X					X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 24	X			X		X			X		X			X		X			X
EPH CWG GC (S)	All	NDPs: 0 Tests: 24	X			X		X			X		X			X		X			X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 24		X			X		X			X		X			X		X		
Metals in solid samples by OES	All	NDPs: 0 Tests: 24	X			X		X			X		X			X		X			X
PAH by GCMS	All	NDPs: 0 Tests: 24	X			X		X			X		X			X		X			X
pH	All	NDPs: 0 Tests: 24	X			X		X			X		X			X		X			X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 24	X			X		X			X		X			X		X			X
Sample description	All	NDPs: 0 Tests: 23	X			X					X		X			X		X			X
Total Organic Carbon	All	NDPs: 0 Tests: 23	X			X		X			X		X			X		X			X
TPH CWG GC (S)	All	NDPs: 0 Tests: 24	X			X		X			X		X			X		X			X
VOC MS (S)	All	NDPs: 0 Tests: 24		X			X		X			X		X			X		X		

23638970	AL28-2		1.20 - 1.20	1kg TUB with Handle (ALE260)	S			x											
23638964	AL28-1		0.50 - 0.50	60g VOC (ALE215)	S						x								x
				250g Amber Jar (ALE210)	S	x			x	x		x	x	x	x	x	x	x	
23639077	AK34-2		1.60 - 1.60	60g VOC (ALE215)	S						x								x
				250g Amber Jar (ALE210)	S	x			x	x		x	x	x	x	x	x	x	
				1kg TUB with Handle (ALE260)	S			x											
23639071	AK34-1		0.80 - 0.80	60g VOC (ALE215)	S						x								x
				250g Amber Jar (ALE210)	S	x			x	x		x	x	x	x	x	x	x	
23639067	AK33-1		0.20 - 0.20	60g VOC (ALE215)	S						x								x
				250g Amber Jar (ALE210)	S	x			x	x		x	x	x	x	x	x	x	
				1kg TUB with Handle (ALE260)	S			x											
23639060	AK32-1		1.00 - 1.00	60g VOC (ALE215)	S						x								x
				250g Amber Jar (ALE210)	S	x			x	x		x	x	x	x	x	x	x	
23639020	AK31-2		1.10 - 1.10	60g VOC (ALE215)	S						x								x
				250g Amber Jar (ALE210)	S	x			x	x		x	x	x	x	x		x	
23639015	AK31-1		0.10 - 0.10	60g VOC (ALE215)	S						x								x
				250g Amber Jar (ALE210)	S	x			x	x		x	x	x	x	x	x	x	
				1kg TUB with Handle (ALE260)	S			x											
23639030	AK30-2		1.00 - 1.00	60g VOC (ALE215)	S						x								x
				250g Amber Jar (ALE210)	S	x			x	x		x	x	x	x	x	x	x	
23639025	AK30-1		0.20 - 0.20	60g VOC (ALE215)	S						x								x

Validated

CERTIFICATE OF ANALYSIS

SDG:	210130-32	**Client Reference:**	P18-669	**Report Number:**	586352
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			23638970		23638954		23639034		23639007		23639041		23639045		23639051		23638948				
Customer Sample Reference			AL28-2		AL29-1		AL30-1		AL30-2		AL31-1		AL31-2		AL32-1		AL33-1				
AGS Reference																					
Depth (m)			1.20 - 1.20		0.80 - 0.80		0.50 - 0.50		2.00 - 2.00		0.50 - 0.50		1.50 - 1.50		0.50 - 0.50		0.80 - 0.80				
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 24	X			X			X		X			X		X			X		X
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 12			X			X					X					X			
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 24	X			X			X		X			X		X			X		X
EPH CWG GC (S)	All	NDPs: 0 Tests: 24	X			X			X		X			X		X			X		X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 24		X			X			X		X			X		X			X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 24	X			X			X		X			X		X			X		X
PAH by GCMS	All	NDPs: 0 Tests: 24	X			X			X		X			X		X			X		X
pH	All	NDPs: 0 Tests: 24	X			X			X		X			X		X			X		X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 24	X			X			X		X			X		X			X		X
Sample description	All	NDPs: 0 Tests: 23	X			X			X		X			X		X			X		X
Total Organic Carbon	All	NDPs: 0 Tests: 23	X			X			X		X			X		X			X		X
TPH CWG GC (S)	All	NDPs: 0 Tests: 24	X			X			X		X			X		X			X		X
VOC MS (S)	All	NDPs: 0 Tests: 24		X			X			X		X			X		X			X	

23638948	AL33-1		0.80 - 0.80	60g VOC (ALE215)	S
					X
					X

CERTIFICATE OF ANALYSIS

SDG:	210130-32	**Client Reference:**	P18-669	**Report Number:**	586352
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

Sample Descriptions

Grain Sizes

very fine	<0.063mm	**fine**	0.063mm - 0.1mm	**medium**	0.1mm - 2mm	**coarse**	2mm - 10mm	**very coarse**	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
23638988	AJ27-1	0.70 - 0.70	Dark Brown	Sand	Stones	None
23638943	AJ29-1	0.70 - 0.70	Dark Brown	Sand	Stones	None
23638959	AJ29-2	1.50 - 1.50	Dark Brown	Sand	Stones	None
23638993	AJ30-1	0.40 - 0.40	Black	Sand	Stones	None
23638999	AJ30-2	1.50 - 1.50	Dark Brown	Sand	Stones	None
23638980	AK27-1	0.80 - 0.80	Dark Brown	Sand	Stones	None
23638976	AK28-1	1.00 - 1.00	Grey	Sand	Stones	Concrete/Aggregate
23639025	AK30-1	0.20 - 0.20	Dark Brown	Sand	Stones	None
23639030	AK30-2	1.00 - 1.00	Grey	Sand	Stones	Concrete/Aggregate
23639015	AK31-1	0.10 - 0.10	Dark Brown	Sandy Loam	Stones	Concrete/Aggregate
23639020	AK31-2	1.10 - 1.10	Black	Sand	None	None
23639060	AK32-1	1.00 - 1.00	Black	Sand	Stones	None
23639067	AK33-1	0.20 - 0.20	Dark Brown	Sand	Vegetation	Stones
23639071	AK34-1	0.80 - 0.80	Dark Brown	Sand	None	Stones
23639077	AK34-2	1.60 - 1.60	Dark Brown	Sand	Vegetation	Stones
23638964	AL28-1	0.50 - 0.50	Dark Brown	Sand	Stones	None
23638970	AL28-2	1.20 - 1.20	Dark Brown	Sand	Stones	None
23638954	AL29-1	0.80 - 0.80	Dark Brown	Sand	Brick	Stones
23639034	AL30-1	0.50 - 0.50	Grey	Sand	Stones	None
23639007	AL30-2	2.00 - 2.00	Grey	Sand	Stones	Concrete/Aggregate
23639041	AL31-1	0.50 - 0.50	Grey	Sand	Stones	None
23639045	AL31-2	1.50 - 1.50	Dark Brown	Sand	Stones	N/A
23639051	AL32-1	0.50 - 0.50	Black	Sand	Stones	Concrete/Aggregate
23638948	AL33-1	0.80 - 0.80	Dark Brown	Stone/Soil	None	Stones

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	210130-32	**Client Reference:**	P18-669	**Report Number:**	586352
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AJ27-1	AJ29-1	AJ29-2	AJ30-1	AJ30-2	AK27-1
			Depth (m)	0.70 - 0.70	0.70 - 0.70	1.50 - 1.50	0.40 - 0.40	1.50 - 1.50	0.80 - 0.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	29/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021	29/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	30/01/2021	30/01/2021	30/01/2021	30/01/2021	30/01/2021	30/01/2021
			SDG Ref	210130-32	210130-32	210130-32	210130-32	210130-32	210130-32
			Lab Sample No.(s)	23638988	23638943	23638959	23638993	23638999	23638980
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		14	1.4	10	13	20	17
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	18.6 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		1.31 #	3.95 #	4.22 #	>100 #	22.9 #	1.81 #
pH	1 pH Units	TM133		11.9 M	9.91 M	9.58 M	8.83 M	9.57 M	12.1 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		<6 M	14.2 M	9.37 M	7.95 M	11.5 M	<6 M
Cadmium	<0.02 mg/kg	TM181		1.92 M	2.29 M	1.51 M	0.923 M	0.632 M	0.469 M
Chromium	<0.9 mg/kg	TM181		374 M	<9 M	<9 M	17.8 M	30.6 M	205 M
Copper	<1.4 mg/kg	TM181		27.7 M	23.5 M	14.5 M	34.6 M	31.3 M	<14 M
Iron	<1000 mg/kg	TM181		133000 #	338000 #		49600 #		49900 #
Lead	<0.7 mg/kg	TM181		53.6 M	39.7 M	24.7 M	52.8 M	47.6 M	39.6 M
Manganese	<0.13 mg/kg	TM181		29500 M	4850 M	2970 M	1360 M	1360 M	14900 M
Mercury	<0.1 mg/kg	TM181		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Nickel	<0.2 mg/kg	TM181		15.3 M	36.9 M	21.7 M	17.5 M	33.3 M	4.61 M
Selenium	<1 mg/kg	TM181		14 #	<10 #	<10 #	<10 #	<10 #	13.4 #
Vanadium	<0.2 mg/kg	TM181		968 #	49.6 #	36.4 #	34.8 #	43 #	244 #
Zinc	<1.9 mg/kg	TM181		84.5 M	131 M	80.8 M	70.3 M	86.9 M	42.9 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	210130-32	**Client Reference:**	P18-669	**Report Number:**	586352
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AK28-1	AK30-1	AK30-2	AK31-1	AK31-2	AK32-1
			Depth (m)	1.00 - 1.00	0.20 - 0.20	1.00 - 1.00	0.10 - 0.10	1.10 - 1.10	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	29/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	30/01/2021	30/01/2021	30/01/2021	30/01/2021	30/01/2021	30/01/2021
			SDG Ref	210130-32	210130-32	210130-32	210130-32	210130-32	210130-32
			Lab Sample No.(s)	23638976	23639025	23639030	23639015	23639020	23639060
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		7.5	12	13	11	23	16
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		2.6 #	12.1 #	38.4 #	17.2 #		31.5 #
pH	1 pH Units	TM133		12 M	9.22 M	11.3 M	10.5 M	10.8 M	11.4 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		<6 M	7.22 M	11.2 M	10.3 M	6.83 M	6.44 M
Cadmium	<0.02 mg/kg	TM181		1.27 M	0.769 M	1.47 M	2.19 M	0.45 M	0.963 M
Chromium	<0.9 mg/kg	TM181		723 M	21.9 M	222 M	142 M	15.3 M	265 M
Copper	<1.4 mg/kg	TM181		37.9 M	<14 M	40.9 M	36.5 M	21.7 M	16.4 M
Iron	<1000 mg/kg	TM181		152000 #	58900 #	54800 #	230000 #		
Lead	<0.7 mg/kg	TM181		137 M	44.3 M	60.4 M	46.7 M	57.2 M	34.2 M
Manganese	<0.13 mg/kg	TM181		34000 M	1710 M	8170 M	5740 M	1150 M	3190 M
Mercury	<0.1 mg/kg	TM181		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Nickel	<0.2 mg/kg	TM181		13.1 M	24.3 M	26.3 M	37.2 M	11.3 M	14.4 M
Selenium	<1 mg/kg	TM181		23.3 #	<10 #	<10 #	<10 #	<10 #	<10 #
Vanadium	<0.2 mg/kg	TM181		543 #	32.7 #	285 #	97.3 #	26 #	233 #
Zinc	<1.9 mg/kg	TM181		94.1 M	77.6 M	265 M	109 M	75.3 M	68.4 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	210130-32	**Client Reference:**	P18-669	**Report Number:**	586352
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AK33-1	AK34-1	AK34-2	AL28-1	AL28-2	AL29-1
			Depth (m)	0.20 - 0.20	0.80 - 0.80	1.60 - 1.60	0.50 - 0.50	1.20 - 1.20	0.80 - 0.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	29/01/2021	29/01/2021	29/01/2021	29/01/2021	29/01/2021	29/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	30/01/2021	30/01/2021	30/01/2021	30/01/2021	30/01/2021	30/01/2021
			SDG Ref	210130-32	210130-32	210130-32	210130-32	210130-32	210130-32
			Lab Sample No.(s)	23639067	23639071	23639077	23638964	23638970	23638954
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		12	11	13	6.9	6.9	9.3
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		9.43 #	10.1 #	4.14 #	<0.35 #	3.31 #	6.14 #
pH	1 pH Units	TM133		10.2 M	9.51 M	10.2 M	12.5 M	12.4 M	11.5 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	1.02 M
Arsenic	<0.6 mg/kg	TM181		9.69 M	13.6 M	15.9 M	<6 M	<6 M	<6 M
Cadmium	<0.02 mg/kg	TM181		1.6 M	1.49 M	1.34 M	1.09 M	1.19 M	1.42 M
Chromium	<0.9 mg/kg	TM181		75 M	119 M	33.8 M	1080 M	936 M	836 M
Copper	<1.4 mg/kg	TM181		22.4 M	23.3 M	20.2 M	14.3 M	<14 M	23.3 M
Iron	<1000 mg/kg	TM181		134000 #		101000 #		163000 #	166000 #
Lead	<0.7 mg/kg	TM181		72 M	67.5 M	44.3 M	22.4 M	23.5 M	100 M
Manganese	<0.13 mg/kg	TM181		8420 M	8330 M	6690 M	48700 M	48700 M	43500 M
Mercury	<0.1 mg/kg	TM181		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Nickel	<0.2 mg/kg	TM181		45.9 M	26.5 M	27.2 M	5.25 M	5.37 M	9.39 M
Selenium	<1 mg/kg	TM181		<10 #	<10 #	<10 #	30.6 #	31.2 #	29.5 #
Vanadium	<0.2 mg/kg	TM181		139 #	134 #	53.6 #	840 #	709 #	684 #
Zinc	<1.9 mg/kg	TM181		212 M	196 M	120 M	40.6 M	57.3 M	123 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	210130-32	**Client Reference:**	P18-669	**Report Number:**	586352
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AL30-1	AL30-2	AL31-1	AL31-2	AL32-1	AL33-1
			Depth (m)	0.50 - 0.50	2.00 - 2.00	0.50 - 0.50	1.50 - 1.50	0.50 - 0.50	0.80 - 0.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021	29/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	30/01/2021	30/01/2021	30/01/2021	30/01/2021	30/01/2021	30/01/2021
			SDG Ref	210130-32	210130-32	210130-32	210130-32	210130-32	210130-32
			Lab Sample No.(s)	23639034	23639007	23639041	23639045	23639051	23638948
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		12	9.3	21	12	9.4	11
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 #
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 #
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 #
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 #
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 #
Soil Organic Matter (SOM)	<0.35 %	TM132		20.5 #	21.2 #	54.5 #	3.33 #	18.1 #	1.62 #
pH	1 pH Units	TM133		10.6 M	11.9 M	10.6 M	9.1 M	11.3 M	11.9 #
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 #
Arsenic	<0.6 mg/kg	TM181		8.72 M	<6 M	<6 M	11.4 M	8.28 M	7.73 #
Cadmium	<0.02 mg/kg	TM181		1.22 M	1.45 M	1.11 M	0.662 M	1.87 M	1.01 #
Chromium	<0.9 mg/kg	TM181		235 M	653 M	68.5 M	25.3 M	160 M	1170 #
Copper	<1.4 mg/kg	TM181		19.2 M	15.3 M	<14 M	24 M	20.4 M	53.3 #
Iron	<1000 mg/kg	TM181		90000 #	144000 #	95800 #	32100 #	138000 #	
Lead	<0.7 mg/kg	TM181		90 M	<7 M	23.3 M	19.8 M	37.6 M	26.8 #
Manganese	<0.13 mg/kg	TM181		11800 M	35700 M	11400 M	1690 M	12900 M	16300 #
Mercury	<0.1 mg/kg	TM181		<1 M	<1 M	<1 M	<1 M	<1 M	<1 #
Nickel	<0.2 mg/kg	TM181		23.6 M	5.78 M	22.8 M	26.6 M	34.6 M	496 #
Selenium	<1 mg/kg	TM181		10.2 #	19.7 #	<10 #	<10 #	<10 #	10.4 #
Vanadium	<0.2 mg/kg	TM181		218 #	544 #	94.3 #	40.1 #	157 #	255 #
Zinc	<1.9 mg/kg	TM181		198 M	39.5 M	81.3 M	64.9 M	98.7 M	70.7 #

Validated

CERTIFICATE OF ANALYSIS

SDG:	210130-32	**Client Reference:**	P18-669	**Report Number:**	586352
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AJ27-1	AJ29-1	AJ29-2	AJ30-1	AJ30-2	AK27-1
			Depth (m)	0.70 - 0.70	0.70 - 0.70	1.50 - 1.50	0.40 - 0.40	1.50 - 1.50	0.80 - 0.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	29/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021	29/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	30/01/2021	30/01/2021	30/01/2021	30/01/2021	30/01/2021	30/01/2021
			SDG Ref	210130-32	210130-32	210130-32	210130-32	210130-32	210130-32
			Lab Sample No.(s)	23638988	23638943	23638959	23638993	23638999	23638980
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		81.4	86.3	83	77.8	82.9	80.2
Acenaphthene-d10 % recovery**	%	TM218		82.2	82.5	83.4	78	80.7	81.8
Phenanthrene-d10 % recovery**	%	TM218		80.2	80.8	80.1	74.5	80.9	80.5
Chrysene-d12 % recovery**	%	TM218		78.5	77.8	72.1	66.8	76.7	78
Perylene-d12 % recovery**	%	TM218		75.5	74.9	70.2	70.4	73.4	74.6
Naphthalene	<9 µg/kg	TM218		21 M	<9 M	<9 M	112 M	117 M	140 M
Acenaphthylene	<12 µg/kg	TM218		<12 M	<12 M	<12 M	173 M	191 M	62.7 M
Acenaphthene	<8 µg/kg	TM218		42.9 M	<8 M	<8 M	<8 M	<8 M	22.8 M
Fluorene	<10 µg/kg	TM218		19.1 M	<10 M	<10 M	34.4 M	58.1 M	33.1 M
Phenanthrene	<15 µg/kg	TM218		458 M	43.8 M	22.3 M	233 M	350 M	306 M
Anthracene	<16 µg/kg	TM218		112 M	<16 M	<16 M	71.2 M	99.1 M	78.5 M
Fluoranthene	<17 µg/kg	TM218		1250 M	64.2 M	31.2 M	956 M	874 M	597 M
Pyrene	<15 µg/kg	TM218		1190 M	46.4 M	27.1 M	892 M	727 M	462 M
Benz(a)anthracene	<14 µg/kg	TM218		715 M	29.7 M	30.7 M	732 M	484 M	330 M
Chrysene	<10 µg/kg	TM218		828 M	30.4 M	37.1 M	560 M	514 M	391 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		1190 M	40.9 M	64.1 M	1450 M	937 M	587 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		376 M	<14 M	19.2 M	430 M	280 M	181 M
Benzo(a)pyrene	<15 µg/kg	TM218		775 M	24.1 M	35.1 M	1060 M	570 M	332 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		618 M	23.6 M	38 M	972 M	566 M	318 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		103 M	<23 M	<23 M	164 M	108 M	68.9 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		652 M	<24 M	35.9 M	860 M	524 M	298 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		8350	303	341	8700	6400	4210

Validated

CERTIFICATE OF ANALYSIS

SDG:	210130-32	**Client Reference:**	P18-669	**Report Number:**	586352
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AK28-1	AK30-1	AK30-2	AK31-1	AK31-2	AK32-1
			Depth (m)	1.00 - 1.00	0.20 - 0.20	1.00 - 1.00	0.10 - 0.10	1.10 - 1.10	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	29/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	30/01/2021	30/01/2021	30/01/2021	30/01/2021	30/01/2021	30/01/2021
			SDG Ref	210130-32	210130-32	210130-32	210130-32	210130-32	210130-32
			Lab Sample No.(s)	23638976	23639025	23639030	23639015	23639020	23639060
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		80.7	81.9	77.2	80.3	77.7	78.8
Acenaphthene-d10 % recovery**	%	TM218		82.4	81	79.1	83.5	78.7	82.5
Phenanthrene-d10 % recovery**	%	TM218		85.2	79.1	80.2	86.6	74.3	86.8
Chrysene-d12 % recovery**	%	TM218		88	75.2	81.2	75.5	63.8	75.9
Perylene-d12 % recovery**	%	TM218		102	72.2	75.3	72.2	62.3	70.5
Naphthalene	<9 µg/kg	TM218		19.5 M	31.9 M	27 M	568 M	134 M	547 M
Acenaphthylene	<12 µg/kg	TM218		<12 M	101 M	26.6 M	665 M	58.5 M	932 M
Acenaphthene	<8 µg/kg	TM218		<8 M	<8 M	<8 M	<80 M	14.4 M	64 M
Fluorene	<10 µg/kg	TM218		<10 M	<10 M	18.7 M	1050 M	89.5 M	562 M
Phenanthrene	<15 µg/kg	TM218		101 M	128 M	151 M	6250 M	835 M	3770 M
Anthracene	<16 µg/kg	TM218		17.8 M	49.4 M	30.8 M	2260 M	268 M	1440 M
Fluoranthene	<17 µg/kg	TM218		339 M	511 M	225 M	7650 M	886 M	11200 M
Pyrene	<15 µg/kg	TM218		316 M	416 M	170 M	5150 M	659 M	9490 M
Benz(a)anthracene	<14 µg/kg	TM218		177 M	317 M	115 M	2720 M	564 M	4800 M
Chrysene	<10 µg/kg	TM218		195 M	316 M	115 M	2220 M	567 M	4920 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		295 M	675 M	184 M	3190 M	771 M	7250 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		114 M	232 M	54.8 M	980 M	238 M	1710 M
Benzo(a)pyrene	<15 µg/kg	TM218		190 M	429 M	106 M	2000 M	537 M	4080 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		204 M	471 M	89.4 M	1850 M	377 M	4210 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		32.5 M	85.4 M	<23 M	324 M	99.1 M	686 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		162 M	407 M	85.1 M	1320 M	361 M	3360 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		2160	4170	1400	38200	6460	59000

Validated

CERTIFICATE OF ANALYSIS

SDG:	210130-32	**Client Reference:**	P18-669	**Report Number:**	586352
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AK33-1	AK34-1	AK34-2	AL28-1	AL28-2	AL29-1
			Depth (m)	0.20 - 0.20	0.80 - 0.80	1.60 - 1.60	0.50 - 0.50	1.20 - 1.20	0.80 - 0.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	29/01/2021	29/01/2021	29/01/2021	29/01/2021	29/01/2021	29/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	30/01/2021	30/01/2021	30/01/2021	30/01/2021	30/01/2021	30/01/2021
			SDG Ref	210130-32	210130-32	210130-32	210130-32	210130-32	210130-32
			Lab Sample No.(s)	23639067	23639071	23639077	23638964	23638970	23638954
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		85.8	79.8	78.1	81	85.2	79.6
Acenaphthene-d10 % recovery**	%	TM218		81.2	83.1	82.3	81.9	80.9	85.4
Phenanthrene-d10 % recovery**	%	TM218		76.9	87	86.5	84.4	78	89.9
Chrysene-d12 % recovery**	%	TM218		76.8	75.7	79.4	79.7	76.7	78.6
Perylene-d12 % recovery**	%	TM218		77.9	70	75.9	83.9	73.5	72.1
Naphthalene	<9 µg/kg	TM218		42.1 M	59.9 M	23 M	<9 M	24.4 M	141 M
Acenaphthylene	<12 µg/kg	TM218		31.5 M	46.1 M	<12 M	<12 M	<12 M	47.2 M
Acenaphthene	<8 µg/kg	TM218		<8 M	<8 M	<8 M	<8 M	<8 M	24.7 M
Fluorene	<10 µg/kg	TM218		<10 M	<10 M	<10 M	<10 M	11.2 M	45.4 M
Phenanthrene	<15 µg/kg	TM218		92.3 M	120 M	42.8 M	17.3 M	107 M	409 M
Anthracene	<16 µg/kg	TM218		27.6 M	33.6 M	<16 M	<16 M	38.9 M	96.7 M
Fluoranthene	<17 µg/kg	TM218		193 M	301 M	89.1 M	48.4 M	184 M	776 M
Pyrene	<15 µg/kg	TM218		143 M	259 M	73.7 M	52.2 M	141 M	580 M
Benz(a)anthracene	<14 µg/kg	TM218		104 M	184 M	55 M	22.7 M	86 M	307 M
Chrysene	<10 µg/kg	TM218		101 M	157 M	60.6 M	32.9 M	97.2 M	309 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		186 M	388 M	104 M	50.2 M	130 M	473 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		61.5 M	104 M	29.5 M	18.5 M	47.9 M	140 M
Benzo(a)pyrene	<15 µg/kg	TM218		111 M	195 M	56.7 M	<15 M	77 M	259 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		128 M	221 M	62.2 M	23.1 M	71.1 M	268 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		<23 M	34.4 M	<23 M	<23 M	<23 M	47.1 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		113 M	169 M	50.2 M	<24 M	67.2 M	208 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		1330	2270	647	265	1080	4130

Validated

CERTIFICATE OF ANALYSIS

SDG:	210130-32	**Client Reference:**	P18-669	**Report Number:**	586352
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AL30-1	AL30-2	AL31-1	AL31-2	AL32-1	AL33-1
			Depth (m)	0.50 - 0.50	2.00 - 2.00	0.50 - 0.50	1.50 - 1.50	0.50 - 0.50	0.80 - 0.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021	29/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	30/01/2021	30/01/2021	30/01/2021	30/01/2021	30/01/2021	30/01/2021
			SDG Ref	210130-32	210130-32	210130-32	210130-32	210130-32	210130-32
			Lab Sample No.(s)	23639034	23639007	23639041	23639045	23639051	23638948
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		80.9	81.1	78.5	81	82.1	83.7
Acenaphthene-d10 % recovery**	%	TM218		83.3	82.4	79.8	78	82.6	83.1
Phenanthrene-d10 % recovery**	%	TM218		83.7	79.6	77.5	78.6	83.1	81
Chrysene-d12 % recovery**	%	TM218		78	73.6	69	72.3	80.5	78.6
Perylene-d12 % recovery**	%	TM218		70.3	70	69.1	70.5	86.3	77
Naphthalene	<9 µg/kg	TM218		190 M	52.4 M	143 M	11.5 M	44.7 M	70.5 #
Acenaphthylene	<12 µg/kg	TM218		164 M	59.9 M	63.9 M	<12 M	38.3 M	30.5 #
Acenaphthene	<8 µg/kg	TM218		37 M	<8 M	11.9 M	<8 M	<8 M	<8 #
Fluorene	<10 µg/kg	TM218		136 M	28.1 M	37 M	<10 M	11.6 M	12.4 #
Phenanthrene	<15 µg/kg	TM218		943 M	406 M	390 M	28.8 M	137 M	113 #
Anthracene	<16 µg/kg	TM218		303 M	126 M	101 M	<16 M	43.6 M	30.8 #
Fluoranthene	<17 µg/kg	TM218		1820 M	666 M	704 M	38.5 M	354 M	208 #
Pyrene	<15 µg/kg	TM218		1330 M	496 M	526 M	30.4 M	276 M	163 #
Benz(a)anthracene	<14 µg/kg	TM218		857 M	255 M	409 M	23.2 M	243 M	126 #
Chrysene	<10 µg/kg	TM218		838 M	271 M	391 M	29.2 M	210 M	143 #
Benzo(b)fluoranthene	<15 µg/kg	TM218		1200 M	340 M	525 M	38.3 M	426 M	247 #
Benzo(k)fluoranthene	<14 µg/kg	TM218		380 M	101 M	181 M	<14 M	130 M	74.6 #
Benzo(a)pyrene	<15 µg/kg	TM218		692 M	201 M	382 M	20 M	271 M	149 #
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		589 M	175 M	286 M	<18 M	269 M	175 #
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		132 M	41.1 M	64.2 M	<23 M	47.6 M	31.1 #
Benzo(g,h,i)perylene	<24 µg/kg	TM218		546 M	175 M	261 M	<24 M	231 M	142 #
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		10200	3390	4480	220	2730	1720

Validated

CERTIFICATE OF ANALYSIS

SDG:	210130-32	**Client Reference:**	P18-669	**Report Number:**	586352
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AJ27-1	AJ29-1	AJ29-2	AJ30-1	AJ30-2	AK27-1
			Depth (m)	0.70 - 0.70	0.70 - 0.70	1.50 - 1.50	0.40 - 0.40	1.50 - 1.50	0.80 - 0.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	29/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021	29/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	30/01/2021	30/01/2021	30/01/2021	30/01/2021	30/01/2021	30/01/2021
			SDG Ref	210130-32	210130-32	210130-32	210130-32	210130-32	210130-32
			Lab Sample No.(s)	23638988	23638943	23638959	23638993	23638999	23638980
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		130	96.3	122	77.2	122	102
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	<10	<10	<10	15	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		<10	<10	<10	18.4	20	<10
Aliphatics >C8-C10	<10 µg/kg	TM089		<10	<10	20	42.6	22.5	<10
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	<1000	<1000	10400	<1000	7390
Aliphatics >C16-C21	<1000 µg/kg	TM414		<1000	1100	<1000	20900	6190	26300
Aliphatics >C21-C35	<1000 µg/kg	TM414		7440	5090	1410	27100	18600	66600
Aliphatics >C35-C44	<1000 µg/kg	TM414		3070	<1000	<1000	4980	5250	11200
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		11500	6740	<5000	63900	31000	112000
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		45000	<10000	<10000	101000	50800	123000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10	<10	13.3	28.8	15	<10
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000	<1000	1020	<1000	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		4410	<1000	<1000	4730	1870	1520
Aromatics > EC21-EC35	<1000 µg/kg	TM414		28000	<1000	<1000	28800	16400	8940
Aromatics >EC35-EC44	<1000 µg/kg	TM414		<1000	<1000	<1000	2340	1030	<1000
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		33500	<5000	<5000	36900	19800	11700
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		45000	<10000	<10000	101000	50900	123000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50	<50	<50	61	57.5	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50	<50	<50	<50	<50
GRO >C5-C10	<20 µg/kg	TM089		<20	<20	<20	61	57.5	<20

Validated

CERTIFICATE OF ANALYSIS

SDG:	210130-32	**Client Reference:**	P18-669	**Report Number:**	586352
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AK28-1	AK30-1	AK30-2	AK31-1	AK31-2	AK32-1
			Depth (m)	1.00 - 1.00	0.20 - 0.20	1.00 - 1.00	0.10 - 0.10	1.10 - 1.10	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	29/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	30/01/2021	30/01/2021	30/01/2021	30/01/2021	30/01/2021	30/01/2021
			SDG Ref	210130-32	210130-32	210130-32	210130-32	210130-32	210130-32
			Lab Sample No.(s)	23638976	23639025	23639030	23639015	23639020	23639060
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		109	84.7	89.2	55 4	48 4	81.2
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	<10	<10	<10 4	<10 4	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		<10	<10	<10	<10 4	18.1 4	<10
Aliphatics >C8-C10	<10 µg/kg	TM089		<10	<10	10.4	<10 4	28.4 4	<10
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<5000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		2780	<1000	2160	<5000	4910	1960
Aliphatics >C16-C21	<1000 µg/kg	TM414		14800	<1000	4490	10400	15300	18800
Aliphatics >C21-C35	<1000 µg/kg	TM414		54900	2720	1940	16700	22700	12100
Aliphatics >C35-C44	<1000 µg/kg	TM414		13600	1090	<1000	<5000	1930	<1000
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		86200	<5000	8980	32000	45200	33900
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		94200	23800	40800	67600	67000	190000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10	<10	<10 4	<10 4	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10	<10	<10 4	<10 4	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10	<10	<10	<10 4	19.4 4	<10
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<5000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000	<1000	<5000	1030	2320
Aromatics > EC16-EC21	<1000 µg/kg	TM414		<1000	1420	1990	6630	6510	32200
Aromatics > EC21-EC35	<1000 µg/kg	TM414		6370	12300	18500	23400	13200	110000
Aromatics >EC35-EC44	<1000 µg/kg	TM414		<1000	5140	10900	<5000	<1000	11100
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	1320	1820	<5000	<1000	1350
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		7990	18900	31800	35500	21800	156000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		94200	18900	40800	67600	67000	190000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50	<50	<50	<50 4	<50 4	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50	<50	<50 4	<50 4	<50
GRO >C5-C10	<20 µg/kg	TM089		<20	<20	<20	<20 4	<20 4	<20

CERTIFICATE OF ANALYSIS

SDG:	210130-32	**Client Reference:**	P18-669	**Report Number:**	586352
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AK33-1	AK34-1	AK34-2	AL28-1	AL28-2	AL29-1
			Depth (m)	0.20 - 0.20	0.80 - 0.80	1.60 - 1.60	0.50 - 0.50	1.20 - 1.20	0.80 - 0.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	29/01/2021	29/01/2021	29/01/2021	29/01/2021	29/01/2021	29/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	30/01/2021	30/01/2021	30/01/2021	30/01/2021	30/01/2021	30/01/2021
			SDG Ref	210130-32	210130-32	210130-32	210130-32	210130-32	210130-32
			Lab Sample No.(s)	23639067	23639071	23639077	23638964	23638970	23638954
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		123	132 4	95.1	121	101	102
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	<10 4	<10	<10	<10	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		<10	<10 4	<10	<10	<10	<10
Aliphatics >C8-C10	<10 µg/kg	TM089		<10	<10 4	<10	<10	<10	<10
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414		<1000	1100	<1000	<1000	1390	12600
Aliphatics >C21-C35	<1000 µg/kg	TM414		8240	8100	6570	12300	11800	44500
Aliphatics >C35-C44	<1000 µg/kg	TM414		<1000	<1000	<1000	1680	1510	12200
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		9500	9880	8000	14900	15000	70200
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		21800	21600	16100	16800	18100	84600
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10 4	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10 4	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10	<10 4	<10	<10	<10	<10
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		1350	<1000	<1000	<1000	<1000	1570
Aromatics > EC21-EC35	<1000 µg/kg	TM414		9840	10300	7010	<1000	1960	11400
Aromatics >EC35-EC44	<1000 µg/kg	TM414		<1000	1070	<1000	<1000	<1000	<1000
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		12300	11800	8070	<5000	<5000	14400
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		21800	21600	16100	14900	15000	84600
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50	<50 4	<50	<50	<50	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50 4	<50	<50	<50	<50
GRO >C5-C10	<20 µg/kg	TM089		<20	<20 4	<20	<20	<20	<20

Validated

CERTIFICATE OF ANALYSIS

SDG:	210130-32	**Client Reference:**	P18-669	**Report Number:**	586352
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AL30-1	AL30-2	AL31-1	AL31-2	AL32-1	AL33-1
			Depth (m)	0.50 - 0.50	2.00 - 2.00	0.50 - 0.50	1.50 - 1.50	0.50 - 0.50	0.80 - 0.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021	29/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	30/01/2021	30/01/2021	30/01/2021	30/01/2021	30/01/2021	30/01/2021
			SDG Ref	210130-32	210130-32	210130-32	210130-32	210130-32	210130-32
			Lab Sample No.(s)	23639034	23639007	23639041	23639045	23639051	23638948
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		76.6	101	47 4	122	97.8	98.2
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	<10	<10 4	<10	<10	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		<10	<10	<10 4	11.4	<10	<10
Aliphatics >C8-C10	<10 µg/kg	TM089		<10	<10	<10 4	14.8	<10	<10
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414		3810	3080	2500	1150	4380	<1000
Aliphatics >C21-C35	<1000 µg/kg	TM414		19700	10500	22600	5000	18700	4260
Aliphatics >C35-C44	<1000 µg/kg	TM414		8160	1460	30700	<1000	<1000	<1000
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		32100	15300	56400	6500	24300	5540
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		70500	20100	112000	<10000	69500	10900
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10	<10 4	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10	<10 4	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10	<10	<10 4	<10	<10	<10
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		6390	<1000	4870	<1000	<1000	<1000
Aromatics > EC21-EC35	<1000 µg/kg	TM414		29000	3360	45400	1450	43500	3800
Aromatics >EC35-EC44	<1000 µg/kg	TM414		2250	<1000	4000	<1000	1000	<1000
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		38400	<5000	55200	<5000	45200	5320
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		70500	15300	112000	<10000	69500	10900
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50	<50	<50 4	<50	<50	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50	<50 4	<50	<50	<50
GRO >C5-C10	<20 µg/kg	TM089		<20	<20	<20 4	<20	<20	<20

CERTIFICATE OF ANALYSIS

SDG:	210130-32	**Client Reference:**	P18-669	**Report Number:**	586352
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AJ27-1	AJ29-1	AJ29-2	AJ30-1	AJ30-2	AK27-1
			Depth (m)	0.70 - 0.70	0.70 - 0.70	1.50 - 1.50	0.40 - 0.40	1.50 - 1.50	0.80 - 0.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	29/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021	29/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	30/01/2021	30/01/2021	30/01/2021	30/01/2021	30/01/2021	30/01/2021
			SDG Ref	210130-32	210130-32	210130-32	210130-32	210130-32	210130-32
			Lab Sample No.(s)	23638988	23638943	23638959	23638993	23638999	23638980
			AGS Reference						
Dibromofluoromethane**	%	TM116		114	116	115	120	155	114
Toluene-d8**	%	TM116		102	100	100	97.4	99.4	101
4-Bromofluorobenzene**	%	TM116		101	98	97.5	81.3	96.2	101
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 M	<260 M	626 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210130-32	**Client Reference:**	P18-669	**Report Number:**	586352
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AK28-1	AK30-1	AK30-2	AK31-1	AK31-2	AK32-1
			Depth (m)	1.00 - 1.00	0.20 - 0.20	1.00 - 1.00	0.10 - 0.10	1.10 - 1.10	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	29/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	30/01/2021	30/01/2021	30/01/2021	30/01/2021	30/01/2021	30/01/2021
			SDG Ref	210130-32	210130-32	210130-32	210130-32	210130-32	210130-32
			Lab Sample No.(s)	23638976	23639025	23639030	23639015	23639020	23639060
			AGS Reference						
Dibromofluoromethane**	%	TM116		116	115	121	112	110	113
Toluene-d8**	%	TM116		101	97.9	99.3	96.1	96.5	102
4-Bromofluorobenzene**	%	TM116		98.9	91.7	96.7	85	81	95.2
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 M	<260 M	<260 M	462 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210130-32	**Client Reference:**	P18-669	**Report Number:**	586352
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AK33-1	AK34-1	AK34-2	AL28-1	AL28-2	AL29-1
			Depth (m)	0.20 - 0.20	0.80 - 0.80	1.60 - 1.60	0.50 - 0.50	1.20 - 1.20	0.80 - 0.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	29/01/2021	29/01/2021	29/01/2021	29/01/2021	29/01/2021	29/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	30/01/2021	30/01/2021	30/01/2021	30/01/2021	30/01/2021	30/01/2021
			SDG Ref	210130-32	210130-32	210130-32	210130-32	210130-32	210130-32
			Lab Sample No.(s)	23639067	23639071	23639077	23638964	23638970	23638954
			AGS Reference						
Dibromofluoromethane**	%	TM116		119	115	116	114	111	117
Toluene-d8**	%	TM116		101	102	102	102	99.4	101
4-Bromofluorobenzene**	%	TM116		95.3	98.9	101	100	95.8	99.4
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 M	<260 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

Validated

CERTIFICATE OF ANALYSIS

SDG:	210130-32	**Client Reference:**	P18-669	**Report Number:**	586352
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AL30-1	AL30-2	AL31-1	AL31-2	AL32-1	AL33-1
			Depth (m)	0.50 - 0.50	2.00 - 2.00	0.50 - 0.50	1.50 - 1.50	0.50 - 0.50	0.80 - 0.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021	29/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	30/01/2021	30/01/2021	30/01/2021	30/01/2021	30/01/2021	30/01/2021
			SDG Ref	210130-32	210130-32	210130-32	210130-32	210130-32	210130-32
			Lab Sample No.(s)	23639034	23639007	23639041	23639045	23639051	23638948
			AGS Reference						
Dibromofluoromethane**	%	TM116		118	112	166	130	119	114
Toluene-d8**	%	TM116		101	99.5	98.4	98.7	99.1	102
4-Bromofluorobenzene**	%	TM116		98	96.8	93.5	99.2	93	101
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 #
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 #
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 #
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 #
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 #
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 M	<260 M	<260 M	<260 #
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210130-32	**Client Reference:**	P18-669	**Report Number:**	586352
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

Asbestos Identification - Solid Samples

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&+$@	Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AJ29-1 0.70 - 0.70 SOLID 28/01/2021 00:00:00 30/01/2021 05:00:00 210130-32 23638943 TM048	05/02/2021	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AJ30-1 0.40 - 0.40 SOLID 28/01/2021 00:00:00 30/01/2021 05:00:00 210130-32 23638993 TM048	05/02/21	Eva Guerra	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AK27-1 0.80 - 0.80 SOLID 29/01/2021 00:00:00 30/01/2021 05:00:00 210130-32 23638980 TM048	05/02/2021	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AK30-1 0.20 - 0.20 SOLID 28/01/2021 00:00:00 30/01/2021 05:00:00 210130-32 23639025 TM048	05/02/2021	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AK31-1 0.10 - 0.10 SOLID 28/01/2021 00:00:00 30/01/2021 05:00:00 210130-32 23639015 TM048	05/02/2021	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AK33-1 0.20 - 0.20 SOLID 29/01/2021 00:00:00 30/01/2021 05:00:00 210130-32 23639067 TM048	05/02/2021	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AK34-2 1.60 - 1.60 SOLID 29/01/2021 00:00:00 30/01/2021 05:00:00 210130-32 23639077 TM048	05/02/2021	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AL28-2 1.20 - 1.20 SOLID 29/01/2021 00:00:00 30/01/2021 05:00:00 210130-32 23638970 TM048	05/02/2021	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG:	210130-32	**Client Reference:**	P18-669	**Report Number:**	586352
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	AL29-1 0.80 - 0.80 SOLID 29/01/2021 00:00:00 30/01/2021 05:00:00 210130-32 23638954 TM048	08/02/21	Eva Guerra	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	AL30-1 0.50 - 0.50 SOLID 28/01/2021 00:00:00 30/01/2021 05:00:00 210130-32 23639034 TM048	05/02/2021	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	AL31-1 0.50 - 0.50 SOLID 28/01/2021 00:00:00 30/01/2021 05:00:00 210130-32 23639041 TM048	05/02/2021	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	AL32-1 0.50 - 0.50 SOLID 28/01/2021 00:00:00 30/01/2021 05:00:00 210130-32 23639051 TM048	05/02/2021	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	210130-32	**Client Reference:**	P18-669	**Report Number:**	586352
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

Test Completion Dates

Lab Sample No(s)	23638988	23638943	23638959	23638993	23638999	23638980	23638976	23639025	23639030	23639015
Customer Sample Ref.	AJ27-1	AJ29-1	AJ29-2	AJ30-1	AJ30-2	AK27-1	AK28-1	AK30-1	AK30-2	AK31-1
AGS Ref.										
Depth	0.70 - 0.70	0.70 - 0.70	1.50 - 1.50	0.40 - 0.40	1.50 - 1.50	0.80 - 0.80	1.00 - 1.00	0.20 - 0.20	1.00 - 1.00	0.10 - 0.10
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	05-Feb-2021	03-Feb-2021	05-Feb-2021	03-Feb-2021	05-Feb-2021	05-Feb-2021	05-Feb-2021	05-Feb-2021	05-Feb-2021	05-Feb-2021
Asbestos ID in Solid Samples		05-Feb-2021		05-Feb-2021		05-Feb-2021		05-Feb-2021		05-Feb-2021
Cyanide Comp/Free/Total/Thiocyanate	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021	03-Feb-2021
EPH CWG GC (S)	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021
GRO by GC-FID (S)	08-Feb-2021	08-Feb-2021	08-Feb-2021	08-Feb-2021	09-Feb-2021	08-Feb-2021	08-Feb-2021	08-Feb-2021	08-Feb-2021	08-Feb-2021
Metals in solid samples by OES	08-Feb-2021	05-Feb-2021	04-Feb-2021	05-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021	08-Feb-2021	04-Feb-2021
PAH by GCMS	03-Feb-2021	08-Feb-2021	03-Feb-2021	05-Feb-2021	03-Feb-2021	03-Feb-2021	05-Feb-2021	03-Feb-2021	05-Feb-2021	03-Feb-2021
pH	01-Feb-2021	02-Feb-2021	01-Feb-2021	02-Feb-2021	01-Feb-2021	02-Feb-2021	02-Feb-2021	02-Feb-2021	02-Feb-2021	02-Feb-2021
Phenols by HPLC (S)	09-Feb-2021	09-Feb-2021	10-Feb-2021	09-Feb-2021	09-Feb-2021	10-Feb-2021	05-Feb-2021	09-Feb-2021	05-Feb-2021	05-Feb-2021
Sample description	30-Jan-2021	30-Jan-2021	30-Jan-2021	30-Jan-2021	30-Jan-2021	30-Jan-2021	30-Jan-2021	30-Jan-2021	30-Jan-2021	30-Jan-2021
Total Organic Carbon	03-Feb-2021	08-Feb-2021	08-Feb-2021	08-Feb-2021	08-Feb-2021	08-Feb-2021	08-Feb-2021	08-Feb-2021	08-Feb-2021	08-Feb-2021
TPH CWG GC (S)	08-Feb-2021	08-Feb-2021	08-Feb-2021	08-Feb-2021	09-Feb-2021	08-Feb-2021	08-Feb-2021	08-Feb-2021	08-Feb-2021	08-Feb-2021
VOC MS (S)	05-Feb-2021	08-Feb-2021	08-Feb-2021	08-Feb-2021	08-Feb-2021	05-Feb-2021	05-Feb-2021	08-Feb-2021	08-Feb-2021	08-Feb-2021

Lab Sample No(s)	23639020	23639060	23639067	23639071	23639077	23638964	23638970	23638954	23639034	23639007
Customer Sample Ref.	AK31-2	AK32-1	AK33-1	AK34-1	AK34-2	AL28-1	AL28-2	AL29-1	AL30-1	AL30-2
AGS Ref.										
Depth	1.10 - 1.10	1.00 - 1.00	0.20 - 0.20	0.80 - 0.80	1.60 - 1.60	0.50 - 0.50	1.20 - 1.20	0.80 - 0.80	0.50 - 0.50	2.00 - 2.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	05-Feb-2021	05-Feb-2021	05-Feb-2021	08-Feb-2021	05-Feb-2021	05-Feb-2021	05-Feb-2021	05-Feb-2021	05-Feb-2021	05-Feb-2021
Asbestos ID in Solid Samples			05-Feb-2021		05-Feb-2021		05-Feb-2021	08-Feb-2021	05-Feb-2021	
Cyanide Comp/Free/Total/Thiocyanate	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021
EPH CWG GC (S)	04-Feb-2021	05-Feb-2021	05-Feb-2021	05-Feb-2021	05-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021
GRO by GC-FID (S)	08-Feb-2021	08-Feb-2021	08-Feb-2021	09-Feb-2021	08-Feb-2021	08-Feb-2021	08-Feb-2021	08-Feb-2021	09-Feb-2021	08-Feb-2021
Metals in solid samples by OES	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021	08-Feb-2021
PAH by GCMS	05-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	04-Feb-2021	08-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021
pH	01-Feb-2021	01-Feb-2021	02-Feb-2021	01-Feb-2021	02-Feb-2021	01-Feb-2021	02-Feb-2021	02-Feb-2021	02-Feb-2021	02-Feb-2021
Phenols by HPLC (S)	09-Feb-2021	08-Feb-2021	09-Feb-2021	10-Feb-2021	10-Feb-2021	09-Feb-2021	10-Feb-2021	10-Feb-2021	09-Feb-2021	09-Feb-2021
Sample description	30-Jan-2021	30-Jan-2021	30-Jan-2021	30-Jan-2021	30-Jan-2021	30-Jan-2021	30-Jan-2021	30-Jan-2021	30-Jan-2021	30-Jan-2021
Total Organic Carbon		08-Feb-2021	08-Feb-2021	08-Feb-2021	08-Feb-2021	08-Feb-2021	08-Feb-2021	08-Feb-2021	08-Feb-2021	08-Feb-2021
TPH CWG GC (S)	08-Feb-2021	08-Feb-2021	08-Feb-2021	09-Feb-2021	08-Feb-2021	08-Feb-2021	08-Feb-2021	08-Feb-2021	09-Feb-2021	08-Feb-2021
VOC MS (S)	08-Feb-2021	05-Feb-2021	05-Feb-2021	05-Feb-2021	05-Feb-2021	05-Feb-2021	08-Feb-2021	05-Feb-2021	05-Feb-2021	08-Feb-2021

Lab Sample No(s)	23639041	23639045	23639051	23638948
Customer Sample Ref.	AL31-1	AL31-2	AL32-1	AL33-1
AGS Ref.				
Depth	0.50 - 0.50	1.50 - 1.50	0.50 - 0.50	0.80 - 0.80
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	03-Feb-2021	05-Feb-2021	08-Feb-2021	05-Feb-2021
Asbestos ID in Solid Samples	05-Feb-2021		05-Feb-2021	
Cyanide Comp/Free/Total/Thiocyanate	03-Feb-2021	03-Feb-2021	04-Feb-2021	03-Feb-2021
EPH CWG GC (S)	04-Feb-2021	04-Feb-2021	04-Feb-2021	05-Feb-2021
GRO by GC-FID (S)	08-Feb-2021	08-Feb-2021	08-Feb-2021	08-Feb-2021
Metals in solid samples by OES	04-Feb-2021	05-Feb-2021	08-Feb-2021	04-Feb-2021
PAH by GCMS	05-Feb-2021	03-Feb-2021	05-Feb-2021	03-Feb-2021
pH	02-Feb-2021	01-Feb-2021	02-Feb-2021	01-Feb-2021
Phenols by HPLC (S)	09-Feb-2021	09-Feb-2021	09-Feb-2021	05-Feb-2021
Sample description	30-Jan-2021	30-Jan-2021	30-Jan-2021	30-Jan-2021
Total Organic Carbon	09-Feb-2021	08-Feb-2021	08-Feb-2021	08-Feb-2021
TPH CWG GC (S)	08-Feb-2021	08-Feb-2021	08-Feb-2021	08-Feb-2021
VOC MS (S)	08-Feb-2021	08-Feb-2021	08-Feb-2021	05-Feb-2021

Appendix General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

18. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Matrix interference**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**
§	**Sampled on date not provided**

19. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.
Standing Committee of Analysts, *The Quantification of Asbestos in Soil (2017).*

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Rodgers Leask
Office 225
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Aztec West
Almondsbury
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BS32 4QA

Attention: Elliot Thomas

CERTIFICATE OF ANALYSIS

Date of report Generation:	17 February 2021
Customer:	Rodgers Leask
Sample Delivery Group (SDG):	210203-41
Your Reference:	P18-669
Location:	Llanwern
Report No:	587186

This report has been revised and directly supersedes 586571 in its entirety.

We received 16 samples on Wednesday February 03, 2021 and 16 of these samples were scheduled for analysis which was completed on Wednesday February 17, 2021. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.
The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan

Operations Manager

ALS Life Sciences Limited. Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291.

CERTIFICATE OF ANALYSIS

SDG:	210203-41	**Client Reference:**	P18-669	**Report Number:**	587186
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	586571

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
23656269	P22-1		0.60 - 0.60	01/02/2021
23656315	P22-2		1.30 - 1.30	01/02/2021
23656320	T19-1		0.30 - 0.30	01/02/2021
23656304	V12-1		1.00 - 1.00	02/02/2021
23656309	V12-2		1.60 - 1.60	02/02/2021
23656299	V13-1		1.00 - 1.00	02/02/2021
23656291	V14-1		0.30 - 0.30	02/02/2021
23656275	V16-1		1.00 - 1.00	02/02/2021
23656279	V16-2		1.80 - 1.80	02/02/2021
23656284	V16-3		2.20 - 2.20	02/02/2021
23656355	V17-1		1.00 - 1.00	02/02/2021
23656342	V18-1		0.50 - 0.50	02/02/2021
23656346	V18-2		1.50 - 1.50	02/02/2021
23656336	V19-1		0.50 - 0.50	01/02/2021
23656330	V20-1		1.30 - 1.30	01/02/2021
23656325	V21-1		0.50 - 0.50	01/02/2021

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	210203-41	**Client Reference:**	P18-669	**Report Number:**	587186
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	586571

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			23656269		23656315		23656320		23656304		23656309		23656299		23656291		23656275	
Customer Sample Reference			P22-1		P22-2		T19-1		V12-1		V12-2		V13-1		V14-1		V16-1	
AGS Reference																		
Depth (m)			0.60 - 0.60		1.30 - 1.30		0.30 - 0.30		1.00 - 1.00		1.60 - 1.60		1.00 - 1.00		0.30 - 0.30		1.00 - 1.00	
Container			1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 16		X		X			X			X		X			X		X	
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 8	X					X			X					X				
Asbestos Quantification - Full	All	NDPs: 0 Tests: 2	X					X												
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 16		X		X			X			X		X			X		X	
EPH CWG GC (S)	All	NDPs: 0 Tests: 16		X		X			X			X		X			X		X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 16			X		X			X			X		X			X		
Metals in solid samples by OES	All	NDPs: 0 Tests: 16		X		X			X			X		X			X		X	
PAH by GCMS	All	NDPs: 0 Tests: 16		X		X			X			X		X			X		X	
pH	All	NDPs: 0 Tests: 16		X		X			X			X		X			X		X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 16		X		X			X			X		X			X		X	
Sample description	All	NDPs: 0 Tests: 16		X		X			X			X		X			X		X	
Total Organic Carbon	All	NDPs: 1 Tests: 15		X		X			X			X		X			X		X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 16		X		X			X			X		X			X		X	
VOC MS (S)	All	NDPs: 0 Tests: 16			X		X			X			X		X			X		

23656325	V21-1		0.50 - 0.50	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
23656330	V20-1		1.30 - 1.30	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X												
23656336	V19-1		0.50 - 0.50	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
23656346	V18-2		1.50 - 1.50	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
23656342	V18-1		0.50 - 0.50	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X												
23656355	V17-1		1.00 - 1.00	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X												
23656284	V16-3		2.20 - 2.20	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
23656279	V16-2		1.80 - 1.80	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	N	X	
				1kg TUB with Handle (ALE260)	S		X												
23656275	V16-1		1.00 - 1.00	60g VOC (ALE215)	S						X								X

CERTIFICATE OF ANALYSIS

SDG:	210203-41	**Client Reference:**	P18-669	**Report Number:**	587186
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	586571

Sample Descriptions

Grain Sizes

very fine	<0.063mm	**fine**	0.063mm - 0.1mm	**medium**	0.1mm - 2mm	**coarse**	2mm - 10mm	**very coarse**	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
23656269	P22-1	0.60 - 0.60	Dark Brown	Silty Clay Loam	Stones	Vegetation
23656315	P22-2	1.30 - 1.30	Dark Brown	Loamy Sand	Stones	None
23656320	T19-1	0.30 - 0.30	Dark Brown	Sandy Silt Loam	Stones	None
23656304	V12-1	1.00 - 1.00	Dark Brown	Gravel	Stones	None
23656309	V12-2	1.60 - 1.60	Dark Brown	Loamy Sand	Stones	None
23656299	V13-1	1.00 - 1.00	Dark Brown	Loamy Sand	Stones	Vegetation
23656291	V14-1	0.30 - 0.30	Dark Brown	Sandy Silt Loam	Stones	None
23656275	V16-1	1.00 - 1.00	Dark Brown	Sand	Stones	None
23656279	V16-2	1.80 - 1.80	Dark Brown	Sand	Stones	None
23656284	V16-3	2.20 - 2.20	Dark Brown	Sand	Stones	None
23656355	V17-1	1.00 - 1.00	Dark Brown	Loamy Sand	Stones	None
23656342	V18-1	0.50 - 0.50	Dark Brown	Sandy Silt Loam	Stones	Vegetation
23656346	V18-2	1.50 - 1.50	Dark Brown	Loamy Sand	Stones	Vegetation
23656336	V19-1	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	Vegetation
23656330	V20-1	1.30 - 1.30	Dark Brown	Sand	Stones	None
23656325	V21-1	0.50 - 0.50	Dark Brown	Sandy Silt Loam	Stones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	210203-41	**Client Reference:**	P18-669	**Report Number:**	587186
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	586571

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	P22-1	P22-2	T19-1	V12-1	V12-2	V13-1
			Depth (m)	0.60 - 0.60	1.30 - 1.30	0.30 - 0.30	1.00 - 1.00	1.60 - 1.60	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/02/2021	01/02/2021	01/02/2021	02/02/2021	02/02/2021	02/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	03/02/2021	03/02/2021	03/02/2021	03/02/2021	03/02/2021	03/02/2021
			SDG Ref	210203-41	210203-41	210203-41	210203-41	210203-41	210203-41
			Lab Sample No.(s)	23656269	23656315	23656320	23656304	23656309	23656299
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		8.3	13	7.6	8.6	15	12
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 #	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0109 M	<0.01 M	<0.01 M	<0.01 #	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 #	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 #	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 #	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		3.4 #	4.53 #	13.3 #	1.74 #	16.6 #	11.2 #
pH	1 pH Units	TM133		10.8 M	10.7 M	10.4 M	9.78 #	10.9 M	10.2 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 #	4.35 M	<1 M
Arsenic	<0.6 mg/kg	TM181		6.93 M	10.5 M	<6 M	<6 #	4.61 M	6.06 M
Cadmium	<0.02 mg/kg	TM181		0.707 M	0.875 M	0.42 M	<0.2 #	0.295 M	0.232 M
Chromium	<0.9 mg/kg	TM181		316 M	103 M	17.6 M	<9 #	34.1 M	10.5 M
Copper	<1.4 mg/kg	TM181		16.3 M	16.5 M	<14 M	<14 #	10.4 M	<14 M
Iron	<1000 mg/kg	TM181		114000 #	94700 #	60800 #	<10000 #	22400 #	20700 #
Lead	<0.7 mg/kg	TM181		57.5 M	61.9 M	26.9 M	<7 #	28.6 M	11.9 M
Manganese	<0.13 mg/kg	TM181		26200 M	9520 M	2630 M	5590 #	4620 M	2950 M
Mercury	<0.1 mg/kg	TM181		<1 M	<1 M	<1 M	<1 #	<0.1 M	<1 M
Nickel	<0.2 mg/kg	TM181		14.6 M	18.2 M	13.1 M	<2 #	5.65 M	6.82 M
Selenium	<1 mg/kg	TM181		16.9 #	<10 #	<10 #	<10 #	3.12 #	<10 #
Vanadium	<0.2 mg/kg	TM181		341 #	162 #	52.4 #	21 #	73.8 #	24.5 #
Zinc	<1.9 mg/kg	TM181		174 M	193 M	80 M	<19 #	93.2 M	52.7 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304		<0.001 #		0.0159 #			
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304		<0.001 #		<0.001 #			
Additional Asbestos Components (Using TM048)		TM304		None #		None #			
Analysts Comments		TM304		0		N/A			
Asbestos Quantification - Total - %	<0.001 %	TM304		<0.001 #		0.0159 #			

Validated

CERTIFICATE OF ANALYSIS

SDG:	210203-41	**Client Reference:**	P18-669	**Report Number:**	587186
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	586571

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	V14-1	V16-1	V16-2	V16-3	V17-1	V18-1
			Depth (m)	0.30 - 0.30	1.00 - 1.00	1.80 - 1.80	2.20 - 2.20	1.00 - 1.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	02/02/2021	02/02/2021	02/02/2021	02/02/2021	02/02/2021	02/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	03/02/2021	03/02/2021	03/02/2021	03/02/2021	03/02/2021	03/02/2021
			SDG Ref	210203-41	210203-41	210203-41	210203-41	210203-41	210203-41
			Lab Sample No.(s)	23656291	23656275	23656279	23656284	23656355	23656342
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		11	10	3.5	10	17	11
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.0121 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.109 M	0.0224 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	0.0726 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	0.194 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		8.81 #	4.1 #		12.5 #	71.9 #	5.9 #
pH	1 pH Units	TM133		10.4 M	9.96 M	9.97 M	8.71 M	10.5 M	8.53 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	20.9 M
Arsenic	<0.6 mg/kg	TM181		6.72 M	<6 M	<6 M	<6 M	<6 M	<6 M
Cadmium	<0.02 mg/kg	TM181		0.745 M	0.283 M	<0.2 M	<0.2 M	0.592 M	0.497 M
Chromium	<0.9 mg/kg	TM181		89.2 M	40.9 M	17.1 M	15.4 M	27.8 M	<9 M
Copper	<1.4 mg/kg	TM181		14.3 M	<14 M	<14 M	<14 M	<14 M	<14 M
Iron	<1000 mg/kg	TM181		67200 #	41000 #	14100 #	15300 #	23100 #	128000 #
Lead	<0.7 mg/kg	TM181		51.1 M	16.6 M	400 M	8.08 M	36.5 M	23.2 M
Manganese	<0.13 mg/kg	TM181		7640 M	6910 M	3220 M	3340 M	4840 M	8720 M
Mercury	<0.1 mg/kg	TM181		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Nickel	<0.2 mg/kg	TM181		13.8 M	5.54 M	4.98 M	14.3 M	6.84 M	5.69 M
Selenium	<1 mg/kg	TM181		<10 #	<10 #	<10 #	<10 #	<10 #	<10 #
Vanadium	<0.2 mg/kg	TM181		159 #	53.2 #	50.3 #	44.4 #	40.3 #	21.9 #
Zinc	<1.9 mg/kg	TM181		167 M	63.2 M	20.2 M	27.6 M	78.7 M	98.1 M

CERTIFICATE OF ANALYSIS

SDG:	210203-41	**Client Reference:**	P18-669	**Report Number:**	587186
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	586571

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	V18-2	V19-1	V20-1	V21-1		
			Depth (m)	1.50 - 1.50	0.50 - 0.50	1.30 - 1.30	0.50 - 0.50		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	02/02/2021	01/02/2021	01/02/2021	01/02/2021		
			Sample Time	.	.	.	.		
			Date Received	03/02/2021	03/02/2021	03/02/2021	03/02/2021		
			SDG Ref	210203-41	210203-41	210203-41	210203-41		
			Lab Sample No.(s)	23656346	23656336	23656330	23656325		
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		21	7.8	12	10		
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M		
Phenol	<0.01 mg/kg	TM062 (S)		0.0126 M	<0.01 M	<0.01 M	<0.01 M		
Cresols	<0.01 mg/kg	TM062 (S)		0.0126 M	<0.01 M	<0.01 M	<0.01 M		
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M		
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M		
Soil Organic Matter (SOM)	<0.35 %	TM132		50.7 #	3.43 #	4.41 #	11 #		
pH	1 pH Units	TM133		10.5 M	11.4 M	11.1 M	10.1 M		
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M		
Arsenic	<0.6 mg/kg	TM181		6.22 M	15.5 M	<6 M	14.5 M		
Cadmium	<0.02 mg/kg	TM181		0.711 M	0.563 M	0.348 M	0.609 M		
Chromium	<0.9 mg/kg	TM181		86.9 M	66.1 M	10.5 M	<9 M		
Copper	<1.4 mg/kg	TM181		<14 M	44.2 M	71.7 M	<14 M		
Iron	<1000 mg/kg	TM181		33800 #	96400 #	53700 #	232000 #		
Lead	<0.7 mg/kg	TM181		27.3 M	32.4 M	12.8 M	41.1 M		
Manganese	<0.13 mg/kg	TM181		10500 M	8110 M	3330 M	4560 M		
Mercury	<0.1 mg/kg	TM181		<1 M	<1 M	<1 M	<1 M		
Nickel	<0.2 mg/kg	TM181		7.15 M	17.4 M	6.41 M	22.9 M		
Selenium	<1 mg/kg	TM181		<10 #	<10 #	<10 #	<10 #		
Vanadium	<0.2 mg/kg	TM181		87.3 #	131 #	52.3 #	80.1 #		
Zinc	<1.9 mg/kg	TM181		44.8 M	110 M	44 M	87.3 M		

Validated

CERTIFICATE OF ANALYSIS

SDG:	210203-41	**Client Reference:**	P18-669	**Report Number:**	587186
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	586571

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	P22-1	P22-2	T19-1	V12-1	V12-2	V13-1
			Depth (m)	0.60 - 0.60	1.30 - 1.30	0.30 - 0.30	1.00 - 1.00	1.60 - 1.60	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/02/2021	01/02/2021	01/02/2021	02/02/2021	02/02/2021	02/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	03/02/2021	03/02/2021	03/02/2021	03/02/2021	03/02/2021	03/02/2021
			SDG Ref	210203-41	210203-41	210203-41	210203-41	210203-41	210203-41
			Lab Sample No.(s)	23656269	23656315	23656320	23656304	23656309	23656299
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		82.2	86.3	81	83.9	91.9	81.1
Acenaphthene-d10 % recovery**	%	TM218		87.6	85.6	83.3	85.2	91.7	88
Phenanthrene-d10 % recovery**	%	TM218		91.4	86.5	81.9	91.1	91.8	95
Chrysene-d12 % recovery**	%	TM218		92.2	92.3	79.8	89.9	84.5	85
Perylene-d12 % recovery**	%	TM218		87.5	88.9	71.4	84.6	89	76.9
Naphthalene	<9 µg/kg	TM218		384 M	257 M	531 M	26.1 #	472 M	263 M
Acenaphthylene	<12 µg/kg	TM218		175 M	114 M	215 M	<12 #	61.6 M	113 M
Acenaphthene	<8 µg/kg	TM218		53.8 M	21.8 M	24.8 M	<8 #	116 M	50.2 M
Fluorene	<10 µg/kg	TM218		384 M	99.4 M	107 M	<10 #	138 M	167 M
Phenanthrene	<15 µg/kg	TM218		2350 M	773 M	1260 M	88.4 #	991 M	1130 M
Anthracene	<16 µg/kg	TM218		503 M	244 M	309 M	<16 #	235 M	282 M
Fluoranthene	<17 µg/kg	TM218		2690 M	1470 M	1960 M	114 #	1240 M	1340 M
Pyrene	<15 µg/kg	TM218		1900 M	1050 M	1480 M	98.4 #	901 M	968 M
Benz(a)anthracene	<14 µg/kg	TM218		1080 M	624 M	940 M	73.5 #	572 M	529 M
Chrysene	<10 µg/kg	TM218		1100 M	586 M	990 M	90.3 #	571 M	535 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		1430 M	817 M	1450 M	130 #	810 M	692 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		425 M	246 M	423 M	36.3 #	244 M	220 M
Benzo(a)pyrene	<15 µg/kg	TM218		886 M	490 M	779 M	63.6 #	485 M	386 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		622 M	336 M	537 M	53.1 #	362 M	281 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		148 M	75.5 M	138 M	<23 #	70 M	76.7 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		583 M	318 M	529 M	54.8 #	310 M	270 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		14700	7510	11700	828	7580	7300

Validated

CERTIFICATE OF ANALYSIS

SDG:	210203-41	**Client Reference:**	P18-669	**Report Number:**	587186
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	586571

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	V14-1	V16-1	V16-2	V16-3	V17-1	V18-1
			Depth (m)	0.30 - 0.30	1.00 - 1.00	1.80 - 1.80	2.20 - 2.20	1.00 - 1.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	02/02/2021	02/02/2021	02/02/2021	02/02/2021	02/02/2021	02/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	03/02/2021	03/02/2021	03/02/2021	03/02/2021	03/02/2021	03/02/2021
			SDG Ref	210203-41	210203-41	210203-41	210203-41	210203-41	210203-41
			Lab Sample No.(s)	23656291	23656275	23656279	23656284	23656355	23656342
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		74.6	87	99.5	85.2	90.7	84.4
Acenaphthene-d10 % recovery**	%	TM218		84.8	86.8	97.8	83.9	89.3	86.4
Phenanthrene-d10 % recovery**	%	TM218		81.6	89.7	91.6	87.4	89.4	85
Chrysene-d12 % recovery**	%	TM218		75.6	87.5	69.1	80.5	75.9	84
Perylene-d12 % recovery**	%	TM218		71.8	83.6	53.9	71	70.2	75.6
Naphthalene	<9 µg/kg	TM218		632 M	113 M	166 M	68.8 M	1710 M	864 M
Acenaphthylene	<12 µg/kg	TM218		315 M	55.8 M	25 M	15.6 M	38.7 M	<240 M
Acenaphthene	<8 µg/kg	TM218		<160 M	<8 M	<8 M	<8 M	132 M	669 M
Fluorene	<10 µg/kg	TM218		326 M	46 M	48.1 M	21.5 M	152 M	<200 M
Phenanthrene	<15 µg/kg	TM218		2030 M	334 M	247 M	139 M	2140 M	10900 M
Anthracene	<16 µg/kg	TM218		683 M	107 M	55.5 M	25.8 M	311 M	1100 M
Fluoranthene	<17 µg/kg	TM218		3150 M	484 M	187 M	125 M	1100 M	6420 M
Pyrene	<15 µg/kg	TM218		2370 M	342 M	166 M	105 M	750 M	4340 M
Benz(a)anthracene	<14 µg/kg	TM218		1270 M	233 M	94.7 M	69.7 M	324 M	1470 M
Chrysene	<10 µg/kg	TM218		1300 M	237 M	141 M	85 M	382 M	1680 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		1670 M	323 M	137 M	101 M	506 M	2270 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		491 M	100 M	41.5 M	28.5 M	127 M	637 M
Benzo(a)pyrene	<15 µg/kg	TM218		938 M	178 M	66.3 M	53.6 M	277 M	1240 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		642 M	131 M	58.2 M	37.7 M	241 M	1130 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		<460 M	29.7 M	<23 M	<23 M	51.2 M	<460 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		618 M	132 M	58.3 M	41.4 M	240 M	1210 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		16400	2840	1490	917	8470	33900

CERTIFICATE OF ANALYSIS

SDG:	210203-41	**Client Reference:**	P18-669	**Report Number:**	587186
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	586571

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	V18-2	V19-1	V20-1	V21-1		
			Depth (m)	1.50 - 1.50	0.50 - 0.50	1.30 - 1.30	0.50 - 0.50		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	02/02/2021	01/02/2021	01/02/2021	01/02/2021		
			Sample Time	.	.	.	.		
			Date Received	03/02/2021	03/02/2021	03/02/2021	03/02/2021		
			SDG Ref	210203-41	210203-41	210203-41	210203-41		
			Lab Sample No.(s)	23656346	23656336	23656330	23656325		
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		91.4	81.2	82.8	85.5		
Acenaphthene-d10 % recovery**	%	TM218		91.6	90.8	88	86.2		
Phenanthrene-d10 % recovery**	%	TM218		91.3	82	93	100		
Chrysene-d12 % recovery**	%	TM218		78.3	85	88.4	123		
Perylene-d12 % recovery**	%	TM218		76.2	76.8	82.7	109		
Naphthalene	<9 µg/kg	TM218		1900 M	<180 M	42.9 M	292 M		
Acenaphthylene	<12 µg/kg	TM218		56.4 M	<240 M	<12 M	82.3 M		
Acenaphthene	<8 µg/kg	TM218		168 M	<160 M	11 M	12.2 M		
Fluorene	<10 µg/kg	TM218		196 M	<200 M	24.1 M	42.4 M		
Phenanthrene	<15 µg/kg	TM218		2670 M	1000 M	137 M	431 M		
Anthracene	<16 µg/kg	TM218		495 M	<320 M	25 M	93.3 M		
Fluoranthene	<17 µg/kg	TM218		1980 M	2480 M	126 M	503 M		
Pyrene	<15 µg/kg	TM218		1370 M	2120 M	100 M	397 M		
Benz(a)anthracene	<14 µg/kg	TM218		791 M	1030 M	61 M	299 M		
Chrysene	<10 µg/kg	TM218		908 M	1330 M	79.5 M	375 M		
Benzo(b)fluoranthene	<15 µg/kg	TM218		1460 M	1630 M	81.9 M	553 M		
Benzo(k)fluoranthene	<14 µg/kg	TM218		359 M	526 M	23.2 M	165 M		
Benzo(a)pyrene	<15 µg/kg	TM218		826 M	800 M	41.5 M	276 M		
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		813 M	601 M	30.9 M	294 M		
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		122 M	<460 M	<23 M	71.1 M		
Benzo(g,h,i)perylene	<24 µg/kg	TM218		716 M	618 M	33.3 M	305 M		
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		14800	12100	818	4190		

Validated

CERTIFICATE OF ANALYSIS

SDG:	210203-41	**Client Reference:**	P18-669	**Report Number:**	587186
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	586571

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	P22-1	P22-2	T19-1	V12-1	V12-2	V13-1
			Depth (m)	0.60 - 0.60	1.30 - 1.30	0.30 - 0.30	1.00 - 1.00	1.60 - 1.60	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/02/2021	01/02/2021	01/02/2021	02/02/2021	02/02/2021	02/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	03/02/2021	03/02/2021	03/02/2021	03/02/2021	03/02/2021	03/02/2021
			SDG Ref	210203-41	210203-41	210203-41	210203-41	210203-41	210203-41
			Lab Sample No.(s)	23656269	23656315	23656320	23656304	23656309	23656299
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		68 4	121	27.5 4	114	58.6 4	63.2 4
Aliphatics >C5-C6	<10 µg/kg	TM089		<10 4	<10	<10 4	<10	14.2 4	11.4 4
Aliphatics >C6-C8	<10 µg/kg	TM089		10.9 4	<10	29.2 4	<10	60.2 4	51.3 4
Aliphatics >C8-C10	<10 µg/kg	TM089		<10 4	<10	23.8 4	<10	72 4	58.1 4
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	1530	<1000	<1000	1590
Aliphatics >C12-C16	<1000 µg/kg	TM414		9980	<1000	6420	<1000	22400	25800
Aliphatics >C16-C21	<1000 µg/kg	TM414		41200	4630	19700	<1000	45200	49500
Aliphatics >C21-C35	<1000 µg/kg	TM414		79600	28400	68100	2930	54100	84700
Aliphatics >C35-C44	<1000 µg/kg	TM414		32700	9780	60400	<1000	5900	20400
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		164000	43600	156000	<5000	128000	182000
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		199000	67900	233000	<10000	169000	234000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 4	<10	<10 4	<10	<10 4	<10 4
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 4	<10	<10 4	<10	14.2 4	10.3 4
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10 4	<10	16.2 4	<10	48.4 4	38.8 4
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	1270	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		1970	<1000	5430	<1000	4070	7590
Aromatics > EC16-EC21	<1000 µg/kg	TM414		6660	5010	15000	<1000	10100	13000
Aromatics > EC21-EC35	<1000 µg/kg	TM414		24800	17100	50700	<1000	23600	29000
Aromatics >EC35-EC44	<1000 µg/kg	TM414		1330	1170	4240	<1000	1980	2220
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		35100	24400	76700	<5000	40200	52300
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		199000	67900	233000	<10000	169000	235000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50 4	<50	53 4	<50	146 4	121 4
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 4	<50	<50 4	<50	62.5 4	<50 4
GRO >C5-C10	<20 µg/kg	TM089		<20 4	<20	53 4	<20	209 4	121 4

Validated

CERTIFICATE OF ANALYSIS

SDG:	210203-41	**Client Reference:**	P18-669	**Report Number:**	587186
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	586571

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	V14-1	V16-1	V16-2	V16-3	V17-1	V18-1
			Depth (m)	0.30 - 0.30	1.00 - 1.00	1.80 - 1.80	2.20 - 2.20	1.00 - 1.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	02/02/2021	02/02/2021	02/02/2021	02/02/2021	02/02/2021	02/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	03/02/2021	03/02/2021	03/02/2021	03/02/2021	03/02/2021	03/02/2021
			SDG Ref	210203-41	210203-41	210203-41	210203-41	210203-41	210203-41
			Lab Sample No.(s)	23656291	23656275	23656279	23656284	23656355	23656342
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		63 4	74.6	79.3	83.5	73.4	72
Aliphatics >C5-C6	<10 µg/kg	TM089		<10 4	<10	<10	<10	<10	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		<10 4	<10	<10	<10	<10	22.4
Aliphatics >C8-C10	<10 µg/kg	TM089		<10 4	<10	<10	<10	<10	78.4
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	1780	3510
Aliphatics >C12-C16	<1000 µg/kg	TM414		1400	<1000	<1000	<1000	13000	34000
Aliphatics >C16-C21	<1000 µg/kg	TM414		6500	1710	10100	3200	48100	37900
Aliphatics >C21-C35	<1000 µg/kg	TM414		28300	8380	9920	7200	147000	48200
Aliphatics >C35-C44	<1000 µg/kg	TM414		20600	4790	<1000	<1000	44800	34700
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		57400	15200	21000	11000	254000	158000
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		128000	42000	30300	48000	401000	370000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 4	<10	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 4	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10 4	<10	<10	<10	<10	52.6
Aromatics > EC10-EC12	<1000 µg/kg	TM414		1190	<1000	<1000	<1000	2330	1960
Aromatics > EC12-EC16	<1000 µg/kg	TM414		3880	<1000	<1000	<1000	15200	17400
Aromatics > EC16-EC21	<1000 µg/kg	TM414		15800	4560	3290	9300	21400	42900
Aromatics > EC21-EC35	<1000 µg/kg	TM414		44700	14900	4350	25600	104000	96200
Aromatics >EC35-EC44	<1000 µg/kg	TM414		5230	6230	<1000	1100	3540	52900
Aromatics > EC40-EC44	<1000 µg/kg	TM414		1290	2600	<1000	<1000	<1000	13200
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		70800	26800	9300	37000	147000	211000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		128000	42000	30300	48000	401000	370000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50 4	<50	<50	<50	<50	101
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 4	<50	<50	<50	<50	52.6
GRO >C5-C10	<20 µg/kg	TM089		<20 4	<20	<20	<20	<20	153

Validated

CERTIFICATE OF ANALYSIS

SDG:	210203-41	**Client Reference:**	P18-669	**Report Number:**	587186
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	586571

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	V18-2	V19-1	V20-1	V21-1		
			Depth (m)	1.50 - 1.50	0.50 - 0.50	1.30 - 1.30	0.50 - 0.50		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	02/02/2021	01/02/2021	01/02/2021	01/02/2021		
			Sample Time	.	.	.	.		
			Date Received	03/02/2021	03/02/2021	03/02/2021	03/02/2021		
			SDG Ref	210203-41	210203-41	210203-41	210203-41		
			Lab Sample No.(s)	23656346	23656336	23656330	23656325		
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		115	75	74.3	76		
Aliphatics >C5-C6	<10 µg/kg	TM089		25.2	<10	<10	<10		
Aliphatics >C6-C8	<10 µg/kg	TM089		156	<10	<10	<10		
Aliphatics >C8-C10	<10 µg/kg	TM089		221	<10	<10	<10		
Aliphatics >C10-C12	<1000 µg/kg	TM414		1610	<1000	<1000	<1000		
Aliphatics >C12-C16	<1000 µg/kg	TM414		18700	4240	2990	1740		
Aliphatics >C16-C21	<1000 µg/kg	TM414		31000	13100	11000	12000		
Aliphatics >C21-C35	<1000 µg/kg	TM414		36000	84200	32200	47500		
Aliphatics >C35-C44	<1000 µg/kg	TM414		25600	86900	7040	20700		
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		113000	189000	53300	82200		
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		220000	327000	61500	112000		
Aromatics >EC5-EC7	<10 µg/kg	TM089		17.6	<10	<10	<10		
Aromatics >EC7-EC8	<10 µg/kg	TM089		49.1	<10	<10	<10		
Aromatics >EC8-EC10	<10 µg/kg	TM089		147	<10	<10	<10		
Aromatics > EC10-EC12	<1000 µg/kg	TM414		2400	<1000	<1000	<1000		
Aromatics > EC12-EC16	<1000 µg/kg	TM414		10200	3250	<1000	1900		
Aromatics > EC16-EC21	<1000 µg/kg	TM414		12900	11700	1200	3320		
Aromatics > EC21-EC35	<1000 µg/kg	TM414		42400	80100	5660	22100		
Aromatics >EC35-EC44	<1000 µg/kg	TM414		39000	42500	<1000	2100		
Aromatics > EC40-EC44	<1000 µg/kg	TM414		11300	19000	<1000	<1000		
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		107000	138000	8170	29700		
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		220000	327000	61500	112000		
Total Aliphatics >C5-C10	<50 µg/kg	TM089		402	<50	<50	<50		
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		214	<50	<50	<50		
GRO >C5-C10	<20 µg/kg	TM089		616	<20	<20	<20		

Validated

CERTIFICATE OF ANALYSIS

SDG:	210203-41	**Client Reference:**	P18-669	**Report Number:**	587186
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	586571

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	P22-1	P22-2	T19-1	V12-1	V12-2	V13-1
			Depth (m)	0.60 - 0.60	1.30 - 1.30	0.30 - 0.30	1.00 - 1.00	1.60 - 1.60	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/02/2021	01/02/2021	01/02/2021	02/02/2021	02/02/2021	02/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	03/02/2021	03/02/2021	03/02/2021	03/02/2021	03/02/2021	03/02/2021
			SDG Ref	210203-41	210203-41	210203-41	210203-41	210203-41	210203-41
			Lab Sample No.(s)	23656269	23656315	23656320	23656304	23656309	23656299
			AGS Reference						
Dibromofluoromethane**	%	TM116		105	104	102	107	107	106
Toluene-d8**	%	TM116		97.2	97.5	90.6	97.8	97.3	97.2
4-Bromofluorobenzene**	%	TM116		88.8	89.2	72.7	97.8	88.7	89.2
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 #	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 #	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 #	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 #	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 #	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 M	<260 #	373 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210203-41	**Client Reference:**	P18-669	**Report Number:**	587186
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	586571

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	V14-1	V16-1	V16-2	V16-3	V17-1	V18-1
			Depth (m)	0.30 - 0.30	1.00 - 1.00	1.80 - 1.80	2.20 - 2.20	1.00 - 1.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	02/02/2021	02/02/2021	02/02/2021	02/02/2021	02/02/2021	02/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	03/02/2021	03/02/2021	03/02/2021	03/02/2021	03/02/2021	03/02/2021
			SDG Ref	210203-41	210203-41	210203-41	210203-41	210203-41	210203-41
			Lab Sample No.(s)	23656291	23656275	23656279	23656284	23656355	23656342
			AGS Reference						
Dibromofluoromethane**	%	TM116		110	105	104	105	116	112
Toluene-d8**	%	TM116		94	95.4	99.2	97.4	97.9	98.2
4-Bromofluorobenzene**	%	TM116		89.9	88.8	97.5	93.1	91.5	95.1
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		320 M	<260 M	<260 M	<260 M	<260 M	769 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210203-41	**Client Reference:**	P18-669	**Report Number:**	587186
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	586571

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	V18-2	V19-1	V20-1	V21-1		
			Depth (m)	1.50 - 1.50	0.50 - 0.50	1.30 - 1.30	0.50 - 0.50		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	02/02/2021	01/02/2021	01/02/2021	01/02/2021		
			Sample Time	.	.	.	.		
			Date Received	03/02/2021	03/02/2021	03/02/2021	03/02/2021		
			SDG Ref	210203-41	210203-41	210203-41	210203-41		
			Lab Sample No.(s)	23656346	23656336	23656330	23656325		
			AGS Reference						
Dibromofluoromethane**	%	TM116		104	109	102	106		
Toluene-d8**	%	TM116		95.3	95.6	97.1	98.7		
4-Bromofluorobenzene**	%	TM116		85.3	92	89.2	91		
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M		
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M		
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M		
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M		
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #		
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M		
Naphthalene	<13 µg/kg	TM116		5880 M	<260 M	<260 M	<260 M		
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4		
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800		

CERTIFICATE OF ANALYSIS

SDG:	210203-41	**Client Reference:**	P18-669	**Report Number:**	587186
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	586571

Asbestos Identification - Solid Samples

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&+$@	Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	P22-1 0.60 - 0.60 SOLID 01/02/2021 00:00:00 03/02/2021 05:00:00 210203-41 23656269 TM048	09/02/21	Eva Guerra	bundle of fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	T19-1 0.30 - 0.30 SOLID 01/02/2021 00:00:00 03/02/2021 05:00:00 210203-41 23656320 TM048	09/02/2021	Marcin Magdziarek	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	V12-1 1.00 - 1.00 SOLID 02/02/2021 00:00:00 03/02/2021 05:00:00 210203-41 23656304 TM048	09/02/2021	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	V14-1 0.30 - 0.30 SOLID 02/02/2021 00:00:00 03/02/2021 05:00:00 210203-41 23656291 TM048	09/02/2021	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	V16-2 1.80 - 1.80 SOLID 02/02/2021 00:00:00 03/02/2021 05:00:00 210203-41 23656279 TM048	09/02/2021	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	V17-1 1.00 - 1.00 SOLID 02/02/2021 00:00:00 03/02/2021 05:00:00 210203-41 23656355 TM048	09/02/2021	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	V18-1 0.50 - 0.50 SOLID 02/02/2021 00:00:00 03/02/2021 05:00:00 210203-41 23656342 TM048	09/02/2021	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	V20-1 1.30 - 1.30 SOLID 01/02/2021 00:00:00 03/02/2021 05:00:00 210203-41 23656330 TM048	09/02/2021	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	210203-41	**Client Reference:**	P18-669	**Report Number:**	587186
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	586571

Asbestos Quantification - Full

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

		Additional Asbestos Components	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM	Asbestos Quantification - Total - %
Cust. Sample Ref.	P22-1	None (#)	-	<0.001 (#)	<0.001 (#)	<0.001 (#)
Depth (m)	0.60 - 0.60					
Sample Type	SOLID					
Date Sampled	01/02/2021 00:00:00					
Date Received	03/02/2021 05:00:00					
SDG	210203-41					
Original Sample	23656269					
Method Number	TM304					
Cust. Sample Ref.	T19-1	None (#)	N/A	0.0159 (#)	<0.001 (#)	0.0159 (#)
Depth (m)	0.30 - 0.30					
Sample Type	SOLID					
Date Sampled	01/02/2021 00:00:00					
Date Received	03/02/2021 05:00:00					
SDG	210203-41					
Original Sample	23656320					
Method Number	TM304					

CERTIFICATE OF ANALYSIS

SDG:	210203-41	**Client Reference:**	P18-669	**Report Number:**	587186
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	586571

Notification of NDPs (No determination possible)

Date Received : 03/02/2021 08:04:33

Sample No	Customer Sample Ref.	Depth (m)	Test	Comment
23656279	V16-2	1.80 - 1.80	Total Organic Carbon	Sample unsuitable for analysis

CERTIFICATE OF ANALYSIS

SDG:	210203-41	**Client Reference:**	P18-669	**Report Number:**	587186
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	586571

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	210203-41	**Client Reference:**	P18-669	**Report Number:**	587186
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	586571

Test Completion Dates

Lab Sample No(s)	23656269	23656315	23656320	23656304	23656309	23656299	23656291	23656275	23656279	23656284
Customer Sample Ref.	P22-1	P22-2	T19-1	V12-1	V12-2	V13-1	V14-1	V16-1	V16-2	V16-3
AGS Ref.										
Depth	0.60 - 0.60	1.30 - 1.30	0.30 - 0.30	1.00 - 1.00	1.60 - 1.60	1.00 - 1.00	0.30 - 0.30	1.00 - 1.00	1.80 - 1.80	2.20 - 2.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021
Asbestos ID in Solid Samples	09-Feb-2021		09-Feb-2021	09-Feb-2021			09-Feb-2021		09-Feb-2021	
Asbestos Quantification - Full	16-Feb-2021		17-Feb-2021							
Cyanide Comp/Free/Total/Thiocyanate	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	08-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021
EPH CWG GC (S)	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	08-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021
GRO by GC-FID (S)	11-Feb-2021	10-Feb-2021	10-Feb-2021	12-Feb-2021	10-Feb-2021	10-Feb-2021	11-Feb-2021	10-Feb-2021	10-Feb-2021	10-Feb-2021
Metals in solid samples by OES	10-Feb-2021	10-Feb-2021	09-Feb-2021	10-Feb-2021	10-Feb-2021	09-Feb-2021	10-Feb-2021	10-Feb-2021	09-Feb-2021	09-Feb-2021
PAH by GCMS	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	08-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	11-Feb-2021	09-Feb-2021
pH	08-Feb-2021	08-Feb-2021	08-Feb-2021	08-Feb-2021	04-Feb-2021	08-Feb-2021	08-Feb-2021	08-Feb-2021	08-Feb-2021	08-Feb-2021
Phenols by HPLC (S)	11-Feb-2021	11-Feb-2021	11-Feb-2021	12-Feb-2021	11-Feb-2021	11-Feb-2021	11-Feb-2021	11-Feb-2021	11-Feb-2021	11-Feb-2021
Sample description	06-Feb-2021	06-Feb-2021	06-Feb-2021	06-Feb-2021	03-Feb-2021	06-Feb-2021	06-Feb-2021	06-Feb-2021	06-Feb-2021	06-Feb-2021
Total Organic Carbon	10-Feb-2021	10-Feb-2021	10-Feb-2021	10-Feb-2021	10-Feb-2021	10-Feb-2021	10-Feb-2021	10-Feb-2021		10-Feb-2021
TPH CWG GC (S)	11-Feb-2021	11-Feb-2021	11-Feb-2021	12-Feb-2021	11-Feb-2021	11-Feb-2021	11-Feb-2021	11-Feb-2021	11-Feb-2021	11-Feb-2021
VOC MS (S)	10-Feb-2021	10-Feb-2021	10-Feb-2021	09-Feb-2021	10-Feb-2021	10-Feb-2021	10-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021

Lab Sample No(s)	23656355	23656342	23656346	23656336	23656330	23656325
Customer Sample Ref.	V17-1	V18-1	V18-2	V19-1	V20-1	V21-1
AGS Ref.						
Depth	1.00 - 1.00	0.50 - 0.50	1.50 - 1.50	0.50 - 0.50	1.30 - 1.30	0.50 - 0.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021
Asbestos ID in Solid Samples	09-Feb-2021	09-Feb-2021			09-Feb-2021	
Cyanide Comp/Free/Total/Thiocyanate	05-Feb-2021	09-Feb-2021	08-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021
EPH CWG GC (S)	08-Feb-2021	09-Feb-2021	08-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021
GRO by GC-FID (S)	10-Feb-2021	11-Feb-2021	11-Feb-2021	10-Feb-2021	10-Feb-2021	11-Feb-2021
Metals in solid samples by OES	09-Feb-2021	10-Feb-2021	10-Feb-2021	10-Feb-2021	09-Feb-2021	09-Feb-2021
PAH by GCMS	08-Feb-2021	09-Feb-2021	08-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021
pH	05-Feb-2021	08-Feb-2021	04-Feb-2021	08-Feb-2021	08-Feb-2021	08-Feb-2021
Phenols by HPLC (S)	11-Feb-2021	11-Feb-2021	11-Feb-2021	11-Feb-2021	11-Feb-2021	12-Feb-2021
Sample description	04-Feb-2021	06-Feb-2021	03-Feb-2021	06-Feb-2021	06-Feb-2021	06-Feb-2021
Total Organic Carbon	10-Feb-2021	10-Feb-2021	10-Feb-2021	10-Feb-2021	10-Feb-2021	10-Feb-2021
TPH CWG GC (S)	10-Feb-2021	11-Feb-2021	11-Feb-2021	11-Feb-2021	11-Feb-2021	11-Feb-2021
VOC MS (S)	10-Feb-2021	10-Feb-2021	09-Feb-2021	09-Feb-2021	10-Feb-2021	10-Feb-2021

Appendix General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

18. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Matrix interference**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**
§	**Sampled on date not provided**

19. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.
Standing Committee of Analysts, *The Quantification of Asbestos in Soil (2017).*

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Rodgers Leask
Office 225
2430/2440
Aztec West
Almondsbury
Bristol
BS32 4QA

Attention: Elliot Thomas

CERTIFICATE OF ANALYSIS

Date of report Generation:	19 February 2021
Customer:	Rodgers Leask
Sample Delivery Group (SDG):	210206-39
Your Reference:	P18-669
Location:	Llanwern
Report No:	587491

This report has been revised and directly supersedes 587296 in its entirety.

We received 16 samples on Saturday February 06, 2021 and 16 of these samples were scheduled for analysis which was completed on Friday February 19, 2021. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.
The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan

Operations Manager

ALS Life Sciences Limited. Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291.

CERTIFICATE OF ANALYSIS

SDG:	210206-39	**Client Reference:**	P18-669	**Report Number:**	587491
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	587296

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
23677975	S16-1		0.90 - 0.90	04/02/2021
23678020	S16-2		2.20 - 2.20	04/02/2021
23678025	S18-1		0.70 - 0.70	04/02/2021
23678034	S19-1		1.00 - 1.00	04/02/2021
23678039	S19-2		2.00 - 2.00	04/02/2021
23677997	S21-1		0.50 - 0.50	05/02/2021
23678005	S21-2		1.80 - 1.80	05/02/2021
23678009	S22-1		0.50 - 0.50	05/02/2021
23678013	S22-2		1.30 - 1.30	05/02/2021
23677984	T21-1		1.00 - 1.00	05/02/2021
23677989	T21-2		2.00 - 2.00	05/02/2021
23678044	U19-1		0.30 - 0.30	05/02/2021
23678051	U20-1		0.80 - 0.80	05/02/2021
23678058	U20-2		1.30 - 1.30	05/02/2021
23678064	U21-1		0.50 - 0.50	05/02/2021
23677979	U21-2		1.40 - 1.40	05/02/2021

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	210206-39	**Client Reference:**	P18-669	**Report Number:**	587491
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	587296

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			23677975		23678020		23678025		23678034		23678039		23677997		23678005		23678009				
Customer Sample Reference			S16-1		S16-2		S18-1		S19-1		S19-2		S21-1		S21-2		S22-1				
AGS Reference																					
Depth (m)			0.90 - 0.90		2.20 - 2.20		0.70 - 0.70		1.00 - 1.00		2.00 - 2.00		0.50 - 0.50		1.80 - 1.80		0.50 - 0.50				
Container			1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 16		X		X			X		X			X			X		X		
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 8	X					X					X			X					X
Asbestos Quantification - Full	All	NDPs: 0 Tests: 2											X			X					
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 16		X		X			X		X			X			X		X		
EPH CWG GC (S)	All	NDPs: 0 Tests: 16		X		X			X		X			X			X		X		
GRO by GC-FID (S)	All	NDPs: 0 Tests: 16			X		X			X		X			X			X		X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 16		X		X			X		X			X			X		X		
PAH by GCMS	All	NDPs: 0 Tests: 16		X		X			X		X			X			X		X		
pH	All	NDPs: 0 Tests: 16		X		X			X		X			X			X		X		
Phenols by HPLC (S)	All	NDPs: 0 Tests: 16		X		X			X		X			X			X		X		
Sample description	All	NDPs: 0 Tests: 15		X		X			X		X			X			X		X		
Total Organic Carbon	All	NDPs: 0 Tests: 16		X		X			X		X			X			X		X		
TPH CWG GC (S)	All	NDPs: 0 Tests: 16		X		X			X		X			X			X		X		
VOC MS (S)	All	NDPs: 0 Tests: 16			X		X			X		X			X			X		X	

23677979	U21-2		1.40 - 1.40	60g VOC (ALE215)	S								x												x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x	x					
23678064	U21-1		0.50 - 0.50	60g VOC (ALE215)	S								x												x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x	x					
				1kg TUB with Handle (ALE260)	S		x																		
23678058	U20-2		1.30 - 1.30	60g VOC (ALE215)	S								x												x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x	x					
23678051	U20-1		0.80 - 0.80	60g VOC (ALE215)	S								x												x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x	x					
				1kg TUB with Handle (ALE260)	S		x																		
23678044	U19-1		0.30 - 0.30	60g VOC (ALE215)	S								x												x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x	x					
23677989	T21-2		2.00 - 2.00	60g VOC (ALE215)	S								x												x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x	x					
23677984	T21-1		1.00 - 1.00	60g VOC (ALE215)	S								x												x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x	x					
				1kg TUB with Handle (ALE260)	S		x																		
23678013	S22-2		1.30 - 1.30	60g VOC (ALE215)	S								x												x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x	x					
23678009	S22-1		0.50 - 0.50	60g VOC (ALE215)	S								x												x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x			x	x				

CERTIFICATE OF ANALYSIS

SDG:	210206-39	**Client Reference:**	P18-669	**Report Number:**	587491
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	587296

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
23677975	S16-1	0.90 - 0.90	Dark Brown	Loamy Sand	Stones	None
23678020	S16-2	2.20 - 2.20	Dark Brown	Sand	Stones	Crushed Brick
23678025	S18-1	0.70 - 0.70	Dark Brown	Sand	Stones	None
23678034	S19-1	1.00 - 1.00	Dark Brown	Loamy Sand	Stones	Vegetation
23678039	S19-2	2.00 - 2.00	Dark Brown	Sand	Stones	Vegetation
23677997	S21-1	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	Vegetation
23678005	S21-2	1.80 - 1.80	Dark Brown	Loamy Sand	Stones	Vegetation
23678009	S22-1	0.50 - 0.50	Dark Brown	Loamy Sand	Vegetation	Brick
23678013	S22-2	1.30 - 1.30	Dark Brown	Sandy Loam	Stones	Vegetation
23677984	T21-1	1.00 - 1.00	Dark Brown	Loamy Sand	Stones	None
23677989	T21-2	2.00 - 2.00	Dark Brown	Loamy Sand	Stones	Vegetation
23678044	U19-1	0.30 - 0.30	Dark Brown	Loamy Sand	Stones	Vegetation
23678051	U20-1	0.80 - 0.80	Dark Brown	Loamy Sand	Stones	Coal fragments
23678058	U20-2	1.30 - 1.30	Dark Brown	Stone/Soil	Stones	Vegetation
23678064	U21-1	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Brick
23677979	U21-2	1.40 - 1.40	Dark Brown	Loamy Sand	Stones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	210206-39	**Client Reference:**	P18-669	**Report Number:**	587491
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	587296

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	S16-1	S16-2	S18-1	S19-1	S19-2	S21-1
			Depth (m)	0.90 - 0.90	2.20 - 2.20	0.70 - 0.70	1.00 - 1.00	2.00 - 2.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	04/02/2021	04/02/2021	04/02/2021	04/02/2021	04/02/2021	05/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	06/02/2021	06/02/2021	06/02/2021	06/02/2021	06/02/2021	06/02/2021
			SDG Ref	210206-39	210206-39	210206-39	210206-39	210206-39	210206-39
			Lab Sample No.(s)	23677975	23678020	23678025	23678034	23678039	23677997
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		11	19	11	14	16	16
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0113 M	<0.01 M	<0.01 M	0.0116 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	0.0116 M	0.0119 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		61.7 #	32.1 #	4.47 #	62.9 #	33.6 #	45.2 #
pH	1 pH Units	TM133		11.1 M	8.96 M	12.6 M	10.1 M	11 M	10.5 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		<6 M	6.47 M	<6 M	7.62 M	9.93 M	<6 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	<0.2 M	<0.2 M	0.459 M	<0.2 M	0.956 M
Chromium	<0.9 mg/kg	TM181		83.6 M	11.7 M	458 M	51 M	123 M	120 M
Copper	<1.4 mg/kg	TM181		<14 M	22.6 M	<14 M	<14 M	28 M	29.9 M
Iron	<1000 mg/kg	TM181		40100 #	24200 #	134000 #	34500 #	47100 #	59200 #
Lead	<0.7 mg/kg	TM181		22.2 M	20.2 M	9.23 M	66.1 M	64.8 M	52.4 M
Manganese	<0.13 mg/kg	TM181		4880 M	4100 M	29000 M	3280 M	8070 M	9620 M
Mercury	<0.1 mg/kg	TM181		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Nickel	<0.2 mg/kg	TM181		8.99 M	19.9 M	2.79 M	11.7 M	18.1 M	10.9 M
Selenium	<1 mg/kg	TM181		<10 #	<10 #	<10 #	<10 #	<10 #	<10 #
Vanadium	<0.2 mg/kg	TM181		94.1 #	31.1 #	458 #	57.3 #	134 #	245 #
Zinc	<1.9 mg/kg	TM181		55.3 M	73.8 M	60.5 M	88.3 M	113 M	183 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304						<0.001 #	<0.001 #
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304						<0.001 #	<0.001 #
Additional Asbestos Components (Using TM048)		TM304						None #	None #
Analysts Comments		TM304						N/A	0
Asbestos Quantification - Total - %	<0.001 %	TM304						<0.001 #	<0.001 #

Validated

CERTIFICATE OF ANALYSIS

SDG:	210206-39	**Client Reference:**	P18-669	**Report Number:**	587491
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	587296

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	S21-2	S22-1	S22-2	T21-1	T21-2	U19-1
			Depth (m)	1.80 - 1.80	0.50 - 0.50	1.30 - 1.30	1.00 - 1.00	2.00 - 2.00	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/02/2021	05/02/2021	05/02/2021	05/02/2021	05/02/2021	05/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	06/02/2021	06/02/2021	06/02/2021	06/02/2021	06/02/2021	06/02/2021
			SDG Ref	210206-39	210206-39	210206-39	210206-39	210206-39	210206-39
			Lab Sample No.(s)	23678005	23678009	23678013	23677984	23677989	23678044
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		20	15	21	16	17	11
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		0.0124 M	<0.01 M	0.0127 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		16.5 #	21.7 #	24.3 #	37.2 #	36.7 #	8.26 #
pH	1 pH Units	TM133		11.2 M	10.2 M	9.63 M	10.8 M	10.4 M	12 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		10.9 M	<6 M	11.6 M	<6 M	6.59 M	<6 M
Cadmium	<0.02 mg/kg	TM181		1.44 M	0.592 M	1.44 M	<0.2 M	0.597 M	0.889 M
Chromium	<0.9 mg/kg	TM181		182 M	133 M	85.7 M	44.9 M	179 M	476 M
Copper	<1.4 mg/kg	TM181		44.7 M	19.9 M	23.6 M	25.4 M	18.6 M	<14 M
Iron	<1000 mg/kg	TM181		70900 #	65500 #	122000 #	66400 #	59400 #	154000 #
Lead	<0.7 mg/kg	TM181		75 M	44.6 M	114 M	58 M	51.7 M	31.5 M
Manganese	<0.13 mg/kg	TM181		4170 M	6900 M	7740 M	2400 M	8280 M	28200 M
Mercury	<0.1 mg/kg	TM181		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Nickel	<0.2 mg/kg	TM181		24.9 M	17.8 M	23.8 M	17.9 M	16.4 M	10.1 M
Selenium	<1 mg/kg	TM181		<10 #	<10 #	<10 #	<10 #	<10 #	12 #
Vanadium	<0.2 mg/kg	TM181		101 #	122 #	183 #	48.5 #	245 #	409 #
Zinc	<1.9 mg/kg	TM181		239 M	89.9 M	353 M	127 M	107 M	86.1 M

CERTIFICATE OF ANALYSIS

SDG:	210206-39	**Client Reference:**	P18-669	**Report Number:**	587491
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	587296

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	U20-1	U20-2	U21-1	U21-2		
			Depth (m)	0.80 - 0.80	1.30 - 1.30	0.50 - 0.50	1.40 - 1.40		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	05/02/2021	05/02/2021	05/02/2021	05/02/2021		
			Sample Time	.	.	.	.		
			Date Received	06/02/2021	06/02/2021	06/02/2021	06/02/2021		
			SDG Ref	210206-39	210206-39	210206-39	210206-39		
			Lab Sample No.(s)	23678051	23678058	23678064	23677979		
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		8.4	15	11	13		
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 #	<12 M	<12 M		
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 #	<0.01 M	<0.01 M		
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 #	<0.01 M	<0.01 M		
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 #	<0.015 M	<0.015 M		
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 #	<0.035 M	<0.035 M		
Soil Organic Matter (SOM)	<0.35 %	TM132		7.57 #	4.86 #	33.1 #	9.09 #		
pH	1 pH Units	TM133		10.9 M	10.1 #	9.8 M	10.4 M		
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 #	<1 M	<1 M		
Arsenic	<0.6 mg/kg	TM181		<6 M	6.86 #	7.16 M	7.62 M		
Cadmium	<0.02 mg/kg	TM181		0.349 M	0.645 #	<0.2 M	0.892 M		
Chromium	<0.9 mg/kg	TM181		<9 M	64.2 #	21.5 M	14 M		
Copper	<1.4 mg/kg	TM181		<14 M	15.6 #	33.3 M	16.8 M		
Iron	<1000 mg/kg	TM181		17100 #	51900 #	215000 #	81800 #		
Lead	<0.7 mg/kg	TM181		24.6 M	424 #	169 M	91.7 M		
Manganese	<0.13 mg/kg	TM181		1380 M	6270 #	3200 M	6760 M		
Mercury	<0.1 mg/kg	TM181		<1 M	<1 #	<1 M	<1 M		
Nickel	<0.2 mg/kg	TM181		12.4 M	12.4 #	42 M	13.1 M		
Selenium	<1 mg/kg	TM181		<10 #	<10 #	<10 #	<10 #		
Vanadium	<0.2 mg/kg	TM181		19.1 #	89.5 #	49.8 #	78.8 #		
Zinc	<1.9 mg/kg	TM181		57.9 M	95.3 #	117 M	108 M		

Validated

CERTIFICATE OF ANALYSIS

SDG:	210206-39	**Client Reference:**	P18-669	**Report Number:**	587491
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	587296

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	S16-1	S16-2	S18-1	S19-1	S19-2	S21-1
			Depth (m)	0.90 - 0.90	2.20 - 2.20	0.70 - 0.70	1.00 - 1.00	2.00 - 2.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	04/02/2021	04/02/2021	04/02/2021	04/02/2021	04/02/2021	05/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	06/02/2021	06/02/2021	06/02/2021	06/02/2021	06/02/2021	06/02/2021
			SDG Ref	210206-39	210206-39	210206-39	210206-39	210206-39	210206-39
			Lab Sample No.(s)	23677975	23678020	23678025	23678034	23678039	23677997
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		101	98.6	95.8	104	82.9	79.9
Acenaphthene-d10 % recovery**	%	TM218		102	98.4	96.6	108	86.8	82.7
Phenanthrene-d10 % recovery**	%	TM218		101	98.2	94.5	98.6	87	86.4
Chrysene-d12 % recovery**	%	TM218		89.9	86.3	89.9	96.8	77.8	75.8
Perylene-d12 % recovery**	%	TM218		77.3	87.3	86.1	83.3	75.7	72.7
Naphthalene	<9 µg/kg	TM218		376 M	169 M	450 M	3270 M	3630 M	1170 M
Acenaphthylene	<12 µg/kg	TM218		28 M	39.1 M	61.8 M	1810 M	5690 M	464 M
Acenaphthene	<8 µg/kg	TM218		53.7 M	17.1 M	10.2 M	184 M	415 M	79.3 M
Fluorene	<10 µg/kg	TM218		150 M	43.7 M	55.8 M	1220 M	6780 M	751 M
Phenanthrene	<15 µg/kg	TM218		649 M	257 M	592 M	11800 M	36400 M	5970 M
Anthracene	<16 µg/kg	TM218		72.7 M	46.9 M	89.2 M	2370 M	7660 M	1380 M
Fluoranthene	<17 µg/kg	TM218		358 M	287 M	526 M	16900 M	42000 M	8180 M
Pyrene	<15 µg/kg	TM218		298 M	216 M	372 M	12000 M	28900 M	6080 M
Benz(a)anthracene	<14 µg/kg	TM218		165 M	120 M	233 M	7070 M	13700 M	3000 M
Chrysene	<10 µg/kg	TM218		286 M	131 M	248 M	6690 M	12000 M	2890 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		271 M	114 M	377 M	8550 M	15700 M	3730 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		78.3 M	51.6 M	118 M	3230 M	5310 M	1140 M
Benzo(a)pyrene	<15 µg/kg	TM218		135 M	98.8 M	185 M	5230 M	10100 M	2310 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		87.3 M	89.1 M	162 M	3040 M	7000 M	1890 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		34.4 M	<23 M	42.7 M	811 M	1170 M	365 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		127 M	82.9 M	179 M	3230 M	6440 M	1530 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		3170	1760	3700	87300	203000	40900

Validated

CERTIFICATE OF ANALYSIS

SDG:	210206-39	**Client Reference:**	P18-669	**Report Number:**	587491
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	587296

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	S21-2	S22-1	S22-2	T21-1	T21-2	U19-1
			Depth (m)	1.80 - 1.80	0.50 - 0.50	1.30 - 1.30	1.00 - 1.00	2.00 - 2.00	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/02/2021	05/02/2021	05/02/2021	05/02/2021	05/02/2021	05/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	06/02/2021	06/02/2021	06/02/2021	06/02/2021	06/02/2021	06/02/2021
			SDG Ref	210206-39	210206-39	210206-39	210206-39	210206-39	210206-39
			Lab Sample No.(s)	23678005	23678009	23678013	23677984	23677989	23678044
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		82.7	98.5	97	82.1	82.6	98.9
Acenaphthene-d10 % recovery**	%	TM218		83.5	96.4	94.5	81.9	83.3	97
Phenanthrene-d10 % recovery**	%	TM218		86.1	97.5	96	83.2	84.2	97.8
Chrysene-d12 % recovery**	%	TM218		84.1	99.5	94.6	75.6	80.8	96.7
Perylene-d12 % recovery**	%	TM218		80.6	106	100	70.7	75.7	101
Naphthalene	<9 µg/kg	TM218		1130 M	577 M	649 M	720 M	420 M	282 M
Acenaphthylene	<12 µg/kg	TM218		226 M	604 M	347 M	269 M	210 M	98.6 M
Acenaphthene	<8 µg/kg	TM218		527 M	36.5 M	38.4 M	<40 M	19.8 M	<8 M
Fluorene	<10 µg/kg	TM218		460 M	463 M	220 M	194 M	131 M	55.9 M
Phenanthrene	<15 µg/kg	TM218		1650 M	3250 M	1910 M	1670 M	1130 M	1040 M
Anthracene	<16 µg/kg	TM218		436 M	1790 M	616 M	352 M	269 M	234 M
Fluoranthene	<17 µg/kg	TM218		1880 M	6500 M	3600 M	2120 M	1810 M	1600 M
Pyrene	<15 µg/kg	TM218		1460 M	4690 M	2660 M	1540 M	1330 M	1090 M
Benz(a)anthracene	<14 µg/kg	TM218		776 M	2500 M	1490 M	823 M	776 M	652 M
Chrysene	<10 µg/kg	TM218		775 M	2470 M	1270 M	859 M	793 M	680 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		1030 M	3430 M	1610 M	1020 M	1030 M	617 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		324 M	1130 M	606 M	322 M	341 M	293 M
Benzo(a)pyrene	<15 µg/kg	TM218		673 M	2320 M	1340 M	627 M	660 M	505 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		474 M	1830 M	1060 M	448 M	498 M	429 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		90.9 M	335 M	194 M	<115 M	88.9 M	79.3 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		456 M	1580 M	929 M	445 M	494 M	378 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		12400	33500	18600	11400	10000	8040

Validated

CERTIFICATE OF ANALYSIS

SDG:	210206-39	**Client Reference:**	P18-669	**Report Number:**	587491
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	587296

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	U20-1	U20-2	U21-1	U21-2		
			Depth (m)	0.80 - 0.80	1.30 - 1.30	0.50 - 0.50	1.40 - 1.40		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	05/02/2021	05/02/2021	05/02/2021	05/02/2021		
			Sample Time	.	.	.	.		
			Date Received	06/02/2021	06/02/2021	06/02/2021	06/02/2021		
			SDG Ref	210206-39	210206-39	210206-39	210206-39		
			Lab Sample No.(s)	23678051	23678058	23678064	23677979		
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		104	102	91.2	84.5		
Acenaphthene-d10 % recovery**	%	TM218		101	98.4	94.9	85.6		
Phenanthrene-d10 % recovery**	%	TM218		97.1	98.4	94.4	87.6		
Chrysene-d12 % recovery**	%	TM218		93	95.5	89.8	84.5		
Perylene-d12 % recovery**	%	TM218		90.7	104	78.1	82.2		
Naphthalene	<9 µg/kg	TM218		157 M	55.6 #	1080 M	198 M		
Acenaphthylene	<12 µg/kg	TM218		<12 M	14.7 #	394 M	73.7 M		
Acenaphthene	<8 µg/kg	TM218		13.4 M	10.2 #	28.6 M	12.6 M		
Fluorene	<10 µg/kg	TM218		41 M	13.2 #	232 M	49.3 M		
Phenanthrene	<15 µg/kg	TM218		225 M	130 #	2850 M	403 M		
Anthracene	<16 µg/kg	TM218		32.6 M	23.7 #	758 M	96.6 M		
Fluoranthene	<17 µg/kg	TM218		114 M	173 #	5170 M	579 M		
Pyrene	<15 µg/kg	TM218		87.1 M	145 #	3580 M	428 M		
Benz(a)anthracene	<14 µg/kg	TM218		60 M	122 #	2220 M	284 M		
Chrysene	<10 µg/kg	TM218		97.2 M	146 #	1940 M	301 M		
Benzo(b)fluoranthene	<15 µg/kg	TM218		86.2 M	152 #	2870 M	398 M		
Benzo(k)fluoranthene	<14 µg/kg	TM218		19.6 M	73.4 #	893 M	140 M		
Benzo(a)pyrene	<15 µg/kg	TM218		44.8 M	145 #	1600 M	243 M		
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		31.3 M	139 #	1130 M	182 M		
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		<23 M	28.2 #	266 M	37 M		
Benzo(g,h,i)perylene	<24 µg/kg	TM218		45 M	129 #	1050 M	210 M		
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		1050	1500	26100	3640		

Validated

CERTIFICATE OF ANALYSIS

SDG:	210206-39	**Client Reference:**	P18-669	**Report Number:**	587491
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	587296

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	S16-1	S16-2	S18-1	S19-1	S19-2	S21-1
			Depth (m)	0.90 - 0.90	2.20 - 2.20	0.70 - 0.70	1.00 - 1.00	2.00 - 2.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	04/02/2021	04/02/2021	04/02/2021	04/02/2021	04/02/2021	05/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	06/02/2021	06/02/2021	06/02/2021	06/02/2021	06/02/2021	06/02/2021
			SDG Ref	210206-39	210206-39	210206-39	210206-39	210206-39	210206-39
			Lab Sample No.(s)	23677975	23678020	23678025	23678034	23678039	23677997
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		14.8 4	134 4	59 4	9 4	88.5	15.6 4
Aliphatics >C5-C6	<10 µg/kg	TM089		71.2 4	14.9 4	<10 4	<10 4	<10	<10 4
Aliphatics >C6-C8	<10 µg/kg	TM089		359 4	45.9 4	18.1 4	<10 4	29.8	14.3 4
Aliphatics >C8-C10	<10 µg/kg	TM089		295 4	64.5 4	42.9 4	<10 4	39.3	11.9 4
Aliphatics >C10-C12	<1000 µg/kg	TM414		17600	<1000	<1000	2780	<1000	1270
Aliphatics >C12-C16	<1000 µg/kg	TM414		77200	8060	<1000	6670	1800	4620
Aliphatics >C16-C21	<1000 µg/kg	TM414		87500	15800	2800	19800	9370	10400
Aliphatics >C21-C35	<1000 µg/kg	TM414		60000	16600	37000	42500	32100	38700
Aliphatics >C35-C44	<1000 µg/kg	TM414		12000	3110	4790	6510	8590	10900
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		254000	43600	45200	78200	52200	66000
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		323000	59500	59400	249000	120000	187000
Aromatics >EC5-EC7	<10 µg/kg	TM089		91.5 4	<10 4	<10 4	<10 4	<10	<10 4
Aromatics >EC7-EC8	<10 µg/kg	TM089		115 4	11.2 4	<10 4	<10 4	<10	<10 4
Aromatics >EC8-EC10	<10 µg/kg	TM089		197 4	42.2 4	28.3 4	<10 4	26.2	<10 4
Aromatics > EC10-EC12	<1000 µg/kg	TM414		4410	<1000	<1000	4810	2530	2110
Aromatics > EC12-EC16	<1000 µg/kg	TM414		31500	2420	1860	12400	4920	7470
Aromatics > EC16-EC21	<1000 µg/kg	TM414		14500	2830	1930	48400	19700	27800
Aromatics > EC21-EC35	<1000 µg/kg	TM414		17200	9700	9170	100000	38200	77400
Aromatics >EC35-EC44	<1000 µg/kg	TM414		<1000	<1000	<1000	4810	2880	6620
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		68800	16000	14200	171000	68300	121000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		324000	59700	59500	249000	121000	188000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		725 4	125 4	61 4	<50 4	69	<50 4
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		403 4	53.3 4	<50 4	<50 4	<50	<50 4
GRO >C5-C10	<20 µg/kg	TM089		1130 4	179 4	61 4	<20 4	69	<20 4

Validated

CERTIFICATE OF ANALYSIS

SDG:	210206-39	**Client Reference:**	P18-669	**Report Number:**	587491
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	587296

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	S21-2	S22-1	S22-2	T21-1	T21-2	U19-1
			Depth (m)	1.80 - 1.80	0.50 - 0.50	1.30 - 1.30	1.00 - 1.00	2.00 - 2.00	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/02/2021	05/02/2021	05/02/2021	05/02/2021	05/02/2021	05/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	06/02/2021	06/02/2021	06/02/2021	06/02/2021	06/02/2021	06/02/2021
			SDG Ref	210206-39	210206-39	210206-39	210206-39	210206-39	210206-39
			Lab Sample No.(s)	23678005	23678009	23678013	23677984	23677989	23678044
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		15.4 4	73	44.8 4	26 4	31.1 4	56.2 4
Aliphatics >C5-C6	<10 µg/kg	TM089		13.6 4	<10	<10 4	<10 4	<10 4	<10 4
Aliphatics >C6-C8	<10 µg/kg	TM089		65.7 4	32.8	27.9 4	<10 4	13.3 4	11.3 4
Aliphatics >C8-C10	<10 µg/kg	TM089		68.2 4	55	33 4	<10 4	12.1 4	12.4 4
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	1580	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		10400	<1000	<1000	2950	3740	1500
Aliphatics >C16-C21	<1000 µg/kg	TM414		29900	<1000	3020	4120	5800	5900
Aliphatics >C21-C35	<1000 µg/kg	TM414		90400	2400	11100	10600	19300	59600
Aliphatics >C35-C44	<1000 µg/kg	TM414		21200	<1000	3300	2850	4450	10200
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		153000	<5000	19000	21500	34900	77200
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		226000	52400	84100	54800	84800	93000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 4	<10	<10 4	<10 4	<10 4	<10 4
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 4	<10	<10 4	<10 4	<10 4	<10 4
Aromatics >EC8-EC10	<10 µg/kg	TM089		44.6 4	36.3	21.6 4	<10 4	<10 4	<10 4
Aromatics > EC10-EC12	<1000 µg/kg	TM414		1380	<1000	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		9270	<1000	1720	3900	5130	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		19900	14000	17600	7530	12300	2430
Aromatics > EC21-EC35	<1000 µg/kg	TM414		41600	31200	41900	18600	30600	11700
Aromatics >EC35-EC44	<1000 µg/kg	TM414		1290	2610	3230	2390	1140	<1000
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		73400	48700	65200	33300	49900	15800
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		226000	48700	84200	54800	84800	93000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		148 4	87.8	61 4	<50 4	<50 4	<50 4
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 4	<50	<50 4	<50 4	<50 4	<50 4
GRO >C5-C10	<20 µg/kg	TM089		148 4	87.8	61 4	<20 4	<20 4	<20 4

Validated

CERTIFICATE OF ANALYSIS

SDG:	210206-39	**Client Reference:**	P18-669	**Report Number:**	587491
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	587296

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	U20-1	U20-2	U21-1	U21-2		
			Depth (m)	0.80 - 0.80	1.30 - 1.30	0.50 - 0.50	1.40 - 1.40		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	05/02/2021	05/02/2021	05/02/2021	05/02/2021		
			Sample Time	.	.	.	.		
			Date Received	06/02/2021	06/02/2021	06/02/2021	06/02/2021		
			SDG Ref	210206-39	210206-39	210206-39	210206-39		
			Lab Sample No.(s)	23678051	23678058	23678064	23677979		
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		87	122	15 4	81		
Aliphatics >C5-C6	<10 µg/kg	TM089		14.2	<10	<10 4	17.3		
Aliphatics >C6-C8	<10 µg/kg	TM089		66.6	<10	<10 4	84		
Aliphatics >C8-C10	<10 µg/kg	TM089		50.2	<10	<10 4	109		
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	1150	<1000		
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	<1000	3640	4230		
Aliphatics >C16-C21	<1000 µg/kg	TM414		2150	<1000	6390	14400		
Aliphatics >C21-C35	<1000 µg/kg	TM414		21000	1470	18600	28900		
Aliphatics >C35-C44	<1000 µg/kg	TM414		7370	<1000	4230	6140		
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		31500	<5000	34000	54400		
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		40900	11500	85100	84200		
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10	<10 4	<10		
Aromatics >EC7-EC8	<10 µg/kg	TM089		27.3	<10	<10 4	16.1		
Aromatics >EC8-EC10	<10 µg/kg	TM089		32.7	<10	<10 4	72.5		
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000		
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000	3780	1020		
Aromatics > EC16-EC21	<1000 µg/kg	TM414		1230	<1000	11000	5290		
Aromatics > EC21-EC35	<1000 µg/kg	TM414		6190	7650	34400	22200		
Aromatics >EC35-EC44	<1000 µg/kg	TM414		<1000	<1000	1160	1030		
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000		
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		9410	9250	51100	29800		
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		41100	<10000	85100	84500		
Total Aliphatics >C5-C10	<50 µg/kg	TM089		131	<50	<50 4	210		
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		60	<50	<50 4	88.6		
GRO >C5-C10	<20 µg/kg	TM089		191	<20	<20 4	299		

Validated

CERTIFICATE OF ANALYSIS

SDG:	210206-39	**Client Reference:**	P18-669	**Report Number:**	587491
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	587296

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	S16-1	S16-2	S18-1	S19-1	S19-2	S21-1
			Depth (m)	0.90 - 0.90	2.20 - 2.20	0.70 - 0.70	1.00 - 1.00	2.00 - 2.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	04/02/2021	04/02/2021	04/02/2021	04/02/2021	04/02/2021	05/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	06/02/2021	06/02/2021	06/02/2021	06/02/2021	06/02/2021	06/02/2021
			SDG Ref	210206-39	210206-39	210206-39	210206-39	210206-39	210206-39
			Lab Sample No.(s)	23677975	23678020	23678025	23678034	23678039	23677997
			AGS Reference						
Dibromofluoromethane**	%	TM116		100	112	98.8	96.7	104	109
Toluene-d8**	%	TM116		92.9	97.6	96.1	88.3	94.8	95.7
4-Bromofluorobenzene**	%	TM116		76.8	94.3	89.9	72.2	87.7	86.8
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<2000 M
Benzene	<9 µg/kg	TM116		205 M	<180 M	<180 M	<180 M	<180 M	<1800 M
Toluene	<7 µg/kg	TM116		380 M	<140 M	<140 M	<140 M	<140 M	<1400 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<800 M
p/m-Xylene	<10 µg/kg	TM116		271 #	<200 #	<200 #	<200 #	<200 #	<2000 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<2000 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 M	341 M	337 M	4140 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<4
Sum of BTEX	<40 µg/kg	TM116		856	<800	<800	<800	<800	<8000

Validated

CERTIFICATE OF ANALYSIS

SDG:	210206-39	**Client Reference:**	P18-669	**Report Number:**	587491
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	587296

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	S21-2	S22-1	S22-2	T21-1	T21-2	U19-1
			Depth (m)	1.80 - 1.80	0.50 - 0.50	1.30 - 1.30	1.00 - 1.00	2.00 - 2.00	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/02/2021	05/02/2021	05/02/2021	05/02/2021	05/02/2021	05/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	06/02/2021	06/02/2021	06/02/2021	06/02/2021	06/02/2021	06/02/2021
			SDG Ref	210206-39	210206-39	210206-39	210206-39	210206-39	210206-39
			Lab Sample No.(s)	23678005	23678009	23678013	23677984	23677989	23678044
			AGS Reference						
Dibromofluoromethane**	%	TM116		105	105	97.9	108	108	106
Toluene-d8**	%	TM116		95.1	95.7	95.3	99.7	101	97
4-Bromofluorobenzene**	%	TM116		82.9	88.2	82.3	98.4	96.9	92.6
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<2000 M	<2000 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<1800 M	<1800 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<1400 M	<1400 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<800 M	<800 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<2000 #	<2000 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<2000 M	<2000 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 M	<2600 M	<2600 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<4	<4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<8000	<8000	<800

CERTIFICATE OF ANALYSIS

SDG:	210206-39	**Client Reference:**	P18-669	**Report Number:**	587491
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	587296

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	U20-1	U20-2	U21-1	U21-2		
			Depth (m)	0.80 - 0.80	1.30 - 1.30	0.50 - 0.50	1.40 - 1.40		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	05/02/2021	05/02/2021	05/02/2021	05/02/2021		
			Sample Time	.	.	.	.		
			Date Received	06/02/2021	06/02/2021	06/02/2021	06/02/2021		
			SDG Ref	210206-39	210206-39	210206-39	210206-39		
			Lab Sample No.(s)	23678051	23678058	23678064	23677979		
			AGS Reference						
Dibromofluoromethane**	%	TM116		104	112	98	109		
Toluene-d8**	%	TM116		98.6	97.9	93.3	97.1		
4-Bromofluorobenzene**	%	TM116		91.1	95.2	79	90.6		
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 #	<200 M	<200 M		
Benzene	<9 µg/kg	TM116		<180 M	<180 #	<180 M	<180 M		
Toluene	<7 µg/kg	TM116		<140 M	<140 #	<140 M	<140 M		
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 #	<80 M	<80 M		
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #		
o-Xylene	<10 µg/kg	TM116		<200 M	<200 #	<200 M	<200 M		
Naphthalene	<13 µg/kg	TM116		<260 M	<260 #	<260 M	<260 M		
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4		
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800		

CERTIFICATE OF ANALYSIS

SDG:	210206-39	**Client Reference:**	P18-669	**Report Number:**	587491
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	587296

Asbestos Identification - Solid Samples

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&+$@	Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	S16-1 0.90 - 0.90 SOLID 04/02/2021 00:00:00 06/02/2021 05:00:00 210206-39 23677975 TM048	15/02/2021	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	S18-1 0.70 - 0.70 SOLID 04/02/2021 00:00:00 06/02/2021 05:00:00 210206-39 23678025 TM048	12/02/2021	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	S19-2 2.00 - 2.00 SOLID 04/02/2021 00:00:00 06/02/2021 05:00:00 210206-39 23678039 TM048	15/02/2021	Marcin Magdziarek	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	S21-1 0.50 - 0.50 SOLID 05/02/2021 00:00:00 06/02/2021 05:00:00 210206-39 23677997 TM048	12/02/2021	Marcin Magdziarek	Soil containing ACM debris	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	S22-1 0.50 - 0.50 SOLID 05/02/2021 00:00:00 06/02/2021 05:00:00 210206-39 23678009 TM048	12/02/2021	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	T21-1 1.00 - 1.00 SOLID 05/02/2021 00:00:00 06/02/2021 05:00:00 210206-39 23677984 TM048	15/02/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	U20-1 0.80 - 0.80 SOLID 05/02/2021 00:00:00 06/02/2021 05:00:00 210206-39 23678051 TM048	12/02/2021	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	U21-1 0.50 - 0.50 SOLID 05/02/2021 00:00:00 06/02/2021 05:00:00 210206-39 23678064 TM048	12/02/2021	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	210206-39	**Client Reference:**	P18-669	**Report Number:**	587491
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	587296

Asbestos Quantification - Full

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

		Additional Asbestos Components	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM	Asbestos Quantification - Total - %
Cust. Sample Ref.	S19-2	None (#)	N/A	<0.001 (#)	<0.001 (#)	<0.001 (#)
Depth (m)	2.00 - 2.00					
Sample Type	SOLID					
Date Sampled	04/02/2021 00:00:00					
Date Received	06/02/2021 05:00:00					
SDG	210206-39					
Original Sample	23678039					
Method Number	TM304					
Cust. Sample Ref.	S21-1	None (#)	-	<0.001 (#)	<0.001 (#)	<0.001 (#)
Depth (m)	0.50 - 0.50					
Sample Type	SOLID					
Date Sampled	05/02/2021 00:00:00					
Date Received	06/02/2021 05:00:00					
SDG	210206-39					
Original Sample	23677997					
Method Number	TM304					

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	210206-39	**Client Reference:**	P18-669	**Report Number:**	587491
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	587296

Test Completion Dates

Lab Sample No(s)	23677975	23678020	23678025	23678034	23678039	23677997	23678005	23678009	23678013	23677984
Customer Sample Ref.	S16-1	S16-2	S18-1	S19-1	S19-2	S21-1	S21-2	S22-1	S22-2	T21-1
AGS Ref.										
Depth	0.90 - 0.90	2.20 - 2.20	0.70 - 0.70	1.00 - 1.00	2.00 - 2.00	0.50 - 0.50	1.80 - 1.80	0.50 - 0.50	1.30 - 1.30	1.00 - 1.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021
Asbestos ID in Solid Samples	15-Feb-2021		12-Feb-2021		15-Feb-2021	12-Feb-2021		12-Feb-2021		15-Feb-2021
Asbestos Quantification - Full					19-Feb-2021	18-Feb-2021				
Cyanide Comp/Free/Total/Thiocyanate	10-Feb-2021	10-Feb-2021	10-Feb-2021	10-Feb-2021	10-Feb-2021	10-Feb-2021	10-Feb-2021	10-Feb-2021	10-Feb-2021	10-Feb-2021
EPH CWG GC (S)	11-Feb-2021	11-Feb-2021	11-Feb-2021	10-Feb-2021	11-Feb-2021	10-Feb-2021	10-Feb-2021	11-Feb-2021	11-Feb-2021	11-Feb-2021
GRO by GC-FID (S)	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021
Metals in solid samples by OES	11-Feb-2021	11-Feb-2021	12-Feb-2021	12-Feb-2021	12-Feb-2021	15-Feb-2021	12-Feb-2021	15-Feb-2021	15-Feb-2021	11-Feb-2021
PAH by GCMS	15-Feb-2021	11-Feb-2021	12-Feb-2021	16-Feb-2021	11-Feb-2021	10-Feb-2021	11-Feb-2021	11-Feb-2021	11-Feb-2021	11-Feb-2021
pH	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021
Phenols by HPLC (S)	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021
Sample description	08-Feb-2021	08-Feb-2021	08-Feb-2021	08-Feb-2021	08-Feb-2021	08-Feb-2021	08-Feb-2021	08-Feb-2021	08-Feb-2021	08-Feb-2021
Total Organic Carbon	12-Feb-2021	12-Feb-2021	12-Feb-2021	12-Feb-2021	12-Feb-2021	15-Feb-2021	12-Feb-2021	12-Feb-2021	12-Feb-2021	15-Feb-2021
TPH CWG GC (S)	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021
VOC MS (S)	12-Feb-2021	12-Feb-2021	12-Feb-2021	12-Feb-2021	12-Feb-2021	14-Feb-2021	12-Feb-2021	12-Feb-2021	12-Feb-2021	14-Feb-2021

Lab Sample No(s)	23677989	23678044	23678051	23678058	23678064	23677979
Customer Sample Ref.	T21-2	U19-1	U20-1	U20-2	U21-1	U21-2
AGS Ref.						
Depth	2.00 - 2.00	0.30 - 0.30	0.80 - 0.80	1.30 - 1.30	0.50 - 0.50	1.40 - 1.40
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021
Asbestos ID in Solid Samples			12-Feb-2021		12-Feb-2021	
Cyanide Comp/Free/Total/Thiocyanate	10-Feb-2021	10-Feb-2021	10-Feb-2021	10-Feb-2021	10-Feb-2021	10-Feb-2021
EPH CWG GC (S)	10-Feb-2021	10-Feb-2021	11-Feb-2021	10-Feb-2021	11-Feb-2021	11-Feb-2021
GRO by GC-FID (S)	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021
Metals in solid samples by OES	15-Feb-2021	15-Feb-2021	12-Feb-2021	15-Feb-2021	11-Feb-2021	15-Feb-2021
PAH by GCMS	11-Feb-2021	11-Feb-2021	15-Feb-2021	11-Feb-2021	12-Feb-2021	11-Feb-2021
pH	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021	09-Feb-2021
Phenols by HPLC (S)	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021
Sample description	08-Feb-2021	08-Feb-2021	08-Feb-2021	08-Feb-2021	08-Feb-2021	08-Feb-2021
Total Organic Carbon	15-Feb-2021	12-Feb-2021	12-Feb-2021	12-Feb-2021	12-Feb-2021	12-Feb-2021
TPH CWG GC (S)	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021	15-Feb-2021
VOC MS (S)	14-Feb-2021	12-Feb-2021	12-Feb-2021	12-Feb-2021	12-Feb-2021	12-Feb-2021

Appendix General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

18. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Matrix interference**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**
§	**Sampled on date not provided**

19. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.
Standing Committee of Analysts, *The Quantification of Asbestos in Soil (2017).*

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
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Fax: (01244) 528701
email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

Rodgers Leask
Office 225
2430/2440
Aztec West
Almondsbury
Bristol
BS32 4QA

Attention: Elliot Thomas

CERTIFICATE OF ANALYSIS

Date of report Generation:	09 March 2021
Customer:	Rodgers Leask
Sample Delivery Group (SDG):	210218-32
Your Reference:	P18-669
Location:	Llanwern
Report No:	589805

This report has been revised and directly supersedes 589801 in its entirety.

We received 54 samples on Thursday February 18, 2021 and 54 of these samples were scheduled for analysis which was completed on Tuesday March 09, 2021. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.
The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan

Operations Manager

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
23748251	SPDL-1		0.20 - 0.20	16/02/2021
23747881	SPDL-2		0.20 - 0.20	16/02/2021
23747887	SPDL-3		0.20 - 0.20	16/02/2021
23747896	SPDL-4		0.20 - 0.20	16/02/2021
23748172	SPJJ-1		0.20 - 0.20	16/02/2021
23748234	SPJJ-2		0.20 - 0.20	16/02/2021
23748241	SPJJ-3		0.20 - 0.20	16/02/2021
23748245	SPJJ-4		0.20 - 0.20	16/02/2021
23747877	SPLB-1		0.20 - 0.20	16/02/2021
23747944	SPLB-2		0.20 - 0.20	16/02/2021
23748025	SPLB-3		0.20 - 0.20	16/02/2021
23748100	SPLB-4		0.20 - 0.20	16/02/2021
23747902	W35-1		0.20 - 0.20	16/02/2021
23747909	W35-2		0.20 - 0.20	16/02/2021
23747914	W35-3		0.20 - 0.20	16/02/2021
23747921	W35-4		0.20 - 0.20	16/02/2021
23747924	W35-5		0.20 - 0.20	16/02/2021
23747930	W35-6		0.20 - 0.20	16/02/2021
23748130	W129-1		0.20 - 0.20	17/02/2021
23748135	W129-2		0.20 - 0.20	17/02/2021
23747982	W131-1		0.20 - 0.20	17/02/2021
23747988	W131-2		0.20 - 0.20	17/02/2021
23748000	W131-3		0.20 - 0.20	17/02/2021
23748009	W131-4		0.20 - 0.20	17/02/2021
23748017	W156-1		0.20 - 0.20	17/02/2021
23748032	W156-2		0.20 - 0.20	17/02/2021
23748046	W156-3		0.20 - 0.20	17/02/2021
23748052	W156-4		0.20 - 0.20	17/02/2021
23748060	W156-5		0.20 - 0.20	17/02/2021
23748067	W156-6		0.20 - 0.20	17/02/2021
23748072	W156-7		0.20 - 0.20	17/02/2021
23748077	W156-8		0.20 - 0.20	17/02/2021
23748084	W156-9		0.20 - 0.20	17/02/2021
23748094	W206-1		0.20 - 0.20	17/02/2021
23748105	W206-2		0.20 - 0.20	17/02/2021
23748115	W206-3		0.20 - 0.20	17/02/2021
23748120	W206-4		0.20 - 0.20	17/02/2021
23748200	W208-1		0.20 - 0.20	17/02/2021
23748230	W208-2		0.20 - 0.20	17/02/2021
23747937	W209-1		0.20 - 0.20	17/02/2021
23747950	W209-2		0.20 - 0.20	17/02/2021
23747954	W209-3		0.20 - 0.20	17/02/2021
23747961	W209-4		0.20 - 0.20	17/02/2021
23747966	W209-5		0.20 - 0.20	17/02/2021
23747973	W209-6		0.20 - 0.20	17/02/2021
23748089	W156-10		0.20 - 0.20	17/02/2021
23748142	W209B-1		0.20 - 0.20	17/02/2021
23748146	W209B-2		0.20 - 0.20	17/02/2021
23748156	W209B-3		0.20 - 0.20	17/02/2021
23748161	W209B-4		0.20 - 0.20	17/02/2021
23748167	W209C-1		0.20 - 0.20	17/02/2021
23748178	W209C-2		0.20 - 0.20	17/02/2021
23748183	W209C-3		0.20 - 0.20	17/02/2021
23748191	W209C-4		0.20 - 0.20	17/02/2021

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			23748251		23747881		23747887		23747896		23748172		23748234		23748241		23748245				
Customer Sample Reference			SPDL-1		SPDL-2		SPDL-3		SPDL-4		SPJ-1		SPJ-2		SPJ-3		SPJ-4				
AGS Reference																					
Depth (m)			0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20				
Container			1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 54		X		X			X		X			X		X			X		X
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 27	X					X					X					X			
Asbestos Quantification - Full	All	NDPs: 0 Tests: 8											X								
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 54		X		X			X		X			X		X			X		X
EPH CWG GC (S)	All	NDPs: 0 Tests: 54		X		X			X		X			X		X			X		X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 54			X		X			X		X			X		X			X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 54		X		X			X		X			X		X			X		X
PAH by GCMS	All	NDPs: 0 Tests: 54		X		X			X		X			X		X			X		X
pH	All	NDPs: 0 Tests: 54		X		X			X		X			X		X			X		X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 54		X		X			X		X			X		X			X		X
Sample description	All	NDPs: 0 Tests: 54		X		X			X		X			X		X			X		X
Total Organic Carbon	All	NDPs: 0 Tests: 54		X		X			X		X			X		X			X		X
TPH CWG GC (S)	All	NDPs: 0 Tests: 54		X		X			X		X			X		X			X		X
VOC MS (S)	All	NDPs: 0 Tests: 54			X		X			X		X			X		X			X	

23747921	W35-4		0.20 - 0.20	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
23747914	W35-3		0.20 - 0.20	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X												
23747909	W35-2		0.20 - 0.20	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
23747902	W35-1		0.20 - 0.20	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X	X											
23748100	SPLB-4		0.20 - 0.20	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
23748025	SPLB-3		0.20 - 0.20	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X												
23747944	SPLB-2		0.20 - 0.20	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
23747877	SPLB-1		0.20 - 0.20	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X												
23748245	SPJJ-4		0.20 - 0.20	60g VOC (ALE215)	S						X								X

Validated

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			23747924		23747930		23748130			23748135		23747982			23747988		23748000		23748009		
Customer Sample Reference			W35-5		W35-6		W129-1			W129-2		W131-1			W131-2		W131-3		W131-4		
AGS Reference																					
Depth (m)			0.20 - 0.20		0.20 - 0.20		0.20 - 0.20			0.20 - 0.20		0.20 - 0.20			0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		
Container			60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 54		X		X			X		X			X		X			X		X
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 27	X					X					X					X			
Asbestos Quantification - Full	All	NDPs: 0 Tests: 8	X					X													
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 54		X		X			X		X			X		X			X		X
EPH CWG GC (S)	All	NDPs: 0 Tests: 54		X		X			X		X			X		X			X		X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 54			X		X			X		X			X		X			X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 54		X		X			X		X			X		X			X		X
PAH by GCMS	All	NDPs: 0 Tests: 54		X		X			X		X			X		X			X		X
pH	All	NDPs: 0 Tests: 54		X		X			X		X			X		X			X		X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 54		X		X			X		X			X		X			X		X
Sample description	All	NDPs: 0 Tests: 54		X		X			X		X			X		X			X		X
Total Organic Carbon	All	NDPs: 0 Tests: 54		X		X			X		X			X		X			X		X
TPH CWG GC (S)	All	NDPs: 0 Tests: 54		X		X			X		X			X		X			X		X
VOC MS (S)	All	NDPs: 0 Tests: 54			X		X			X		X			X		X			X	

23748077	W156-8		0.20 - 0.20	60g VOC (ALE215)	S								x										x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x				
23748072	W156-7		0.20 - 0.20	60g VOC (ALE215)	S								x										x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x				
				1kg TUB with Handle (ALE260)	S		x																
23748067	W156-6		0.20 - 0.20	60g VOC (ALE215)	S								x										x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x				
23748060	W156-5		0.20 - 0.20	60g VOC (ALE215)	S								x										x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x				
				1kg TUB with Handle (ALE260)	S		x		x														
23748052	W156-4		0.20 - 0.20	60g VOC (ALE215)	S								x										x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x				
23748046	W156-3		0.20 - 0.20	60g VOC (ALE215)	S								x										x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x				
				1kg TUB with Handle (ALE260)	S		x																
23748032	W156-2		0.20 - 0.20	60g VOC (ALE215)	S								x										x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x				
23748017	W156-1		0.20 - 0.20	60g VOC (ALE215)	S								x										x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x				
				1kg TUB with Handle (ALE260)	S		x																
23748009	W131-4		0.20 - 0.20	60g VOC (ALE215)	S								x										x

Validated

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
			23748084	W156-9		0.20 - 0.20	1kg TUB with Handle (ALE260)	S
			23748084	W156-9		0.20 - 0.20	60g VOC (ALE215)	S
			23748094	W206-1		0.20 - 0.20	1kg TUB with Handle (ALE260)	S
			23748094	W206-1		0.20 - 0.20	250g Amber Jar (ALE210)	S
			23748094	W206-1		0.20 - 0.20	60g VOC (ALE215)	S
			23748105	W206-2		0.20 - 0.20	250g Amber Jar (ALE210)	S
			23748105	W206-2		0.20 - 0.20	60g VOC (ALE215)	S
			23748115	W206-3		0.20 - 0.20	1kg TUB with Handle (ALE260)	S
			23748115	W206-3		0.20 - 0.20	250g Amber Jar (ALE210)	S
			23748115	W206-3		0.20 - 0.20	60g VOC (ALE215)	S
			23748120	W206-4		0.20 - 0.20	250g Amber Jar (ALE210)	S
			23748120	W206-4		0.20 - 0.20	60g VOC (ALE215)	S
			23748200	W208-1		0.20 - 0.20	1kg TUB with Handle (ALE260)	S
			23748200	W208-1		0.20 - 0.20	250g Amber Jar (ALE210)	S
			23748200	W208-1		0.20 - 0.20	60g VOC (ALE215)	S
			23748230	W208-2		0.20 - 0.20	250g Amber Jar (ALE210)	S
			23748230	W208-2		0.20 - 0.20	60g VOC (ALE215)	S
			23747937	W209-1		0.20 - 0.20	1kg TUB with Handle (ALE260)	S
			23747937	W209-1		0.20 - 0.20	250g Amber Jar (ALE210)	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 54	X					
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 27	X					
Asbestos Quantification - Full	All	NDPs: 0 Tests: 8						
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 54	X					
EPH CWG GC (S)	All	NDPs: 0 Tests: 54	X					
GRO by GC-FID (S)	All	NDPs: 0 Tests: 54		X				
Metals in solid samples by OES	All	NDPs: 0 Tests: 54	X					
PAH by GCMS	All	NDPs: 0 Tests: 54	X					
pH	All	NDPs: 0 Tests: 54	X					
Phenols by HPLC (S)	All	NDPs: 0 Tests: 54	X					
Sample description	All	NDPs: 0 Tests: 54	X					
Total Organic Carbon	All	NDPs: 0 Tests: 54	X					
TPH CWG GC (S)	All	NDPs: 0 Tests: 54	X					
VOC MS (S)	All	NDPs: 0 Tests: 54		X				
Ammonium Soil by Titration	All	NDPs: 0 Tests: 54			X			
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 27				X		
Asbestos Quantification - Full	All	NDPs: 0 Tests: 8					X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 54			X			
EPH CWG GC (S)	All	NDPs: 0 Tests: 54			X			
GRO by GC-FID (S)	All	NDPs: 0 Tests: 54				X		
Metals in solid samples by OES	All	NDPs: 0 Tests: 54			X			
PAH by GCMS	All	NDPs: 0 Tests: 54			X			
pH	All	NDPs: 0 Tests: 54			X			
Phenols by HPLC (S)	All	NDPs: 0 Tests: 54			X			
Sample description	All	NDPs: 0 Tests: 54			X			
Total Organic Carbon	All	NDPs: 0 Tests: 54			X			
TPH CWG GC (S)	All	NDPs: 0 Tests: 54			X			
VOC MS (S)	All	NDPs: 0 Tests: 54				X		

23748156	W209B-3		0.20 - 0.20	1kg TUB with Handle (ALE260)	S			X													
23748146	W209B-2		0.20 - 0.20	60g VOC (ALE215)	S							X									X
				250g Amber Jar (ALE210)	S	X				X	X		X	X	X	X	X	X	X	X	
23748142	W209B-1		0.20 - 0.20	60g VOC (ALE215)	S							X									X
				250g Amber Jar (ALE210)	S	X				X	X		X	X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S			X													
23748089	W156-10		0.20 - 0.20	60g VOC (ALE215)	S							X									X
				250g Amber Jar (ALE210)	S	X				X	X		X	X	X	X	X	X	X	X	
23747973	W209-6		0.20 - 0.20	60g VOC (ALE215)	S							X									X
				250g Amber Jar (ALE210)	S	X				X	X		X	X	X	X	X	X	X	X	
23747966	W209-5		0.20 - 0.20	60g VOC (ALE215)	S							X									X
				250g Amber Jar (ALE210)	S	X				X	X		X	X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S			X	X												
23747961	W209-4		0.20 - 0.20	60g VOC (ALE215)	S							X									X
				250g Amber Jar (ALE210)	S	X				X	X		X	X	X	X	X	X	X	X	
23747954	W209-3		0.20 - 0.20	60g VOC (ALE215)	S							X									X
				250g Amber Jar (ALE210)	S	X				X	X		X	X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S			X													
23747950	W209-2		0.20 - 0.20	60g VOC (ALE215)	S							X									X
				250g Amber Jar (ALE210)	S	X				X	X		X	X	X	X	X	X	X	X	
23747937	W209-1		0.20 - 0.20	60g VOC (ALE215)	S							X									X

Validated

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			23748156		23748161		23748167		23748178		23748183		23748191	
Customer Sample Reference			W209B-3		W209B-4		W209C-1		W209C-2		W209C-3		W209C-4	
AGS Reference														
Depth (m)			0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20	
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 54	X		X			X		X			X		X	
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 27					X					X				
Asbestos Quantification - Full	All	NDPs: 0 Tests: 8										X				
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 54	X		X			X		X			X		X	
EPH CWG GC (S)	All	NDPs: 0 Tests: 54	X		X			X		X			X		X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 54		X		X			X		X			X		X
Metals in solid samples by OES	All	NDPs: 0 Tests: 54	X		X			X		X			X		X	
PAH by GCMS	All	NDPs: 0 Tests: 54	X		X			X		X			X		X	
pH	All	NDPs: 0 Tests: 54	X		X			X		X			X		X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 54	X		X			X		X			X		X	
Sample description	All	NDPs: 0 Tests: 54	X		X			X		X			X		X	
Total Organic Carbon	All	NDPs: 0 Tests: 54	X		X			X		X			X		X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 54	X		X			X		X			X		X	
VOC MS (S)	All	NDPs: 0 Tests: 54		X		X			X		X			X		X

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
23748251	SPDL-1	0.20 - 0.20	Black	Loamy Sand	Stones	None
23747881	SPDL-2	0.20 - 0.20	Dark Brown	Sandy Silt Loam	Vegetation	Stones
23747887	SPDL-3	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	Vegetation
23747896	SPDL-4	0.20 - 0.20	Dark Brown	Sand	Vegetation	Stones
23748172	SPJJ-1	0.20 - 0.20	Dark Brown	Sandy Clay Loam	Stones	None
23748234	SPJJ-2	0.20 - 0.20	Dark Brown	Sandy Silt Loam	Stones	Brick
23748241	SPJJ-3	0.20 - 0.20	Dark Brown	Sandy Silt Loam	Stones	Brick
23748245	SPJJ-4	0.20 - 0.20	Light Brown	Sandy Clay Loam	Stones	Vegetation
23747877	SPLB-1	0.20 - 0.20	Dark Brown	Sandy Clay Loam	Stones	Brick
23747944	SPLB-2	0.20 - 0.20	Dark Brown	Clay	Stones	Vegetation
23748025	SPLB-3	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	Brick
23748100	SPLB-4	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	Vegetation
23747902	W35-1	0.20 - 0.20	Black	Sandy Silt Loam	Stones	None
23747909	W35-2	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	Vegetation
23747914	W35-3	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	Vegetation
23747921	W35-4	0.20 - 0.20	Black	Loamy Sand	Stones	Vegetation
23747924	W35-5	0.20 - 0.20	Dark Brown	Sand	None	Stones
23747930	W35-6	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	Vegetation
23748130	W129-1	0.20 - 0.20	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23748135	W129-2	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	Vegetation
23747982	W131-1	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	Brick
23747988	W131-2	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	Brick
23748000	W131-3	0.20 - 0.20	Black	Loamy Sand	Stones	None
23748009	W131-4	0.20 - 0.20	Dark Brown	Loamy Sand	Vegetation	Brick
23748017	W156-1	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	None
23748032	W156-2	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	Brick
23748046	W156-3	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	None
23748052	W156-4	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	None
23748060	W156-5	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	Brick
23748067	W156-6	0.20 - 0.20	Dark Brown	Sand	N/A	Stones
23748072	W156-7	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	None
23748077	W156-8	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	Vegetation
23748084	W156-9	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	Vegetation
23748094	W206-1	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	None
23748105	W206-2	0.20 - 0.20	Black	Loamy Sand	Stones	Vegetation
23748115	W206-3	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	Vegetation
23748120	W206-4	0.20 - 0.20	Black	Loamy Sand	Stones	N/A
23748200	W208-1	0.20 - 0.20	Dark Brown	Sandy Clay Loam	Stones	None
23748230	W208-2	0.20 - 0.20	Dark Brown	Sandy Clay Loam	Stones	None

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

			Colour	Description	Inclusions	Inclusions 2
23747937	W209-1	0.20 - 0.20	Light Brown	Silty Clay Loam	Stones	None
23747950	W209-2	0.20 - 0.20	Black	Silty Clay Loam	Stones	None
23747954	W209-3	0.20 - 0.20	Black	Sandy Silt Loam	Stones	Brick
23747961	W209-4	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	Brick
23747966	W209-5	0.20 - 0.20	Dark Brown	Silty Clay Loam	Brick	Stones
23747973	W209-6	0.20 - 0.20	Black	Silty Clay Loam	Stones	None
23748089	W156-10	0.20 - 0.20	Black	Sandy Silt Loam	Stones	None
23748142	W209B-1	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	None
23748146	W209B-2	0.20 - 0.20	Dark Brown	Sand	Vegetation	Stones
23748156	W209B-3	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	Brick
23748161	W209B-4	0.20 - 0.20	Dark Brown	Sand	None	Stones
23748167	W209C-1	0.20 - 0.20	Dark Brown	Stone/Soil	None	Stones
23748178	W209C-2	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	None
23748183	W209C-3	0.20 - 0.20	Dark Brown	Stone/Soil	None	Stones
23748191	W209C-4	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SPDL-1	SPDL-2	SPDL-3	SPDL-4	SPJJ-1	SPJJ-2
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23748251	23747881	23747887	23747896	23748172	23748234
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		14	18	14	14	12	10
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0122 M	<0.01 M	0.0116 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		0.0117 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		0.0351 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		0.0468 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		23.3 #	21.9 #	15.4 #	24.1 #	4.03 #	6.62 #
pH	1 pH Units	TM133		8.33 M	8.98 M	8.18 M	8.78 M	8.73 M	8.95 M
Cyanide, Total	<1 mg/kg	TM153		26.8 M	46 M	26.9 M	46.7 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		7.29 M	14 M	<6 M	9.28 M	8.86 M	13.2 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	0.497 M	<0.2 M	0.272 M	0.247 M	0.699 M
Chromium	<0.9 mg/kg	TM181		106 M	37.8 M	26.6 M	40.7 M	65.9 M	88.6 M
Copper	<1.4 mg/kg	TM181		24.1 M	25.6 M	30.5 M	39.8 M	14.6 M	25.7 M
Iron	<1000 mg/kg	TM181		67500 #	41200 #	65600 #	33400 #	50000 #	27300 #
Lead	<0.7 mg/kg	TM181		44.1 M	127 M	38.7 M	93.8 M	48 M	86.3 M
Manganese	<0.13 mg/kg	TM181		9420 M	2510 M	3810 M	3550 M	6920 M	5460 M
Mercury	<0.1 mg/kg	TM181		2.17 M	5.47 M	2.51 M	6.7 M	<1 M	<1 M
Nickel	<0.2 mg/kg	TM181		18.6 M	28.3 M	18.6 M	29.8 M	20.7 M	23.5 M
Selenium	<1 mg/kg	TM181		<10 #	<10 #	<10 #	1.62 #	<10 #	<10 #
Vanadium	<0.2 mg/kg	TM181		208 #	64.1 #	90.1 #	51.9 #	114 #	135 #
Zinc	<1.9 mg/kg	TM181		118 M	180 M	136 M	246 M	127 M	262 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304						<0.001 #	
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304						<0.001 #	
Additional Asbestos Components (Using TM048)		TM304						None #	
Analysts Comments		TM304						0	
Asbestos Quantification - Total - %	<0.001 %	TM304						<0.001 #	

Validated

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SPJJ-3	SPJJ-4	SPLB-1	SPLB-2	SPLB-3	SPLB-4
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23748241	23748245	23747877	23747944	23748025	23748100
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		12	15	17	26	16	16
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	0.0121 M	<0.01 M	0.0119 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		4.36 #	6.57 #	11.7 #	4.88 #	5.98 #	13.5 #
pH	1 pH Units	TM133		8.64 M	8.83 M	8.01 M	8.13 M	8.42 M	8.36 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		7.67 M	7.53 M	16 M	10.8 M	8.95 M	12.8 M
Cadmium	<0.02 mg/kg	TM181		0.392 M	0.71 M	<0.2 M	<0.2 M	<0.2 M	<0.2 M
Chromium	<0.9 mg/kg	TM181		119 M	43.3 M	60.5 M	61.6 M	401 M	264 M
Copper	<1.4 mg/kg	TM181		<14 M	17.6 M	24.1 M	21.2 M	19.2 M	26.4 M
Iron	<1000 mg/kg	TM181		56500 #	35000 #	36500 #	43300 #	112000 #	78800 #
Lead	<0.7 mg/kg	TM181		58.1 M	49.5 M	51.6 M	39.6 M	34.1 M	72.7 M
Manganese	<0.13 mg/kg	TM181		7230 M	3530 M	2290 M	1230 M	34600 M	10300 M
Mercury	<0.1 mg/kg	TM181		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Nickel	<0.2 mg/kg	TM181		21 M	25.3 M	31.2 M	39.5 M	19.5 M	32.9 M
Selenium	<1 mg/kg	TM181		<10 #	<10 #	<10 #	<10 #	19 #	<10 #
Vanadium	<0.2 mg/kg	TM181		136 #	80.2 #	99.5 #	81.2 #	235 #	192 #
Zinc	<1.9 mg/kg	TM181		114 M	127 M	139 M	142 M	87.3 M	215 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W35-1	W35-2	W35-3	W35-4	W35-5	W35-6
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23747902	23747909	23747914	23747921	23747924	23747930
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		13	12	11	15	10	12
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0113 M	<0.01 M	<0.01 M	0.0111 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.0111 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		59.3 #	3.17 #	5.5 #	29.5 #	2.98 #	7.93 #
pH	1 pH Units	TM133		12.1 M	11.7 M	9.01 M	12.1 M	12 M	8.95 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	1.6 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		7.27 M	7.11 M	9.62 M	8 M	7.46 M	11.6 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	0.241 M	<0.2 M	<0.2 M	<0.2 M	0.232 M
Chromium	<0.9 mg/kg	TM181		289 M	236 M	126 M	307 M	218 M	68.6 M
Copper	<1.4 mg/kg	TM181		36.6 M	125 M	20.1 M	553 M	32.2 M	24.3 M
Iron	<1000 mg/kg	TM181		120000 #	161000 #	71900 #	178000 #	114000 #	53900 #
Lead	<0.7 mg/kg	TM181		109 M	89.3 M	85.8 M	119 M	54.4 M	80.2 M
Manganese	<0.13 mg/kg	TM181		29900 M	31700 M	11400 M	37900 M	22700 M	7030 M
Mercury	<0.1 mg/kg	TM181		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Nickel	<0.2 mg/kg	TM181		23.8 M	46.3 M	13.6 M	195 M	24.1 M	17.1 M
Selenium	<1 mg/kg	TM181		16.8 #	15.1 #	<10 #	19.3 #	16.8 #	<10 #
Vanadium	<0.2 mg/kg	TM181		638 #	391 #	155 #	770 #	262 #	108 #
Zinc	<1.9 mg/kg	TM181		131 M	321 M	619 M	179 M	110 M	657 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304		<0.001 #				<0.001 #	
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304		<0.001 #				<0.001 #	
Additional Asbestos Components (Using TM048)		TM304		None #				None #	
Analysts Comments		TM304		N/a				0	
Asbestos Quantification - Total - %	<0.001 %	TM304		0.0015 #				<0.001 #	

Validated

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W129-1	W129-2	W131-1	W131-2	W131-3	W131-4
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23748130	23748135	23747982	23747988	23748000	23748009
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		11	12	11	12	12	12
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.0114 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		15.2 #	10.2 #	5.83 #	4.5 #	4.41 #	18.3 #
pH	1 pH Units	TM133		8.74 M	9 M	9.16 M	8.95 M	8.63 M	8.88 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	1.11 M	<1 M	1.11 M	<1 M
Arsenic	<0.6 mg/kg	TM181		<6 M	8.13 M	9.03 M	12.7 M	19.4 M	11.1 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	<0.2 M	<0.2 M	<0.2 M	<0.2 M	0.376 M
Chromium	<0.9 mg/kg	TM181		89 M	133 M	26.1 M	62.2 M	10.9 M	124 M
Copper	<1.4 mg/kg	TM181		<14 M	18.2 M	41 M	25.1 M	45.5 M	28.6 M
Iron	<1000 mg/kg	TM181		28200 #	84600 #	148000 #	141000 #	233000 #	111000 #
Lead	<0.7 mg/kg	TM181		49.6 M	71.2 M	53.1 M	114 M	85.1 M	121 M
Manganese	<0.13 mg/kg	TM181		7860 M	10500 M	4520 M	6790 M	6260 M	10700 M
Mercury	<0.1 mg/kg	TM181		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Nickel	<0.2 mg/kg	TM181		15.9 M	20.2 M	27.2 M	27.1 M	43.6 M	25.2 M
Selenium	<1 mg/kg	TM181		<10 #	<10 #	<10 #	<10 #	<10 #	<10 #
Vanadium	<0.2 mg/kg	TM181		350 #	404 #	99.9 #	137 #	99 #	193 #
Zinc	<1.9 mg/kg	TM181		153 M	212 M	168 M	353 M	299 M	373 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304		<0.001 #					
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304		<0.001 #					
Additional Asbestos Components (Using TM048)		TM304		None #					
Analysts Comments		TM304		0					
Asbestos Quantification - Total - %	<0.001 %	TM304		<0.001 #					

Validated

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W156-1	W156-2	W156-3	W156-4	W156-5	W156-6
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23748017	23748032	23748046	23748052	23748060	23748067
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		15	15	15	12	13	15
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0118 M	<0.01 M	<0.01 M	<0.01 M	0.0114 M	0.0117 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.0228 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		1.86 #	9.88 #	4.29 #	4.03 #	10.4 #	1.46 #
pH	1 pH Units	TM133		12.7 M	8.96 M	9.01 M	11.3 M	10.7 M	12.7 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	3.3 M	<1 M	2.28 M	3.44 M	<1 M
Arsenic	<0.6 mg/kg	TM181		8.27 M	15.7 M	11.2 M	9.36 M	<6 M	13.6 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	3.53 M	<0.2 M	<0.2 M	<0.2 M	<0.2 M
Chromium	<0.9 mg/kg	TM181		553 M	<9 M	<9 M	155 M	218 M	514 M
Copper	<1.4 mg/kg	TM181		38.6 M	30 M	<14 M	21.7 M	24.4 M	45.7 M
Iron	<1000 mg/kg	TM181		212000 #	352000 #	178000 #	280000 #	156000 #	284000 #
Lead	<0.7 mg/kg	TM181		29.7 M	892 M	<7 M	82.7 M	48.7 M	31.4 M
Manganese	<0.13 mg/kg	TM181		48200 M	8360 M	284 M	19500 M	18400 M	39600 M
Mercury	<0.1 mg/kg	TM181		<1 M	1.25 M	2.06 M	<1 M	<1 M	<1 M
Nickel	<0.2 mg/kg	TM181		35.5 M	36 M	<2 M	23.2 M	19.8 M	40.6 M
Selenium	<1 mg/kg	TM181		27.7 #	<10 #	<10 #	<10 #	10.5 #	19.4 #
Vanadium	<0.2 mg/kg	TM181		848 #	165 #	2.73 #	550 #	885 #	1000 #
Zinc	<1.9 mg/kg	TM181		62.1 M	2180 M	<19 M	193 M	129 M	82.7 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304						0.0349 #	
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304						0.0038 #	
Additional Asbestos Components (Using TM048)		TM304						PCM analysis detecte #	
Analysts Comments		TM304						N/A	
Asbestos Quantification - Total - %	<0.001 %	TM304						0.0387 #	

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W156-7	W156-8	W156-9	W206-1	W206-2	W206-3
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23748072	23748077	23748084	23748094	23748105	23748115
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		15	18	10	14	14	11
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		7.88 #	8.9 #	4.33 #	9.67 #	75.7 #	5.05 #
pH	1 pH Units	TM133		8.61 M	10.1 M	11.3 M	9.97 M	8.95 M	9.27 M
Cyanide, Total	<1 mg/kg	TM153		3.45 M	<1 M	4.84 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		24.9 M	9.46 M	7.27 M	9.17 M	<6 M	7.44 M
Cadmium	<0.02 mg/kg	TM181		5.2 M	<0.2 M	<0.2 M	0.347 M	<0.2 M	<0.2 M
Chromium	<0.9 mg/kg	TM181		106 M	<9 M	225 M	97.9 M	105 M	222 M
Copper	<1.4 mg/kg	TM181		34.1 M	22.8 M	19.5 M	23.6 M	33.5 M	21.5 M
Iron	<1000 mg/kg	TM181		190000 #	243000 #	220000 #	83800 #	65100 #	91600 #
Lead	<0.7 mg/kg	TM181		1040 M	80.8 M	50.9 M	80.9 M	32.7 M	75.7 M
Manganese	<0.13 mg/kg	TM181		13900 M	7350 M	31400 M	7320 M	7680 M	11400 M
Mercury	<0.1 mg/kg	TM181		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Nickel	<0.2 mg/kg	TM181		35.1 M	26.2 M	16.4 M	29.8 M	21 M	24.7 M
Selenium	<1 mg/kg	TM181		<10 #	<10 #	12.4 #	<10 #	<10 #	<10 #
Vanadium	<0.2 mg/kg	TM181		223 #	168 #	1120 #	217 #	236 #	251 #
Zinc	<1.9 mg/kg	TM181		2560 M	233 M	116 M	241 M	92.1 M	274 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304					<0.001 #		
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304					<0.001 #		
Additional Asbestos Components (Using TM048)		TM304					None #		
Analysts Comments		TM304					0		
Asbestos Quantification - Total - %	<0.001 %	TM304					<0.001 #		

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W206-4	W208-1	W208-2	W209-1	W209-2	W209-3
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23748120	23748200	23748230	23747937	23747950	23747954
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		18	13	17	12	15	13
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	0.475 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	0.475 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		54.8 #	4.12 #	6.86 #	11.4 #	33.8 #	49.1 #
pH	1 pH Units	TM133		8.43 M	10.4 M	10.6 M	8.83 M	8.97 M	8.96 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	36.1 M	35.9 M	124 M
Arsenic	<0.6 mg/kg	TM181		8.56 M	17.8 M	11.6 M	15.8 M	<6 M	10.1 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	0.382 M	0.448 M	<0.2 M	<0.2 M	<0.2 M
Chromium	<0.9 mg/kg	TM181		115 M	205 M	104 M	<9 M	142 M	70.2 M
Copper	<1.4 mg/kg	TM181		25.2 M	33.6 M	27.9 M	36.6 M	24.9 M	27.7 M
Iron	<1000 mg/kg	TM181		47800 #	63900 #	61700 #	274000 #	76900 #	90200 #
Lead	<0.7 mg/kg	TM181		32.6 M	146 M	105 M	304 M	158 M	270 M
Manganese	<0.13 mg/kg	TM181		6260 M	10100 M	6800 M	7720 M	6430 M	4820 M
Mercury	<0.1 mg/kg	TM181		<1 M	<1 M	<1 M	5.87 M	1.84 M	3.44 M
Nickel	<0.2 mg/kg	TM181		26.4 M	25.7 M	24.2 M	44.4 M	22.6 M	20.8 M
Selenium	<1 mg/kg	TM181		<10 #	<10 #	<10 #	<10 #	<10 #	<10 #
Vanadium	<0.2 mg/kg	TM181		304 #	163 #	150 #	129 #	114 #	72.5 #
Zinc	<1.9 mg/kg	TM181		87.6 M	264 M	285 M	694 M	216 M	191 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W209-4	W209-5	W209-6	W156-10	W209B-1	W209B-2
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23747961	23747966	23747973	23748089	23748142	23748146
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		14	12	12	11	14	16
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0116 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		0.0232 M	<0.01 M	<0.01 M	0.0112 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		17.4 #	21.6 #	33.8 #	7.53 #	46.4 #	64.1 #
pH	1 pH Units	TM133		9.08 M	9.15 M	8.71 M	10.4 M	9.32 M	8.93 M
Cyanide, Total	<1 mg/kg	TM153		273 M	41.7 M	31.5 M	1.84 M	1.96 M	4.05 M
Arsenic	<0.6 mg/kg	TM181		12.6 M	11 M	9.56 M	<6 M	9.46 M	8.55 M
Cadmium	<0.02 mg/kg	TM181		0.537 M	<0.2 M	<0.2 M	<0.2 M	<0.2 M	<0.2 M
Chromium	<0.9 mg/kg	TM181		32.3 M	35.5 M	52.2 M	214 M	49 M	38.2 M
Copper	<1.4 mg/kg	TM181		30 M	20 M	33.2 M	19 M	33.5 M	24.7 M
Iron	<1000 mg/kg	TM181		236000 #	22100 #	79700 #	170000 #	85300 #	84200 #
Lead	<0.7 mg/kg	TM181		362 M	127 M	102 M	59.5 M	78 M	71.2 M
Manganese	<0.13 mg/kg	TM181		8310 M	4410 M	4440 M	25900 M	5670 M	8710 M
Mercury	<0.1 mg/kg	TM181		6.12 M	3.73 M	2.36 M	<1 M	<1 M	<1 M
Nickel	<0.2 mg/kg	TM181		36.4 M	24.7 M	20.9 M	14.9 M	30.3 M	24.5 M
Selenium	<1 mg/kg	TM181		<10 #	<10 #	<10 #	17.9 #	<10 #	<10 #
Vanadium	<0.2 mg/kg	TM181		172 #	79.1 #	131 #	1430 #	137 #	77.9 #
Zinc	<1.9 mg/kg	TM181		831 M	245 M	144 M	152 M	172 M	172 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304			<0.001 #				
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304			<0.001 #				
Additional Asbestos Components (Using TM048)		TM304			None #				
Analysts Comments		TM304			0				
Asbestos Quantification - Total - %	<0.001 %	TM304			<0.001 #				

Validated

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W209B-3	W209B-4	W209C-1	W209C-2	W209C-3	W209C-4
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23748156	23748161	23748167	23748178	23748183	23748191
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		9.9	15	10	11	12	11
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 #	<12 M	<12 #	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 #	<0.01 M	<0.01 #	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	0.0222 #	<0.01 M	<0.01 #	0.0112 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 #	<0.015 M	<0.015 #	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 #	<0.035 M	<0.035 #	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		20.3 #	50.3 #	6.84 #	6.9 #	4.84 #	4.64 #
pH	1 pH Units	TM133		8.88 M	9.11 M	10 #	9.64 M	10.6 #	9.58 M
Cyanide, Total	<1 mg/kg	TM153		5.82 M	2.7 M	<1 #	4.41 M	<1 #	2.07 M
Arsenic	<0.6 mg/kg	TM181		<6 M	8.52 M	<6 #	8.2 M	9.58 #	<6 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	<0.2 M	<0.2 #	<0.2 M	0.212 #	<0.2 M
Chromium	<0.9 mg/kg	TM181		194 M	93.2 M	66.8 #	70 M	213 #	91 M
Copper	<1.4 mg/kg	TM181		24.7 M	21.9 M	<14 #	25.3 M	45.5 #	67.5 M
Iron	<1000 mg/kg	TM181		136000 #	80400 #	76600 #	84600 #	111000 #	58200 #
Lead	<0.7 mg/kg	TM181		79.6 M	72.2 M	67.7 #	202 M	125 #	64.1 M
Manganese	<0.13 mg/kg	TM181		18000 M	10600 M	6420 #	6890 M	20300 #	3960 M
Mercury	<0.1 mg/kg	TM181		<1 M	<1 M	<1 #	<1 M	<1 #	<1 M
Nickel	<0.2 mg/kg	TM181		15.4 M	22.4 M	12.1 #	29.1 M	20.4 #	27.9 M
Selenium	<1 mg/kg	TM181		14 #	<10 #	<10 #	<10 #	13.7 #	<10 #
Vanadium	<0.2 mg/kg	TM181		407 #	173 #	115 #	78.9 #	503 #	105 #
Zinc	<1.9 mg/kg	TM181		177 M	126 M	170 #	374 M	308 #	3020 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304						<0.001 #	
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304						<0.001 #	
Additional Asbestos Components (Using TM048)		TM304						None #	
Analysts Comments		TM304						0	
Asbestos Quantification - Total - %	<0.001 %	TM304						<0.001 #	

Validated

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SPDL-1	SPDL-2	SPDL-3	SPDL-4	SPJJ-1	SPJJ-2
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23748251	23747881	23747887	23747896	23748172	23748234
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		95.5	89.7	92.2	91.1	97.2	92.3
Acenaphthene-d10 % recovery**	%	TM218		96.4	83.7	93.2	92.9	91.6	96.4
Phenanthrene-d10 % recovery**	%	TM218		101	94.9	94.8	95	89.6	99.7
Chrysene-d12 % recovery**	%	TM218		77.1	91	82.4	78.4	80.6	83.2
Perylene-d12 % recovery**	%	TM218		77.3	85.2	84.1	78.1	78	84.6
Naphthalene	<9 µg/kg	TM218		5310 M	3440 M	5400 M	2610 M	78.7 M	52.8 M
Acenaphthylene	<12 µg/kg	TM218		1960 M	2340 M	1800 M	2530 M	65.7 M	54.6 M
Acenaphthene	<8 µg/kg	TM218		150 M	97.7 M	131 M	96.6 M	10.1 M	12.6 M
Fluorene	<10 µg/kg	TM218		288 M	319 M	294 M	316 M	34 M	28.3 M
Phenanthrene	<15 µg/kg	TM218		2120 M	3240 M	2770 M	2980 M	335 M	266 M
Anthracene	<16 µg/kg	TM218		794 M	1590 M	923 M	1440 M	129 M	72.7 M
Fluoranthene	<17 µg/kg	TM218		3250 M	6230 M	4590 M	5290 M	945 M	592 M
Pyrene	<15 µg/kg	TM218		2400 M	4590 M	3360 M	3840 M	685 M	486 M
Benz(a)anthracene	<14 µg/kg	TM218		1400 M	3030 M	2210 M	2430 M	453 M	286 M
Chrysene	<10 µg/kg	TM218		1550 M	3740 M	2020 M	2540 M	441 M	301 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		2890 M	5500 M	4370 M	4850 M	609 M	487 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		899 M	1700 M	1350 M	1480 M	175 M	168 M
Benzo(a)pyrene	<15 µg/kg	TM218		1740 M	3240 M	2590 M	2700 M	333 M	293 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		2660 M	4970 M	4340 M	4580 M	280 M	202 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		389 M	743 M	509 M	579 M	66.7 M	47.9 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		3530 M	5430 M	4430 M	4760 M	264 M	246 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		31300	50200	41100	43000	4900	3600

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SPJJ-3	SPJJ-4	SPLB-1	SPLB-2	SPLB-3	SPLB-4
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23748241	23748245	23747877	23747944	23748025	23748100
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		92	93	98.1	92.6	93.6	92.5
Acenaphthene-d10 % recovery**	%	TM218		88.1	84.3	93.9	94.1	96.8	96.1
Phenanthrene-d10 % recovery**	%	TM218		88.9	94.9	92.5	93.2	99.2	98.1
Chrysene-d12 % recovery**	%	TM218		84.2	94.3	84.2	83	81.8	79
Perylene-d12 % recovery**	%	TM218		86.4	91.6	83	83.3	82.9	80
Naphthalene	<9 µg/kg	TM218		95.9 M	81.2 M	540 M	92.8 M	588 M	334 M
Acenaphthylene	<12 µg/kg	TM218		80.7 M	83.5 M	164 M	32.8 M	211 M	158 M
Acenaphthene	<8 µg/kg	TM218		10.1 M	<8 M	37.2 M	<8 M	39.3 M	37.1 M
Fluorene	<10 µg/kg	TM218		33.3 M	41.3 M	150 M	40.1 M	166 M	109 M
Phenanthrene	<15 µg/kg	TM218		366 M	402 M	658 M	205 M	928 M	560 M
Anthracene	<16 µg/kg	TM218		110 M	111 M	289 M	64.1 M	292 M	401 M
Fluoranthene	<17 µg/kg	TM218		1170 M	1100 M	1050 M	250 M	1670 M	1250 M
Pyrene	<15 µg/kg	TM218		913 M	837 M	768 M	179 M	1220 M	967 M
Benz(a)anthracene	<14 µg/kg	TM218		520 M	524 M	477 M	109 M	694 M	572 M
Chrysene	<10 µg/kg	TM218		476 M	543 M	505 M	92.5 M	703 M	794 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		755 M	790 M	732 M	143 M	1040 M	977 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		287 M	254 M	235 M	42.7 M	316 M	325 M
Benzo(a)pyrene	<15 µg/kg	TM218		474 M	466 M	421 M	85.8 M	621 M	569 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		367 M	406 M	354 M	65.3 M	444 M	383 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		60.2 M	81 M	82.7 M	<23 M	91.2 M	83.1 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		365 M	388 M	341 M	63.5 M	465 M	428 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		6080	6110	6810	1460	9490	7950

Validated

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W35-1	W35-2	W35-3	W35-4	W35-5	W35-6
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23747902	23747909	23747914	23747921	23747924	23747930
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		93.4	96.9	97.4	93	92.6	87.7
Acenaphthene-d10 % recovery**	%	TM218		97.3	93.9	93.8	100	93.2	89.4
Phenanthrene-d10 % recovery**	%	TM218		97.6	95.3	90.2	104	94.9	91.1
Chrysene-d12 % recovery**	%	TM218		78.4	84.8	80.6	82.9	83.2	87.3
Perylene-d12 % recovery**	%	TM218		75.8	80.8	77.5	85.7	84.6	79.4
Naphthalene	<9 µg/kg	TM218		1500 M	435 M	<90 M	1470 M	285 M	84.7 M
Acenaphthylene	<12 µg/kg	TM218		89.1 M	97.8 M	<120 M	188 M	97.4 M	<60 M
Acenaphthene	<8 µg/kg	TM218		359 M	115 M	<80 M	449 M	71.1 M	<40 M
Fluorene	<10 µg/kg	TM218		265 M	83 M	<100 M	374 M	70.5 M	<50 M
Phenanthrene	<15 µg/kg	TM218		3430 M	1670 M	290 M	5160 M	1340 M	315 M
Anthracene	<16 µg/kg	TM218		620 M	351 M	<160 M	1290 M	387 M	101 M
Fluoranthene	<17 µg/kg	TM218		3760 M	3420 M	603 M	7050 M	2770 M	1080 M
Pyrene	<15 µg/kg	TM218		3170 M	3200 M	488 M	5960 M	2370 M	893 M
Benz(a)anthracene	<14 µg/kg	TM218		1670 M	2270 M	316 M	3470 M	1690 M	616 M
Chrysene	<10 µg/kg	TM218		1830 M	2600 M	354 M	3590 M	1740 M	737 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		2430 M	3650 M	569 M	4460 M	2630 M	1150 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		705 M	1240 M	172 M	1430 M	883 M	378 M
Benzo(a)pyrene	<15 µg/kg	TM218		1430 M	2300 M	325 M	2980 M	1690 M	590 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		827 M	1740 M	348 M	1800 M	1440 M	628 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		204 M	420 M	<230 M	359 M	242 M	<115 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		1030 M	1800 M	361 M	1910 M	1300 M	547 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		23300	25400	3830	41900	19000	7130

Validated

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W129-1	W129-2	W131-1	W131-2	W131-3	W131-4
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23748130	23748135	23747982	23747988	23748000	23748009
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		92.7	93.2	89.6	92.8	90.2	97.1
Acenaphthene-d10 % recovery**	%	TM218		94.9	89.8	87.7	95.6	89	95.5
Phenanthrene-d10 % recovery**	%	TM218		95.9	90.4	90.6	97.5	90.2	95.4
Chrysene-d12 % recovery**	%	TM218		79.4	82.6	88.4	97.4	76.5	79.7
Perylene-d12 % recovery**	%	TM218		78.5	75.3	86	93.3	70.9	76.5
Naphthalene	<9 µg/kg	TM218		299 M	234 M	100 M	95 M	48.5 M	44.9 M
Acenaphthylene	<12 µg/kg	TM218		116 M	159 M	136 M	45.8 M	16.2 M	52 M
Acenaphthene	<8 µg/kg	TM218		248 M	42 M	26 M	11.7 M	<8 M	12 M
Fluorene	<10 µg/kg	TM218		157 M	82.6 M	290 M	19 M	14 M	20 M
Phenanthrene	<15 µg/kg	TM218		1610 M	976 M	1260 M	204 M	138 M	183 M
Anthracene	<16 µg/kg	TM218		430 M	271 M	261 M	49.8 M	28.2 M	<16 M
Fluoranthene	<17 µg/kg	TM218		2400 M	2060 M	1360 M	452 M	177 M	438 M
Pyrene	<15 µg/kg	TM218		2060 M	1560 M	834 M	389 M	137 M	380 M
Benz(a)anthracene	<14 µg/kg	TM218		1140 M	956 M	471 M	285 M	91.3 M	237 M
Chrysene	<10 µg/kg	TM218		1150 M	1000 M	425 M	324 M	108 M	271 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		1610 M	1270 M	570 M	546 M	144 M	447 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		509 M	460 M	209 M	173 M	44.5 M	111 M
Benzo(a)pyrene	<15 µg/kg	TM218		1120 M	766 M	328 M	322 M	73.7 M	246 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		635 M	591 M	262 M	291 M	70.5 M	224 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		130 M	135 M	46.7 M	58.4 M	<23 M	<23 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		727 M	548 M	231 M	281 M	68.6 M	236 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		14300	11100	6810	3550	1160	2900

Validated

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W156-1	W156-2	W156-3	W156-4	W156-5	W156-6
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23748017	23748032	23748046	23748052	23748060	23748067
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		91.6	94	92.3	91.6	92.6	91.7
Acenaphthene-d10 % recovery**	%	TM218		93.1	89.9	94.2	90.2	93.4	88.4
Phenanthrene-d10 % recovery**	%	TM218		95.5	90.2	96	93.3	89.8	87.2
Chrysene-d12 % recovery**	%	TM218		79.1	78.7	82.9	81.5	78.6	79.6
Perylene-d12 % recovery**	%	TM218		79.9	70.3	82.4	72.4	78.8	77.7
Naphthalene	<9 µg/kg	TM218		358 M	3270 M	3630 M	3200 M	5690 M	553 M
Acenaphthylene	<12 µg/kg	TM218		42.9 M	50.9 M	366 M	758 M	5810 M	76 M
Acenaphthene	<8 µg/kg	TM218		109 M	16.7 M	53.3 M	78.3 M	364 M	135 M
Fluorene	<10 µg/kg	TM218		64.6 M	39.2 M	220 M	440 M	7260 M	92.2 M
Phenanthrene	<15 µg/kg	TM218		986 M	294 M	1470 M	7030 M	102000 M	1280 M
Anthracene	<16 µg/kg	TM218		202 M	64.6 M	368 M	2670 M	41600 M	274 M
Fluoranthene	<17 µg/kg	TM218		1970 M	383 M	2240 M	14100 M	139000 M	2540 M
Pyrene	<15 µg/kg	TM218		1910 M	323 M	1630 M	10600 M	102000 M	2370 M
Benz(a)anthracene	<14 µg/kg	TM218		1200 M	174 M	885 M	4440 M	37900 M	1430 M
Chrysene	<10 µg/kg	TM218		1240 M	171 M	785 M	4910 M	40800 M	1490 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		1920 M	284 M	1250 M	6280 M	51200 M	2240 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		725 M	89.1 M	412 M	2060 M	15100 M	839 M
Benzo(a)pyrene	<15 µg/kg	TM218		1500 M	172 M	847 M	4120 M	34400 M	1590 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		879 M	149 M	711 M	3530 M	30800 M	1200 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		162 M	32.1 M	110 M	648 M	4020 M	236 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		1010 M	163 M	639 M	3490 M	27100 M	1180 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		14300	5680	15600	68400	645000	17500

Validated

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W156-7	W156-8	W156-9	W206-1	W206-2	W206-3
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23748072	23748077	23748084	23748094	23748105	23748115
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		87.9	92.3	92.1	93.6	91.4	93.3
Acenaphthene-d10 % recovery**	%	TM218		86.8	96.5	96.8	90.5	92.4	93.2
Phenanthrene-d10 % recovery**	%	TM218		91.2	100	98.4	90.9	91.6	94
Chrysene-d12 % recovery**	%	TM218		79	81.1	79.3	84	80.1	82.5
Perylene-d12 % recovery**	%	TM218		70.1	81.7	80.1	80.9	75.5	82.3
Naphthalene	<9 µg/kg	TM218		4410 M	2520 M	2940 M	246 M	892 M	271 M
Acenaphthylene	<12 µg/kg	TM218		65.5 M	202 M	469 M	157 M	169 M	154 M
Acenaphthene	<8 µg/kg	TM218		30.7 M	35.2 M	90.3 M	19.3 M	125 M	21 M
Fluorene	<10 µg/kg	TM218		73.3 M	150 M	381 M	90.3 M	257 M	88.3 M
Phenanthrene	<15 µg/kg	TM218		503 M	945 M	2380 M	655 M	1570 M	717 M
Anthracene	<16 µg/kg	TM218		135 M	234 M	674 M	213 M	309 M	218 M
Fluoranthene	<17 µg/kg	TM218		622 M	1400 M	3650 M	1580 M	1880 M	1700 M
Pyrene	<15 µg/kg	TM218		577 M	1080 M	3030 M	1140 M	1430 M	1240 M
Benz(a)anthracene	<14 µg/kg	TM218		248 M	492 M	1510 M	686 M	857 M	743 M
Chrysene	<10 µg/kg	TM218		241 M	481 M	1540 M	675 M	876 M	631 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		392 M	718 M	2380 M	960 M	1200 M	1080 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		103 M	239 M	714 M	297 M	397 M	329 M
Benzo(a)pyrene	<15 µg/kg	TM218		215 M	443 M	1460 M	556 M	689 M	631 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		171 M	273 M	1040 M	430 M	491 M	514 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		29.3 M	63 M	209 M	106 M	149 M	89 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		172 M	318 M	1160 M	424 M	515 M	442 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		7980	9590	23600	8240	11800	8870

Validated

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W206-4	W208-1	W208-2	W209-1	W209-2	W209-3
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23748120	23748200	23748230	23747937	23747950	23747954
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		91.1	92.4	95.2	95.1	92.7	89.8
Acenaphthene-d10 % recovery**	%	TM218		92	93.9	91.6	96.9	92.5	92.9
Phenanthrene-d10 % recovery**	%	TM218		91.1	94.2	92.2	98.2	92.5	89.2
Chrysene-d12 % recovery**	%	TM218		78.5	78	83.3	80.3	82.8	75.2
Perylene-d12 % recovery**	%	TM218		72.3	79.3	80.3	76.5	78.7	71.8
Naphthalene	<9 µg/kg	TM218		948 M	107 M	98.5 M	2770 M	1190 M	1320 M
Acenaphthylene	<12 µg/kg	TM218		197 M	83.6 M	76.1 M	4750 M	144 M	361 M
Acenaphthene	<8 µg/kg	TM218		153 M	19.2 M	21.9 M	452 M	61.7 M	63.1 M
Fluorene	<10 µg/kg	TM218		303 M	44.4 M	86.8 M	5140 M	118 M	321 M
Phenanthrene	<15 µg/kg	TM218		1990 M	318 M	530 M	17600 M	963 M	1920 M
Anthracene	<16 µg/kg	TM218		394 M	124 M	166 M	<16 M	307 M	419 M
Fluoranthene	<17 µg/kg	TM218		2920 M	799 M	835 M	24500 M	2010 M	2950 M
Pyrene	<15 µg/kg	TM218		2150 M	633 M	655 M	14900 M	1620 M	2220 M
Benz(a)anthracene	<14 µg/kg	TM218		1150 M	379 M	379 M	8920 M	1070 M	1400 M
Chrysene	<10 µg/kg	TM218		923 M	358 M	371 M	8600 M	941 M	1240 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		1490 M	577 M	533 M	10800 M	1740 M	2400 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		438 M	193 M	178 M	3240 M	561 M	701 M
Benzo(a)pyrene	<15 µg/kg	TM218		860 M	341 M	298 M	6770 M	1010 M	1380 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		596 M	219 M	245 M	5220 M	840 M	1150 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		150 M	49.5 M	60.3 M	284 M	211 M	275 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		534 M	258 M	230 M	4100 M	865 M	1140 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		15200	4500	4760	118000	13700	19300

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W209-4	W209-5	W209-6	W156-10	W209B-1	W209B-2
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23747961	23747966	23747973	23748089	23748142	23748146
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		93.3	95.7	90.2	93.1	86.4	94.5
Acenaphthene-d10 % recovery**	%	TM218		97.7	90.9	94.3	96.5	83.1	87.6
Phenanthrene-d10 % recovery**	%	TM218		99.8	83.7	90.7	98.7	83.1	87.6
Chrysene-d12 % recovery**	%	TM218		83.6	80.1	77.5	79.8	76.4	79
Perylene-d12 % recovery**	%	TM218		77.3	82.2	71.1	80.5	77.1	66.6
Naphthalene	<9 µg/kg	TM218		9190 M	2100 M	1340 M	4760 M	514 M	439 M
Acenaphthylene	<12 µg/kg	TM218		9760 M	291 M	293 M	1380 M	319 M	145 M
Acenaphthene	<8 µg/kg	TM218		623 M	55.2 M	58.9 M	155 M	30.6 M	32.6 M
Fluorene	<10 µg/kg	TM218		11300 M	157 M	161 M	869 M	151 M	130 M
Phenanthrene	<15 µg/kg	TM218		34300 M	843 M	1350 M	5110 M	1460 M	1120 M
Anthracene	<16 µg/kg	TM218		16800 M	296 M	388 M	2210 M	408 M	302 M
Fluoranthene	<17 µg/kg	TM218		34300 M	2060 M	2780 M	8730 M	2990 M	1800 M
Pyrene	<15 µg/kg	TM218		22800 M	1640 M	2210 M	8290 M	2230 M	1460 M
Benz(a)anthracene	<14 µg/kg	TM218		13300 M	1510 M	1470 M	3790 M	1360 M	955 M
Chrysene	<10 µg/kg	TM218		12100 M	1460 M	1300 M	3830 M	1360 M	1020 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		15500 M	2480 M	2820 M	5390 M	2230 M	1420 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		4020 M	773 M	810 M	1810 M	691 M	390 M
Benzo(a)pyrene	<15 µg/kg	TM218		9200 M	1680 M	1630 M	3110 M	1280 M	786 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		6840 M	1490 M	1410 M	2070 M	1130 M	654 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		389 M	257 M	315 M	423 M	175 M	162 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		5040 M	1350 M	1410 M	2260 M	1030 M	690 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		206000	18400	19800	54200	17400	11500

Validated

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W209B-3	W209B-4	W209C-1	W209C-2	W209C-3	W209C-4
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23748156	23748161	23748167	23748178	23748183	23748191
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		93.3	94.1	92.4	93.4	93.1	94.4
Acenaphthene-d10 % recovery**	%	TM218		94.9	94.7	95.2	95.8	93.2	94
Phenanthrene-d10 % recovery**	%	TM218		95.5	95.3	92.6	97.2	94	94
Chrysene-d12 % recovery**	%	TM218		77.9	74.2	82.1	80.4	80.3	79.7
Perylene-d12 % recovery**	%	TM218		75.5	71	85	81	80.9	79.6
Naphthalene	<9 µg/kg	TM218		12200 M	522 M	1670 #	201 M	822 #	156 M
Acenaphthylene	<12 µg/kg	TM218		13200 M	219 M	3210 #	96.7 M	561 #	70.2 M
Acenaphthene	<8 µg/kg	TM218		822 M	48.8 M	565 #	23.9 M	43.4 #	19.9 M
Fluorene	<10 µg/kg	TM218		5120 M	177 M	5910 #	58.4 M	531 #	50.1 M
Phenanthrene	<15 µg/kg	TM218		52400 M	1540 M	25100 #	463 M	2450 #	295 M
Anthracene	<16 µg/kg	TM218		18500 M	392 M	10500 #	134 M	1590 #	123 M
Fluoranthene	<17 µg/kg	TM218		112000 M	2580 M	30900 #	942 M	4010 #	604 M
Pyrene	<15 µg/kg	TM218		82800 M	2070 M	18600 #	789 M	2960 #	478 M
Benz(a)anthracene	<14 µg/kg	TM218		51900 M	1420 M	9360 #	540 M	1490 #	303 M
Chrysene	<10 µg/kg	TM218		49000 M	1520 M	7280 #	595 M	1240 #	293 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		78500 M	2590 M	9440 #	957 M	1930 #	524 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		23300 M	545 M	3560 #	315 M	636 #	143 M
Benzo(a)pyrene	<15 µg/kg	TM218		45800 M	1440 M	6110 #	575 M	1120 #	290 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		44300 M	1320 M	4080 #	437 M	814 #	253 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		7770 M	310 M	774 #	87.5 M	195 #	49.2 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		38300 M	1370 M	3220 #	500 M	722 #	254 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		636000	18100	140000	6710	21100	3910

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SPDL-1	SPDL-2	SPDL-3	SPDL-4	SPJJ-1	SPJJ-2
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23748251	23747881	23747887	23747896	23748172	23748234
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		77.9	41 4	76.3	74.3	76.2	93.9
Aliphatics >C5-C6	<10 µg/kg	TM089		18.7	<10 4	<10	<10	<10	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		31.6	<10 4	10.4	25.5	<10	<10
Aliphatics >C8-C10	<10 µg/kg	TM089		58.5	<10 4	36	37.1	<10	<10
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		25600	3300	1430	2260	<1000	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414		756000	184000	101000	217000	<1000	2660
Aliphatics >C21-C35	<1000 µg/kg	TM414		154000	50000	9470	46300	3910	20200
Aliphatics >C35-C44	<1000 µg/kg	TM414		2350	<1000	<1000	<1000	<1000	4150
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		938000	238000	113000	266000	<5000	27200
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		1190000	596000	293000	522000	<10000	51800
Aromatics >EC5-EC7	<10 µg/kg	TM089		28.1	<10 4	39.4	13.9	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10 4	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		38.6	<10 4	24.4	24.4	<10	<10
Aromatics > EC10-EC12	<1000 µg/kg	TM414		9890	4920	5620	4580	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		9730	10800	6920	10500	<1000	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		31900	49100	71500	50400	1250	2590
Aromatics > EC21-EC35	<1000 µg/kg	TM414		168000	255000	78500	157000	3150	19400
Aromatics >EC35-EC44	<1000 µg/kg	TM414		28400	38000	18000	33900	<1000	2600
Aromatics > EC40-EC44	<1000 µg/kg	TM414		5120	6860	2730	6920	<1000	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		248000	358000	180000	256000	5450	24600
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		1190000	596000	293000	522000	<10000	51800
Total Aliphatics >C5-C10	<50 µg/kg	TM089		109	<50 4	<50	62.6	<50	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		66.7	<50 4	63.8	<50	<50	<50
GRO >C5-C10	<20 µg/kg	TM089		176	<20 4	63.8	62.6	<20	<20

Validated

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SPJJ-3	SPJJ-4	SPLB-1	SPLB-2	SPLB-3	SPLB-4
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23748241	23748245	23747877	23747944	23748025	23748100
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		75.3	83.9	84.2	104	89.3	63.5 4
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10 4
Aliphatics >C6-C8	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10 4
Aliphatics >C8-C10	<10 µg/kg	TM089		<10	16.5	<10	<10	<10	<10 4
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414		<1000	<1000	10000	<1000	1000	3640
Aliphatics >C21-C35	<1000 µg/kg	TM414		18400	3410	29900	4580	8670	8940
Aliphatics >C35-C44	<1000 µg/kg	TM414		2090	<1000	4090	<1000	<1000	<1000
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		22000	<5000	44300	<5000	10400	13500
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		48200	36500	82100	<10000	25300	24900
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10 4
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10 4
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10	10.6	<10	<10	<10	<10 4
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		2090	<1000	<1000	<1000	<1000	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		6150	7850	5720	<1000	2630	1200
Aromatics > EC21-EC35	<1000 µg/kg	TM414		16500	21800	28900	1950	10900	8960
Aromatics >EC35-EC44	<1000 µg/kg	TM414		1450	2040	2180	<1000	1040	<1000
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		26200	32700	37800	<5000	14900	11400
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		48200	32700	82100	<10000	25300	24900
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50	<50	<50	<50	<50	<50 4
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50	<50	<50	<50	<50 4
GRO >C5-C10	<20 µg/kg	TM089		<20	<20	<20	<20	<20	<20 4

Validated

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W35-1	W35-2	W35-3	W35-4	W35-5	W35-6
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23747902	23747909	23747914	23747921	23747924	23747930
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		30.1 4	80.4	73.5	35.3	97.6	76.9
Aliphatics >C5-C6	<10 µg/kg	TM089		15 4	<10	<10	13	<10	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		77.1 4	<10	<10	37.8	<10	<10
Aliphatics >C8-C10	<10 µg/kg	TM089		87.4 4	<10	<10	53.1	<10	<10
Aliphatics >C10-C12	<1000 µg/kg	TM414		2390	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		11400	2030	<1000	9280	1920	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414		27500	10200	4050	22400	8090	<1000
Aliphatics >C21-C35	<1000 µg/kg	TM414		72900	60700	14300	70600	51300	6090
Aliphatics >C35-C44	<1000 µg/kg	TM414		28300	21700	<1000	15700	16600	<1000
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		142000	94700	19100	119000	78000	7250
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		233000	157000	90700	240000	139000	57900
Aromatics >EC5-EC7	<10 µg/kg	TM089		24.2 4	<10	<10	28.3	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		26.5 4	<10	<10	28.3	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		58.7 4	<10	<10	35.4	<10	<10
Aromatics > EC10-EC12	<1000 µg/kg	TM414		1870	<1000	<1000	1360	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		8670	<1000	<1000	4890	<1000	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		22600	7560	2710	29000	8470	1690
Aromatics > EC21-EC35	<1000 µg/kg	TM414		53600	48000	46700	78200	46900	32700
Aromatics >EC35-EC44	<1000 µg/kg	TM414		3360	5950	22000	7870	5160	16200
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	1740	1190	<1000	4860
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		90100	62000	71600	121000	61300	50700
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		233000	157000	90700	240000	139000	57900
Total Aliphatics >C5-C10	<50 µg/kg	TM089		179 4	<50	<50	104	<50	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		109 4	<50	<50	92	<50	<50
GRO >C5-C10	<20 µg/kg	TM089		289 4	<20	<20	196	<20	<20

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W129-1	W129-2	W131-1	W131-2	W131-3	W131-4
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23748130	23748135	23747982	23747988	23748000	23748009
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		37.3 4	61.2 4	99.6	87.4	98.4	84.6
Aliphatics >C5-C6	<10 µg/kg	TM089		<10 4	<10 4	<10	<10	<10	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		<10 4	<10 4	<10	<10	<10	<10
Aliphatics >C8-C10	<10 µg/kg	TM089		<10 4	<10 4	<10	<10	<10	<10
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	1120	<1000	<1000	<1000	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414		1070	2080	<1000	5430	<1000	6960
Aliphatics >C21-C35	<1000 µg/kg	TM414		6940	15400	12700	40400	10700	42600
Aliphatics >C35-C44	<1000 µg/kg	TM414		<1000	2220	3120	3960	2720	9790
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		8870	21400	16600	50000	14000	60400
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		32100	54500	34700	88700	41000	96100
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 4	<10 4	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 4	<10 4	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10 4	<10 4	<10	<10	<10	<10
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000	<1000	1280	3480	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		4390	5450	1250	3390	4600	2110
Aromatics > EC21-EC35	<1000 µg/kg	TM414		17300	23900	13500	28700	15100	28300
Aromatics >EC35-EC44	<1000 µg/kg	TM414		<1000	2570	3380	5290	3850	4800
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	<1000	1170	<1000	1880
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		23300	33100	18100	38600	27000	35800
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		32100	54500	34700	88700	41000	96100
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50 4	<50 4	<50	<50	<50	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 4	<50 4	<50	<50	<50	<50
GRO >C5-C10	<20 µg/kg	TM089		<20 4	<20 4	<20	<20	<20	<20

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W156-1	W156-2	W156-3	W156-4	W156-5	W156-6
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23748017	23748032	23748046	23748052	23748060	23748067
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		99.9	115	73.8	79.5	84.7	96.7
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	<10	<10	<10	12.5	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		<10	17.6	<10	<10	51.3	<10
Aliphatics >C8-C10	<10 µg/kg	TM089		<10	28.1	<10	<10	73	<10
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		1190	<1000	1780	13200	13800	1710
Aliphatics >C16-C21	<1000 µg/kg	TM414		11900	16100	14000	119000	369000	12100
Aliphatics >C21-C35	<1000 µg/kg	TM414		61300	46900	57700	142000	147000	95700
Aliphatics >C35-C44	<1000 µg/kg	TM414		27600	11400	21800	40800	15300	54400
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		102000	75100	95200	314000	546000	164000
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		142000	117000	136000	379000	1680000	312000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10	18.7	<10	<10	49	<10
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	5600	2950	4340	14800	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000	<1000	1510	55600	1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		5390	3270	6880	13000	436000	24900
Aromatics > EC21-EC35	<1000 µg/kg	TM414		30400	27000	29000	42200	557000	105000
Aromatics >EC35-EC44	<1000 µg/kg	TM414		3510	6220	1980	3490	71400	16200
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	1200	<1000	<1000	14700	3740
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		39800	42100	41100	64500	1140000	148000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		142000	117000	136000	379000	1680000	312000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50	<50	<50	<50	137	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50	<50	<50	<50	<50
GRO >C5-C10	<20 µg/kg	TM089		<20	<20	<20	<20	137	<20

Validated

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W156-7	W156-8	W156-9	W206-1	W206-2	W206-3
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23748072	23748077	23748084	23748094	23748105	23748115
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		86.6	102	83.8	58 4	19.1 4	100
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	<10	<10	<10 4	15.2 4	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		<10	13.4	<10	<10 4	62 4	16.8
Aliphatics >C8-C10	<10 µg/kg	TM089		<10	30.5	<10	<10 4	39.8 4	20.2
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	1130	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	5880	5580	<1000	4200	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414		28800	42800	91800	<1000	13800	3880
Aliphatics >C21-C35	<1000 µg/kg	TM414		61000	99800	93700	10700	22700	24200
Aliphatics >C35-C44	<1000 µg/kg	TM414		17100	38100	31300	1560	3750	4960
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		108000	187000	222000	13300	45600	33500
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		136000	254000	298000	86400	91900	69900
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10	<10	<10 4	<10 4	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10	<10	<10 4	<10 4	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10	20.7	<10	<10 4	26.9 4	13.4
Aromatics > EC10-EC12	<1000 µg/kg	TM414		4610	7920	2820	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	1550	1030	<1000	5150	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		2960	10900	17500	18500	11600	6500
Aromatics > EC21-EC35	<1000 µg/kg	TM414		19400	44300	48300	48300	27100	27600
Aromatics >EC35-EC44	<1000 µg/kg	TM414		1110	2270	6230	5000	1820	1650
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		28100	67000	75900	73100	46300	36400
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		136000	254000	298000	86400	92000	70000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50	<50	<50	<50 4	117 4	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50	<50	<50 4	<50 4	<50
GRO >C5-C10	<20 µg/kg	TM089		<20	<20	<20	<20 4	117 4	<20

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W206-4	W208-1	W208-2	W209-1	W209-2	W209-3
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23748120	23748200	23748230	23747937	23747950	23747954
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		14.7 4	104	118	99.3	94.3	88.5
Aliphatics >C5-C6	<10 µg/kg	TM089		<10 4	<10	<10	<10	39.8	20.9
Aliphatics >C6-C8	<10 µg/kg	TM089		41.5 4	27.6	37.2	<10	101	82.4
Aliphatics >C8-C10	<10 µg/kg	TM089		26.8 4	28.8	57.6	14.7	453	128
Aliphatics >C10-C12	<1000 µg/kg	TM414		2010	<1000	<1000	<1000	16900	7100
Aliphatics >C12-C16	<1000 µg/kg	TM414		6100	<1000	<1000	2910	50700	25100
Aliphatics >C16-C21	<1000 µg/kg	TM414		16400	<1000	<1000	29800	56900	60800
Aliphatics >C21-C35	<1000 µg/kg	TM414		29900	9550	5260	15100	71600	37600
Aliphatics >C35-C44	<1000 µg/kg	TM414		6330	2060	1560	4640	9010	5780
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		60800	12700	7220	52400	205000	136000
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		122000	22300	16100	1520000	372000	232000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 4	<10	<10	<10	23.4	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 4	<10	<10	<10	14	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		17.1 4	19.6	38.4	10.2	302	84.7
Aromatics > EC10-EC12	<1000 µg/kg	TM414		1250	<1000	<1000	9410	10100	4400
Aromatics > EC12-EC16	<1000 µg/kg	TM414		8900	<1000	<1000	160000	36900	11600
Aromatics > EC16-EC21	<1000 µg/kg	TM414		15500	1400	1440	526000	27800	15100
Aromatics > EC21-EC35	<1000 µg/kg	TM414		34300	7170	6470	664000	75900	55900
Aromatics >EC35-EC44	<1000 µg/kg	TM414		1370	<1000	<1000	113000	16200	8930
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	<1000	15900	4530	2210
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		61400	9630	8910	1470000	167000	96000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		122000	22400	16300	1520000	373000	233000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		68.3 4	56.4	94.8	<50	593	231
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 4	<50	<50	<50	339	84.7
GRO >C5-C10	<20 µg/kg	TM089		68.3 4	56.4	94.8	<20	932	316

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
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**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W209-4	W209-5	W209-6	W156-10	W209B-1	W209B-2
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23747961	23747966	23747973	23748089	23748142	23748146
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		78.5	98.2	79.4	78.1	48.1 4	35 4
Aliphatics >C5-C6	<10 µg/kg	TM089		12.8	22.5	19.2	23.5	<10 4	<10 4
Aliphatics >C6-C8	<10 µg/kg	TM089		24.4	69.7	28.3	45.9	<10 4	<10 4
Aliphatics >C8-C10	<10 µg/kg	TM089		30.2	279	87	73.9	<10 4	<10 4
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	28300	2910	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		13100	82600	22400	32600	1490	2090
Aliphatics >C16-C21	<1000 µg/kg	TM414		73900	84100	67000	447000	10600	12900
Aliphatics >C21-C35	<1000 µg/kg	TM414		31800	81900	44900	220000	27200	26000
Aliphatics >C35-C44	<1000 µg/kg	TM414		4710	9070	7750	30400	7180	3980
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		124000	286000	145000	730000	46400	45000
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		1150000	462000	281000	960000	160000	178000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	12.9	22.6	11.2	<10 4	<10 4
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10	11.3	15.7	<10 4	<10 4
Aromatics >EC8-EC10	<10 µg/kg	TM089		20.9	185	58.8	49.3	<10 4	<10 4
Aromatics > EC10-EC12	<1000 µg/kg	TM414		15300	14000	4910	5850	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		84700	50000	8980	10700	3880	4650
Aromatics > EC16-EC21	<1000 µg/kg	TM414		345000	35200	31300	71400	21600	26900
Aromatics > EC21-EC35	<1000 µg/kg	TM414		499000	57100	79700	116000	79700	91500
Aromatics >EC35-EC44	<1000 µg/kg	TM414		79300	20200	11500	25900	7370	9770
Aromatics > EC40-EC44	<1000 µg/kg	TM414		13300	6830	2810	8370	<1000	1220
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		1020000	176000	136000	230000	113000	133000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		1150000	463000	282000	961000	160000	178000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		67.3	371	134	143	<50 4	<50 4
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	198	92.7	76.2	<50 4	<50 4
GRO >C5-C10	<20 µg/kg	TM089		67.3	569	227	220	<20 4	<20 4

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W209B-3	W209B-4	W209C-1	W209C-2	W209C-3	W209C-4
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23748156	23748161	23748167	23748178	23748183	23748191
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		48.7 4	16.2 4	82.8	91.4	73.5	76
Aliphatics >C5-C6	<10 µg/kg	TM089		<10 4	33 4	<10	<10	11.4	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		21.1 4	155 4	13.3	17	18.2	12.3
Aliphatics >C8-C10	<10 µg/kg	TM089		26.6 4	117 4	34.4	35	41	22.4
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		1930	<1000	5590	2360	3550	1460
Aliphatics >C16-C21	<1000 µg/kg	TM414		12400	11100	9960	4870	11200	3720
Aliphatics >C21-C35	<1000 µg/kg	TM414		38000	25700	95300	27700	35400	18000
Aliphatics >C35-C44	<1000 µg/kg	TM414		10400	5070	97000	13900	30300	6520
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		62800	42800	208000	48800	80600	29900
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		356000	114000	340000	100000	290000	76600
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 4	<10 4	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 4	14.2 4	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		17.8 4	77.9 4	22.2	23.7	27.4	15.7
Aromatics > EC10-EC12	<1000 µg/kg	TM414		2350	<1000	1020	<1000	4930	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		9060	2780	13000	<1000	9740	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		80800	14000	27200	5480	63700	5040
Aromatics > EC21-EC35	<1000 µg/kg	TM414		184000	48800	86800	42100	120000	34000
Aromatics >EC35-EC44	<1000 µg/kg	TM414		17400	4700	3700	3260	10800	7380
Aromatics > EC40-EC44	<1000 µg/kg	TM414		2400	1570	<1000	1240	2840	1300
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		294000	70800	132000	51400	210000	46800
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		356000	114000	340000	100000	290000	76700
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50 4	304 4	<50	52	70.7	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 4	92 4	<50	<50	<50	<50
GRO >C5-C10	<20 µg/kg	TM089		<20 4	396 4	<20	52	70.7	<20

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SPDL-1	SPDL-2	SPDL-3	SPDL-4	SPJJ-1	SPJJ-2
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23748251	23747881	23747887	23747896	23748172	23748234
			AGS Reference						
Dibromofluoromethane**	%	TM116		106	101	110	102	109	109
Toluene-d8**	%	TM116		92.8	89.6	93.7	91.9	94.6	95.3
4-Bromofluorobenzene**	%	TM116		96.6	84.6	101	90.9	101	103
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		478 M	561 M	545 M	397 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SPJJ-3	SPJJ-4	SPLB-1	SPLB-2	SPLB-3	SPLB-4
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23748241	23748245	23747877	23747944	23748025	23748100
			AGS Reference						
Dibromofluoromethane**	%	TM116		111	108	106	109	108	105
Toluene-d8**	%	TM116		95.6	94	95.4	95.5	92.1	95.9
4-Bromofluorobenzene**	%	TM116		102	99.4	101	106	97.2	94.7
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 M	<260 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W35-1	W35-2	W35-3	W35-4	W35-5	W35-6
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021	16/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23747902	23747909	23747914	23747921	23747924	23747930
			AGS Reference						
Dibromofluoromethane**	%	TM116		97.3	105	109	93.5	110	110
Toluene-d8**	%	TM116		93.2	98.6	99.1	96.1	95.7	96.5
4-Bromofluorobenzene**	%	TM116		77.3	95.7	90.6	79.7	103	93
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	179 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 M	406 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W129-1	W129-2	W131-1	W131-2	W131-3	W131-4
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23748130	23748135	23747982	23747988	23748000	23748009
			AGS Reference						
Dibromofluoromethane**	%	TM116		104	104	111	107	105	107
Toluene-d8**	%	TM116		93.2	92.3	95.3	99.6	98.4	99.9
4-Bromofluorobenzene**	%	TM116		92.9	88.6	103	95.1	96.7	97.3
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 M	<260 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

Validated

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W156-1	W156-2	W156-3	W156-4	W156-5	W156-6
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23748017	23748032	23748046	23748052	23748060	23748067
			AGS Reference						
Dibromofluoromethane**	%	TM116		106	108	106	106	98.3	106
Toluene-d8**	%	TM116		93.8	94.1	101	99.6	93.9	94.8
4-Bromofluorobenzene**	%	TM116		105	102	94.9	93.1	82.2	106
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	489 M	1890 M	491 M	1760 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

Validated

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W156-7	W156-8	W156-9	W206-1	W206-2	W206-3
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23748072	23748077	23748084	23748094	23748105	23748115
			AGS Reference						
Dibromofluoromethane**	%	TM116		108	107	103	116	93.1	106
Toluene-d8**	%	TM116		98.3	97.6	97.9	94.7	86.6	95.5
4-Bromofluorobenzene**	%	TM116		92.1	97.3	93.9	101	74.1	103
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		517 M	583 M	376 M	<260 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W206-4	W208-1	W208-2	W209-1	W209-2	W209-3
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23748120	23748200	23748230	23747937	23747950	23747954
			AGS Reference						
Dibromofluoromethane**	%	TM116		96.4	104	107	110	106	106
Toluene-d8**	%	TM116		83.3	92.6	97.5	95.7	93.7	92.6
4-Bromofluorobenzene**	%	TM116		70.9	91.2	92.5	105	96.9	94.6
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		350 M	<260 M	<260 M	<260 M	619 M	569 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

Validated

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W209-4	W209-5	W209-6	W156-10	W209B-1	W209B-2
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23747961	23747966	23747973	23748089	23748142	23748146
			AGS Reference						
Dibromofluoromethane**	%	TM116		106	107	113	106	107	110
Toluene-d8**	%	TM116		99.5	94.4	94.4	100	92.4	91.4
4-Bromofluorobenzene**	%	TM116		97	93.6	95	91.7	87.6	86.9
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		581 M	386 M	381 M	43000 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

Validated

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W209B-3	W209B-4	W209C-1	W209C-2	W209C-3	W209C-4
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021	17/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
			SDG Ref	210218-32	210218-32	210218-32	210218-32	210218-32	210218-32
			Lab Sample No.(s)	23748156	23748161	23748167	23748178	23748183	23748191
			AGS Reference						
Dibromofluoromethane**	%	TM116		106	104	108	106	108	110
Toluene-d8**	%	TM116		93.6	97.1	93.8	97.9	97.5	94.8
4-Bromofluorobenzene**	%	TM116		94.7	84	100	89.1	87.7	101
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 #	<200 M	<200 #	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 #	<180 M	<180 #	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 #	<140 M	<140 #	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 #	<80 M	<80 #	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 #	<200 M	<200 #	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	621 #	<260 M	1560 #	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

Asbestos Identification - Solid Samples

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SPDL-1 0.20 - 0.20 SOLID 16/02/2021 00:00:00 18/02/2021 05:00:00 210218-32 23748251 TM048	25/02/2021	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SPDL-3 0.20 - 0.20 SOLID 16/02/2021 00:00:00 18/02/2021 05:00:00 210218-32 23747887 TM048	26/02/2021	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SPJJ-1 0.20 - 0.20 SOLID 16/02/2021 00:00:00 18/02/2021 05:00:00 210218-32 23748172 TM048	26/02/2021	Agnieszka Chelmowska	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SPJJ-3 0.20 - 0.20 SOLID 16/02/2021 00:00:00 18/02/2021 05:00:00 210218-32 23748241 TM048	26/02/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SPLB-1 0.20 - 0.20 SOLID 16/02/2021 00:00:00 18/02/2021 05:00:00 210218-32 23747877 TM048	26/02/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SPLB-3 0.20 - 0.20 SOLID 16/02/2021 00:00:00 18/02/2021 05:00:00 210218-32 23748025 TM048	26/02/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W35-1 0.20 - 0.20 SOLID 16/02/2021 00:00:00 18/02/2021 05:00:00 210218-32 23747902 TM048	25/02/2021	Agnieszka Chelmowska	Loose fibres in soil	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W35-3 0.20 - 0.20 SOLID 16/02/2021 00:00:00 18/02/2021 05:00:00 210218-32 23747914 TM048	25/02/2021	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W35-5 0.20 - 0.20 SOLID 16/02/2021 00:00:00 18/02/2021 05:00:00 210218-32 23747924 TM048	25/02/2021	Paul Poynton	Loose fibres in soil	Trace (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W129-1 0.20 - 0.20 SOLID 17/02/2021 00:00:00 18/02/2021 05:00:00 210218-32 23748130 TM048	26/02/2021	Marcin Magdziarek	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W131-1 0.20 - 0.20 SOLID 17/02/2021 00:00:00 18/02/2021 05:00:00 210218-32 23747982 TM048	26/02/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W131-3 0.20 - 0.20 SOLID 17/02/2021 00:00:00 18/02/2021 05:00:00 210218-32 23748000 TM048	26/02/2021	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W156-1 0.20 - 0.20 SOLID 17/02/2021 00:00:00 18/02/2021 05:00:00 210218-32 23748017 TM048	25/02/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W156-3 0.20 - 0.20 SOLID 17/02/2021 00:00:00 18/02/2021 05:00:00 210218-32 23748046 TM048	26/02/2021	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W156-5 0.20 - 0.20 SOLID 17/02/2021 00:00:00 18/02/2021 05:00:00 210218-32 23748060 TM048	26/02/2021	Agnieszka Chelmowska	Loose fibres in soil	Not Detected (#)	Trace (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W156-7 0.20 - 0.20 SOLID 17/02/2021 00:00:00 18/02/2021 05:00:00 210218-32 23748072 TM048	25/02/2021	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W156-9 0.20 - 0.20 SOLID 17/02/2021 00:00:00 18/02/2021 05:00:00 210218-32 23748084 TM048	25/02/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W206-1 0.20 - 0.20 SOLID 17/02/2021 00:00:00 18/02/2021 05:00:00 210218-32 23748094 TM048	25/02/2021	Agnieszka Chelmowska	Loose fibres in soil	Trace (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W206-3 0.20 - 0.20 SOLID 17/02/2021 00:00:00 18/02/2021 05:00:00 210218-32 23748115 TM048	26/02/2021	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W208-1 0.20 - 0.20 SOLID 17/02/2021 00:00:00 18/02/2021 05:00:00 210218-32 23748200 TM048	26/02/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W209-1 0.20 - 0.20 SOLID 17/02/2021 00:00:00 18/02/2021 05:00:00 210218-32 23747937 TM048	25/02/2021	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W209-3 0.20 - 0.20 SOLID 17/02/2021 00:00:00 18/02/2021 05:00:00 210218-32 23747954 TM048	25/02/2021	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W209-5 0.20 - 0.20 SOLID 17/02/2021 00:00:00 18/02/2021 05:00:00 210218-32 23747966 TM048	26/02/2021	Agnieszka Chelmowska	Loose fibres in soil	Not Detected (#)	Trace (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W209B-1 0.20 - 0.20 SOLID 17/02/2021 00:00:00 18/02/2021 05:00:00 210218-32 23748142 TM048	25/02/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W209B-3 0.20 - 0.20 SOLID 17/02/2021 00:00:00 18/02/2021 05:00:00 210218-32 23748156 TM048	26/02/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W209C-1 0.20 - 0.20 SOLID 17/02/2021 00:00:00 18/02/2021 05:00:00 210218-32 23748167 TM048	25/02/2021	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W209C-3 0.20 - 0.20 SOLID 17/02/2021 00:00:00 18/02/2021 05:00:00 210218-32 23748183 TM048	01/03/2021	Paul Poynton	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

Asbestos Quantification - Full

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

		Additional Asbestos Components	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM	Asbestos Quantification - Total - %
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SPJJ-1 0.20 - 0.20 SOLID 16/02/2021 00:00:00 18/02/2021 05:00:00 210218-32 23748172 TM304	None (#)	-	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W35-1 0.20 - 0.20 SOLID 16/02/2021 00:00:00 18/02/2021 05:00:00 210218-32 23747902 TM304	None (#)	N/a	<0.001 (#)	<0.001 (#)	0.0015 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W35-5 0.20 - 0.20 SOLID 16/02/2021 00:00:00 18/02/2021 05:00:00 210218-32 23747924 TM304	None (#)	-	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W129-1 0.20 - 0.20 SOLID 17/02/2021 00:00:00 18/02/2021 05:00:00 210218-32 23748130 TM304	None (#)	-	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W156-5 0.20 - 0.20 SOLID 17/02/2021 00:00:00 18/02/2021 05:00:00 210218-32 23748060 TM304	PCM analysis detected fibres typical of amphibole asbestos. (#)	N/A	0.0349 (#)	0.0038 (#)	0.0387 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W206-1 0.20 - 0.20 SOLID 17/02/2021 00:00:00 18/02/2021 05:00:00 210218-32 23748094 TM304	None (#)	-	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W209-5 0.20 - 0.20 SOLID 17/02/2021 00:00:00 18/02/2021 05:00:00 210218-32 23747966 TM304	None (#)	-	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W209C-3 0.20 - 0.20 SOLID 17/02/2021 00:00:00 18/02/2021 05:00:00 210218-32 23748183 TM304	None (#)	-	<0.001 (#)	<0.001 (#)	<0.001 (#)

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

Test Completion Dates

Lab Sample No(s)	23748251	23747881	23747887	23747896	23748172	23748234	23748241	23748245	23747877	23747944
Customer Sample Ref.	SPDL-1	SPDL-2	SPDL-3	SPDL-4	SPJJ-1	SPJJ-2	SPJJ-3	SPJJ-4	SPLB-1	SPLB-2
AGS Ref.										
Depth	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	01-Mar-2021	25-Feb-2021	01-Mar-2021	25-Feb-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021
Asbestos ID in Solid Samples	25-Feb-2021		26-Feb-2021		26-Feb-2021		26-Feb-2021		26-Feb-2021	
Asbestos Quantification - Full					05-Mar-2021					
Cyanide Comp/Free/Total/Thiocyanate	01-Mar-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021
EPH CWG GC (S)	24-Feb-2021	24-Feb-2021	24-Feb-2021	24-Feb-2021	24-Feb-2021	24-Feb-2021	24-Feb-2021	24-Feb-2021	24-Feb-2021	22-Feb-2021
GRO by GC-FID (S)	01-Mar-2021	01-Mar-2021	26-Feb-2021	26-Feb-2021	01-Mar-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021
Metals in solid samples by OES	01-Mar-2021	01-Mar-2021	25-Feb-2021	03-Mar-2021	01-Mar-2021	08-Mar-2021	01-Mar-2021	01-Mar-2021	25-Feb-2021	01-Mar-2021
PAH by GCMS	25-Feb-2021	25-Feb-2021	23-Feb-2021	23-Feb-2021	25-Feb-2021	25-Feb-2021	01-Mar-2021	25-Feb-2021	25-Feb-2021	26-Feb-2021
pH	22-Feb-2021	19-Feb-2021	23-Feb-2021	19-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021
Phenols by HPLC (S)	25-Feb-2021	23-Feb-2021	25-Feb-2021	23-Feb-2021	23-Feb-2021	25-Feb-2021	25-Feb-2021	23-Feb-2021	24-Feb-2021	24-Feb-2021
Sample description	19-Feb-2021	18-Feb-2021	19-Feb-2021	18-Feb-2021	18-Feb-2021	19-Feb-2021	19-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021
Total Organic Carbon	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021
TPH CWG GC (S)	01-Mar-2021	01-Mar-2021	26-Feb-2021	26-Feb-2021	01-Mar-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021
VOC MS (S)	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021

Lab Sample No(s)	23748025	23748100	23747902	23747909	23747914	23747921	23747924	23747930	23748130	23748135
Customer Sample Ref.	SPLB-3	SPLB-4	W35-1	W35-2	W35-3	W35-4	W35-5	W35-6	W129-1	W129-2
AGS Ref.										
Depth	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	01-Mar-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	25-Feb-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021
Asbestos ID in Solid Samples	26-Feb-2021		25-Feb-2021		25-Feb-2021		25-Feb-2021		26-Feb-2021	
Asbestos Quantification - Full			09-Mar-2021				05-Mar-2021		08-Mar-2021	
Cyanide Comp/Free/Total/Thiocyanate	24-Feb-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	26-Feb-2021	01-Mar-2021	26-Feb-2021	26-Feb-2021	01-Mar-2021	26-Feb-2021
EPH CWG GC (S)	24-Feb-2021	24-Feb-2021	24-Feb-2021	22-Feb-2021	24-Feb-2021	24-Feb-2021	22-Feb-2021	24-Feb-2021	24-Feb-2021	24-Feb-2021
GRO by GC-FID (S)	26-Feb-2021	01-Mar-2021	26-Feb-2021	26-Feb-2021	01-Mar-2021	01-Mar-2021	26-Feb-2021	26-Feb-2021	01-Mar-2021	01-Mar-2021
Metals in solid samples by OES	01-Mar-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	08-Mar-2021	01-Mar-2021	08-Mar-2021	01-Mar-2021
PAH by GCMS	25-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	23-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021
pH	23-Feb-2021	22-Feb-2021	23-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021
Phenols by HPLC (S)	25-Feb-2021	25-Feb-2021	25-Feb-2021	23-Feb-2021	23-Feb-2021	25-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021
Sample description	19-Feb-2021	19-Feb-2021	19-Feb-2021	18-Feb-2021	18-Feb-2021	19-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021
Total Organic Carbon	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021
TPH CWG GC (S)	26-Feb-2021	01-Mar-2021	26-Feb-2021	26-Feb-2021	01-Mar-2021	01-Mar-2021	26-Feb-2021	26-Feb-2021	01-Mar-2021	01-Mar-2021
VOC MS (S)	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021

Lab Sample No(s)	23747982	23747988	23748000	23748009	23748017	23748032	23748046	23748052	23748060	23748067
Customer Sample Ref.	W131-1	W131-2	W131-3	W131-4	W156-1	W156-2	W156-3	W156-4	W156-5	W156-6
AGS Ref.										
Depth	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	01-Mar-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021
Asbestos ID in Solid Samples	26-Feb-2021		26-Feb-2021		25-Feb-2021		26-Feb-2021		26-Feb-2021	
Asbestos Quantification - Full									08-Mar-2021	
Cyanide Comp/Free/Total/Thiocyanate	26-Feb-2021	26-Feb-2021	22-Feb-2021	01-Mar-2021	26-Feb-2021	26-Feb-2021	01-Mar-2021	01-Mar-2021	26-Feb-2021	26-Feb-2021
EPH CWG GC (S)	22-Feb-2021	22-Feb-2021	22-Feb-2021	24-Feb-2021	23-Feb-2021	22-Feb-2021	22-Feb-2021	24-Feb-2021	24-Feb-2021	24-Feb-2021
GRO by GC-FID (S)	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	01-Mar-2021	25-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021
Metals in solid samples by OES	25-Feb-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	02-Mar-2021	01-Mar-2021	01-Mar-2021	02-Mar-2021
PAH by GCMS	01-Mar-2021	25-Feb-2021	26-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	23-Feb-2021	26-Feb-2021	23-Feb-2021	25-Feb-2021
pH	19-Feb-2021	19-Feb-2021	19-Feb-2021	22-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021
Phenols by HPLC (S)	23-Feb-2021	25-Feb-2021	23-Feb-2021	25-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	25-Feb-2021	23-Feb-2021
Sample description	18-Feb-2021	18-Feb-2021	18-Feb-2021	19-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021
Total Organic Carbon	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021
TPH CWG GC (S)	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	01-Mar-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021
VOC MS (S)	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021

Validated

CERTIFICATE OF ANALYSIS

SDG:	210218-32	**Client Reference:**	P18-669	**Report Number:**	589805
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	589801

Lab Sample No(s)	23748072	23748077	23748084	23748094	23748105	23748115	23748120	23748200	23748230	23747937
Customer Sample Ref.	W156-7	W156-8	W156-9	W206-1	W206-2	W206-3	W206-4	W208-1	W208-2	W209-1
AGS Ref.										
Depth	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	01-Mar-2021	25-Feb-2021	01-Mar-2021	25-Feb-2021	25-Feb-2021	01-Mar-2021	25-Feb-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021
Asbestos ID in Solid Samples	25-Feb-2021		25-Feb-2021	25-Feb-2021		26-Feb-2021		26-Feb-2021		25-Feb-2021
Asbestos Quantification - Full				08-Mar-2021						
Cyanide Comp/Free/Total/Thiocyanate	01-Mar-2021	01-Mar-2021	01-Mar-2021	26-Feb-2021	01-Mar-2021	01-Mar-2021	26-Feb-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021
EPH CWG GC (S)	22-Feb-2021	24-Feb-2021	22-Feb-2021	24-Feb-2021	22-Feb-2021	23-Feb-2021	24-Feb-2021	22-Feb-2021	24-Feb-2021	24-Feb-2021
GRO by GC-FID (S)	26-Feb-2021	26-Feb-2021	26-Feb-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	26-Feb-2021	01-Mar-2021	26-Feb-2021
Metals in solid samples by OES	08-Mar-2021	01-Mar-2021	06-Mar-2021	01-Mar-2021	01-Mar-2021	02-Mar-2021	01-Mar-2021	02-Mar-2021	01-Mar-2021	01-Mar-2021
PAH by GCMS	01-Mar-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021	26-Feb-2021	23-Feb-2021	26-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021
pH	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	22-Feb-2021
Phenols by HPLC (S)	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	23-Feb-2021	25-Feb-2021	25-Feb-2021
Sample description	18-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021	19-Feb-2021	19-Feb-2021
Total Organic Carbon	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021
TPH CWG GC (S)	26-Feb-2021	26-Feb-2021	26-Feb-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	26-Feb-2021	01-Mar-2021	26-Feb-2021
VOC MS (S)	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021

Lab Sample No(s)	23747950	23747954	23747961	23747966	23747973	23748089	23748142	23748146	23748156	23748161
Customer Sample Ref.	W209-2	W209-3	W209-4	W209-5	W209-6	W156-10	W209B-1	W209B-2	W209B-3	W209B-4
AGS Ref.										
Depth	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	01-Mar-2021	01-Mar-2021	01-Mar-2021	23-Feb-2021	01-Mar-2021	01-Mar-2021	25-Feb-2021	25-Feb-2021	01-Mar-2021	25-Feb-2021
Asbestos ID in Solid Samples		25-Feb-2021		26-Feb-2021			25-Feb-2021		26-Feb-2021	
Asbestos Quantification - Full				05-Mar-2021						
Cyanide Comp/Free/Total/Thiocyanate	22-Feb-2021	01-Mar-2021	01-Mar-2021	22-Feb-2021	01-Mar-2021	01-Mar-2021	26-Feb-2021	01-Mar-2021	01-Mar-2021	26-Feb-2021
EPH CWG GC (S)	22-Feb-2021	24-Feb-2021	22-Feb-2021	22-Feb-2021	22-Feb-2021	24-Feb-2021	22-Feb-2021	22-Feb-2021	24-Feb-2021	24-Feb-2021
GRO by GC-FID (S)	01-Mar-2021	01-Mar-2021	25-Feb-2021	01-Mar-2021	26-Feb-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	26-Feb-2021
Metals in solid samples by OES	01-Mar-2021	01-Mar-2021	01-Mar-2021	08-Mar-2021	25-Feb-2021	01-Mar-2021	02-Mar-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021
PAH by GCMS	26-Feb-2021	26-Feb-2021	25-Feb-2021	24-Feb-2021	26-Feb-2021	25-Feb-2021	01-Mar-2021	01-Mar-2021	23-Feb-2021	25-Feb-2021
pH	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021	23-Feb-2021	19-Feb-2021
Phenols by HPLC (S)	23-Feb-2021	23-Feb-2021	23-Feb-2021	22-Feb-2021	23-Feb-2021	25-Feb-2021	23-Feb-2021	23-Feb-2021	25-Feb-2021	23-Feb-2021
Sample description	18-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021	19-Feb-2021	18-Feb-2021	18-Feb-2021	19-Feb-2021	18-Feb-2021
Total Organic Carbon	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	01-Mar-2021
TPH CWG GC (S)	01-Mar-2021	01-Mar-2021	26-Feb-2021	01-Mar-2021	26-Feb-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021	26-Feb-2021
VOC MS (S)	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021

Lab Sample No(s)	23748167	23748178	23748183	23748191
Customer Sample Ref.	W209C-1	W209C-2	W209C-3	W209C-4
AGS Ref.				
Depth	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	25-Feb-2021	01-Mar-2021	25-Feb-2021	01-Mar-2021
Asbestos ID in Solid Samples	25-Feb-2021		01-Mar-2021	
Asbestos Quantification - Full			08-Mar-2021	
Cyanide Comp/Free/Total/Thiocyanate	01-Mar-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021
EPH CWG GC (S)	22-Feb-2021	24-Feb-2021	24-Feb-2021	24-Feb-2021
GRO by GC-FID (S)	26-Feb-2021	01-Mar-2021	01-Mar-2021	26-Feb-2021
Metals in solid samples by OES	01-Mar-2021	02-Mar-2021	02-Mar-2021	25-Feb-2021
PAH by GCMS	26-Feb-2021	25-Feb-2021	25-Feb-2021	25-Feb-2021
pH	19-Feb-2021	19-Feb-2021	19-Feb-2021	19-Feb-2021
Phenols by HPLC (S)	23-Feb-2021	24-Feb-2021	23-Feb-2021	25-Feb-2021
Sample description	18-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021
Total Organic Carbon	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021
TPH CWG GC (S)	26-Feb-2021	01-Mar-2021	01-Mar-2021	26-Feb-2021
VOC MS (S)	26-Feb-2021	26-Feb-2021	26-Feb-2021	26-Feb-2021

Appendix General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

18. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Matrix interference**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**
§	**Sampled on date not provided**

19. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.
Standing Committee of Analysts, *The Quantification of Asbestos in Soil (2017).*

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Hawarden
Deeside
CH5 3US
Tel: (01244) 528700
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Website: www.alsenvironmental.co.uk

Rodgers Leask
Office 225
2430/2440
Aztec West
Almondsbury
Bristol
BS32 4QA

Attention: Elliot Thomas

CERTIFICATE OF ANALYSIS

Date of report Generation:	09 April 2021
Customer:	Rodgers Leask
Sample Delivery Group (SDG):	210324-144
Your Reference:	P18-669
Location:	Llanwern
Report No:	593424

This report has been revised and directly supersedes 592816 in its entirety.

We received 21 samples on Wednesday March 24, 2021 and 21 of these samples were scheduled for analysis which was completed on Friday April 09, 2021. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.
The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan

Operations Manager

CERTIFICATE OF ANALYSIS

SDG:	210324-144	**Client Reference:**	P18-669	**Report Number:**	593424
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	592816

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
23964586	3C-1		0.20 - 0.20	22/03/2021
23964593	3C-2		0.20 - 0.20	22/03/2021
23964598	3C-3		0.20 - 0.20	22/03/2021
23964430	3C-4		0.20 - 0.20	22/03/2021
23964434	3C-5		0.20 - 0.20	22/03/2021
23964455	3C-6		0.20 - 0.20	22/03/2021
23964462	3C-7		0.20 - 0.20	22/03/2021
23964549	R-128-1		0.20 - 0.20	22/03/2021
23964523	R-128-2		0.20 - 0.20	22/03/2021
23964561	R-129-1		0.20 - 0.20	22/03/2021
23964570	R-132-1		0.20 - 0.20	22/03/2021
23964426	W-178-1		0.20 - 0.20	22/03/2021
23964445	W-178-2		0.20 - 0.20	22/03/2021
23964470	W-178-3		0.20 - 0.20	22/03/2021
23964476	W-178-4		0.20 - 0.20	22/03/2021
23964483	W-178-5		0.20 - 0.20	22/03/2021
23964496	W-178-6		0.20 - 0.20	22/03/2021
23964509	W-178-7		0.20 - 0.20	22/03/2021
23964536	W-178-8		0.20 - 0.20	22/03/2021
23964574	W-199-1		0.20 - 0.20	22/03/2021
23964582	W-199-2		0.20 - 0.20	22/03/2021

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	210324-144	**Client Reference:**	P18-669	**Report Number:**	593424
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	592816

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			23964586		23964593		23964598		23964430		23964434		23964455		23964462		23964549				
Customer Sample Reference			3C-1		3C-2		3C-3		3C-4		3C-5		3C-6		3C-7		R-128-1				
AGS Reference																					
Depth (m)			0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20				
Container			1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 21		X		X			X		X			X		X			X		
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 11	X					X					X					X			X
Asbestos Quantification - Full	All	NDPs: 0 Tests: 1																			X
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 21		X		X			X		X			X		X			X		
EPH CWG GC (S)	All	NDPs: 0 Tests: 21		X		X			X		X			X		X			X		
GRO by GC-FID (S)	All	NDPs: 0 Tests: 21			X		X			X		X			X		X			X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 21		X		X			X		X			X		X			X		
PAH by GCMS	All	NDPs: 0 Tests: 21		X		X			X		X			X		X			X		
pH	All	NDPs: 0 Tests: 21		X		X			X		X			X		X			X		
Phenols by HPLC (S)	All	NDPs: 0 Tests: 21		X		X			X		X			X		X			X		
Sample description	All	NDPs: 0 Tests: 21		X		X			X		X			X		X			X		
Total Organic Carbon	All	NDPs: 0 Tests: 21		X		X			X		X			X		X			X		
TPH CWG GC (S)	All	NDPs: 0 Tests: 21		X		X			X		X			X		X			X		
VOC MS (S)	All	NDPs: 0 Tests: 21			X		X			X		X			X		X			X	

23964483	W-178-5		0.20 - 0.20	250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X					
				1kg TUB with Handle (ALE260)	S		X																
23964476	W-178-4		0.20 - 0.20	60g VOC (ALE215)	S						X												X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X					
23964470	W-178-3		0.20 - 0.20	60g VOC (ALE215)	S						X												X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X					
				1kg TUB with Handle (ALE260)	S		X																
23964445	W-178-2		0.20 - 0.20	60g VOC (ALE215)	S						X												X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X					
23964426	W-178-1		0.20 - 0.20	60g VOC (ALE215)	S						X												X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X					
				1kg TUB with Handle (ALE260)	S		X																
23964570	R-132-1		0.20 - 0.20	60g VOC (ALE215)	S						X												X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X					
23964561	R-129-1		0.20 - 0.20	60g VOC (ALE215)	S						X												X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X					
				1kg TUB with Handle (ALE260)	S		X																
23964523	R-128-2		0.20 - 0.20	60g VOC (ALE215)	S						X												X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X					
23964549	R-128-1		0.20 - 0.20	60g VOC (ALE215)	S						X												X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X					

CERTIFICATE OF ANALYSIS

SDG:	210324-144	**Client Reference:**	P18-669	**Report Number:**	593424
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	592816

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			23964483	23964496	23964509		23964536		23964574		23964582		
Customer Sample Reference			W-178-5	W-178-6	W-178-7		W-178-8		W-199-1		W-199-2		
AGS Reference													
Depth (m)			0.20 - 0.20	0.20 - 0.20	0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		
Container			60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 21		X			X		X			X		X	
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 11				X					X				
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 21		X			X		X			X		X	
EPH CWG GC (S)	All	NDPs: 0 Tests: 21		X			X		X			X		X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 21	X		X			X		X			X		X
Metals in solid samples by OES	All	NDPs: 0 Tests: 21		X			X		X			X		X	
PAH by GCMS	All	NDPs: 0 Tests: 21		X			X		X			X		X	
pH	All	NDPs: 0 Tests: 21		X			X		X			X		X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 21		X			X		X			X		X	
Sample description	All	NDPs: 0 Tests: 21		X			X		X			X		X	
Total Organic Carbon	All	NDPs: 0 Tests: 21		X			X		X			X		X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 21		X			X		X			X		X	
VOC MS (S)	All	NDPs: 0 Tests: 21	X		X			X		X			X		X

CERTIFICATE OF ANALYSIS

SDG:	210324-144	**Client Reference:**	P18-669	**Report Number:**	593424
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	592816

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
23964586	3C-1	0.20 - 0.20	Black	Loamy Sand	Stones	Vegetation
23964593	3C-2	0.20 - 0.20	Black	Loamy Sand	Stones	None
23964598	3C-3	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	Brick
23964430	3C-4	0.20 - 0.20	Black	Loamy Sand	Stones	Vegetation
23964434	3C-5	0.20 - 0.20	Black	Loamy Sand	Stones	None
23964455	3C-6	0.20 - 0.20	White	Loamy Sand	Vegetation	Brick
23964462	3C-7	0.20 - 0.20	Orange	Loamy Sand	Stones	Brick
23964549	R-128-1	0.20 - 0.20	Black	Loamy Sand	Stones	Brick
23964523	R-128-2	0.20 - 0.20	Light Brown	Sandy Loam	Stones	Vegetation
23964561	R-129-1	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	Brick
23964570	R-132-1	0.20 - 0.20	Dark Brown	Sandy Clay	Stones	Brick
23964426	W-178-1	0.20 - 0.20	Dark Brown	Silt Loam	Stones	Vegetation
23964445	W-178-2	0.20 - 0.20	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23964470	W-178-3	0.20 - 0.20	Dark Brown	Sandy Silt Loam	Stones	Vegetation
23964476	W-178-4	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	Vegetation
23964483	W-178-5	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	Vegetation
23964496	W-178-6	0.20 - 0.20	Dark Brown	Sandy Clay Loam	Stones	None
23964509	W-178-7	0.20 - 0.20	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23964536	W-178-8	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	None
23964574	W-199-1	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	None
23964582	W-199-2	0.20 - 0.20	Black	Sandy Loam	Stones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

CERTIFICATE OF ANALYSIS

SDG:	210324-144	**Client Reference:**	P18-669	**Report Number:**	593424
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	592816

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-1	3C-2	3C-3	3C-4	3C-5	3C-6
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/03/2021	22/03/2021	22/03/2021	22/03/2021	22/03/2021	22/03/2021
			Sample Time	.	.	.	.	.	.
			Date Received	24/03/2021	24/03/2021	24/03/2021	24/03/2021	24/03/2021	24/03/2021
			SDG Ref	210324-144	210324-144	210324-144	210324-144	210324-144	210324-144
			Lab Sample No.(s)	23964586	23964593	23964598	23964430	23964434	23964455
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		12	13	10	9.2	12	13
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	16.4 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0113 M	<0.01 M	<0.01 M	0.011 M	0.0113 M	0.0115 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		25.9 #	42.9 #	20.2 #	28.4 #	31 #	27.4 #
pH	1 pH Units	TM133		8.98 M	10.7 M	9.24 M	9.61 M	9.78 M	9.54 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		5.38 M	8.49 M	7.74 M	7.69 M	7.19 M	7.8 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	<0.02 M	0.0611 M	0.529 M	0.46 M	0.551 M
Chromium	<0.9 mg/kg	TM181		351 M	145 M	192 M	180 M	300 M	381 M
Copper	<1.4 mg/kg	TM181		13.4 M	19.6 M	21.4 M	20.2 M	20.1 M	18.3 M
Iron	<1000 mg/kg	TM181		104000 #	30700 #	57500 #	47300 #	88500 #	99100 #
Lead	<0.7 mg/kg	TM181		28.6 M	21.8 M	24.3 M	86.5 M	113 M	114 M
Manganese	<0.13 mg/kg	TM181		21400 M	13900 M	14900 M	14900 M	18600 M	41900 M
Mercury	<0.1 mg/kg	TM181		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Nickel	<0.2 mg/kg	TM181		9.67 M	15.2 M	15.8 M	15.4 M	14 M	12.1 M
Selenium	<1 mg/kg	TM181		9.47 #	6.21 #	8.63 #	7.07 #	8.75 #	9.02 #
Vanadium	<0.2 mg/kg	TM181		304 #	158 #	185 #	204 #	274 #	298 #
Zinc	<1.9 mg/kg	TM181		115 M	88.4 M	51.4 M	416 M	633 M	602 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	210324-144	**Client Reference:**	P18-669	**Report Number:**	593424
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	592816

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-7	R-128-1	R-128-2	R-129-1	R-132-1	W-178-1
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/03/2021	22/03/2021	22/03/2021	22/03/2021	22/03/2021	22/03/2021
			Sample Time	.	.	.	.	.	.
			Date Received	24/03/2021	24/03/2021	24/03/2021	24/03/2021	24/03/2021	24/03/2021
			SDG Ref	210324-144	210324-144	210324-144	210324-144	210324-144	210324-144
			Lab Sample No.(s)	23964462	23964549	23964523	23964561	23964570	23964426
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		7.6	9.3	6.9	8.9	21	22
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		5.41 #	9.64 #	2.74 #	5.9 #	2.45 #	4.79 #
pH	1 pH Units	TM133		10.3 M	9.22 M	8.73 M	9.47 M	8.49 M	8.31 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	2.02 M	<1 M	<1 M	<1 M	1.61 M
Arsenic	<0.6 mg/kg	TM181		9.48 M	13.4 M	7.42 M	11.9 M	10.7 M	10.6 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	1.38 M	0.12 M	0.355 M	0.187 M	1.86 M
Chromium	<0.9 mg/kg	TM181		40.1 M	86.3 M	20.7 M	91.4 M	39.4 M	14.9 M
Copper	<1.4 mg/kg	TM181		18.9 M	32 M	8.4 M	23.3 M	12.6 M	26.5 M
Iron	<1000 mg/kg	TM181		89100 #	100000 #	18000 #	65200 #	36400 #	76400 #
Lead	<0.7 mg/kg	TM181		39.8 M	260 M	18.1 M	69.1 M	37.3 M	255 M
Manganese	<0.13 mg/kg	TM181		4580 M	8790 M	2390 M	8610 M	2440 M	2920 M
Mercury	<0.1 mg/kg	TM181		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Nickel	<0.2 mg/kg	TM181		23.3 M	27.9 M	10.4 M	17.7 M	23.4 M	23.3 M
Selenium	<1 mg/kg	TM181		1.09 #	3.08 #	3.81 #	4.77 #	1.18 #	<1 #
Vanadium	<0.2 mg/kg	TM181		144 #	205 #	54.3 #	205 #	64.2 #	58.9 #
Zinc	<1.9 mg/kg	TM181		93 M	1130 M	85.5 M	283 M	156 M	22900 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304			<0.001 #				
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304			<0.001 #				
Additional Asbestos Components (Using TM048)		TM304			None #				
Analysts Comments		TM304			N/A				
Asbestos Quantification - Total - %	<0.001 %	TM304			<0.001 #				

Validated

CERTIFICATE OF ANALYSIS

SDG:	210324-144	**Client Reference:**	P18-669	**Report Number:**	593424
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	592816

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W-178-2	W-178-3	W-178-4	W-178-5	W-178-6	W-178-7
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/03/2021	22/03/2021	22/03/2021	22/03/2021	22/03/2021	22/03/2021
			Sample Time	.	.	.	.	.	.
			Date Received	24/03/2021	24/03/2021	24/03/2021	24/03/2021	24/03/2021	24/03/2021
			SDG Ref	210324-144	210324-144	210324-144	210324-144	210324-144	210324-144
			Lab Sample No.(s)	23964445	23964470	23964476	23964483	23964496	23964509
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		17	23	11	10	11	12
Exchangeable Ammonia as N	<12 mg/kg	TM024		14.8 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	0.013 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	0.013 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	0.146 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	0.146 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		3.41 #	4.53 #	11.2 #	3.05 #	2.03 #	8.62 #
pH	1 pH Units	TM133		8.8 M	8.46 M	8.64 M	9.21 M	8.74 M	8.71 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	1.61 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		9.37 M	10 M	82.9 M	8.6 M	8.65 M	8.69 M
Cadmium	<0.02 mg/kg	TM181		1.02 M	1.53 M	0.374 M	<0.02 M	0.0779 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		92.2 M	46.6 M	179 M	199 M	79.1 M	78.3 M
Copper	<1.4 mg/kg	TM181		22 M	25.7 M	27.8 M	17.9 M	14 M	15.1 M
Iron	<1000 mg/kg	TM181		61800 #	76700 #	125000 #	182000 #	130000 #	137000 #
Lead	<0.7 mg/kg	TM181		170 M	206 M	66.6 M	19.7 M	54.8 M	28.9 M
Manganese	<0.13 mg/kg	TM181		5390 M	2500 M	26000 M	26000 M	5840 M	10900 M
Mercury	<0.1 mg/kg	TM181		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Nickel	<0.2 mg/kg	TM181		22.7 M	23.3 M	36.2 M	14 M	20.7 M	16.9 M
Selenium	<1 mg/kg	TM181		2.42 #	<1 #	16.5 #	6.27 #	<1 #	2.79 #
Vanadium	<0.2 mg/kg	TM181		95 #	54.7 #	463 #	693 #	146 #	219 #
Zinc	<1.9 mg/kg	TM181		642 M	784 M	250 M	67.7 M	245 M	110 M

CERTIFICATE OF ANALYSIS

SDG:	210324-144	**Client Reference:**	P18-669	**Report Number:**	593424
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	592816

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W-178-8	W-199-1	W-199-2			
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20			
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
			Date Sampled	22/03/2021	22/03/2021	22/03/2021			
			Sample Time	.	.	.			
			Date Received	24/03/2021	24/03/2021	24/03/2021			
			SDG Ref	210324-144	210324-144	210324-144			
			Lab Sample No.(s)	23964536	23964574	23964582			
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		12	8.3	14			
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M			
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M			
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M			
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M			
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M			
Soil Organic Matter (SOM)	<0.35 %	TM132		6.28 #	3.98 #	11.4 #			
pH	1 pH Units	TM133		9.01 M	9.09 M	9.87 M			
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	18.6 M			
Arsenic	<0.6 mg/kg	TM181		9.31 M	8.28 M	16.7 M			
Cadmium	<0.02 mg/kg	TM181		<0.02 M	<0.2 M	9.98 M			
Chromium	<0.9 mg/kg	TM181		226 M	189 M	272 M			
Copper	<1.4 mg/kg	TM181		15.8 M	28.3 M	60.6 M			
Iron	<1000 mg/kg	TM181		166000 #	206000 #	232000 #			
Lead	<0.7 mg/kg	TM181		24.8 M	68 M	1550 M			
Manganese	<0.13 mg/kg	TM181		22400 M	14600 M	19600 M			
Mercury	<0.1 mg/kg	TM181		<0.1 M	<1 M	<1 M			
Nickel	<0.2 mg/kg	TM181		14.9 M	25.3 M	38.2 M			
Selenium	<1 mg/kg	TM181		7.88 #	<10 #	<10 #			
Vanadium	<0.2 mg/kg	TM181		680 #	220 #	1090 #			
Zinc	<1.9 mg/kg	TM181		95.9 M	220 M	6570 M			

Validated

CERTIFICATE OF ANALYSIS

SDG:	210324-144	**Client Reference:**	P18-669	**Report Number:**	593424
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	592816

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-1	3C-2	3C-3	3C-4	3C-5	3C-6
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/03/2021	22/03/2021	22/03/2021	22/03/2021	22/03/2021	22/03/2021
			Sample Time	.	.	.	.	.	.
			Date Received	24/03/2021	24/03/2021	24/03/2021	24/03/2021	24/03/2021	24/03/2021
			SDG Ref	210324-144	210324-144	210324-144	210324-144	210324-144	210324-144
			Lab Sample No.(s)	23964586	23964593	23964598	23964430	23964434	23964455
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		84.9	81.1	91.6	90.3	89.8	87.7
Acenaphthene-d10 % recovery**	%	TM218		86.3	83	87.6	93.7	93	90.9
Phenanthrene-d10 % recovery**	%	TM218		86.4	89	100	98.3	100	97.3
Chrysene-d12 % recovery**	%	TM218		84.3	81.9	109	98.2	97.9	91.1
Perylene-d12 % recovery**	%	TM218		72	71.5	109	89.8	94.9	81.5
Naphthalene	<9 µg/kg	TM218		4060 M	1360 M	476 M	2870 M	993 M	2240 M
Acenaphthylene	<12 µg/kg	TM218		2930 M	467 M	125 M	1140 M	344 M	1040 M
Acenaphthene	<8 µg/kg	TM218		330 M	81.7 M	41.6 M	115 M	60.2 M	125 M
Fluorene	<10 µg/kg	TM218		5430 M	441 M	133 M	659 M	233 M	669 M
Phenanthrene	<15 µg/kg	TM218		30000 M	2720 M	986 M	4640 M	1470 M	4300 M
Anthracene	<16 µg/kg	TM218		17200 M	1110 M	283 M	1890 M	485 M	1460 M
Fluoranthene	<17 µg/kg	TM218		44900 M	6170 M	1460 M	9220 M	2600 M	9620 M
Pyrene	<15 µg/kg	TM218		29900 M	4420 M	1200 M	7090 M	1940 M	6760 M
Benz(a)anthracene	<14 µg/kg	TM218		16700 M	2800 M	928 M	4700 M	1310 M	4690 M
Chrysene	<10 µg/kg	TM218		14900 M	2630 M	1040 M	4940 M	1330 M	4500 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		19800 M	3380 M	1550 M	7420 M	2090 M	6590 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		6720 M	972 M	491 M	2510 M	641 M	2020 M
Benzo(a)pyrene	<15 µg/kg	TM218		12100 M	1870 M	961 M	4610 M	1180 M	3880 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		8730 M	1290 M	737 M	3640 M	1030 M	2960 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		1430 M	278 M	161 M	564 M	165 M	540 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		7480 M	1060 M	736 M	3370 M	958 M	2650 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		223000	31000	11300	59400	16800	54000

Validated

CERTIFICATE OF ANALYSIS

SDG:	210324-144	**Client Reference:**	P18-669	**Report Number:**	593424
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	592816

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-7	R-128-1	R-128-2	R-129-1	R-132-1	W-178-1
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/03/2021	22/03/2021	22/03/2021	22/03/2021	22/03/2021	22/03/2021
			Sample Time	.	.	.	.	.	.
			Date Received	24/03/2021	24/03/2021	24/03/2021	24/03/2021	24/03/2021	24/03/2021
			SDG Ref	210324-144	210324-144	210324-144	210324-144	210324-144	210324-144
			Lab Sample No.(s)	23964462	23964549	23964523	23964561	23964570	23964426
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		85	90.8	90.2	94.4	89.1	84.8
Acenaphthene-d10 % recovery**	%	TM218		83.8	93.3	92.3	96.1	89.9	86.1
Phenanthrene-d10 % recovery**	%	TM218		84.2	97.1	98.4	101	95.4	92.2
Chrysene-d12 % recovery**	%	TM218		78.1	97	96.5	98.2	91.2	89.4
Perylene-d12 % recovery**	%	TM218		75.2	93.8	92.1	94.9	87.6	85.7
Naphthalene	<9 µg/kg	TM218		87.1 M	190 M	38.2 M	2760 M	33.3 M	40 M
Acenaphthylene	<12 µg/kg	TM218		<60 M	233 M	14.2 M	644 M	<12 M	63.5 M
Acenaphthene	<8 µg/kg	TM218		<40 M	<80 M	25.3 M	53.2 M	<8 M	32.4 M
Fluorene	<10 µg/kg	TM218		<50 M	<100 M	26.1 M	198 M	<10 M	36.3 M
Phenanthrene	<15 µg/kg	TM218		256 M	1820 M	192 M	3040 M	79.1 M	400 M
Anthracene	<16 µg/kg	TM218		<80 M	402 M	60.2 M	888 M	22.2 M	117 M
Fluoranthene	<17 µg/kg	TM218		425 M	4140 M	271 M	2290 M	156 M	1280 M
Pyrene	<15 µg/kg	TM218		348 M	3100 M	237 M	1620 M	117 M	989 M
Benz(a)anthracene	<14 µg/kg	TM218		209 M	1680 M	218 M	693 M	84.5 M	664 M
Chrysene	<10 µg/kg	TM218		241 M	1890 M	224 M	759 M	91.4 M	759 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		351 M	2870 M	301 M	981 M	119 M	1200 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		111 M	829 M	99.6 M	303 M	36.8 M	282 M
Benzo(a)pyrene	<15 µg/kg	TM218		201 M	1530 M	181 M	550 M	63 M	626 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		161 M	1370 M	127 M	427 M	52.1 M	527 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		<115 M	<230 M	32.8 M	<115 M	<23 M	93.1 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		173 M	1350 M	122 M	428 M	47.8 M	509 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		2560	21400	2170	15600	902	7620

Validated

CERTIFICATE OF ANALYSIS

SDG:	210324-144	**Client Reference:**	P18-669	**Report Number:**	593424
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	592816

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W-178-2	W-178-3	W-178-4	W-178-5	W-178-6	W-178-7
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/03/2021	22/03/2021	22/03/2021	22/03/2021	22/03/2021	22/03/2021
			Sample Time	.	.	.	.	.	.
			Date Received	24/03/2021	24/03/2021	24/03/2021	24/03/2021	24/03/2021	24/03/2021
			SDG Ref	210324-144	210324-144	210324-144	210324-144	210324-144	210324-144
			Lab Sample No.(s)	23964445	23964470	23964476	23964483	23964496	23964509
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		78.3	84.2	85.7	77.8	88.6	81.1
Acenaphthene-d10 % recovery**	%	TM218		83.2	89	85.5	82.8	93.6	83.9
Phenanthrene-d10 % recovery**	%	TM218		94.5	89	96.8	87.1	93.7	93.2
Chrysene-d12 % recovery**	%	TM218		89.2	82.3	86.6	78.5	87.7	85.8
Perylene-d12 % recovery**	%	TM218		97.8	73.6	85.7	71.3	78.7	86.1
Naphthalene	<9 µg/kg	TM218		18.8 M	37 M	18.6 M	172 M	20.5 M	124 M
Acenaphthylene	<12 µg/kg	TM218		33 M	51.4 M	21.9 M	<120 M	21 M	35.5 M
Acenaphthene	<8 µg/kg	TM218		16.5 M	66.2 M	12.5 M	<80 M	12.9 M	28 M
Fluorene	<10 µg/kg	TM218		19.1 M	53.2 M	19.7 M	<100 M	12.1 M	25.8 M
Phenanthrene	<15 µg/kg	TM218		206 M	432 M	204 M	349 M	140 M	367 M
Anthracene	<16 µg/kg	TM218		52 M	83.2 M	43.4 M	<160 M	34.8 M	89.5 M
Fluoranthene	<17 µg/kg	TM218		601 M	1070 M	461 M	531 M	371 M	434 M
Pyrene	<15 µg/kg	TM218		479 M	832 M	373 M	432 M	292 M	385 M
Benz(a)anthracene	<14 µg/kg	TM218		345 M	561 M	227 M	304 M	194 M	297 M
Chrysene	<10 µg/kg	TM218		396 M	624 M	266 M	361 M	228 M	324 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		679 M	961 M	465 M	508 M	342 M	505 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		229 M	291 M	143 M	193 M	96.6 M	169 M
Benzo(a)pyrene	<15 µg/kg	TM218		382 M	516 M	230 M	306 M	182 M	317 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		368 M	489 M	221 M	271 M	187 M	231 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		69.8 M	101 M	47.8 M	<230 M	39.7 M	39.7 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		342 M	403 M	225 M	<240 M	162 M	227 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		4240	6570	2980	3430	2340	3600

CERTIFICATE OF ANALYSIS

SDG:	210324-144	**Client Reference:**	P18-669	**Report Number:**	593424
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	592816

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W-178-8	W-199-1	W-199-2			
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20			
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
			Date Sampled	22/03/2021	22/03/2021	22/03/2021			
			Sample Time	.	.	.			
			Date Received	24/03/2021	24/03/2021	24/03/2021			
			SDG Ref	210324-144	210324-144	210324-144			
			Lab Sample No.(s)	23964536	23964574	23964582			
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		85.2	86.3	91			
Acenaphthene-d10 % recovery**	%	TM218		89.8	89.1	89.9			
Phenanthrene-d10 % recovery**	%	TM218		89.7	96.5	92			
Chrysene-d12 % recovery**	%	TM218		80.7	94.5	72.4			
Perylene-d12 % recovery**	%	TM218		71	91.1	62.6			
Naphthalene	<9 µg/kg	TM218		193 M	115 M	71.4 M			
Acenaphthylene	<12 µg/kg	TM218		53.4 M	59.6 M	<12 M			
Acenaphthene	<8 µg/kg	TM218		20.7 M	17.7 M	47.8 M			
Fluorene	<10 µg/kg	TM218		34.9 M	34.6 M	44.6 M			
Phenanthrene	<15 µg/kg	TM218		401 M	373 M	459 M			
Anthracene	<16 µg/kg	TM218		77.8 M	102 M	103 M			
Fluoranthene	<17 µg/kg	TM218		560 M	648 M	704 M			
Pyrene	<15 µg/kg	TM218		429 M	529 M	813 M			
Benz(a)anthracene	<14 µg/kg	TM218		299 M	379 M	347 M			
Chrysene	<10 µg/kg	TM218		306 M	405 M	388 M			
Benzo(b)fluoranthene	<15 µg/kg	TM218		477 M	671 M	416 M			
Benzo(k)fluoranthene	<14 µg/kg	TM218		171 M	202 M	175 M			
Benzo(a)pyrene	<15 µg/kg	TM218		267 M	399 M	356 M			
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		273 M	338 M	295 M			
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		54.8 M	56.9 M	36.2 M			
Benzo(g,h,i)perylene	<24 µg/kg	TM218		244 M	340 M	277 M			
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		3860	4670	4530			

Validated

CERTIFICATE OF ANALYSIS

SDG:	210324-144	**Client Reference:**	P18-669	**Report Number:**	593424
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	592816

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-1	3C-2	3C-3	3C-4	3C-5	3C-6
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/03/2021	22/03/2021	22/03/2021	22/03/2021	22/03/2021	22/03/2021
			Sample Time	.	.	.	.	.	.
			Date Received	24/03/2021	24/03/2021	24/03/2021	24/03/2021	24/03/2021	24/03/2021
			SDG Ref	210324-144	210324-144	210324-144	210324-144	210324-144	210324-144
			Lab Sample No.(s)	23964586	23964593	23964598	23964430	23964434	23964455
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		38.2 4	21.9 4	20.8 4	30.3 4	36.4 4	28.3 4
Aliphatics >C5-C6	<10 µg/kg	TM089		<10 4	<10 4	<10 4	<10 4	10.2 4	<10 4
Aliphatics >C6-C8	<10 µg/kg	TM089		<10 4	<10 4	<10 4	<10 4	18.1 4	<10 4
Aliphatics >C8-C10	<10 µg/kg	TM089		<10 4	<10 4	<10 4	<10 4	13.6 4	<10 4
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	1220
Aliphatics >C12-C16	<1000 µg/kg	TM414		3700	1720	1920	2170	2630	3440
Aliphatics >C16-C21	<1000 µg/kg	TM414		24500	16300	9230	11100	12800	14200
Aliphatics >C21-C35	<1000 µg/kg	TM414		34400	24300	19700	27000	35300	39400
Aliphatics >C35-C44	<1000 µg/kg	TM414		10500	5010	2330	7310	9710	9760
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		73700	47300	33400	48100	61200	68100
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		459000	184000	66700	284000	251000	510000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 4	<10 4	<10 4	<10 4	<10 4	<10 4
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 4	<10 4	<10 4	<10 4	<10 4	<10 4
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10 4	<10 4	<10 4	<10 4	<10 4	<10 4
Aromatics > EC10-EC12	<1000 µg/kg	TM414		6530	2840	<1000	4040	3520	5380
Aromatics > EC12-EC16	<1000 µg/kg	TM414		11600	4060	2420	5920	5300	19300
Aromatics > EC16-EC21	<1000 µg/kg	TM414		95300	31800	7220	42700	39400	133000
Aromatics > EC21-EC35	<1000 µg/kg	TM414		239000	86700	21800	156000	122000	245000
Aromatics >EC35-EC44	<1000 µg/kg	TM414		32600	11400	<1000	27200	19200	38700
Aromatics > EC40-EC44	<1000 µg/kg	TM414		6130	1560	<1000	2890	2380	5420
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		385000	137000	33400	236000	189000	442000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		459000	184000	66700	284000	251000	510000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50 4	<50 4	<50 4	<50 4	<50 4	<50 4
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 4	<50 4	<50 4	<50 4	<50 4	<50 4
GRO >C5-C10	<20 µg/kg	TM089		<20 4	<20 4	<20 4	<20 4	<20 4	<20 4

Validated

CERTIFICATE OF ANALYSIS

SDG:	210324-144	**Client Reference:**	P18-669	**Report Number:**	593424
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	592816

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-7	R-128-1	R-128-2	R-129-1	R-132-1	W-178-1
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/03/2021	22/03/2021	22/03/2021	22/03/2021	22/03/2021	22/03/2021
			Sample Time	.	.	.	.	.	.
			Date Received	24/03/2021	24/03/2021	24/03/2021	24/03/2021	24/03/2021	24/03/2021
			SDG Ref	210324-144	210324-144	210324-144	210324-144	210324-144	210324-144
			Lab Sample No.(s)	23964462	23964549	23964523	23964561	23964570	23964426
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		89.8	75.7	93	55 4	81.1	89.4
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	<10	<10	<10 4	<10	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		<10	<10	<10	<10 4	<10	<10
Aliphatics >C8-C10	<10 µg/kg	TM089		<10	<10	<10	<10 4	<10	<10
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	<1000	<1000	1760	<1000	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414		1260	10800	<1000	12800	<1000	2530
Aliphatics >C21-C35	<1000 µg/kg	TM414		6660	46100	3200	30500	<1000	28600
Aliphatics >C35-C44	<1000 µg/kg	TM414		1310	18300	<1000	6990	<1000	4420
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		9270	76100	<5000	52400	<5000	35500
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		16900	206000	13600	116000	<10000	73300
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10	<10	<10 4	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10	<10	<10 4	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10	<10	<10	<10 4	<10	<10
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	1480	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	2530	1430	1580	<1000	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		1290	28300	1530	14200	<1000	3590
Aromatics > EC21-EC35	<1000 µg/kg	TM414		5350	87500	5580	43000	2020	27100
Aromatics >EC35-EC44	<1000 µg/kg	TM414		<1000	11100	<1000	3700	<1000	6890
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	1050	<1000	<1000	<1000	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		7640	130000	9540	63900	<5000	37700
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		16900	206000	<10000	116000	<10000	73300
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50	<50	<50	<50 4	<50	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50	<50	<50 4	<50	<50
GRO >C5-C10	<20 µg/kg	TM089		<20	<20	<20	<20 4	<20	<20

CERTIFICATE OF ANALYSIS

SDG:	210324-144	**Client Reference:**	P18-669	**Report Number:**	593424
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	592816

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W-178-2	W-178-3	W-178-4	W-178-5	W-178-6	W-178-7
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/03/2021	22/03/2021	22/03/2021	22/03/2021	22/03/2021	22/03/2021
			Sample Time	.	.	.	.	.	.
			Date Received	24/03/2021	24/03/2021	24/03/2021	24/03/2021	24/03/2021	24/03/2021
			SDG Ref	210324-144	210324-144	210324-144	210324-144	210324-144	210324-144
			Lab Sample No.(s)	23964445	23964470	23964476	23964483	23964496	23964509
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		93.2	120	127	55.6 4	123	62 4
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	<10	<10	<10 4	<10	<10 4
Aliphatics >C6-C8	<10 µg/kg	TM089		<10	<10	<10	<10 4	<10	<10 4
Aliphatics >C8-C10	<10 µg/kg	TM089		<10	<10	<10	<10 4	<10	<10 4
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414		1030	3270	<1000	5410	<1000	6550
Aliphatics >C21-C35	<1000 µg/kg	TM414		17200	38700	11300	32700	14100	28200
Aliphatics >C35-C44	<1000 µg/kg	TM414		2550	4230	1780	4960	2220	1610
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		20800	46200	13300	43900	16800	37400
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		42400	96000	32600	98300	42000	82700
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10	<10	<10 4	<10	<10 4
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10	<10	<10 4	<10	<10 4
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10	<10	<10	<10 4	<10	<10 4
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000	<1000	1310	<1000	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		2500	5370	1230	9360	1700	2930
Aromatics > EC21-EC35	<1000 µg/kg	TM414		17200	35400	16300	35800	20300	31500
Aromatics >EC35-EC44	<1000 µg/kg	TM414		1720	8800	1770	7520	3260	9960
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	<1000	1880	<1000	1840
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		21600	49800	19300	54300	25200	45300
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		42400	96000	32600	98300	42000	82700
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50	<50	<50	<50 4	<50	<50 4
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50	<50	<50 4	<50	<50 4
GRO >C5-C10	<20 µg/kg	TM089		<20	<20	<20	<20 4	<20	<20 4

Validated

CERTIFICATE OF ANALYSIS

SDG:	210324-144	**Client Reference:**	P18-669	**Report Number:**	593424
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	592816

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W-178-8	W-199-1	W-199-2
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/03/2021	22/03/2021	22/03/2021
			Sample Time	.	.	.
			Date Received	24/03/2021	24/03/2021	24/03/2021
			SDG Ref	210324-144	210324-144	210324-144
			Lab Sample No.(s)	23964536	23964574	23964582
			AGS Reference			
GRO Surrogate % recovery**	%	TM089		53.2 4	81.6	99.7
Aliphatics >C5-C6	<10 µg/kg	TM089		<10 4	<10	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		<10 4	<10	<10
Aliphatics >C8-C10	<10 µg/kg	TM089		<10 4	<10	<10
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		1520	<1000	2800
Aliphatics >C16-C21	<1000 µg/kg	TM414		9080	8410	22200
Aliphatics >C21-C35	<1000 µg/kg	TM414		47400	74300	90600
Aliphatics >C35-C44	<1000 µg/kg	TM414		6070	28800	29200
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		64300	112000	145000
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		113000	140000	179000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 4	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 4	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10 4	<10	<10
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		1160	<1000	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		3100	3590	4170
Aromatics > EC21-EC35	<1000 µg/kg	TM414		32800	23000	28800
Aromatics >EC35-EC44	<1000 µg/kg	TM414		11000	1560	1060
Aromatics > EC40-EC44	<1000 µg/kg	TM414		1810	<1000	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		48400	28100	34200
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		113000	140000	179000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50 4	<50	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 4	<50	<50
GRO >C5-C10	<20 µg/kg	TM089		<20 4	<20	<20

CERTIFICATE OF ANALYSIS

SDG:	210324-144	**Client Reference:**	P18-669	**Report Number:**	593424
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	592816

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-1	3C-2	3C-3	3C-4	3C-5	3C-6
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/03/2021	22/03/2021	22/03/2021	22/03/2021	22/03/2021	22/03/2021
			Sample Time	.	.	.	.	.	.
			Date Received	24/03/2021	24/03/2021	24/03/2021	24/03/2021	24/03/2021	24/03/2021
			SDG Ref	210324-144	210324-144	210324-144	210324-144	210324-144	210324-144
			Lab Sample No.(s)	23964586	23964593	23964598	23964430	23964434	23964455
			AGS Reference						
Dibromofluoromethane**	%	TM116		96.6	93.7	99.3	95.1	97.3	97.9
Toluene-d8**	%	TM116		95.4	94	95.6	94.2	92.5	95
4-Bromofluorobenzene**	%	TM116		85.3	78.4	83.1	82.6	78.8	84.8
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		1010 M	455 M	<260 M	707 M	1130 M	386 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

Validated

CERTIFICATE OF ANALYSIS

SDG:	210324-144	**Client Reference:**	P18-669	**Report Number:**	593424
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	592816

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-7	R-128-1	R-128-2	R-129-1	R-132-1	W-178-1
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/03/2021	22/03/2021	22/03/2021	22/03/2021	22/03/2021	22/03/2021
			Sample Time	.	.	.	.	.	.
			Date Received	24/03/2021	24/03/2021	24/03/2021	24/03/2021	24/03/2021	24/03/2021
			SDG Ref	210324-144	210324-144	210324-144	210324-144	210324-144	210324-144
			Lab Sample No.(s)	23964462	23964549	23964523	23964561	23964570	23964426
			AGS Reference						
Dibromofluoromethane**	%	TM116		105	107	108	105	106	105
Toluene-d8**	%	TM116		99.6	98.1	99.4	98.3	99	98.4
4-Bromofluorobenzene**	%	TM116		101	97.3	100	94.1	98.1	96.5
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 M	<260 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210324-144	**Client Reference:**	P18-669	**Report Number:**	593424
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	592816

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W-178-2	W-178-3	W-178-4	W-178-5	W-178-6	W-178-7
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/03/2021	22/03/2021	22/03/2021	22/03/2021	22/03/2021	22/03/2021
			Sample Time	.	.	.	.	.	.
			Date Received	24/03/2021	24/03/2021	24/03/2021	24/03/2021	24/03/2021	24/03/2021
			SDG Ref	210324-144	210324-144	210324-144	210324-144	210324-144	210324-144
			Lab Sample No.(s)	23964445	23964470	23964476	23964483	23964496	23964509
			AGS Reference						
Dibromofluoromethane**	%	TM116		106	110	103	100	104	100
Toluene-d8**	%	TM116		98.5	98.5	98.6	97.2	99.4	97.8
4-Bromofluorobenzene**	%	TM116		99.4	98.6	98.2	93.8	99.1	91.2
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 M	<260 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210324-144	**Client Reference:**	P18-669	**Report Number:**	593424
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	592816

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W-178-8	W-199-1	W-199-2			
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20			
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
			Date Sampled	22/03/2021	22/03/2021	22/03/2021			
			Sample Time	.	.	.			
			Date Received	24/03/2021	24/03/2021	24/03/2021			
			SDG Ref	210324-144	210324-144	210324-144			
			Lab Sample No.(s)	23964536	23964574	23964582			
			AGS Reference						
Dibromofluoromethane**	%	TM116		97.6	104	106			
Toluene-d8**	%	TM116		94.8	98.1	99.4			
4-Bromofluorobenzene**	%	TM116		88.5	98.3	102			
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M			
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M			
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M			
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M			
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #			
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M			
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 M			
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4			
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800			

CERTIFICATE OF ANALYSIS

SDG:	210324-144	**Client Reference:**	P18-669	**Report Number:**	593424
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	592816

Asbestos Identification - Solid Samples

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&+$@	Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	3C-1 0.20 - 0.20 SOLID 22/03/2021 00:00:00 24/03/2021 05:00:00 210324-144 23964586 TM048	30/03/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	3C-3 0.20 - 0.20 SOLID 22/03/2021 00:00:00 24/03/2021 05:00:00 210324-144 23964598 TM048	30/03/2021	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	3C-5 0.20 - 0.20 SOLID 22/03/2021 00:00:00 24/03/2021 05:00:00 210324-144 23964434 TM048	30/03/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	3C-7 0.20 - 0.20 SOLID 22/03/2021 00:00:00 24/03/2021 05:00:00 210324-144 23964462 TM048	30/03/2021	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	R-128-1 0.20 - 0.20 SOLID 22/03/2021 00:00:00 24/03/2021 05:00:00 210324-144 23964549 TM048	30/03/2021	Barbara Urbanek-Walsh	Loose fibres in soil.	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	R-129-1 0.20 - 0.20 SOLID 22/03/2021 00:00:00 24/03/2021 05:00:00 210324-144 23964561 TM048	30/03/2021	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W-178-1 0.20 - 0.20 SOLID 22/03/2021 00:00:00 24/03/2021 05:00:00 210324-144 23964426 TM048	30/03/2021	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W-178-3 0.20 - 0.20 SOLID 22/03/2021 00:00:00 24/03/2021 05:00:00 210324-144 23964470 TM048	30/03/2021	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG:	210324-144	**Client Reference:**	P18-669	**Report Number:**	593424
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	592816

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W-178-5 0.20 - 0.20 SOLID 22/03/2021 00:00:00 24/03/2021 05:00:00 210324-144 23964483 TM048	30/03/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W-178-7 0.20 - 0.20 SOLID 22/03/2021 00:00:00 24/03/2021 05:00:00 210324-144 23964509 TM048	30/03/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W-199-1 0.20 - 0.20 SOLID 22/03/2021 00:00:00 24/03/2021 05:00:00 210324-144 23964574 TM048	30/03/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	210324-144	**Client Reference:**	P18-669	**Report Number:**	593424
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	592816

Asbestos Quantification - Full

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&♦$@	Sample deviation (see appendix)

		Additional Asbestos Components	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM	Asbestos Quantification - Total - %
Cust. Sample Ref.	R-128-1	None (#)	N/A	<0.001 (#)	<0.001 (#)	<0.001 (#)
Depth (m)	0.20 - 0.20					
Sample Type	SOLID					
Date Sampled	22/03/2021 00:00:00					
Date Received	24/03/2021 05:00:00					
SDG	210324-144					
Original Sample	23964549					
Method Number	TM304					

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	210324-144	**Client Reference:**	P18-669	**Report Number:**	593424
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	592816

Test Completion Dates

Lab Sample No(s)	23964586	23964593	23964598	23964430	23964434	23964455	23964462	23964549	23964523	23964561
Customer Sample Ref.	3C-1	3C-2	3C-3	3C-4	3C-5	3C-6	3C-7	R-128-1	R-128-2	R-129-1
AGS Ref.										
Depth	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021
Asbestos ID in Solid Samples	30-Mar-2021		30-Mar-2021		30-Mar-2021		30-Mar-2021	30-Mar-2021		30-Mar-2021
Asbestos Quantification - Full								09-Apr-2021		
Cyanide Comp/Free/Total/Thiocyanate	30-Mar-2021	30-Mar-2021	29-Mar-2021	30-Mar-2021	30-Mar-2021	30-Mar-2021	30-Mar-2021	30-Mar-2021	30-Mar-2021	30-Mar-2021
EPH CWG GC (S)	31-Mar-2021	30-Mar-2021	30-Mar-2021	30-Mar-2021	30-Mar-2021	30-Mar-2021	30-Mar-2021	30-Mar-2021	30-Mar-2021	30-Mar-2021
GRO by GC-FID (S)	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	30-Mar-2021	30-Mar-2021	30-Mar-2021	31-Mar-2021
Metals in solid samples by OES	01-Apr-2021	31-Mar-2021	01-Apr-2021	31-Mar-2021	31-Mar-2021	01-Apr-2021	31-Mar-2021	01-Apr-2021	31-Mar-2021	31-Mar-2021
PAH by GCMS	31-Mar-2021	31-Mar-2021	29-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021
pH	29-Mar-2021	29-Mar-2021	29-Mar-2021	29-Mar-2021	29-Mar-2021	29-Mar-2021	29-Mar-2021	29-Mar-2021	29-Mar-2021	29-Mar-2021
Phenols by HPLC (S)	30-Mar-2021	30-Mar-2021	29-Mar-2021	30-Mar-2021	30-Mar-2021	30-Mar-2021	30-Mar-2021	31-Mar-2021	30-Mar-2021	31-Mar-2021
Sample description	26-Mar-2021	26-Mar-2021	25-Mar-2021	26-Mar-2021	26-Mar-2021	26-Mar-2021	26-Mar-2021	26-Mar-2021	26-Mar-2021	26-Mar-2021
Total Organic Carbon	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021
TPH CWG GC (S)	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	30-Mar-2021	30-Mar-2021	30-Mar-2021	31-Mar-2021
VOC MS (S)	29-Mar-2021	29-Mar-2021	29-Mar-2021	29-Mar-2021	29-Mar-2021	29-Mar-2021	29-Mar-2021	29-Mar-2021	29-Mar-2021	29-Mar-2021

Lab Sample No(s)	23964570	23964426	23964445	23964470	23964476	23964483	23964496	23964509	23964536	23964574
Customer Sample Ref.	R-132-1	W-178-1	W-178-2	W-178-3	W-178-4	W-178-5	W-178-6	W-178-7	W-178-8	W-199-1
AGS Ref.										
Depth	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021
Asbestos ID in Solid Samples		30-Mar-2021		30-Mar-2021		30-Mar-2021		30-Mar-2021		30-Mar-2021
Cyanide Comp/Free/Total/Thiocyanate	30-Mar-2021	29-Mar-2021	29-Mar-2021	29-Mar-2021	29-Mar-2021	29-Mar-2021	29-Mar-2021	29-Mar-2021	29-Mar-2021	30-Mar-2021
EPH CWG GC (S)	30-Mar-2021	30-Mar-2021	30-Mar-2021	30-Mar-2021	30-Mar-2021	30-Mar-2021	30-Mar-2021	30-Mar-2021	30-Mar-2021	30-Mar-2021
GRO by GC-FID (S)	30-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	30-Mar-2021
Metals in solid samples by OES	31-Mar-2021	31-Mar-2021	01-Apr-2021	01-Apr-2021	01-Apr-2021	01-Apr-2021	01-Apr-2021	01-Apr-2021	31-Mar-2021	01-Apr-2021
PAH by GCMS	31-Mar-2021	31-Mar-2021	29-Mar-2021	29-Mar-2021	29-Mar-2021	29-Mar-2021	29-Mar-2021	29-Mar-2021	29-Mar-2021	31-Mar-2021
pH	29-Mar-2021	29-Mar-2021	25-Mar-2021	29-Mar-2021	25-Mar-2021	29-Mar-2021	25-Mar-2021	29-Mar-2021	25-Mar-2021	29-Mar-2021
Phenols by HPLC (S)	31-Mar-2021	31-Mar-2021	29-Mar-2021	31-Mar-2021	30-Mar-2021	31-Mar-2021	29-Mar-2021	29-Mar-2021	30-Mar-2021	30-Mar-2021
Sample description	26-Mar-2021	25-Mar-2021	25-Mar-2021	25-Mar-2021	25-Mar-2021	25-Mar-2021	25-Mar-2021	25-Mar-2021	25-Mar-2021	26-Mar-2021
Total Organic Carbon	31-Mar-2021	31-Mar-2021	30-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021
TPH CWG GC (S)	30-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	30-Mar-2021
VOC MS (S)	29-Mar-2021	29-Mar-2021	29-Mar-2021	29-Mar-2021	29-Mar-2021	29-Mar-2021	29-Mar-2021	29-Mar-2021	29-Mar-2021	29-Mar-2021

Lab Sample No(s)	23964582
Customer Sample Ref.	W-199-2
AGS Ref.	
Depth	0.20 - 0.20
Type	Soil/Solid (S)
Ammonium Soil by Titration	31-Mar-2021
Cyanide Comp/Free/Total/Thiocyanate	30-Mar-2021
EPH CWG GC (S)	30-Mar-2021
GRO by GC-FID (S)	30-Mar-2021
Metals in solid samples by OES	01-Apr-2021
PAH by GCMS	01-Apr-2021
pH	29-Mar-2021
Phenols by HPLC (S)	30-Mar-2021
Sample description	26-Mar-2021
Total Organic Carbon	31-Mar-2021
TPH CWG GC (S)	30-Mar-2021
VOC MS (S)	29-Mar-2021

Appendix General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

18. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Matrix interference**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**
§	**Sampled on date not provided**

19. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.
Standing Committee of Analysts, *The Quantification of Asbestos in Soil (2017).*

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Rodgers Leask
Office 225
2430/2440
Aztec West
Almondsbury
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BS32 4QA

Attention: Elliot Thomas

CERTIFICATE OF ANALYSIS

Date of report Generation:	07 April 2021
Customer:	Rodgers Leask
Sample Delivery Group (SDG):	210327-46
Your Reference:	P18-669
Location:	Llanwern
Report No:	593169

We received 7 samples on Saturday March 27, 2021 and 7 of these samples were scheduled for analysis which was completed on Wednesday April 07, 2021. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.
The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan

Operations Manager

ALS Life Sciences Limited. Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291.

CERTIFICATE OF ANALYSIS

SDG:	210327-46	**Client Reference:**	P18-669	**Report Number:**	593169
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
23984485	R116-1		0.20 - 0.20	26/03/2021
23984490	R117-1		0.20 - 0.20	26/03/2021
23984496	R118-1		0.20 - 0.20	26/03/2021
23984501	R193-1		0.20 - 0.20	26/03/2021
23984467	SPIS-1		0.20 - 0.20	26/03/2021
23984473	SPIS-2		0.20 - 0.20	26/03/2021
23984478	SPIS-3		0.20 - 0.20	26/03/2021

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	210327-46	**Client Reference:**	P18-669	**Report Number:**	593169
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			23984485		23984490		23984496		23984501		23984467		23984473		23984478					
Customer Sample Reference			R116-1		R117-1		R118-1		R193-1		SPIS-1		SPIS-2		SPIS-3					
AGS Reference																				
Depth (m)			0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		0.20 - 0.20					
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 7	X			X		X			X			X		X			X	
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 4			X					X			X					X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 7	X			X		X			X			X		X			X	
EPH CWG GC (S)	All	NDPs: 0 Tests: 7	X			X		X			X			X		X			X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 7		X			X		X			X			X		X				X
Metals in solid samples by OES	All	NDPs: 0 Tests: 7	X			X		X			X			X		X			X	
PAH by GCMS	All	NDPs: 0 Tests: 7	X			X		X			X			X		X			X	
pH	All	NDPs: 0 Tests: 7	X			X		X			X			X		X			X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 7	X			X		X			X			X		X			X	
Sample description	All	NDPs: 0 Tests: 6	X			X					X			X		X			X	
Total Organic Carbon	All	NDPs: 0 Tests: 7	X			X		X			X			X		X			X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 7	X			X		X			X			X		X			X	
VOC MS (S)	All	NDPs: 0 Tests: 7		X			X		X			X			X		X				X

CERTIFICATE OF ANALYSIS

SDG:	210327-46	**Client Reference:**	P18-669	**Report Number:**	593169
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

Sample Descriptions

Grain Sizes

very fine	<0.063mm	**fine**	0.063mm - 0.1mm	**medium**	0.1mm - 2mm	**coarse**	2mm - 10mm	**very coarse**	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
23984485	R116-1	0.20 - 0.20	Dark Brown	Sand	Stones	Vegetation
23984490	R117-1	0.20 - 0.20	Black	Sand	Stones	Vegetation
23984496	R118-1	0.20 - 0.20	Dark Brown	Sand	Brick	Vegetation
23984501	R193-1	0.20 - 0.20	Dark Brown	Sand	Stones	Vegetation
23984467	SPIS-1	0.20 - 0.20	Dark Brown	Sand	Stones	Vegetation
23984473	SPIS-2	0.20 - 0.20	Dark Brown	Sand	Stones	Vegetation
23984478	SPIS-3	0.20 - 0.20	Dark Brown	Sand	Stones	Vegetation

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	210327-46	**Client Reference:**	P18-669	**Report Number:**	593169
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	R116-1	R117-1	R118-1	R193-1	SPIS-1	SPIS-2
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	26/03/2021	26/03/2021	26/03/2021	26/03/2021	26/03/2021	26/03/2021
			Sample Time	.	.	.	.	.	.
			Date Received	27/03/2021	27/03/2021	27/03/2021	27/03/2021	27/03/2021	27/03/2021
			SDG Ref	210327-46	210327-46	210327-46	210327-46	210327-46	210327-46
			Lab Sample No.(s)	23984485	23984490	23984496	23984501	23984467	23984473
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		6	6.8	6.5	9	4.5	5.7
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.0105 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	0.0107 M	<0.01 M	<0.01 M	0.0106 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		6.83 #	99.3 #	4.19 #	8.96 #	7.36 #	20.7 #
pH	1 pH Units	TM133		9.03 M	8.58 M	9.02 M	10.6 M	10.1 M	10 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	16.6 M	<1 M	11.2 M	3.61 M	1.61 M
Arsenic	<0.6 mg/kg	TM181		9.4 M	6.16 M	8.74 M	11.3 M	4.61 M	5.29 M
Cadmium	<0.02 mg/kg	TM181		0.437 M	0.0797 M	0.201 M	4.82 M	0.321 M	0.417 M
Chromium	<0.9 mg/kg	TM181		87.1 M	148 M	66.4 M	535 M	355 M	315 M
Copper	<1.4 mg/kg	TM181		17.8 M	27.7 M	15 M	43 M	11 M	16.5 M
Iron	<1000 mg/kg	TM181		89000 #	59800 #	44700 #	203000 #	137000 #	107000 #
Lead	<0.7 mg/kg	TM181		62.7 M	32.5 M	38.7 M	766 M	63 M	64.9 M
Manganese	<0.13 mg/kg	TM181		7170 M	9060 M	7460 M	30000 M	2740 M	18700 M
Mercury	<0.1 mg/kg	TM181		<0.1 M	0.112 M	<0.1 M	<1 M	<0.1 M	<0.1 M
Nickel	<0.2 mg/kg	TM181		16.8 M	13.4 M	16.6 M	24 M	39.2 M	12.7 M
Selenium	<1 mg/kg	TM181		2.05 #	4.44 #	3.47 #	16 #	8.45 #	7.59 #
Vanadium	<0.2 mg/kg	TM181		129 #	374 #	132 #	1510 #	299 #	269 #
Zinc	<1.9 mg/kg	TM181		284 M	228 M	172 M	3120 M	376 M	337 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	210327-46	**Client Reference:**	P18-669	**Report Number:**	593169
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Customer Sample Ref.	SPIS-3
Depth (m)	0.20 - 0.20
Sample Type	Soil/Solid (S)
Date Sampled	26/03/2021
Sample Time	.
Date Received	27/03/2021
SDG Ref	210327-46
Lab Sample No.(s)	23984478
AGS Reference	

Component	LOD/Units	Method	
Moisture Content Ratio (% of as received sample)	%	PM024	3.1
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12 M
Phenol	<0.01 mg/kg	TM062 (S)	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132	15 #
pH	1 pH Units	TM133	10.9 M
Cyanide, Total	<1 mg/kg	TM153	<1 M
Arsenic	<0.6 mg/kg	TM181	5.01 M
Cadmium	<0.02 mg/kg	TM181	<0.02 M
Chromium	<0.9 mg/kg	TM181	355 M
Copper	<1.4 mg/kg	TM181	14.3 M
Iron	<1000 mg/kg	TM181	90600 #
Lead	<0.7 mg/kg	TM181	29.7 M
Manganese	<0.13 mg/kg	TM181	21500 M
Mercury	<0.1 mg/kg	TM181	<0.1 M
Nickel	<0.2 mg/kg	TM181	12 M
Selenium	<1 mg/kg	TM181	7.15 #
Vanadium	<0.2 mg/kg	TM181	262 #
Zinc	<1.9 mg/kg	TM181	125 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	210327-46	**Client Reference:**	P18-669	**Report Number:**	593169
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	R116-1	R117-1	R118-1	R193-1	SPIS-1	SPIS-2
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	26/03/2021	26/03/2021	26/03/2021	26/03/2021	26/03/2021	26/03/2021
			Sample Time	.	.	.	.	.	.
			Date Received	27/03/2021	27/03/2021	27/03/2021	27/03/2021	27/03/2021	27/03/2021
			SDG Ref	210327-46	210327-46	210327-46	210327-46	210327-46	210327-46
			Lab Sample No.(s)	23984485	23984490	23984496	23984501	23984467	23984473
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		83.7	90.2	82	81.8	86.3	84.3
Acenaphthene-d10 % recovery**	%	TM218		88.6	89.3	85.8	85	90	84.3
Phenanthrene-d10 % recovery**	%	TM218		90.6	93.1	88.8	88.1	93.9	86
Chrysene-d12 % recovery**	%	TM218		89.6	90	85.5	80.9	93.4	80.1
Perylene-d12 % recovery**	%	TM218		82.6	81.8	78.8	71.4	87.5	75.1
Naphthalene	<9 µg/kg	TM218		311 M	4420 M	464 M	59.2 M	451 M	263 M
Acenaphthylene	<12 µg/kg	TM218		263 M	5980 M	276 M	123 M	645 M	188 M
Acenaphthene	<8 µg/kg	TM218		<80 M	637 M	39.5 M	23.6 M	48.5 M	31.7 M
Fluorene	<10 µg/kg	TM218		115 M	3710 M	162 M	57.6 M	274 M	65.5 M
Phenanthrene	<15 µg/kg	TM218		1050 M	33800 M	1250 M	540 M	2570 M	956 M
Anthracene	<16 µg/kg	TM218		303 M	11800 M	344 M	187 M	1500 M	285 M
Fluoranthene	<17 µg/kg	TM218		2300 M	73700 M	2460 M	1550 M	6900 M	1440 M
Pyrene	<15 µg/kg	TM218		1680 M	55000 M	1900 M	1470 M	5280 M	1070 M
Benz(a)anthracene	<14 µg/kg	TM218		1220 M	34800 M	1160 M	786 M	3220 M	679 M
Chrysene	<10 µg/kg	TM218		1260 M	34100 M	1130 M	798 M	3610 M	678 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		2050 M	49500 M	1610 M	1440 M	4980 M	1270 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		661 M	18100 M	558 M	380 M	1710 M	373 M
Benzo(a)pyrene	<15 µg/kg	TM218		1080 M	30500 M	935 M	759 M	3220 M	677 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		1110 M	26000 M	766 M	661 M	2860 M	753 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		<230 M	5560 M	164 M	129 M	633 M	153 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		960 M	20500 M	630 M	578 M	2340 M	614 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		14400	408000	13900	9540	40200	9500

Validated

CERTIFICATE OF ANALYSIS

SDG:	210327-46	**Client Reference:**	P18-669	**Report Number:**	593169
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Customer Sample Ref.	SPIS-3
Depth (m)	0.20 - 0.20
Sample Type	Soil/Solid (S)
Date Sampled	26/03/2021
Sample Time	.
Date Received	27/03/2021
SDG Ref	210327-46
Lab Sample No.(s)	23984478
AGS Reference	

Component	LOD/Units	Method	
Naphthalene-d8 % recovery**	%	TM218	86.7
Acenaphthene-d10 % recovery**	%	TM218	89
Phenanthrene-d10 % recovery**	%	TM218	91.4
Chrysene-d12 % recovery**	%	TM218	88.8
Perylene-d12 % recovery**	%	TM218	82.6
Naphthalene	<9 µg/kg	TM218	234 M
Acenaphthylene	<12 µg/kg	TM218	157 M
Acenaphthene	<8 µg/kg	TM218	32.7 M
Fluorene	<10 µg/kg	TM218	59.7 M
Phenanthrene	<15 µg/kg	TM218	624 M
Anthracene	<16 µg/kg	TM218	189 M
Fluoranthene	<17 µg/kg	TM218	1350 M
Pyrene	<15 µg/kg	TM218	1040 M
Benz(a)anthracene	<14 µg/kg	TM218	687 M
Chrysene	<10 µg/kg	TM218	782 M
Benzo(b)fluoranthene	<15 µg/kg	TM218	1250 M
Benzo(k)fluoranthene	<14 µg/kg	TM218	391 M
Benzo(a)pyrene	<15 µg/kg	TM218	633 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	610 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	128 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218	502 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	8670

CERTIFICATE OF ANALYSIS

SDG:	210327-46	**Client Reference:**	P18-669	**Report Number:**	593169
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	R116-1	R117-1	R118-1	R193-1	SPIS-1	SPIS-2
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	26/03/2021	26/03/2021	26/03/2021	26/03/2021	26/03/2021	26/03/2021
			Sample Time	.	.	.	.	.	.
			Date Received	27/03/2021	27/03/2021	27/03/2021	27/03/2021	27/03/2021	27/03/2021
			SDG Ref	210327-46	210327-46	210327-46	210327-46	210327-46	210327-46
			Lab Sample No.(s)	23984485	23984490	23984496	23984501	23984467	23984473
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		61	25.7	87.8	108	73.5	80.8
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	<10	15	<10	<10	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		<10	<10	29.9	<10	<10	<10
Aliphatics >C8-C10	<10 µg/kg	TM089		<10	<10	27.8	<10	<10	<10
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	2540	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	6330	<1000	2920	<1000	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414		7940	33200	6620	26900	6930	4780
Aliphatics >C21-C35	<1000 µg/kg	TM414		52300	37300	38400	115000	18400	16500
Aliphatics >C35-C44	<1000 µg/kg	TM414		5860	2200	11700	34300	2850	1950
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		67000	81600	57700	180000	28500	23800
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		178000	1330000	129000	241000	181000	132000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10	<10	18.2	<10	<10	<10
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	9790	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	32100	1900	<1000	2670	4620
Aromatics > EC16-EC21	<1000 µg/kg	TM414		10300	266000	16100	9920	24700	20300
Aromatics > EC21-EC35	<1000 µg/kg	TM414		77000	815000	47300	46400	109000	72500
Aromatics >EC35-EC44	<1000 µg/kg	TM414		22800	124000	5670	4420	14800	10000
Aromatics > EC40-EC44	<1000 µg/kg	TM414		3290	21100	1550	<1000	2270	2130
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		111000	1250000	71700	61400	153000	108000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		178000	1330000	129000	241000	181000	132000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50	<50	72.7	<50	<50	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50	<50	<50	<50	<50
GRO >C5-C10	<20 µg/kg	TM089		<20	<20	72.7	<20	<20	<20

CERTIFICATE OF ANALYSIS

SDG:	210327-46	**Client Reference:**	P18-669	**Report Number:**	593169
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Customer Sample Ref.	SPIS-3
Depth (m)	0.20 - 0.20
Sample Type	Soil/Solid (S)
Date Sampled	26/03/2021
Sample Time	.
Date Received	27/03/2021
SDG Ref	210327-46
Lab Sample No.(s)	23984478
AGS Reference	

Component	LOD/Units	Method	
GRO Surrogate % recovery**	%	TM089	70.8
Aliphatics >C5-C6	<10 µg/kg	TM089	<10
Aliphatics >C6-C8	<10 µg/kg	TM089	<10
Aliphatics >C8-C10	<10 µg/kg	TM089	<10
Aliphatics >C10-C12	<1000 µg/kg	TM414	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414	1080
Aliphatics >C21-C35	<1000 µg/kg	TM414	8290
Aliphatics >C35-C44	<1000 µg/kg	TM414	1170
Total Aliphatics >C10-C44	<5000 µg/kg	TM414	10800
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414	35400
Aromatics >EC5-EC7	<10 µg/kg	TM089	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089	<10
Aromatics > EC10-EC12	<1000 µg/kg	TM414	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414	1130
Aromatics > EC16-EC21	<1000 µg/kg	TM414	4510
Aromatics > EC21-EC35	<1000 µg/kg	TM414	17400
Aromatics >EC35-EC44	<1000 µg/kg	TM414	1420
Aromatics > EC40-EC44	<1000 µg/kg	TM414	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414	24600
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414	35400
Total Aliphatics >C5-C10	<50 µg/kg	TM089	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089	<50
GRO >C5-C10	<20 µg/kg	TM089	<20

Validated

CERTIFICATE OF ANALYSIS

SDG:	210327-46	**Client Reference:**	P18-669	**Report Number:**	593169
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	R116-1	R117-1	R118-1	R193-1	SPIS-1	SPIS-2
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	26/03/2021	26/03/2021	26/03/2021	26/03/2021	26/03/2021	26/03/2021
			Sample Time	.	.	.	.	.	.
			Date Received	27/03/2021	27/03/2021	27/03/2021	27/03/2021	27/03/2021	27/03/2021
			SDG Ref	210327-46	210327-46	210327-46	210327-46	210327-46	210327-46
			Lab Sample No.(s)	23984485	23984490	23984496	23984501	23984467	23984473
			AGS Reference						
Dibromofluoromethane**	%	TM116		101	86.9	105	106	102	105
Toluene-d8**	%	TM116		95.4	91.3	97.9	98.3	97.3	98.1
4-Bromofluorobenzene**	%	TM116		94.3	75.3	94.1	101	93.6	96.3
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	920 M	<260 M	<260 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

Validated

CERTIFICATE OF ANALYSIS

SDG:	210327-46	**Client Reference:**	P18-669	**Report Number:**	593169
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Customer Sample Ref.	SPIS-3
Depth (m)	0.20 - 0.20
Sample Type	Soil/Solid (S)
Date Sampled	26/03/2021
Sample Time	.
Date Received	27/03/2021
SDG Ref	210327-46
Lab Sample No.(s)	23984478
AGS Reference	

Component	LOD/Units	Method	
Dibromofluoromethane**	%	TM116	101
Toluene-d8**	%	TM116	97.1
4-Bromofluorobenzene**	%	TM116	91.3
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<200 M
Benzene	<9 µg/kg	TM116	<180 M
Toluene	<7 µg/kg	TM116	<140 M
Ethylbenzene	<4 µg/kg	TM116	<80 M
p/m-Xylene	<10 µg/kg	TM116	<200 #
o-Xylene	<10 µg/kg	TM116	<200 M
Naphthalene	<13 µg/kg	TM116	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116	<0.4
Sum of BTEX	<40 µg/kg	TM116	<800

CERTIFICATE OF ANALYSIS

SDG:	210327-46	**Client Reference:**	P18-669	**Report Number:**	593169
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

Asbestos Identification - Solid Samples

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&+$@	Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	R117-1 0.20 - 0.20 SOLID 26/03/2021 00:00:00 27/03/2021 05:00:00 210327-46 23984490 TM048	06/04/2021	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	R193-1 0.20 - 0.20 SOLID 26/03/2021 00:00:00 27/03/2021 05:00:00 210327-46 23984501 TM048	06/04/2021	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SPIS-1 0.20 - 0.20 SOLID 26/03/2021 00:00:00 27/03/2021 05:00:00 210327-46 23984467 TM048	06/04/2021	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SPIS-3 0.20 - 0.20 SOLID 26/03/2021 00:00:00 27/03/2021 05:00:00 210327-46 23984478 TM048	06/04/2021	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	210327-46	**Client Reference:**	P18-669	**Report Number:**	593169
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	210327-46	**Client Reference:**	P18-669	**Report Number:**	593169
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

Test Completion Dates

Lab Sample No(s)	23984485	23984490	23984496	23984501	23984467	23984473	23984478
Customer Sample Ref.	R116-1	R117-1	R118-1	R193-1	SPIS-1	SPIS-2	SPIS-3
AGS Ref.							
Depth	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021
Asbestos ID in Solid Samples		06-Apr-2021		06-Apr-2021	06-Apr-2021		06-Apr-2021
Cyanide Comp/Free/Total/Thiocyanate	01-Apr-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021
EPH CWG GC (S)	01-Apr-2021	01-Apr-2021	01-Apr-2021	01-Apr-2021	01-Apr-2021	01-Apr-2021	01-Apr-2021
GRO by GC-FID (S)	06-Apr-2021	06-Apr-2021	06-Apr-2021	06-Apr-2021	06-Apr-2021	06-Apr-2021	06-Apr-2021
Metals in solid samples by OES	07-Apr-2021	07-Apr-2021	07-Apr-2021	07-Apr-2021	07-Apr-2021	07-Apr-2021	07-Apr-2021
PAH by GCMS	01-Apr-2021	01-Apr-2021	01-Apr-2021	01-Apr-2021	01-Apr-2021	01-Apr-2021	01-Apr-2021
pH	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021
Phenols by HPLC (S)	31-Mar-2021	07-Apr-2021	07-Apr-2021	07-Apr-2021	31-Mar-2021	07-Apr-2021	31-Mar-2021
Sample description	29-Mar-2021	29-Mar-2021	29-Mar-2021	29-Mar-2021	29-Mar-2021	29-Mar-2021	29-Mar-2021
Total Organic Carbon	07-Apr-2021	07-Apr-2021	06-Apr-2021	07-Apr-2021	06-Apr-2021	07-Apr-2021	06-Apr-2021
TPH CWG GC (S)	06-Apr-2021	06-Apr-2021	06-Apr-2021	06-Apr-2021	06-Apr-2021	06-Apr-2021	06-Apr-2021
VOC MS (S)	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021	31-Mar-2021

Appendix General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

18. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Matrix interference**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**
§	**Sampled on date not provided**

19. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.
Standing Committee of Analysts, *The Quantification of Asbestos in Soil (2017).*

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Deeside
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Rodgers Leask
Office 225
2430/2440
Aztec West
Almondsbury
Bristol
BS32 4QA

Attention: Elliot Thomas

CERTIFICATE OF ANALYSIS

Date of report Generation:	26 May 2021
Customer:	Rodgers Leask
Sample Delivery Group (SDG):	210410-54
Your Reference:	P18-669
Location:	Llanwern
Report No:	599423

This report has been revised and directly supersedes 594612 in its entirety.

We received 8 samples on Saturday April 10, 2021 and 8 of these samples were scheduled for analysis which was completed on Monday April 19, 2021. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.
The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan
Operations Manager

CERTIFICATE OF ANALYSIS

SDG:	210410-54	**Client Reference:**	P18-669	**Report Number:**	599423
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	594612

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
24055215	R104-1		0.20 - 0.20	08/04/2021
24055220	R104-2		0.20 - 0.20	08/04/2021
24055224	R104-3		0.20 - 0.20	08/04/2021
24055228	R107-1-1		0.20 - 0.20	08/04/2021
24055232	R107-1-2		0.20 - 0.20	08/04/2021
24055236	R107-2-1		0.20 - 0.20	08/04/2021
24055240	W121-1		0.20 - 0.20	08/04/2021
24055244	W123-1		0.20 - 0.20	08/04/2021

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	210410-54	**Client Reference:**	P18-669	**Report Number:**	599423
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	594612

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water
Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			24055215		24055220		24055224			24055228		24055232			24055236		24055240		24055244		
Customer Sample Reference			R104-1		R104-2		R104-3			R107-1-1		R107-1-2			R107-2-1		W121-1		W123-1		
AGS Reference																					
Depth (m)			0.20 - 0.20		0.20 - 0.20		0.20 - 0.20			0.20 - 0.20		0.20 - 0.20			0.20 - 0.20		0.20 - 0.20		0.20 - 0.20		
Container			1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 8		X		X			X		X			X		X			X		X
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 4	X					X					X					X			
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 8		X		X			X		X			X		X			X		X
EPH CWG GC (S)	All	NDPs: 0 Tests: 8		X		X			X		X			X		X			X		X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 8			X		X			X		X			X		X			X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 8		X		X			X		X			X		X			X		X
PAH by GCMS	All	NDPs: 0 Tests: 8		X		X			X		X			X		X			X		X
pH	All	NDPs: 0 Tests: 8		X		X			X		X			X		X			X		X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 8		X		X			X		X			X		X			X		X
Sample description	All	NDPs: 0 Tests: 8		X		X			X		X			X		X			X		X
Total Organic Carbon	All	NDPs: 0 Tests: 8		X		X			X		X			X		X			X		X
TPH CWG GC (S)	All	NDPs: 0 Tests: 8		X		X			X		X			X		X			X		X
VOC MS (S)	All	NDPs: 0 Tests: 8			X		X			X		X			X		X			X	

24055244	W123-1		0.20 - 0.20	60g VOC (ALE215)	S
					X
					X

CERTIFICATE OF ANALYSIS

SDG:	210410-54	**Client Reference:**	P18-669	**Report Number:**	599423
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	594612

Sample Descriptions

Grain Sizes

very fine	<0.063mm	**fine**	0.063mm - 0.1mm	**medium**	0.1mm - 2mm	**coarse**	2mm - 10mm	**very coarse**	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
24055215	R104-1	0.20 - 0.20	Black	Loamy Sand	Stones	None
24055220	R104-2	0.20 - 0.20	Black	Loamy Sand	Stones	None
24055224	R104-3	0.20 - 0.20	Black	Loamy Sand	Stones	None
24055228	R107-1-1	0.20 - 0.20	Black	Loamy Sand	Stones	None
24055232	R107-1-2	0.20 - 0.20	Black	Loamy Sand	Stones	None
24055236	R107-2-1	0.20 - 0.20	Black	Loamy Sand	Vegetation	Stones
24055240	W121-1	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	Vegetation
24055244	W123-1	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	210410-54	**Client Reference:**	P18-669	**Report Number:**	599423
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	594612

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4♦§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	R104-1	R104-2	R104-3	R107-1-1	R107-1-2	R107-2-1
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	08/04/2021	08/04/2021	08/04/2021	08/04/2021	08/04/2021	08/04/2021
			Sample Time	.	.	.	.	.	.
			Date Received	10/04/2021	10/04/2021	10/04/2021	10/04/2021	10/04/2021	10/04/2021
			SDG Ref	210410-54	210410-54	210410-54	210410-54	210410-54	210410-54
			Lab Sample No.(s)	24055215	24055220	24055224	24055228	24055232	24055236
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		21	26	20	7.5	11	39
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.0164 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		11.3 #	9.53 #	10.1 #	4.09 #	3.41 #	23.1 #
pH	1 pH Units	TM133		10.5 M	10.8 M	10.9 M	9.01 M	8.62 M	8.05 M
Cyanide, Total	<1 mg/kg	TM153		20.9 M	21.3 M	13.6 M	1.9 M	9.32 M	14.9 M
Arsenic	<0.6 mg/kg	TM181		21.7 M	33 M	23.2 M	16.9 M	18.8 M	27.5 M
Cadmium	<0.02 mg/kg	TM181		6.24 M	13.2 M	8.99 M	8.48 M	8.01 M	16.9 M
Chromium	<0.9 mg/kg	TM181		185 M	<9 M	168 M	259 M	184 M	20.4 M
Copper	<1.4 mg/kg	TM181		42.4 M	57.3 M	47.7 M	41.7 M	33.2 M	58.1 M
Iron	<1000 mg/kg	TM181		300000 #	384000 #	304000 #	262000 #	258000 #	237000 #
Lead	<0.7 mg/kg	TM181		1350 M	1760 M	1310 M	767 M	753 M	2070 M
Manganese	<0.13 mg/kg	TM181		26500 M	12700 M	21900 M	24800 M	16400 M	8060 M
Mercury	<0.1 mg/kg	TM181		1.19 M	1.94 M	<1 M	<1 M	<1 M	<1 M
Nickel	<0.2 mg/kg	TM181		34 M	51.9 M	37.4 M	33 M	30.5 M	50 M
Selenium	<1 mg/kg	TM181		14.9 #	<10 #	<10 #	11.6 #	<10 #	<10 #
Vanadium	<0.2 mg/kg	TM181		324 #	390 #	1000 #	887 #	859 #	257 #
Zinc	<1.9 mg/kg	TM181		3820 M	6050 M	4740 M	3090 M	2830 M	7040 M

Validated

CERTIFICATE OF ANALYSIS

SDG: 210410-54 **Client Reference:** P18-669 **Report Number:** 599423
Location: Llanwern **Order Number:** 108282 **Superseded Report:** 594612

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4♦§@	Sample deviation (see appendix)

Customer Sample Ref.	W121-1	W123-1
Depth (m)	0.20 - 0.20	0.20 - 0.20
Sample Type	Soil/Solid (S)	Soil/Solid (S)
Date Sampled	08/04/2021	08/04/2021
Sample Time	.	.
Date Received	10/04/2021	10/04/2021
SDG Ref	210410-54	210410-54
Lab Sample No.(s)	24055240	24055244
AGS Reference		

Component	LOD/Units	Method						
Moisture Content Ratio (% of as received sample)	%	PM024	8.5	8				
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12 M	<12 M				
Phenol	<0.01 mg/kg	TM062 (S)	0.0109 M	<0.01 M				
Cresols	<0.01 mg/kg	TM062 (S)	0.0109 M	<0.01 M				
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015 M	<0.015 M				
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035 M	<0.035 M				
Soil Organic Matter (SOM)	<0.35 %	TM132	4.22 #	4.4 #				
pH	1 pH Units	TM133	9.01 M	8.88 M				
Cyanide, Total	<1 mg/kg	TM153	<1 M	<1 M				
Arsenic	<0.6 mg/kg	TM181	9.91 M	9.5 M				
Cadmium	<0.02 mg/kg	TM181	0.118 M	0.597 M				
Chromium	<0.9 mg/kg	TM181	236 M	95 M				
Copper	<1.4 mg/kg	TM181	29.1 M	24.4 M				
Iron	<1000 mg/kg	TM181	122000 #	65000 #				
Lead	<0.7 mg/kg	TM181	94.3 M	74.3 M				
Manganese	<0.13 mg/kg	TM181	21300 M	7060 M				
Mercury	<0.1 mg/kg	TM181	<0.1 M	<0.1 M				
Nickel	<0.2 mg/kg	TM181	14.3 M	19.2 M				
Selenium	<1 mg/kg	TM181	8.44 #	3.7 #				
Vanadium	<0.2 mg/kg	TM181	489 #	131 #				
Zinc	<1.9 mg/kg	TM181	234 M	242 M				

Validated

CERTIFICATE OF ANALYSIS

SDG: 210410-54 **Client Reference:** P18-669 **Report Number:** 599423
Location: Llanwern **Order Number:** 108282 **Superseded Report:** 594612

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4♦§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	R104-1	R104-2	R104-3	R107-1-1	R107-1-2	R107-2-1
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	08/04/2021	08/04/2021	08/04/2021	08/04/2021	08/04/2021	08/04/2021
			Sample Time	.	.	.	.	.	.
			Date Received	10/04/2021	10/04/2021	10/04/2021	10/04/2021	10/04/2021	10/04/2021
			SDG Ref	210410-54	210410-54	210410-54	210410-54	210410-54	210410-54
			Lab Sample No.(s)	24055215	24055220	24055224	24055228	24055232	24055236
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		88.3	83.4	89.6	93.1	95.9	91.7
Acenaphthene-d10 % recovery**	%	TM218		93.5	84.1	94.9	100	104	97.7
Phenanthrene-d10 % recovery**	%	TM218		89.5	75.3	90.8	99.5	105	96.2
Chrysene-d12 % recovery**	%	TM218		56.8	39.2	53.6	76.2	78.5	71.3
Perylene-d12 % recovery**	%	TM218		43	31.2	37.4	76	74.4	70.8
Naphthalene	<9 µg/kg	TM218		173 M	142 M	218 M	264 M	285 M	226 M
Acenaphthylene	<12 µg/kg	TM218		137 M	31.6 M	106 M	35.8 M	54.3 M	<12 M
Acenaphthene	<8 µg/kg	TM218		22.9 M	27.6 M	41.8 M	38.6 M	40.3 M	27.6 M
Fluorene	<10 µg/kg	TM218		49.8 M	44.9 M	77.6 M	34 M	47 M	90.2 M
Phenanthrene	<15 µg/kg	TM218		372 M	312 M	539 M	349 M	410 M	523 M
Anthracene	<16 µg/kg	TM218		108 M	73.3 M	164 M	103 M	136 M	158 M
Fluoranthene	<17 µg/kg	TM218		746 M	427 M	791 M	619 M	854 M	445 M
Pyrene	<15 µg/kg	TM218		1050 M	595 M	1140 M	600 M	740 M	446 M
Benz(a)anthracene	<14 µg/kg	TM218		567 M	248 M	505 M	407 M	566 M	251 M
Chrysene	<10 µg/kg	TM218		718 M	279 M	662 M	497 M	582 M	440 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		1110 M	379 M	942 M	744 M	864 M	496 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		291 M	141 M	255 M	232 M	298 M	131 M
Benzo(a)pyrene	<15 µg/kg	TM218		565 M	256 M	477 M	409 M	479 M	232 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		497 M	250 M	398 M	388 M	375 M	174 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		72.2 M	54.6 M	65.6 M	70.6 M	84.1 M	44.1 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		451 M	233 M	357 M	368 M	340 M	193 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		6930	3490	6740	5160	6150	3880

CERTIFICATE OF ANALYSIS

SDG: 210410-54 | Client Reference: P18-669 | Report Number: 599423
Location: Llanwern | Order Number: 108282 | Superseded Report: 594612

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4♦§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W121-1	W123-1
			Depth (m)	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	08/04/2021	08/04/2021
			Sample Time	.	.
			Date Received	10/04/2021	10/04/2021
			SDG Ref	210410-54	210410-54
			Lab Sample No.(s)	24055240	24055244
			AGS Reference		
Naphthalene-d8 % recovery**	%	TM218		93.2	95.1
Acenaphthene-d10 % recovery**	%	TM218		98.2	102
Phenanthrene-d10 % recovery**	%	TM218		94.4	103
Chrysene-d12 % recovery**	%	TM218		78.7	85.7
Perylene-d12 % recovery**	%	TM218		89.2	98
Naphthalene	<9 µg/kg	TM218		55 M	231 M
Acenaphthylene	<12 µg/kg	TM218		19 M	97.7 M
Acenaphthene	<8 µg/kg	TM218		118 M	36.3 M
Fluorene	<10 µg/kg	TM218		98.1 M	61.4 M
Phenanthrene	<15 µg/kg	TM218		262 M	556 M
Anthracene	<16 µg/kg	TM218		<16 M	214 M
Fluoranthene	<17 µg/kg	TM218		643 M	1040 M
Pyrene	<15 µg/kg	TM218		607 M	872 M
Benz(a)anthracene	<14 µg/kg	TM218		579 M	635 M
Chrysene	<10 µg/kg	TM218		550 M	694 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		1070 M	1100 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		401 M	460 M
Benzo(a)pyrene	<15 µg/kg	TM218		735 M	731 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		692 M	786 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		115 M	106 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		617 M	657 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		6560	8280

Validated

CERTIFICATE OF ANALYSIS

SDG: 210410-54 **Client Reference:** P18-669 **Report Number:** 599423
Location: Llanwern **Order Number:** 108282 **Superseded Report:** 594612

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4♦§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	R104-1	R104-2	R104-3	R107-1-1	R107-1-2	R107-2-1
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	08/04/2021	08/04/2021	08/04/2021	08/04/2021	08/04/2021	08/04/2021
			Sample Time	.	.	.	.	.	.
			Date Received	10/04/2021	10/04/2021	10/04/2021	10/04/2021	10/04/2021	10/04/2021
			SDG Ref	210410-54	210410-54	210410-54	210410-54	210410-54	210410-54
			Lab Sample No.(s)	24055215	24055220	24055224	24055228	24055232	24055236
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		106	111	101	107	110	80.6
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aliphatics >C8-C10	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	2130	2000	<1000	<1000	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414		16800	20500	20200	7610	7960	10500
Aliphatics >C21-C35	<1000 µg/kg	TM414		36600	49000	50300	31100	32000	35800
Aliphatics >C35-C44	<1000 µg/kg	TM414		5710	7870	9940	8630	9100	6680
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		60100	79500	82500	48100	49700	53700
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		71900	93700	98600	63400	64200	107000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		3140	4080	3260	1260	1290	3730
Aromatics > EC21-EC35	<1000 µg/kg	TM414		7490	8650	11600	13000	12000	41800
Aromatics >EC35-EC44	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	6440
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		11800	14300	16100	15300	14500	52800
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		71900	93700	98600	63400	64200	107000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50	<50	<50	<50	<50	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50	<50	<50	<50	<50
GRO >C5-C10	<20 µg/kg	TM089		<20	<20	<20	<20	<20	<20

CERTIFICATE OF ANALYSIS

SDG: 210410-54 **Client Reference:** P18-669 **Report Number:** 599423
Location: Llanwern **Order Number:** 108282 **Superseded Report:** 594612

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4♦§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W121-1	W123-1				
			Depth (m)	0.20 - 0.20	0.20 - 0.20				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	08/04/2021	08/04/2021				
			Sample Time	.	.				
			Date Received	10/04/2021	10/04/2021				
			SDG Ref	210410-54	210410-54				
			Lab Sample No.(s)	24055240	24055244				
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		95.6	90.2				
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	<10				
Aliphatics >C6-C8	<10 µg/kg	TM089		<10	<10				
Aliphatics >C8-C10	<10 µg/kg	TM089		<10	<10				
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000				
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	<1000				
Aliphatics >C16-C21	<1000 µg/kg	TM414		9970	6740				
Aliphatics >C21-C35	<1000 µg/kg	TM414		44200	45900				
Aliphatics >C35-C44	<1000 µg/kg	TM414		13900	13200				
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		68300	66300				
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		107000	125000				
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10				
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10				
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10	<10				
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000				
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000				
Aromatics > EC16-EC21	<1000 µg/kg	TM414		1180	6230				
Aromatics > EC21-EC35	<1000 µg/kg	TM414		32100	48200				
Aromatics >EC35-EC44	<1000 µg/kg	TM414		5700	3860				
Aromatics > EC40-EC44	<1000 µg/kg	TM414		1280	<1000				
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		39000	58900				
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		107000	125000				
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50	<50				
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50				
GRO >C5-C10	<20 µg/kg	TM089		<20	<20				

Validated

CERTIFICATE OF ANALYSIS

SDG: 210410-54 **Client Reference:** P18-669 **Report Number:** 599423
Location: Llanwern **Order Number:** 108282 **Superseded Report:** 594612

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4♦§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	R104-1	R104-2	R104-3	R107-1-1	R107-1-2	R107-2-1
			Depth (m)	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	08/04/2021	08/04/2021	08/04/2021	08/04/2021	08/04/2021	08/04/2021
			Sample Time	.	.	.	.	.	.
			Date Received	10/04/2021	10/04/2021	10/04/2021	10/04/2021	10/04/2021	10/04/2021
			SDG Ref	210410-54	210410-54	210410-54	210410-54	210410-54	210410-54
			Lab Sample No.(s)	24055215	24055220	24055224	24055228	24055232	24055236
			AGS Reference						
Dibromofluoromethane**	%	TM116		104	101	105	105	105	106
Toluene-d8**	%	TM116		98.6	98.6	98.5	98.5	100	97.3
4-Bromofluorobenzene**	%	TM116		99.2	98.3	99.8	100	102	95
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 M	<260 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210410-54	**Client Reference:**	P18-669	**Report Number:**	599423
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	594612

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4♦§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W121-1	W123-1				
			Depth (m)	0.20 - 0.20	0.20 - 0.20				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	08/04/2021	08/04/2021				
			Sample Time	.	.				
			Date Received	10/04/2021	10/04/2021				
			SDG Ref	210410-54	210410-54				
			Lab Sample No.(s)	24055240	24055244				
			AGS Reference						
Dibromofluoromethane**	%	TM116		106	106				
Toluene-d8**	%	TM116		97.9	98				
4-Bromofluorobenzene**	%	TM116		96.5	97.5				
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M				
Benzene	<9 µg/kg	TM116		<180 M	<180 M				
Toluene	<7 µg/kg	TM116		<140 M	<140 M				
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M				
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #				
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M				
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M				
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4				
Sum of BTEX	<40 µg/kg	TM116		<800	<800				

CERTIFICATE OF ANALYSIS

SDG:	210410-54	**Client Reference:**	P18-669	**Report Number:**	599423
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	594612

Asbestos Identification - Solid Samples

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	R104-1 0.20 - 0.20 SOLID 08/04/2021 00:00:00 10/04/2021 05:00:00 210410-54 24055215 TM048	14/04/2021	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	R104-3 0.20 - 0.20 SOLID 08/04/2021 00:00:00 10/04/2021 05:00:00 210410-54 24055224 TM048	14/04/2021	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	R107-1-2 0.20 - 0.20 SOLID 08/04/2021 00:00:00 10/04/2021 05:00:00 210410-54 24055232 TM048	14/04/2021	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W121-1 0.20 - 0.20 SOLID 08/04/2021 00:00:00 10/04/2021 05:00:00 210410-54 24055240 TM048	14/04/2021	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	210410-54	**Client Reference:**	P18-669	**Report Number:**	599423
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	594612

Test Completion Dates

Lab Sample No(s)	24055215	24055220	24055224	24055228	24055232	24055236	24055240	24055244
Customer Sample Ref.	R104-1	R104-2	R104-3	R107-1-1	R107-1-2	R107-2-1	W121-1	W123-1
AGS Ref.								
Depth	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20	0.20 - 0.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	13-Apr-2021	13-Apr-2021	13-Apr-2021	13-Apr-2021	13-Apr-2021	13-Apr-2021	13-Apr-2021	13-Apr-2021
Asbestos ID in Solid Samples	15-Apr-2021		15-Apr-2021		15-Apr-2021		15-Apr-2021	
Cyanide Comp/Free/Total/Thiocyanate	14-Apr-2021	14-Apr-2021	14-Apr-2021	14-Apr-2021	14-Apr-2021	14-Apr-2021	14-Apr-2021	14-Apr-2021
EPH CWG GC (S)	16-Apr-2021	16-Apr-2021	16-Apr-2021	16-Apr-2021	16-Apr-2021	15-Apr-2021	16-Apr-2021	15-Apr-2021
GRO by GC-FID (S)	13-Apr-2021	13-Apr-2021	13-Apr-2021	13-Apr-2021	13-Apr-2021	13-Apr-2021	13-Apr-2021	13-Apr-2021
Metals in solid samples by OES	19-Apr-2021	19-Apr-2021	19-Apr-2021	19-Apr-2021	19-Apr-2021	19-Apr-2021	19-Apr-2021	19-Apr-2021
PAH by GCMS	16-Apr-2021	16-Apr-2021	16-Apr-2021	13-Apr-2021	14-Apr-2021	13-Apr-2021	14-Apr-2021	13-Apr-2021
pH	14-Apr-2021	12-Apr-2021	12-Apr-2021	12-Apr-2021	12-Apr-2021	12-Apr-2021	12-Apr-2021	12-Apr-2021
Phenols by HPLC (S)	14-Apr-2021	13-Apr-2021	14-Apr-2021	13-Apr-2021	14-Apr-2021	13-Apr-2021	14-Apr-2021	13-Apr-2021
Sample description	10-Apr-2021	10-Apr-2021	10-Apr-2021	10-Apr-2021	10-Apr-2021	10-Apr-2021	10-Apr-2021	10-Apr-2021
Total Organic Carbon	19-Apr-2021	19-Apr-2021	19-Apr-2021	19-Apr-2021	19-Apr-2021	19-Apr-2021	19-Apr-2021	19-Apr-2021
TPH CWG GC (S)	16-Apr-2021	16-Apr-2021	16-Apr-2021	16-Apr-2021	16-Apr-2021	15-Apr-2021	16-Apr-2021	15-Apr-2021
VOC MS (S)	13-Apr-2021	13-Apr-2021	13-Apr-2021	13-Apr-2021	13-Apr-2021	13-Apr-2021	13-Apr-2021	13-Apr-2021

Appendix General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

18. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Matrix interference**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**
§	**Sampled on date not provided**

19. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.
Standing Committee of Analysts, *The Quantification of Asbestos in Soil (2017).*

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Final Report

Report No.:	21-41336-1
Initial Date of Issue:	01-Dec-2021
Client	Rodgers Leask Environmental
Client Address:	Office 225 2430/2440 Aztec West Almoundsbury Bristol BS32 4AQ
Contact(s):	Chris Wilson David McCarroll Elliot Thomas
Project	P18-669
Quotation No.:	Q21-24056
Order No.:	PO115623
No. of Samples:	31
Turnaround (Wkdays):	5
Date Approved:	01-Dec-2021
Approved By:	
Details:	Glynn Harvey, Technical Manager

Date Received:	24-Nov-2021
Date Instructed:	24-Nov-2021
Results Due:	30-Nov-2021

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental				**Chemtest Job No.:**	21-41336	21-41336	21-41336	21-41336	21-41336	21-41336	21-41336	21-41336	21-41336	21-41336
Quotation No.: Q21-24056				**Chemtest Sample ID.:**	1326695	1326696	1326697	1326698	1326699	1326700	1326701	1326702	1326703	1326704
				Client Sample ID.:	AU31-1	AU30-1	AU30-2	AT30-1	AT30-2	AS30-1	AS30-2	AS30-3	AT31-1	AT31-2
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):	0.4	0.5	1.1	0.2	1.5	0.7	1.5	2.5	0.5	1.8
				Date Sampled:	19-Nov-2021	##########	19-Nov-2021	##########	19-Nov-2021	##########	19-Nov-2021	##########	19-Nov-2021	##########
				Asbestos Lab:	COVENTRY		COVENTRY		COVENTRY		COVENTRY		COVENTRY	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**										
ACM Type	U	2192		N/A	-		-		-		-		-	
Asbestos Identification	U	2192		N/A	No Asbestos Detected		No Asbestos Detected		No Asbestos Detected		No Asbestos Detected		No Asbestos Detected	
Asbestos by Gravimetry	U	2192	%	0.001										
Total Asbestos	U	2192	%	0.001										
Moisture	N	2030	%	0.020	9.4	13	17	10	8.4	7.7	24	16	9.6	8.2
Soil Colour	N	2040		N/A	Black	Black	Black	Brown	Brown	Brown	Black	Brown	Brown	Brown
Other Material	N	2040		N/A	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones
Soil Texture	N	2040		N/A	Sand	Sand	Sand	Sand	Sand	Sand	Sand	Sand	Sand	Sand
pH	M	2010		4.0	10.4	10.3	10.7	10.3	10.5	11.8	11.5	10.2	10.3	10.2
Cyanide (Total)	M	2300	mg/kg	0.50	2.7	1.6	20	22	1.7	1.9	< 0.50	< 0.50	0.50	1.3
Ammoniacal Nitrogen	M	2425	mg/kg	0.50	11	7.8	6.0	14	6.9	4.4	4.2	16	1.9	1.4
Iron (Total)	N	2430	mg/kg	100	24000	26000	26000	25000	26000	23000	20000	25000	26000	22000
Arsenic	M	2450	mg/kg	1.0	43	35	19	17	14	22	3.0	14	18	23
Cadmium	M	2450	mg/kg	0.10	0.69	0.40	0.36	1.3	0.25	0.84	< 0.10	0.79	0.33	0.24
Chromium	M	2450	mg/kg	1.0	110	110	130	79	74	590	44	63	49	82
Manganese	M	2450	mg/kg	5.0	12000	11000	6400	5400	5100	26000	1400	2500	4600	6100
Copper	M	2450	mg/kg	0.50	95	95	67	36	130	71	120	180	26	31
Mercury	M	2450	mg/kg	0.10	0.66	0.85	0.89	0.27	0.24	2.7	0.24	0.19	0.26	0.21
Nickel	M	2450	mg/kg	0.50	46	47	34	37	46	58	11	36	51	17
Lead	M	2450	mg/kg	0.50	140	140	310	150	61	52	20	72	87	140
Selenium	M	2450	mg/kg	0.20	< 0.20	0.28	0.33	0.39	< 0.20	< 0.20	0.63	0.54	0.23	< 0.20
Vanadium	U	2450	mg/kg	5.0	140	120	100	110	120	1400	94	100	46	82
Zinc	M	2450	mg/kg	0.50	200	160	160	300	150	91	27	140	150	180
Organic Matter	M	2625	%	0.40	24	59	64	17	98	2.8	100	47	40	21
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	21	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	36	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	88	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental					**Chemtest Job No.:**	21-41336	21-41336	21-41336	21-41336	21-41336	21-41336	21-41336	21-41336	21-41336	21-41336
Quotation No.: Q21-24056					**Chemtest Sample ID.:**	1326695	1326696	1326697	1326698	1326699	1326700	1326701	1326702	1326703	1326704
					Client Sample ID.:	AU31-1	AU30-1	AU30-2	AT30-1	AT30-2	AS30-1	AS30-2	AS30-3	AT31-1	AT31-2
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	0.4	0.5	1.1	0.2	1.5	0.7	1.5	2.5	0.5	1.8
					Date Sampled:	19-Nov-2021	##########	19-Nov-2021	##########	19-Nov-2021	##########	19-Nov-2021	##########	19-Nov-2021	##########
					Asbestos Lab:	COVENTRY		COVENTRY		COVENTRY		COVENTRY		COVENTRY	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**											
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0		< 5.0	150	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0		< 10	150	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Benzene	M	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	M	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	M	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	M	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	M	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Naphthalene	M	2800	mg/kg	0.10		< 0.10	< 0.10	1.8	3.2	< 0.10	< 0.10	0.67	< 0.10	< 0.10	< 0.10
Acenaphthylene	N	2800	mg/kg	0.10		< 0.10	< 0.10	0.66	0.67	< 0.10	< 0.10	0.13	< 0.10	< 0.10	< 0.10
Acenaphthene	M	2800	mg/kg	0.10		< 0.10	< 0.10	0.24	0.28	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	M	2800	mg/kg	0.10		< 0.10	< 0.10	0.32	0.52	< 0.10	< 0.10	0.47	< 0.10	< 0.10	< 0.10
Phenanthrene	M	2800	mg/kg	0.10		0.71	2.5	4.1	3.8	1.1	< 0.10	5.7	1.4	0.84	0.48
Anthracene	M	2800	mg/kg	0.10		0.22	1.0	0.91	1.1	0.19	< 0.10	0.88	0.22	0.32	0.14
Fluoranthene	M	2800	mg/kg	0.10		1.1	4.1	6.4	6.6	2.0	0.98	3.1	1.2	1.9	0.68
Pyrene	M	2800	mg/kg	0.10		1.0	3.2	4.5	4.5	1.3	0.94	1.9	0.82	1.4	0.51
Benzo[a]anthracene	M	2800	mg/kg	0.10		0.74	2.2	3.2	3.2	1.3	0.85	1.7	0.77	1.4	0.48
Chrysene	M	2800	mg/kg	0.10		0.70	2.5	3.4	2.8	1.3	1.0	2.0	0.90	1.6	0.65
Benzo[b]fluoranthene	M	2800	mg/kg	0.10		1.7	4.1	5.2	4.8	1.3	1.7	1.9	1.1	3.1	1.0
Benzo[k]fluoranthene	M	2800	mg/kg	0.10		0.49	1.1	1.4	1.4	0.73	0.77	0.60	0.38	0.87	0.27
Benzo[a]pyrene	M	2800	mg/kg	0.10		0.85	2.8	2.8	3.1	1.2	1.4	1.0	0.72	2.1	0.81
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.10		0.72	2.9	2.8	2.4	1.0	1.0	< 0.10	< 0.10	2.1	< 0.10
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10		0.22	0.43	1.1	0.83	0.24	< 0.10	< 0.10	< 0.10	0.48	< 0.10
Benzo[g,h,i]perylene	M	2800	mg/kg	0.10		0.91	1.9	2.5	2.3	0.84	0.78	< 0.10	< 0.10	1.6	< 0.10
Total Of 16 PAH's	N	2800	mg/kg	2.0		9.4	29	41	42	13	9.4	20	7.5	18	5.0
Resorcinol	M	2920	mg/kg	0.020		< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Phenol	M	2920	mg/kg	0.020		< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Cresols	M	2920	mg/kg	0.020		< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Xylenols	M	2920	mg/kg	0.020		< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
1-Naphthol	N	2920	mg/kg	0.020		< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Trimethylphenols	M	2920	mg/kg	0.020		< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Total Phenols	M	2920	mg/kg	0.10		< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental				**Chemtest Job No.:**	21-41336	21-41336	21-41336	21-41336	21-41336	21-41336	21-41336	21-41336	21-41336	21-41336
Quotation No.: Q21-24056				**Chemtest Sample ID.:**	1326705	1326706	1326707	1326708	1326709	1326710	1326711	1326712	1326713	1326714
				Client Sample ID.:	AS31-1	AS31-2	AR31-1	AR30-1	AQ31-1	AP31-1	AQ30-1	AQ30-2	AQ30-3	AO30-1
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):	0.6	1.7	0.3	0.5	1.0	0.3	0.5	1.7	2.8	0.6
				Date Sampled:	19-Nov-2021	##########	19-Nov-2021	##########	19-Nov-2021	##########	19-Nov-2021	##########	19-Nov-2021	##########
				Asbestos Lab:	COVENTRY		COVENTRY		COVENTRY		COVENTRY		COVENTRY	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**										
ACM Type	U	2192		N/A	-		-		-		Fibres/Clumps		-	
Asbestos Identification	U	2192		N/A	No Asbestos Detected		No Asbestos Detected		No Asbestos Detected		Chrysotile		No Asbestos Detected	
Asbestos by Gravimetry	U	2192	%	0.001							<0.001			
Total Asbestos	U	2192	%	0.001							<0.001			
Moisture	N	2030	%	0.020	10	9.7	5.0	11	4.3	11	12	17	20	10
Soil Colour	N	2040		N/A	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Black	Black	Black
Other Material	N	2040		N/A	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones
Soil Texture	N	2040		N/A	Sand	Sand	Sand	Sand	Sand	Sand	Sand	Sand	Sand	Sand
pH	M	2010		4.0	11.8	11.2	10.9	10.7	> 12.0	10.2	11.6	11.2	11.2	12.0
Cyanide (Total)	M	2300	mg/kg	0.50	2.4	3.4	< 0.50	< 0.50	< 0.50	< 0.50	4.5	2.4	< 0.50	1.2
Ammoniacal Nitrogen	M	2425	mg/kg	0.50	< 0.50	0.74	0.75	< 0.50	0.56	< 0.50	< 0.50	0.61	1.5	< 0.50
Iron (Total)	N	2430	mg/kg	100	22000	23000	8900	7500	21000	19000	23000	23000	14000	23000
Arsenic	M	2450	mg/kg	1.0	26	22	55	15	43	19	25	22	12	17
Cadmium	M	2450	mg/kg	0.10	0.15	0.38	0.82	< 0.10	< 0.10	< 0.10	0.59	1.1	2.5	0.15
Chromium	M	2450	mg/kg	1.0	670	120	10	19	1200	67	410	570	86	340
Manganese	M	2450	mg/kg	5.0	28000	7300	1800	3100	35000	4300	18000	11000	2300	13000
Copper	M	2450	mg/kg	0.50	130	51	76	23	290	60	51	73	34	50
Mercury	M	2450	mg/kg	0.10	4.3	0.53	< 0.10	< 0.10	1.9	0.14	1.4	0.85	0.24	0.89
Nickel	M	2450	mg/kg	0.50	35	25	10	8.3	26	9.9	32	150	15	16
Lead	M	2450	mg/kg	0.50	43	65	21	7.5	80	23	78	110	160	38
Selenium	M	2450	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Vanadium	U	2450	mg/kg	5.0	1200	220	24	23	800	95	390	250	82	300
Zinc	M	2450	mg/kg	0.50	77	83	60	24	82	45	110	120	190	86
Organic Matter	M	2625	%	0.40	9.0	11	2.2	0.69	2.8	1.2	9.0	29	59	33
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	1200	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	210	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	230	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	1400	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	230	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	19	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	210	< 1.0	< 1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental					**Chemtest Job No.:**	21-41336	21-41336	21-41336	21-41336	21-41336	21-41336	21-41336	21-41336	21-41336	21-41336
Quotation No.: Q21-24056					**Chemtest Sample ID.:**	1326705	1326706	1326707	1326708	1326709	1326710	1326711	1326712	1326713	1326714
					Client Sample ID.:	AS31-1	AS31-2	AR31-1	AR30-1	AQ31-1	AP31-1	AQ30-1	AQ30-2	AQ30-3	AO30-1
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	0.6	1.7	0.3	0.5	1.0	0.3	0.5	1.7	2.8	0.6
					Date Sampled:	19-Nov-2021	##########	19-Nov-2021	##########	19-Nov-2021	##########	19-Nov-2021	##########	19-Nov-2021	##########
					Asbestos Lab:	COVENTRY		COVENTRY		COVENTRY		COVENTRY		COVENTRY	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**											
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0		19	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	210	< 5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0		1400	< 10	< 10	< 10	< 10	< 10	440	< 10	< 10	< 10
Benzene	M	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	M	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	M	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	M	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	M	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Naphthalene	M	2800	mg/kg	0.10		< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	N	2800	mg/kg	0.10		< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	M	2800	mg/kg	0.10		< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	M	2800	mg/kg	0.10		< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	M	2800	mg/kg	0.10		< 0.10	3.1	< 0.10	1.6	0.24	0.34	< 0.10	1.6	1.4	1.9
Anthracene	M	2800	mg/kg	0.10		< 0.10	0.83	< 0.10	0.93	0.20	0.12	< 0.10	0.27	0.41	0.39
Fluoranthene	M	2800	mg/kg	0.10		0.77	6.1	< 0.10	3.2	0.47	0.90	1.3	2.2	1.8	2.2
Pyrene	M	2800	mg/kg	0.10		0.75	4.6	< 0.10	2.4	0.21	1.2	1.5	1.7	1.6	1.6
Benzo[a]anthracene	M	2800	mg/kg	0.10		0.70	2.5	< 0.10	1.1	0.23	0.91	0.97	1.1	1.1	0.84
Chrysene	M	2800	mg/kg	0.10		0.68	1.7	< 0.10	1.0	0.40	1.0	1.1	1.3	0.99	1.2
Benzo[b]fluoranthene	M	2800	mg/kg	0.10		1.2	1.9	< 0.10	1.1	0.24	2.4	2.2	1.8	1.4	1.7
Benzo[k]fluoranthene	M	2800	mg/kg	0.10		0.49	0.50	< 0.10	0.37	0.17	0.61	0.66	0.58	0.47	0.58
Benzo[a]pyrene	M	2800	mg/kg	0.10		1.0	1.3	< 0.10	0.97	0.27	1.3	1.3	1.2	0.82	0.98
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.10		< 0.10	< 0.10	< 0.10	< 0.10	0.37	1.4	< 0.10	1.1	0.43	< 0.10
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10		< 0.10	< 0.10	< 0.10	< 0.10	0.42	0.34	< 0.10	0.30	0.10	< 0.10
Benzo[g,h,i]perylene	M	2800	mg/kg	0.10		< 0.10	< 0.10	< 0.10	< 0.10	0.38	1.2	< 0.10	0.99	0.58	< 0.10
Total Of 16 PAH's	N	2800	mg/kg	2.0		5.6	23	< 2.0	13	3.6	12	9.0	14	11	11
Resorcinol	M	2920	mg/kg	0.020		< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Phenol	M	2920	mg/kg	0.020		< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Cresols	M	2920	mg/kg	0.020		< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Xylenols	M	2920	mg/kg	0.020		< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
1-Naphthol	N	2920	mg/kg	0.020		< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Trimethylphenols	M	2920	mg/kg	0.020		< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Total Phenols	M	2920	mg/kg	0.10		< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental				**Chemtest Job No.:**	21-41336	21-41336	21-41336	21-41336	21-41336	21-41336	21-41336	21-41336	21-41336	21-41336
Quotation No.: Q21-24056				**Chemtest Sample ID.:**	1326715	1326716	1326717	1326718	1326719	1326720	1326721	1326722	1326723	1326724
				Client Sample ID.:	AN31-1	AN30-1	AM31-1	AM30-1	AM29-1	AL28-1	AT26-1	AT26-2	W208-3-1	W208-3-2
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):	0.3	1.0	1.1	0.4	1.2	0.2	1.0	1.4	0.2	0.2
				Date Sampled:	19-Nov-2021	##########	19-Nov-2021	##########	19-Nov-2021	##########	19-Nov-2021	##########	19-Nov-2021	##########
				Asbestos Lab:	COVENTRY		COVENTRY		COVENTRY		COVENTRY		COVENTRY	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**										
ACM Type	U	2192		N/A	-		-		-		-		-	
Asbestos Identification	U	2192		N/A	No Asbestos Detected		No Asbestos Detected		No Asbestos Detected		No Asbestos Detected		No Asbestos Detected	
Asbestos by Gravimetry	U	2192	%	0.001										
Total Asbestos	U	2192	%	0.001										
Moisture	N	2030	%	0.020	9.0	8.7	8.9	3.6	12	4.1	11	9.4	11	8.0
Soil Colour	N	2040		N/A	Black	Black	Brown	Brown	Black	Brown	Brown	Brown	Brown	Brown
Other Material	N	2040		N/A	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones
Soil Texture	N	2040		N/A	Sand	Sand	Sand	Sand	Sand	Sand	Sand	Sand	Sand	Sand
pH	M	2010		4.0	> 12.0	11.1	11.9	> 12.0	> 12.0	> 12.0	> 12.0	11.0	11.0	10.7
Cyanide (Total)	M	2300	mg/kg	0.50	3.6	0.50	0.70	3.9	1.5	0.90	1.1	< 0.50	0.80	0.50
Ammoniacal Nitrogen	M	2425	mg/kg	0.50	0.70	< 0.50	< 0.50	1.0	< 0.50	< 0.50	< 0.50	1.2	1.1	27
Iron (Total)	N	2430	mg/kg	100	23000	22000	21000	21000	22000	21000	22000	22000	20000	21000
Arsenic	M	2450	mg/kg	1.0	27	11	17	41	23	35	33	30	38	30
Cadmium	M	2450	mg/kg	0.10	0.34	0.29	< 0.10	0.40	< 0.10	< 0.10	0.10	0.74	0.66	0.55
Chromium	M	2450	mg/kg	1.0	410	26	200	1000	450	530	400	140	130	100
Manganese	M	2450	mg/kg	5.0	17000	2700	11000	39000	18000	33000	28000	5200	4600	6600
Copper	M	2450	mg/kg	0.50	39	55	18	81	61	34	94	140	230	140
Mercury	M	2450	mg/kg	0.10	1.3	0.18	0.50	2.7	1.2	1.2	0.93	0.41	0.43	0.40
Nickel	M	2450	mg/kg	0.50	21	11	10	28	17	46	51	34	34	28
Lead	M	2450	mg/kg	0.50	67	61	24	180	43	24	31	120	120	97
Selenium	M	2450	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Vanadium	U	2450	mg/kg	5.0	360	38	210	780	400	2200	2300	180	190	160
Zinc	M	2450	mg/kg	0.50	130	80	53	110	60	65	69	220	200	180
Organic Matter	M	2625	%	0.40	26	53	2.4	2.1	22	1.4	2.2	7.1	5.9	6.2
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	< 1.0	< 1.0	6.2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	6.2	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	6.4	< 1.0	12
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	56	< 1.0	300
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental					**Chemtest Job No.:**	21-41336	21-41336	21-41336	21-41336	21-41336	21-41336	21-41336	21-41336	21-41336	21-41336
Quotation No.: Q21-24056					**Chemtest Sample ID.:**	1326715	1326716	1326717	1326718	1326719	1326720	1326721	1326722	1326723	1326724
					Client Sample ID.:	AN31-1	AN30-1	AM31-1	AM30-1	AM29-1	AL28-1	AT26-1	AT26-2	W208-3-1	W208-3-2
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	0.3	1.0	1.1	0.4	1.2	0.2	1.0	1.4	0.2	0.2
					Date Sampled:	19-Nov-2021	##########	19-Nov-2021	##########	19-Nov-2021	##########	19-Nov-2021	##########	19-Nov-2021	##########
					Asbestos Lab:	COVENTRY		COVENTRY		COVENTRY		COVENTRY		COVENTRY	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**											
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	63	< 5.0	310
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0		< 10	< 10	< 10	< 10	< 10	< 10	< 10	63	< 10	310
Benzene	M	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	M	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	M	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	M	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	M	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Naphthalene	M	2800	mg/kg	0.10		< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.18	0.59	2.1	2.6
Acenaphthylene	N	2800	mg/kg	0.10		< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.13	0.25	0.71	0.98
Acenaphthene	M	2800	mg/kg	0.10		< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.33	0.14	0.13	0.17
Fluorene	M	2800	mg/kg	0.10		< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.19	0.24	0.41	0.55
Phenanthrene	M	2800	mg/kg	0.10		0.59	1.2	< 0.10	0.38	< 0.10	2.0	3.7	1.2	3.3	4.1
Anthracene	M	2800	mg/kg	0.10		0.24	0.16	< 0.10	0.26	< 0.10	0.37	0.54	0.36	0.77	1.4
Fluoranthene	M	2800	mg/kg	0.10		1.5	0.76	0.84	0.74	0.83	2.7	5.7	2.3	5.4	6.9
Pyrene	M	2800	mg/kg	0.10		1.3	0.61	0.89	0.58	0.70	2.2	5.2	1.6	3.7	4.5
Benzo[a]anthracene	M	2800	mg/kg	0.10		0.71	0.47	0.69	0.42	0.38	1.9	4.0	1.5	2.6	3.0
Chrysene	M	2800	mg/kg	0.10		0.99	0.55	0.77	0.55	0.52	2.1	3.5	1.6	2.6	3.2
Benzo[b]fluoranthene	M	2800	mg/kg	0.10		1.5	0.55	1.1	0.48	1.0	3.1	5.8	2.5	3.3	4.2
Benzo[k]fluoranthene	M	2800	mg/kg	0.10		0.26	0.26	0.50	0.18	0.31	1.3	2.1	0.61	1.5	1.5
Benzo[a]pyrene	M	2800	mg/kg	0.10		0.95	0.44	0.93	0.13	0.70	2.3	4.6	1.4	2.0	3.0
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.10		0.75	< 0.10	< 0.10	< 0.10	< 0.10	2.2	4.1	1.3	2.4	2.9
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10		0.28	< 0.10	< 0.10	< 0.10	< 0.10	0.42	0.64	0.43	0.41	0.59
Benzo[g,h,i]perylene	M	2800	mg/kg	0.10		0.73	< 0.10	< 0.10	< 0.10	< 0.10	2.0	3.7	1.3	1.6	1.9
Total Of 16 PAH's	N	2800	mg/kg	2.0		9.8	5.0	5.7	3.7	4.4	23	44	17	33	42
Resorcinol	M	2920	mg/kg	0.020		< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Phenol	M	2920	mg/kg	0.020		< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Cresols	M	2920	mg/kg	0.020		< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Xylenols	M	2920	mg/kg	0.020		< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
1-Naphthol	N	2920	mg/kg	0.020		< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Trimethylphenols	M	2920	mg/kg	0.020		< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Total Phenols	M	2920	mg/kg	0.10		< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

Results - Water

Project: P18-669

Client: Rodgers Leask Environmental			**Chemtest Job No.:**		21-41336
Quotation No.: Q21-24056			**Chemtest Sample ID.:**		1326725
			Client Sample ID.:		D2-S
			Sample Type:		WATER
			Date Sampled:		##########
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
pH	U	1010		N/A	8.4
Electrical Conductivity	U	1020	µS/cm	1.0	970
Suspended Solids At 105C	U	1030	mg/l	5.0	< 5.0
Total Dissolved Solids	N	1020	mg/l	1.0	630
Turbidity	N	1060	NTU	1.0	4.4
Biochemical Oxygen Demand	N	1090	mg O2/l	4.0	[B] < 4.0
Chemical Oxygen Demand	U	1100	mg O2/l	10	[B] 30
Dissolved Oxygen	N	1150	mg O2/l	0.50	6.0
Redox Potential	N	1170	mV	N/A	130
Chloride	U	1220	mg/l	1.0	55
Fluoride	U	1220	mg/l	0.050	0.56
Ammoniacal Nitrogen	U	1220	mg/l	0.050	7.8
Phosphorus (Total)	N	1220	mg/l	0.020	0.037
Phosphate	U	1220	mg/l	0.200	< 0.20
Phosphorus (Dissolved)	U	1220	mg/l	0.020	0.036
Sulphur	N	1220	mg/l	1.0	83
Sulphate	U	1220	mg/l	1.0	250
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050
Thiocyanate	U	1300	mg/l	0.50	< 0.50
Cyanide (Complex)	U	1300	mg/l	0.050	< 0.050
Sulphide	U	1325	mg/l	0.050	[B] < 0.050
Calcium	U	1455	mg/l	2.00	71
Magnesium	U	1455	mg/l	0.20	16
Total Calcium	N	1455	mg/l	5.0	71
Total Magnesium	N	1455	mg/l	0.50	15
Total Hardness as CaCO3	U	1270	mg/l	15	240
Arsenic (Dissolved)	U	1455	µg/l	0.20	4.4
Boron (Dissolved)	U	1455	µg/l	10.0	390
Barium (Dissolved)	U	1455	µg/l	5.00	130
Beryllium (Dissolved)	U	1455	µg/l	1.00	< 1.0
Cadmium (Dissolved)	U	1455	µg/l	0.11	< 0.11
Chromium (Dissolved)	U	1455	µg/l	0.50	0.67
Copper (Dissolved)	U	1455	µg/l	0.50	2.3
Iron (Dissolved)	N	1455	µg/l	5.0	28
Mercury (Dissolved)	U	1455	µg/l	0.05	< 0.05
Manganese (Dissolved)	U	1455	µg/l	0.50	100
Nickel (Dissolved)	U	1455	µg/l	0.50	2.1
Lead (Dissolved)	U	1455	µg/l	0.50	< 0.50
Antimony (Dissolved)	U	1455	µg/l	0.50	0.55
Selenium (Dissolved)	U	1455	µg/l	0.50	1.7
Vanadium (Dissolved)	U	1455	µg/l	0.50	14
Zinc (Dissolved)	U	1455	µg/l	2.5	3.4
Arsenic (Total)	N	1455	µg/l	0.20	4.4

Results - Water

Project: P18-669

Client: Rodgers Leask Environmental			**Chemtest Job No.:**		21-41336
Quotation No.: Q21-24056			**Chemtest Sample ID.:**		1326725
			Client Sample ID.:		D2-S
			Sample Type:		WATER
			Date Sampled:		##########
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Boron (Total)	N	1455	µg/l	10.0	390
Barium (Total)	N	1455	µg/l	5.00	130
Beryllium (Total)	N	1455	µg/l	1.00	< 1.0
Cadmium (Total)	N	1455	µg/l	0.11	< 0.11
Chromium (Total)	N	1455	µg/l	0.50	0.67
Copper (Total)	N	1455	µg/l	0.50	2.3
Iron (Total)	N	1455	µg/l	5.0	28
Mercury (Total)	N	1455	µg/l	0.05	< 0.05
Manganese (Total)	N	1455	µg/l	0.50	100
Nickel (Total)	N	1455	µg/l	0.50	2.1
Lead (Total)	N	1455	µg/l	0.50	< 0.50
Antimony (Total)	N	1455	µg/l	0.50	0.55
Selenium (Total)	N	1455	µg/l	0.50	1.7
Vanadium (Total)	N	1455	µg/l	0.50	14
Zinc (Total)	N	1455	µg/l	2.5	3.4
Chromium (Hexavalent)	U	1490	µg/l	20	[B] < 20
Dissolved Organic Carbon	U	1610	mg/l	2.0	8.0
Total Inorganic Carbon	N	1220	mg/l	2.5	46
Total Organic Carbon	U	1610	mg/l	2.0	8.5
Aliphatic TPH >C5-C6	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C6-C8	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C8-C10	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C10-C12	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C12-C16	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C16-C21	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C21-C35	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C35-C44	N	1675	µg/l	0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	µg/l	5.0	< 5.0
Aromatic TPH >C5-C7	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C7-C8	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C8-C10	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C10-C12	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C12-C16	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C16-C21	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C21-C35	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C35-C44	N	1675	µg/l	0.10	< 0.10
Total Aromatic Hydrocarbons	N	1675	µg/l	5.0	< 5.0
Total Petroleum Hydrocarbons	N	1675	µg/l	10	< 10
Dichlorodifluoromethane	U	1760	µg/l	1.0	< 1.0
Chloromethane	U	1760	µg/l	1.0	< 1.0
Vinyl Chloride	N	1760	µg/l	1.0	< 1.0
Bromomethane	U	1760	µg/l	5	< 5
Chloroethane	U	1760	µg/l	2.0	< 2.0
Trichlorofluoromethane	U	1760	µg/l	1.0	< 1.0

Results - Water

Project: P18-669

Client: Rodgers Leask Environmental			**Chemtest Job No.:**		21-41336
Quotation No.: Q21-24056			**Chemtest Sample ID.:**		1326725
			Client Sample ID.:		D2-S
			Sample Type:		WATER
			Date Sampled:		##########
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
1,1-Dichloroethene	U	1760	µg/l	1.0	< 1.0
Trans 1,2-Dichloroethene	U	1760	µg/l	1.0	< 1.0
1,1-Dichloroethane	U	1760	µg/l	1.0	< 1.0
cis 1,2-Dichloroethene	U	1760	µg/l	1.0	< 1.0
Bromochloromethane	U	1760	µg/l	5	< 5
Trichloromethane	U	1760	µg/l	1.0	< 1.0
1,1,1-Trichloroethane	U	1760	µg/l	1.0	< 1.0
Tetrachloromethane	U	1760	µg/l	1.0	< 1.0
1,1-Dichloropropene	U	1760	µg/l	1.0	< 1.0
Benzene	U	1760	µg/l	1.0	< 1.0
1,2-Dichloroethane	U	1760	µg/l	2.0	< 2.0
Trichloroethene	N	1760	µg/l	1.0	< 1.0
1,2-Dichloropropane	U	1760	µg/l	1.0	< 1.0
Dibromomethane	U	1760	µg/l	10	< 10
Bromodichloromethane	U	1760	µg/l	5	< 5
cis-1,3-Dichloropropene	N	1760	µg/l	10	< 10
Toluene	U	1760	µg/l	1.0	< 1.0
Trans-1,3-Dichloropropene	N	1760	µg/l	10	< 10
1,1,2-Trichloroethane	U	1760	µg/l	10	< 10
Tetrachloroethene	U	1760	µg/l	1.0	< 1.0
1,3-Dichloropropane	U	1760	µg/l	2.0	< 2.0
Dibromochloromethane	U	1760	µg/l	10	< 10
1,2-Dibromoethane	U	1760	µg/l	5	< 5
Chlorobenzene	N	1760	µg/l	1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	1760	µg/l	2.0	< 2.0
Ethylbenzene	U	1760	µg/l	1.0	< 1.0
m & p-Xylene	U	1760	µg/l	1.0	< 1.0
o-Xylene	U	1760	µg/l	1.0	< 1.0
Styrene	U	1760	µg/l	1.0	< 1.0
Tribromomethane	U	1760	µg/l	1.0	< 1.0
Isopropylbenzene	U	1760	µg/l	1.0	< 1.0
Bromobenzene	U	1760	µg/l	1.0	< 1.0
1,2,3-Trichloropropane	N	1760	µg/l	50	< 50
N-Propylbenzene	U	1760	µg/l	1.0	< 1.0
2-Chlorotoluene	U	1760	µg/l	1.0	< 1.0
1,3,5-Trimethylbenzene	U	1760	µg/l	1.0	< 1.0
4-Chlorotoluene	U	1760	µg/l	1.0	< 1.0
Tert-Butylbenzene	U	1760	µg/l	1.0	< 1.0
1,2,4-Trimethylbenzene	U	1760	µg/l	1.0	< 1.0
Sec-Butylbenzene	U	1760	µg/l	1.0	< 1.0
1,3-Dichlorobenzene	N	1760	µg/l	1.0	< 1.0
4-Isopropyltoluene	U	1760	µg/l	1.0	< 1.0
1,4-Dichlorobenzene	U	1760	µg/l	1.0	< 1.0
N-Butylbenzene	U	1760	µg/l	1.0	< 1.0

Results - Water

Project: P18-669

Client: Rodgers Leask Environmental			**Chemtest Job No.:**		21-41336
Quotation No.: Q21-24056			**Chemtest Sample ID.:**		1326725
			Client Sample ID.:		D2-S
			Sample Type:		WATER
			Date Sampled:		##########
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
1,2-Dichlorobenzene	U	1760	µg/l	1.0	< 1.0
1,2-Dibromo-3-Chloropropane	U	1760	µg/l	50	< 50
1,2,4-Trichlorobenzene	U	1760	µg/l	1.0	< 1.0
Hexachlorobutadiene	U	1760	µg/l	1.0	< 1.0
1,2,3-Trichlorobenzene	U	1760	µg/l	2.0	< 2.0
Methyl Tert-Butyl Ether	N	1760	µg/l	1.0	< 1.0
N-Nitrosodimethylamine	N	1790	µg/l	0.50	< 0.50
Phenol	N	1790	µg/l	0.50	< 0.50
2-Chlorophenol	N	1790	µg/l	0.50	< 0.50
Bis-(2-Chloroethyl)Ether	N	1790	µg/l	0.50	< 0.50
1,3-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50
1,4-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50
1,2-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50
2-Methylphenol (o-Cresol)	N	1790	µg/l	0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	N	1790	µg/l	0.50	< 0.50
Hexachloroethane	N	1790	µg/l	0.50	< 0.50
N-Nitrosodi-n-propylamine	N	1790	µg/l	0.50	< 0.50
4-Methylphenol	N	1790	µg/l	0.50	< 0.50
Nitrobenzene	N	1790	µg/l	0.50	< 0.50
Isophorone	N	1790	µg/l	0.50	< 0.50
2-Nitrophenol	N	1790	µg/l	0.50	< 0.50
2,4-Dimethylphenol	N	1790	µg/l	0.50	< 0.50
Bis(2-Chloroethoxy)Methane	N	1790	µg/l	0.50	< 0.50
2,4-Dichlorophenol	N	1790	µg/l	0.50	< 0.50
1,2,4-Trichlorobenzene	N	1790	µg/l	0.50	< 0.50
Naphthalene	N	1790	µg/l	0.50	< 0.50
4-Chloroaniline	N	1790	µg/l	0.50	< 0.50
Hexachlorobutadiene	N	1790	µg/l	0.50	< 0.50
4-Chloro-3-Methylphenol	N	1790	µg/l	0.50	< 0.50
2-Methylnaphthalene	N	1790	µg/l	0.50	< 0.50
Hexachlorocyclopentadiene	N	1790	µg/l	0.50	< 0.50
2,4,6-Trichlorophenol	N	1790	µg/l	0.50	< 0.50
2,4,5-Trichlorophenol	N	1790	µg/l	0.50	< 0.50
2-Chloronaphthalene	N	1790	µg/l	0.50	< 0.50
2-Nitroaniline	N	1790	µg/l	0.50	< 0.50
Acenaphthylene	N	1790	µg/l	0.50	< 0.50
Dimethylphthalate	N	1790	µg/l	0.50	< 0.50
2,6-Dinitrotoluene	N	1790	µg/l	0.50	< 0.50
Acenaphthene	N	1790	µg/l	0.50	< 0.50
3-Nitroaniline	N	1790	µg/l	0.50	< 0.50
Dibenzofuran	N	1790	µg/l	0.50	< 0.50
4-Chlorophenylphenylether	N	1790	µg/l	0.50	< 0.50
2,4-Dinitrotoluene	N	1790	µg/l	0.50	< 0.50
Fluorene	N	1790	µg/l	0.50	< 0.50

Results - Water

Project: P18-669

Client: Rodgers Leask Environmental			**Chemtest Job No.:**		21-41336
Quotation No.: Q21-24056			**Chemtest Sample ID.:**		1326725
			Client Sample ID.:		D2-S
			Sample Type:		WATER
			Date Sampled:		##########
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Diethyl Phthalate	N	1790	µg/l	0.50	< 0.50
4-Nitroaniline	N	1790	µg/l	0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	1790	µg/l	0.50	< 0.50
Azobenzene	N	1790	µg/l	0.50	< 0.50
4-Bromophenylphenyl Ether	N	1790	µg/l	0.50	< 0.50
Hexachlorobenzene	N	1790	µg/l	0.50	< 0.50
Pentachlorophenol	N	1790	µg/l	0.50	< 0.50
Phenanthrene	N	1790	µg/l	0.50	< 0.50
Anthracene	N	1790	µg/l	0.50	< 0.50
Carbazole	N	1790	µg/l	0.50	< 0.50
Di-N-Butyl Phthalate	N	1790	µg/l	0.50	< 0.50
Fluoranthene	N	1790	µg/l	0.50	< 0.50
Pyrene	N	1790	µg/l	0.50	< 0.50
Butylbenzyl Phthalate	N	1790	µg/l	0.50	< 0.50
Benzo[a]anthracene	N	1790	µg/l	0.50	< 0.50
Chrysene	N	1790	µg/l	0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	1790	µg/l	0.50	< 0.50
Di-N-Octyl Phthalate	N	1790	µg/l	0.50	< 0.50
Benzo[b]fluoranthene	N	1790	µg/l	0.50	< 0.50
Benzo[k]fluoranthene	N	1790	µg/l	0.50	< 0.50
Benzo[a]pyrene	N	1790	µg/l	0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	N	1790	µg/l	0.50	< 0.50
Dibenz(a,h)Anthracene	N	1790	µg/l	0.50	< 0.50
Benzo[g,h,i]perylene	N	1790	µg/l	0.50	< 0.50
4-Nitrophenol	N	1790	µg/l	0.50	< 0.50
Naphthalene	U	1800	µg/l	0.10	< 0.10
Acenaphthylene	U	1800	µg/l	0.10	< 0.10
Acenaphthene	U	1800	µg/l	0.10	< 0.10
Fluorene	U	1800	µg/l	0.10	< 0.10
Phenanthrene	U	1800	µg/l	0.10	< 0.10
Anthracene	U	1800	µg/l	0.10	< 0.10
Fluoranthene	U	1800	µg/l	0.10	< 0.10
Pyrene	U	1800	µg/l	0.10	< 0.10
Benzo[a]anthracene	U	1800	µg/l	0.10	< 0.10
Chrysene	U	1800	µg/l	0.10	< 0.10
Benzo[b]fluoranthene	U	1800	µg/l	0.10	< 0.10
Benzo[k]fluoranthene	U	1800	µg/l	0.10	< 0.10
Benzo[a]pyrene	U	1800	µg/l	0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	1800	µg/l	0.10	< 0.10
Dibenz(a,h)Anthracene	U	1800	µg/l	0.10	< 0.10
Benzo[g,h,i]perylene	U	1800	µg/l	0.10	< 0.10
Total Of 16 PAH's	U	1800	µg/l	2.0	< 2.0
Total Phenols	U	1920	mg/l	0.030	< 0.030

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request.The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
1326725		D2-S		19-Nov-2021	B	Coloured Winchester 1000ml
1326725		D2-S		19-Nov-2021	B	EPA Vial 40ml
1326725		D2-S		19-Nov-2021	B	Plastic Bottle 1000ml

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH	pH Meter
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1030	Total Suspended Solids	Total suspended solids	Filtration of a mixed sample through a standard glass fibre filter and determination of the mass of residue retained dried at 105°C.
1060	Turbidity	Turbidity	Spetctrophotometry
1090	Biochemical Oxygen Demand	Biochemical Oxygen demand (BOD)	Colorimetric determination of dissolved oxygen in seeded sample after 5 days incubation at 20°C.
1100	Chemical Oxygen Demand	Chemical Oxygen demand (COD)	Dichromate oxidation of organic matter in sample followed by colorimetric determination of residual Cr[VI].
1150	Dissolved Oxygen	Dissolved Oxygen (DO)	Electrometric determination (on site preferred), using oxygen sensitive membrane electrode.
1170	Redox Potential	Redox Potential	Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1270	Total Hardness of Waters	Total hardness	Calculation applied to calcium and magnesium results, expressed as mg l-1 CaCO3 equivalent.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1325	Sulphide in Waters	Sulphides	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using N,N–dimethyl-pphenylenediamine.
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5–C6, >C6–C8, >C8– C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Pentane extraction / GCxGC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-MS	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930

Test Methods

SOP	Title	Parameters included	Method summary
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	22-20752-1
Initial Date of Issue:	10-Jun-2022
Client	Rodgers Leask Environmental
Client Address:	Office 225 2430/2440 Aztec West Almoundsbury Bristol BS32 4AQ
Contact(s):	Caitlin Davies Chris Wilson David McCarroll
Project	P18-669
Quotation No.:	Q21-24056
Order No.:	PO115623
No. of Samples:	8
Turnaround (Wkdays):	5
Date Approved:	10-Jun-2022
Approved By:	
Details:	Stuart Henderson, Technical Manager

Date Received:	06-Jun-2022
Date Instructed:	06-Jun-2022
Results Due:	10-Jun-2022

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental		**Chemtest Job No.:**			22-20752	22-20752	22-20752	22-20752	22-20752	22-20752	22-20752	22-20752
Quotation No.: Q21-24056		**Chemtest Sample ID.:**			1441669	1441670	1441671	1441672	1441673	1441674	1441675	1441676
		Client Sample ID.:			AT35-1	AT35-2	AU34-2	AU34-1	AT34-2	AS36-1	AU36-1	AU35-1
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			0.5	1.4	2.3	0.5	1.5	1	0.7	0.5
		Date Sampled:			31-May-2022	31-May-2022	31-May-2022	31-May-2022	31-May-2022	31-May-2022	31-May-2022	31-May-2022
		Asbestos Lab:			NEW-ASB		NEW-ASB		NEW-ASB		NEW-ASB	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
ACM Type	U	2192		N/A	-		-		-		-	
Asbestos Identification	U	2192		N/A	No Asbestos Detected		No Asbestos Detected		No Asbestos Detected		No Asbestos Detected	
Moisture	N	2030	%	0.020	10	13	14	6.5	9.5	7.6	6.4	15
Soil Colour	N	2040		N/A	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown
Other Material	N	2040		N/A	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones
Soil Texture	N	2040		N/A	Sand	Sand	Sand	Sand	Sand	Sand	Sand	Sand
pH	M	2010		4.0	> 12.0	> 12.0	10.2	10.3	11.2	11.7	11.8	> 12.0
Cyanide (Total)	M	2300	mg/kg	0.50	14	5.4	0.70	1.5	2.7	1.8	18	12
Ammoniacal Nitrogen	M	2425	mg/kg	0.50	1.0	0.65	12	2.2	0.76	0.58	1.1	2.1
Iron (Total)	N	2430	mg/kg	100	23000	22000	19000	20000	12000	24000	25000	22000
Arsenic	M	2455	mg/kg	0.5	12	8.8	17	8.0	6.9	6.0	5.2	12
Cadmium	M	2455	mg/kg	0.10	1.2	0.77	0.24	0.35	0.22	0.10	0.25	0.33
Chromium	M	2455	mg/kg	0.5	270	110	15	39	34	540	89	29
Manganese	M	2455	mg/kg	1.0	9900	5000	480	2400	2500	14000	4900	2100
Copper	M	2455	mg/kg	0.50	46	37	27	13	16	13	14	22
Mercury	M	2455	mg/kg	0.05	0.29	0.17	0.12	0.11	0.05	< 0.05	0.17	0.43
Nickel	M	2455	mg/kg	0.50	29	38	18	13	16	10	11	22
Lead	M	2455	mg/kg	0.50	170	80	35	41	22	12	32	34
Selenium	M	2455	mg/kg	0.25	0.60	0.51	1.3	0.73	2.7	< 0.25	0.44	0.79
Vanadium	U	2455	mg/kg	0.5	170	76	21	41	36	320	87	33
Zinc	M	2455	mg/kg	0.50	560	210	59	110	48	40	130	120
Organic Matter	M	2625	%	0.40	8.3	7.8	17	6.0	3.3	6.0	2.9	5.2
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	9.8	< 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	32	< 1.0
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	84	< 1.0
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	3000	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	630	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	3800	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental		**Chemtest Job No.:**			22-20752	22-20752	22-20752	22-20752	22-20752	22-20752	22-20752	22-20752
Quotation No.: Q21-24056		**Chemtest Sample ID.:**			1441669	1441670	1441671	1441672	1441673	1441674	1441675	1441676
		Client Sample ID.:			AT35-1	AT35-2	AU34-2	AU34-1	AT34-2	AS36-1	AU36-1	AU35-1
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			0.5	1.4	2.3	0.5	1.5	1	0.7	0.5
		Date Sampled:			31-May-2022	31-May-2022	31-May-2022	31-May-2022	31-May-2022	31-May-2022	31-May-2022	31-May-2022
		Asbestos Lab:			NEW-ASB		NEW-ASB		NEW-ASB		NEW-ASB	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	500	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	33	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	530	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	< 10	< 10	< 10	< 10	< 10	4300	< 10
Benzene	M	2760	µg/kg	1.0	1.2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	22
Toluene	M	2760	µg/kg	1.0	1.3	< 1.0	< 1.0	< 1.0	< 1.0	6.8	< 1.0	5.8
Ethylbenzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	3.0	< 1.0	< 1.0
m & p-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	8.9	< 1.0	< 1.0
o-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	4.3	< 1.0	< 1.0
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Naphthalene	M	2800	mg/kg	0.10	1.4	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	N	2800	mg/kg	0.10	0.59	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	M	2800	mg/kg	0.10	0.35	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	M	2800	mg/kg	0.10	0.56	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	M	2800	mg/kg	0.10	3.1	1.2	< 0.10	0.84	0.37	< 0.10	0.48	0.26
Anthracene	M	2800	mg/kg	0.10	0.82	0.44	< 0.10	0.20	0.21	< 0.10	0.55	0.13
Fluoranthene	M	2800	mg/kg	0.10	7.0	3.2	0.50	1.3	0.69	0.62	1.9	0.84
Pyrene	M	2800	mg/kg	0.10	7.1	3.2	0.62	0.94	0.62	0.57	2.3	0.78
Benzo[a]anthracene	M	2800	mg/kg	0.10	4.0	2.1	0.51	0.86	< 0.10	< 0.10	1.8	0.39
Chrysene	M	2800	mg/kg	0.10	4.2	2.0	0.57	0.59	< 0.10	< 0.10	2.0	0.56
Benzo[b]fluoranthene	M	2800	mg/kg	0.10	7.7	3.6	< 0.10	1.1	< 0.10	< 0.10	4.4	1.0
Benzo[k]fluoranthene	M	2800	mg/kg	0.10	2.7	1.3	< 0.10	0.39	< 0.10	< 0.10	1.5	0.32
Benzo[a]pyrene	M	2800	mg/kg	0.10	6.1	2.5	< 0.10	1.1	< 0.10	< 0.10	3.6	0.69
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.10	4.9	2.2	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.72
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10	0.91	0.63	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.14
Benzo[g,h,i]perylene	M	2800	mg/kg	0.10	4.4	2.0	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.68
Total Of 16 PAH's	N	2800	mg/kg	2.0	56	24	2.2	7.3	< 2.0	< 2.0	19	6.5
Resorcinol	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Phenol	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Cresols	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Xylenols	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
1-Naphthol	N	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Trimethylphenols	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Total Phenols	M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

Report Information

Key

U	UKAS accredited
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N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
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All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
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Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	22-20758-1
Initial Date of Issue:	10-Jun-2022
Client	Rodgers Leask Environmental
Client Address:	Office 225 2430/2440 Aztec West Almoundsbury Bristol BS32 4AQ
Contact(s):	Caitlin Davies Chris Wilson David McCarroll
Project	P18-669
Quotation No.:	Q21-24056
Order No.:	PO115623
No. of Samples:	8
Turnaround (Wkdays):	5
Date Approved:	10-Jun-2022
Approved By:	
Details:	Stuart Henderson, Technical Manager

Date Received:	06-Jun-2022
Date Instructed:	06-Jun-2022
Results Due:	10-Jun-2022

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental		**Chemtest Job No.:**			22-20758	22-20758	22-20758	22-20758	22-20758	22-20758	22-20758	22-20758
Quotation No.: Q21-24056		**Chemtest Sample ID.:**			1441700	1441701	1441702	1441703	1441704	1441705	1441706	1441707
		Client Sample ID.:			AQ36-2	AQ34-1	AO37-1	AO37-2	AN36-2	AN36-1	AQ34-2	AQ36-1
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			2	0.5	0.3	1.8	2	0.5	1.5	0.5
		Date Sampled:			31-May-2022	31-May-2022	31-May-2022	31-May-2022	31-May-2022	31-May-2022	31-May-2022	31-May-2022
		Asbestos Lab:			DURHAM		DURHAM		DURHAM		DURHAM	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
ACM Type	U	2192		N/A	-		-		-		-	
Asbestos Identification	U	2192		N/A	No Asbestos Detected		No Asbestos Detected		No Asbestos Detected		No Asbestos Detected	
Moisture	N	2030	%	0.020	17	1.7	2.8	7.8	9.1	5.0	7.7	4.8
Soil Colour	N	2040		N/A	Brown	Brown	Grey	Brown	Brown	Grey	Brown	Grey
Other Material	N	2040		N/A	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones
Soil Texture	N	2040		N/A	Sand	Gravel	Sand	Sand	Sand	Sand	Sand	Sand
pH	M	2010		4.0	8.9	11.4	9.7	10.9	9.0	10.7	> 12.0	11.4
Cyanide (Total)	M	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	2.2
Ammoniacal Nitrogen	M	2425	mg/kg	0.50	15	0.86	1.0	3.3	18	1.1	0.93	< 0.50
Iron (Total)	N	2430	mg/kg	100	19000	8100	14000	13000	25000	12000	13000	14000
Arsenic	M	2455	mg/kg	0.5	18	2.4	5.3	5.7	19	5.3	26	4.2
Cadmium	M	2455	mg/kg	0.10	0.18	0.16	0.25	0.12	0.13	0.17	1.5	0.48
Chromium	M	2455	mg/kg	0.5	15	6.1	12	27	13	23	17	66
Manganese	M	2455	mg/kg	1.0	350	250	3900	1400	990	910	2400	3000
Copper	M	2455	mg/kg	0.50	42	4.8	6.9	15	33	5.4	13	11
Mercury	M	2455	mg/kg	0.05	0.49	0.07	0.05	< 0.05	0.05	< 0.05	0.09	0.06
Nickel	M	2455	mg/kg	0.50	19	3.2	7.8	14	37	7.7	9.6	33
Lead	M	2455	mg/kg	0.50	80	29	26	24	27	17	62	50
Selenium	M	2455	mg/kg	0.25	1.3	< 0.25	< 0.25	1.4	1.2	< 0.25	0.39	0.25
Vanadium	U	2455	mg/kg	0.5	22	6.8	12	52	25	24	24	58
Zinc	M	2455	mg/kg	0.50	70	61	42	42	61	33	140	85
Organic Matter	M	2625	%	0.40	31	4.7	1.0	2.4	5.5	6.0	7.4	10
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental			**Chemtest Job No.:**		22-20758	22-20758	22-20758	22-20758	22-20758	22-20758	22-20758	22-20758
Quotation No.: Q21-24056			**Chemtest Sample ID.:**		1441700	1441701	1441702	1441703	1441704	1441705	1441706	1441707
			Client Sample ID.:		AQ36-2	AQ34-1	AO37-1	AO37-2	AN36-2	AN36-1	AQ34-2	AQ36-1
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		2	0.5	0.3	1.8	2	0.5	1.5	0.5
			Date Sampled:		31-May-2022	31-May-2022	31-May-2022	31-May-2022	31-May-2022	31-May-2022	31-May-2022	31-May-2022
			Asbestos Lab:		DURHAM		DURHAM		DURHAM		DURHAM	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Benzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Naphthalene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	M	2800	mg/kg	0.10	1.2	0.14	0.18	0.48	< 0.10	0.27	0.54	0.46
Anthracene	M	2800	mg/kg	0.10	0.25	< 0.10	< 0.10	0.12	< 0.10	< 0.10	0.12	< 0.10
Fluoranthene	M	2800	mg/kg	0.10	1.6	0.10	0.25	0.53	< 0.10	0.40	0.63	0.65
Pyrene	M	2800	mg/kg	0.10	1.2	0.10	0.23	0.33	< 0.10	0.31	0.51	0.57
Benzo[a]anthracene	M	2800	mg/kg	0.10	0.63	< 0.10	0.13	0.23	< 0.10	0.11	0.29	0.31
Chrysene	M	2800	mg/kg	0.10	0.69	< 0.10	0.17	0.23	< 0.10	0.15	0.29	0.38
Benzo[b]fluoranthene	M	2800	mg/kg	0.10	0.99	< 0.10	< 0.10	0.34	< 0.10	0.20	0.55	0.64
Benzo[k]fluoranthene	M	2800	mg/kg	0.10	0.36	< 0.10	< 0.10	0.13	< 0.10	0.10	0.16	0.20
Benzo[a]pyrene	M	2800	mg/kg	0.10	0.65	< 0.10	< 0.10	0.24	< 0.10	0.13	0.31	0.38
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.10	0.41	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.25	0.35
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10	0.15	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.10	0.11
Benzo[g,h,i]perylene	M	2800	mg/kg	0.10	0.42	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.26	0.38
Total Of 16 PAH's	N	2800	mg/kg	2.0	8.6	< 2.0	< 2.0	2.6	< 2.0	< 2.0	4.0	4.4
Resorcinol	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Phenol	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Cresols	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Xylenols	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
1-Naphthol	N	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Trimethylphenols	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Total Phenols	M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
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2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
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2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

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A - Date of sampling not supplied
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E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

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All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Amended Report

Report No.:	22-20761-3		
Initial Date of Issue:	15-Jun-2022	**Date of Re-Issue:**	27-Jun-2022
Client	Rodgers Leask Environmental		
Client Address:	Office 225 2430/2440 Aztec West Almoundsbury Bristol BS32 4AQ		
Contact(s):	Caitlin Davies Chris Wilson David McCarroll		
Project	P18-669		
Quotation No.:		**Date Received:**	06-Jun-2022
Order No.:	PO115623	**Date Instructed:**	06-Jun-2022
No. of Samples:	8		
Turnaround (Wkdays):	17	**Results Due:**	28-Jun-2022
Date Approved:	27-Jun-2022		
Approved By:			
Details:	Stuart Henderson, Technical Manager		

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental		**Chemtest Job No.:**			22-20761	22-20761	22-20761	22-20761	22-20761	22-20761	22-20761
Quotation No.:		**Chemtest Sample ID.:**			1441718	1441719	1441720	1441721	1441722	1441723	1441725
		Client Sample ID.:			AT34-1	AO36-1	AN35-1	AP34-1	AO36-2	AP34-5	AT35-1
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			0.70	0.50	0.30	0.60	1.80	1.90	0.5
		Date Sampled:			31-May-2022	31-May-2022	31-May-2022	31-May-2022	31-May-2022	31-May-2022	31-May-2022
		Asbestos Lab:			COVENTRY		COVENTRY		COVENTRY	COVENTRY	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**							
ACM Type	U	2192		N/A	-		-		bitumen	-	
Asbestos Identification	U	2192		N/A	No Asbestos Detected		No Asbestos Detected		Chrysotile	No Asbestos Detected	
Asbestos by Gravimetry	U	2192	%	0.001					0.063		
Total Asbestos	U	2192	%	0.001					0.063		
Moisture	N	2030	%	0.020	8.9	7.3	11	7.7	8.4	12	16
Soil Colour	N	2040		N/A	Brown	Brown	Brown	Brown	Brown	Brown	Brown
Other Material	N	2040		N/A	Stones	Stones	Stones	Stones	Stones	Stones	Stones
Soil Texture	N	2040		N/A	Sand	Sand	Sand	Sand	Sand	Sand	Sand
pH	M	2010		4.0	10.8	> 12.0	11.6	11.4	10.2	10.5	11.2
Cyanide (Total)	M	2300	mg/kg	0.50	1.6	< 0.50	< 0.50	0.70	< 0.50	< 0.50	0.80
Ammoniacal Nitrogen	M	2425	mg/kg	0.50	0.93	0.58	0.86	2.6	2.0	1.3	0.58
Iron (Total)	N	2430	mg/kg	100	8700	10000	18000	9600	21000	11000	30000
Arsenic	M	2455	mg/kg	0.5	3.8	14	7.3	5.7	12	5.6	3.0
Cadmium	M	2455	mg/kg	0.10	< 0.10	0.19	0.41	0.14	0.17	< 0.10	0.82
Chromium	M	2455	mg/kg	0.5	24	8.4	76	25	17	27	76
Manganese	M	2455	mg/kg	1.0	2000	330	2800	2100	660	3500	3400
Copper	M	2455	mg/kg	0.50	10	6.5	17	12	18	16	17
Mercury	M	2455	mg/kg	0.05	< 0.05	< 0.05	0.07	< 0.05	0.06	< 0.05	0.13
Nickel	M	2455	mg/kg	0.50	7.9	4.8	12	5.2	14	4.7	8.6
Lead	M	2455	mg/kg	0.50	19	19	27	20	25	16	51
Selenium	M	2455	mg/kg	0.25	1.4	< 0.25	1.7	3.6	0.70	3.7	0.67
Vanadium	U	2455	mg/kg	0.5	38	10	67	49	21	74	64
Zinc	M	2455	mg/kg	0.50	26	30	39	42	43	33	150
Organic Matter	M	2625	%	0.40	4.8	12	12	2.9	13	3.5	7.1
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental		**Chemtest Job No.:**			22-20761	22-20761	22-20761	22-20761	22-20761	22-20761	22-20761
Quotation No.:		**Chemtest Sample ID.:**			1441718	1441719	1441720	1441721	1441722	1441723	1441725
		Client Sample ID.:			AT34-1	AO36-1	AN35-1	AP34-1	AO36-2	AP34-5	AT35-1
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			0.70	0.50	0.30	0.60	1.80	1.90	0.5
		Date Sampled:			31-May-2022	31-May-2022	31-May-2022	31-May-2022	31-May-2022	31-May-2022	31-May-2022
		Asbestos Lab:			COVENTRY		COVENTRY		COVENTRY	COVENTRY	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**							
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Benzene	M	2760	µg/kg	1.0	2.4	1.1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	M	2760	µg/kg	1.0	2.3	1.8	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	M	2760	µg/kg	1.0	4.2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	M	2760	µg/kg	1.0	2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Naphthalene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	M	2800	mg/kg	0.10	0.22	1.5	0.56	0.21	0.74	0.27	1.2
Anthracene	M	2800	mg/kg	0.10	< 0.10	0.69	0.13	< 0.10	0.21	< 0.10	0.21
Fluoranthene	M	2800	mg/kg	0.10	0.38	3.9	0.77	0.27	0.86	0.39	3.2
Pyrene	M	2800	mg/kg	0.10	0.35	2.7	0.66	0.30	0.69	0.31	3.1
Benzo[a]anthracene	M	2800	mg/kg	0.10	0.24	1.7	0.39	0.13	0.36	0.16	2.1
Chrysene	M	2800	mg/kg	0.10	0.26	1.8	0.53	0.13	0.40	0.15	2.2
Benzo[b]fluoranthene	M	2800	mg/kg	0.10	0.48	2.3	0.68	< 0.10	0.45	0.23	3.8
Benzo[k]fluoranthene	M	2800	mg/kg	0.10	0.19	0.77	0.23	< 0.10	0.17	0.11	1.4
Benzo[a]pyrene	M	2800	mg/kg	0.10	0.23	1.6	0.46	< 0.10	0.28	0.20	2.8
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.10	0.23	1.2	0.32	< 0.10	0.15	< 0.10	< 0.10
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10	0.13	0.19	0.13	< 0.10	0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	M	2800	mg/kg	0.10	0.30	1.2	0.40	< 0.10	0.21	< 0.10	< 0.10
Total Of 16 PAH's	N	2800	mg/kg	2.0	3.0	20	5.3	< 2.0	4.6	< 2.0	20
Resorcinol	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Phenol	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Cresols	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Xylenols	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
1-Naphthol	N	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Trimethylphenols	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Total Phenols	M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

Results - Water

Project: P18-669

Client: Rodgers Leask Environmental			**Chemtest Job No.:**		22-20761
Quotation No.:			**Chemtest Sample ID.:**		1441724
			Client Sample ID.:		D2-S
			Sample Type:		WATER
			Date Sampled:		31-May-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
pH	U	1010		N/A	7.7
Electrical Conductivity	U	1020	µS/cm	1.0	700
Suspended Solids At 105C	U	1030	mg/l	5.0	27
Total Dissolved Solids	N	1020	mg/l	1.0	460
Turbidity	N	1060	NTU	1.0	10
Biochemical Oxygen Demand	N	1090	mg O2/l	4.0	[B] < 4.0
Chemical Oxygen Demand	U	1100	mg O2/l	10	[B] 22
Dissolved Oxygen	N	1150	mg O2/l	0.50	6.7
Redox Potential	N	1170	mV	N/A	83
Chloride	U	1220	mg/l	1.0	67
Fluoride	U	1220	mg/l	0.050	0.48
Ammoniacal Nitrogen	U	1220	mg/l	0.050	0.11
Phosphorus (Total)	N	1220	mg/l	0.020	< 0.020
Phosphate	U	1220	mg/l	0.200	< 0.20
Phosphorus (Dissolved)	U	1220	mg/l	0.020	< 0.020
Sulphur	N	1220	mg/l	1.0	43
Sulphate	U	1220	mg/l	1.0	130
Cyanide (Total)	U	1300	mg/l	0.050	1.1
Cyanide (Free)	U	1300	mg/l	0.050	0.14
Thiocyanate	U	1300	mg/l	0.50	< 0.50
Cyanide (Complex)	U	1300	mg/l	0.050	0.98
Sulphide	U	1325	mg/l	0.050	[B] < 0.050
Calcium	U	1455	mg/l	2.00	51
Magnesium	U	1455	mg/l	0.20	10
Total Calcium	N	1455	mg/l	5.0	54
Total Magnesium	N	1455	mg/l	0.50	10
Total Hardness as CaCO3	U	1270	mg/l	15	170
Arsenic (Dissolved)	U	1455	µg/l	0.20	2.7
Boron (Dissolved)	U	1455	µg/l	10.0	140
Barium (Dissolved)	U	1455	µg/l	5.00	54
Beryllium (Dissolved)	U	1455	µg/l	1.00	< 1.0
Cadmium (Dissolved)	U	1455	µg/l	0.11	< 0.11
Chromium (Dissolved)	U	1455	µg/l	0.50	2.6
Copper (Dissolved)	U	1455	µg/l	0.50	2.5
Iron (Dissolved)	N	1455	µg/l	5.0	< 5.0
Mercury (Dissolved)	U	1455	µg/l	0.05	< 0.05
Manganese (Dissolved)	U	1455	µg/l	0.50	1.5
Nickel (Dissolved)	U	1455	µg/l	0.50	1.8
Lead (Dissolved)	U	1455	µg/l	0.50	< 0.50
Antimony (Dissolved)	U	1455	µg/l	0.50	0.50

Results - Water

Project: P18-669

Client: Rodgers Leask Environmental			**Chemtest Job No.:**		22-20761
Quotation No.:			**Chemtest Sample ID.:**		1441724
			Client Sample ID.:		D2-S
			Sample Type:		WATER
			Date Sampled:		31-May-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Selenium (Dissolved)	U	1455	µg/l	0.50	0.86
Vanadium (Dissolved)	U	1455	µg/l	0.50	8.1
Zinc (Dissolved)	U	1455	µg/l	2.5	< 2.5
Arsenic (Total)	N	1455	µg/l	0.20	2.9
Boron (Total)	N	1455	µg/l	10.0	140
Barium (Total)	N	1455	µg/l	5.00	52
Beryllium (Total)	N	1455	µg/l	1.00	< 1.0
Cadmium (Total)	N	1455	µg/l	0.11	< 0.11
Chromium (Total)	N	1455	µg/l	0.50	7.7
Copper (Total)	N	1455	µg/l	0.50	3.1
Iron (Total)	N	1455	µg/l	5.0	< 5.0
Mercury (Total)	N	1455	µg/l	0.05	< 0.05
Manganese (Total)	N	1455	µg/l	0.50	1.5
Nickel (Total)	N	1455	µg/l	0.50	1.8
Lead (Total)	N	1455	µg/l	0.50	< 0.50
Antimony (Total)	N	1455	µg/l	0.50	< 0.50
Selenium (Total)	N	1455	µg/l	0.50	1.5
Vanadium (Total)	N	1455	µg/l	0.50	7.8
Zinc (Total)	N	1455	µg/l	2.5	< 2.5
Chromium (Hexavalent)	U	1490	µg/l	20	[B] < 20
Dissolved Organic Carbon	U	1610	mg/l	2.0	6.8
Total Inorganic Carbon	N	1220	mg/l	2.5	24
Total Organic Carbon	U	1610	mg/l	2.0	6.9
Aliphatic TPH >C5-C6	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C6-C8	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C8-C10	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C10-C12	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C12-C16	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C16-C21	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C21-C35	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C35-C44	N	1675	µg/l	0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	µg/l	5.0	< 5.0
Aromatic TPH >C5-C7	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C7-C8	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C8-C10	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C10-C12	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C12-C16	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C16-C21	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C21-C35	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C35-C44	N	1675	µg/l	0.10	< 0.10

Results - Water

Project: P18-669

Client: Rodgers Leask Environmental			**Chemtest Job No.:**		22-20761
Quotation No.:			**Chemtest Sample ID.:**		1441724
			Client Sample ID.:		D2-S
			Sample Type:		WATER
			Date Sampled:		31-May-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Total Aromatic Hydrocarbons	N	1675	µg/l	5.0	< 5.0
Total Petroleum Hydrocarbons	N	1675	µg/l	10	< 10
Dichlorodifluoromethane	U	1760	µg/l	1.0	< 1.0
Chloromethane	U	1760	µg/l	1.0	< 1.0
Vinyl Chloride	N	1760	µg/l	1.0	< 1.0
Bromomethane	U	1760	µg/l	5	< 5
Chloroethane	U	1760	µg/l	2.0	< 2.0
Trichlorofluoromethane	U	1760	µg/l	1.0	< 1.0
1,1-Dichloroethene	U	1760	µg/l	1.0	< 1.0
Trans 1,2-Dichloroethene	U	1760	µg/l	1.0	< 1.0
1,1-Dichloroethane	U	1760	µg/l	1.0	< 1.0
cis 1,2-Dichloroethene	U	1760	µg/l	1.0	< 1.0
Bromochloromethane	U	1760	µg/l	5	< 5
Trichloromethane	U	1760	µg/l	1.0	< 1.0
1,1,1-Trichloroethane	U	1760	µg/l	1.0	< 1.0
Tetrachloromethane	U	1760	µg/l	1.0	< 1.0
1,1-Dichloropropene	U	1760	µg/l	1.0	< 1.0
Benzene	U	1760	µg/l	1.0	< 1.0
1,2-Dichloroethane	U	1760	µg/l	2.0	< 2.0
Trichloroethene	N	1760	µg/l	1.0	< 1.0
1,2-Dichloropropane	U	1760	µg/l	1.0	< 1.0
Dibromomethane	U	1760	µg/l	10	< 10
Bromodichloromethane	U	1760	µg/l	5	< 5
cis-1,3-Dichloropropene	N	1760	µg/l	10	< 10
Toluene	U	1760	µg/l	1.0	< 1.0
Trans-1,3-Dichloropropene	N	1760	µg/l	10	< 10
1,1,2-Trichloroethane	U	1760	µg/l	10	< 10
Tetrachloroethene	U	1760	µg/l	1.0	< 1.0
1,3-Dichloropropane	U	1760	µg/l	2.0	< 2.0
Dibromochloromethane	U	1760	µg/l	10	< 10
1,2-Dibromoethane	U	1760	µg/l	5	< 5
Chlorobenzene	N	1760	µg/l	1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	1760	µg/l	2.0	< 2.0
Ethylbenzene	U	1760	µg/l	1.0	< 1.0
m & p-Xylene	U	1760	µg/l	1.0	< 1.0
o-Xylene	U	1760	µg/l	1.0	< 1.0
Styrene	U	1760	µg/l	1.0	< 1.0
Tribromomethane	U	1760	µg/l	1.0	< 1.0
Isopropylbenzene	U	1760	µg/l	1.0	< 1.0
Bromobenzene	U	1760	µg/l	1.0	< 1.0

Results - Water

Project: P18-669

Client: Rodgers Leask Environmental			**Chemtest Job No.:**		22-20761
Quotation No.:			**Chemtest Sample ID.:**		1441724
			Client Sample ID.:		D2-S
			Sample Type:		WATER
			Date Sampled:		31-May-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
1,2,3-Trichloropropane	N	1760	µg/l	50	< 50
N-Propylbenzene	U	1760	µg/l	1.0	< 1.0
2-Chlorotoluene	U	1760	µg/l	1.0	< 1.0
1,3,5-Trimethylbenzene	U	1760	µg/l	1.0	< 1.0
4-Chlorotoluene	U	1760	µg/l	1.0	< 1.0
Tert-Butylbenzene	U	1760	µg/l	1.0	< 1.0
1,2,4-Trimethylbenzene	U	1760	µg/l	1.0	< 1.0
Sec-Butylbenzene	U	1760	µg/l	1.0	< 1.0
1,3-Dichlorobenzene	N	1760	µg/l	1.0	< 1.0
4-Isopropyltoluene	U	1760	µg/l	1.0	< 1.0
1,4-Dichlorobenzene	U	1760	µg/l	1.0	< 1.0
N-Butylbenzene	U	1760	µg/l	1.0	< 1.0
1,2-Dichlorobenzene	U	1760	µg/l	1.0	< 1.0
1,2-Dibromo-3-Chloropropane	U	1760	µg/l	50	< 50
1,2,4-Trichlorobenzene	U	1760	µg/l	1.0	< 1.0
Hexachlorobutadiene	U	1760	µg/l	1.0	< 1.0
1,2,3-Trichlorobenzene	U	1760	µg/l	2.0	< 2.0
Methyl Tert-Butyl Ether	N	1760	µg/l	1.0	< 1.0
N-Nitrosodimethylamine	N	1790	µg/l	0.50	< 0.50
Phenol	N	1790	µg/l	0.50	< 0.50
2-Chlorophenol	N	1790	µg/l	0.50	< 0.50
Bis-(2-Chloroethyl)Ether	N	1790	µg/l	0.50	< 0.50
1,3-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50
1,4-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50
1,2-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50
2-Methylphenol (o-Cresol)	N	1790	µg/l	0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	N	1790	µg/l	0.50	< 0.50
Hexachloroethane	N	1790	µg/l	0.50	< 0.50
N-Nitrosodi-n-propylamine	N	1790	µg/l	0.50	< 0.50
4-Methylphenol	N	1790	µg/l	0.50	< 0.50
Nitrobenzene	N	1790	µg/l	0.50	< 0.50
Isophorone	N	1790	µg/l	0.50	< 0.50
2-Nitrophenol	N	1790	µg/l	0.50	< 0.50
2,4-Dimethylphenol	N	1790	µg/l	0.50	< 0.50
Bis(2-Chloroethoxy)Methane	N	1790	µg/l	0.50	< 0.50
2,4-Dichlorophenol	N	1790	µg/l	0.50	< 0.50
1,2,4-Trichlorobenzene	N	1790	µg/l	0.50	< 0.50
Naphthalene	N	1790	µg/l	0.50	< 0.50
4-Chloroaniline	N	1790	µg/l	0.50	< 0.50
Hexachlorobutadiene	N	1790	µg/l	0.50	< 0.50

Results - Water

Project: P18-669

Client: Rodgers Leask Environmental			**Chemtest Job No.:**		22-20761
Quotation No.:			**Chemtest Sample ID.:**		1441724
			Client Sample ID.:		D2-S
			Sample Type:		WATER
			Date Sampled:		31-May-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
4-Chloro-3-Methylphenol	N	1790	µg/l	0.50	< 0.50
2-Methylnaphthalene	N	1790	µg/l	0.50	< 0.50
Hexachlorocyclopentadiene	N	1790	µg/l	0.50	< 0.50
2,4,6-Trichlorophenol	N	1790	µg/l	0.50	< 0.50
2,4,5-Trichlorophenol	N	1790	µg/l	0.50	< 0.50
2-Chloronaphthalene	N	1790	µg/l	0.50	< 0.50
2-Nitroaniline	N	1790	µg/l	0.50	< 0.50
Acenaphthylene	N	1790	µg/l	0.50	< 0.50
Dimethylphthalate	N	1790	µg/l	0.50	< 0.50
2,6-Dinitrotoluene	N	1790	µg/l	0.50	< 0.50
Acenaphthene	N	1790	µg/l	0.50	< 0.50
3-Nitroaniline	N	1790	µg/l	0.50	< 0.50
Dibenzofuran	N	1790	µg/l	0.50	< 0.50
4-Chlorophenylphenylether	N	1790	µg/l	0.50	< 0.50
2,4-Dinitrotoluene	N	1790	µg/l	0.50	< 0.50
Fluorene	N	1790	µg/l	0.50	< 0.50
Diethyl Phthalate	N	1790	µg/l	0.50	< 0.50
4-Nitroaniline	N	1790	µg/l	0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	1790	µg/l	0.50	< 0.50
Azobenzene	N	1790	µg/l	0.50	< 0.50
4-Bromophenylphenyl Ether	N	1790	µg/l	0.50	< 0.50
Hexachlorobenzene	N	1790	µg/l	0.50	< 0.50
Pentachlorophenol	N	1790	µg/l	0.50	< 0.50
Phenanthrene	N	1790	µg/l	0.50	< 0.50
Anthracene	N	1790	µg/l	0.50	< 0.50
Carbazole	N	1790	µg/l	0.50	< 0.50
Di-N-Butyl Phthalate	N	1790	µg/l	0.50	< 0.50
Fluoranthene	N	1790	µg/l	0.50	< 0.50
Pyrene	N	1790	µg/l	0.50	< 0.50
Butylbenzyl Phthalate	N	1790	µg/l	0.50	< 0.50
Benzo[a]anthracene	N	1790	µg/l	0.50	< 0.50
Chrysene	N	1790	µg/l	0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	1790	µg/l	0.50	< 0.50
Di-N-Octyl Phthalate	N	1790	µg/l	0.50	< 0.50
Benzo[b]fluoranthene	N	1790	µg/l	0.50	< 0.50
Benzo[k]fluoranthene	N	1790	µg/l	0.50	< 0.50
Benzo[a]pyrene	N	1790	µg/l	0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	N	1790	µg/l	0.50	< 0.50
Dibenz(a,h)Anthracene	N	1790	µg/l	0.50	< 0.50
Benzo[g,h,i]perylene	N	1790	µg/l	0.50	< 0.50

Results - Water

Project: P18-669

Client: Rodgers Leask Environmental			**Chemtest Job No.:**		22-20761
Quotation No.:			**Chemtest Sample ID.:**		1441724
			Client Sample ID.:		D2-S
			Sample Type:		WATER
			Date Sampled:		31-May-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
4-Nitrophenol	N	1790	µg/l	0.50	< 0.50
Naphthalene	U	1800	µg/l	0.10	< 0.10
Acenaphthylene	U	1800	µg/l	0.10	< 0.10
Acenaphthene	U	1800	µg/l	0.10	< 0.10
Fluorene	U	1800	µg/l	0.10	< 0.10
Phenanthrene	U	1800	µg/l	0.10	< 0.10
Anthracene	U	1800	µg/l	0.10	< 0.10
Fluoranthene	U	1800	µg/l	0.10	< 0.10
Pyrene	U	1800	µg/l	0.10	< 0.10
Benzo[a]anthracene	U	1800	µg/l	0.10	< 0.10
Chrysene	U	1800	µg/l	0.10	< 0.10
Benzo[b]fluoranthene	U	1800	µg/l	0.10	< 0.10
Benzo[k]fluoranthene	U	1800	µg/l	0.10	< 0.10
Benzo[a]pyrene	U	1800	µg/l	0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	1800	µg/l	0.10	< 0.10
Dibenz(a,h)Anthracene	U	1800	µg/l	0.10	< 0.10
Benzo[g,h,i]perylene	U	1800	µg/l	0.10	< 0.10
Total Of 16 PAH's	U	1800	µg/l	2.0	< 2.0
Total Phenols	U	1920	mg/l	0.030	< 0.030

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request.The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
1441724		D2-S		31-May-2022	B	Coloured Winchester 1000ml
1441724		D2-S		31-May-2022	B	EPA Vial 40ml
1441724		D2-S		31-May-2022	B	Plastic Bottle 1000ml

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH	pH Meter
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1030	Total Suspended Solids	Total suspended solids	Filtration of a mixed sample through a standard glass fibre filter and determination of the mass of residue retained dried at 105°C.
1060	Turbidity	Turbidity	Spetctrophotometry
1090	Biochemical Oxygen Demand	Biochemical Oxygen demand (BOD)	Colorimetric determination of dissolved oxygen in seeded sample after 5 days incubation at 20°C.
1100	Chemical Oxygen Demand	Chemical Oxygen demand (COD)	Dichromate oxidation of organic matter in sample followed by colorimetric determination of residual Cr[VI].
1150	Dissolved Oxygen	Dissolved Oxygen (DO)	Electrometric determination (on site preferred), using oxygen sensitive membrane electrode.
1170	Redox Potential	Redox Potential	Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1270	Total Hardness of Waters	Total hardness	Calculation applied to calcium and magnesium results, expressed as mg l-1 CaCO3 equivalent.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1325	Sulphide in Waters	Sulphides	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using N,N–dimethyl-pphenylenediamine.
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5–C6, >C6–C8, >C8– C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Pentane extraction / GCxGC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-MS	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

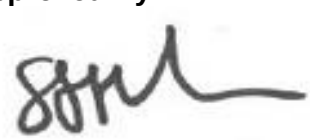
If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Amended Report

Report No.:	22-20772-2		
Initial Date of Issue:	10-Jun-2022	**Date of Re-Issue:**	14-Jun-2022
Client	Rodgers Leask Environmental		
Client Address:	Office 225 2430/2440 Aztec West Almoundsbury Bristol BS32 4AQ		
Contact(s):	Caitlin Davies Chris Wilson David McCarroll		
Project	P18-669		
Quotation No.:	Q21-24056	**Date Received:**	06-Jun-2022
Order No.:	PO115623	**Date Instructed:**	06-Jun-2022
No. of Samples:	6		
Turnaround (Wkdays):	11	**Results Due:**	20-Jun-2022
Date Approved:	14-Jun-2022		

Approved By:



Details: Stuart Henderson, Technical Manager

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental		**Chemtest Job No.:**			22-20772	22-20772	22-20772	22-20772	22-20772	22-20772
Quotation No.: Q21-24056		**Chemtest Sample ID.:**			1441789	1441790	1441791	1441792	1441793	1441794
		Client Sample ID.:			AT36-2	AU37-1	AT37-2	AT36-1	AU37-2	AN35-2
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			1.8	0.6	1.8	0.4	1.7	1
		Date Sampled:			31-May-2022	31-May-2022	31-May-2022	31-May-2022	31-May-2022	31-May-2022
		Asbestos Lab:			DURHAM		DURHAM		DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**						
ACM Type	U	2192		N/A	Fibres/Clumps		-		-	-
Asbestos Identification	U	2192		N/A	Chrysotile		No Asbestos Detected		No Asbestos Detected	No Asbestos Detected
Asbestos by Gravimetry	U	2192	%	0.001	0.005					
Total Asbestos	U	2192	%	0.001	0.005					
Moisture	N	2030	%	0.020	12	9.8	13	6.6	11	13
Soil Colour	N	2040		N/A	Black	Black	Black	Brown	Brown	Black
Other Material	N	2040		N/A	Stones	Stones	Stones	Stones and Roots	Stones	Stones
Soil Texture	N	2040		N/A	Sand	Sand	Sand	Sand	Sand	Sand
pH	M	2010		4.0	> 12.0	11.2	11.3	12.0	> 12.0	11.2
Cyanide (Total)	M	2300	mg/kg	0.50	0.60	2.5	0.70	8.7	3.3	< 0.50
Ammoniacal Nitrogen	M	2425	mg/kg	0.50	0.86	1.7	1.6	1.5	1.3	1.6
Iron (Total)	N	2430	mg/kg	100	11000	22000	14000	22000	13000	21000
Arsenic	M	2455	mg/kg	0.5	6.2	6.5	5.4	6.8	8.1	12
Cadmium	M	2455	mg/kg	0.10	0.18	0.65	0.15	0.53	0.26	0.22
Chromium	M	2455	mg/kg	0.5	28	110	19	230	40	48
Manganese	M	2455	mg/kg	1.0	2100	5500	660	9500	1100	2000
Copper	M	2455	mg/kg	0.50	18	21	17	23	29	32
Mercury	M	2455	mg/kg	0.05	0.11	0.12	< 0.05	0.13	0.05	0.09
Nickel	M	2455	mg/kg	0.50	11	16	16	13	24	21
Lead	M	2455	mg/kg	0.50	27	60	14	60	29	51
Selenium	M	2455	mg/kg	0.25	2.6	1.0	0.82	0.47	0.84	1.2
Vanadium	U	2455	mg/kg	0.5	43	100	27	200	37	46
Zinc	M	2455	mg/kg	0.50	75	150	30	190	45	79
Organic Matter	M	2625	%	0.40	5.9	7.8	9.3	2.1	2.6	12
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental		**Chemtest Job No.:**			22-20772	22-20772	22-20772	22-20772	22-20772	22-20772
Quotation No.: Q21-24056		**Chemtest Sample ID.:**			1441789	1441790	1441791	1441792	1441793	1441794
		Client Sample ID.:			AT36-2	AU37-1	AT37-2	AT36-1	AU37-2	AN35-2
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			1.8	0.6	1.8	0.4	1.7	1
		Date Sampled:			31-May-2022	31-May-2022	31-May-2022	31-May-2022	31-May-2022	31-May-2022
		Asbestos Lab:			DURHAM		DURHAM		DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**						
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	< 10	< 10	< 10	< 10	< 10
Benzene	M	2760	µg/kg	1.0	< 1.0	1.9	6.3	< 1.0	< 1.0	< 1.0
Toluene	M	2760	µg/kg	1.0	< 1.0	< 1.0	2.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Naphthalene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	M	2800	mg/kg	0.10	< 0.10	1.7	< 0.10	< 0.10	0.58	< 0.10
Anthracene	M	2800	mg/kg	0.10	< 0.10	1.5	< 0.10	< 0.10	0.90	< 0.10
Fluoranthene	M	2800	mg/kg	0.10	< 0.10	9.1	< 0.10	0.99	4.4	0.65
Pyrene	M	2800	mg/kg	0.10	< 0.10	9.3	< 0.10	1.1	3.5	0.78
Benzo[a]anthracene	M	2800	mg/kg	0.10	< 0.10	7.6	< 0.10	1.0	3.0	< 0.10
Chrysene	M	2800	mg/kg	0.10	< 0.10	9.6	< 0.10	1.0	4.4	< 0.10
Benzo[b]fluoranthene	M	2800	mg/kg	0.10	< 0.10	17	< 0.10	1.8	5.7	< 0.10
Benzo[k]fluoranthene	M	2800	mg/kg	0.10	< 0.10	5.9	< 0.10	0.49	1.8	< 0.10
Benzo[a]pyrene	M	2800	mg/kg	0.10	< 0.10	14	< 0.10	1.5	4.0	< 0.10
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.10	< 0.10	12	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10	< 0.10	1.4	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	M	2800	mg/kg	0.10	< 0.10	12	< 0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's	N	2800	mg/kg	2.0	< 2.0	100	< 2.0	7.9	28	< 2.0
Resorcinol	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Phenol	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Cresols	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Xylenols	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
1-Naphthol	N	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Trimethylphenols	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Total Phenols	M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	22-23680-1
Initial Date of Issue:	30-Jun-2022
Client	Rodgers Leask Environmental
Client Address:	Office 225 2430/2440 Aztec West Almoundsbury Bristol BS32 4AQ
Contact(s):	Caitlin Davies Chris Wilson David McCarroll
Project	P18-669
Quotation No.:	Q21-24056
Order No.:	PO115623
No. of Samples:	5
Turnaround (Wkdays):	5
Date Approved:	30-Jun-2022
Approved By:	
Details:	Stuart Henderson, Technical Manager

Date Received:	24-Jun-2022
Date Instructed:	24-Jun-2022
Results Due:	30-Jun-2022

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental		**Chemtest Job No.:**			22-23680	22-23680	22-23680	22-23680	22-23680
Quotation No.: Q21-24056		**Chemtest Sample ID.:**			1454848	1454849	1454850	1454851	1454852
		Client Sample ID.:			R159-1	R164-1	R164-2	R154-1	R157-1
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			0.20	0.20	0.20	0.20	0.20
		Bottom Depth (m):			0.20	0.20	0.20	0.20	0.20
		Date Sampled:			22-Jun-2022	22-Jun-2022	22-Jun-2022	22-Jun-2022	22-Jun-2022
		Asbestos Lab:			DURHAM		DURHAM		DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**					
ACM Type	U	2192		N/A	-		-		-
Asbestos Identification	U	2192		N/A	No Asbestos Detected		No Asbestos Detected		No Asbestos Detected
Moisture	N	2030	%	0.020	6.3	7.2	7.4	2.9	5.7
Soil Colour	N	2040		N/A	Brown	Brown	Brown	Brown	Black
Other Material	N	2040		N/A	Stones	Stones and Roots	Stones and Roots	Stones	Stones
Soil Texture	N	2040		N/A	Gravel	Loam	Loam	Gravel	Loam
pH	M	2010		4.0	7.8	7.7	7.5	7.6	9.7
Cyanide (Total)	M	2300	mg/kg	0.50	0.80	15	12	1.0	0.90
Ammoniacal Nitrogen	M	2425	mg/kg	0.50	2.7	3.2	2.6	3.7	1.7
Iron (Total)	N	2430	mg/kg	100	31000	26000	26000	18000	28000
Arsenic	M	2455	mg/kg	0.5	11	5.7	16	7.4	8.9
Cadmium	M	2455	mg/kg	0.10	0.41	0.83	1.1	0.22	0.76
Chromium	M	2455	mg/kg	0.5	19	49	85	22	98
Manganese	M	2455	mg/kg	1.0	6100	3000	4900	1300	6500
Copper	M	2455	mg/kg	0.50	150	22	39	15	18
Mercury	M	2455	mg/kg	0.05	1.7	0.31	0.35	0.05	0.15
Nickel	M	2455	mg/kg	0.50	11	22	27	19	19
Lead	M	2455	mg/kg	0.50	67	130	160	31	58
Selenium	M	2455	mg/kg	0.25	1.7	0.97	1.5	1.3	0.98
Vanadium	U	2455	mg/kg	0.5	34	58	91	33	170
Zinc	M	2455	mg/kg	0.50	180	330	350	68	150
Organic Matter	M	2625	%	0.40	4.0	9.0	9.1	3.6	19
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	< 1.0	20	25	< 1.0	< 1.0
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	360	170	240	80	150
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	35	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	360	190	300	80	150
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	6.6

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental		**Chemtest Job No.:**			22-23680	22-23680	22-23680	22-23680	22-23680
Quotation No.: Q21-24056		**Chemtest Sample ID.:**			1454848	1454849	1454850	1454851	1454852
		Client Sample ID.:			R159-1	R164-1	R164-2	R154-1	R157-1
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			0.20	0.20	0.20	0.20	0.20
		Bottom Depth (m):			0.20	0.20	0.20	0.20	0.20
		Date Sampled:			22-Jun-2022	22-Jun-2022	22-Jun-2022	22-Jun-2022	22-Jun-2022
		Asbestos Lab:			DURHAM		DURHAM		DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**					
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	14	24	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	71	170	< 1.0	33
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	280	1600	2500	160	270
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	410	580	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	280	2100	3300	160	310
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	640	2300	3600	240	460
Benzene	M	2760	µg/kg	1.0	5.3	< 1.0	< 1.0	< 1.0	3.1
Toluene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	2.1
Ethylbenzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Naphthalene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	3.0
Acenaphthylene	N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.91
Acenaphthene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.13
Fluorene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.75
Phenanthrene	M	2800	mg/kg	0.10	< 0.10	1.5	1.4	0.27	4.6
Anthracene	M	2800	mg/kg	0.10	< 0.10	3.3	3.1	0.34	1.3
Fluoranthene	M	2800	mg/kg	0.10	0.39	20	18	1.1	8.0
Pyrene	M	2800	mg/kg	0.10	0.34	21	18	1.0	5.6
Benzo[a]anthracene	M	2800	mg/kg	0.10	< 0.10	17	15	0.80	4.0
Chrysene	M	2800	mg/kg	0.10	< 0.10	18	16	0.81	3.0
Benzo[b]fluoranthene	M	2800	mg/kg	0.10	< 0.10	40	36	1.6	5.4
Benzo[k]fluoranthene	M	2800	mg/kg	0.10	< 0.10	12	11	0.49	1.6
Benzo[a]pyrene	M	2800	mg/kg	0.10	< 0.10	33	29	1.3	3.9
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.10	< 0.10	35	30	1.3	2.9
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10	< 0.10	4.9	4.2	0.21	0.41
Benzo[g,h,i]perylene	M	2800	mg/kg	0.10	< 0.10	30	26	0.99	2.5
Total Of 16 PAH's	N	2800	mg/kg	2.0	< 2.0	240	210	10	48
Resorcinol	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Phenol	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Cresols	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Xylenols	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
1-Naphthol	N	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Trimethylphenols	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Total Phenols	M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
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I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

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The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

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All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	22-29945-1
Initial Date of Issue:	16-Aug-2022
Client	Rodgers Leask Environmental
Client Address:	Office 225 2430/2440 Aztec West Almoundsbury Bristol BS32 4AQ
Contact(s):	Chris Wilson Caitlin Davies David McCarroll
Project	P18-669
Quotation No.:	Q22-28243
Order No.:	PO115623
No. of Samples:	5
Turnaround (Wkdays):	5
Date Approved:	15-Aug-2022
Approved By:	
Details:	Stuart Henderson, Technical Manager

Date Received:	08-Aug-2022
Date Instructed:	08-Aug-2022
Results Due:	12-Aug-2022

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental		**Chemtest Job No.:**			22-29945	22-29945	22-29945	22-29945	22-29945
Quotation No.: Q22-28243		**Chemtest Sample ID.:**			1482829	1482830	1482831	1482832	1482833
		Client Sample ID.:			AR32-1	AS32-1	AT32-1	AU29-1	AV30-1
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			0.5	1.3	1.3	0.6	1.0
		Date Sampled:			04-Aug-2022	04-Aug-2022	04-Aug-2022	04-Aug-2022	04-Aug-2022
		Asbestos Lab:			COVENTRY		COVENTRY		COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**					
ACM Type	U	2192		N/A	-		-		-
Asbestos Identification	U	2192		N/A	No Asbestos Detected		No Asbestos Detected		No Asbestos Detected
Moisture	N	2030	%	0.020	7.6	15	11	6.9	9.2
Soil Colour	N	2040		N/A	Black	Black	Black	Brown	Brown
Other Material	N	2040		N/A	Stones	Stones	Stones	Stones	Stones
Soil Texture	N	2040		N/A	Gravel	Clay	Clay	Loam	Gravel
pH	M	2010		4.0	10.1	9.8	9.1	9.5	9.6
Cyanide (Total)	M	2300	mg/kg	0.50	< 0.50	< 0.50	1.4	0.80	0.80
Ammoniacal Nitrogen	M	2425	mg/kg	0.50	1.5	8.6	27	33	12
Iron (Total)	N	2430	mg/kg	100	39000	42000	88000	81000	92000
Arsenic	M	2455	mg/kg	0.5	7.7	10	11	12	28
Cadmium	M	2455	mg/kg	0.10	< 0.10	0.12	2.1	12	2.4
Chromium	M	2455	mg/kg	0.5	26	25	32	43	79
Manganese	M	2455	mg/kg	1.0	1600	1700	2800	3300	9500
Copper	M	2455	mg/kg	0.50	21	15	29	29	27
Mercury	M	2455	mg/kg	0.05	< 0.05	0.07	0.13	0.13	0.15
Nickel	M	2455	mg/kg	0.50	11	15	22	22	41
Lead	M	2455	mg/kg	0.50	13	17	200	360	120
Selenium	M	2455	mg/kg	0.25	0.96	1.1	1.6	1.6	1.2
Vanadium	U	2455	mg/kg	0.5	37	43	48	52	78
Zinc	M	2455	mg/kg	0.50	30	39	380	690	390
Organic Matter	M	2625	%	0.40	16	17	24	28	26
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	5.6

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental		**Chemtest Job No.:**			22-29945	22-29945	22-29945	22-29945	22-29945
Quotation No.: Q22-28243		**Chemtest Sample ID.:**			1482829	1482830	1482831	1482832	1482833
		Client Sample ID.:			AR32-1	AS32-1	AT32-1	AU29-1	AV30-1
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			0.5	1.3	1.3	0.6	1.0
		Date Sampled:			04-Aug-2022	04-Aug-2022	04-Aug-2022	04-Aug-2022	04-Aug-2022
		Asbestos Lab:			COVENTRY		COVENTRY		COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**					
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	120
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0	130
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	< 10	< 10	< 10	130
Benzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Naphthalene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	M	2800	mg/kg	0.10	< 0.10	< 0.10	0.73	0.75	< 0.10
Anthracene	M	2800	mg/kg	0.10	< 0.10	< 0.10	0.15	0.20	< 0.10
Fluoranthene	M	2800	mg/kg	0.10	0.39	< 0.10	0.57	0.47	4.0
Pyrene	M	2800	mg/kg	0.10	0.39	< 0.10	0.44	0.54	3.2
Benzo[a]anthracene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	2.6
Chrysene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	2.0
Benzo[b]fluoranthene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	6.1
Benzo[k]fluoranthene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	1.7
Benzo[a]pyrene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	4.2
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's	N	2800	mg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0	24
Resorcinol	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Phenol	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Cresols	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Xylenols	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
1-Naphthol	N	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Trimethylphenols	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Total Phenols	M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Appendix E: Gas Monitoring

4G WS01

Date	Oxygen Concentration (%)		Carbon dioxide concentration (%)		Methane concentration (%)		Flow Rate		Gas Screening Value	Pressure (mb)	Pressure Trend	Depth To Water (m)	Base Level (m)	Water Level (m)	H2S (ppm)	CO (ppm)
	Minimum	Steady	Peak	Steady	Peak	Steady	Peak	Steady							Peak	Peak
09/02/24	17.4	17.4	0.1	0.0	0.8	0.8	1.3	1.3	0.010	976	Falling	1.72	2.96	1.24	0.00	1
29/02/24	18.0	18.0	0.1	0.0	1.0	1.0	0.0	-0.1	0.000	1003	Steady	1.52	2.93	1.41	0.00	2
05/06/25	6.4	6.4	0.0	0.0	0.0	0.0	0.0	0.0	0.000	999	Falling	1.81	2.93	1.12	0.00	0
22/07/25	13.9	13.9	0.0	0.0	0.0	0.0	0.0	0.0	0.000	1009	Rising	2.051	2.93	0.88	0.00	0
28/07/25	15.7	15.7	0.1	0.0	0.5	0.4	0.0	0.0	0.000	1014	Steady	2.17	2.93	0.77	0.00	0
06/08/25	14.2	14.2	0.0	0.0	1.4	1.4	0.0	0.0	0.000	1020	Falling	2.25	2.93	0.68	0.00	0

Determining the Gas Screening Value

Maximum Carbon dioxide concentration**	Maximum methane**	Maximum flow rate*
0.1	1.4	1.3

*0.3 l/hr Flow has been used on any value less than 0.3 l/hr based on gas analyser potential error.
*0.1% concentration value has been used on any value less than 0.1%, based on the gas analyser margin of error.

Gas Screening Value (l/hr) = Max. borehole flow rate (l/hr) x Max. gas concentration (%)

Gas Screening Value =	0.0182

4G WS02

Date	Oxygen Concentration (%)		Carbon dioxide concentration (%)		Methane concentration (%)		Flow Rate		Gas Screening Value	Pressure	Pressure Trend	Depth To Water (m)	Base Level (m)	Water Level (m)	H2S (ppm)	CO (ppm)
	Minimum	Steady	Peak	Steady	Peak	Steady	Peak	Steady							Peak	Peak
09/02/24	0.2	0.2	0.1	0.0	0.9	0.9	2.4	2.4	0.022	976	Falling	1.19	2.97	1.78	0	1
29/02/24	0.2	0.2	0.1	0.0	0.8	0.8	0.1	-0.1	0.001	1004	Steady	1.70	2.91	1.21	0	1
05/06/25	16.7	16.8	0.0	0.0	0.0	0.0	0.0	0.0	0.000	999	Falling	1.54	2.93	1.39	0	0
22/07/25	15.3	15.3	0.0	0.0	0.0	0.0	0.0	0.0	0.000	1009	Rising	1.74	2.93	1.20	0	0
28/07/25	15.5	15.5	0.0	0.0	0.0	0.0	0.0	0.0	0.000	1014	Steady	1.79	2.92	1.13	0.00	0
06/08/25	15.1	15.1	0.0	0.0	0.0	0.0	0.0	0.0	0.000	1020	Falling	1.825	2.92	1.09	0.00	0

Determining the Gas Screening Value

Maximum Carbon dioxide concentration	Maximum methane	Maximum flow rate*
0.1	0.9	2.4

*0.3 l/hr Flow has been used on any value less than 0.3 l/hr based on gas analyser potential error.
*0.1% concentration value has been used on any value less than 0.1%, based on the gas analyser margin of error.

Gas Screening Value (l/hr) = Max. borehole flow rate (l/hr) x Max. gas concentration (%)

Gas Screening Value =	0.0216

4G WS03

Date	Oxygen Concentration (%)		Carbon dioxide concentration (%)		Methane concentration (%)		Flow Rate		Gas Screening Value	Pressure	Pressure Trend	Depth To Water (m)	Base Level (m)	Water Level (m)	H2S (ppm)	CO (ppm)
	Minimum	Steady	Peak	Steady	Peak	Steady	Peak	Steady							Peak	Peak
09/02/24	21.7	22.0	0.1	0.1	0.4	0.4	0.1	0.1	0.000	976	Falling	1.28	1.95	0.67	0	0
29/02/24	22.3	22.6	0.1	0.1	0.5	0.5	0.0	0.0	0.000	1003	Steady	1.29	1.94	0.65	0	0
05/06/25	19.2	20.3	0.0	0.0	0.0	0.0	1.3	0.0	0.000	999	Falling	1.90	1.95	0.05	0.00	0
22/07/25	16.9	17.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000	1009	Rising	1.139	1.97	0.83	0.00	0
28/07/25	15.8	15.8	0.0	0.0	0.0	0.0	0.0	0.0	0.000	1014	Steady	1.259	1.97	0.71	0.00	0
06/08/25	15.0	15.4	0.0	0.0	0.0	0.0	0.0	0.0	0.000	1020	Falling	1.37	1.96	0.59	0.00	0

Determining the Gas Screening Value

Maximum Carbon dioxide concentration	Maximum methane	Maximum flow rate*
0.1	0.5	1.3

*0.3 l/hr Flow has been used on any value less than 0.3 l/hr based on gas analyser potential error.
*0.1% concentration value has been used on any value less than 0.1%, based on the gas analyser margin of error.

Gas Screening Value (l/hr) = Max. borehole flow rate (l/hr) x Max. gas concentration (%)

Gas Screening Value =	0.0065

4G WS04

Date	Oxygen Concentration (%)		Carbon dioxide concentration (%)		Methane concentration (%)		Flow Rate		Gas Screening Value	Pressure	Pressure Trend	Depth To Water (m)	Base Level (m)	Water Level (m)	H2S (ppm)	CO (ppm)
	Minimum	Steady	Peak	Steady	Peak	Steady	Peak	Steady							Peak	Peak
09/02/2024	0.2	0.2	0.1	0.0	3.5	3.5	-0.1	-0.1	-0.004	977	Falling	2.60	2.94	0.34	0	1
29/02/24	0.2	0.2	0.1	0.0	3.8	3.8	-0.1	0.0	-0.004	1004	Steady	2.52	2.61	0.09	0	1
05/06/25	0.0	0.0	0.0	0.0	5.1	5.1	0.0	0.0	0.000	998	Falling	2.37	2.93	0.56	0.00	0
22/07/25	7.0	7.0	0.0	0.0	4.2	4.2	0.0	0.0		1012	Rising	2.64	2.93	0.29	0.00	0
28/07/25	0.6	0.6	0.0	0.0	6.6	6.6	0.0	0.0		1014	Steady	2.65	2.93	0.28	0.00	0
06/08/25	0.8	0.8	0.0	0.0	5.9	5.9	0.0	0.0		1019	Falling	2.641	2.93	0.29	0.00	0

Determining the Gas Screening Value

Maximum Carbon dioxide concentration	Maximum methane	Maximum flow rate*
0.1	6.6	0.3

*0.3 l/hr Flow has been used on any value less than 0.3 l/hr based on gas analyser potential error.
*0.1% concentration value has been used on any value less than 0.1%, based on the gas analyser margin of error.

Gas Screening Value (l/hr) = Max. borehole flow rate (l/hr) x Max. gas concentration (%)

Gas Screening Value =	0.0198

4G WS05

Date	Oxygen Concentration (%)		Carbon dioxide concentration (%)		Methane concentration (%)		Flow Rate		Gas Screening Value	Pressure	Pressure Trend	Depth To Water (m)	Base Level (m)	Water Level (m)	H2S (ppm)	CO (ppm)
	Minimum	Steady	Peak	Steady	Peak	Steady	Peak	Steady							Peak	Peak
05/06/2025	20.1	20.4	0.0	0.0	0.0	0.0	0.0	0.0	0.000	998	Falling	1.83	2.94	1.11	0	0
22/07/25	17.7	17.7	0.0	0.0	2.0	2.0	0.4	0.0	0.008	1009	Rising	2.156	2.94	0.79	0	0
28/07/25	12.9	12.9	0.0	0.0	1.7	1.7	0.0	0.0	0.000	1014	Steady	2.386	2.94	0.55	0.00	10
06/08/25	9.3	9.3	0.0	0.0	1.6	1.6	0.0	0.0	0.000	1019	Falling	2.485	2.93	0.45	0.00	0

Determining the Gas Screening Value

Maximum Carbon dioxide concentration	Maximum methane	Maximum flow rate*
0.1	2.0	0.4

*0.3 l/hr Flow has been used on any value less than 0.3 l/hr based on gas analyser potential error.
*0.1% concentration value has been used on any value less than 0.1%, based on the gas analyser margin of error.

Gas Screening Value (l/hr) = Max. borehole flow rate (l/hr) x Max. gas concentration (%)

Gas Screening Value =	0.0080

4G WS06

Date	Oxygen Concentration (%)		Carbon dioxide concentration (%)		Methane concentration (%)		Flow Rate		Gas Screening Value	Pressure	Pressure Trend	Depth To Water (m)	Base Level (m)	Water Level (m)	H2S (ppm)	CO (ppm)
	Minimum	Steady	Peak	Steady	Peak	Steady	Peak	Steady							Peak	Peak
22/07/2025	NO BUNG	NO BUNG	NO BUNG	NO BUNG	NO BUNG	NO BUNG	NO BUNG	NO BUNG	NO BUNG	1010	Rising	1.17	1.98	0.81		
28/07/25	15.1	15.1	0.0	0.0	0.0	0.0	0.0	0.0		1015	Steady	1.22	1.98	0.76	0	0
06/08/25	19.9	19.9	0.2	0.0	0.0	0.0	0.0	0.0		1019	Falling	0.84	1.98	1.14	0.00	0

Determining the Gas Screening Value

Maximum Carbon dioxide concentration	Maximum methane	Maximum flow rate*
0.2	0.1	0.3

*0.3 l/hr Flow has been used on any value less than 0.3 l/hr based on gas analyser potential error.
*0.1% concentration value has been used on any value less than 0.1%, based on the gas analyser margin of error.

Gas Screening Value (l/hr) = Max. borehole flow rate (l/hr) x Max. gas concentration (%)

Gas Screening Value =	0.0006

4G WS07

Date	Oxygen Concentration (%)		Carbon dioxide concentration (%)		Methane concentration (%)		Flow Rate		Gas Screening Value	Pressure	Pressure Trend	Depth To Water (m)	Base Level (m)	Water Level (m)	H2S (ppm)	CO (ppm)
	Minimum	Steady	Peak	Steady	Peak	Steady	Peak	Steady							Peak	Peak
22/07/2025	17.6	17.6	0.0	0.0	0.0	0.0	0.0	0.0	0.000	1010	Rising	Dry	1.99		0	0
28/07/25	20.3	20.3	0.0	0.0	0.0	0.0	0.0	0.0		1015	Steady	Dry	2.00		0	0
06/08/25	19.0	19.1	0.0	0.0	0.0	0.0	0.0	0.0	0.000	1018	Falling	Dry	2.00		0.00	0

Determining the Gas Screening Value

Maximum Carbon dioxide concentration	Maximum methane	Maximum flow rate*
0.1	0.1	0.3

*0.3 l/hr Flow has been used on any value less than 0.3 l/hr based on gas analyser potential error.
*0.1% concentration value has been used on any value less than 0.1%, based on the gas analyser margin of error.

Gas Screening Value (l/hr) = Max. borehole flow rate (l/hr) x Max. gas concentration (%)

Gas Screening Value =	0.0003

4G WS08

Date	Oxygen Concentration (%)		Carbon dioxide concentration (%)		Methane concentration (%)		Flow Rate		Gas Screening Value	Pressure	Pressure Trend	Depth To Water (m)	Base Level (m)	Water Level (m)	H2S (ppm)	CO (ppm)
	Minimum	Steady	Peak	Steady	Peak	Steady	Peak	Steady							Peak	Peak
22/07/2025	19.9	19.9	0.0	0.0	0.0	0.0	0.0	0.0	0.000	1010	Rising	1.92	1.98	0.06	0	0
28/07/25	15.1	15.1	0.0	0.0	1.3	1.3	0.0	0.0	0.000	1015	Steady	1.92	1.98	0.06	0	10
06/08/25	1.4	1.4	0.0	0.0	4.2	4.2	0.0	0.0	0.000	1019	Falling	1.89	1.97	0.08	0.00	0

Determining the Gas Screening Value

Maximum Carbon dioxide concentration	Maximum methane	Maximum flow rate*
0.1	4.2	0.3

*0.3 l/hr Flow has been used on any value less than 0.3 l/hr based on gas analyser potential error.
*0.1% concentration value has been used on any value less than 0.1%, based on the gas analyser margin of error.

Gas Screening Value (l/hr) = Max. borehole flow rate (l/hr) x Max. gas concentration (%)

Gas Screening Value =	0.0126

Appendix F: Permeability Testing

Project: P18-669
Phase 4G

4G-INF01 (11/07/2025)				
Time (m)	Water level (mm)	Difference from start (mm)	Permeability (mm/min)	Permeability (m/s)
1	310	0	-	-
2	310	0	0.00	0.00E+00
3	310	0	0.00	0.00E+00
4	310	0	0.00	0.00E+00
5	310	0	0.00	0.00E+00
6	310	0	0.00	0.00E+00
7	309	1	0.14	2.38E-06
8	309	1	0.13	2.08E-06
9	309	1	0.11	1.85E-06
10	309	1	0.10	1.67E-06
40	307	3	0.08	1.25E-06
70	304	6	0.09	1.43E-06
150	300	10	0.07	1.11E-06
260	298	12	0.05	7.69E-07
380	295	15	0.04	6.58E-07

4G-INF02 (29/07/2025)				
Time (m)	Water level (mm)	Difference from start (mm)	Permeability (mm/min)	Permeability (m/s)
1	274	0	-	-
2	274	0	0.00	0.00E+00
3	274	0	0.00	0.00E+00
4	274	0	0.00	0.00E+00
5	274	0	0.00	0.00E+00
6	274	0	0.00	0.00E+00
7	274	0	0.00	0.00E+00
8	274	0	0.00	0.00E+00
9	273	1	0.11	1.85E-06
10	273	1	0.10	1.67E-06
30	270	4	0.13	2.22E-06
60	268	6	0.10	1.67E-06
130	262	12	0.09	1.54E-06
180	260	14	0.08	1.30E-06
420	258	16	0.04	6.35E-07

4G-INF03 (31/07/2025)				
Time (m)	Water level (mm)	Difference from start (mm)	Permeability (mm/min)	Permeability (m/s)
1	290	0	-	-
2	290	0	0.00	0.00E+00
3	290	0	0.00	0.00E+00
4	290	0	0.00	0.00E+00
5	290	0	0.00	0.00E+00
6	290	0	0.00	0.00E+00
7	290	0	0.00	0.00E+00
8	290	0	0.00	0.00E+00
9	290	0	0.00	0.00E+00
10	290	0	0.00	0.00E+00
40	289	1	0.03	4.17E-07
70	283	7	0.10	1.67E-06
130	279	11	0.08	1.41E-06
190	276	14	0.07	1.23E-06
310	273	17	0.05	9.14E-07

Phase 4G - Falling Head Tests

4g- WS05 (14/07/2025) - Falling Head					
	Break (min)	Depth (m bgl)	Change (m)	Speed (m/s)	
Initial		2.94			
1	-	Water added	-	-	
2	1	0.19	-	-	
3	1	0.2	0.01	1.67E-04	
4	1	0.235	0.035	5.83E-04	
5	1	0.262	0.027	4.50E-04	
6	1	0.299	0.037	6.17E-04	
7	1	0.325	0.026	4.33E-04	
8	1	0.348	0.023	3.83E-04	
9	1	0.372	0.024	4.00E-04	
10	1	0.394	0.022	3.67E-04	
40	0	0.412	-	-	
70	30	0.424	0.012	6.67E-06	Test Period
130	90	0.436	0.024	4.44E-06	
190	150	0.451	0.039	4.33E-06	
250	210	0.463	0.051	9.44E-06	
1200	1160	0.472	0.06	2.14E-06	
1440	1400	0.477	0.065	7.74E-07	

Initial Water (m bgl)	0.412
Duration (min)	1400
Final Water (m bgl)	0.477
Measured Change (m)	0.065
Speed (m/sec)	7.74E-07

4g-WS03 (16/07/2025) - Falling Head					
	Break (min)	Depth (m bgl)	Change (m)	Speed (m/s)	
Initial		1.97			
0	-	Water added	-	-	
1	1	0.423	-	-	
2	1	0.486	0.063	1.05E-03	
3	1	0.546	0.06	1.00E-03	
4	1	0.576	0.03	5.00E-04	
5	1	0.58	0.004	6.67E-05	
6	1	0.599	0.019	3.17E-04	
7	1	0.612	0.013	2.17E-04	
8	1	0.619	0.007	1.17E-04	
9	1	0.625	0.006	1.00E-04	
10	1	0.631	0.006	1.00E-04	
40	0	0.708	-	-	
100	60	0.72	0.012	3.33E-06	Test Period
180	140	0.737	0.029	3.45E-06	
220	180	0.78	0.072	6.67E-06	
280	240	0.784	0.076	5.28E-06	
360	320	0.797	0.089	4.64E-06	
1600	1560	0.801	0.093	9.94E-07	

Initial Water (m bgl)	0.708
Duration (min)	1560
Final Water (m bgl)	0.801
Measured Change (m)	0.093
Speed (m/sec)	9.94E-07

4g-WS01 (21/07/2025) - Falling Head					
	Break (min)	Depth (m bgl)	Change (m)	Speed (m/s)	
Initial		2.93			
0	-	Water added	-	-	
1	1	0.984	-	-	
2	1	1.046	0.062	1.03E-03	
3	1	1.081	0.035	5.83E-04	
4	1	1.105	0.024	4.00E-04	
5	1	1.126	0.021	3.50E-04	
6	1	1.142	0.016	2.67E-04	
7	1	1.155	0.013	2.17E-04	
8	1	1.166	0.011	1.83E-04	
9	1	1.174	0.008	1.33E-04	
10	1	1.182	0.008	1.33E-04	
40	0	1.247	-	-	
100	60	1.281	0.034	9.44E-06	Test Period
160	120	1.298	0.051	7.08E-06	
220	180	1.309	0.062	5.74E-06	
280	240	1.327	0.08	5.56E-06	
340	300	1.329	0.082	4.56E-06	
1500	1460	1.333	0.086	9.82E-07	

Initial Water (m bgl)	1.247
Duration (min)	1460
Final Water (m bgl)	1.333
Measured Change (m)	0.086
Speed (m/sec)	9.82E-07

4g- WS06 (01/08/2025) - Falling Head					
	Break (min)	Depth (m bgl)	Change (m)	Speed (m/s)	
Initial		1.984			
1	-	0.235	-	-	
2	1	0.301	-	-	
3	1	0.326	0.025	4.17E-04	
4	1	0.344	0.018	3.00E-04	
5	1	0.362	0.018	3.00E-04	
6	1	0.373	0.011	1.83E-04	
7	1	0.381	0.008	1.33E-04	
8	1	0.384	0.003	5.00E-05	
9	1	0.396	0.012	2.00E-04	
10	1	0.397	0.001	1.67E-05	
40	0	0.441	0	-	
70	30	0.454	0.013	7.22E-06	Test Period
120	80	0.474	0.033	6.87E-06	
185	145	0.493	0.052	5.98E-06	
250	210	0.51	0.069	5.48E-06	
1100	1160	0.519	0.078	1.12E-06	
1520	1480	0.52	0.079	8.90E-07	

Initial Water (m bgl)	0.441
Duration (min)	1480
Final Water (m bgl)	0.52
Measured Change (m)	0.079
Speed (m/sec)	8.90E-07