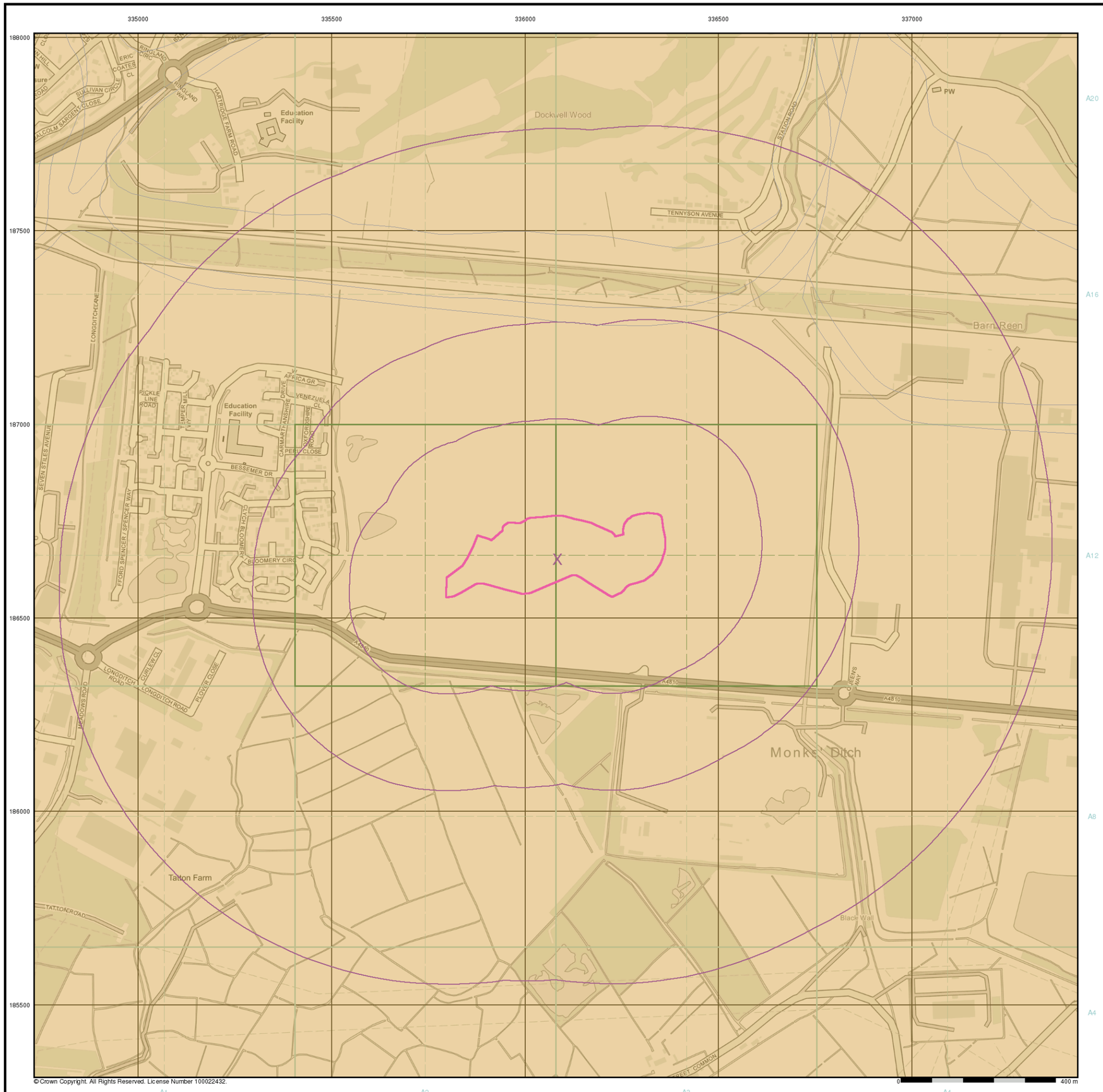

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General

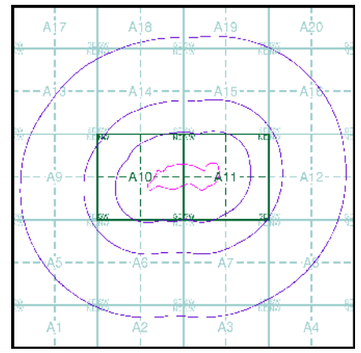
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Cadmium

Cadmium Concentrations mg/kg

- < 1.8
- 1.8 - 2.2
- 2.2 - 3.0
- > 3.0

Estimated Soil Chemistry Cadmium - Slice A



Order Details

Order Details:	304885831_1_1
Customer Ref:	Llanwern 4c 4g 4e
National Grid Reference:	336080, 186650
Slice:	A
Site Area (Ha):	8.34
Search Buffer (m):	1000

Site Details

Site at 336079,186662

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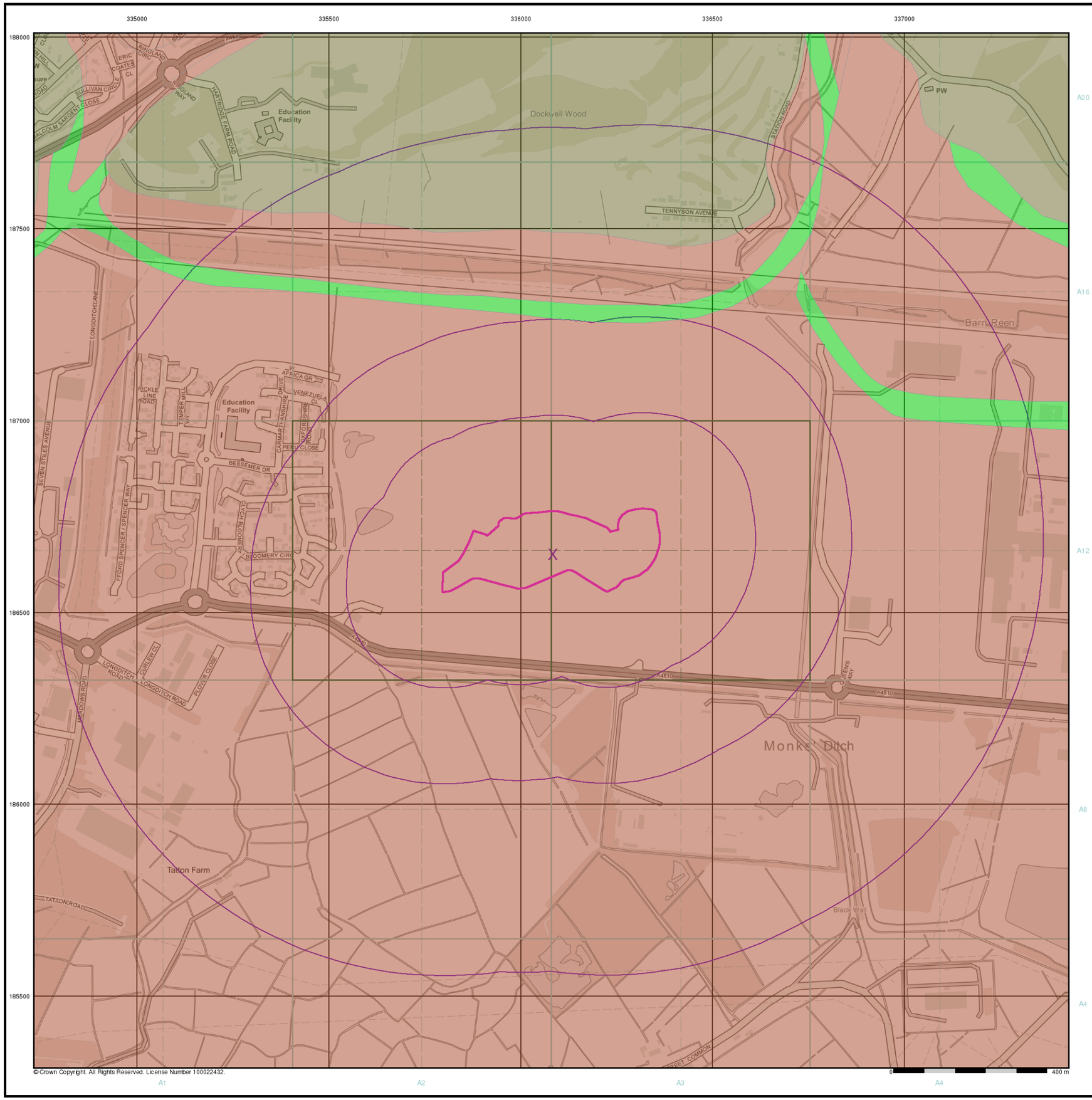

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General

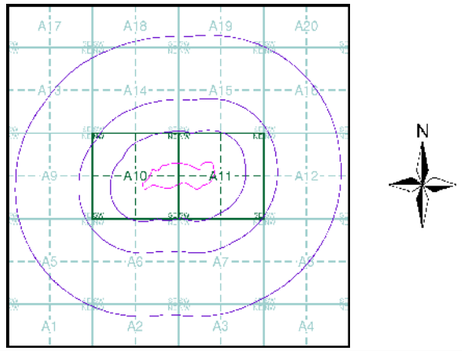
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Chromium

Chromium Concentrations mg/kg

- < 20
- 20 - 40
- 40 - 60
- 60 - 90
- 90 - 120
- 120 - 180
- > 180

Estimated Soil Chemistry Chromium - Slice A



Order Details

Order Details:	304885831_1_1
Customer Ref:	Llanwern 4c 4g 4e
National Grid Reference:	336080, 186650
Slice:	A
Site Area (Ha):	8.34
Search Buffer (m):	1000

Site Details

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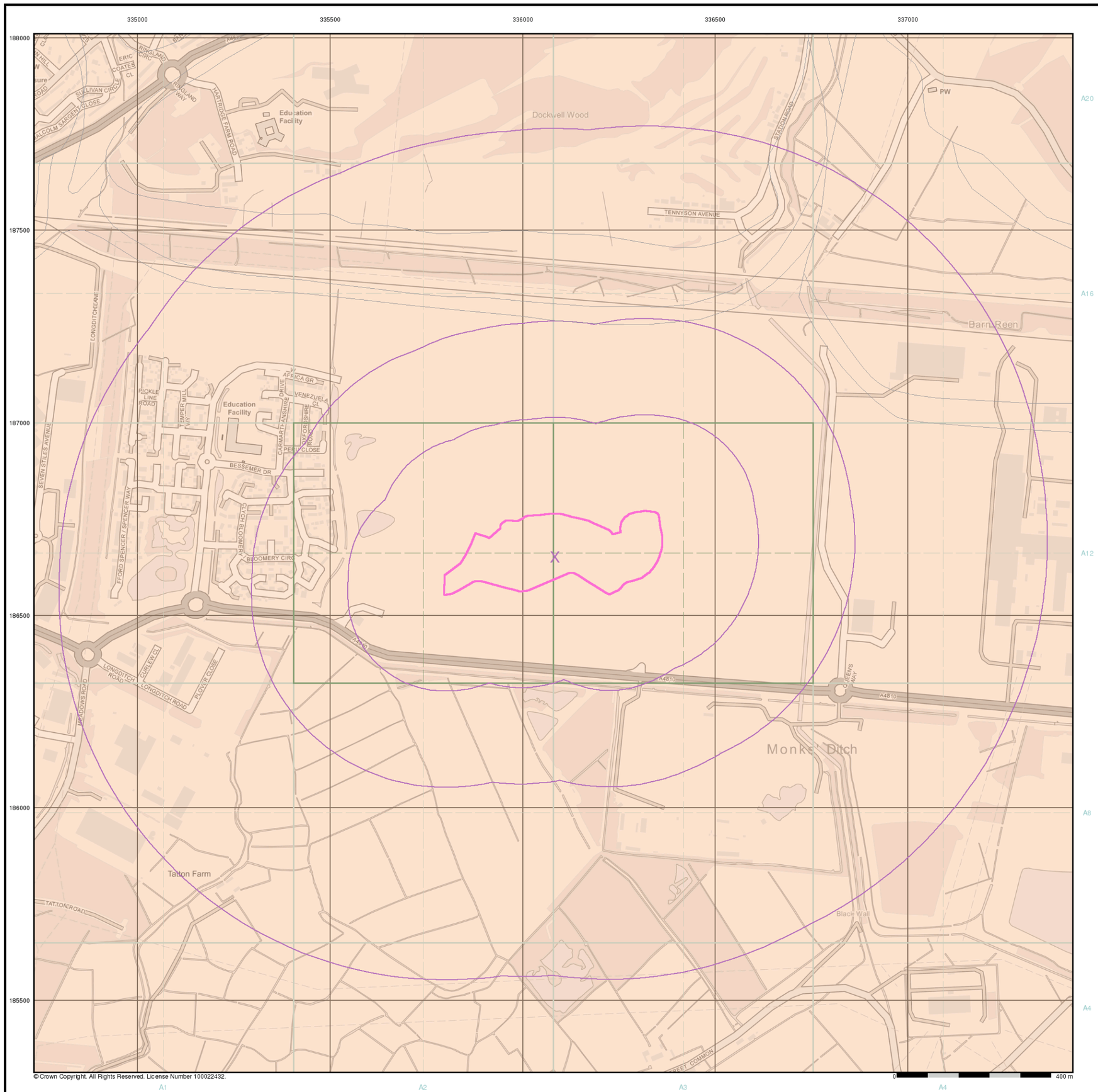

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General

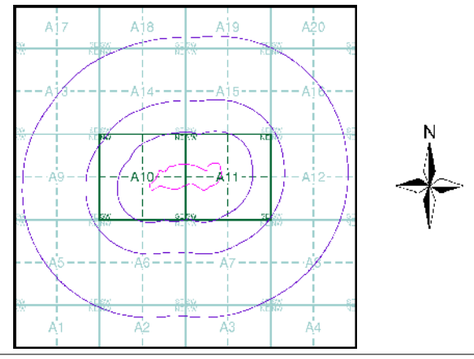
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Lead

Lead Concentrations mg/kg

- <100 mg/kg
- 100 - 200
- 200 - 300
- 300 - 600
- 600 - 1200
- >1200

Estimated Soil Chemistry Lead - Slice A



Order Details

Order Details:	304885831_1_1
Customer Ref:	Llanwern 4c 4g 4e
National Grid Reference:	336080, 186650
Slice:	A
Site Area (Ha):	8.34
Search Buffer (m):	1000

Site Details

Site at 336079,186662

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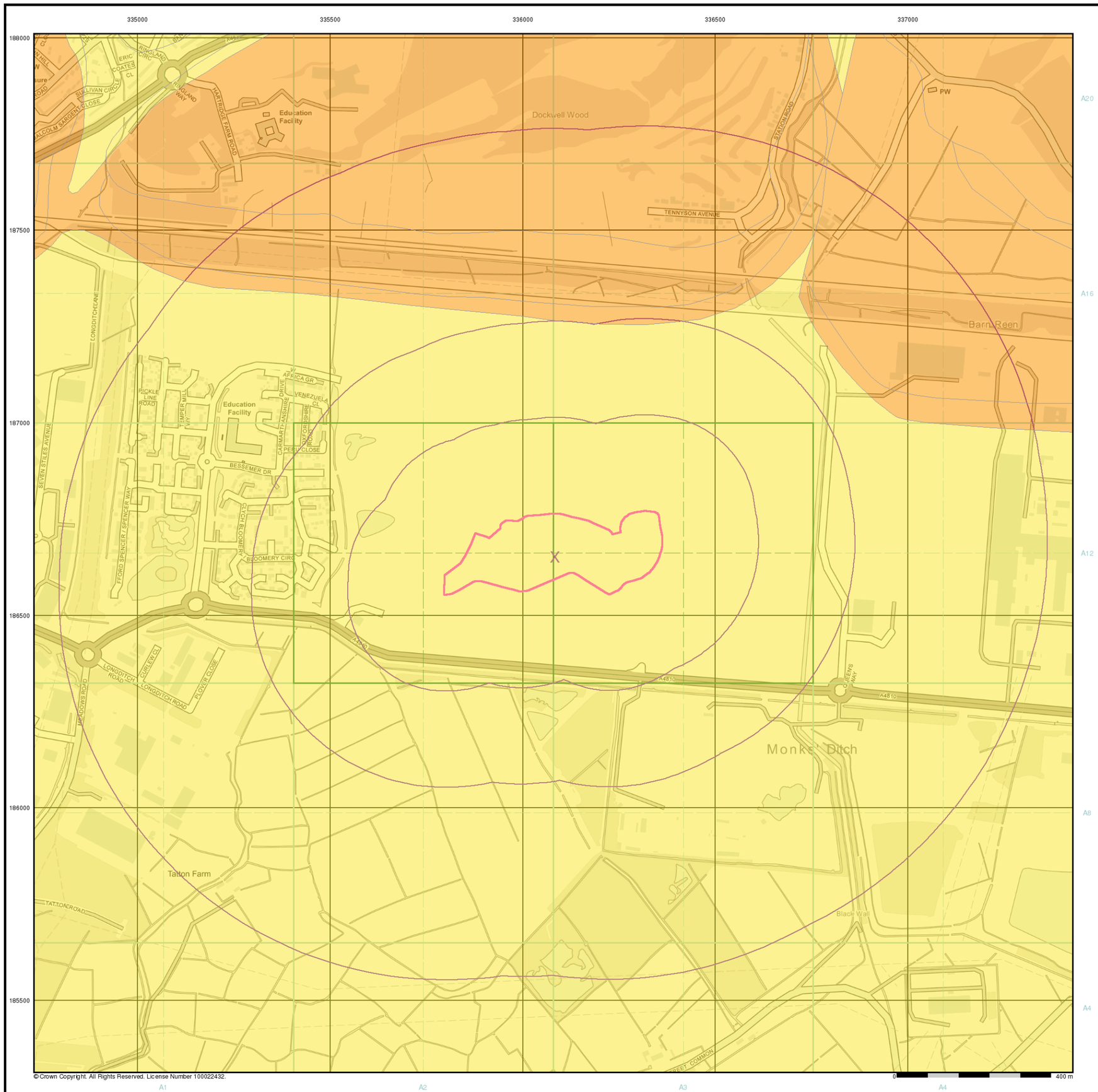

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General

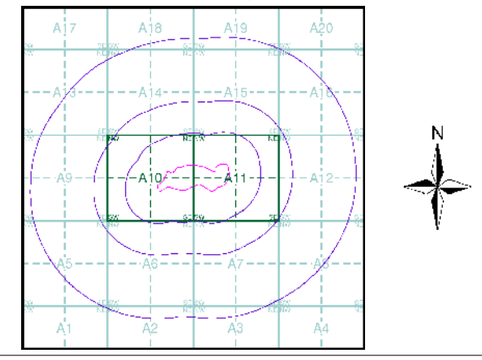
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Nickel

Nickel Concentrations mg/kg

- < 15
- 15 - 30
- 30 - 45
- 45 - 60
- 60 - 80
- 80 - 100
- > 100

Estimated Soil Chemistry Nickel - Slice A



Order Details

Order Details:	304885831_1_1
Customer Ref:	Llanwern 4c 4g 4e
National Grid Reference:	336080, 186650
Slice:	A
Site Area (Ha):	8.34
Search Buffer (m):	1000

Site Details

Site at 336079,186662

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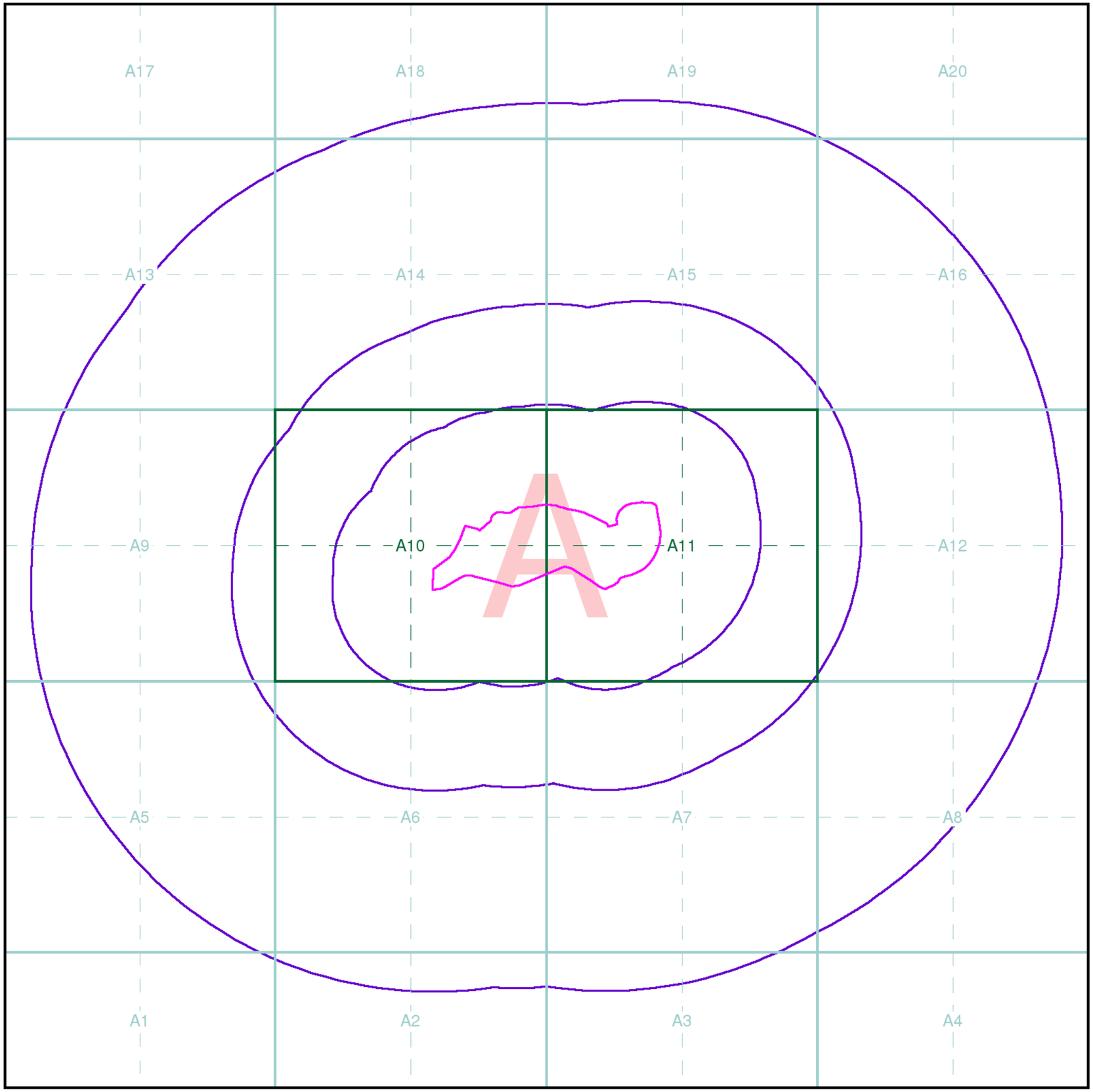

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Index Map

For ease of identification, your site and buffer have been split into Slices, Segments and Quadrants. These are illustrated on the Index Map opposite and explained further below.

Slice
Each slice represents a 1:10,000 plot area (2.7km x 2.7km) for your site and buffer. A large site and buffer may be made up of several slices (represented by a red outline), that are referenced by letters of the alphabet, starting from the bottom left corner of the slice "grid". This grid does not relate to National Grid lines but is designed to give best fit over the site and buffer.

Segment
A segment represents a 1:2,500 plot area. Segments that have plot files associated with them are shown in dark green, others in light blue. These are numbered from the bottom left hand corner within each slice.

Quadrant
A quadrant is a quarter of a segment. These are labelled as NW, NE, SW, SE and are referenced in the datasheet to allow features to be quickly located on plots. Therefore a feature that has a quadrant reference of A7NW will be in Slice A, Segment 7 and the NW Quadrant.

A selection of organisations who provide data within this report:

Map data

British Geological Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL

Cyfoeth Naturiol Cymru
Natural Resources Wales

Envirocheck reports are compiled from 136 different sources of data.

Client Details

Mr R Taylor, Rodgers Leask Ltd, Rodgers Leask Ltd,
Seven House, 18 High Street, Longbridge, Birmingham,
B31 2UQ

Order Details

Order Number:	304885831_1_1
Customer Ref:	Llanwern 4c 4g 4e
National Grid Reference:	336100, 186660
Site Area (Ha):	8.34
Search Buffer (m):	1000

Site Details

Site at 336079,186662

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http://www.landmarkinfo.co.uk/Terms/Show/515

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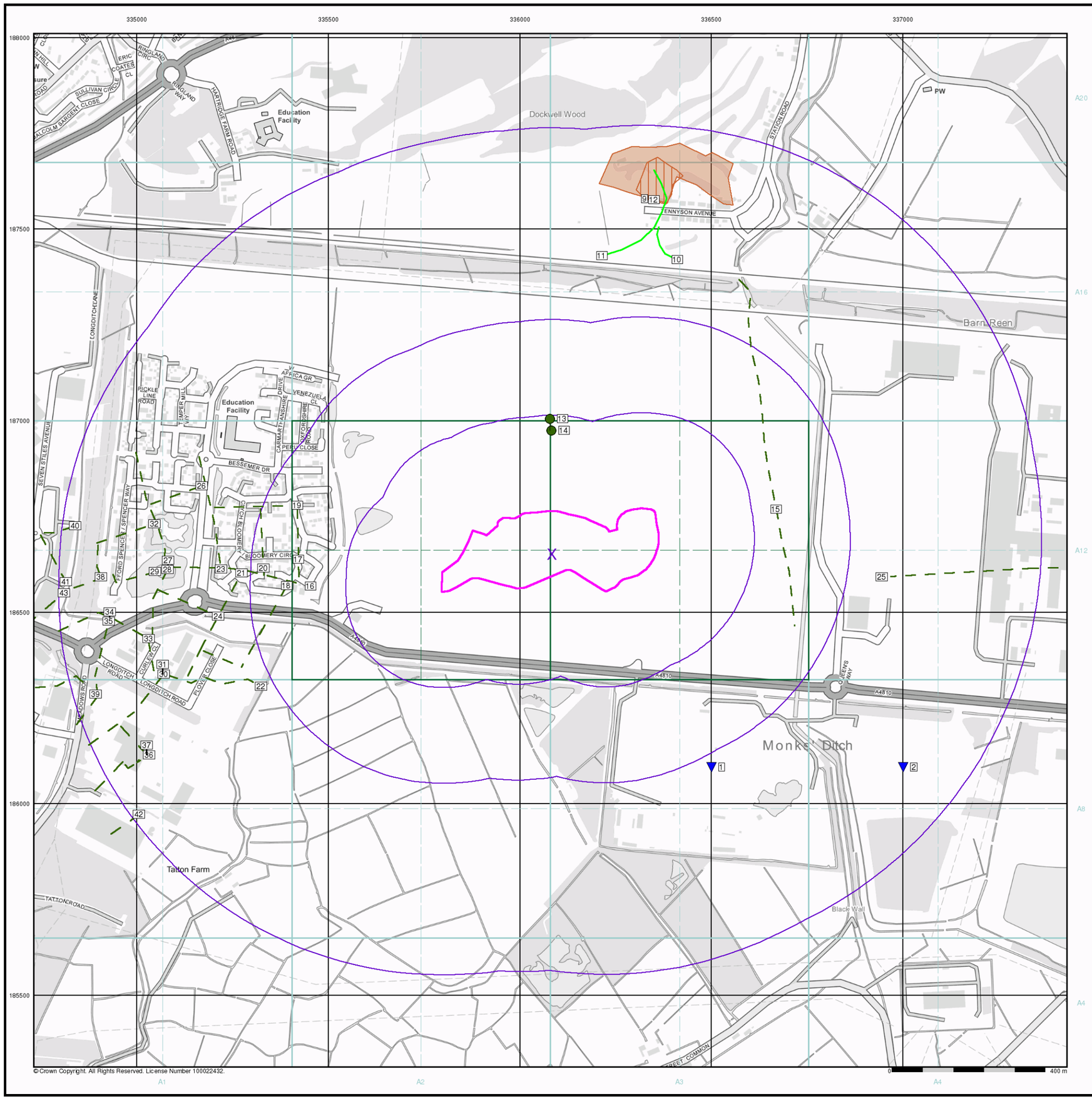

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Historical Land Use Information (1:10,000)

General

Specified Site | Specified Buffer(s) | Bearing Reference Point | Map ID

Several of Type at Location

Potentially Contaminative Industrial Uses (Past Land Uses - Mining)

	Point	Line	Polygon
Air Shafts	◆		
Disturbed Ground	◆		
General Quarrying	◆		
Heap, unknown constituents	◆		
Mineral Railway	◆		
Mining and Quarrying General	◆		
Mining of Coal & Lignite	◆		
Quarrying of Sand and Clay, Operation of Sand and Gravel Pits	◆		

Historical Land Use

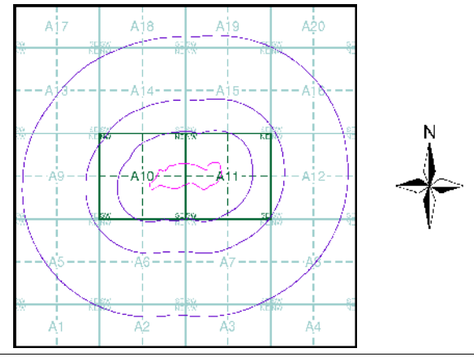
	Point	Line	Polygon
Potentially Infilled Land (Non-Water)	●		
Potentially Infilled Land (Water)	●		
Former Marsh	✠		

Mining Data

Potential Mining Area

BGS Recorded Mineral Site

Mining and Ground Stability - Slice A



Order Details

Order Number:	304885831_1_1
Customer Ref:	Llanwern 4c 4g 4e
National Grid Reference:	336080, 186650
Slice:	A
Site Area (Ha):	8.34
Search Buffer (m):	1000

Site Details

Site at 336079,186662

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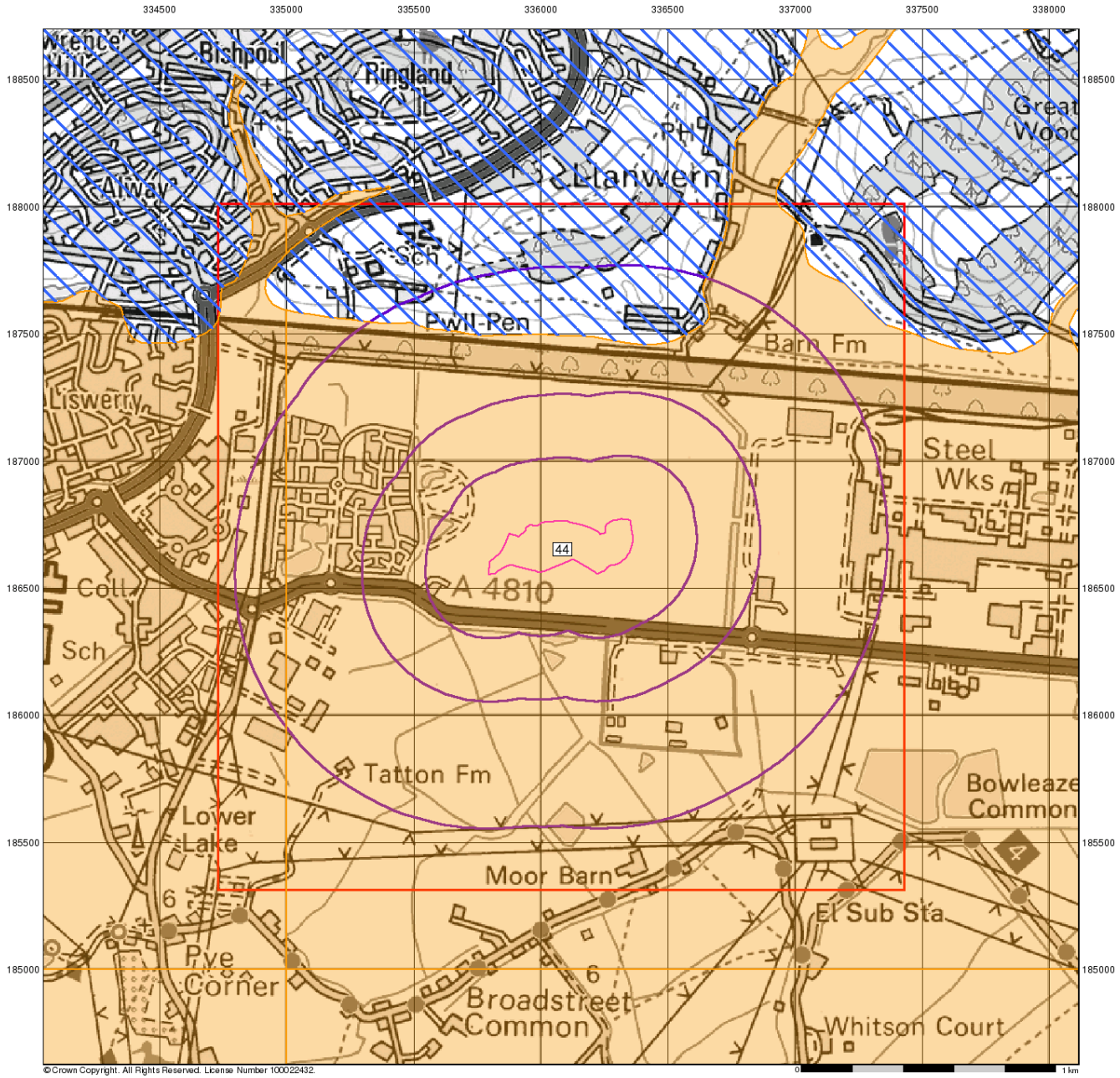

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Ground Stability Data (1:50,000)

General

Specified Site | Specified Buffer(s) | Bearing Reference Point
Slice | Map ID

Potential for Compressible Ground Stability Hazards

High | Low
Moderate | Very Low

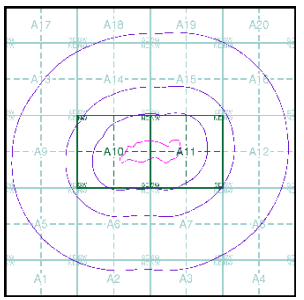
Potential for Collapsible Ground Stability Hazards

High | Low
Moderate | Very Low

Brine Pumping and Salt Mining

	Point	Polygon
Brine Pumping Related Feature	▲	▨
Salt Mining Related Feature	▲	▨

Mining and Ground Stability - Slice A



Order Details

Order Number:	304885831_1_1
Customer Ref:	Llanwern 4c 4g 4e
National Grid Reference:	336080, 186650
Slice:	A
Site Area (Ha):	8.34
Search Buffer (m):	1000

Site Details

Site at 336079,186662

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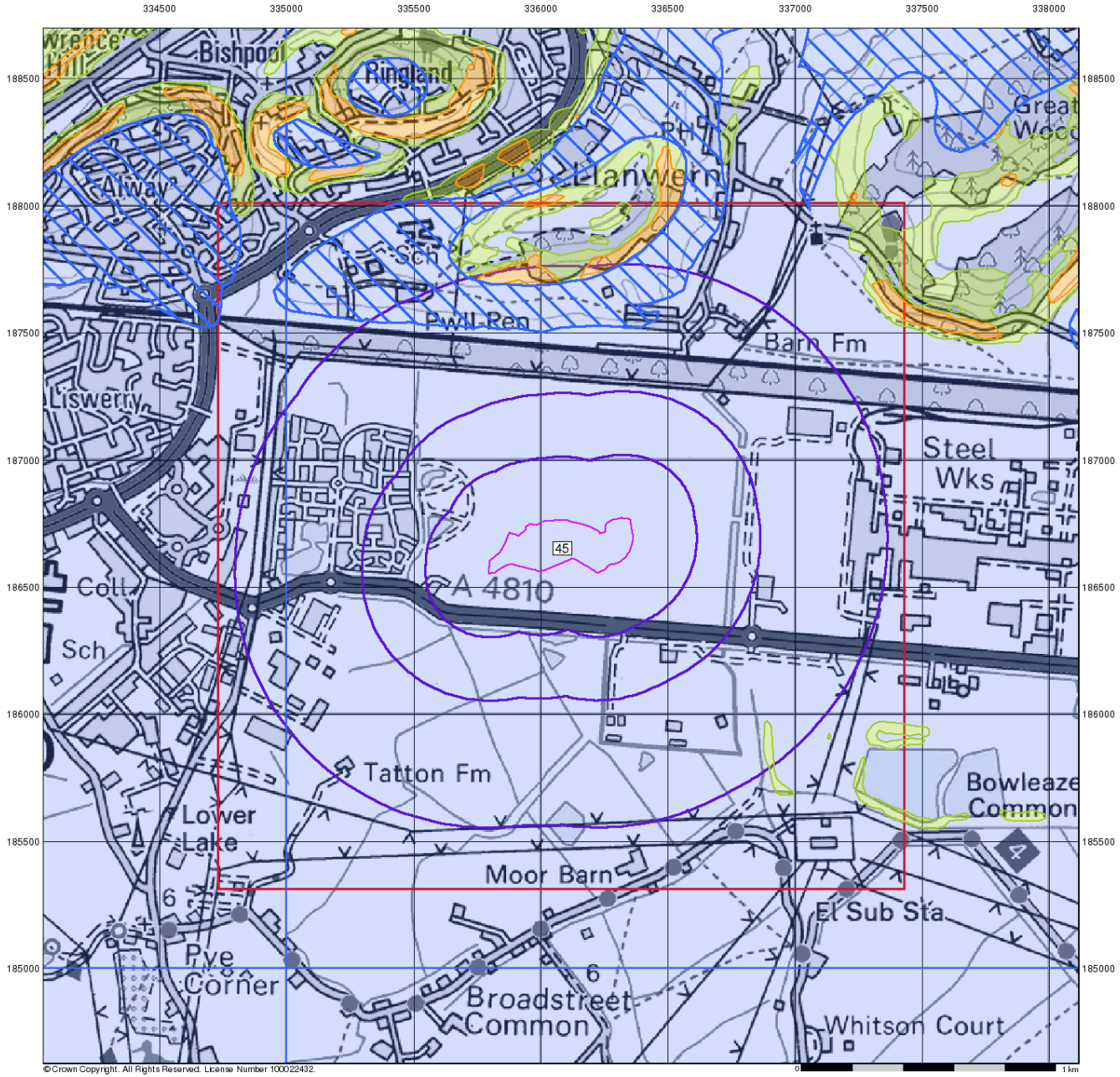

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Ground Stability Data (1:50,000)

General

Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

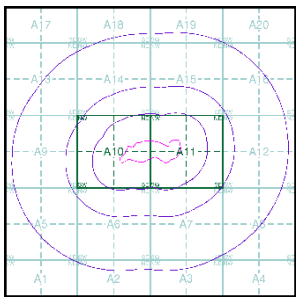
Potential for Landslide Ground Stability Hazards

High | Low | Moderate | Very Low

Potential for Ground Dissolution Stability Hazards

High | Low | Moderate | Very Low

Mining and Ground Stability - Slice A



Order Details

Order Number:	304885831_1_1
Customer Ref:	Llanwern 4c 4g 4e
National Grid Reference:	336080, 186650
Slice:	A
Site Area (Ha):	8.34
Search Buffer (m):	1000

Site Details

Site at 336079,186662

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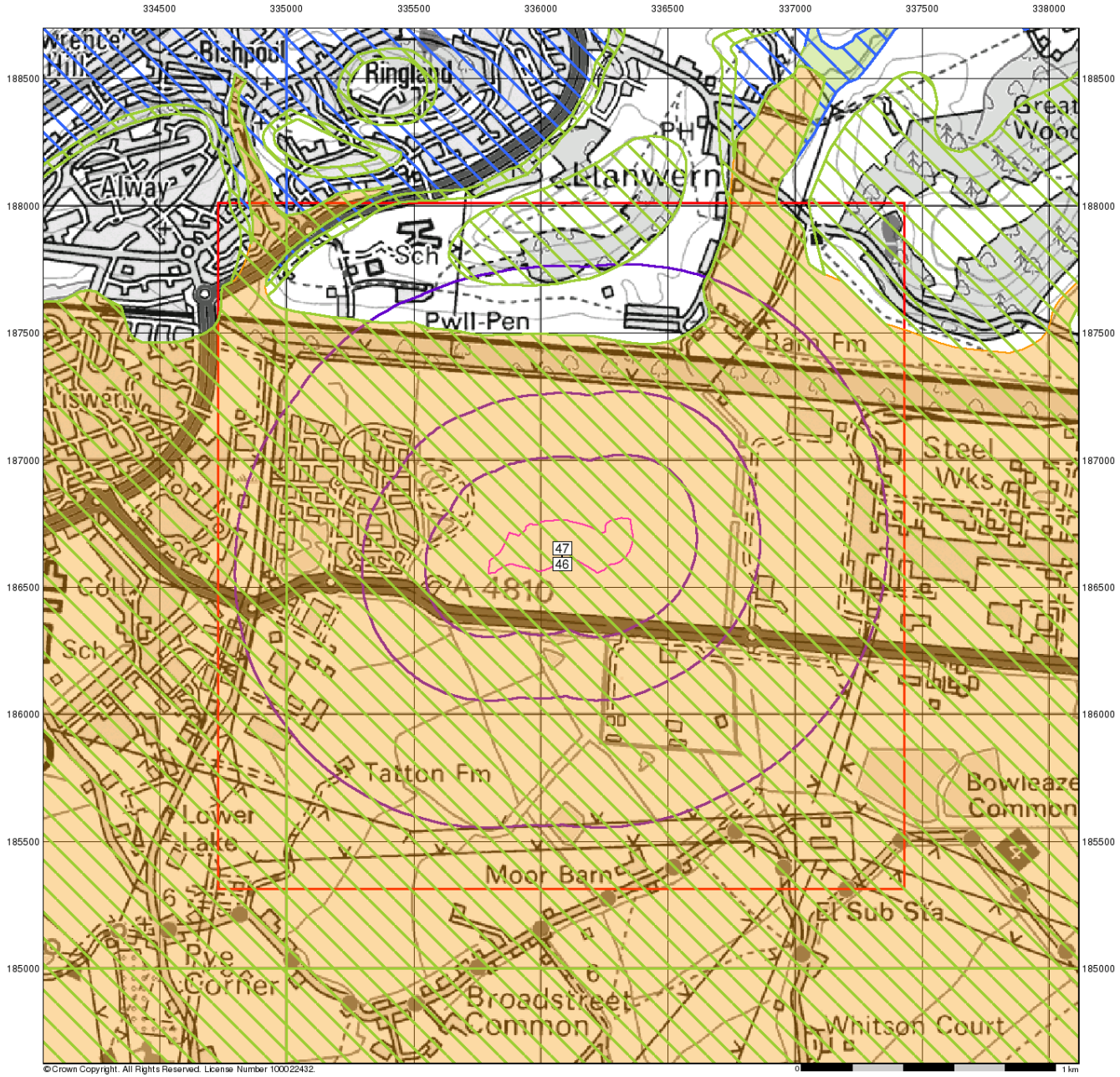
Web: www.envirocheck.co.uk



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Ground Stability Data (1:50,000)

General

Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

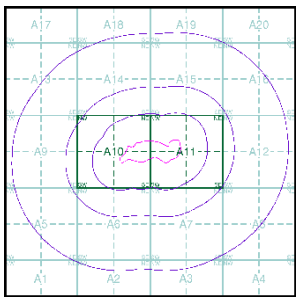
Potential for Running Sand Ground Stability Hazards

High | Low | Moderate | Very Low

Potential for Shrinking or Swelling Clay Ground Stability Hazards

High | Low | Moderate | Very Low

Mining and Ground Stability - Slice A



Order Details

Order Number:	304885831_1_1
Customer Ref:	Llanwern 4c 4g 4e
National Grid Reference:	336080, 186650
Slice:	A
Site Area (Ha):	8.34
Search Buffer (m):	1000

Site Details

Site at 336079,186662

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Envirocheck® Report:

Mining and Ground Stability Datasheet

Order Details:

Order Number:
304885831_1_1

Customer Reference:
Llanwern 4c 4g 4e

National Grid Reference:
336080, 186650

Slice:
A

Site Area (Ha):
8.34

Search Buffer (m):
1000

Site Details:

Site at 336079,186662

Client Details:

Mr R Taylor
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Rodgers Leask Ltd
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Contents

Report Section and Details	Page Number
Summary	-
The Summary section provides an overview of the data contained within the report, detailing the number of data set features or the existence of a data set in relation to the buffer selected. For ease of reference, the report is broken down into 4 sections of data; Mining and Natural Cavities Data, Historical Land Use Information (1:2,500), Historical Land Use Information (1:10,000) and Ground Stability Data (1:50,000).	
Mining and Natural Cavities Data	1
The Mining and Natural Cavities Data section features data sets related to the existence of mining areas and their potential hazards; and details of naturally formed cavities. Data sets within this section are not plotted, with the exception of BGS Recorded Mineral Sites and Potential Mining Areas which feature on the Historical Land Use Information (1:10,000) map.	
Historical Land Use Information (1:2,500)	2
The Historical Land Use Information (1:2,500) section contains data captured from analysis carried out by Landmark of 1:1,250 and 1:2,500 scale historical Ordnance Survey mapping, identifying areas where, historically, the land uses were potentially contaminative. For the purpose of this Envirocheck module, only historical data relating to mining and ground stability has been included and plotted on the corresponding Historical Land Use Information (1:2,500) map. This section also includes the Subterranean Features data set, which details various man-made and man-used underground spaces obtained from the Subterranea Britannica society.	
Historical Land Use Information (1:10,000)	3
The Historical Land Use (1:10,000) section covers data captured from the systematic analysis carried out by Landmark of 1:10, 560 and 1:10,000 scale historical Ordnance Survey mapping dating back to the mid-19th century, identifying potentially contaminative past industrial land uses. For the purpose of this Envirocheck module, only data relating to mining and ground stability has been included and plotted on the accompanying Historical Land Use Information (1:10,000) map.	
Ground Stability Data (1:50,000)	5
The Ground Stability (1:50,000) section includes the BGS Geosure data suite, reporting features to 250m and plotted onto 3 separate maps. Also reported is brine subsidence, brine mining and salt mining data sets, of which Brine Pumping and Salt Mining Related Features are plotted, and subsidence insurance claims and insurance investigations data, which is not plotted.	
Historical Map List	6
The Historical Map List section details the historical mapping that has been analysed for your site, in relation to the Historical Land Use Information sections.	
Data Currency	7
Data Suppliers	8
Useful Contacts	9

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The brine subsidence data relating to the Driotwich area as provided in this report is derived from JPB studies and physical monitoring undertaken annually over more than 35 years. For more detailed interpretation contact enquiries@jpb.co.uk. JPB retain the copyright and intellectual rights to this data and accept no liability for any loss or damage, including in direct or consequential loss, arising from the use of this data.

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Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m
Mining and Natural Cavities Data					
BGS Recorded Mineral Sites	pg 1				2
Coal Mining Affected Areas			n/a	n/a	n/a
Man Made Mining Cavities					
Mining Instability			n/a	n/a	n/a
Natural Cavities					
Non Coal Mining Areas of Great Britain				n/a	n/a
Potential Mining Areas					
Historical Land Use Information (1:2,500)					
Extractive Industries or Potential Excavations from 1855-1909 (100m)				n/a	n/a
Extractive Industries or Potential Excavations from 1893-1915 (100m)				n/a	n/a
Extractive Industries or Potential Excavations from 1906-1937 (100m)				n/a	n/a
Extractive Industries or Potential Excavations from 1924-1949 (100m)				n/a	n/a
Extractive Industries or Potential Excavations from 1950-1980 (100m)	pg 2	2	4	n/a	n/a
Subterranean Features (100m)				n/a	n/a
Historical Land Use Information (1:10,000)					
Air Shafts					
Disturbed Ground					
General Quarrying	pg 3				1
Heap, unknown constituents					
Mineral Railway	pg 3				2
Mining & quarrying general					
Mining of coal & lignite					
Quarrying of sand & clay, operation of sand & gravel pits					
Former Marshes					
Potentially Infilled Land (Non-Water)	pg 3				1
Potentially Infilled Land (Water)	pg 3		2	6	23
Ground Stability Data (1:50,000)					
CBSCB Compensation District			n/a	n/a	n/a
Brine Pumping Related Features					
Brine Subsidence Solution Area					
Potential for Collapsible Ground Stability Hazards	pg 5	Yes		n/a	n/a
Potential for Compressible Ground Stability Hazards	pg 5	Yes		n/a	n/a
Potential for Ground Dissolution Stability Hazards	pg 5	Yes		n/a	n/a
Potential for Landslide Ground Stability Hazards	pg 5	Yes		n/a	n/a
Potential for Running Sand Ground Stability Hazards	pg 5	Yes		n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 5	Yes		n/a	n/a
Salt Mining Related Features					

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Summary

Report Version v53.0

Mining and Natural Cavities Data

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
1	**BGS Recorded Mineral Sites** Site Name: Llanwern Steelworks Slag Location: Llanwern, Newport, Gwent Source: British Geological Survey, National Geoscience Information Service Reference: 13203 Type: Tip **Status: Ceased** Operator: Tarmac (A Crh Company) Operator Location: Not Supplied Periodic Type: Not Available Geology: Blast Furnace Slag Commodity: Blast Furnace Slag Positional Accuracy: Located by supplier to within 100m	A7NE (SE)	529	1	336500 186100
2	**BGS Recorded Mineral Sites** Site Name: Llanwern Works Location: Llanwern, Newport, Gwent Source: British Geological Survey, National Geoscience Information Service Reference: 13204 Type: Tip **Status: Ceased** Operator: Hanson Cement Operator Location: Not Supplied Periodic Type: Not Available Geology: Ground Granulated Blast Furnace Slag - Addition, Cementitious Commodity: Blast Furnace Slag Positional Accuracy: Located by supplier to within 100m	A8NW (SE)	843	1	337000 186100
	Coal Mining Affected Areas In an area which may not be affected by coal mining				
	Non Coal Mining Areas of Great Britain No Hazard				

Historical Land Use Information (1:2,500)

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
3	**Extractive Industries or Potential Excavations from 1950-1980** Use: Pond First Map Published Date: 1967 Last Map Published Date: N/A	A11NW (E)	0	-	336229 186708
4	**Extractive Industries or Potential Excavations from 1950-1980** Use: Pond First Map Published Date: 1967 Last Map Published Date: N/A	A10NE (NW)	0	-	336047 186704
5	**Extractive Industries or Potential Excavations from 1950-1980** Use: Pipe Line First Map Published Date: 1967 Last Map Published Date: 1967	A11NW (NE)	6	-	336148 186791
6	**Extractive Industries or Potential Excavations from 1950-1980** Use: Pond First Map Published Date: 1967 Last Map Published Date: N/A	A11SW (SE)	32	-	336183 186528
7	**Extractive Industries or Potential Excavations from 1950-1980** Use: Pipe Line First Map Published Date: 1967 Last Map Published Date: 1969	A11NW (NE)	42	-	336165 186790
8	**Extractive Industries or Potential Excavations from 1950-1980** Use: Gas Holder First Map Published Date: 1967 Last Map Published Date: N/A	A11NW (NE)	56	-	336246 186822

Historical Land Use Information (1:10,000)

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
9	**General Quarrying** Use: Not Supplied Date of Mapping: 1887 - 1922	A15NW (N)	797	-	336326 187580
10	**Mineral Railway** Use: Not Supplied Date of Mapping: 1922	A15NW (NE)	656	-	336410 187421
11	**Mineral Railway** Use: Not Supplied Date of Mapping: 1922	A15NW (N)	668	-	336213 187430
12	**Potentially Infilled Land (Non-Water)** Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1989	A15NW (N)	800	-	336349 187576
13	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1989	A10NE (N)	211	-	336078 186975
14	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1989	A11NW (N)	211	-	336081 186975
15	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1965	A11NE (E)	311	-	336668 186769
16	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1965	A10SW (W)	344	-	335453 186569
17	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1965	A10SW (W)	374	-	335422 186638
18	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1965	A9SE (W)	406	-	335390 186570
19	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1965	A10NW (W)	418	-	335419 186779
20	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1965	A9SE (W)	467	-	335330 186615
21	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1965	A9SE (W)	525	-	335272 186603
22	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1965	A5NE (SW)	534	-	335324 186306
23	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1965	A9SE (W)	578	-	335220 186613
24	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1965	A9SE (W)	588	-	335211 186489
25	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1965	A12SW (E)	590	-	336945 186592
26	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1965	A9NE (W)	669	-	335169 186830
27	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1965	A9SE (W)	717	-	335081 186624
28	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1965	A9SE (W)	718	-	335079 186611
29	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1965	A9SW (W)	745	-	335052 186607

Historical Land Use Information (1:10,000)

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
30	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1965	A9SE (W)	758	-	335069 186339
31	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1965	A9SW (W)	760	-	335067 186340
32	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1965	A9NW (W)	763	-	335045 186730
33	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1965	A9SW (W)	776	-	335030 186431
34	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1965	A9SW (W)	870	-	334929 186488
35	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1965	A9SW (W)	874	-	334926 186476
36	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1965	A5NW (SW)	876	-	335031 186127
37	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1965	A5NW (SW)	880	-	335025 186129
38	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1965	A9SW (W)	891	-	334906 186593
39	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1965	A5NW (W)	943	-	334892 186286
40	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1965	A9NW (W)	968	-	334838 186726
41	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1965	A9SW (W)	983	-	334814 186580
42	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1965	A5SW (SW)	983	-	335004 185973
43	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1965	A9SW (W)	987	-	334810 186550

Ground Stability Data (1:50,000)

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	CBSCB Compensation District The site does not fall within the brine compensation area.				
	Brine Subsidence Solution Area The site does not fall within the brine subsidence solution area.				
	Potential for Collapsible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A11SW (S)	0	1	336084 186652
44	**Potential for Compressible Ground Stability Hazards** Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A11SW (S)	0	1	336084 186652
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A11SW (S)	0	1	336084 186652
45	**Potential for Landslide Ground Stability Hazards** Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A11SW (S)	0	1	336084 186652
46	**Potential for Running Sand Ground Stability Hazards** Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A11SW (S)	0	1	336084 186652
47	**Potential for Shrinking or Swelling Clay Ground Stability Hazards** Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A11SW (S)	0	1	336084 186652

Historical Map List

The following mapping has been analysed for Historical Land Use Information (1:2,500):

1:2,500	Mapsheet	Published Date
Ordnance Survey Plan	ST3586	1967

The following mapping has been analysed for Historical Land Use Information (1:10,000):

1:10,560	Mapsheet	Published Date
Monmouthshire	029_00	1886
Monmouthshire	034_00	1887
Monmouthshire	029_SE	1902
Monmouthshire	029_SW	1902
Monmouthshire	034_NE	1902
Monmouthshire	034_NW	1902
Monmouthshire	029_SE	1922
Monmouthshire	029_SW	1922
Monmouthshire	034_NE	1922
Monmouthshire	034_NW	1922
Monmouthshire	034_NW	1938
Monmouthshire	029_SE	1954
Monmouthshire	029_SW	1954
Monmouthshire	034_NE	1954
Ordnance Survey Plan	ST38NE	1965
Ordnance Survey Plan	ST38NW	1965
1:10,000	**Mapsheet**	**Published Date**
Ordnance Survey Plan	ST38NE	1989
Ordnance Survey Plan	ST38NW	1994

Data Currency

Mining and Cavities Data	Version	Update Cycle
BGS Recorded Mineral Sites British Geological Survey - National Geoscience Information Service	November 2022	Bi-Annually
Coal Mining Affected Areas The Coal Authority - Property Searches	March 2014	Annual Rolling Update
Man Made Mining Cavities Stantec UK Ltd	December 2021	Bi-Annually
Mining Instability Ove Arup & Partners	June 1998	Not Applicable
Natural Cavities Stantec UK Ltd	December 2021	Bi-Annually
Non Coal Mining Areas of Great Britain British Geological Survey - National Geoscience Information Service	May 2015	Not Applicable
Historical Land Use Information (1:2,500)	**Version**	**Update Cycle**
Subterranean Features Landmark Information Group Limited	June 2022	Bi-Annually
Ground Stability Data (1:50,000)	**Version**	**Update Cycle**
CBSCB Compensation District Cheshire Brine Subsidence Compensation Board (CBSCB) Cheshire Brine Subsidence Compensation Board (CBSCB)	August 2011 November 2020	 As notified
Potential for Collapsible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	April 2020	As notified
Potential for Compressible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	As notified
Potential for Ground Dissolution Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	As notified
Potential for Landslide Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	As notified
Potential for Running Sand Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	As notified
Potential for Shrinking or Swelling Clay Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	As notified
Brine Subsidence Solution Area Johnson Poole & Bloomer	December 2020	Annual Rolling Update

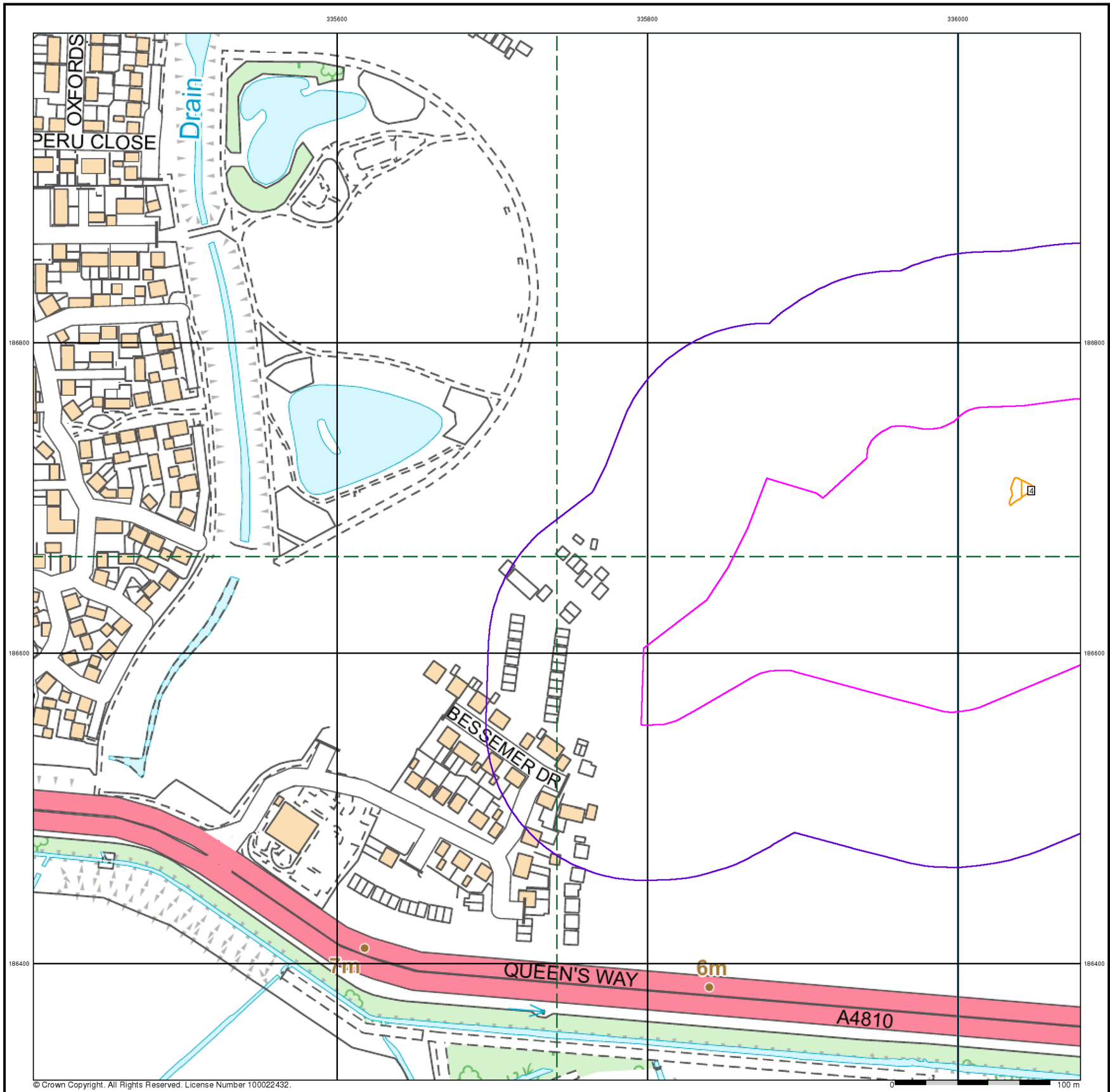
Data Suppliers

A selection of organisations who provide data within this report

Data Supplier	Data Supplier Logo
Ordnance Survey	Map data
British Geological Survey	British Geological Survey, Natural Environment Research Council
The Coal Authority	The Coal Authority
Ove Arup	ARUP
Stantec UK Ltd	Stantec
Wardell Armstrong	wardell armstrong, your earth our world
Johnson Poole & Bloomer	JPB

Useful Contacts

Contact	Name and Address	Contact Details
1	**British Geological Survey - Enquiry Service** British Geological Survey, Environmental Science Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG	Telephone: 0115 936 3143 Fax: 0115 936 3276 Email: enquiries@bgs.ac.uk Website: www.bgs.ac.uk
-	**Landmark Information Group Limited** Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9952 Fax: 0844 844 9951 Email: customerservices@landmarkinfo.co.uk Website: www.landmarkinfo.co.uk



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Historical Land Use Information (1:2,500)

General

Specified Site | Specified Buffer(s) | Bearing Reference Point | Map ID

Several of Type at Location

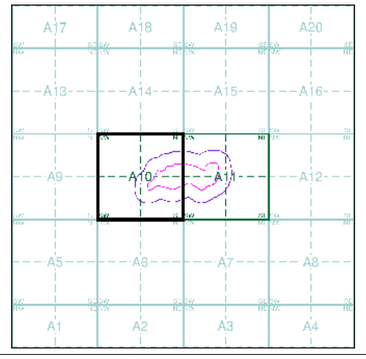
Potentially Contaminative Industrial Uses (Extractive Industries Activity)

	Point	Line	Polygon
Extractive Industries Activity from 1855 - 1909	▲	—	▭
Extractive Industries Activity from 1893 - 1915	▲	—	▨
Extractive Industries Activity from 1906 - 1937	▲	—	▦
Extractive Industries Activity from 1924 - 1949	▲	—	▨
Extractive Industries Activity from 1950 - 1980	▲	—	▥

Subterranean Features

	Point	Line	Polygon
Subterranean Features	▼	- - -	▭

Mining and Ground Stability - Segment A10



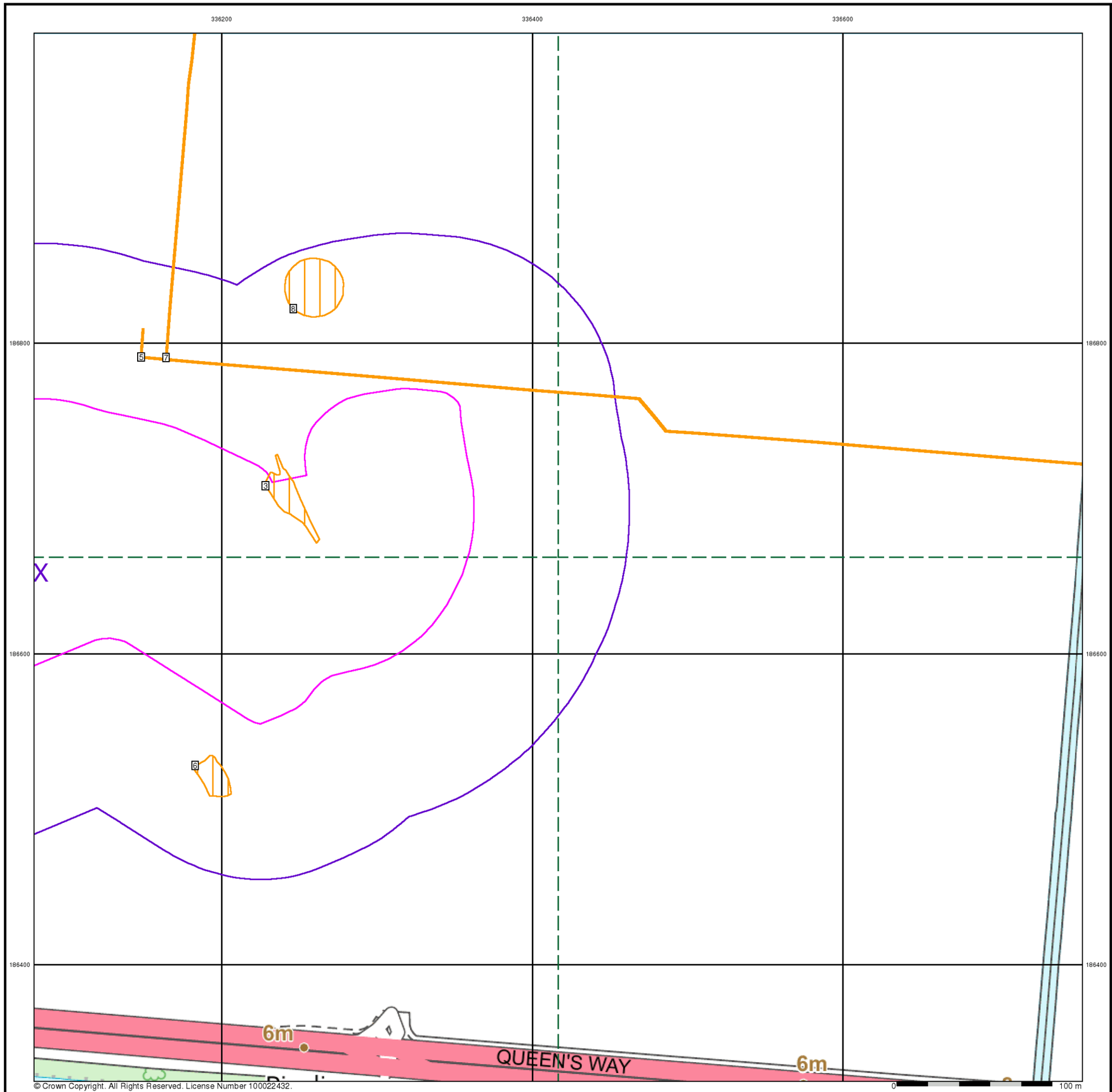
Order Details

Order Number:	304885831_1_1
Customer Ref:	Llanwern 4c 4g 4e
National Grid Reference:	336080, 186650
Slice:	A
Site Area (Ha):	8.34
Plot Buffer (m):	100

Site Details

Site at 336079,186662

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



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Historical Land Use Information (1:2,500)

General

Specified Site | Specified Buffer(s) | Bearing Reference Point | Map ID

Several of Type at Location

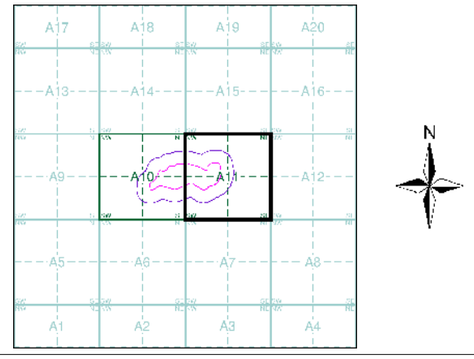
Potentially Contaminative Industrial Uses (Extractive Industries Activity)

	Point	Line	Polygon
Extractive Industries Activity from 1855 - 1909	▲	—	▭
Extractive Industries Activity from 1893 - 1915	▲	—	▨
Extractive Industries Activity from 1906 - 1937	▲	—	▭
Extractive Industries Activity from 1924 - 1949	▲	—	▨
Extractive Industries Activity from 1950 - 1980	▲	—	▭

Subterranean Features

	Point	Line	Polygon
Subterranean Features	▼	- - -	▭

Mining and Ground Stability - Segment A11



Order Details

Order Number:	304885831_1_1
Customer Ref:	Llanwern 4c 4g 4e
National Grid Reference:	336080, 186650
Slice:	A
Site Area (Ha):	8.34
Plot Buffer (m):	100

Site Details

Site at 336079,186662

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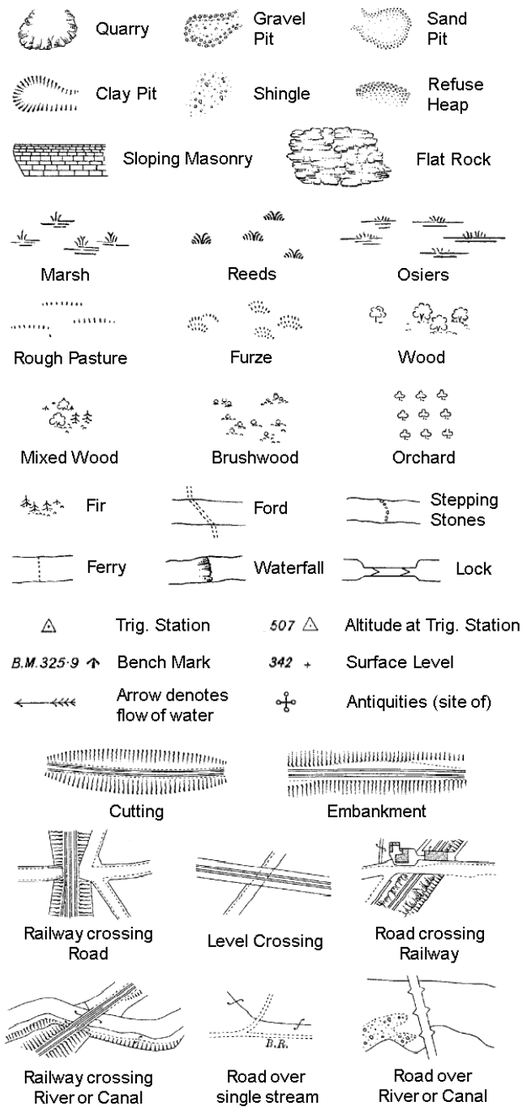
Historical Mapping Legends

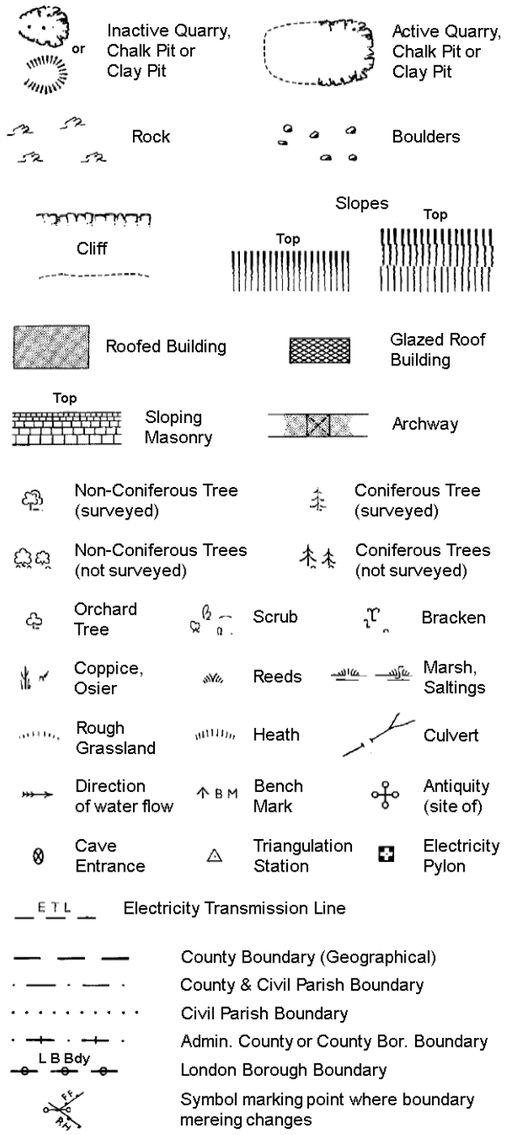
Ordnance Survey County Series and Ordnance Survey Plan 1:2,500



County Boundary (Geographical)
County & Civil Parish Boundary
Administrative County & Civil Parish Boundary
County Borough Boundary (England)
Co. Boro. Bdy.
County Burgh Boundary (Scotland)
Co. Burgh Bdy.

B P B S	Boundary Post or Stone	P.C.B	Police Call Box
B.R.	Bridle Road	P	Pump
E.P	Electricity Pylon	S.P	Signal Post
F.B.	Foot Bridge	St.	Sluice
F.P.	Foot Path	Sp.	Spring
G.P	Guide Post or Board	T.C.B	Telephone Call Box
M.S	Mile Stone	Tr.	Trough
M.P M.R	Mooring Post or Ring	W	Well

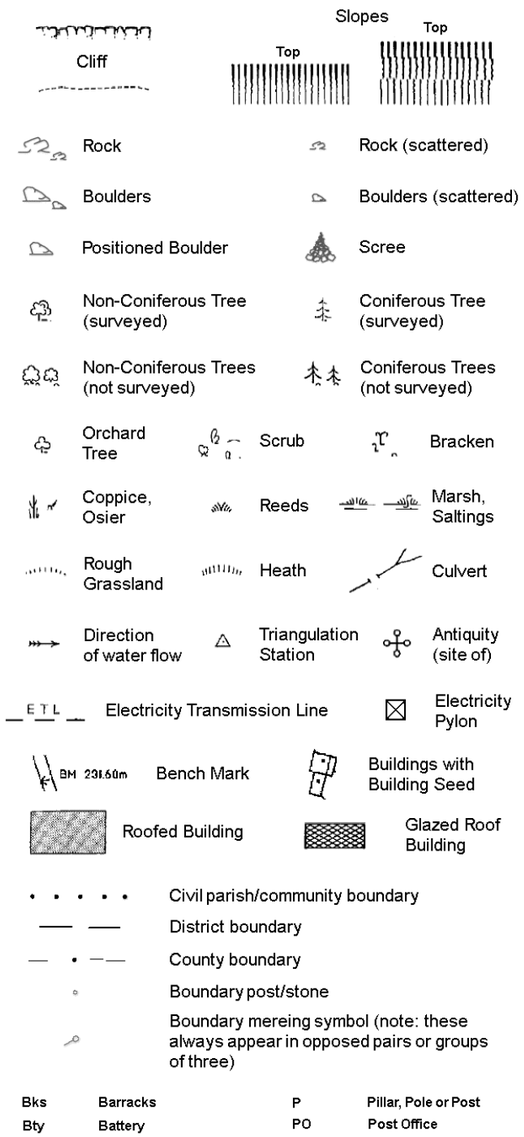
Ordnance Survey Plan, Additional SIMs and Supply of Unpublished Survey Information 1:2,500 and 1:1,250



County Boundary (Geographical)
County & Civil Parish Boundary
Civil Parish Boundary
Admin. County or County Bor. Boundary
L B Bdy
London Borough Boundary
Symbol marking point where boundary mereing changes

BH	Beer House	P	Pillar, Pole or Post
BP, BS	Boundary Post or Stone	PO	Post Office
Cn, C	Capstan, Crane	PC	Public Convenience
Chy	Chimney	PH	Public House
D Fn	Drinking Fountain	Pp	Pump
El P	Electricity Pillar or Post	SB, S Br	Signal Box or Bridge
FAP	Fire Alarm Pillar	SP, SL	Signal Post or Light
FB	Foot Bridge	Spr	Spring
GP	Guide Post	Tk	Tank or Track
H	Hydrant or Hydraulic	TCB	Telephone Call Box
LC	Level Crossing	TCP	Telephone Call Post
MH	Manhole	Tr	Trough
MP	Mile Post or Mooring Post	Wr Pt, Wr T	Water Point, Water Tap
MS	Mile Stone	W	Well
NTL	Normal Tidal Limit	Wd Pp	Wind Pump

Large-Scale National Grid Data 1:2,500 and 1:1,250



Civil parish/community boundary
District boundary
County boundary
Boundary post/stone
Boundary mereing symbol (note: these always appear in opposed pairs or groups of three)

Bks	Barracks	P	Pillar, Pole or Post
Bty	Battery	PO	Post Office
Cemy	Cemetery	PC	Public Convenience
Chy	Chimney	Pp	Pump
Cis	Cistern	Ppg Sta	Pumping Station
Dismtd Rly	Dismantled Railway	PW	Place of Worship
El Gen Sta	Electricity Generating Station	Sewage Ppg Sta	Sewage Pumping Station
El P	Electricity Pole, Pillar	SB, S Br	Signal Box or Bridge
El Sub Sta	Electricity Sub Station	SP, SL	Signal Post or Light
FB	Filter Bed	Spr	Spring
Fn / D Fn	Fountain / Drinking Ftn.	Tk	Tank or Track
Gas Gov	Gas Valve Compound	Tr	Trough
GVC	Gas Governer	Wd Pp	Wind Pump
GP	Guide Post	Wr Pt, Wr T	Water Point, Water Tap
MH	Manhole	Wks	Works (building or area)
MP, MS	Mile Post or Mile Stone	W	Well

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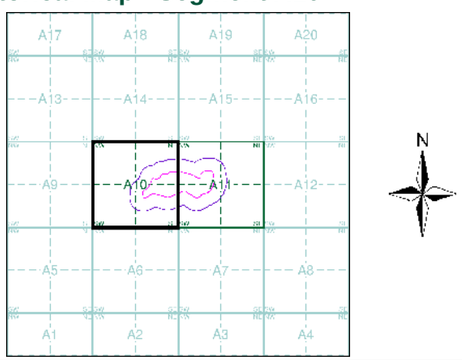
Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Monmouthshire	1:2,500	1883	2
Monmouthshire	1:2,500	1901	3
Monmouthshire	1:2,500	1921	4
Ordnance Survey Plan	1:1,250	1967	5
Ordnance Survey Plan	1:2,500	1967 - 1968	6
Supply of Unpublished Survey Information	1:1,250	1974	7
Additional SIMs	1:1,250	1986	8
Additional SIMs	1:1,250	1991	9
Large-Scale National Grid Data	1:1,250	1992	10
Large-Scale National Grid Data	1:1,250	1995	11
Historical Aerial Photography	1:2,500	2001	12

Historical Map - Segment A10



Order Details

Order Number:	304885831_1_1
Customer Ref:	Llanwern 4c 4g 4e
National Grid Reference:	336080, 186650
Slice:	A
Site Area (Ha):	8.34
Search Buffer (m):	100

Site Details

Site at 336079,186662

Landmark INFORMATION GROUP
Tel: 0844 844 9952
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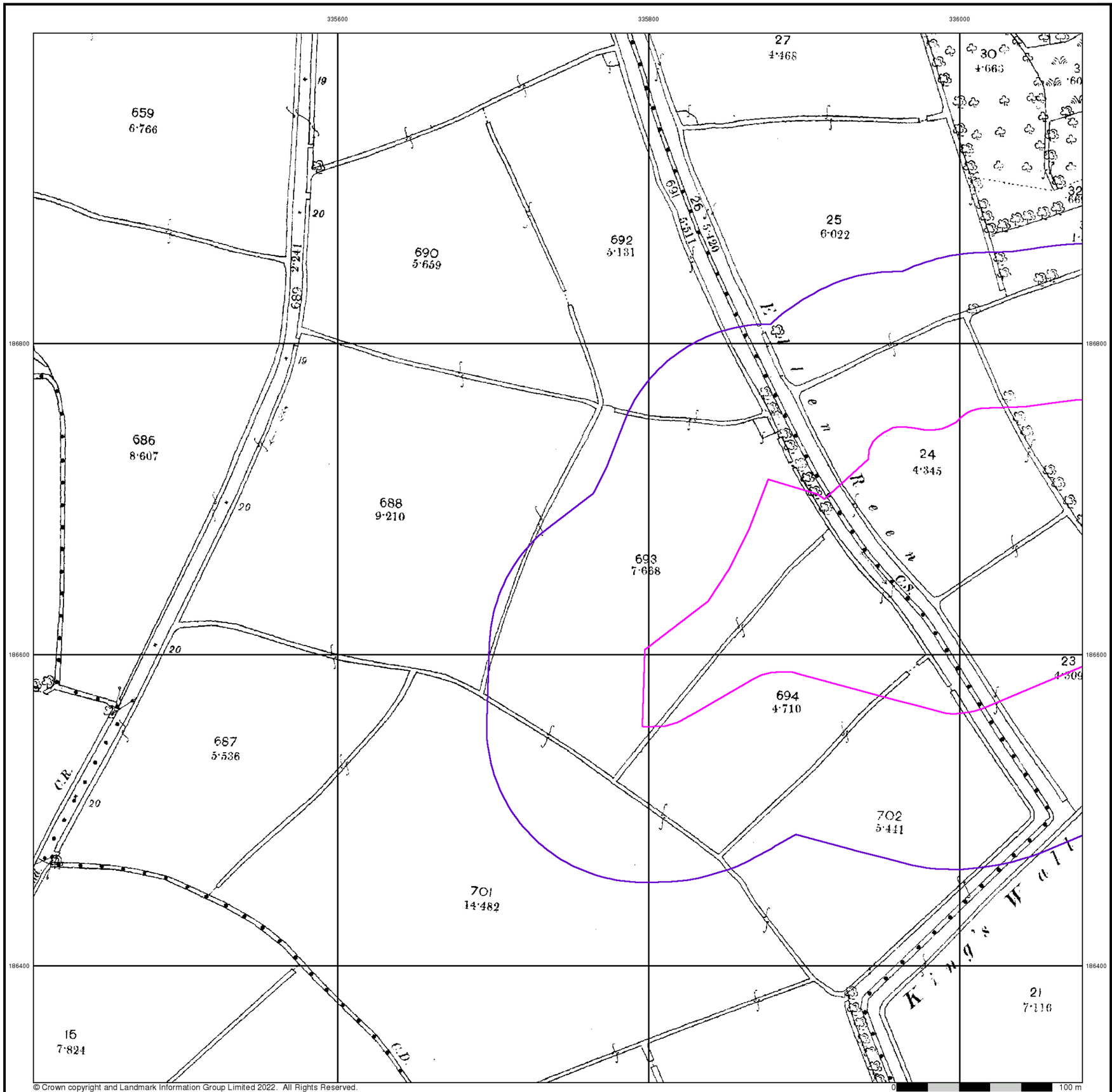

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Monmouthshire

Published 1883

Source map scale - 1:2,500

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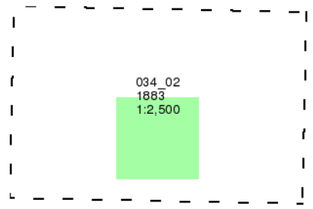
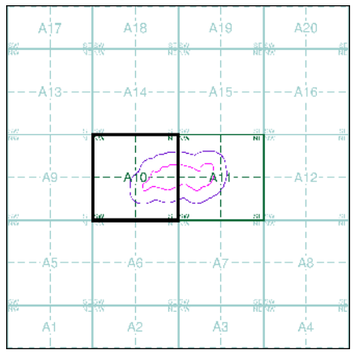
Map Name(s) and Date(s)



Historical Map - Segment A10



Order Details

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Slice:	A
Site Area (Ha):	8.34
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Site Details

Site at 336079,186662

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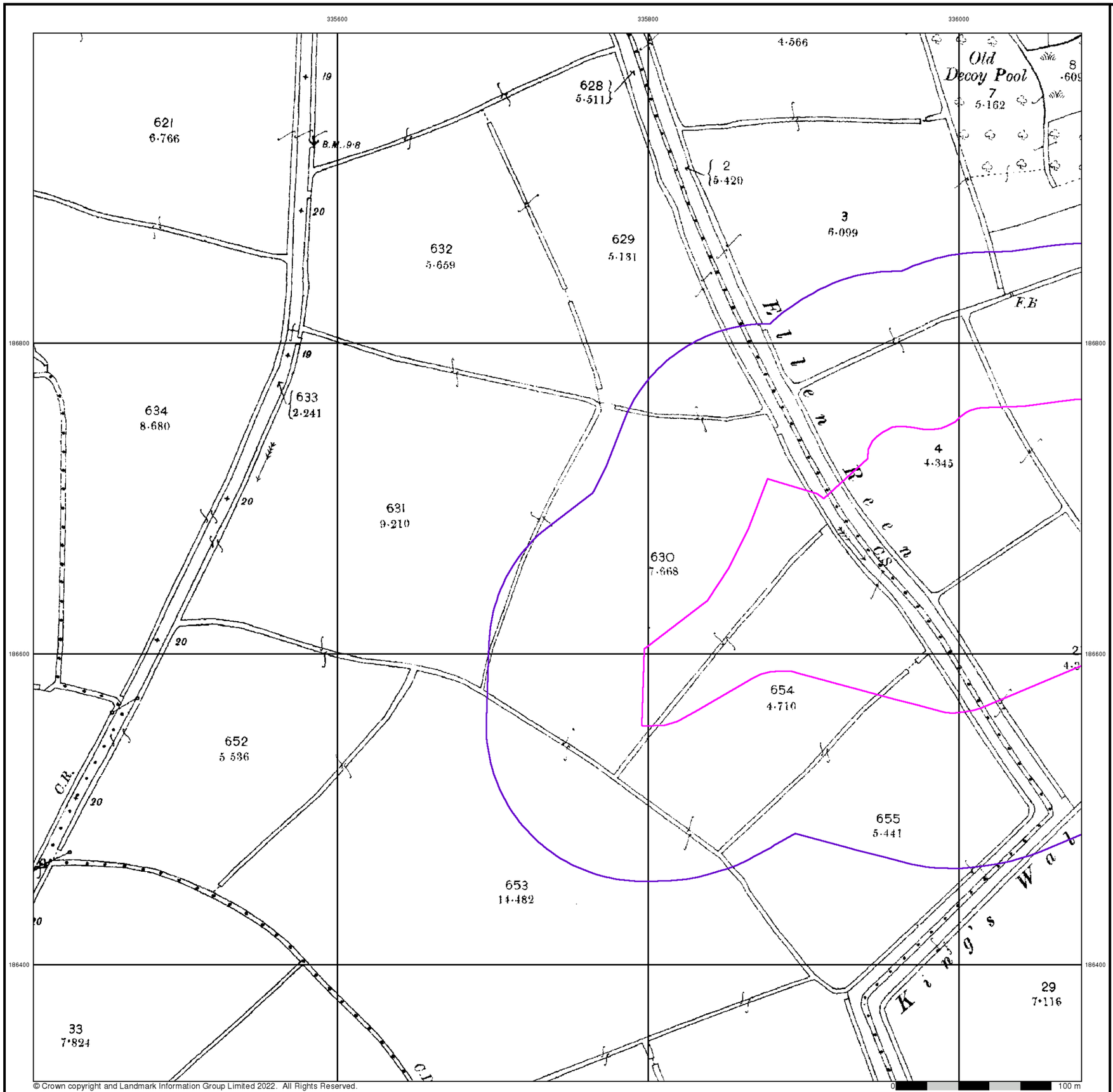

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Monmouthshire

Published 1901

Source map scale - 1:2,500

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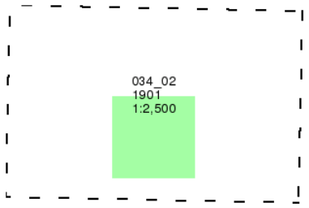
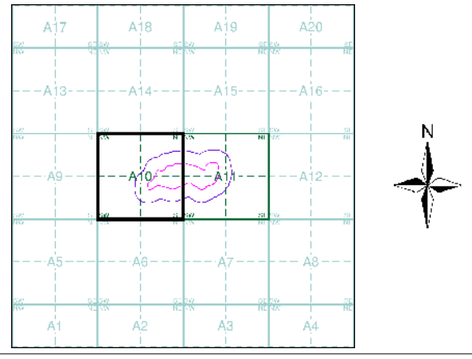
Map Name(s) and Date(s)



Historical Map - Segment A10



Order Details

Order Number:	304885831_1_1
Customer Ref:	Llanwern 4c 4g 4e
National Grid Reference:	336080, 186650
Slice:	A
Site Area (Ha):	8.34
Search Buffer (m):	100

Site Details

Site at 336079,186662

Landmark INFORMATION GROUP

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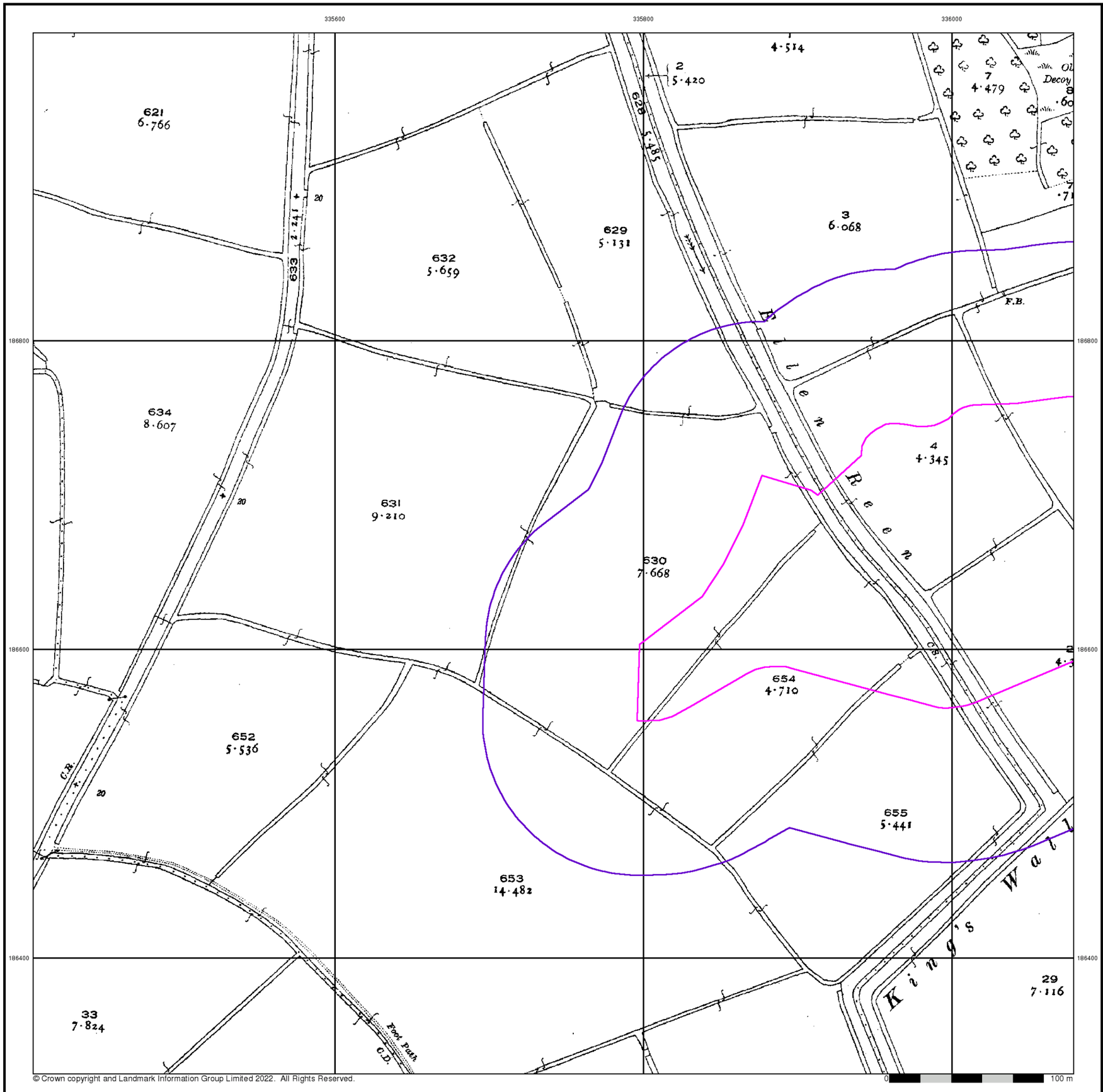

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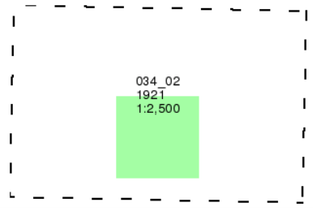
Monmouthshire

Published 1921

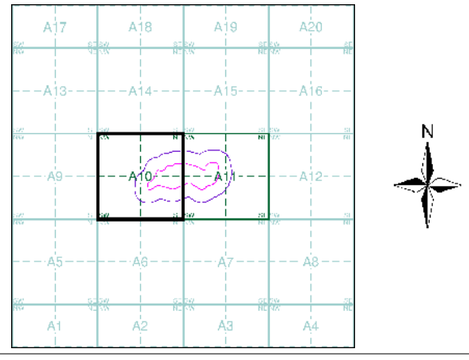
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A10



Order Details

Order Number:	304885831_1_1
Customer Ref:	Llanwern 4c 4g 4e
National Grid Reference:	336080, 186650
Slice:	A
Site Area (Ha):	8.34
Search Buffer (m):	100

Site Details

Site at 336079,186662

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Ordnance Survey Plan

Published 1967

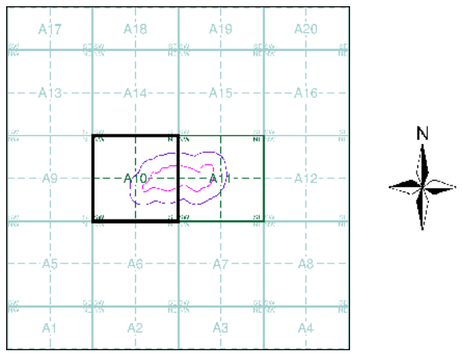
Source map scale - 1:1,250

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

ST3586NW 1967 1:1,250	ST3586NE 1967 1:1,250	ST3686NW 1967 1:1,250
ST3586SW 1967 1:1,250	ST3586SE 1967 1:1,250	ST3686SW 1967 1:1,250

Historical Map - Segment A10



Order Details

Order Number:	304885831_1_1
Customer Ref:	Llanwern 4c 4g 4e
National Grid Reference:	336080, 186650
Slice:	A
Site Area (Ha):	8.34
Search Buffer (m):	100

Site Details

Site at 336079,186662

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335600 335800 336000

186800 186600 186400

Spencer Steelworks
Ore Stocks
Travelling Boom Conveyor
Lighting Tower
Drain
Pond
QUEEN'S WAY
4772 139·66
0004 12·46
0004 148·75
0250 1·05
0004 1·07
4335 7·30

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0 100 m

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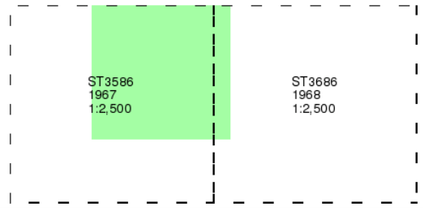
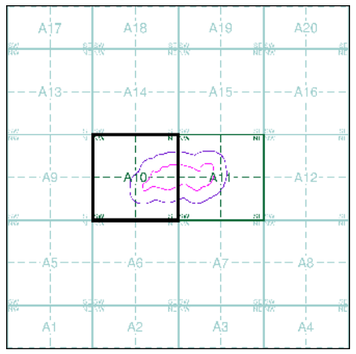
Ordnance Survey Plan
Published 1967 - 1968
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A10



Order Details

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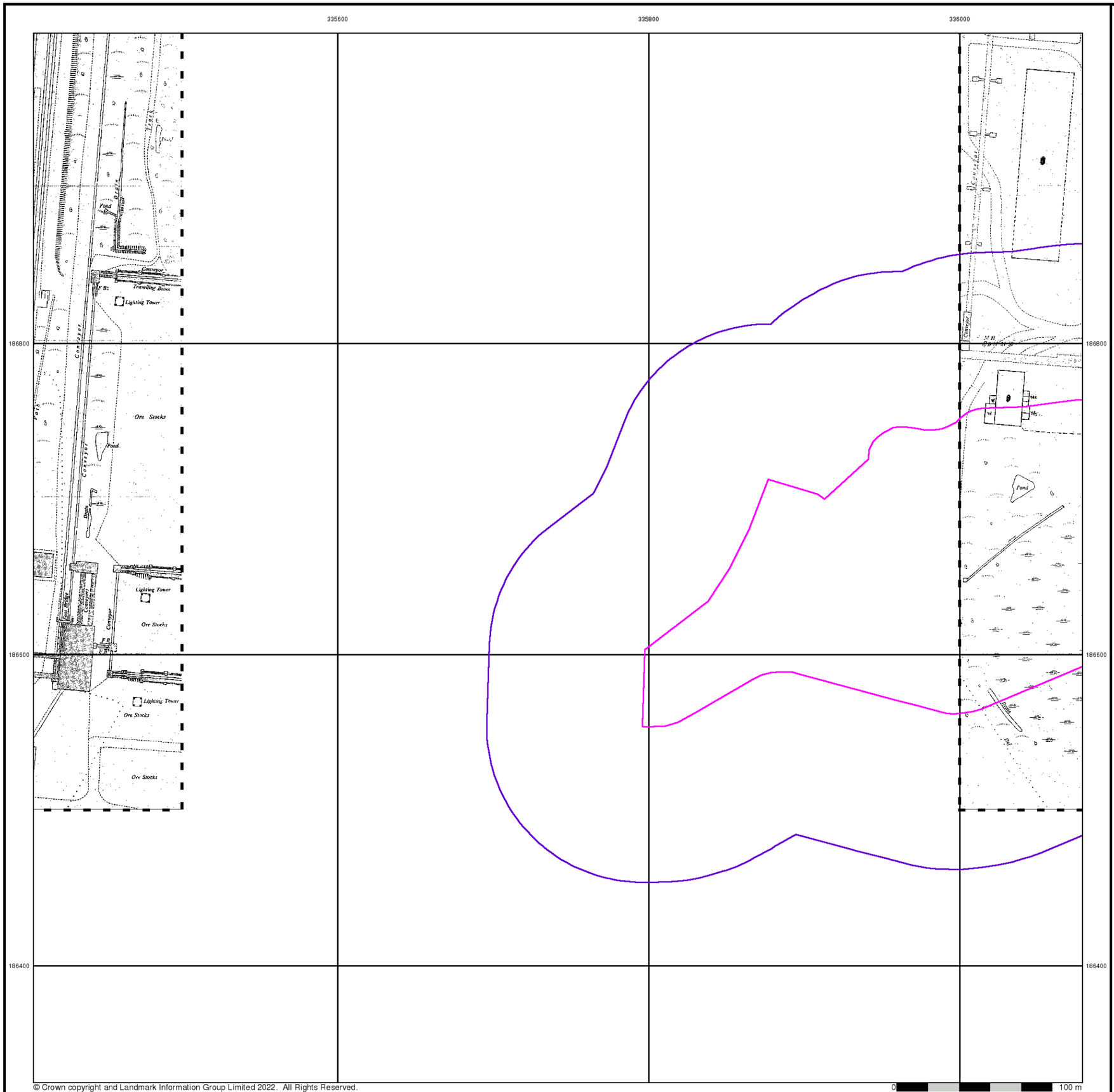

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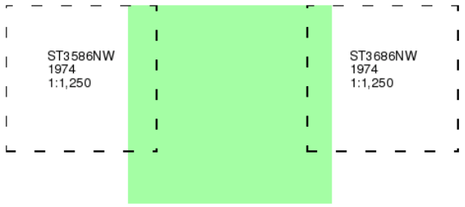
Supply of Unpublished Survey Information

Published 1974

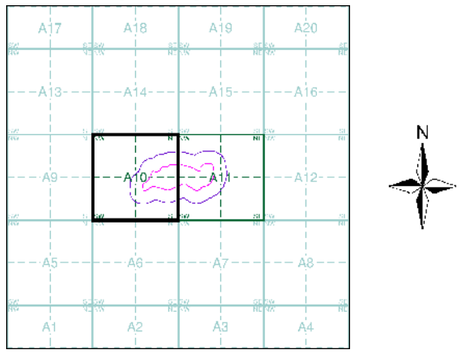
Source map scale - 1:1,250

SUSI maps (Supply of Unpublished Survey Information) were produced between 1972 and 1977, mainly for internal use at Ordnance Survey. These were more of a `work-in-progress' plan as they showed updates of individual areas on a map. These maps were unpublished, and they do not represent a single moment in time. They were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A10



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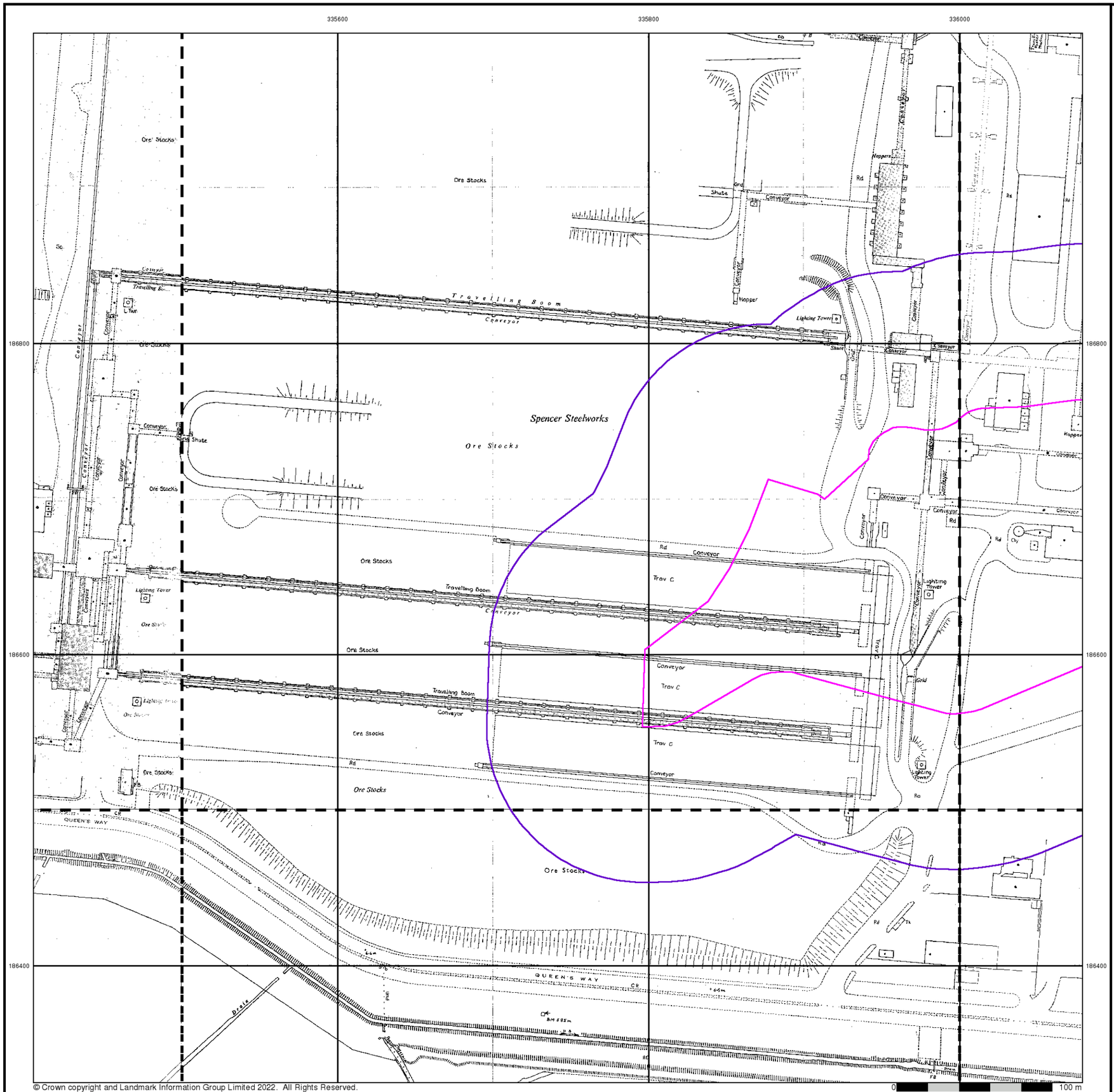

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Additional SIMs

Published 1986

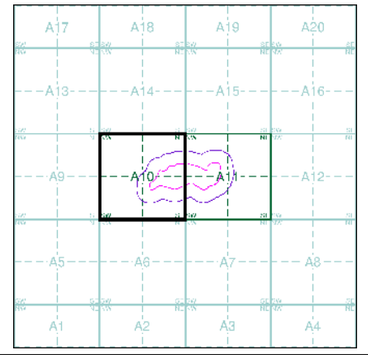
Source map scale - 1:1,250

The SIM cards (Ordnance Survey's `Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

ST3586NW 1986 1:1,250	ST3586NE 1986 1:1,250	ST3686NW 1986 1:1,250
ST3586SW 1986 1:1,250	ST3586SE 1986 1:1,250	ST3686SW 1986 1:1,250

Historical Map - Segment A10



Order Details

Order Number:	304885831_1_1
Customer Ref:	Llanwern 4c 4g 4e
National Grid Reference:	336080, 186650
Slice:	A
Site Area (Ha):	8.34
Search Buffer (m):	100

Site Details

Site at 336079,186662

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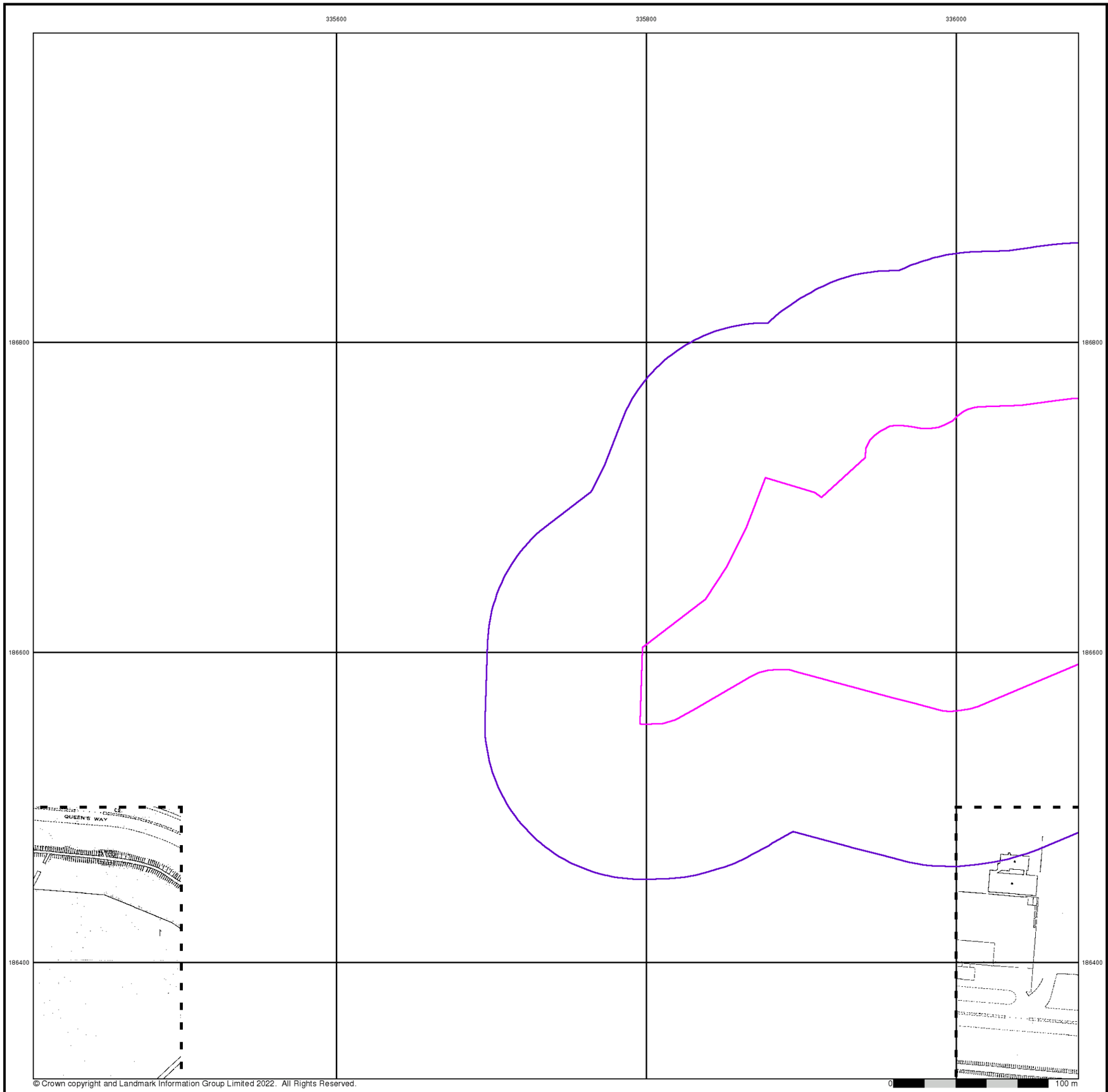

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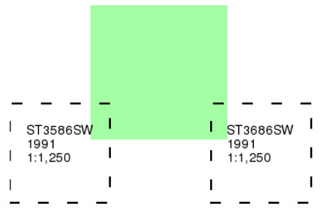
Additional SIMs

Published 1991

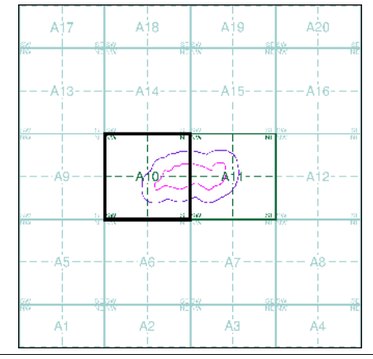
Source map scale - 1:1,250

The SIM cards (Ordnance Survey's `Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A10



Order Details

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Site Details

Site at 336079,186662

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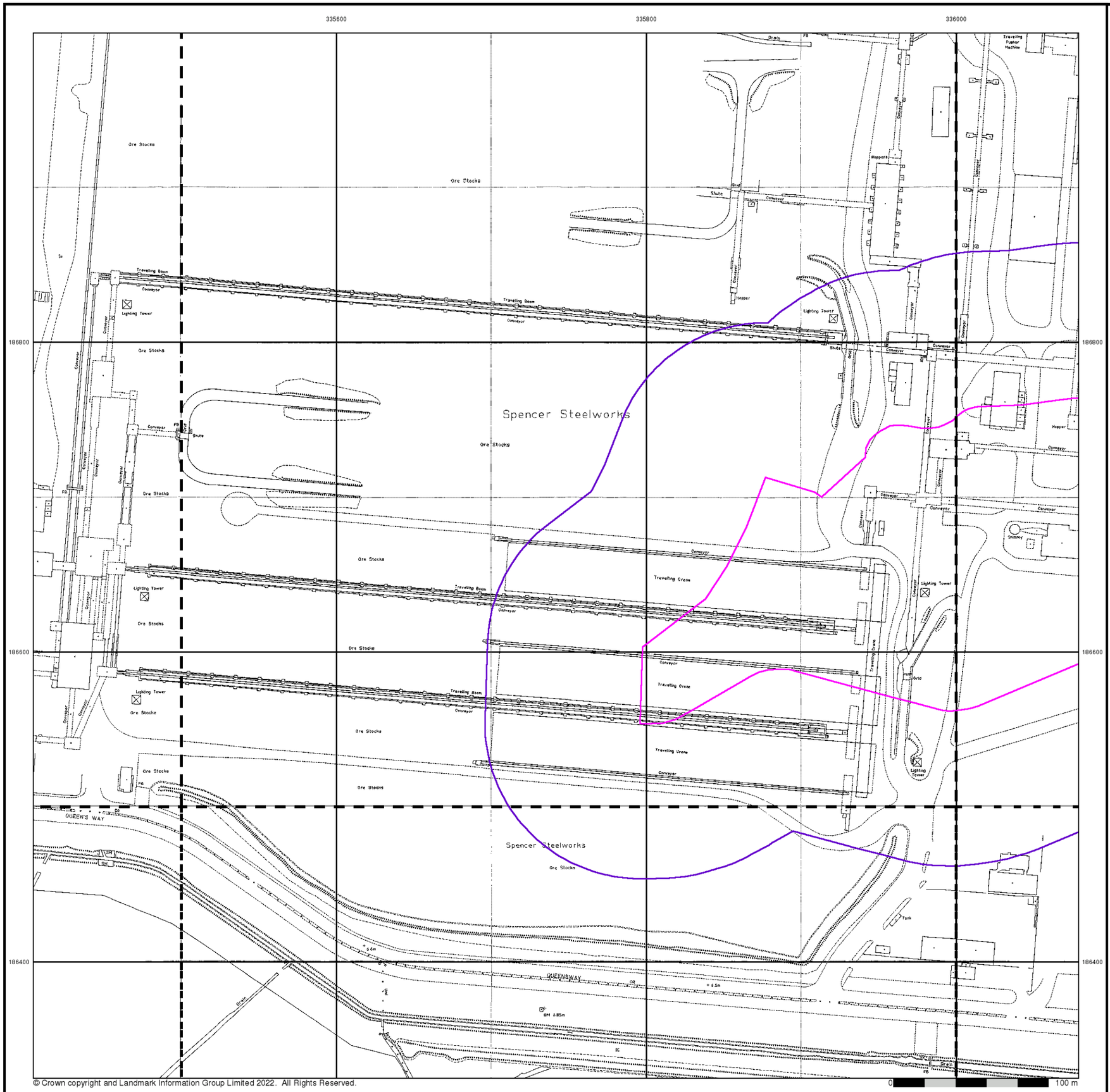

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Large-Scale National Grid Data

Published 1992

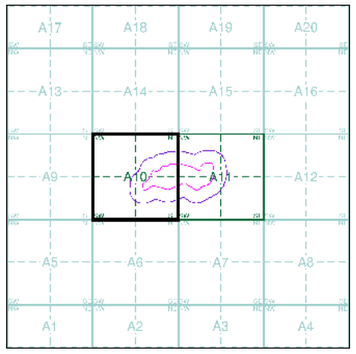
Source map scale - 1:1,250

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

ST3586NW 1992 1:1,250	ST3586NE 1992 1:1,250	ST3686NW 1992 1:1,250
ST3586SW 1992 1:1,250	ST3586SE 1992 1:1,250	ST3686SW 1992 1:1,250

Historical Map - Segment A10



Order Details

Order Number:	304885831_1_1
Customer Ref:	Llanwern 4c 4g 4e
National Grid Reference:	336080, 186650
Slice:	A
Site Area (Ha):	8.34
Search Buffer (m):	100

Site Details

Site at 336079,186662

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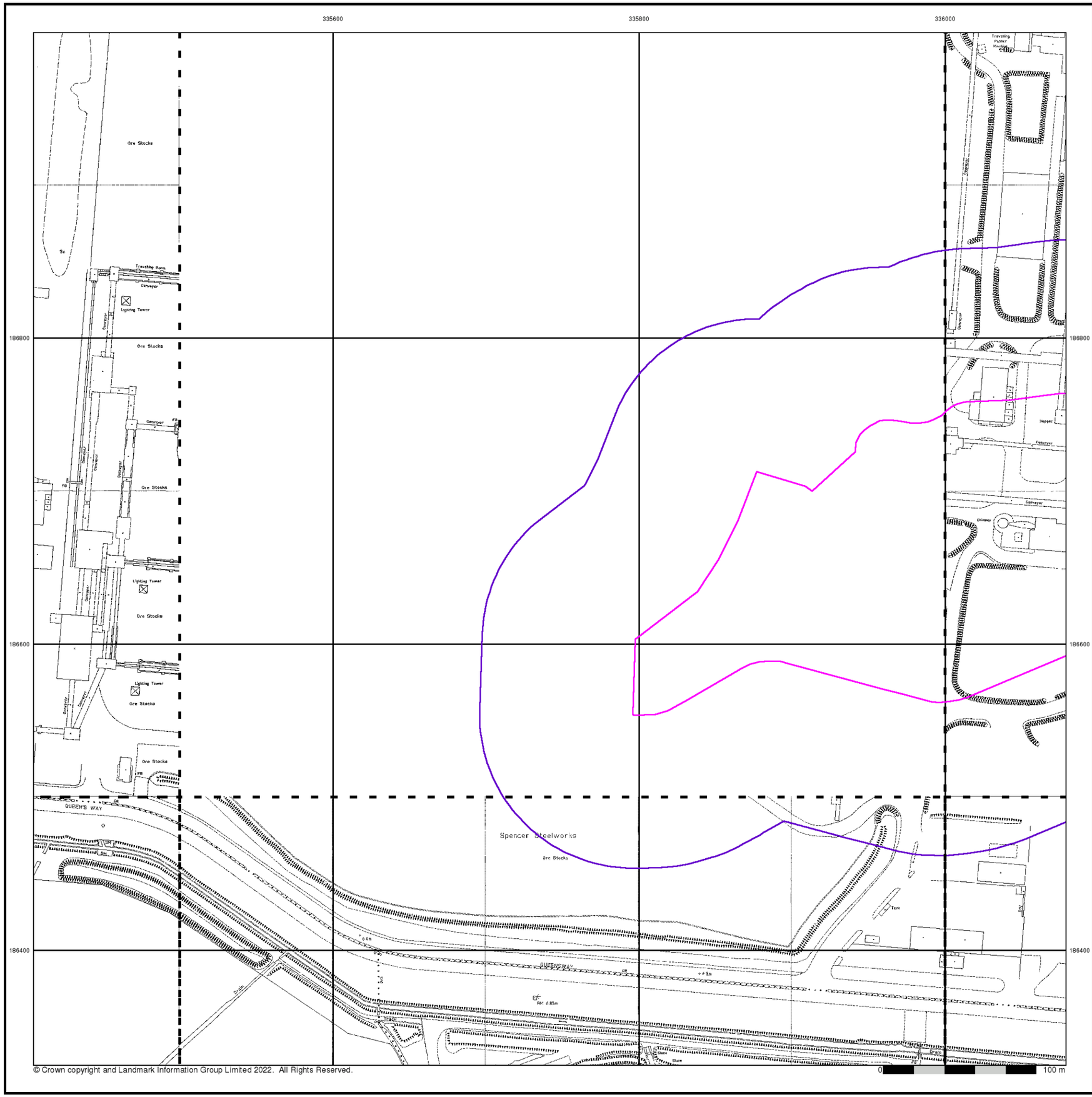

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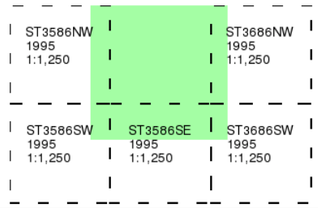
Large-Scale National Grid Data

Published 1995

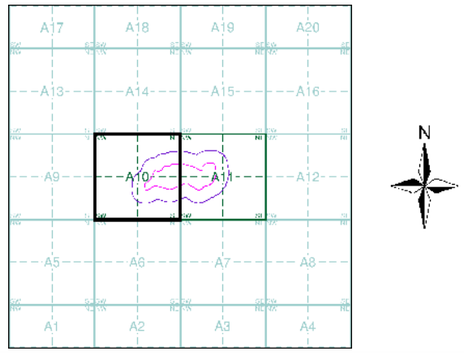
Source map scale - 1:1,250

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A10



Order Details

Order Number:	304885831_1_1
Customer Ref:	Llanwern 4c 4g 4e
National Grid Reference:	336080, 186650
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Site Area (Ha):	8.34
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Site Details

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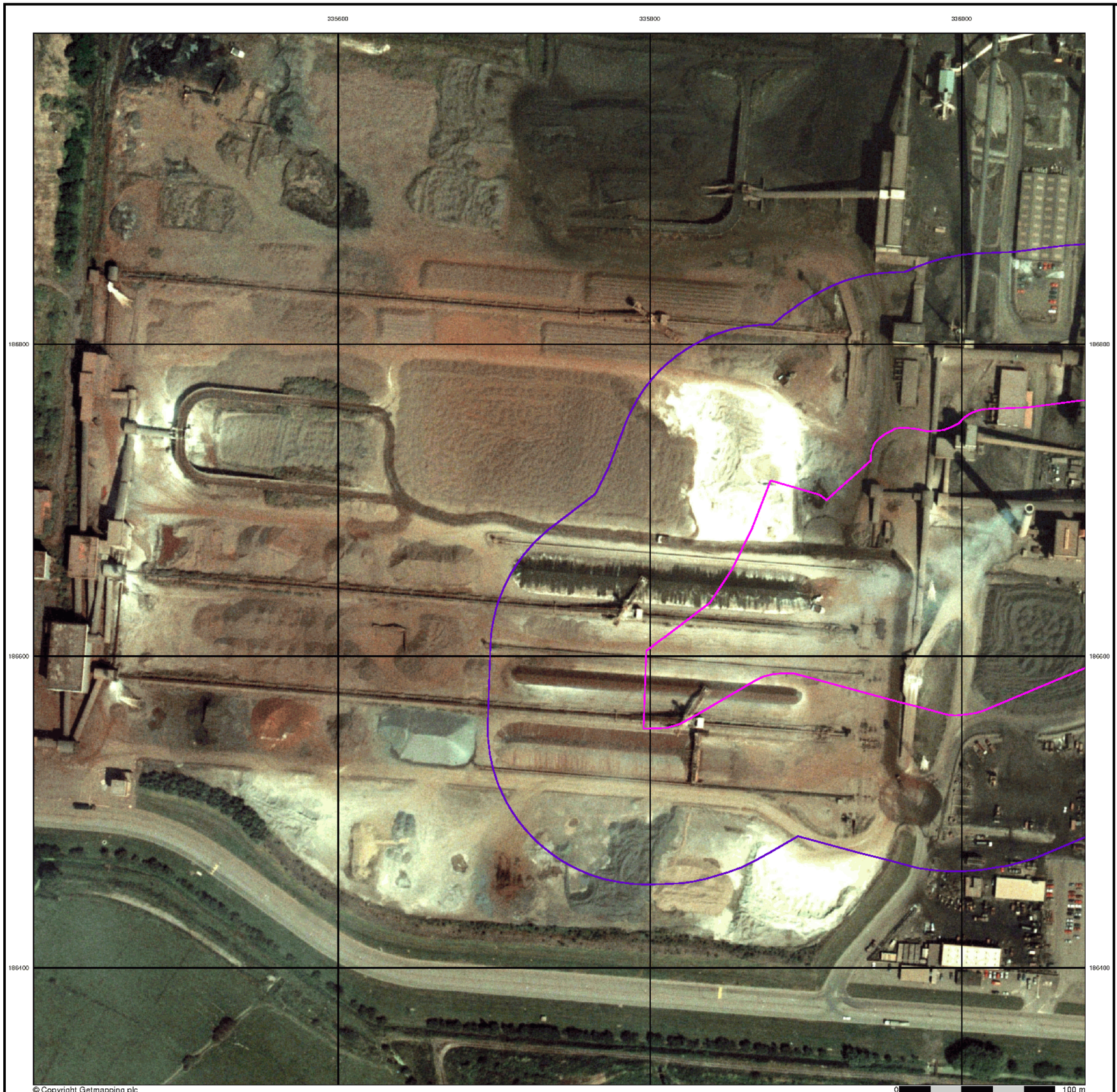

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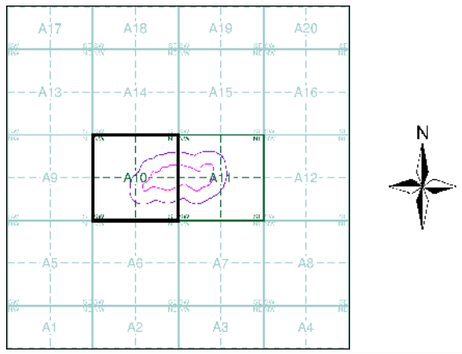
Historical Aerial Photography

Published 2001

This aerial photography was produced by Getmapping, these vertical aerial photographs provide a seamless, full colour survey of the whole of Great Britain

Historical Aerial Photography - Segment A10



Order Details

Order Number:	304885831_1_1
Customer Ref:	Llanwern 4c 4g 4e
National Grid Reference:	336080, 186650
Slice:	A
Site Area (Ha):	8.34
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Site Details

Site at 336079,186662

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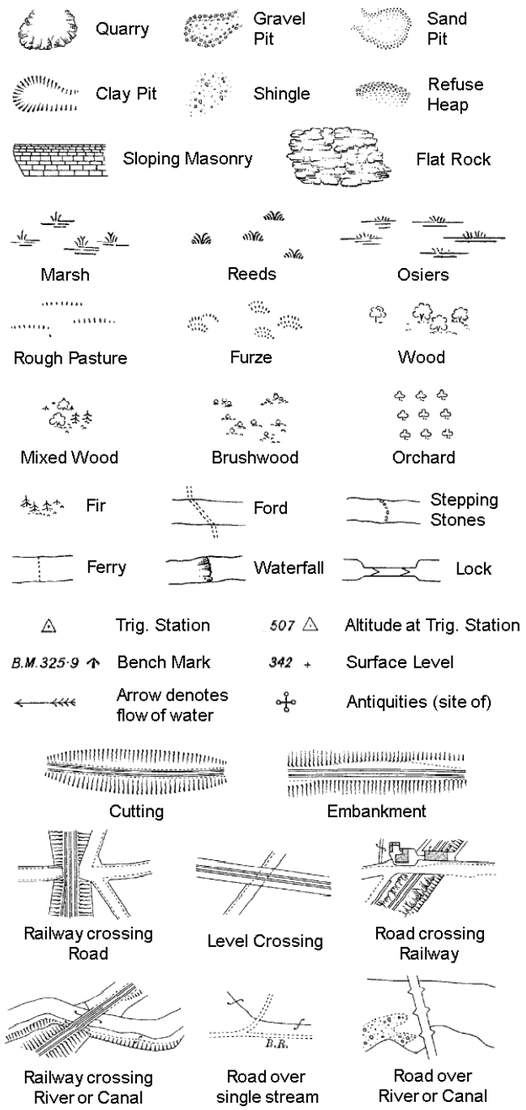
Historical Mapping Legends

Ordnance Survey County Series and Ordnance Survey Plan 1:2,500



County Boundary (Geographical)

County & Civil Parish Boundary

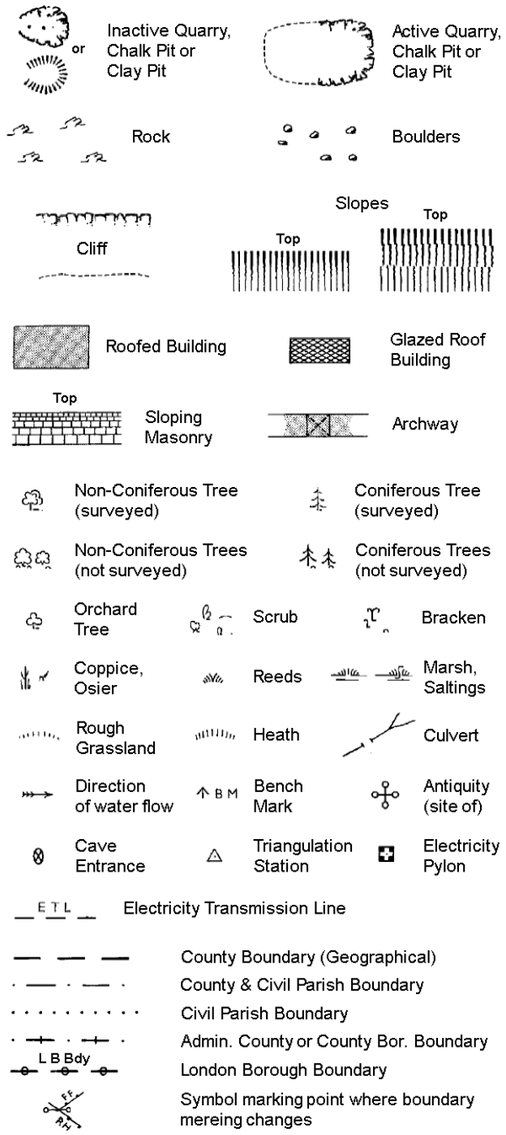
Administrative County & Civil Parish Boundary

Co. Boro. Bdy. County Borough Boundary (England)

Co. Burgh Bdy. County Burgh Boundary (Scotland)

B P B S	Boundary Post or Stone	P.C.B	Police Call Box
B.R.	Bridle Road	P	Pump
E.P	Electricity Pylon	S.P	Signal Post
F.B.	Foot Bridge	Sl.	Sluice
F.P.	Foot Path	Sp.	Spring
G.P	Guide Post or Board	T.C.B	Telephone Call Box
M.S	Mile Stone	Tr.	Trough
M.P M.R	Mooring Post or Ring	W	Well

Ordnance Survey Plan, Additional SIMs and Supply of Unpublished Survey Information 1:2,500 and 1:1,250



County Boundary (Geographical)

County & Civil Parish Boundary

Civil Parish Boundary

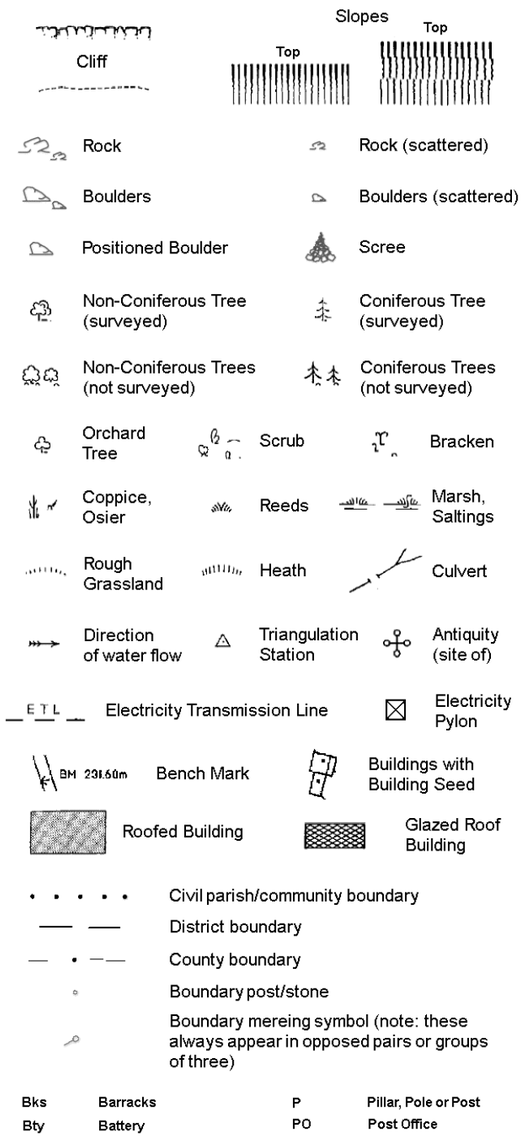
Admin. County or County Bor. Boundary

L B Bdy London Borough Boundary

Symbol marking point where boundary mereing changes

BH	Beer House	P	Pillar, Pole or Post
BP, BS	Boundary Post or Stone	PO	Post Office
Cn, C	Capstan, Crane	PC	Public Convenience
Chy	Chimney	PH	Public House
D Fn	Drinking Fountain	Pp	Pump
El P	Electricity Pillar or Post	SB, S Br	Signal Box or Bridge
FAP	Fire Alarm Pillar	SP, SL	Signal Post or Light
FB	Foot Bridge	Spr	Spring
GP	Guide Post	Tk	Tank or Track
H	Hydrant or Hydraulic	TCB	Telephone Call Box
LC	Level Crossing	TCP	Telephone Call Post
MH	Manhole	Tr	Trough
MP	Mile Post or Mooring Post	Wr Pt, Wr T	Water Point, Water Tap
MS	Mile Stone	W	Well
NTL	Normal Tidal Limit	Wd Pp	Wind Pump

Large-Scale National Grid Data 1:2,500 and 1:1,250



Civil parish/community boundary

District boundary

County boundary

Boundary post/stone

Boundary mereing symbol (note: these always appear in opposed pairs or groups of three)

Bks	Barracks	P	Pillar, Pole or Post
Bty	Battery	PO	Post Office
Cemy	Cemetery	PC	Public Convenience
Chy	Chimney	Pp	Pump
Cis	Cistern	Ppg Sta	Pumping Station
Dismtd Rly	Dismantled Railway	PW	Place of Worship
El Gen Sta	Electricity Generating Station	Sewage Ppg Sta	Sewage Pumping Station
El P	Electricity Pole, Pillar	SB, S Br	Signal Box or Bridge
El Sub Sta	Electricity Sub Station	SP, SL	Signal Post or Light
FB	Filter Bed	Spr	Spring
Fn / D Fn	Fountain / Drinking Ftn.	Tk	Tank or Track
Gas Gov	Gas Valve Compound	Tr	Trough
GVC	Gas Governer	Wd Pp	Wind Pump
GP	Guide Post	Wr Pt, Wr T	Water Point, Water Tap
MH	Manhole	Wks	Works (building or area)
MP, MS	Mile Post or Mile Stone	W	Well

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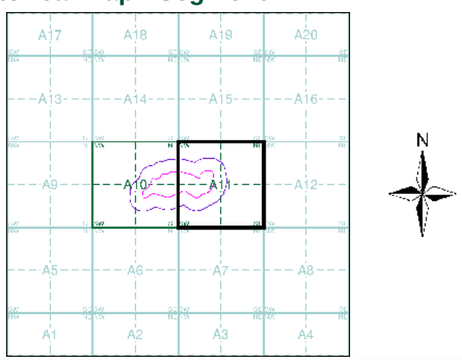
Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Monmouthshire	1:2,500	1883	2
Monmouthshire	1:2,500	1901	3
Monmouthshire	1:2,500	1921	4
Ordnance Survey Plan	1:1,250	1967	5
Ordnance Survey Plan	1:2,500	1968	6
Supply of Unpublished Survey Information	1:1,250	1974	7
Additional SIMs	1:1,250	1986	8
Additional SIMs	1:1,250	1991	9
Large-Scale National Grid Data	1:1,250	1992	10
Large-Scale National Grid Data	1:1,250	1995	11
Historical Aerial Photography	1:2,500	2001	12

Historical Map - Segment A11



Order Details

Order Number:	304885831_1_1
Customer Ref:	Llanwern 4c 4g 4e
National Grid Reference:	336080, 186650
Slice:	A
Site Area (Ha):	8.34
Search Buffer (m):	100

Site Details

Site at 336079,186662

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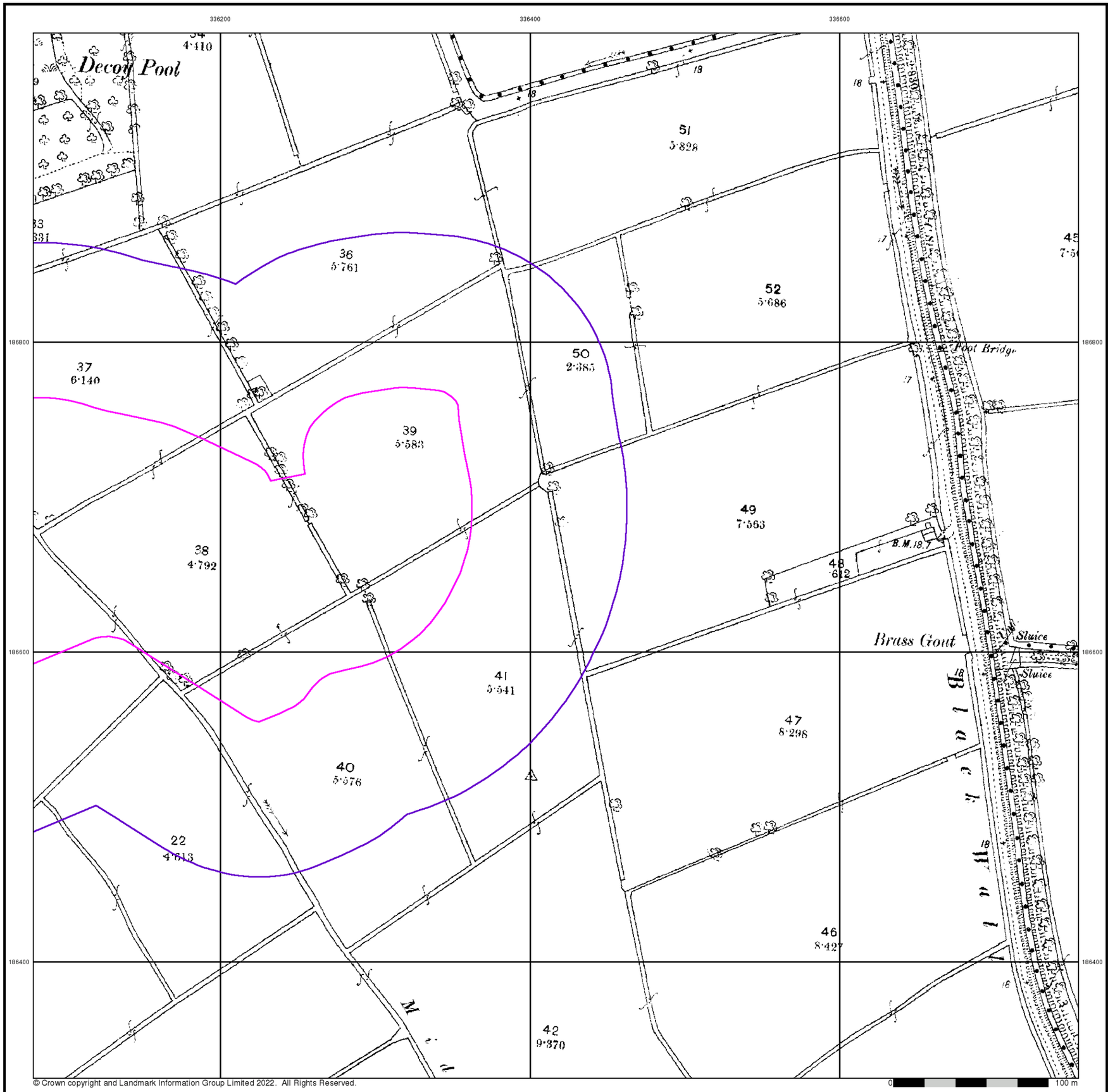

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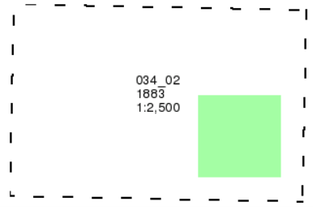
Monmouthshire

Published 1883

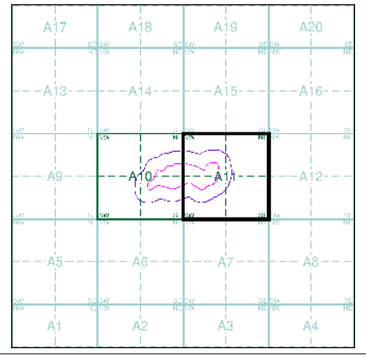
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A11



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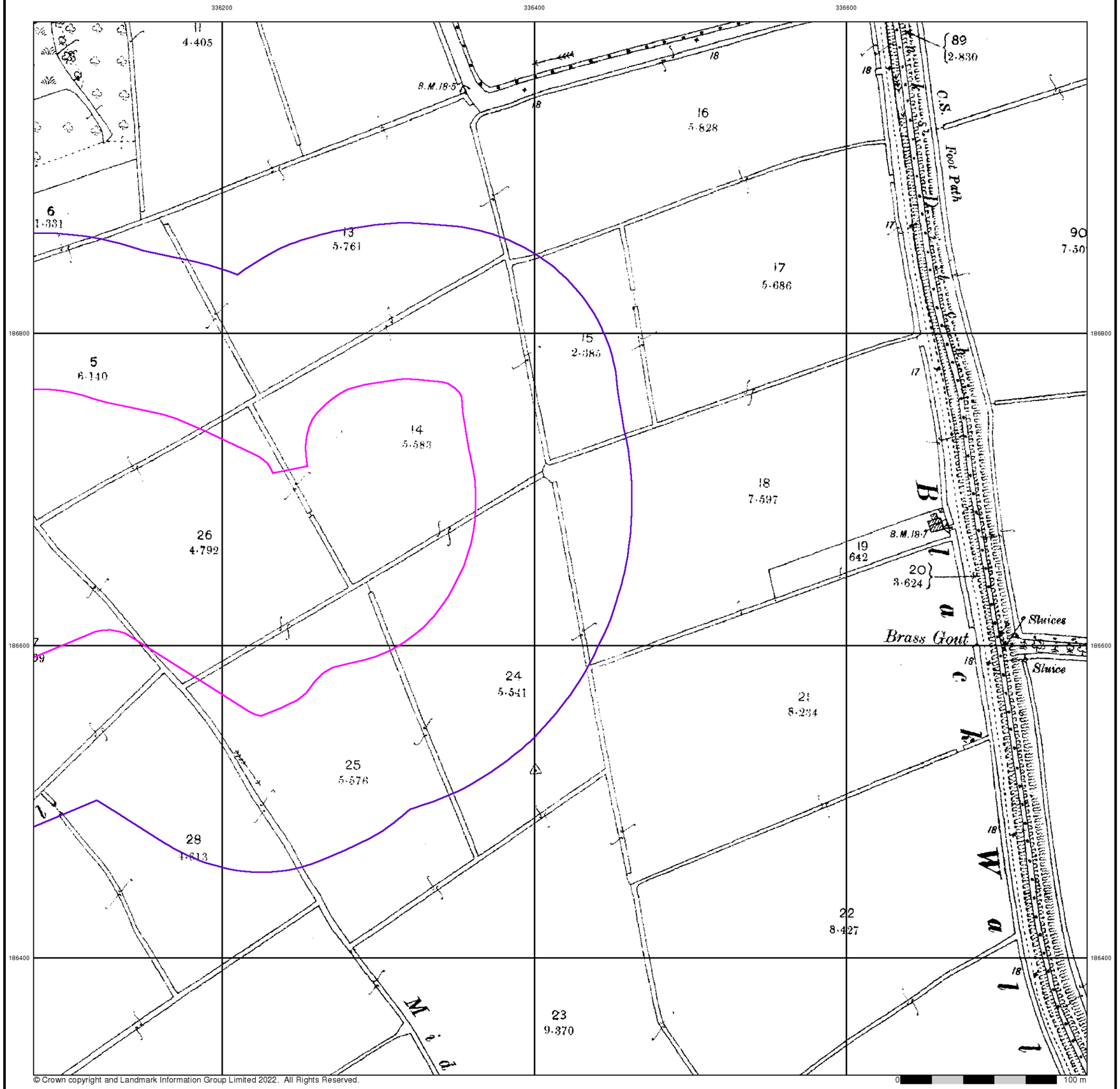

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0 100 m

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Monmouthshire

Published 1901

Source map scale - 1:2,500

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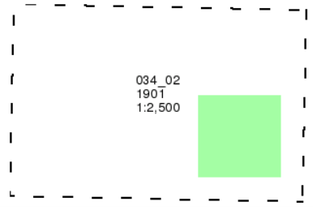
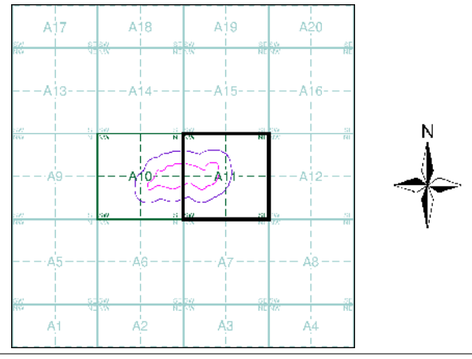


Historical Map - Segment A11



Order Details

Order Number:	304885831_1_1
Customer Ref:	Llanwern 4c 4g 4e
National Grid Reference:	336080, 186650
Slice:	A
Site Area (Ha):	8.34
Search Buffer (m):	100

Site Details

Site at 336079,186662

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Fax: 0844 844 9951
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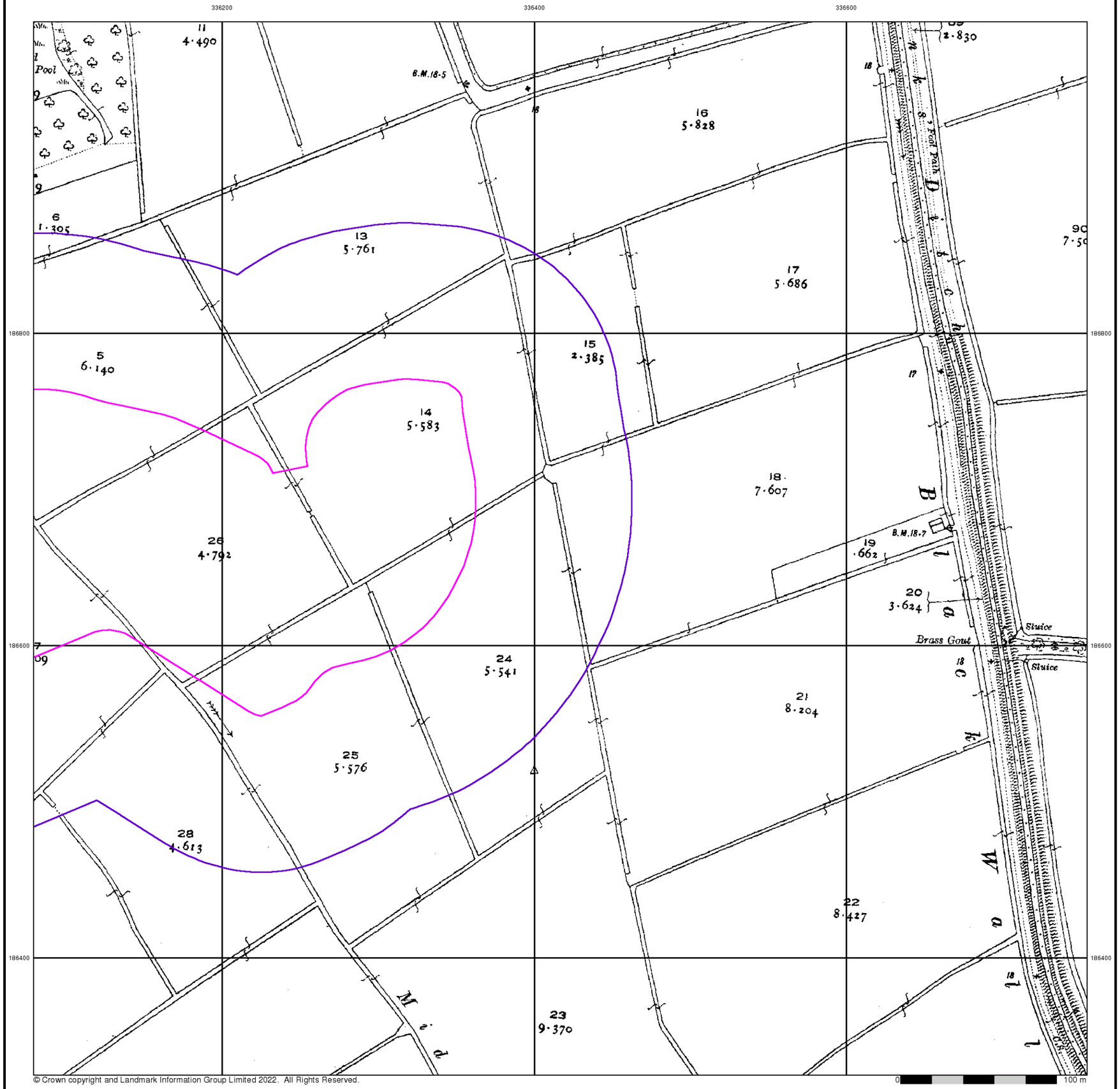

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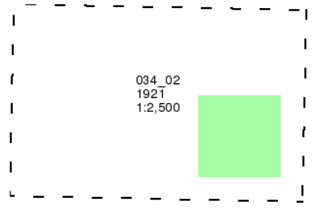
Monmouthshire

Published 1921

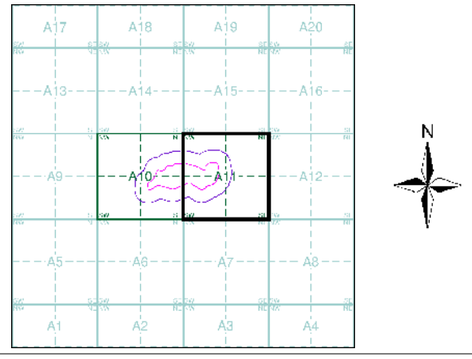
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A11



Order Details

Order Number:	304885831_1_1
Customer Ref:	Llanwern 4c 4g 4e
National Grid Reference:	336080, 186650
Slice:	A
Site Area (Ha):	8.34
Search Buffer (m):	100

Site Details

Site at 336079,186662

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Ordnance Survey Plan

Published 1967

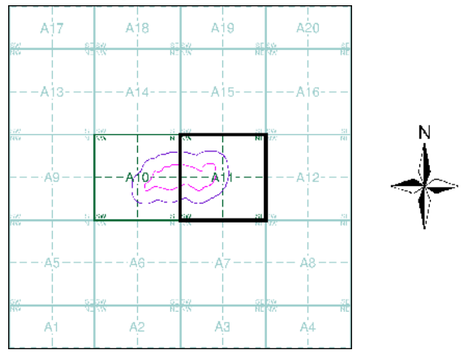
Source map scale - 1:1,250

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

ST3686NW 1967 1:1,250	ST3686NE 1967 1:1,250
ST3686SW 1967 1:1,250	ST3686SE 1967 1:1,250

Historical Map - Segment A11



Order Details

Order Number:	304885831_1_1
Customer Ref:	Llanwern 4c 4g 4e
National Grid Reference:	336080, 186650
Slice:	A
Site Area (Ha):	8.34
Search Buffer (m):	100

Site Details

Site at 336079,186662

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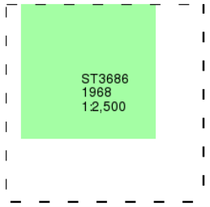
Ordnance Survey Plan

Published 1968

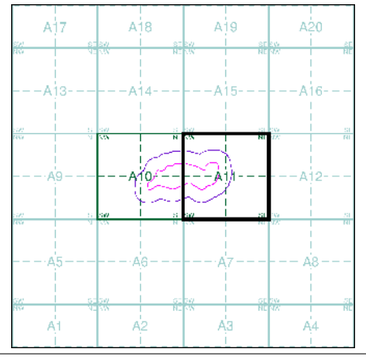
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A11



Order Details

Order Number:	304885831_1_1
Customer Ref:	Llanwern 4c 4g 4e
National Grid Reference:	336080, 186650
Slice:	A
Site Area (Ha):	8.34
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Site Details

Site at 336079,186662

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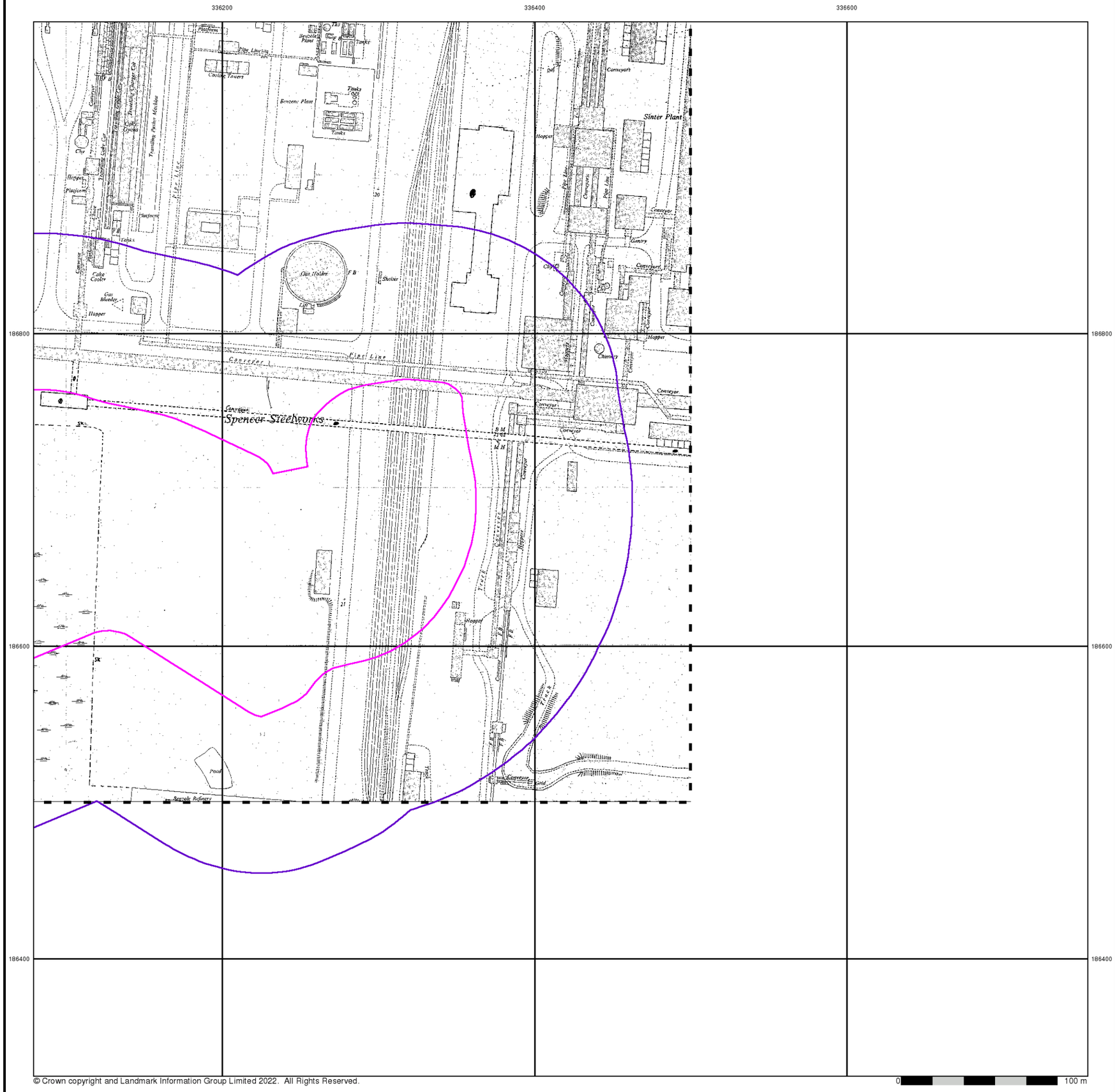

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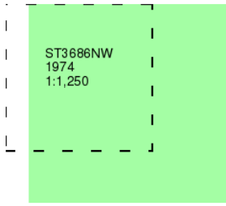
Supply of Unpublished Survey Information

Published 1974

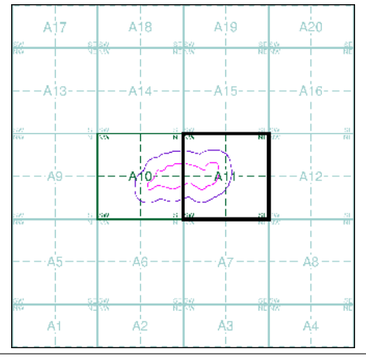
Source map scale - 1:1,250

SUSI maps (Supply of Unpublished Survey Information) were produced between 1972 and 1977, mainly for internal use at Ordnance Survey. These were more of a `work-in-progress' plan as they showed updates of individual areas on a map. These maps were unpublished, and they do not represent a single moment in time. They were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A11



Order Details

Order Number:	304885831_1_1
Customer Ref:	Llanwern 4c 4g 4e
National Grid Reference:	336080, 186650
Slice:	A
Site Area (Ha):	8.34
Search Buffer (m):	100

Site Details

Site at 336079,186662

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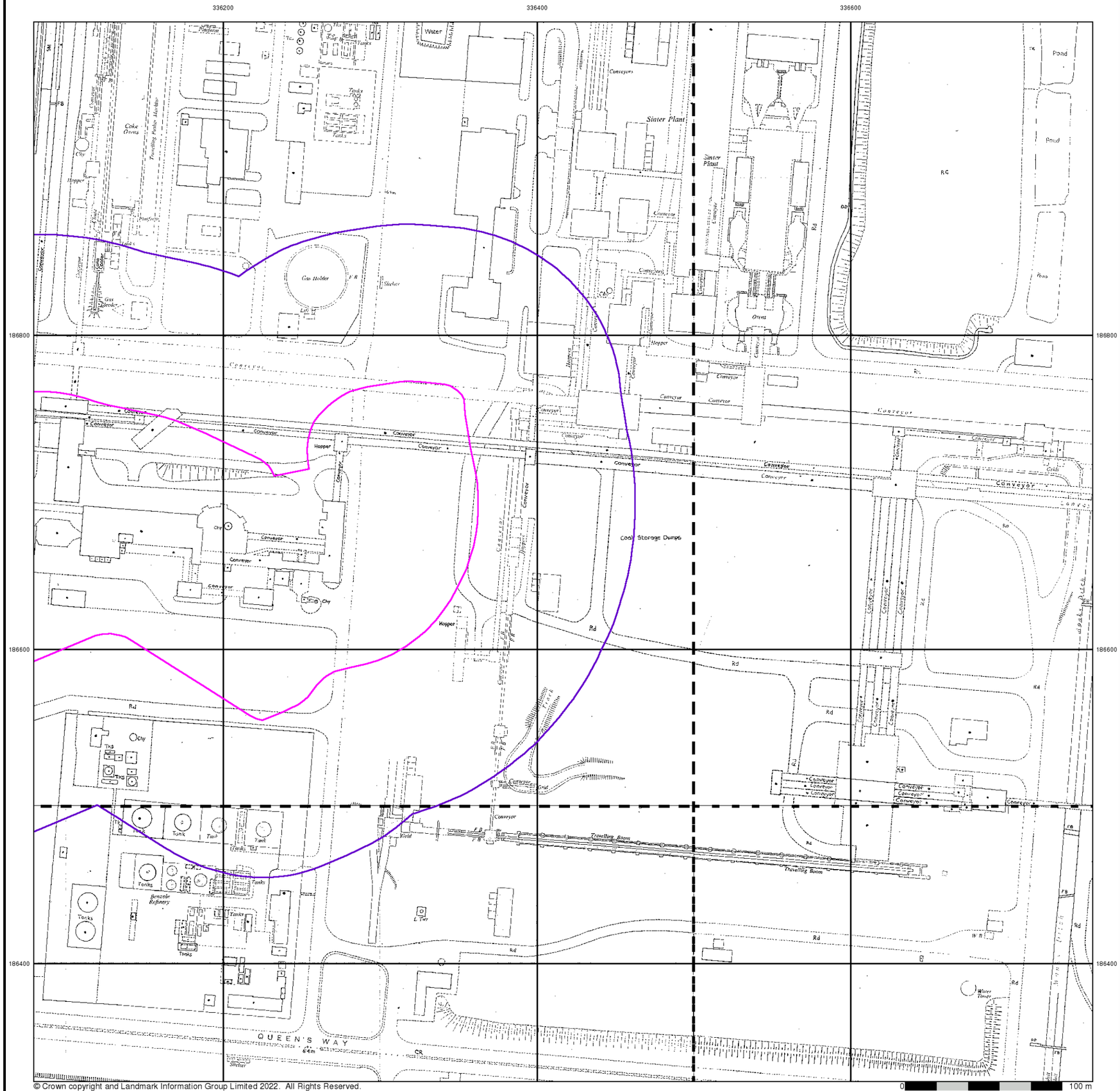

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Additional SIMs

Published 1986

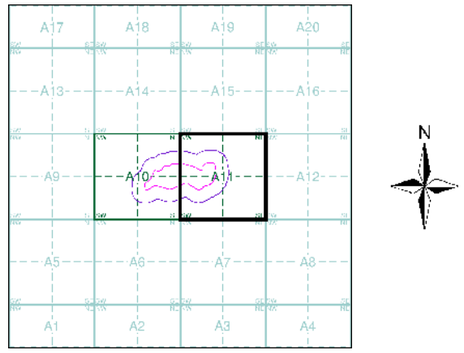
Source map scale - 1:1,250

The SIM cards (Ordnance Survey's `Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

ST3686NW 1986 1:1,250	ST3686NE 1986 1:1,250
ST3686SW 1986 1:1,250	ST3686SE 1986 1:1,250

Historical Map - Segment A11



Order Details

Order Number:	304885831_1_1
Customer Ref:	Llanwern 4c 4g 4e
National Grid Reference:	336080, 186650
Slice:	A
Site Area (Ha):	8.34
Search Buffer (m):	100

Site Details

Site at 336079,186662

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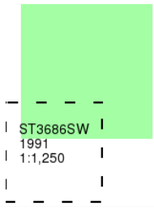
Additional SIMs

Published 1991

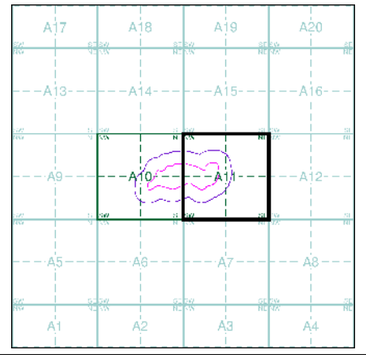
Source map scale - 1:1,250

The SIM cards (Ordnance Survey's `Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A11



Order Details

Order Number:	304885831_1_1
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National Grid Reference:	336080, 186650
Slice:	A
Site Area (Ha):	8.34
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Site Details

Site at 336079,186662

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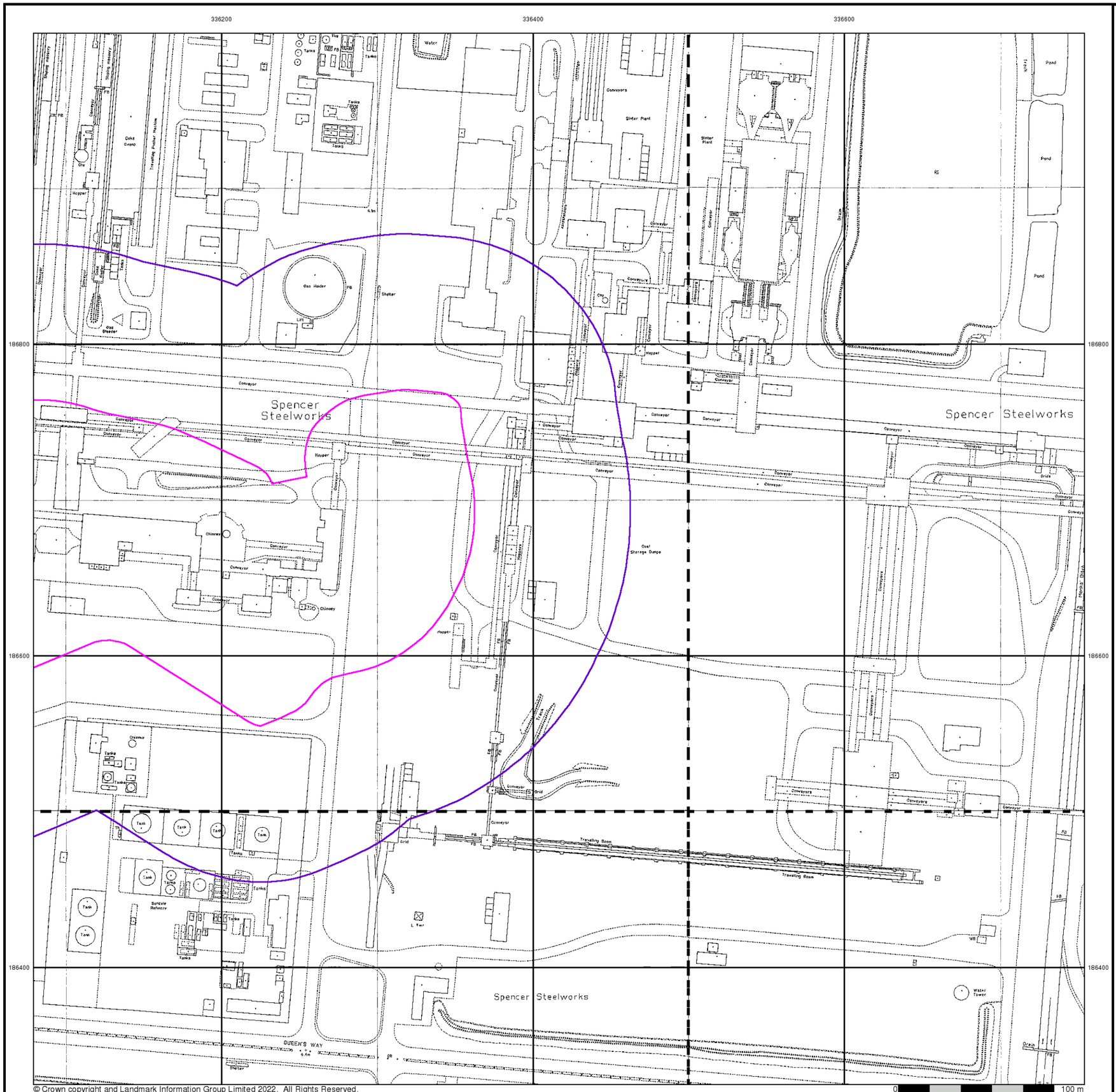

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Large-Scale National Grid Data

Published 1992

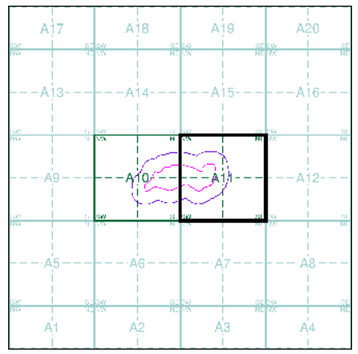
Source map scale - 1:1,250

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

ST3686NW 1992 1:1,250	ST3686NE 1992 1:1,250
ST3686SW 1992 1:1,250	ST3686SE 1992 1:1,250

Historical Map - Segment A11



Order Details

Order Number:	304885831_1_1
Customer Ref:	Llanwern 4c 4g 4e
National Grid Reference:	336080, 186650
Slice:	A
Site Area (Ha):	8.34
Search Buffer (m):	100

Site Details

Site at 336079,186662

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Large-Scale National Grid Data

Published 1995

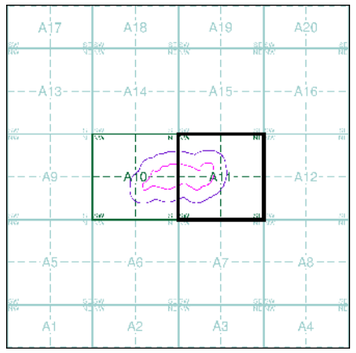
Source map scale - 1:1,250

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

ST3686NW 1995 1:1,250	ST3686NE 1995 1:1,250
ST3686SW 1995 1:1,250	ST3686SE 1995 1:1,250

Historical Map - Segment A11



Order Details

Order Number:	304885831_1_1
Customer Ref:	Llanwern 4c 4g 4e
National Grid Reference:	336080, 186650
Slice:	A
Site Area (Ha):	8.34
Search Buffer (m):	100

Site Details

Site at 336079,186662

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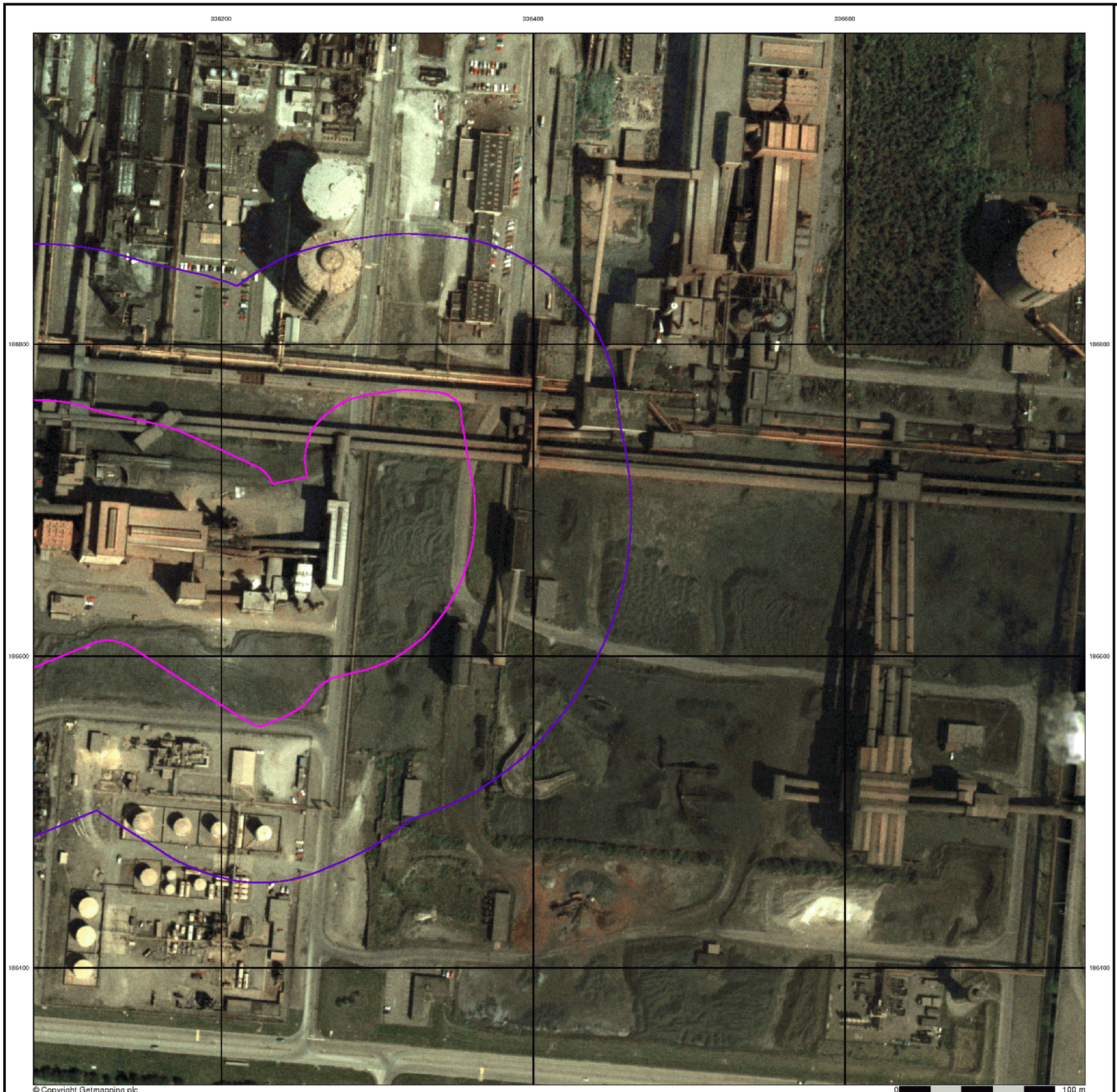

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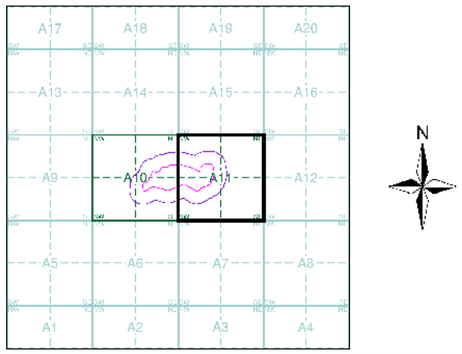
Historical Aerial Photography

Published 2001

This aerial photography was produced by Getmapping, these vertical aerial photographs provide a seamless, full colour survey of the whole of Great Britain

Historical Aerial Photography - Segment A11



Order Details

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Slice:	A
Site Area (Ha):	8.34
Search Buffer (m):	100

Site Details

Site at 336079,186662

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Historical Mapping Legends

Ordnance Survey County Series 1:10,560

Gravel Pit
Sand Pit
Other Pits
Quarry
Shingle
Orchard
Osiers
Reeds
Marsh
Mixed Wood
Deciduous
Brushwood
Fir
Furze
Rough Pasture
Arrow denotes flow of water
Trigonometrical Station
Site of Antiquities
Bench Mark
Pump, Guide Post, Signal Post
Well, Spring, Boundary Post
·285 Surface Level
Sketched Contour
Instrumental Contour
Main Roads
Fenced
Un-Fenced
Minor Roads
Fenced
Un-Fenced
Sunken Road
Raised Road
Road over Railway
Railway over River
Railway over Road
Level Crossing
Road over River or Canal
Road over Stream
Road over Stream
County Boundary (Geographical)
County & Civil Parish Boundary
Administrative County & Civil Parish Boundary
Co. Boro. Bdy. County Borough Boundary (England)
Co. Burgh Bdy. County Burgh Boundary (Scotland)
R.D. Bdy. Rural District Boundary
Civil Parish Boundary

Ordnance Survey Plan 1:10,000

Chalk Pit, Clay Pit or Quarry
Gravel Pit
Sand Pit
Disused Pit or Quarry
Refuse or Slag Heap
Lake, Loch or Pond
Dunes
Boulders
Coniferous Trees
Non-Coniferous Trees
Orchard
Scrub
Coppice
Bracken
Heath
Rough Grassland
Marsh
Reeds
Saltings
Building
Direction of Flow of Water
Shingle
Sand
Glasshouse
Pylon
Electricity Transmission Line
Pole
Sloping Masonry
Cutting
Embankment
Standard Gauge Multiple Track
Road Under
Road Over
Level Crossing
Foot Bridge
Standard Gauge Single Track
Siding, Tramway or Mineral Line
Narrow Gauge
Geographical County
Administrative County, County Borough or County of City
Municipal Borough, Urban or Rural District, Burgh or District Council
Borough, Burgh or County Constituency
Shown only when not coincident with other boundaries
Civil Parish
Shown alternately when coincidence of boundaries occurs

BP, BS	Boundary Post or Stone	Pol Sta	Police Station
Ch	Church	PO	Post Office
CH	Club House	PC	Public Convenience
F E Sta	Fire Engine Station	PH	Public House
FB	Foot Bridge	SB	Signal Box
Fn	Fountain	Spr	Spring
GP	Guide Post	TCB	Telephone Call Box
MP	Mile Post	TCP	Telephone Call Post
MS	Mile Stone	W	Well

1:10,000 Raster Mapping

Gravel Pit
Refuse tip or slag heap
Rock
Rock (scattered)
Boulders
Boulders (scattered)
Shingle
Mud
Sand
Sand Pit
Slopes
Top of cliff
General detail
Underground detail
Overhead detail
Narrow gauge railway
Multi-track railway
Single track railway
County boundary (England only)
Civil, parish or community boundary
District, Unitary, Metropolitan, London Borough boundary
Constituency boundary
Area of wooded vegetation
Non-coniferous trees
Non-coniferous trees (scattered)
Coniferous trees
Coniferous trees (scattered)
Positioned tree
Orchard
Coppice or Osiers
Rough Grassland
Heath
Scrub
Marsh, Salt Marsh or Reeds
Water feature
Flow arrows
MHW(S) Mean high water (springs)
MLW(S) Mean low water (springs)
Telephone line (where shown)
Electricity transmission line (with poles)
BM 123.45 m Bench mark (where shown)
Triangulation station
Point feature (e.g. Guide Post or Mile Stone)
Pylon, flare stack or lighting tower
Site of (antiquity)
Glasshouse
General Building
Important Building

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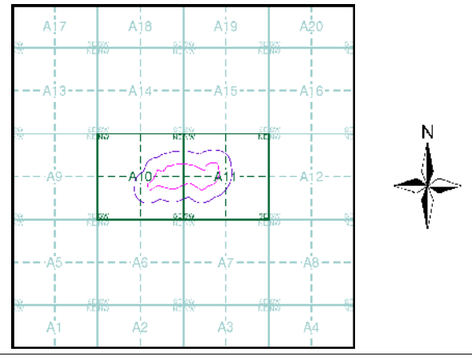
Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Monmouthshire	1:10,560	1886 - 1887	3
Monmouthshire	1:10,560	1902	4
Monmouthshire	1:10,560	1922	5
Monmouthshire	1:10,560	1938 - 1954	6
Historical Aerial Photography	1:10,560	1947	7
Historical Aerial Photography	1:10,560	1947	8
Monmouthshire	1:10,560	1954	9
Ordnance Survey Plan	1:10,000	1965	10
Ordnance Survey Plan	1:10,000	1973	11
Ordnance Survey Plan	1:10,000	1981 - 1989	12
Newport	1:10,000	1983	13
Ordnance Survey Plan	1:10,000	1987	14
10K Raster Mapping	1:10,000	1999	15
10K Raster Mapping	1:10,000	2006	16
VectorMap Local	1:10,000	2022	17

Historical Map - Slice A



Order Details

Order Number:	304885831_1_1
Customer Ref:	Llanwern 4c 4g 4e
National Grid Reference:	336080, 186650
Slice:	A
Site Area (Ha):	8.34
Search Buffer (m):	1000

Site Details

Site at 336079,186662

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Russian Military Mapping Legends

1:5,000 and 1:10,000 mapping

a. Not drawn to scale b. Drawn to scale

- Government and Administrative Buildings
- Military and Industrial Buildings
- Military and Communication Areas
- Subway Entrance
- Fireproof Building
- Prominent Fireproof Building
- Non-fireproof Building
- Non-fireproof Building (non-dwelling)
- Factory, mill, and flour mill, with chimneys
- Factory, mill, and flour mill, without chimneys
- Power Station, drawn to scale
- Hydroelectric Power Station
- Radio Station, drawn to scale
- Telephone Station, drawn to scale
- Abandoned Open-pit Mine or Quarry
- Open-pit Salt Mine
- Pit
- Oil Deposit or Well
- Oil Seepage
- Tailings Pile
- Fuel Storage Tanks
- Natural Gas Tank
- Bench Mark
- Drill Hole
- Burial Mound
- Triangulation Point on Burial Mound
- Single-track Railroad
- Double-track Railroad and Station Building
- Coniferous Forest
- Deciduous Forest
- Mixed Forest
- Lawns
- Citrus Orchard
- Wet Ground
- Scattered Vegetation

243,8 — Values for prominent elevations

186.0 — Numbers for spot elevations, depth soundings, contour lines, etc.

0,2 — Velocity of the current, width of river bed, depth of river

Fractional terms: length and capacity of bridges; depth of fords and condition of the river bottom; height of forest and the diameter of trees

Russian Alphabet (For reference and phonetic interpretation of map text)

А а (A)	З з (Z)	П п (P)	Ч ч (CH)
Б б (B)	И и (I)	Р р (R)	Ш ш (SH)
В в (V)	Й й (Y)	С с (S)	Щ щ (SHCH)
Г г (G)	К к (K)	Т т (T)	ъ (–)
Д д (D)	Л л (L)	У у (U)	ы (Y)
Е е (E)	М м (M)	Ф ф (F)	ь (')
Ё ё (YO)	Н н (N)	Х х (KH)	Э э (E)
Ж ж (ZH)	О о (O)	Ц ц (TS)	Ю ю (YU or IU)
			Я я (YA or IA)

1:25,000 mapping

a. Not drawn to scale b. Drawn to scale

- Government and Administrative Buildings
- Military and Industrial Buildings
- Military and Communication Areas
- Subway Entrance
- Partly Demolished Buildings
- Demolished Buildings
- Built-Up Area with Fireproof Buildings Predominant
- Built-Up Area with Non-Fireproof Buildings Predominant
- Individual Fireproof Building
- Prominent Industrial Building
- Individual Dwelling, Fireproof
- Ruins of an Individual Dwelling
- Factory or Mill Chimney
- Factory or Mill with Chimney
- Factory or Mill without Chimney
- Mine or Open Pit Mine
- Operating Shaft or Mine
- Non-Operating Shaft or Mine
- Salt Mine
- Tailings Pile
- Pit
- Stone Quarry
- Gas Pump or Service Station
- Fuel Storage or Natural Gas Tank
- Oil or Natural Gas Derrick
- Small Hydroelectric Power Station
- Power Station
- Transformer Station
- Cemetery
- Burial Mound (height in metres)
- Triangulation Point on Burial Mound
- Triangulation Point
- Bench Mark
- Bench Mark (monumented)
- Telegraph Office
- Telephone Station
- Radio Station
- Radio Tower
- Airfield or Seaplane Base
- Landing Strip
- Main Highway
- Highway under Construction
- Improved Dirt Road (former truck road)
- Double-track Railroad with First Class Station
- Dismantled Railroad
- Railroad Under Construction
- Shore Embankment
- River or Ditch with Embankment
- Direction and velocity of current
- Well
- Water Reservoir or Rain Water Pit
- Spring
- Isobath with value
- Heavy (Index) Contour Line
- Contour Line and Value
- Half Contour Line
- Spot Elevation Value
- Coniferous
- Deciduous
- Mixed
- Scrub

Key to Numbers on Mapping

ST38NE_Newport

No.	Description
29	Mill (Steel)
71	Railway Station

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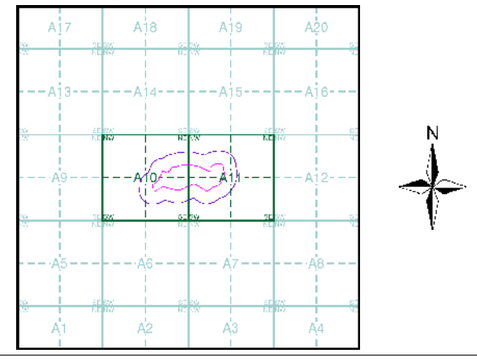
Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Monmouthshire	1:10,560	1886 - 1887	3
Monmouthshire	1:10,560	1902	4
Monmouthshire	1:10,560	1922	5
Monmouthshire	1:10,560	1938 - 1954	6
Historical Aerial Photography	1:10,560	1947	7
Historical Aerial Photography	1:10,560	1947	8
Monmouthshire	1:10,560	1954	9
Ordnance Survey Plan	1:10,000	1965	10
Ordnance Survey Plan	1:10,000	1973	11
Ordnance Survey Plan	1:10,000	1981 - 1989	12
Newport	1:10,000	1983	13
Ordnance Survey Plan	1:10,000	1987	14
10K Raster Mapping	1:10,000	1999	15
10K Raster Mapping	1:10,000	2006	16
VectorMap Local	1:10,000	2022	17

Russian Map - Slice A



Order Details

Order Number: 304885831_1_1
Customer Ref: Llanwern 4c 4g 4e
National Grid Reference: 336080, 186650
Slice: A
Site Area (Ha): 8.34
Search Buffer (m): 1000

Site Details

Site at 336079,186662

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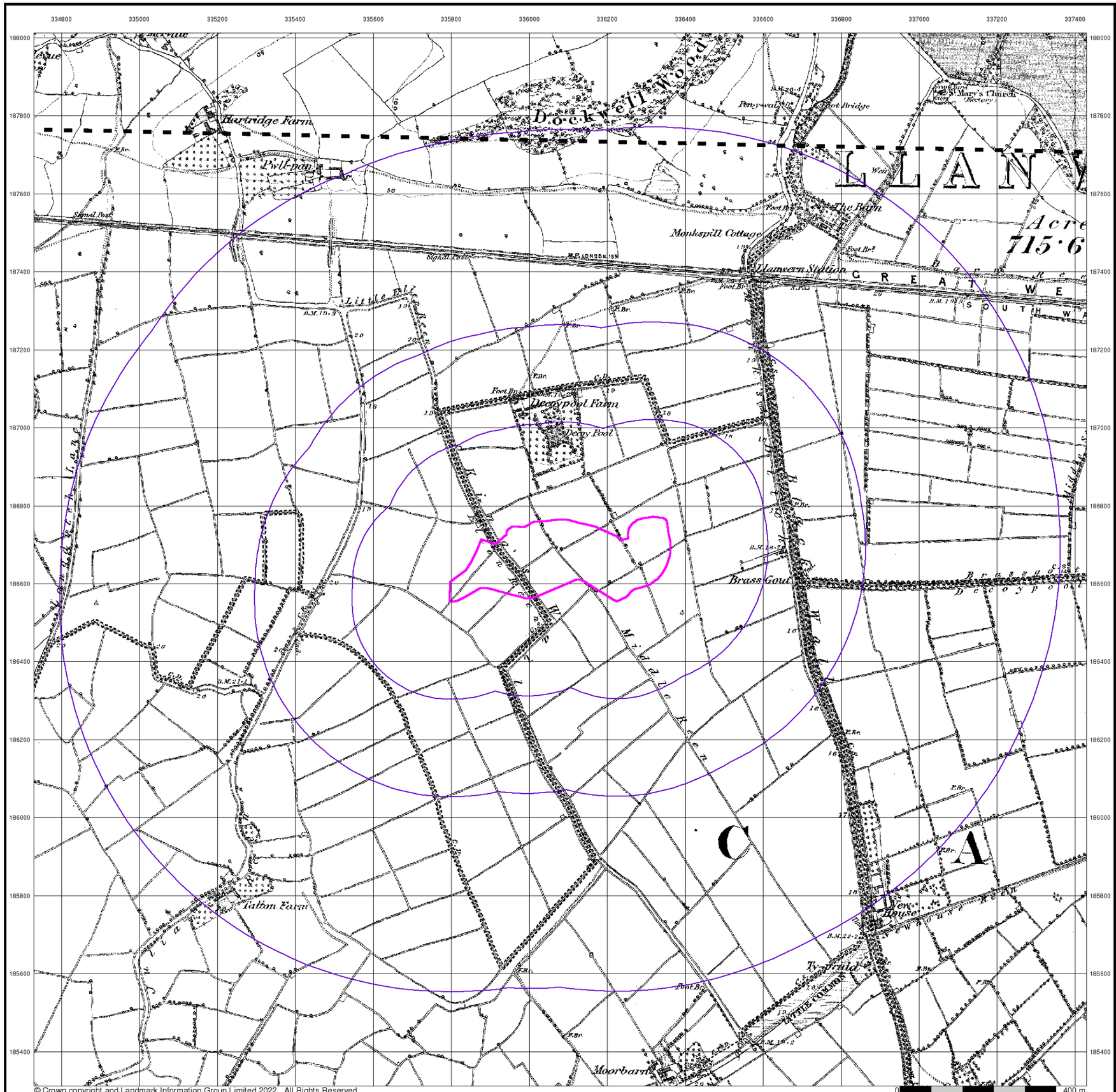
Web: www.envirocheck.co.uk



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Monmouthshire

Published 1886 - 1887

Source map scale - 1:10,560

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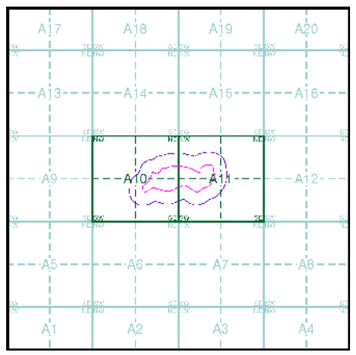
Map Name(s) and Date(s)

02900
1886
1:10,560

03400
1887
1:10,560

Historical Map - Slice A



Order Details

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National Grid Reference:	336080, 186650
Slice:	A
Site Area (Ha):	8.34
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Site Details

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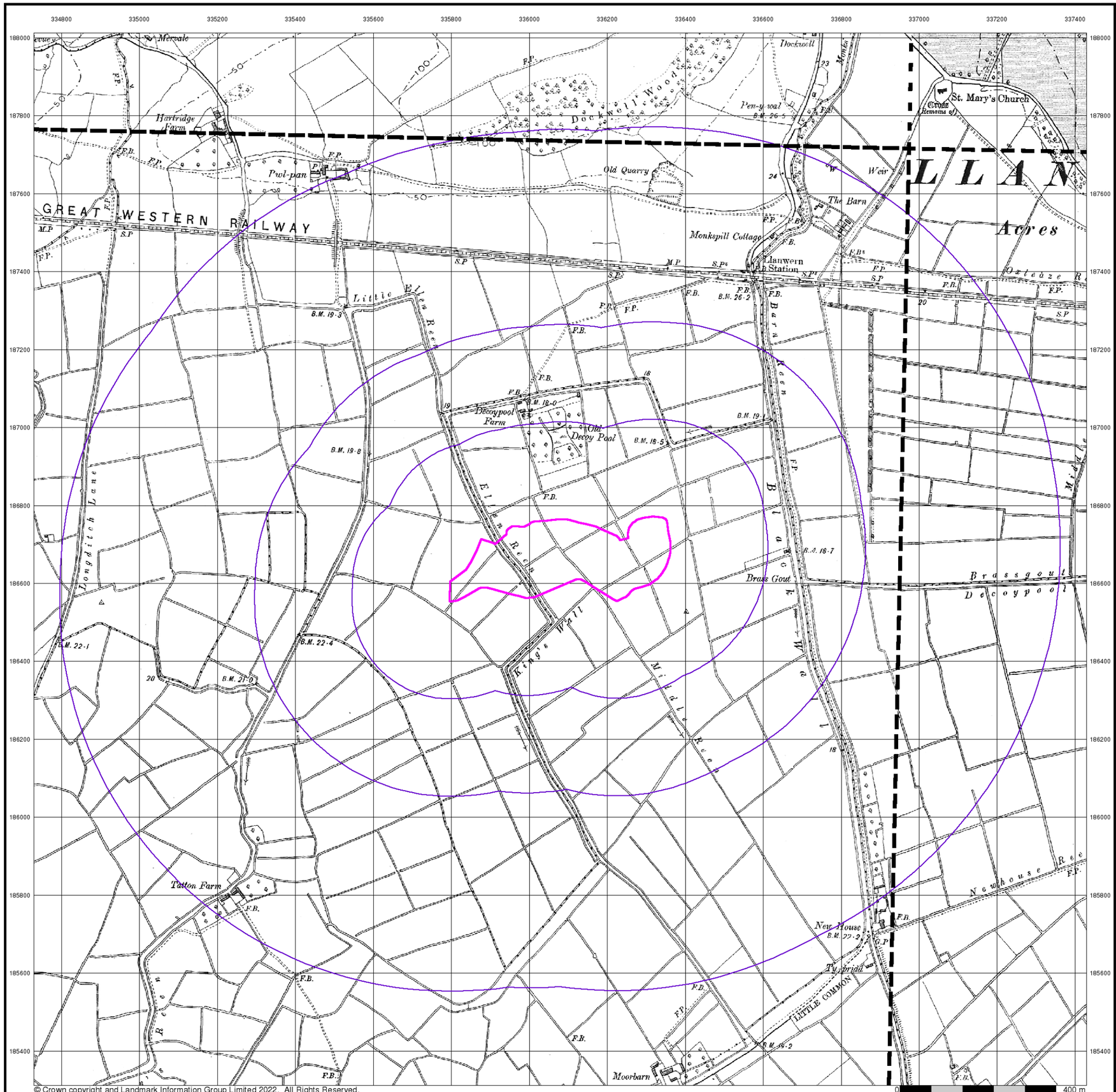

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Monmouthshire

Published 1902

Source map scale - 1:10,560

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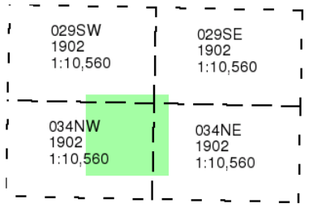
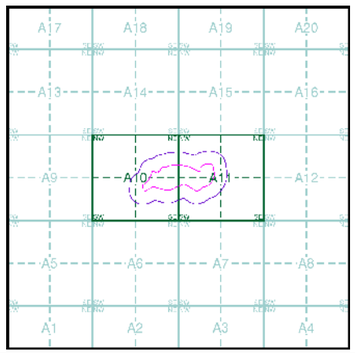
Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

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Site Area (Ha):	8.34
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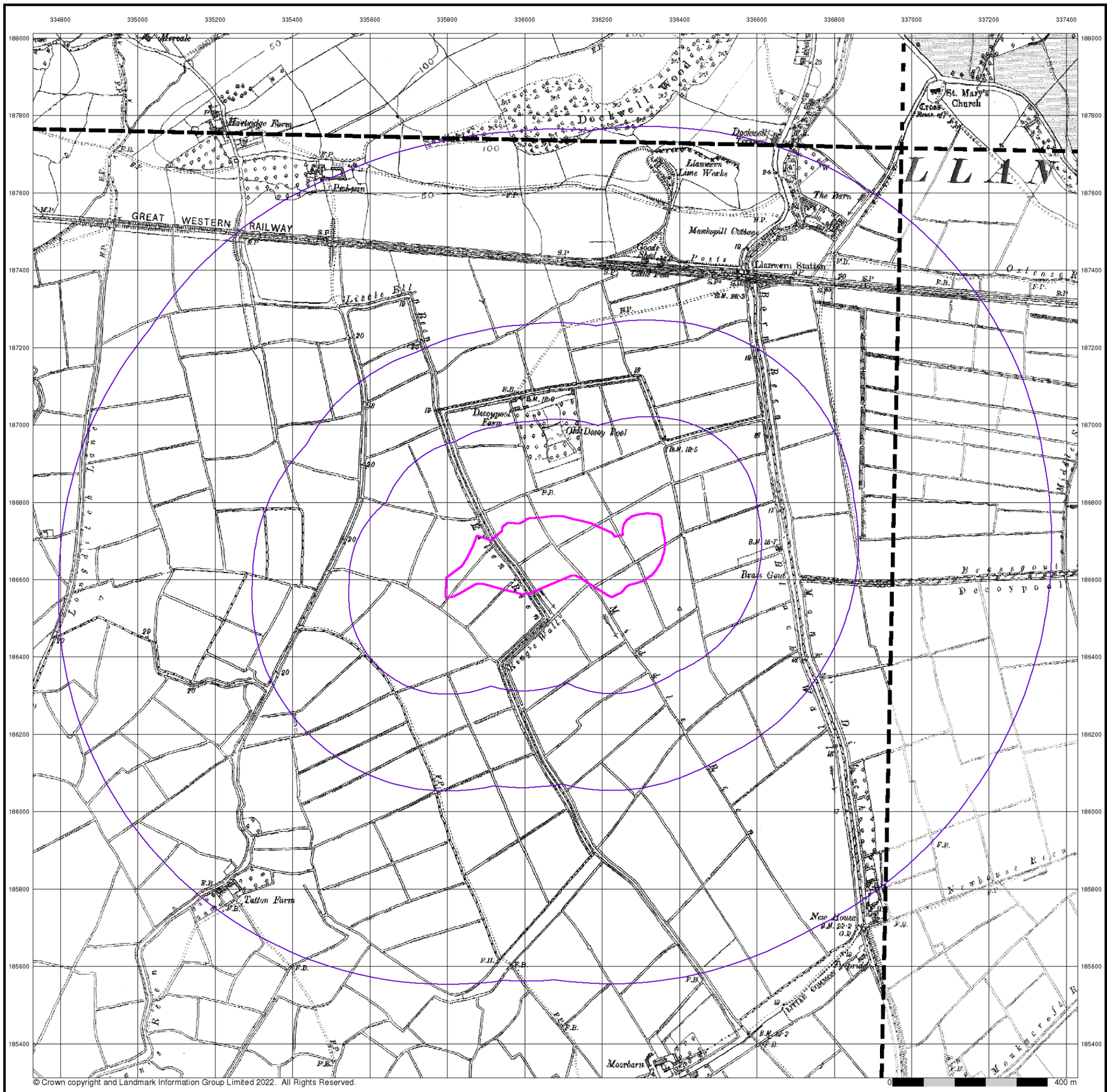

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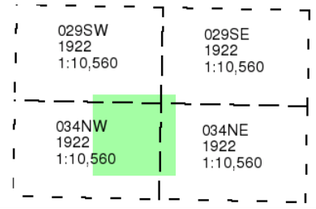
Monmouthshire

Published 1922

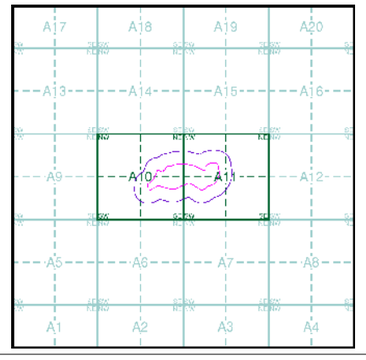
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

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Customer Ref:	Llanwern 4c 4g 4e
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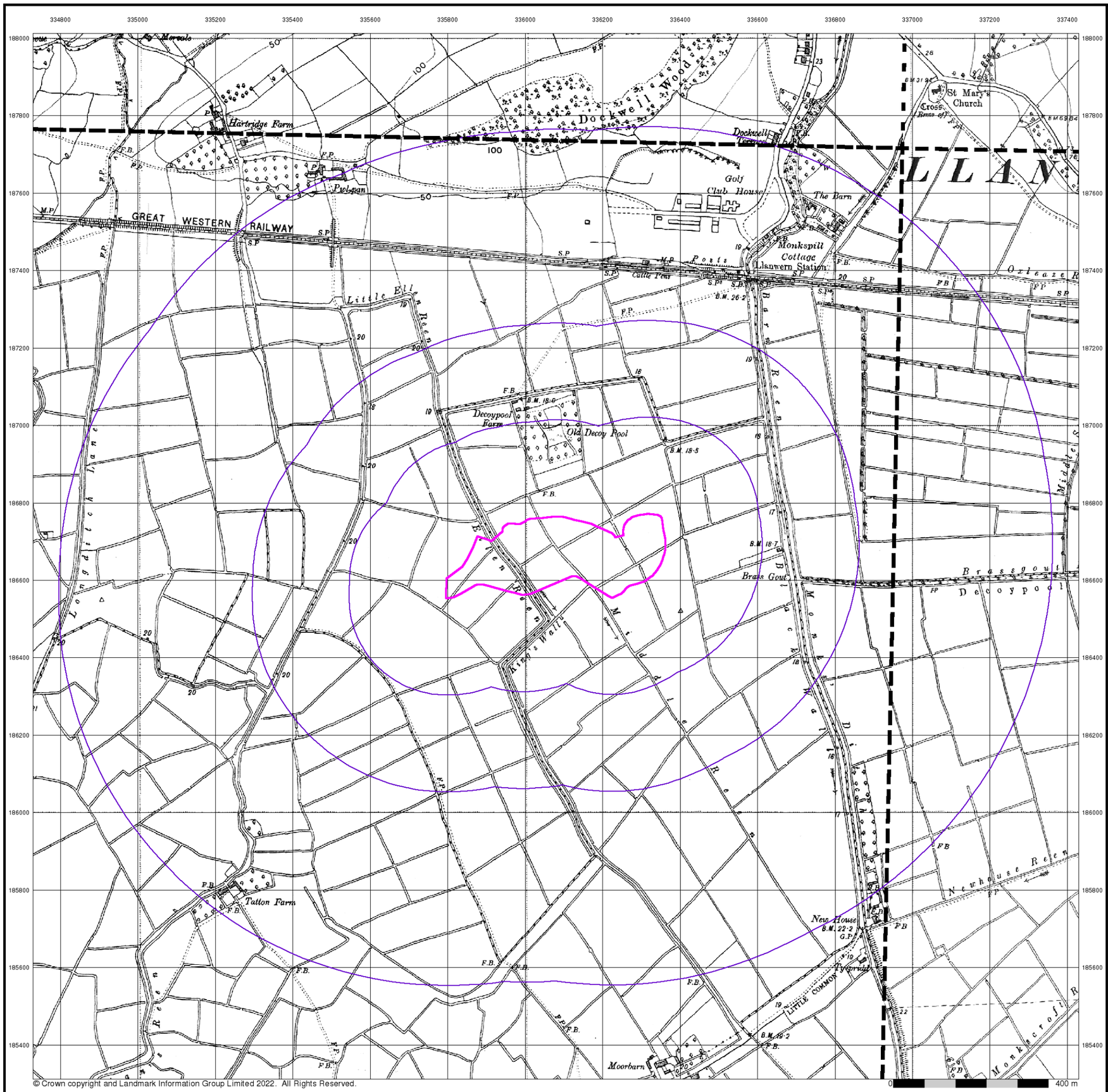

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Monmouthshire

Published 1938 - 1954

Source map scale - 1:10,560

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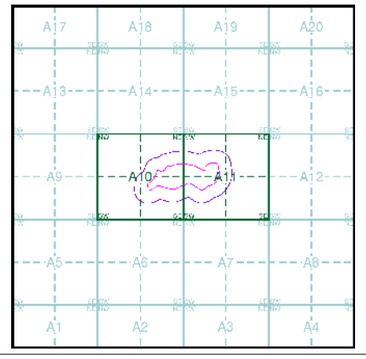
Map Name(s) and Date(s)

029SW 1938 1:10,560	029SE 1954 1:10,560
034NW 1938 1:10,560	034NE 1954 1:10,560

Historical Map - Slice A



Order Details

Order Number:	304885831_1_1
Customer Ref:	Llanwern 4c 4g 4e
National Grid Reference:	336080, 186650
Slice:	A
Site Area (Ha):	8.34
Search Buffer (m):	1000

Site Details

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Historical Aerial Photography

Published 1947

Source map scale - 1:10,560

The Historical Aerial Photos were produced by the Ordnance Survey at a scale of 1:1,250 and 1:10,560 from Air Force photography. They were produced between 1944 and 1951 as an interim measure, pending preparation of conventional mapping, due to post war resource shortages. New security measures in the 1950's meant that every photograph was re-checked for potentially unsafe information with security sites replaced by fake fields or clouds. The original editions were withdrawn and only later made available after a period of fifty years although due to the accuracy of the editing, without viewing both revisions it is not easy to spot the edits. Where available Landmark have included both revisions.

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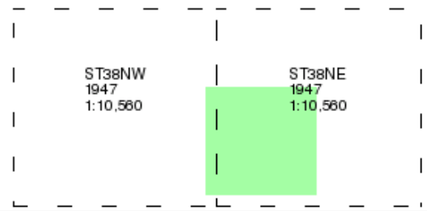
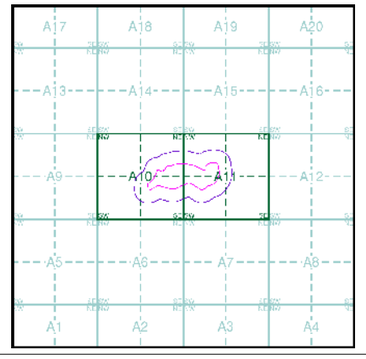
Map Name(s) and Date(s)



Historical Aerial Photography - Slice A



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Order Details

Order Number:	304885831_1_1
Customer Ref:	Llanwern 4c 4g 4e
National Grid Reference:	336080, 186650
Slice:	A
Site Area (Ha):	8.34
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Site Details

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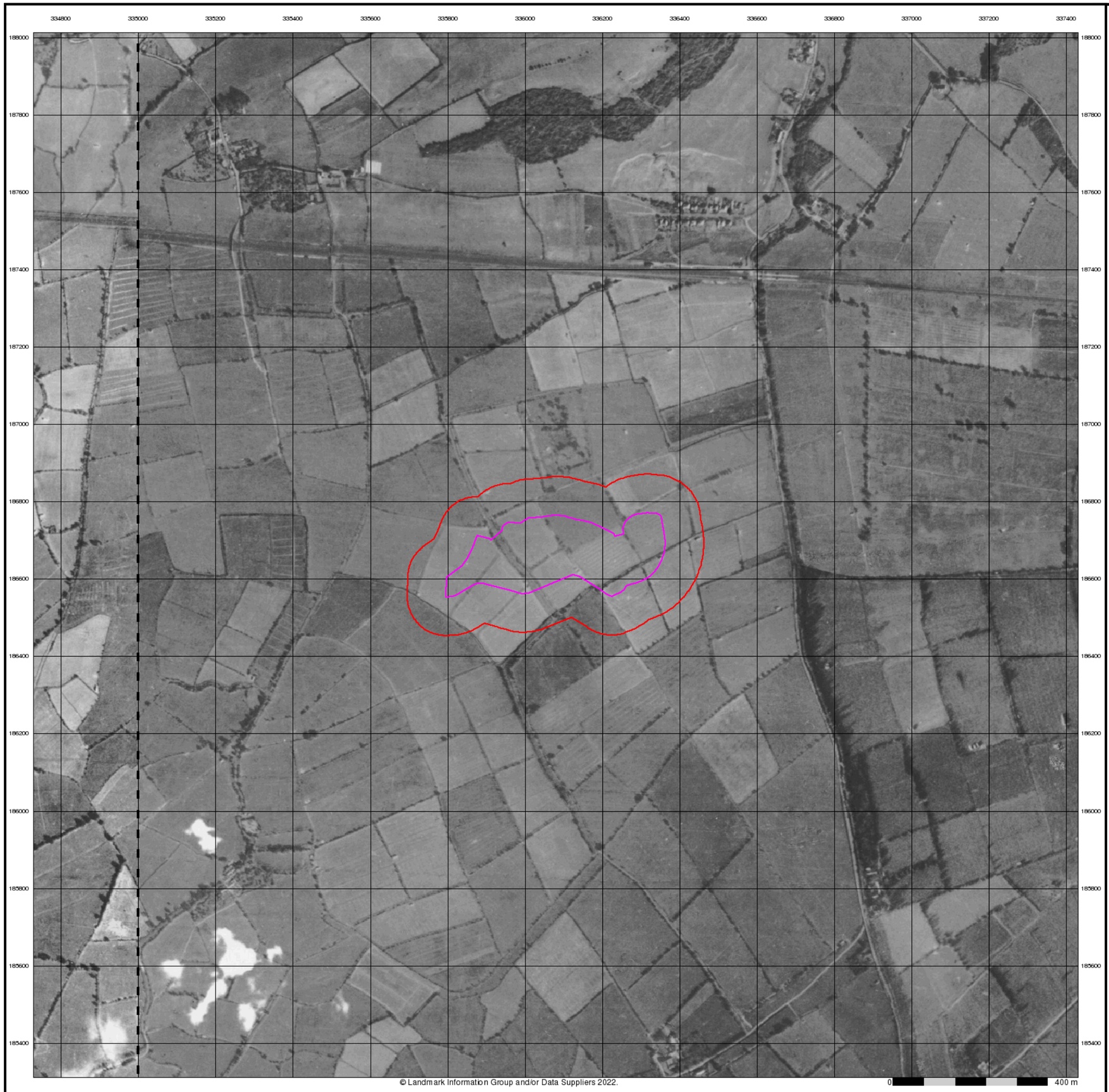

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Published 1947

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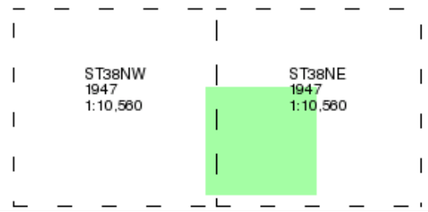
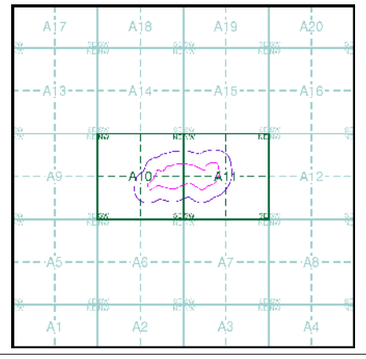
Map Name(s) and Date(s)



Historical Aerial Photography - Slice A



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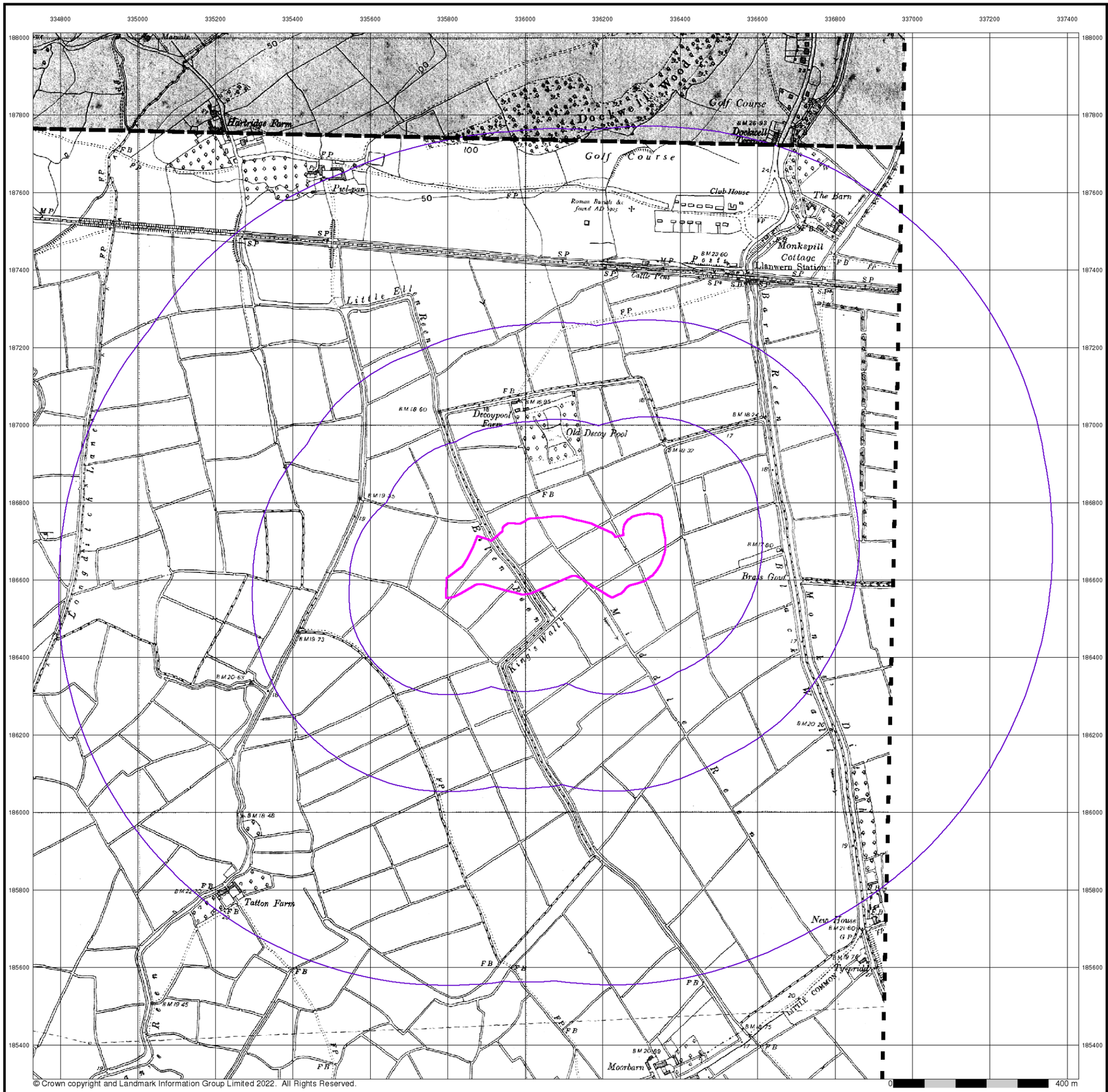

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Monmouthshire

Published 1954

Source map scale - 1:10,560

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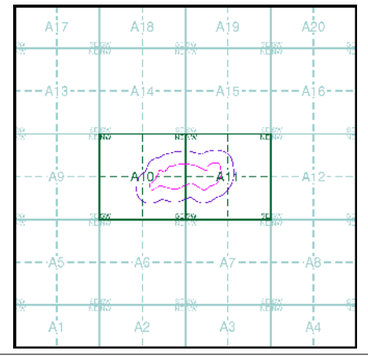
Map Name(s) and Date(s)

029SW
1954
1:10,560

034NW
1954
1:10,560

Historical Map - Slice A



Order Details

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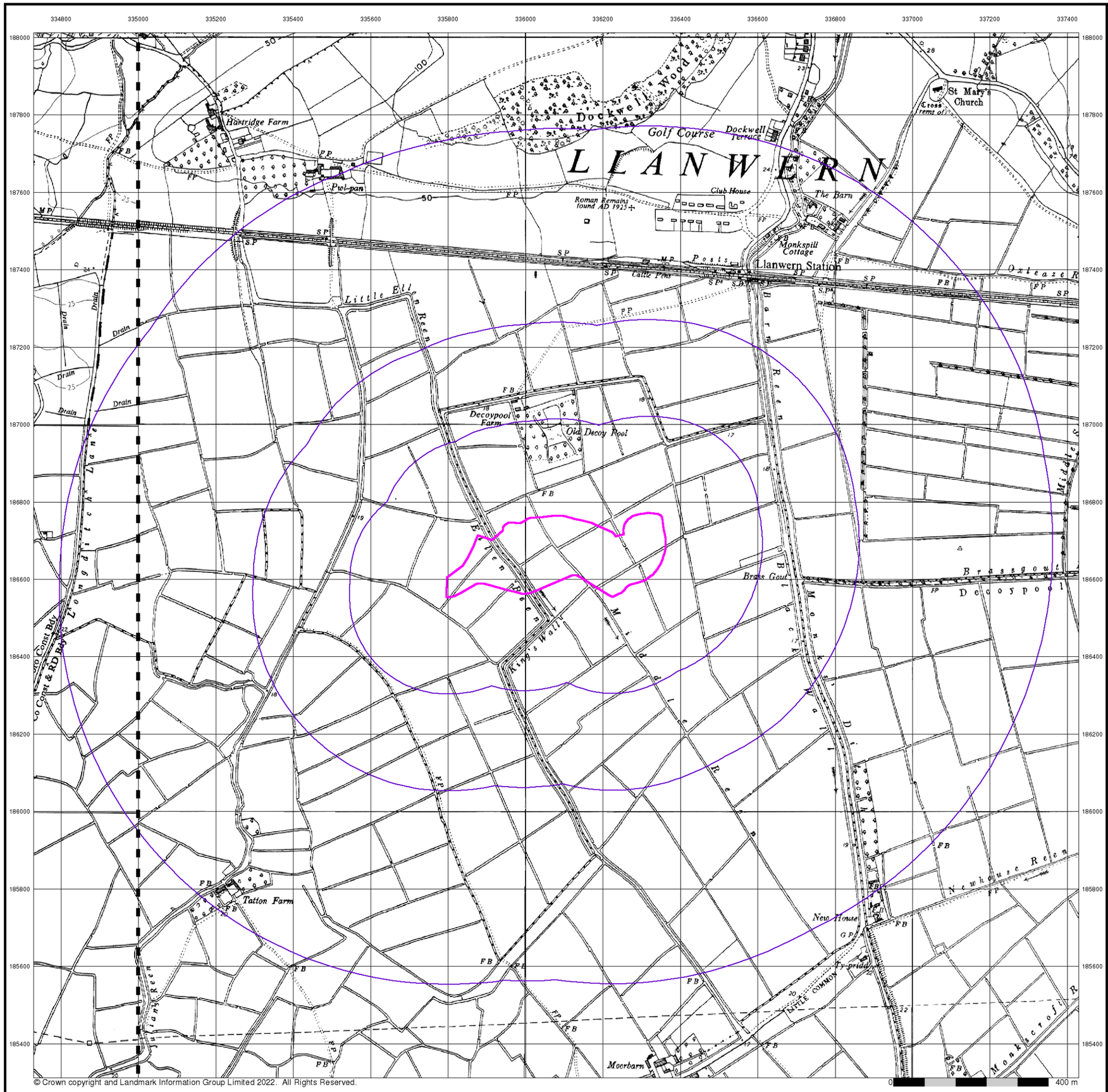

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Ordnance Survey Plan

Published 1965

Source map scale - 1:10,000

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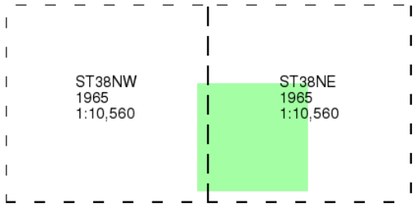
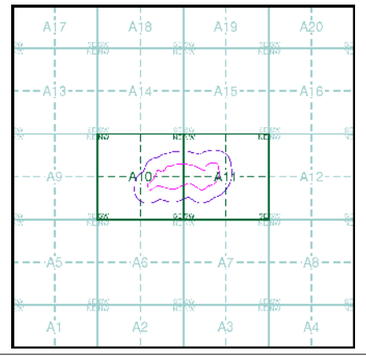
Map Name(s) and Date(s)



Historical Map - Slice A



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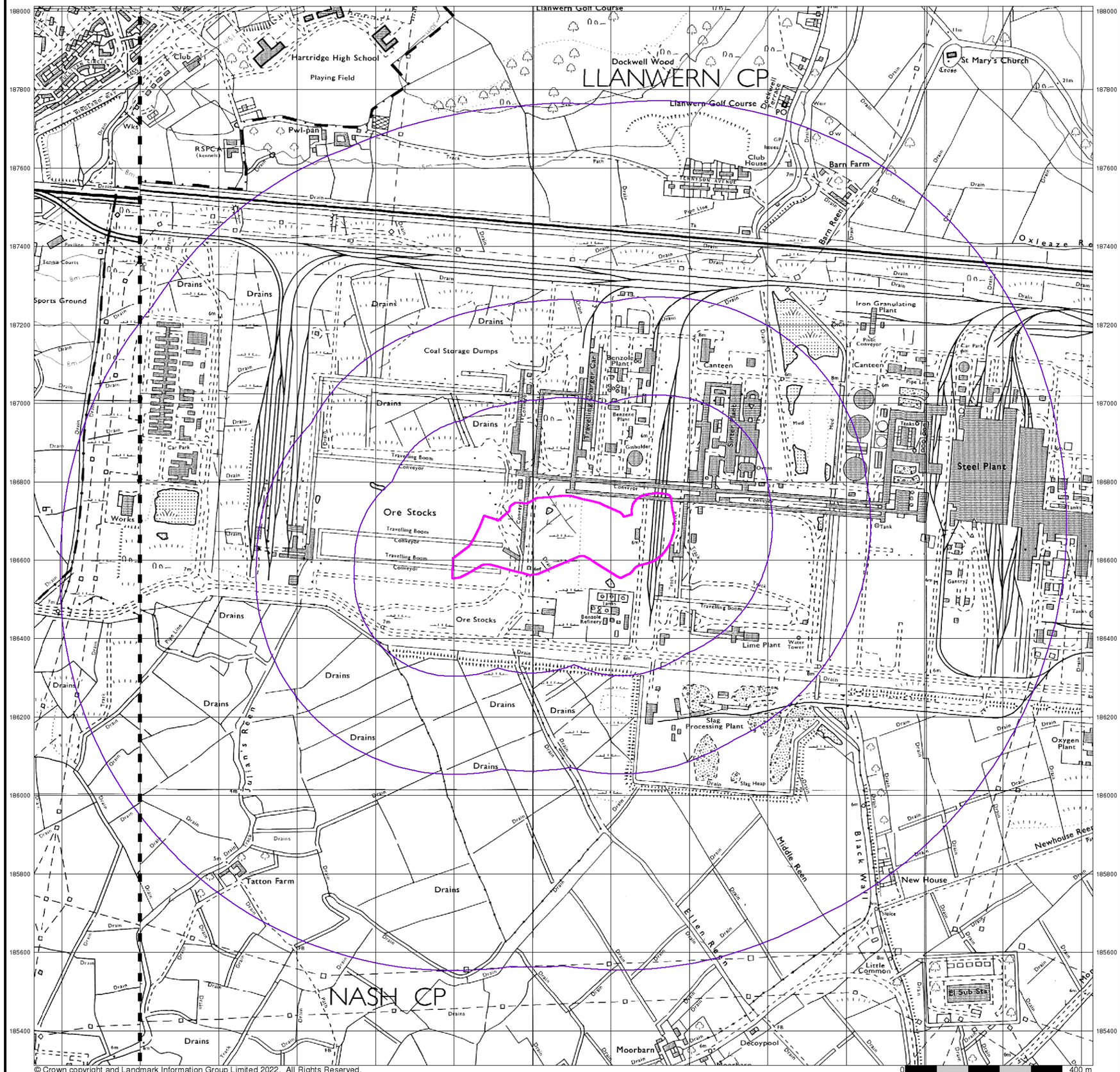

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Ordnance Survey Plan

Published 1973

Source map scale - 1:10,000

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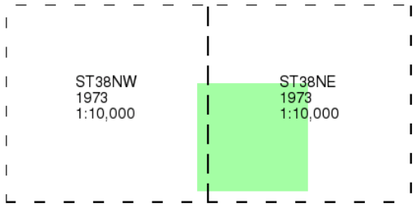
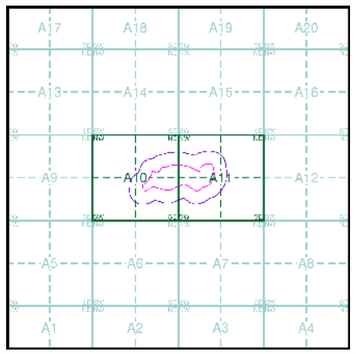
Map Name(s) and Date(s)



Historical Map - Slice A



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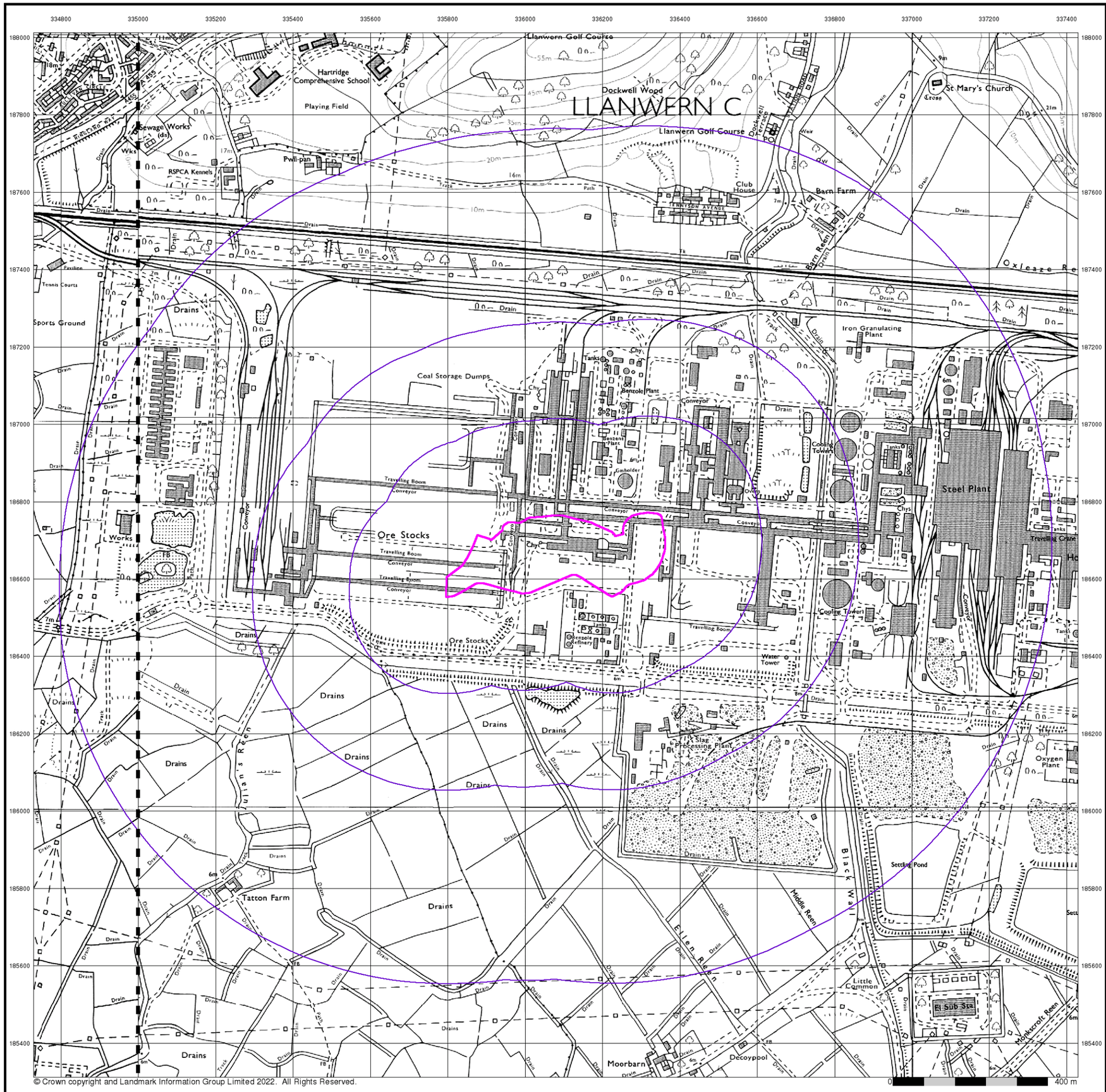

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Ordnance Survey Plan

Published 1981 - 1989

Source map scale - 1:10,000

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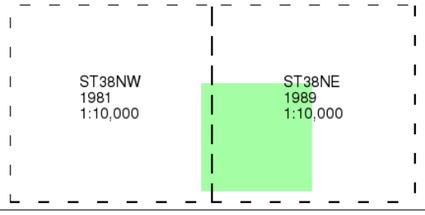
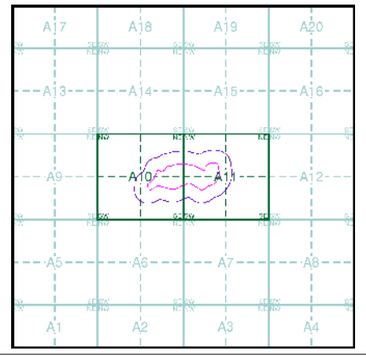
Map Name(s) and Date(s)



Historical Map - Slice A



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National Grid Reference:	336080, 186650
Slice:	A
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Search Buffer (m):	1000

Site Details

Site at 336079,186662

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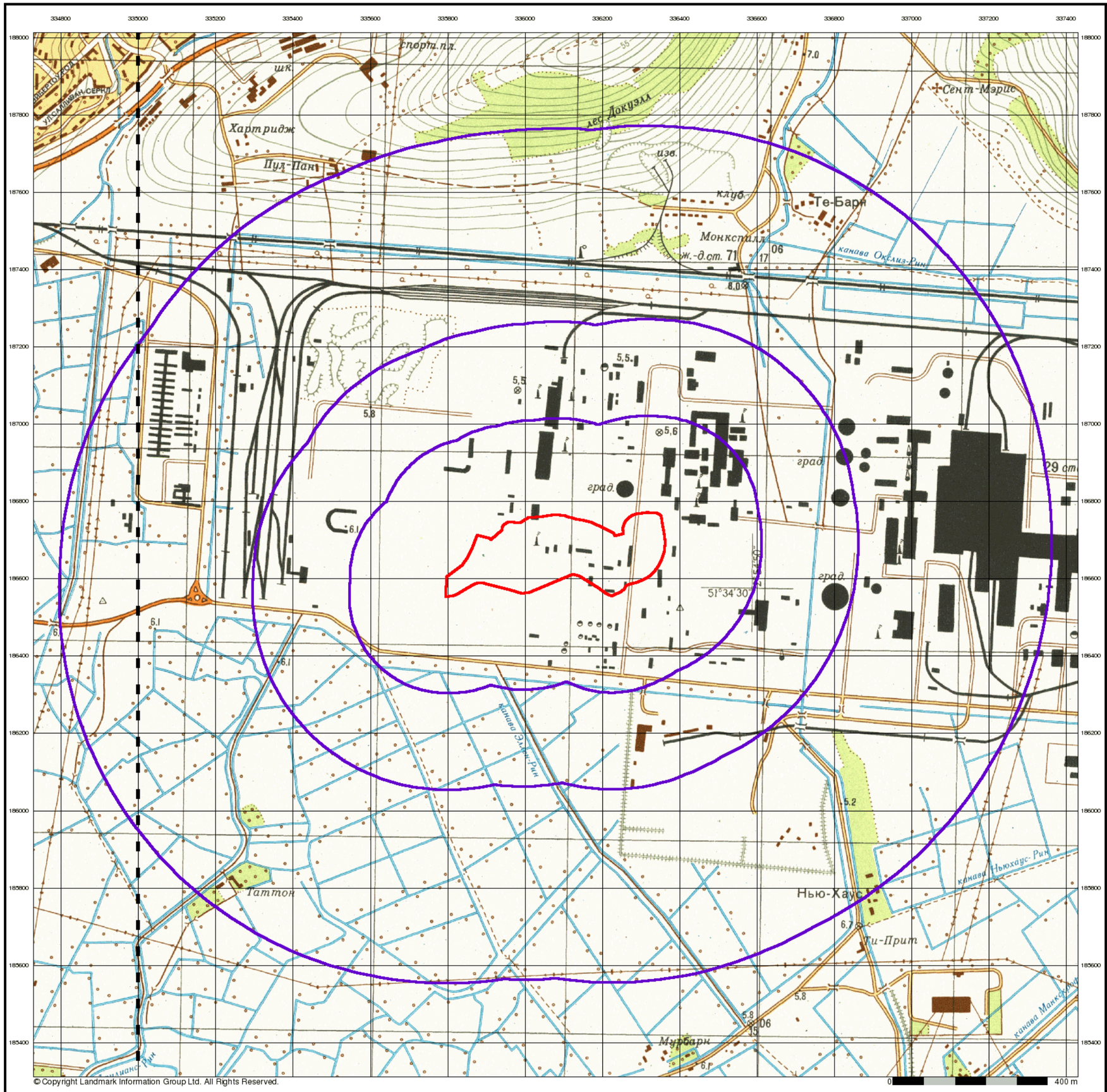

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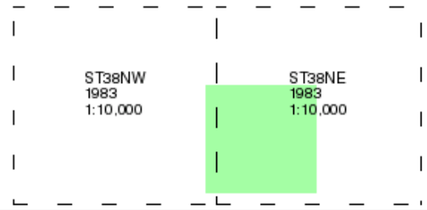
Newport

Published 1983

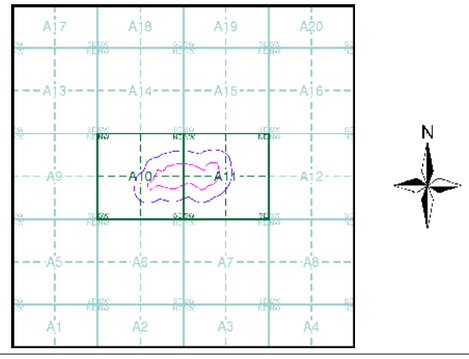
Source map scale - 1:10,000

These maps were produced by the Russian military during the Cold War between 1950 and 1997, and cover 103 towns and cities throughout the U.K. The maps are produced at 1:25,000, 1:10,000 and 1:5,000 scale, and show detailed land use, with colour-coded areas for development, green areas, and non-developed areas. Buildings are coloured black and important building uses (such as hospitals, post offices, factories etc.) are numbered, with a numbered key describing their use.
They were produced by the Russians for the benefit of navigation, as well as strategic military sites and transport hubs, for use if they were to have invaded the U.K. The detailed information provided indicates that the areas were surveyed using land-based personnel, on the ground, in the cities that are mapped.

Map Name(s) and Date(s)



Russian Map - Slice A



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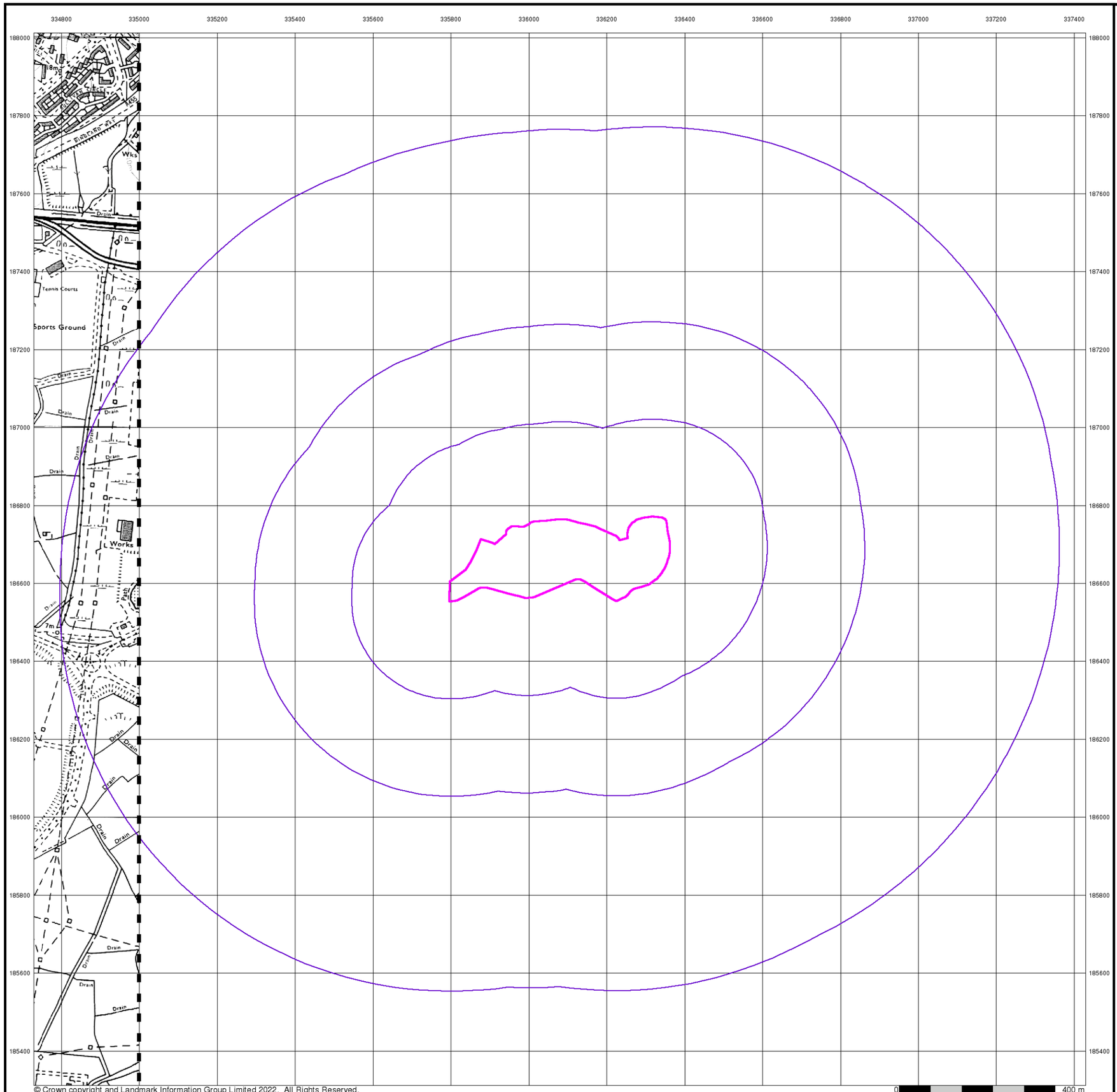

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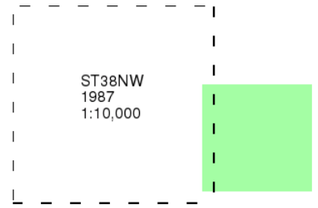
Ordnance Survey Plan

Published 1987

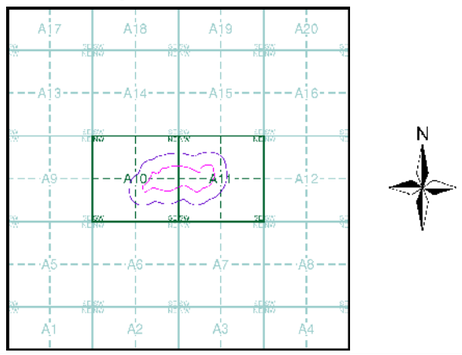
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice A



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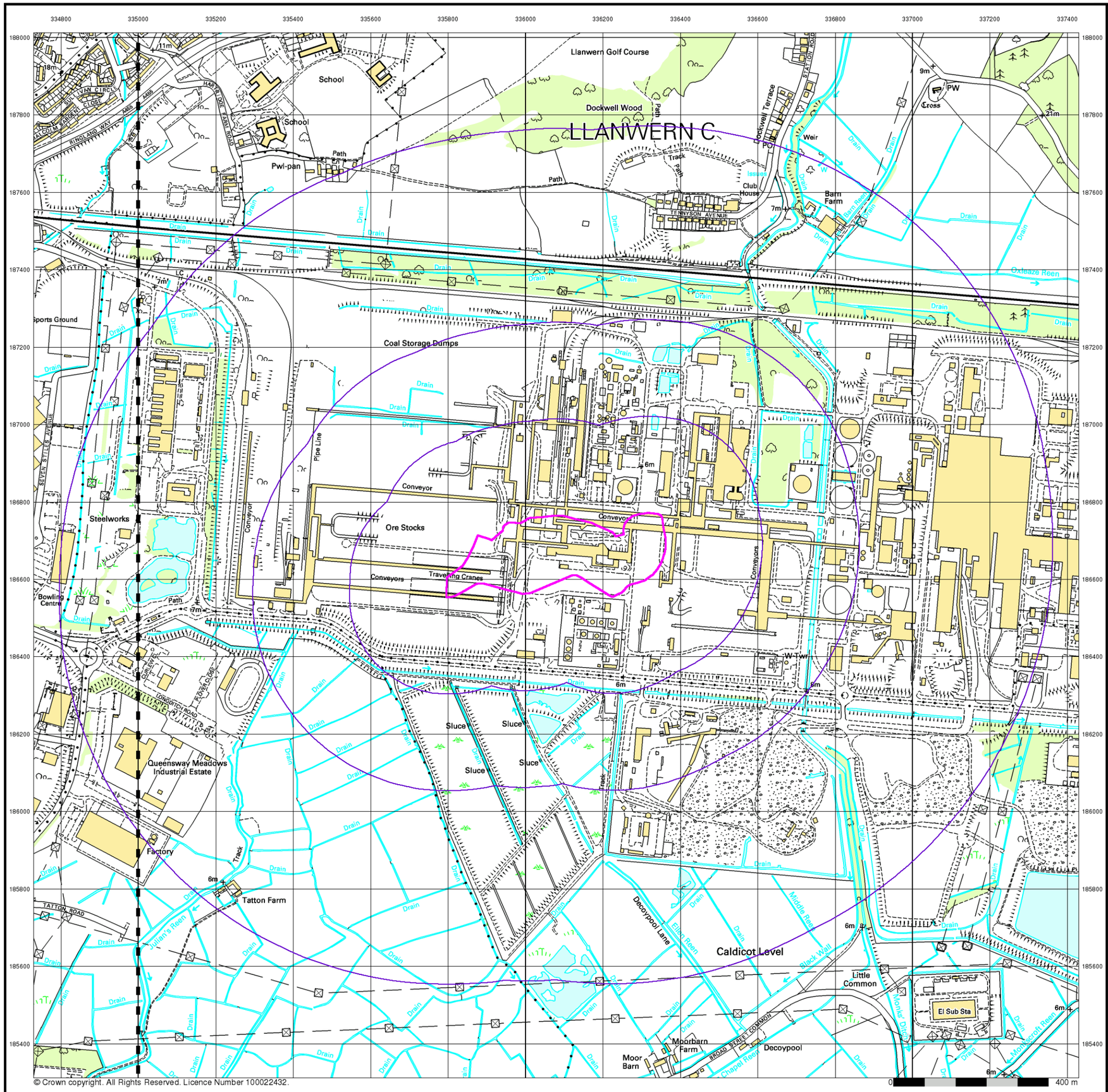

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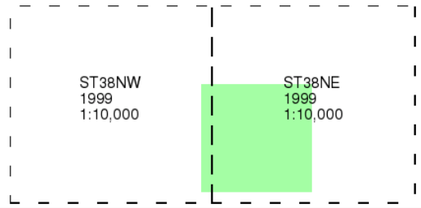
10k Raster Mapping

Published 1999

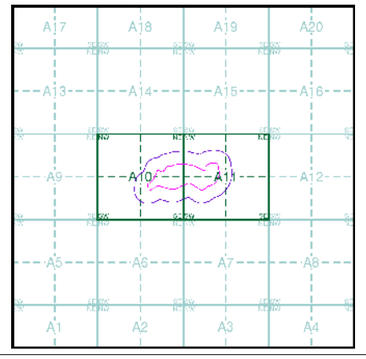
Source map scale - 1:10,000

The historical maps shown were produced from the Ordnance Survey`s 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depiction includes county, unitary authority, district, civil parish and constituency.

Map Name(s) and Date(s)



Historical Map - Slice A



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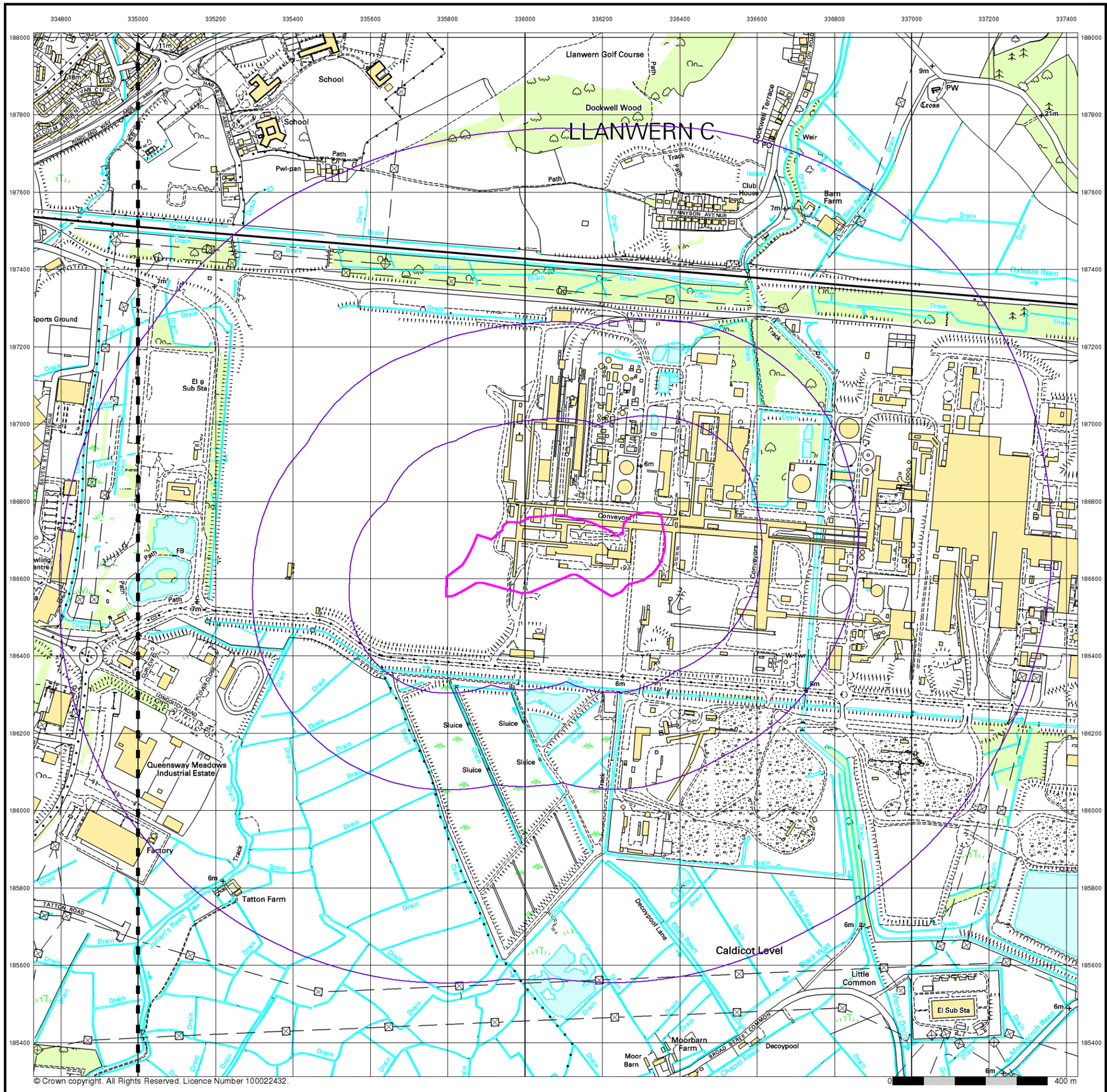

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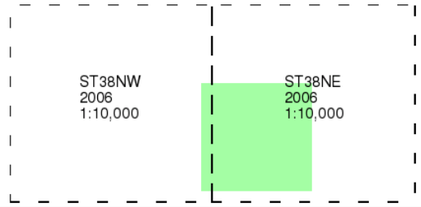
10k Raster Mapping

Published 2006

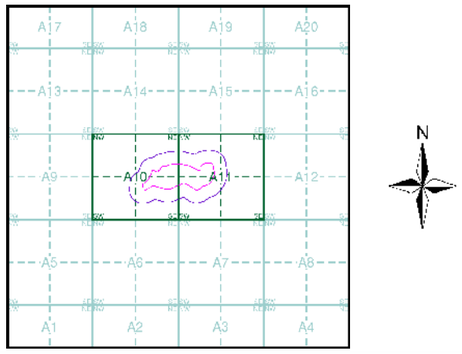
Source map scale - 1:10,000

The historical maps shown were produced from the Ordnance Survey`s 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depiction includes county, unitary authority, district, civil parish and constituency.

Map Name(s) and Date(s)



Historical Map - Slice A



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Search Buffer (m):	1000

Site Details

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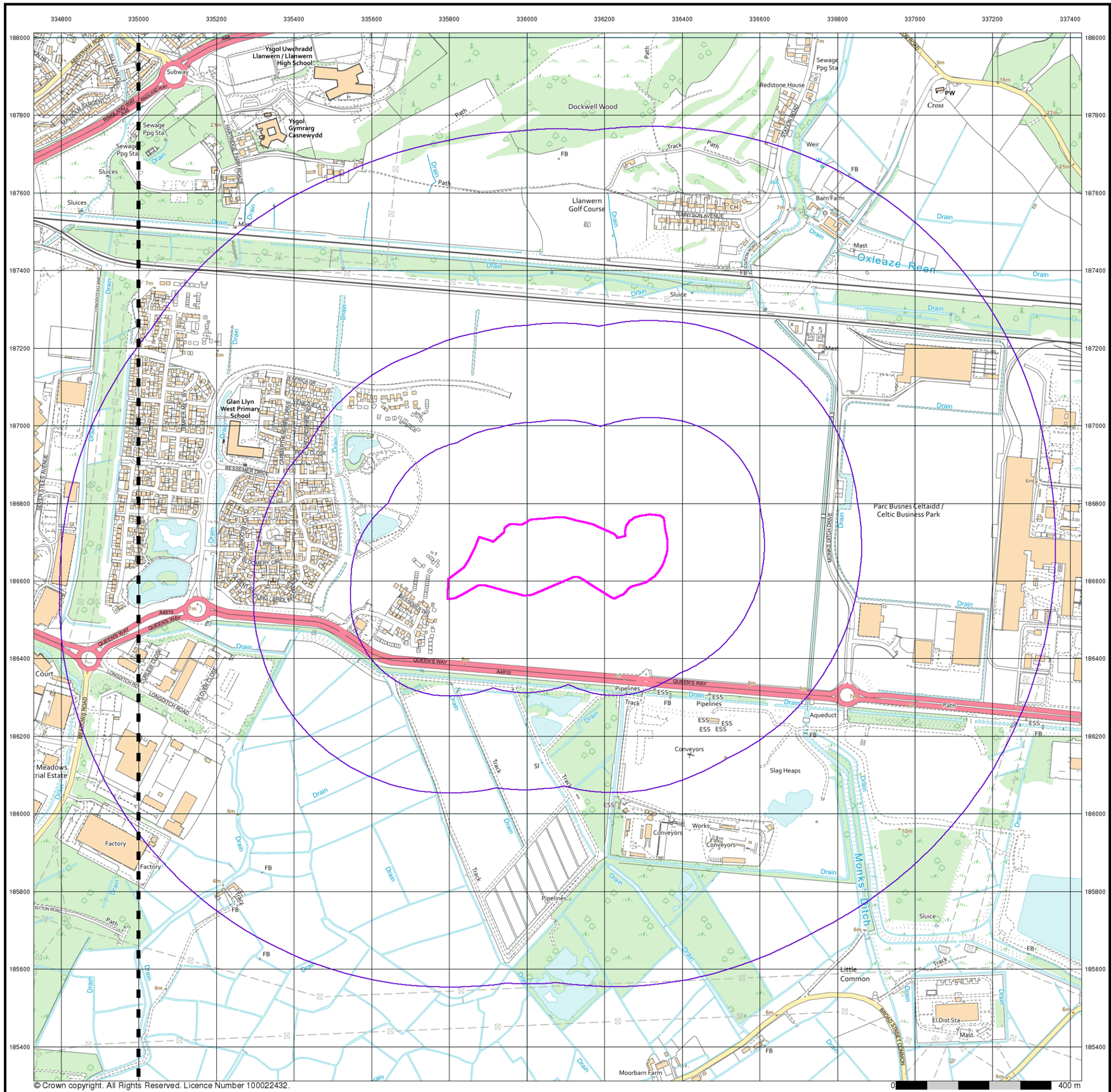

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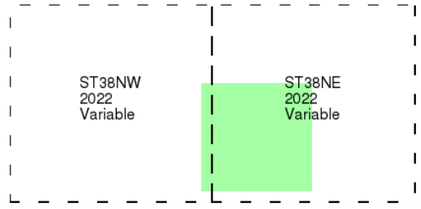
VectorMap Local

Published 2022

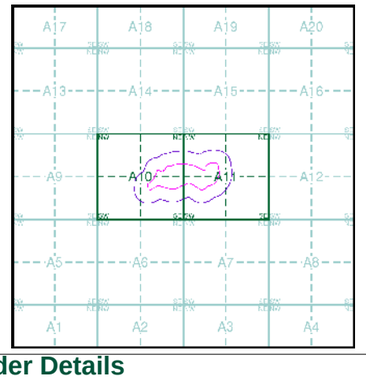
Source map scale - 1:10,000

VectorMap Local (Raster) is Ordnance Survey's highest detailed 'backdrop' mapping product. These maps are produced from OS's VectorMap Local, a simple vector dataset at a nominal scale of 1:10,000, covering the whole of Great Britain, that has been designed for creating graphical mapping. OS VectorMap Local is derived from large-scale information surveyed at 1:1250 scale (covering major towns and cities),1:2500 scale (smaller towns, villages and developed rural areas), and 1:10 000 scale (mountain, moorland and river estuary areas).

Map Name(s) and Date(s)



Historical Map - Slice A



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Geology 1:50,000 Maps Legends

Superficial Geology

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	TFD	Tidal Flat Deposits	Clay and Silt	Not Supplied - Holocene
	ALV	Alluvium	Clay, Silt, Sand and Gravel	Not Supplied - Holocene

Bedrock and Faults

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	LVN	Lavernock Shales Member	Mudstone	Not Supplied - Hettangian
	PNG	Penarth Group	Mudstone	Not Supplied - Rhaetian
	STM	St Mary's Well Bay Member	Limestone and Mudstone, Interbedded	Not Supplied - Rhaetian
	BAN	Blue Anchor Formation	Mudstone and Siltstone	Not Supplied - Norian
	BAN	Blue Anchor Formation	Mudstone	Not Supplied - Norian
	MMG	Mercia Mudstone Group	Mudstone	Not Supplied - Early Triassic
	SMG	St Maughans Formation	Argillaceous Rocks and [Subequal/Subordinate] Sandstone, Interbedded	Not Supplied - Early Devonian
		Faults		

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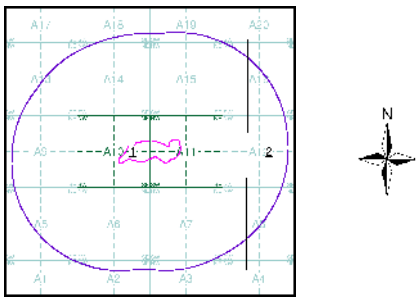
Geology 1:50,000 Maps

This report contains geological map extracts taken from the BGS Digital Geological map of Great Britain at 1:50,000 scale and is designed for users carrying out preliminary site assessments who require geological maps for the area around the site. This mapping may be more up to date than previously published paper maps.
The various geological layers - artificial and landslip deposits, superficial geology and solid (bedrock) geology are displayed in separate maps, but superimposed on the final 'Combined Surface Geology' map. All map legends feature on this page. Not all layers have complete nationwide coverage, so availability of data for relevant map sheets is indicated below.

Geology 1:50,000 Maps Coverage

Map ID:	**2**	**Map ID:**	**1**
Map Sheet No:	**250**	**Map Sheet No:**	**249**
Map Name:	**Chepstow**	**Map Name:**	**Newport**
Map Date:	**1981**	**Map Date:**	**1969**
Bedrock Geology:	**Available**	**Bedrock Geology:**	**Available**
Superficial Geology:	**Available**	**Superficial Geology:**	**Available**
Artificial Geology:	**Not Available**	**Artificial Geology:**	**Available**
Faults:	**Not Supplied**	**Faults:**	**Not Supplied**
Landslip:	**Available**	**Landslip:**	**Available**
Rock Segments:	**Not Supplied**	**Rock Segments:**	**Not Supplied**

Geology 1:50,000 Maps - Slice A



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Site Details:

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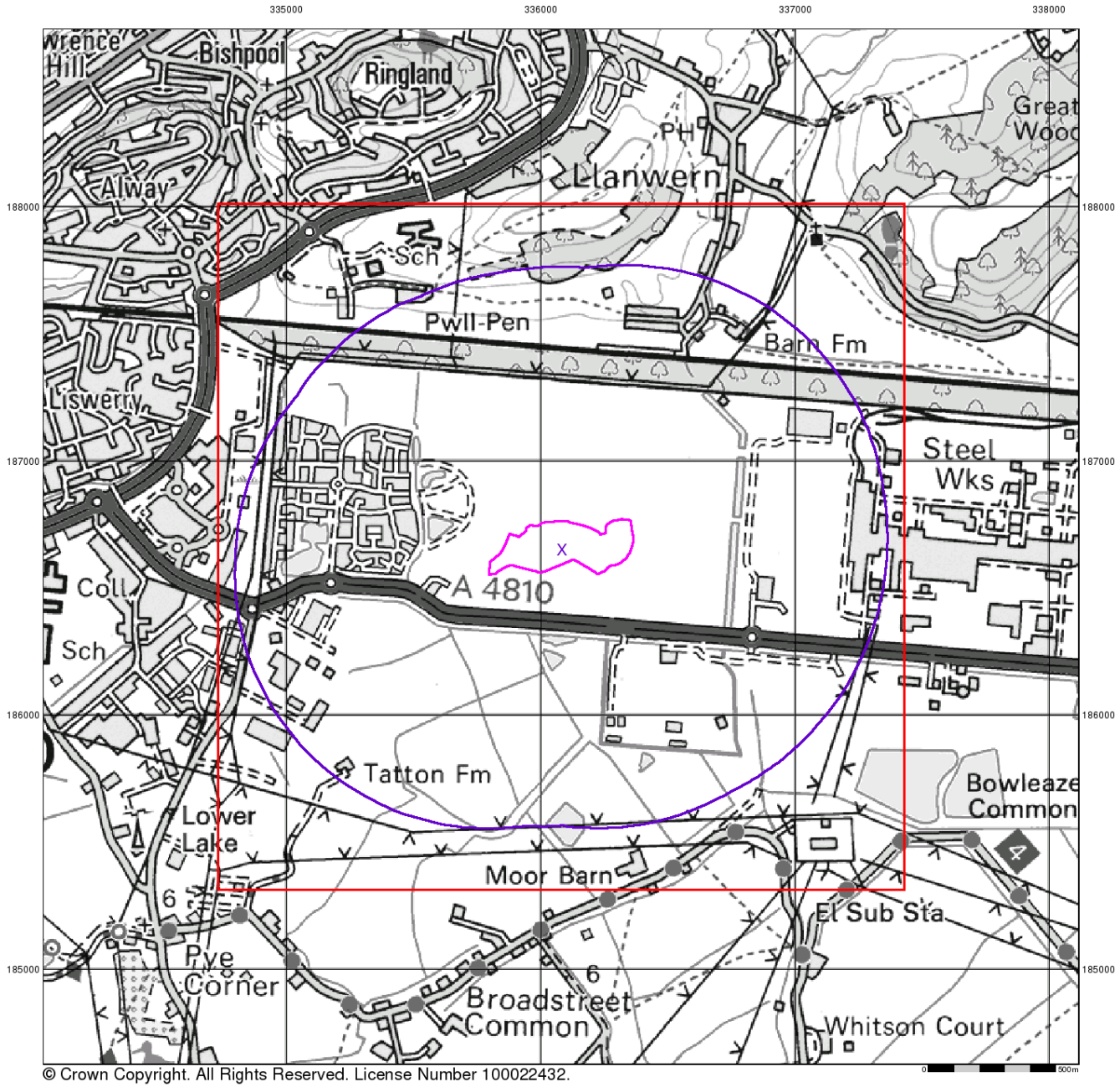

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Artificial Ground and Landslip

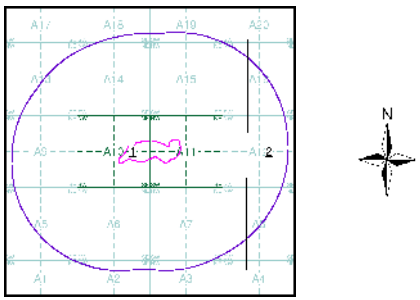
Artificial ground is a term used by BGS for those areas where the ground surface has been significantly modified by human activity. Information about previously developed ground is especially important, as it is often associated with potentially contaminated material, unpredictable engineering conditions and unstable ground.

Artificial ground includes:

- Made ground - man-made deposits such as embankments and spoil heaps on the natural ground surface.
- Worked ground - areas where the ground has been cut away such as quarries and road cuttings.
- Infilled ground - areas where the ground has been cut away then wholly or partially backfilled.
- Landscaped ground - areas where the surface has been reshaped.
- Disturbed ground - areas of ill-defined shallow or near surface mineral workings where it is impracticable to map made and worked ground separately.

Mass movement (landslip) deposits on BGS geological maps are primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground. The dataset also includes foundered strata, where the ground has collapsed due to subsidence.

Artificial Ground and Landslip Map - Slice A



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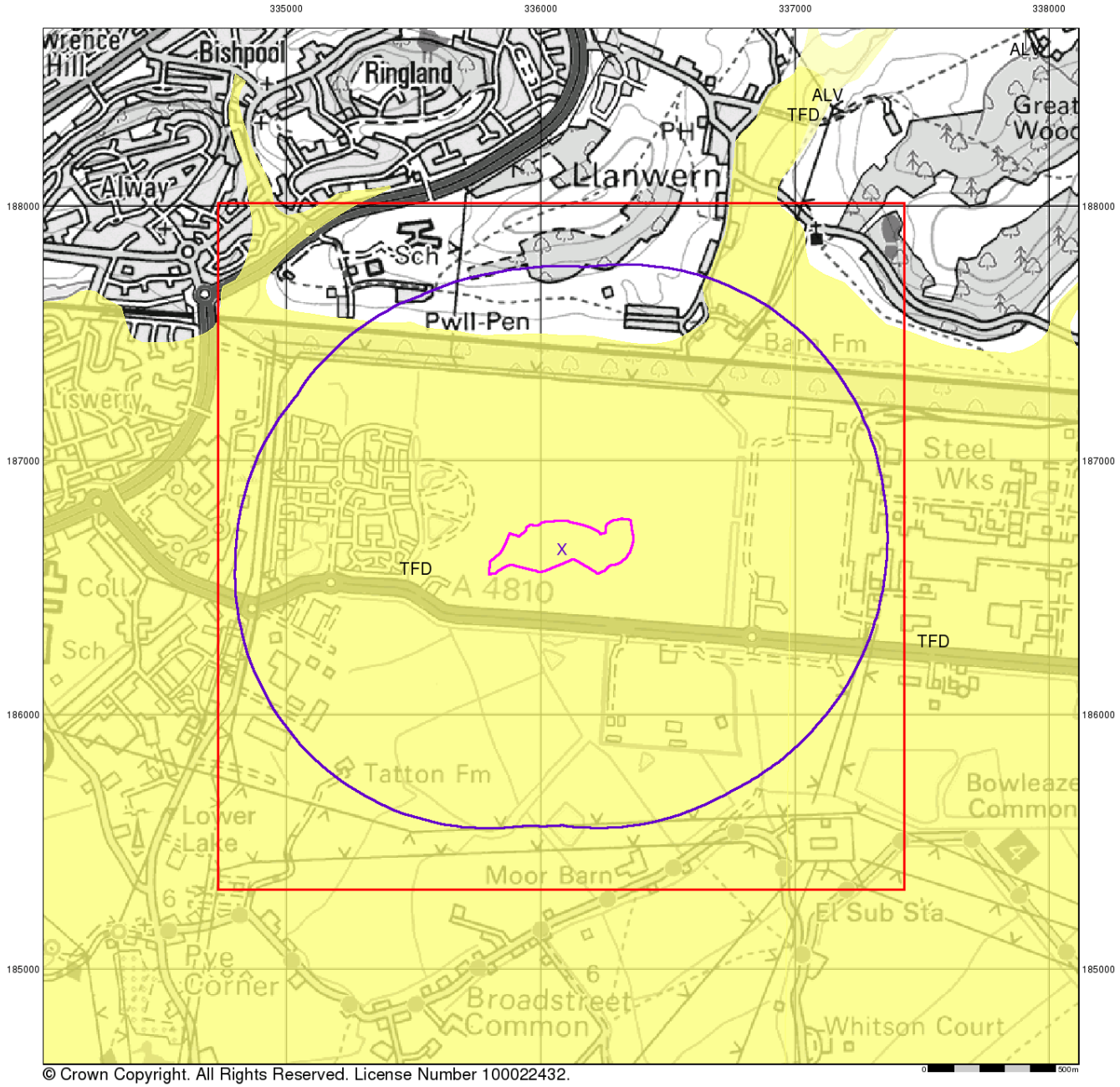

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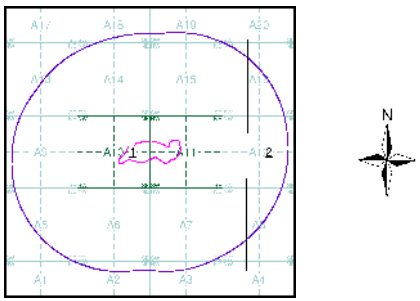
Superficial Geology

Superficial Deposits are the youngest geological deposits formed during the most recent period of geological time, the Quaternary, which extends back about 1.8 million years from the present.

They rest on older deposits or rocks referred to as Bedrock. This dataset contains Superficial deposits that are of natural origin and 'in place'. Other superficial strata may be held in the Mass Movement dataset where they have been moved, or in the Artificial Ground dataset where they are of man-made origin.

Most of these Superficial deposits are unconsolidated sediments such as gravel, sand, silt and clay, and onshore they form relatively thin, often discontinuous patches or larger spreads.

Superficial Geology Map - Slice A



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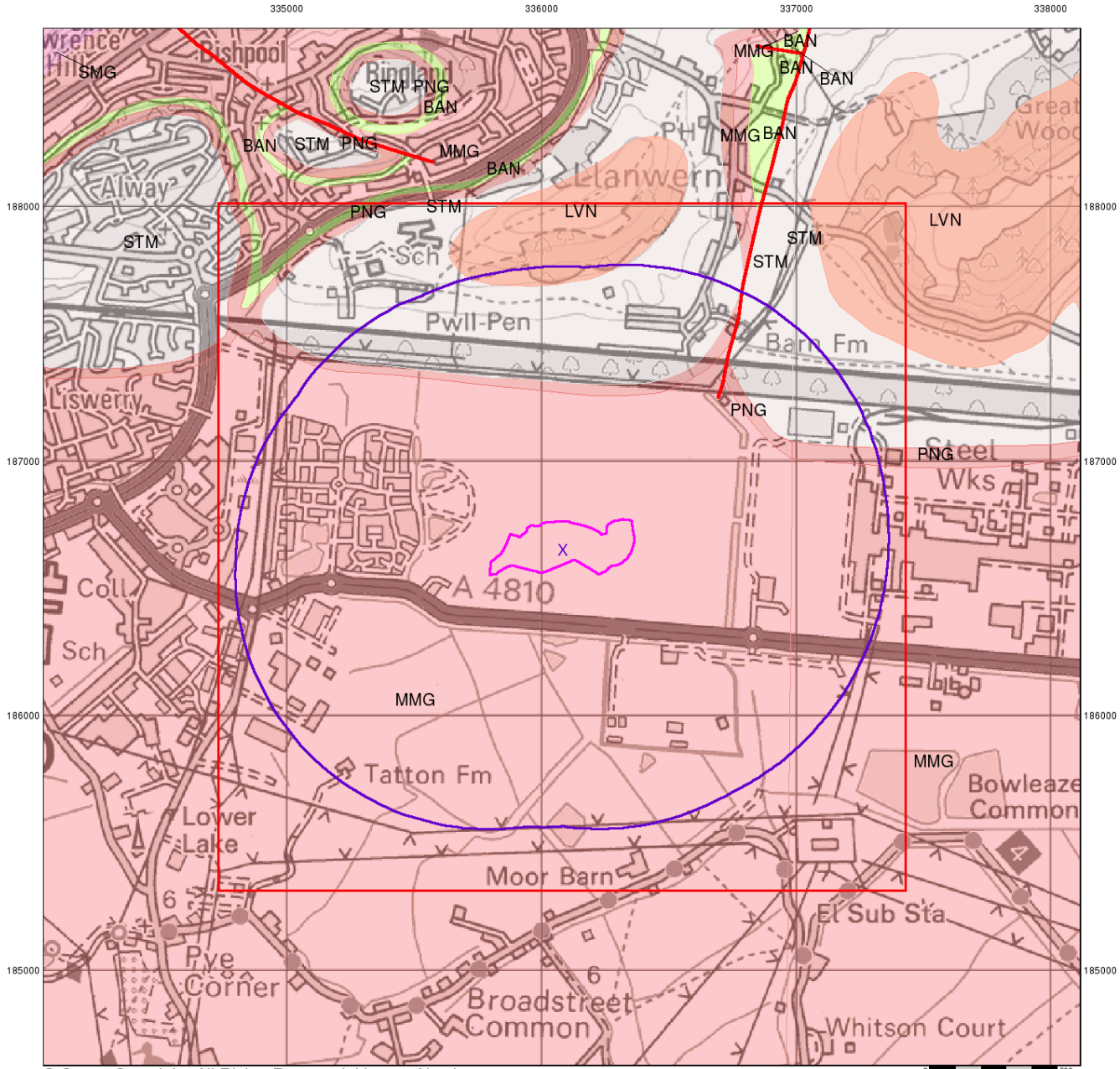

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Bedrock and Faults

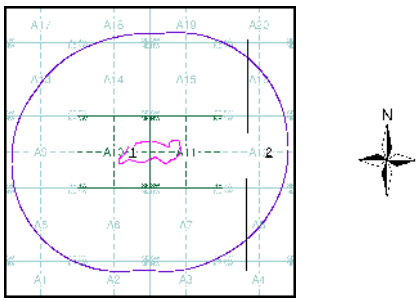
Bedrock geology is a term used for the main mass of rocks forming the Earth and are present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

The bedrock has formed over vast lengths of geological time ranging from ancient and highly altered rocks of the Proterozoic, some 2500 million years ago, or older, up to the relatively young Pliocene, 1.8 million years ago.

The bedrock geology includes many lithologies, often classified into three types based on origin: igneous, metamorphic and sedimentary.

The BGS Faults and Rock Segments dataset includes geological faults (e.g. normal, thrust), and thin beds mapped as lines (e.g. coal seam, gypsum bed). Some of these are linked to other particular 1:50,000 Geology datasets, for example, coal seams are part of the bedrock sequence, most faults and mineral veins primarily affect the bedrock but cut across the strata and post date its deposition.

Bedrock and Faults Map - Slice A



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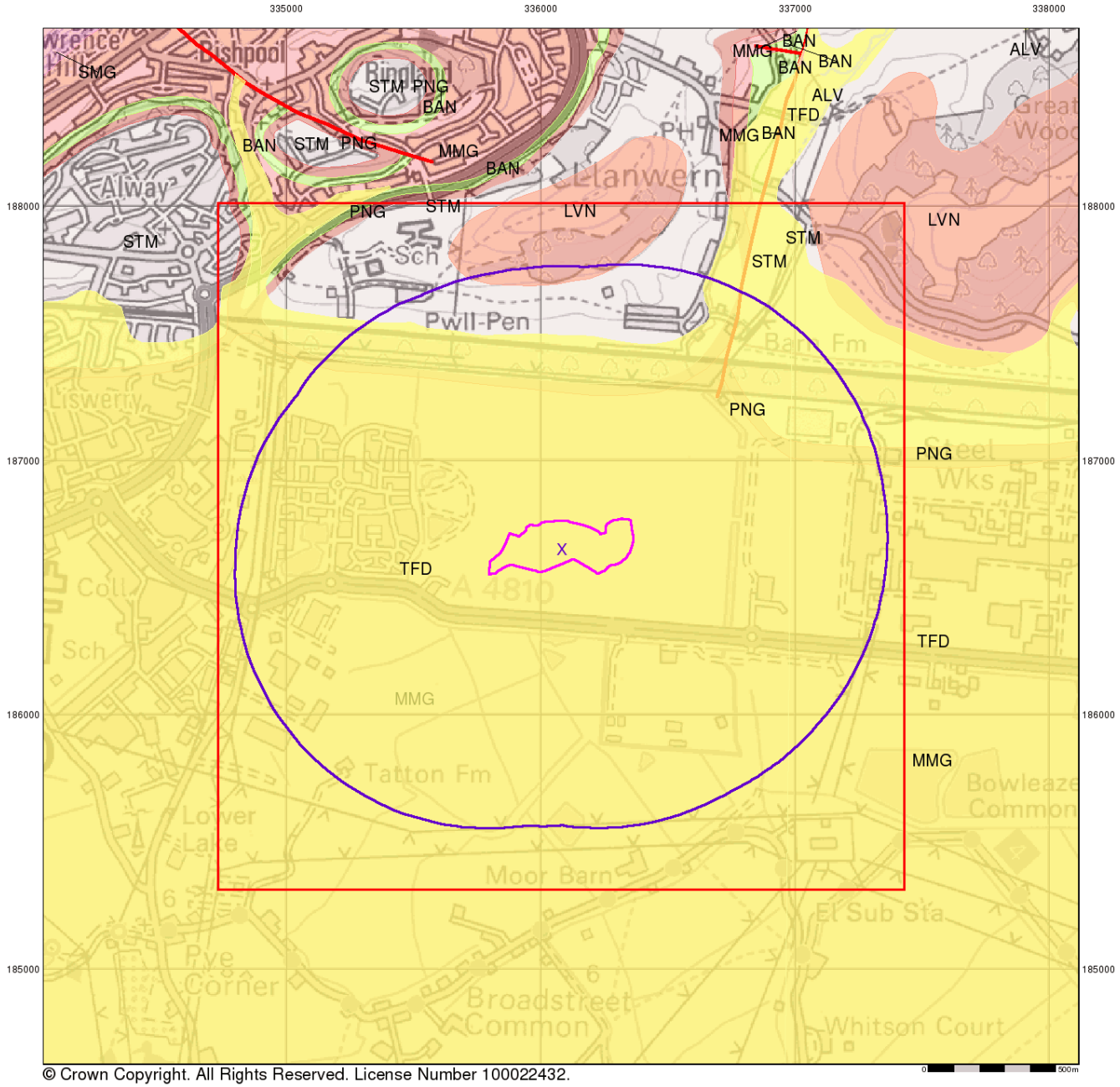

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Combined Surface Geology

The Combined Surface Geology map combines all the previous maps into one combined geological overview of your site.

Please consult the legends to the previous maps to interpret the Combined "Surface Geology" map.

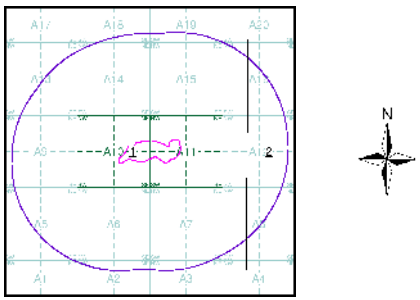
Additional Information

More information on 1:50,000 Geological mapping and explanations of rock classifications can be found on the BGS website. Using the LEX Codes in this report, further descriptions of rock types can be obtained by interrogating the 'BGS Lexicon of Named Rock Units'. This database can be accessed by following the 'Information and Data' link on the BGS website.

Contact

British Geological Survey
Kingsley Dunham Centre
Keyworth
Nottingham
NG12 5GG
Telephone: 0115 936 3143
Fax: 0115 936 3276
email: enquiries@bgs.ac.uk
website: www.bgs.ac.uk

Combined Geology Map - Slice A



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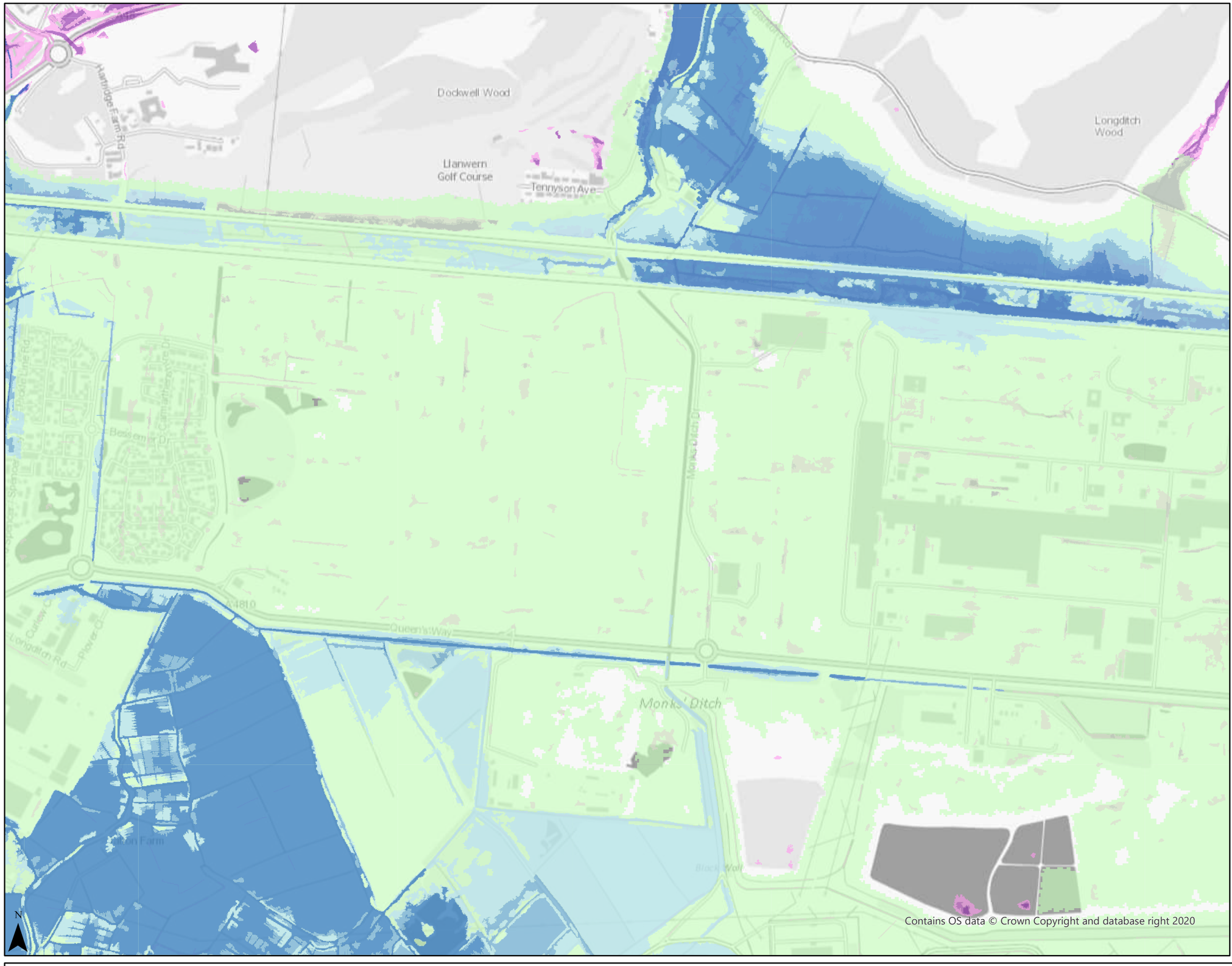
Search Buffer (m):	1000

Site Details:

Site at 336079,186662

Appendix E
Flood Risk Map



Cyfoeth Naturiol Cymru
Natural Resources Wales

Flood Risk Maps

Enter title (max 35 characters)

Legend

Flood Risk from Rivers
- High
- Medium
- Low

Flood Risk from the Sea
- High
- Medium
- Low

Flood Risk from Surface Water & Small Watercourses
- High
- Medium
- Low

Risk Level Under Review

Scale at A3: 1:10,000

Date: 17/06/2025

0.45 0.23 0 0.45
km

British National Grid

Disclaimer

https://naturalresources.wales/flooding/disclaimer-for-our-flood-and-coastal-erosion-risk-maps/?lang=en

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Appendix F
UXO Report

UNEXPLODED BOMB RISK MAP

SITE LOCATION

Map Centre: 335932,186682

This map principally indicates a hazard from Unexploded Bombs (UXB) due to WWII bombardment. Other sources of Unexploded Ordnance (UXO) may be present. It should be noted that this map does not represent UXO risk and should not be reported as such when reproduced.

LEGEND

- **High:** Areas indicated as having a bombing density of 50 bombs per 1000acre or higher.
- **Moderate:** Areas indicated as having a bombing density of 15 to 49 bombs per 1000acre.
- **Low:** Areas indicated as having 15 bombs per 1000acre or less.

Miltary | **Industry** | **UXO find** | **Other**
Transport | **Docks** | **Luftwaffe targets**
Utilities | **Bombing decoy** | **Airfields**

How to use your Unexploded Bomb (UXB) risk map?

This map indicates the potential for UXBs to be present because of World War Two (WWII) bombing. It can be incorporated into a technical report, such as a Phase 1 Desk Study, or similar document as an indication of the potential for UXO encounter on a Site. Other sources of UXO may also be indicated, although note that these are not comprehensive and more detailed research is required to confirm their presence.

What if my Site is in a moderate or high density area?

We typically recommend that a detailed UXO desk study and risk assessment is undertaken for sites in an area with a moderate or high bombing density.
Additionally, if your site is in close proximity to a strategic target, military establishment, airfield or bombing decoy, then additional detailed research is recommended.

If my site is in a low risk area, do I need to do anything?

If both the map and other research confirm that there is a low potential for UXO to be present on your site, then, subject to your own comfort and risk tolerance, works can proceed with no special precautions.

If you are unsure whether other sources of UXO may be present, you can request one of our pre-desk study assessments (PDSA) by emailing a site boundary and location to pdsa@zetica.com.

You should never plan site work or undertake a risk assessment using these maps alone. More detail is required, to include an assessment of the likelihood of a source of UXO hazard from other military activity not reflected on these maps.

If I have any questions, who do I contact?

tel: +44 (0) 1993 886682 **email:** uxo@zetica.com **web:** www.zeticauxo.com

The information in this UXB risk map is derived from a range of sources and should be used with the accompanying notes on our website.

Zetica cannot guarantee the accuracy or completeness of the information or data used and cannot accept any liability for any use of the maps. These maps can be used as part of a technical report or similar publication, subject to acknowledgement. The copyright remains with Zetica Ltd.

Appendix G
Exploratory Hole Logs

ATKINS
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Trial Pit Log

TrialPit No: 4GA6
Sheet 1 of 1

Project Name: Llanwern	Project No. 5111373_LLA	Co-ords: 336211.66 - 186631.56 Level: 5.82	Date 05/11/2018
Location: Llanwern, Newport		Dimensions (m):	Scale 1:20
Client: St Modwen Developments		Depth 2.90	Logged GR

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.50 0.50 0.70	B ES ES					MADE GROUND. Dark red gravelly sand. Gravels are fine to coarse, sub-angular of concrete, brick, iron ore aggregate and occasional slag.
	2.80	ES		2.80 2.90	3.02 2.92		Soft brown PEAT. End of Pit at 2.90m

Remarks: Pit terminated in the Tidal Flat Deposits.

Stability:

AGS

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Trial Pit Log

TrialPit No: 4GA7
Sheet 1 of 1

Project Name: Llanwern	Project No. 5111373_LLA	Co-ords: 336203.00 - 186605.83 Level: 5.84	Date 20/11/2018
Location: Llanwern, Newport		Dimensions (m):	Scale 1:20
Client: St Modwen Developments		Depth 1.90	Logged GR

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.50 0.50	B ES					MADE GROUND. Dark brown/blue/red gravelly sand. Gravels are fine to coarse, angular to sub-rounded of slag, iron ore aggregate, concrete and brick.
▼				0.70	5.14		MADE GROUND. Dark brown/blue/red sandy clayey gravel. Gravels are fine to coarse, angular to sub-rounded of slag, iron ore aggregate, concrete, brick and mudstone.
	1.80	ES		1.80	4.04		Firm blue silty CLAY.
				1.90	3.94		*Difficult to get clean Cay Validation sample* End of Pit at 1.90m

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Remarks: Pit terminated in the Tidal Flat Deposits.

Stability:

AGS

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Trial Pit Log

TrialPit No: 4GB4
Sheet 1 of 1

Project Name: Llanwern	Project No. 5111373_LLA	Co-ords: 336245.96 - 186682.75 Level: 5.88	Date 05/11/2018
Location: Llanwern, Newport		Dimensions (m):	Scale 1:20
Client: St Modwen Developments		Depth 1.40	Logged GR

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.30	ES					MADE GROUND. Brown gravelly sand. Gravels are fine to coarse, angular to sub-rounded of brick, concrete, mudstone and occasional slag.
	0.60 0.60	B ES		0.75	5.13		MADE GROUND. Brown clayey sandy gravel. Gravels are coarse, angular to sub-rounded of mudstone, brick and concrete.
▼							*Very hard to dig. Refusal because of concrete/slag*
				1.40	4.48		End of Pit at 1.40m

Remarks: Refusal in hard ground.

Stability:

AGS

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Trial Pit Log

TrialPit No
4GB5
Sheet 1 of 1

Project Name: Llanwern	Project No. 5111373_LLA	Co-ords: 336241.66 - 186655.41 Level: 6.19	Date 05/11/2018
Location: Llanwern, Newport		Dimensions (m):	Scale 1:20
Client: St Modwen Developments		Depth 2.20	Logged GR

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.50	ES					MADE GROUND. Black gravelly ashy sand with cobbles. Gravels and cobbles are fine to coarse, angular to subangular of coke, concrete and slag.
				0.70	5.49		MADE GROUND. Hard grey/blue sandy gravel. Gravels are coarse, angular of slag.
	1.00 1.00	B ES		1.10	5.09		MADE GROUND. Brown gravelly sand. Gravels are fine to coarse, angular of slag, concrete and brick.
▼				1.65	4.54		MADE GROUND. Light grey to blue very coarse sub-angular gravel with boulders of slag.
	2.10	ES		2.10	4.09		Firm blue silty CLAY.
				2.20	3.99		End of Pit at 2.20m

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Remarks: Pit terminated in the Tidal Flat Deposits.

Stability:

AGS

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Trial Pit Log

TrialPit No: 4GB6
Sheet 1 of 1

Project Name: Llanwern	Project No. 5111373_LLA	Co-ords: 336237.89 - 186631.87 Level: 5.92	Date 05/11/2018
Location: Llanwern, Newport		Dimensions (m):	Scale 1:20
Client: St Modwen Developments		Depth 1.90	Logged GR

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.50	ES		0.70	5.22		MADE GROUND. Brown gravelly sand with boulders. Gravels and boulders are fine to very coarse, angular to sub-rounded of slag, concrete, brick, mudstone, coke and tarmac.
	0.90	ES					MADE GROUND. Grey/brown sandy gravel. Gravels are coarse, sub-angular of slag and brick.
▼	1.00	B		1.00	4.92		MADE GROUND. Brown to yellow coarse sandy gravel. Gravels are fine to coarse, angular to sub-rounded of slag.
	1.80	ES		1.80	4.12		Firm blue silty CLAY.
				1.90	4.02		End of Pit at 1.90m

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Remarks: Pit terminated in the Tidal Flat Deposits.

Stability:

AGS

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Trial Pit Log

TrialPit No: 4GB8
Sheet 1 of 1

Project Name: Llanwern	Project No. 5111373_LLA	Co-ords: 336240.42 - 186581.82 Level: 5.86	Date 06/11/2018
Location: Llanwern, Newport		Dimensions (m):	Scale 1:20
Client: St Modwen Developments		Depth 1.70	Logged GR

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.40	ES		0.50	5.36		MADE GROUND. Brown gravelly sand. Gravels are fine to coarse, angular to sub-rounded of concrete, siltstone, slag and iron ore aggregate.
▼	0.80 0.80	B ES					MADE GROUND. Brown/grey gravelly sand. Gravels are fine to coarse, angular to sub-rounded of slag and concrete.
	1.60	ES		1.60 1.70	4.26 4.16		Firm blue silty CLAY. End of Pit at 1.70m

Remarks: Pit terminated in the Tidal Flat Deposits.

Stability:

AGS

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Trial Pit Log

TrialPit No: 4GB9
Sheet 1 of 1

Project Name: Llanwern	Project No. 5111373_LLA	Co-ords: 336235.43 - 186564.52 Level: 5.97	Date 20/11/2018
Location: Llanwern, Newport		Dimensions (m):	Scale 1:20
Client: St Modwen Developments		Depth 1.70	Logged GR

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.50 0.50	B ES					MADE GROUND. Hard dark brown/grey gravelly sand. Gravels are fine to coarse, sub-angular to sub-rounded of slag, concrete, brick and occasional coke.
	1.60	ES		1.60 1.70	4.37 4.27		Firm blue silty CLAY. End of Pit at 1.70m

Remarks: Pit terminated in the Tidal Flat Deposits.

Stability:

AGS

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Trial Pit Log

TrialPit No: 4CG4
Sheet 1 of 1

Project Name: Llanwern	Project No. 5111373_LLA	Co-ords: 335958.00 - 186682.00 Level: 6.66	Date 11/10/2018
Location: Llanwern, Newport		Dimensions (m):	Scale 1:20
Client: St Modwen Developments		Depth 2.50	Logged JF

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.50	ES					MADE GROUND. Dark brown/red sandy gravel with cobbles and occasional boulders. Gravels, cobbles and boulders are medium to very coarse, sub-angular to sub-rounded of iron ore aggregate, concrete, blast furnace slag, mudstone and occasional steel slag.
				0.80	5.86		MADE GROUND. Dark blue/grey sandy gravel. Gravels are fine to coarse, sub-angular to sub-rounded of steel slag.
	1.20	ES					
	1.50	B					
▼	1.80	ES					
	2.40	ES		2.40	4.26		Firm blue silty CLAY.
				2.50	4.16		End of Pit at 2.50m

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Remarks: Pit terminated in the Tidal Flat Deposits.

Stability:

AGS

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Trial Pit Log

TrialPit No: 4CG5
Sheet 1 of 1

Project Name: Llanwern	Project No. 5111373_LLA	Co-ords: 335958.00 - 186651.00 Level: 6.66	Date 02/10/2018
Location: Llanwern, Newport		Dimensions (m):	Scale 1:20
Client: St Modwen Developments		Depth 2.90	Logged JF

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.50	ES					MADE GROUND. Dark brown gravelly sand with cobbles. Gravels and cobbles are fine to coarse, sub-angular to sub-rounded of concrete, iron ore, brick, blast furnace slag and steel slag.
	1.00	B					
	1.00	ES					
	1.50	ES					
▼							
	2.80	ES		2.80	3.86		Soft blue/brown peaty silty CLAY.
				2.90	3.76		End of Pit at 2.90m

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Remarks: Pit terminated in the Tidal Flat Deposits.

Stability:

AGS

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Trial Pit Log

TrialPit No
4CG6
Sheet 1 of 1

Project Name: Llanwern	Project No. 5111373_LLA	Co-ords: 335959.00 - 186636.00 Level: 6.47	Date 02/10/2018
Location: Llanwern, Newport		Dimensions (m):	Scale 1:20
Client: St Modwen Developments		Depth 3.00	Logged JF

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
							MADE GROUND. Light brown loamy clay with angular gravels of brick.
	0.30	ES		0.30	6.17		MADE GROUND. Dark red/brown sandy gravel with cobbles. Gravels and cobbles are fine to coarse, sub-angular to sub-rounded of blast furnace slag, iron ore, concrete and steel slag.
	1.00	ES					
▼	1.50	B		1.50	4.97		MADE GROUND. Hard light grey medium to coarse, angular gravel of steel slag.
	1.50	ES					
				2.00	4.47		MADE GROUND. Dark red/brown medium to coarse, sub-angular to sub-rounded gravels and boulders of iron ore, concrete, blast furnace slag, brick and steel slag.
	2.90	ES		2.90	3.57		Soft blue/brown peaty silty CLAY.
				3.00	3.47		End of Pit at 3.00m

Remarks: Pit terminated in the Tidal Flat Deposits.

Stability:

AGS

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Trial Pit Log

TrialPit No: 4CH1
Sheet 1 of 1

Project Name: Llanwern	Project No. 5111373_LLA	Co-ords: 335981.00 - 186757.00 Level: 5.48	Date 11/10/2018
Location: Llanwern, Newport		Dimensions (m):	Scale 1:20
Client: St Modwen Developments		Depth 1.70	Logged JF

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.50	ES					MADE GROUND. Black and orange gravelly sand with cobbles. Gravels and cobbles are fine to coarse, sub-angular to sub-rounded of mudstone, brick, concrete, blast funace slag and occasional steel slag.
	1.00	B					
	1.00	ES					
▼							
	1.60	ES		1.60	3.88		Firm blue silty CLAY.
				1.70	3.78		End of Pit at 1.70m

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Remarks: Pit terminated in the Tidal Flat Deposits.

Stability:

AGS

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Trial Pit Log

TrialPit No: 4CH2
Sheet 1 of 1

Project Name: Llanwern	Project No. 5111373_LLA	Co-ords: 335982.00 - 186741.00 Level: 5.78	Date 11/10/2018
Location: Llanwern, Newport		Dimensions (m):	Scale 1:20
Client: St Modwen Developments		Depth 1.90	Logged JF

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
							MADE GROUND. Light brown/grey sandy gravel with cobbles and occasional boulders. Gravels, cobbles and boulders are medium to very coarse, sub-angular to sub-rounded of iron ore aggregate, concrete, blast furnace slag, mudstone and steel slag.
	0.50	ES		0.50	5.28		MADE GROUND. Black gravelly sand with cobbles. Gravels and cobbles are fine to coarse, sub-angular to sub-rounded of brick, mudstone, concrete, blast funace slag and occasional steel slag.
	1.00	ES					
▼	1.50	B					
	1.80	ES		1.80	3.98		Firm blue silty CLAY.
				1.90	3.88		End of Pit at 1.90m

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Remarks: Pit terminated in the Tidal Flat Deposits.

Stability:

AGS

ATKINS
Member of the SNC-Lavalin Group

Trial Pit Log

TrialPit No: 4CH4
Sheet 1 of 1

Project Name: Llanwern	Project No. 5111373_LLA	Co-ords: 335983.00 - 186676.00 Level: 6.17	Date 11/10/2018
Location: Llanwern, Newport		Dimensions (m):	Scale 1:20
Client: St Modwen Developments		Depth 2.10	Logged JF

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.50	ES					MADE GROUND. Dark brown/red sandy gravel with cobbles and occasional boulders. Gravels, cobbles and boulders are medium to very coarse, sub-angular to sub-rounded of iron ore aggregate, concrete, blast furnace slag, mudstone and occasional steel slag.
	1.00	ES					
▼	1.50	B		1.50	4.67		MADE GROUND. Dark grey/brown sandy gravels with cobbles. Gravels and cobbles are fine to coarse, sub-angular to sub-rounded of sandstone, concrete, brick and mudstone.
▼	1.60	ES					
	2.00	ES		2.00	4.17		Soft blue/brown peaty silty CLAY.
				2.10	4.07		End of Pit at 2.10m

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4

Remarks: Pit terminated in the Tidal Flat Deposits.

Stability:

AGS

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Trial Pit Log

TrialPit No: 4CH5
Sheet 1 of 1

Project Name: Llanwern	Project No. 5111373_LLA	Co-ords: 335984.00 - 186662.00 Level: 6.39	Date 11/10/2018
Location: Llanwern, Newport		Dimensions (m):	Scale 1:20
Client: St Modwen Developments		Depth 2.60	Logged JF

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.50	ES					MADE GROUND. Dark brown/red sandy gravel with cobbles. Gravels and cobbles are medium to coarse, sub-angular to sub-rounded of iron ore aggregate, concrete, blast furnace slag, mudstone and occasional steel slag.
	1.00	B					
	1.00	ES					
	1.80	ES					
▼							
	2.50	ES		2.50	3.89		Firm blue silty CLAY.
				2.60	3.79		End of Pit at 2.60m

1
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4

Remarks: Pit terminated in the Tidal Flat Deposits.

Stability:

AGS

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Trial Pit Log

TrialPit No: 4CH6
Sheet 1 of 1

Project Name: Llanwern	Project No. 5111373_LLA	Co-ords: 335983.00 - 186632.00 Level: 6.51	Date 02/10/2018
Location: Llanwern, Newport		Dimensions (m):	Scale 1:20
Client: St Modwen Developments		Depth 3.40	Logged JF

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.50 0.50	B ES					MADE GROUND. Dark red/brown medium to coarse, sub-angular to sub-rounded gravels of iron ore, concrete, blast furnace slag, brick and steel slag.
	1.00	ES					
▼	1.50	ES					
	3.30	ES		3.30 3.40	3.21 3.11		Soft blue/brown peaty silty CLAY. End of Pit at 3.40m

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Remarks: Pit terminated in the Tidal Flat Deposits.

Stability:

AGS

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Trial Pit Log

TrialPit No: 4CI1
Sheet 1 of 1

Project Name: Llanwern	Project No. 5111373_LLA	Co-ords: 336004.00 - 186757.00 Level: 6.39	Date 11/10/2018
Location: Llanwern, Newport		Dimensions (m):	Scale 1:20
Client: St Modwen Developments		Depth 1.20	Logged JF

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.50	ES		0.70	5.69		MADE GROUND. Black gravelly sand with cobbles. Gravels and cobbles are fine to coarse, sub-angular to sub-rounded of brick, mudstone, concrete, blast funace slag and occasional steel slag.
	1.00	B					MADE GROUND. Hard dark blue/grey sandy gravel. Gravels are fine to coarse, sub-angular to sub-rounded of steel slag. Slight yellow colour from 0.7-1.0m.
	1.10	ES		1.20	5.19		End of Pit at 1.20m

Remarks: Refusal in hard ground.

Stability:

AGS

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Trial Pit Log

TrialPit No: 4CI2
Sheet 1 of 1

Project Name: Llanwern	Project No. 5111373_LLA	Co-ords: 336000.00 - 186732.00 Level: 6.25	Date 11/10/2018
Location: Llanwern, Newport		Dimensions (m):	Scale 1:20
Client: St Modwen Developments		Depth 1.80	Logged JF

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
							MADE GROUND. Light brown/grey sandy gravel with cobbles and occasional boulders. Gravels, cobbles and boulders are medium to very coarse, sub-angular to sub-rounded of iron ore aggregate, concrete, blast furnace slag, mudstone and steel slag.
	0.50	ES		0.50	5.75		MADE GROUND. Black gravelly sand with cobbles. Gravels and cobbles are fine to coarse, sub-angular to sub-rounded of iron ore aggregate, brick, concrete, blast funace slag and occasional steel slag.
	1.00	B					
	1.00	ES		1.10	5.15		MADE GROUND. Light grey gravelly sand with cobbles. Gravels and cobbles are fine to coarse, sub-angular to sub-rounded of concrete, brick and blast furnace slag.
	1.50	ES					
	1.70	ES		1.70	4.55		Soft blue/brown peaty silty CLAY.
				1.80	4.45		End of Pit at 1.80m

Remarks: Pit terminated in the Tidal Flat Deposits.

Stability:

AGS

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Trial Pit Log

TrialPit No: 4CI3
Sheet 1 of 1

Project Name: Llanwern	Project No. 5111373_LLA	Co-ords: 335999.00 - 186707.00 Level: 6.16	Date 11/10/2018
Location: Llanwern, Newport		Dimensions (m):	Scale 1:20
Client: St Modwen Developments		Depth 0.80	Logged JF

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.50	ES					MADE GROUND. Light brown/grey sandy gravel with cobbles and occasional boulders. Gravels, cobbles and boulders are medium to very coarse, sub-angular to sub-rounded of iron ore aggregate, concrete, blast furnace slag, mudstone and steel slag.
				0.70	5.46		MADE GROUND. Hard light grey/blue medium to coarse angular sandy gravel of steel slag.
	0.80 0.80	B ES		0.80	5.36		End of Pit at 0.80m

Remarks: Refusal in hard ground.

Stability:

AGS

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Member of the SNC-Lavalin Group

Trial Pit Log

TrialPit No: 4CI4
Sheet 1 of 1

Project Name: Llanwern	Project No. 5111373_LLA	Co-ords: 335998.00 - 186682.00 Level: 6.09	Date 11/10/2018
Location: Llanwern, Newport		Dimensions (m):	Scale 1:20
Client: St Modwen Developments		Depth 2.60	Logged JF

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.50 0.50	B ES					MADE GROUND. Dark brown/red sandy gravel with cobbles and occasional boulders. Gravels, cobbles and boulders are medium to very coarse, sub-angular to sub-rounded of iron ore aggregate, concrete, blast furnace slag, mudstone and occasional steel slag.
	1.00	ES					
▼							
	2.50	ES		2.50	3.59		Firm blue silty CLAY.
				2.60	3.49		End of Pit at 2.60m

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Remarks: Pit terminated in the Tidal Flat Deposits.

Stability:

AGS

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Member of the SNC-Lavalin Group

Trial Pit Log

TrialPit No: 4CI5
Sheet 1 of 1

Project Name: Llanwern	Project No. 5111373_LLA	Co-ords: 336014.00 - 186656.00 Level: 6.17	Date 17/10/2018
Location: Llanwern, Newport		Dimensions (m):	Scale 1:20
Client: St Modwen Developments		Depth 1.20	Logged DP

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.20	5.97		MADE GROUND. Dark red/brown slightly clayey sandy gravel with cobbles. Gravels and cobbles are fine to coarse, sub-angular to sub-rounded of iron ore aggregate, blast furnace slag, concrete and brick.
	0.50	ES					MADE GROUND. ark grey slightly clayey gravelly sand. Gravels are fine to coarse, angular to sub-rounded blast furnace slag, steel slag and concrete.
	1.00	ES					
				1.20	4.97		End of Pit at 1.20m

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Remarks: Trial pit refused on concrete slab.

Stability:

AGS

ATKINS
Member of the SNC-Lavalin Group

Trial Pit Log

TrialPit No: 4CI6
Sheet 1 of 1

Project Name: Llanwern	Project No. 5111373_LLA	Co-ords: 336014.00 - 186633.00 Level: 6.12	Date 17/10/2018
Location: Llanwern, Newport		Dimensions (m):	Scale 1:20
Client: St Modwen Developments		Depth 2.30	Logged DP

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.30	5.82		MADE GROUND. Dark red/brown slightly clayey sandy gravel with cobbles. Gravels and cobbles are fine to coarse, sub-angular to sub-rounded of iron ore aggregate, blast furnace slag, concrete and brick.
	0.50	ES					MADE GROUND. Dark grey sandy gravel with cobbles. Gravels and cobbles are fine to coarse, angular to sub-rounded of steel slag, concrete and brick.
	1.00	ES					
▼				2.10	4.02		Firm bluish grey mottled light brown silty CLAY.
	2.20	ES		2.30	3.82		End of Pit at 2.30m

Remarks: Trial pit terminated in natural arisings.

Stability:

AGS

ATKINS
Member of the SNC-Lavalin Group

Trial Pit Log

TrialPit No
4CI7
Sheet 1 of 1

Project Name: Llanwern	Project No. 5111373_LLA	Co-ords: 336009.00 - 186607.00 Level: 6.09	Date 17/10/2018
Location: Llanwern, Newport		Dimensions (m):	Scale 1:20
Client: St Modwen Developments		Depth 1.90	Logged DP

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.15	5.94		MADE GROUND. Dark red/brown slightly sandy, slightly gravelly clay with frequent rootlets. Gravels are fine to coarse, sub-angular to sub-rounded of iron ore aggregates.
	0.50	ES					MADE GROUND. Dark red/brown slightly clayey sandy gravel with cobbles. Gravels and cobbles are fine to coarse, sub-angular to sub-rounded of iron ore aggregate, blast furnace slag, steel slag, concrete and brick.
	1.00	ES					
				1.70	4.39		Firm bluish grey silty CLAY with frequent partly decomposed rootlets.
	1.80	ES		1.90	4.19		End of Pit at 1.90m

Remarks: Trial pit terminated in natural arisings.

Stability:

AGS

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Trial Pit Log

TrialPit No: 4CJ1
Sheet 1 of 1

Project Name: Llanwern	Project No. 5111373_LLA	Co-ords: 336033.00 - 186757.00 Level: 6.40	Date 17/10/2018
Location: Llanwern, Newport		Dimensions (m):	Scale 1:20
Client: St Modwen Developments		Depth 2.70	Logged DP

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
							MADE GROUND. Dark red/brown sandy gravel with cobbles. Gravels and cobbles are fine to coarse, sub-angular to sub-rounded of iron ore aggregate, blast furnace slag, concrete and brick.
				0.30	6.10		MADE GROUND. Dark grey sandy gravel. Gravels are fine to coarse, sub-angular to sub-rounded of steel slag, blast furnace slag and brick.
	0.50	ES					*0.40m diameter conrete and rebar pillar in southern pit wall.*
	1.00	ES					
				1.70	4.70		MADE GROUND. Red/brown, wet, slightly clayey sandy gravel. Gravels are fine to coarse, sub-angular to sub-rounded of iron ore aggregate, steel slag and blast furnace slag. Strong hydrocarbon odour.
▼							*Metal sheet (0.80 x 0.60 x 0.05m).*
				2.50	3.90		Soft to firm blue/grey mottled light and dark green silty CLAY.
	2.70	ES		2.70	3.70		End of Pit at 2.70m

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Remarks: Trial pit terminated in natural arisings.

Stability:

AGS

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Trial Pit Log

TrialPit No: 4CJ2
Sheet 1 of 1

Project Name: Llanwern	Project No. 5111373_LLA	Co-ords: 336032.00 - 186732.00 Level: 6.40	Date 17/10/2018
Location: Llanwern, Newport		Dimensions (m):	Scale 1:20
Client: St Modwen Developments		Depth 2.30	Logged DP

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
							MADE GROUND. Dark red/brown sandy gravel with cobbles. Gravels and cobbles are fine to coarse, sub-angular to sub-rounded of blast furnace slag, iron ore aggregate, concrete and brick
				0.30	6.10		MADE GROUND. Dark greyish brown slightly clayey sandy gravel with cobbles. Gravels and cobbles are fine to coarse, sub-angular to sub-rounded of iron or aggregate, blast furnace slag, steel slag, brick, concrete and rebar. Low sub-rounded concrete boulder content.
	0.50	ES					
	1.00	ES					
							Rebar orientated north to south in western side of pit.
	2.00	ES					
▼				2.10	4.30		MADE GROUND. Dark brown/grey slightly clayey gravelly sand. Gravels are fine to coarse angular to sub-rounded of blast furnace slag and steel slag.
				2.30	4.10		End of Pit at 2.30m

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Remarks: Trial pit refused on possible concrete slab at base.

Stability:

AGS

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Trial Pit Log

TrialPit No
4CJ3
Sheet 1 of 1

Project Name: Llanwern	Project No. 5111373_LLA	Co-ords: 336029.00 - 186707.00 Level: 6.33	Date 17/10/2018
Location: Llanwern, Newport		Dimensions (m):	Scale 1:20
Client: St Modwen Developments		Depth 2.00	Logged DP

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
							MADE GROUND. Dark red/brown slightly clayey sandy gravel with cobbles. Gravels and cobbles are fine to coarse, sub-angular to sub-rounded of iron ore aggregate, blast furnace slag, concrete and brick.
	0.50	ES		0.40	5.93		MADE GROUND. Dark grey/brown sandy gravel. Gravels are fine to coarse, angular to sub-rounded of blast furnace slag, iron ore aggregate and brick.
	1.00	ES					*Solid steel bar in eastern side of pit (2.70 x 0.50m).*
▼	1.50	ES					*Concrete ledge running north west to south east through centre of pit.*
				1.60	4.73		MADE GROUND. Dark grey gravelly fine to coarse sand and cobbles. Gravels and cobbles are fine to coarse, sub-angular to sub-rounded of blast furnace slag, concrete and brick.
	1.90	ES		1.90	4.43		Soft to firm bluish grey mottled dark green and orangish brown silty CLAY with frequent partly decomposed rootlets.
				2.00	4.33		End of Pit at 2.00m

Remarks: Trial pit terminated in natural arisings.

Stability:

AGS

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Trial Pit Log

TrialPit No 4CJ4
Sheet 1 of 2

Project Name: Llanwern	Project No. 5111373_LLA	Co-ords: 336028.00 - 186682.00 Level: 6.23	Date 17/10/2018
Location: Llanwern, Newport		Dimensions (m):	Scale 1:20
Client: St Modwen Developments		Depth 2.10	Logged DP

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
							MADE GROUND. Dark red/brown sandy gravel with cobbles. Gravels and cobbles are fine to coarse, sub-angular to sub-rounded of iron ore aggregate.
				0.35	5.88		MADE GROUND. Light grey sandy gravel and cobbles. Gravels and cobbles are fine to coarse, angular to sub-angular of brick and fused slag.
				0.90	5.33		MADE GROUND. Dark grey/brown, wet, sandy gravel. Gravels are fine to coarse, angular to sub-rounded of blast furnace slag, steel slag, iron ore aggregate, brick and concrete.
	1.00	ES					
▼	1.40	ES					
							Yellow/grey blast furnace slag band.
				1.90	4.33		Firm bluish grey silty CLAY.
	2.00	ES					
				2.10	4.13		End of Pit at 2.10m
							Continued on Next Sheet

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Remarks: Trial pit terminated in natural arisings.

Stability:

AGS

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Trial Pit Log

TrialPit No
4CJ4
Sheet 2 of 2

Project Name: Llanwern	Project No. 5111373_LLA	Co-ords: 336028.00 - 186682.00 Level: 6.23	Date 17/10/2018
Location: Llanwern, Newport		Dimensions (m):	Scale 1:20
Client: St Modwen Developments		Depth 2.10	Logged DP

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	5.00	ES					

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8

Remarks: Trial pit terminated in natural arisings.

Stability:

AGS

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Trial Pit Log

TrialPit No
4CJ5
Sheet 1 of 1

Project Name: Llanwern	Project No. 5111373_LLA	Co-ords: 336024.00 - 186656.00 Level: 6.11	Date 17/10/2018
Location: Llanwern, Newport		Dimensions (m):	Scale 1:20
Client: St Modwen Developments		Depth 1.80	Logged DP

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
							MADE GROUND. Dark red/brown sandy gravel with cobbles. Gravels and cobbles are fine to coarse, sub-angular to sub-rounded of iron ore aggregate, blast furnace slag and brick.
	0.50	ES		0.40	5.71		MADE GROUND. Dark grey/brown sandy gravel and cobbles. Gravels and cobbles are fine to coarse, angular to sub-rounded of blast furnace slag, fused slag and concrete.
							Bundle of wires in north east corner of pit.
	1.00	ES					
▼				1.30	4.81		MADE GROUND. Dark red/brown slightly clayey sandy gravel with cobbles. Gravels and cobbles are fine to coarse, sub-angular to sub-rounded of iron ore aggregate, blast furnace slag and frequents pockets (<40mm) of soft grey silty clay.
				1.60	4.51		Firm bluish grey silty CLAY.
	1.70	ES					
				1.80	4.31		End of Pit at 1.80m

Remarks: Trial pit terminated in natural arisings.

Stability:

AGS

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Trial Pit Log

TrialPit No
4CK2
Sheet 1 of 1

Project Name: Llanwern	Project No. 5111373_LLA	Co-ords: 336050.00 - 186732.00 Level: 6.04	Date 18/10/2018
Location: Llanwern, Newport		Dimensions (m):	Scale 1:20
Client: St Modwen Developments		Depth 1.30	Logged DP

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
							MADE GROUND. Dark red/brown slightly sandy clayey gravel with cobbles. Gravels and cobbles are fine to coarse, sub-angular to sub-rounded of iron ore aggregate, blast furnace slag, concrete and brick.
				0.80	5.24		MADE GROUND. Light yellow/grey sandy silt.
				1.30	4.74		*Black silt in eastern side of pit.* End of Pit at 1.30m

Remarks: Trial pit refused on concrete slab.

Stability:

AGS

Trial Pit Log

TrialPit No **4EA7** Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336038E - 186602N Level: 5.80	Date 01/11/2018
Location: Llanwern		Dimensions (m): 2.50 × 0.60 Depth 2.20	Scale 1:25
Client: St Modwen Developments			Logged DP - ATKINS

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
0.40		ES		5.35	0.45	MADE GROUND. Dark red/brown slightly sandy clayey gravel with cobbles. Gravels and cobbles are fine to coarse, sub-angular to sub-rounded of iron ore aggregate, blast furnace slag, concrete and brick.		
0.90		ES				MADE GROUND. Dark grey sandy gravel with cobbles. Gravels and cobbles are fine to coarse, sub-angular to sub-rounded of blast furnace slag, steel slag and brick.		▼
1.50		B				*White silt in western face of pit.*		
2.10		ES		3.80 3.60	2.00 2.20	Firm bluish grey silty CLAY. (TIDAL FLAT DEPOSITS) End of Pit at 2.200m		

1 2 3 4 5

Remarks: Trial pit terminated in natural arisings.

Stability:

AGS

Trial Pit Log

TrialPit No **4EA8** Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336040E - 186577N Level: 6.04	Date 31/10/2018
Location: Llanwern		Dimensions (m): 2.50 × 0.60 Depth 1.90	Scale 1:25
Client: St Modwen Developments			Logged DP - ATKINS

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
				5.64	0.40	MADE GROUND. Dark red/brown slightly sandy silty gravel with cobbles. Gravels and cobbles are fine to coarse, sub-angular to sub-rounded of iron ore aggregate, blast furnace slag and concrete.		
0.50		ES				MADE GROUND. Dark grey/brown sandy gravel and cobbles. Gravels and cobbles are fine to coarse, angular to sub-angular of blast furnace slag and steel slag.		
1.00		ES		4.94	1.10	MADE GROUND. Dark red/brown slightly clayey sandy gravel with cobbles. Gravels and cobbles are fine to coarse, sub-angular to sub-rounded of iron ore aggregate, brick and concrete.		
1.50		B		4.39	1.65	Firm greenish grey silty CLAY. (TIDAL FLAT DEPOSITS)		
				4.14	1.90	End of Pit at 1.900m		
2.60		ES						

Remarks: Trial pit terminated in natural arisings.

Stability:

Trial Pit Log

TrialPit No **4EB7**
Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336063E - 186604N Level: 5.80	Date 01/11/2018
Location: Llanwern		Dimensions (m): 2.50 × 0.60 Depth 1.80	Scale 1:25
Client: St Modwen Developments			Logged DP - ATKINS

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
				5.60	0.20	MADE GROUND. Dark red/brown slightly sandy clayey gravel with cobbles. Gravels and cobbles are fine to coarse, sub-angular to sub-rounded of iron ore aggregate, blast furnace slag, concrete and brick.		
0.50 0.50		B ES				MADE GROUND. Dark grey sandy gravel with cobbles. Gravels and cobbles are fine to coarse, sub-angular to sub-rounded of blast furnace slag, steel slag and brick.		
1.60		ES		4.20	1.60	Firm locally soft bluish grey silty CLAY. (TIDAL FLAT DEPOSITS)		
				4.00	1.80	End of Pit at 1.800m		

Remarks: Trial pit terminated in natural arisings.

Stability:

Trial Pit Log

TrialPit No **4EC1**
Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336089E - 186746N Level: 6.51	Date 29/10/2018
Location: Llanwern		Dimensions (m): 2.50 × 0.60 Depth 0.43	Scale 1:25
Client: St Modwen Developments			Logged GR - ATKINS

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
0.20		ES		6.26	0.25	MADE GROUND. Dark brown gravelly sand. Gravel are fine to coarse, angular to subangular concrete, slag, coke and mudstone.		
0.30		B						
0.40		ES		6.08	0.43	MADE GROUND. Black ashy gravelly sand. Gravel are fine to coarse, angular to sub-angular tarmac-slag.		
						End of Pit at 0.430m		
1.00		ES						

Remarks: Refusal. Very hard thick tarmac (mixed with slag)

Stability:

Trial Pit Log

TrialPit No **4EC2**
Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336090E - 186726N Level: 6.26	Date 29/10/2018
Location: Llanwern		Dimensions (m): 2.50 × 0.60 Depth 1.70	Scale 1:25
Client: St Modwen Developments			Logged GR - ATKINS

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
				6.01	0.25	MADE GROUND. Brown gravelly sand. Gravel are fine to coarse, angular to sub-rounded of mudstone and bricks fragments.		
0.50		ES				MADE GROUND. Dark brown/black gravelly sand. Gravel are fine to coarse, angular to subangular of slag, concrete, mudstone and coke. *Ashy*		
				5.56	0.70	MADE GROUND. Light brown/orange silty clayey gravelly sand with cobbles. Gravels are are fine to coarse, angular to subangular of slag, concrete, mudstone and coke. Cobbles of slag.		
1.00		B						
1.00		ES						
				4.76	1.50	MADE GROUND. Dark brown/black gravelly clay with cobbles. Gravel and cobbles are fine to coarse, angular to subangular of slag.		
1.65		ES		4.66	1.60			
				4.56	1.70	Firm Blue silty CLAY. (TIDAL FLAT DEPOSITS)		
						End of Pit at 1.700m		

Remarks: Pit terminated in the Tidal Flat Deposits.

Stability:

Trial Pit Log

TrialPit No **4EC4**

Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336088E - 186675N Level: 6.28	Date 30/10/2018
Location: Llanwern		Dimensions (m): 2.50 × 0.60 Depth 2.30	Scale 1:25
Client: St Modwen Developments			Logged GR - ATKINS

Samples & In Situ Testing				Level (m)		Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results						
0.50		ES		5.73		0.55	MADE GROUND. Brown/slightly red sand and gravel. Gravel are fine to coarse, angular to sub-rounded of slag, concrete, iron ore aggregate and iron pegs.		
1.00		B			1		MADE GROUND. Dark grey/brownish gravelly sand with cobbles and boulders. Gravels are and cobbles are fine to coarse of angular to sub-rounded of slag, concrete, iron ore aggregate / iron pegs. Boulders are of slag/concrete aggregate. *Hard to dig.*		
1.00		ES							
2.25		ES		4.08	2	2.20	Firm Blue silty CLAY. (TIDAL FLAT DEPOSITS)		
				3.98		2.30	End of Pit at 2.300m		
					3				
					4				
					5				

Remarks: Pit terminated in the Tidal Flat Deposits.

Stability:

Trial Pit Log

TrialPit No **4EC7**
Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336087E - 186606N Level: 5.86	Date 01/11/2018
Location: Llanwern		Dimensions (m): 2.50 × 0.60 Depth 1.90	Scale 1:25
Client: St Modwen Developments			Logged DP - ATKINS

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
0.50		ES				MADE GROUND. Dark red/brown slightly sandy clayey gravel with cobbles. Gravels and cobbles are fine to coarse, sub-angular to sub-rounded of iron ore aggregate, blast furnace slag, concrete and brick.		
				5.16	0.70			
1.00		ES				MADE GROUND. Dark grey sandy gravel with cobbles. Gravels and cobbles are fine to coarse, sub-angular to sub-rounded of blast furnace slag and steel slag.		▼
1.80		ES		4.06	1.80			
				3.96	1.90	Firm bluish grey silty CLAY. (TIDAL FLAT DEPOSITS)		
						End of Pit at 1.900m		

Remarks: Trial pit terminated in natural arisings.

Stability:

Trial Pit Log

TrialPit No **4ED1** Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336113E - 186747N Level: 6.52	Date 29/10/2018
Location: Llanwern		Dimensions (m): 2.50 × 0.60 Depth 1.85	Scale 1:25
Client: St Modwen Developments			Logged GR - ATKINS

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
0.50		ES		5.92	0.60	MADE GROUND. Brown gravelly sand. Gravel are fine to coarse, angular to subangular of concrete, slag, coke and mudstone. *Hard layer of aggregate of slag/concrete/tarmac.*		
1.00 1.00		B ES				MADE GROUND. Dark brown/black gravelly clayey sand with few boulders of concrete. Gravel are fine to coarse, angular to subangular of concrete, slag, coke and mudstone.		
1.80		ES		4.77 4.67	1.75 1.85	Soft to firm peaty-CLAY. (TIDAL FLAT DEPOSITS) End of Pit at 1.850m		

Remarks: Pit terminated in the Tidal Flat Deposits.

Stability:

Trial Pit Log

TrialPit No **4ED2** Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336114E - 186730N Level: 6.42	Date 29/10/2018
Location: Llanwern		Dimensions (m): 2.50 × 0.60 Depth 1.20	Scale 1:25
Client: St Modwen Developments			Logged GR - ATKINS

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
				6.17	0.25	MADE GROUND. Brown gravelly sand. Gravel are fine to coarse, angular to subangular of bricks, mudstone.		
0.25		ES		6.09	0.33	MADE GROUND. Black ashy gravelly sand. Gravel are fine to coarse, angular to subangular of coke and slag.		
						MADE GROUND. Dark grey/blueish gravelly sand with cobbles. Gravel and cobbles are fine to coarse, angular to subangular of blast furnace / steel slag, concrete, coke and mudstone.		
						Hard to dig		
1.00		B						
1.00		ES						
				5.22	1.20	End of Pit at 1.200m		

Remarks: Refusal. Hard layer of blust furnace and steel slag.

Stability:

Trial Pit Log

TrialPit No **4ED4**
Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336115E - 186675N Level: 6.21	Date 30/10/2018
Location: Llanwern		Dimensions (m): 2.50 × 0.60 Depth 2.20	Scale 1:25
Client: St Modwen Developments			Logged GR - ATKINS

Samples & In Situ Testing				Level (m)		Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results						
0.50		ES					MADE GROUND. Dark brown/ slightly black clayey gravelly sand. Gravel are fine to coarse, angular to subangular of slag, concrete, clayey aggregate, coke and bricks fragments.		
				5.31	1	0.90			
1.00		B					MADE GROUND. Brownish/greyish gravelly sand. Gravel are fine to coarse, angular to subangular of slag, concrete and occasionally coke.		
1.20		ES							
				4.71		1.50	MADE GROUND. Light brown gravelly sandy clay with cobbles. Gravel and cobbles are fine to coarse, angular to subangular of slag, concrete, slag/concrete aggregate and occasionally coke.		
				4.21	2	2.00	Firm Blue silty CLAY. (TIDAL FLAT DEPOSITS)		
2.10		ES							
				4.01		2.20	End of Pit at 2.200m		
					3				
					4				
					5				

Remarks: Pit terminated in the Tidal Flat Deposits.

Stability:

Trial Pit Log

TrialPit No **4ED7** Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336119E - 186606N Level: 5.82	Date 01/11/2018
Location: Llanwern		Dimensions (m): 2.50 × 0.60 Depth 2.00	Scale 1:25
Client: St Modwen Developments			Logged DP - ATKINS

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
0.50		ES		5.22	0.60	MADE GROUND. Dark red/brown slightly sandy clayey gravel with cobbles. Gravels and cobbles are fine to coarse, sub-angular to sub-rounded of iron ore aggregate, blast furnace slag, concrete and brick.		
1.00		B				MADE GROUND. Dark grey sandy gravel with cobbles. Gravels and cobbles are fine to coarse, sub-angular to sub-rounded of iron ore aggregate, blast furnace slag and brick.		▼
1.90		ES		3.92	1.90	Firm bluish grey silty CLAY. (TIDAL FLAT DEPOSITS)		
				3.82	2.00	End of Pit at 2.000m		

1 2 3 4 5

Remarks: Trial pit terminated in natural arisings.

Stability:

AGS

Trial Pit Log

TrialPit No **4EE2**
Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336140E - 186726N Level: 6.63	Date 29/10/2018
Location: Llanwern		Dimensions (m): 2.50 × 0.60 Depth 2.70	Scale 1:25
Client: St Modwen Developments			Logged GR - ATKINS

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
0.20		ES		6.38	0.25	MADE GROUND. Brown gravelly sand. Gravel are fine to coarse, angular to subangular of concrete, slag, coke and mudstone. *Hard layer of aggregate of slag/concrete/tarmac.*		
0.50		ES				MADE GROUND. Dark brown/black gravelly clayey sand with few boulders of concrete. Gravel are fine to coarse, angular to subangular of concrete, slag, coke and mudstone.		
				5.93	0.70	MADE GROUND. Dark to light grey/black sand and gravel with cobbles and few boulders. Gravel, cobbles and boulders are fine to coarse, angular to sub-angular of blast furnace slag, steel slag and iron ore aggregate. *Hard steel slag and blast furnace slag layer at the top.*		
1.30		ES						
1.50		ES				*Hard layer of light grey slag with boulders/cobbles of iron pellets/iron ore aggregate.*		
				5.03	1.60	MADE GROUND. Light brown/orange gravelly sandy clay with cobbles. Gravel and cobbles are fine to coarse, angular of blast furnace and steel slag.		▼
						Layer gets more gravelly.		
				4.13	2.50	Firm Blue silty CLAY. (TIDAL FLAT DEPOSITS)		
2.60		ES		3.93	2.70	End of Pit at 2.700m		

1 2 3 4 5

Remarks: Pit terminated in the Tidal Flat Deposits.

Stability:

Trial Pit Log

TrialPit No **4EE4** Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336139E - 186675N Level: 6.45	Date 30/10/2018
Location: Llanwern		Dimensions (m): 2.50 × 0.60 Depth 2.20	Scale 1:25
Client: St Modwen Developments			Logged GR - ATKINS

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
0.50		ES				MADE GROUND. Black gravelly sand with cobbles. Gravel and cobbles are fine to coarse, angular of bricks, concrete, concrete/ slag, coke, plastic, metals pieces, fibrous material. *Ashy*		
1.00		ES						
1.50		B		5.05	1.40	MADE GROUND. Light brown to black gravelly clayey sand with yellowish clay. *Light HC odour. Spots of tar present.*		▼
1.50		ES						
2.10		ES		4.45	2.00	Firm Blue silty CLAY. (TIDAL FLAT DEPOSITS)		
				4.25	2.20	End of Pit at 2.200m		

Remarks: Pit terminated in the Tidal Flat Deposits.

Stability:

Trial Pit Log

TrialPit No **4EE5** Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336138E - 186651N Level: 6.04	Date 30/10/2018
Location: Llanwern		Dimensions (m): 2.50 × 0.60 Depth 2.00	Scale 1:25
Client: St Modwen Developments			Logged GR - ATKINS

Samples & In Situ Testing				Level (m)		Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results						
				5.94		0.10	MADE GROUND. Hard Tarmac.		
0.20		ES					MADE GROUND. Brown/grey gravelly sand. Gravel are fine to coarse, angular of blast furnace and steel slag.		
				5.69		0.35	MADE GROUND. Brown/grey/blue/purple gravelly coarse sand. Gravel are fine to coarse, angular to subrounded of steel slag, concrete, mudstone, clay aggregate and coke.		
0.80		ES							
1.00		B			1				▼
				4.54		1.50	MADE GROUND. Light brown clayey sandy gravel. Gravel are fine to coarse of bricks, slag and slag/bricks aggregate.		
				4.14		1.90	Firm Blue silty CLAY. (TIDAL FLAT DEPOSITS)		
1.95		ES		4.04	2	2.00	End of Pit at 2.000m		
					3				
					4				
					5				

Remarks: Pit terminated in the Tidal Flat Deposits.

Stability:

Trial Pit Log

TrialPit No **4EE6**
Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336138E - 186627N Level: 6.07	Date 30/10/2018
Location: Llanwern		Dimensions (m): 2.50 × 0.60 Depth 1.90	Scale 1:25
Client: St Modwen Developments			Logged GR - ATKINS

Samples & In Situ Testing				Level (m)		Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results						
				5.97		0.10	MADE GROUND. Tarmac.		
							MADE GROUND. Light brown gravelly sand. Gravel are fine to coarse, angular to subangular of slag, concrete, bricks.		
				5.77		0.30	MADE GROUND. Grey to light grey sand and gravel. Gravel are fine to coarse, angular to subangular of slag, concrete and bricks.		
				5.07	1	1.00	MADE GROUND. Light brown sandy clayey gravel. Gravel are fine to coarse, angular to subangular of slag, concrete and bricks.		▼
				4.32		1.75	Firm Blue silty CLAY. (TIDAL FLAT DEPOSITS)		
				4.17		1.90	End of Pit at 1.900m		
					2				
					3				
					4				
					5				

Remarks: Pit terminated in the Tidal Flat Deposits.

Stability:

Trial Pit Log

TrialPit No **4EE7**
Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336147E - 186602N Level: 6.20	Date 30/10/2018
Location: Llanwern	Dimensions (m): 2.50 × 0.60		Scale 1:25
Client: St Modwen Developments	Depth 1.80		Logged GR - ATKINS

Samples & In Situ Testing				Level (m)		Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results						
0.30		ES		5.80		0.40	MADE GROUND. Light to dark brown gravelly sand. Gravel are fine to coarse, angular to sub-angular of steel slag, iron ore aggregate and iron ore pellets.		
							Iron ore aggregate/pellets.		
0.80		B					MADE GROUND. Grey/blueish steel slag.		
0.80		ES							
				5.20	1	1.00	MADE GROUND. Grey/light brown coarse sandy gravel. Gravel are fine to coarse, angular to subangular of steel slag and bricks.		▼
							Strong HC odour		
1.75		ES		4.50		1.70	Soft to firm peaty-CLAY. (TIDAL FLAT DEPOSITS)		
				4.39		1.80	End of Pit at 1.800m		
					2				
					3				
					4				
					5				

Remarks: Pit terminated in the Tidal Flat Deposits.

Stability:

Trial Pit Log

TrialPit No **4EF6**
Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336164E - 186627N Level: 5.84	Date 30/10/2018
Location: Llanwern		Dimensions (m): 2.50 × 0.60 Depth 1.60	Scale 1:25
Client: St Modwen Developments			Logged GR - ATKINS

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
				5.74	0.10	MADE GROUND. Tarmac		
						MADE GROUND. Grey/light brown gravelly sand. Gravel are fine to coarse, angular to subangular of slag, concrete, bricks.		
0.30		ES						
0.40		B		5.39	0.45	MADE GROUND. Dark brown sandy gravel. Gravel are fine to coarse, angular to sub-angular of blast furnace slag.		
0.80		ES						
1.55		ES		4.34	1.50	Soft to firm peaty-CLAY. (TIDAL FLAT DEPOSITS)		
				4.24	1.60	End of Pit at 1.600m		

Remarks: Pit terminated in the Tidal Flat Deposits.

Stability:

Trial Pit Log

TrialPit No **4EG4**

Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336190E - 186676N Level: 6.32	Date 30/10/2018
Location: Llanwern		Dimensions (m): 2.50 × 0.60 Depth 2.00	Scale 1:25
Client: St Modwen Developments			Logged GR - ATKINS

Samples & In Situ Testing				Level (m)		Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results						
0.50		ES					MADE GROUND. Black/dark brown gravelly sand. Gravel are fine to coarse, angular to subangular of bricks, concrete, concrete/slag aggregate, coke.		
				5.62		0.70			
1.00		B			1		MADE GROUND. Dark brown/slightly black clayey sandy gravel with cobbles. Gravel and cobbles are fine to coarse, angular of blast furnace slag, concrete, bricks.		▼
1.00		ES							
1.90		ES		4.42		1.90	Firm Blue silty CLAY. (TDIAL FLAT DEPOSITS)		
				4.32	2	2.00	End of Pit at 2.000m		
					3				
					4				
					5				

Remarks: Pit terminated in the Tidal Flat Deposits.

Stability:

Appendix H
Chemical Testing and Screening

P18-669 Llanwern Phase 4G Soil Chemical Screening Results

Project: P18-669												RLL Grid Ref:	S25	S25	S25	S25	S27	S27	S27	S27	T27	T27	T27	T27	T22	T22	T22	T23	T23	T23	T26	T26	T26	T26
Client: Rodgers Leask Environmental				Job No.:									181012-49	181012-49	181012-49	181012-49	181003-43	181003-43	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
Quotation No.: Q21-24056				Sample ID.:									18512158	18511962	18511966	18511972	18449389	18449394	18449398	18449417	18449372	18449376	18449380	18449385	18512075	18512084	18512113	18512054	18512064	18512103	18512129	18512139	18512148	18512154
Order No.: .				Client Sample Ref.:	Generic Assessment Criteria (GAC) Residential End Use with Homegrown Produce (SOM 1%)								4C-G4	4C-G4	4C-G4	4C-G4-V	4C-G5	4C-G5	4C-G5	4C-G5-V	4C-G6	4C-G6	4C-G6	4C-G6-V	4C-H1	4C-H1	4C-H1-V	4C-H2	4C-H2	4C-H2-V	4C-H4	4C-H4	4C-H4-V
				Sample Type:																														
				Top Depth (m):									0.50-0.50	1.20-1.20	1.80-1.80	2.40-2.40	0.50-0.50	1.00-1.00	1.50-1.50	2.80-2.80	0.30-0.30	1.00-1.00	1.50-1.50	2.90-2.90	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	1.00-1.00	1.60-1.60	2.00-2.00
				Bottom Depth (m):																														
				Date Sampled:									11/10/2018	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	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
				Asbestos Lab:																														
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		**Number of Exceedances**	**Maximum Concentration Check**	**Minimum Exceedance Concentration**	**Maximum Concentration**	**Average Concentration**	**Minimum Concentration**																									
ACM Type	U	2192		N/A																														
Asbestos Identification	U	2192		N/A		8							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									-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Asbestos	U	2192	%	0.001									-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Moisture	N	2030	%	0.020									5.05	6.62	0.436	2.69	5.45	7.9	2.21	1.72	2.83	0.974	1.44	43.6	9.78	7.02	1.07	26	10.9	1.33	5.71	4.29	4.31	5.5
Soil Colour	N	2040		N/A									Dark Brown	Dark Brown	Dark Brown	Grey	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	Grey	Dark Brown	Dark Brown	Dark Brown	Grey
Other Material	N	2040		N/A									Vegetation	Vegetation	Vegetation	Vegetation	Stones	Stones	Stones	Vegetation	Crushed Brick	Stones	Stones	Vegetation	Stones	Vegetation	Vegetation	Stones	Stones	N/A	Stones	Stones	Stones	Vegetation
Soil Texture	N	2040		N/A									Sand	Stone/Soil	Stone/Soil	Silty Clay Loam	Stone/Soil	Stone/Soil	Stone/Soil	Silty Clay Loam	Sandy Loam	Sandy Loam	Loamy Sand	Silt Loam	Sand	Stone/Soil	Silty Clay	Sand	Sand	Silty Clay Loam	Sand	Sand	Sand	Sandy Silt Loam
pH	M	2010		4.0									9.01	11.9	11.8	7.73	11.4	11.3	11.7	8	9.69	11.4	11.2	6.87	8.82	9.27	8.54	8.68	8.89	8.08	9.23	9.32	8.98	7.4
Cyanide (Total)	M	2300	mg/kg	0.5					20.90	1.54	1.00		<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	0.5					378.00	51.99	12.00		<12	<12	<12	138	<12	<12	<12	116	<12	<12	<12	175	<12	<12	<12	<12	<12	62.5	<12	<12	<12	200
Iron (Total)	N	2430	mg/kg	100					352000.00	97927.86	13200.00		133000.00	121000	154000	32400	157000	155000	299000	32300	249000	352000	96500	23500	189000	150000	34100	136000	73800	38000	187000	196000	127000	28200
Arsenic	M	2450	mg/kg	1	37	1	141.00	141.00	141.00	11.78	2.33		7.22	8.6	6.66	16.7	8.55	12.1	10.4	13.3	6.4	9.75	13.4	27.4	10.1	12.2	17.8	11.2	15.7	18.4	13.9	14.8	10	14.2
Cadmium	M	2450	mg/kg	0.1	26	0	no exc.	0.00	3.48	0.31	0.02		0.94	<0.02	1.18	0.432	0.261	<0.2	0.711	<0.02	0.154	0.966	<0.02	<0.02	<0.2	<0.02	<0.02	0.998	<0.2	0.541	<0.2	<0.2	<0.2	0.475
Chromium	M	2450	mg/kg	1	910	0	no exc.	0.00	810.00	129.11	0.90		232.00	348	467	49.5	127	342	7.82	35.8	19.1	8.19	38.7	12.1	103	106	27.8	<0.9	<9	32.7	23.8	9.03	30.5	35
Manganese	M	2450	mg/kg	5					49400.00	9218.15	188.00		21100.00	26500	46100	915	13100	22000	6530	967	6670	10000	10400	708	9020	10600	719	3490	1690	782	10400	7880	5960	271
Copper	M	2450	mg/kg	0.5	2400	0	no exc.	0.00	286.00	23.48	4.45		18.30	27.7	29.7	11.9	14.6	23.1	20.8	17.1	10.3	24.7	14.9	20.7	16.1	32.5	10.5	19.5	23.9	11.2	20.6	19.1	12.5	14.6
Mercury	M	2450	mg/kg	0.1	1.2	2	2.17	1.61	2.17	0.62	0.14		<0.14	<0.14	<0.14	<0.14	<0.14	<1.4	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<1.4	<0.14	<0.14	<1.4	<1.4	<0.14	<1.4	<1.4	<0.14	<0.14
Nickel	M	2450	mg/kg	0.5	130	1	238.00	238.00	238.00	24.80	2.88		14.80	15.6	12.8	33	13.7	57.8	15.1	42.8	41.5	14.3	4.71	27.3	23.7	22.1	34.3	27.1	33.7	43	49.7	28	13.3	27.1
Lead	M	2450	mg/kg	0.5	200	0	no exc.	0.00	144.00	40.67	0.70		17.90	15.1	15.6	26.1	57.4	31.2	25	29.6	14.9	20.5	4.47	20.2	45.3	45.8	25.4	35.8	47.2	28.7	64.3	51.3	26	33.7
Selenium	M	2450	mg/kg	0.2	250	0	no exc.	0.00	24.30	6.10	1.00		7.09	7.8	12.3	<1	7.04	12.8	5.22	1.45	4.66	7.14	5.1	1.81	<10	1.71	<1	<1	<10	<1	<10	<10	1.25	<1
Vanadium	U	2450	mg/kg	5	410	14	1890.00	416.00	1890.00	181.60	10.50		911.00	941	1890	84.6	363	894	169	57	250	143	121	37.6	148	143	48.4	56.4	49.4	62.1	142	132	87.5	56.1
Zinc	M	2450	mg/kg	0.5	3700	0	no exc.	0.00	864.00	165.68	14.60		73.60	50.6	61.4	102	275	131	99.4	135	344	126	53.7	130	133	184	115	221	185	128	179	174	103	111
Organic Matter	M	2625	%	0.4					59.80	11.06	0.35		5.05	6.62	0.436	2.69	5.45	7.9	2.21	1.72	2.83	0.974	1.44	43.6	9.78	7.02	1.07	26	10.9	1.33	5.71	4.29	4.31	5.5
Aliphatic TPH >C5-C6	N	2680	mg/kg	1	42	0	no exc.	0.00	0.20	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	0.0274
Aliphatic TPH >C6-C8	N	2680	mg/kg	1	100	0	no exc.	0.00	3.32	0.05	0.00		<0.01	<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	0.0638
Aliphatic TPH >C8-C10	M	2680	mg/kg	1	27	1	46.70	46.70	46.70	0.39	0.01		<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	0.0851
Aliphatic TPH >C10-C12	M	2680	mg/kg	1	130	0	no exc.	0.00	112.00	0.93	0.01		<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	0.0623
Aliphatic TPH >C12-C16	M	2680	mg/kg	1	1.10E+03	0	no exc.	0.00	177.00	6.76	0.10		1.29	<0.1	<0.1	<0.1	21	29.2	43.3	<0.1	1.99	2.24	1.34	0.459	3.2	3.06	<0.1	1.2	1.98	<0.1	2.1	2.21	1.96	<0.1
Aliphatic TPH >C16-C21	M	2680	mg/kg	1	6.50E+04	0	no exc.	0.00	194.00	19.07	0.10		6.63	0.767	2.02	<0.1	46.4	67.6	73.5	1.13	10.2	11.9	6.8	2.49	14.6	22.8	<0.1	5	2.79	<0.1	12.8	10.7	19.3	<0.1
Aliphatic TPH >C21-C35	M	2680	mg/kg	1	6.50E+04	0	no exc.	0.00	821.00	79.37	0.10		73.70	20.6	33.6	<0.1	165	199	141	3.84	82.6	87.6	46.4	111	88.6	49.5	<0.1	52.1	34.7	<0.1	129	126	339	<0.1
Aliphatic TPH >C35-C44	M	2680	mg/kg	1	6.50E+04	0	no exc.	0.00	417.00	31.19	0.10		55.50	11.1	18.2	<0.1	42.5	49.3	30.2	0.405	30.7	15.5	4.23	2.3	32.9	11.9	<0.1	25.5	26.1	<0.1	69	82.2	203	<0.1
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5					4410.00	186.40	0.10		137	32.5	53.8	<0.1	275	345	288	5.37	125	117	58.8	117	139	87.3	<0.1	83.8	65.6	<0.1	213	221	564	<0.1
Aromatic TPH >C5-C7	N	2680	mg/kg	1	70	0	no exc.	0.00	0.20	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
Aromatic TPH >C7-C8	N	2680	mg/kg	1	130	0	no exc.	0.00	0.37	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
Aromatic TPH >C8-C10	M	2680	mg/kg	1	34	0	no exc.	0.00	31.10	0.26	0.01		<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	0.0562
Aromatic TPH >C10-C12	M	2680	mg/kg	1	74	1	112.00	112.00	112.00	0.91	0.01		<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	0.041
Aromatic TPH >C12-C16	M	2680	mg/kg	1	140	1	177.00	177.00	177.00	4.83	0.10		1.98	0.449	<0.1	<0.1	7.9	9.11	7.91	0.746	2.98	0.967	1.88	6.3	3.61	2.37	<0.1	1.51	1.07	<0.1	0.765	1.22	1.36	<0.1
Aromatic TPH >C16-C21	U	2680	mg/kg	1	260	0	no exc.	0.00	213.00	18.36	0.10		9.97	2.7	4.35	<0.1	23.9	27.7	22.2	1.38	10.5	5.39	6.94	13.1	15.1	12.9	<0.1	6.38	5.42	<0.1	7.79	7.41	18.7	0.248
Aromatic TPH >C21-C35	M	2680	mg/kg	1	1100	0	no exc.	0.00	561.00	92.00	0.10		113.00	19.7	41.1	0.186	112	143	75.2	13.9	63.5	42.8	31.5	546	91.6	62.6	<0.1	58.5	52.9	<0.1	145	146	460	21.8
Aromatic TPH >C35-C44	N	2680	mg/kg	1	1100	0	no exc.	0.00	597.00	49.49	0.10		109.00	9.57	21.5	<0.1	60.9	65.5	30.6	4.3	48.9	22.6	15.2	367	59.6	23.8	<0.1	51.1	58.9	<0.1	130	150	443	4.28
Total Aromatic Hydrocarbons	N	2680	mg/kg	5					1170.00	164.70	0.10		234	32.4	66.9	0.186	205	245	136	20.3	126	71.8	55.5	933	170	102	<0.1	118	118	<0.1	283	305	923	26.3
Total Petroleum Hydrocarbons	N	2680	mg/kg	10					5850.00	353.84	0.10		371	64.9	121	0.186	480	590	424	25.6	251	189	114	1050	309	189	<0.1	201	184	<0.1	496	526	1490	26.7
Benzene	M	2760	µg/kg	1	87	133	180.00	90.00	180.00	90.45	9.00		<90	<90	<9	<9	<90	<90	<90	<90	<90	<90	<90	<90	<180	<90	<9	<90	<180	<9	<90	<90	<90	<9
Toluene	M	2760	µg/kg	1	130000	0	no exc.	0.00	140.00	71.04	7.00		<70	<70	<7	<7	<70	<70	<70	<70	<70	<70	<70	<70	<140	<70	<7	<70	<140	<7	<70	<70	<70	<7
Ethylbenzene	M	2760	µg/kg	1	47000	0	no exc.	0.00	102.00	40.64	4.00		<40	<40	<4	<4	<40	<40	<40	<40	<40	<40	<40	<40	<80	<40	<4	<40	<80	<4	<40	<40	<40	<4
m & p-Xylene	M	2760	µg/kg	1	56000	0	no exc.	0.00	211.00	101.29	10.00		<100	<100	<10	<10	<100	<100	<100	<100	<100	<100	<100	<100	<200	<100	<10	<100	<200	<10	<100	<100	<100	<10
o-Xylene	M	2760	µg/kg	1	60000	0	no exc.	0.00	232.00	101.44	10.00		<100	<100	<10	<10	<100	<100	<100	<100	<100	<100	<100	<100	<200	<100	<10	<100	<200	<10	<100	<100	<100	<10
Methyl Tert-Butyl Ether	M	2760	µg/kg	1					200.00	100.50	10.00		<100	<100	<10	<10	<100	<100	<100	<100	<100	<100	<100	<100	<200	<100	<10	<100	<200	<10	<100	<100	<100	<10
Naphthalene	M	2800	mg/kg	0.1	15.00	0	no exc.	0.00	1.21	0.17	0.01		<0.09	0.159	0.0211	<0.009	0.215	0.117	0.0495	<0.009	0.0255	0.037	0.0238	<0.009	0.414	0.274	<0.009	<0.18	0.114	<0.009	0.101	0.14	0.249	<0.009
Acenaphthylene	N	2800	mg/kg	0.1	170.00	0	no exc.	0.00	1.39	0.11	0.01		<0.12	0.034	<0.012	<0.012	0.0552	<0.06	<0.012	<0.012	<0.012	<0.012	0.0171	<0.012	0.112	0.102	<0.012	<0.24	<0.12	<0.012	<0.06	0.182	<0.12	<0.012
Acenaphthene	M	2800	mg/kg	0.1	210.00	0	no exc.	0.00	0.49	0.05	0.01		<0.08	0.019	0.0507	<0.008	0.0187	0.0463	0.015	<0.008	0.0127	<0.008	<0.008	<0.008	0.0228	0.0751	<0.008	<0.16	<0.08	<0.008	<0.04	<0.04	<0.08	<0.008
Fluorene	M	2800	mg/kg	0.1	170.00	0	no exc.	0.00	1.11	0.08	0.01		<0.1	0.0228	0.0165	<0.01	0.0569	<0.05	0.0173	<0.01	0.0181	<0.01	<0.01	<0.01	0.0732	0.0951	<0.01	<0.2	<0.1	<0.01	<0.05	0.198	<0.1	<0.01
Phenanthrene	M	2800	mg/kg	0.1	95.00	0	no exc.	0.00	10.30	0.77	0.02		<0.15	0.278	0.29	<0.015	0.457	0.384	0.14	<0.015	0.151	0.094	0.127	0.0492	0.754	1.01	<0.015	<0.3	0.335	<0.015	0.279	1.78	0.451	<0.015
Anthracene	M	2800	mg/kg	0.1	2400.00	0	no exc.	0.00	2.83	0.20	0.02		<0.16	0.059	0.0641	<0.016	0.0927	<0.08	0.0269	<0.016	0.0465	0.0223	0.0402	<0.016	0.171	0.254	<0.016	<0.32	<0.16	<0.016	0.15	0.428	<0.16	<0.016
Fluoranthene	M	2800	mg/kg	0.1	280.00	0	no exc.	0.00	16.60	1.42	0.02		<0.17	0.581	1.28	<0.017	0.746	1.16	0.248	<0.017	0.274	0.181	0.269	0.155	1.1	1.84	<0.017	<0.34	0.513	<0.017	0.591	2.36	0.662	<0.017
Pyrene	M	2800	mg/kg	0.1	620.00	0	no exc.	0.00	13.10	1.16	0.02		<0.15	0.526	1.35	<0.015	0.737	1.31	0.252	<0.015	0.251	0.215	0.256	0.0943	0.768	1.55	<0.015	<0.3	0.456	<0.015	0.484	1.68	0.476	<0.015
Benzo[a]anthracene	M	2800	mg/kg	0.1	7.20	1	8.90	8.90	8.90	0.79	0.01		<0.14	0.507	1.09	<0.014	0.49	1.07	0.152	<0.014	0.222	0.114	0.196	0.0484	0.561	1.21	<0.014	<0.28	0.399	<0.014	0.26	0.682	0.32	<0.014
Chrysene	M	2800	mg/kg	0.1	15.00	0	no exc.	0.00	7.02	0.78	0.01		<0.1	0.5	1.28	<0.01	0.502	1.12	0.159	<0.01	0.25	0.129	0.228	0.0594	0.583	1.14	<0.01	<0.2	0.472	<0.01	0.308	0.684	0.353	<0.01
Benzo[b]fluoranthene	M	2800	mg/kg	0.1	2.60	17	12.90	2.61	12.90	1.15	0.02		<0.15	0.723	2.16	<0.015	0.566	1.7	0.206	<0.015	0.3	0.148	0.306	0.0822	1.08	2.02	<0.015	<0.3	0.72	<0.015	0.322	0.74	0.41	0.0232
Benzo[k]fluoranthene	M	2800	mg/kg	0.1	77.00	0	no exc.	0.00	3.69	0.42	0.01		<0.14	0.301	0.734	<0.014	0.277	0.633	0.0937	<0.014	0.123	0.0531	0.111	<0.014	0.358	0.645	<0.014	<0.28	0.298	<0.014	0.129	0.365	0.162	<0.014
Benzo[a]pyrene	M	2800	mg/kg	0.1	2.20	10	8.46	2.29	8.46	0.83	0.02		<0.15	0.55	1.67	<0.015	0.654	1.59	0.178	<0.015	0.274	0.122	0.139	<0.015	0.582	1.51	<0.015	<0.3	0.477	<0.015	0.35	0.746	0.302	<0.015
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.1	27.00	0	no exc.	0.00	5.77	0.62	0.02		<0.18	0.329	1.22	<0.018	0.509	1.11	0.176	<0.018	0.21	0.1	0.115	<0.018	0.461	1.07	<0.018	<0.36	0.355	<0.018	0.305	0.556	0.232	<0.018
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.1	0.24	21	1.49	0.26	1.49	0.17	0.02		<0.23	0.0806	0.19	<0.023	0.089	0.193	<0.023	<0.023	0.0404	<0.023	0.0288	<0.023	0.114	0.21	<0.023	<0.46	<0.23	<0.023	<0.115	<0.115	<0.23	<0.023
Benzo[g,h,i]perylene	M	2800	mg/kg	0.1	320.00	0	no exc.	0.00	5.81	0.62	0.02		<0.24	0.412	1.17	<0.024	0.539	1.16	0.155	<0.024	0.206	0.115	0.111	<0.024	0.477	1	<0.024	<0.48	0.364	<0.024	0.29	0.582	<0.24	<0.024
Total Of 16 PAH's	N	2800	mg/kg	2					101.00	9.43	0.12		<1.18	5.08	12.6	<0.118	6	11.6	1.87	<0.118	2.4	1.33	1.97	0.488	7.63	14	<0.118	<2.36	4.5	<0.118	3.57	11.1	3.62	<0.118
Resorcinol	M	2920	mg/kg	0.02					0.00	#DIV/0!	0.00																							
Phenol	M	2920	mg/kg	0.02	280.00	0	no exc.	0.00	0.10	0.01	0.01		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.0846	<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	0.02			0.02	0.01	0.02	0.01	0.01		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.0102	<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
Xylenols	M	2920	mg/kg	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	<0.015
1-Naphthol	N	2920	mg/kg	0.02					0.00	#DIV/0!	0.00																							
Trimethylphenols	M	2920	mg/kg	0.02					0.00	#DIV/0!	0.00																							
Total Phenols	M	2920	mg/kg	0.1	280.00	0	no exc.	0.00	0.13	0.04	0.04		<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	0.0846	<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						U26	U26	U26	U26	U27	U27	U27	U27	U22	U22	U22	U22	U22	U22	U24	U24	U25	U25	U25	V26	V26	V27	V27	V27	V28	V28	V28	V22	V22
Client: Rodgers Leask Environmental			**Job No.:**			181012-49	181012-49	181012-49	181012-49	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	181012-49	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.:**			18511954	18512026	18512107	18512119	18449507	18449354	18449358	18449368	18512091	18512095	18512005	18512018	18512042	18512048	18511995	18511999	18511978	18511985	18511989	18548126	18548131	18548150	18548160	18548171	18548185	18548198	18548220	18548070	18548138
Order No.: .			Client Sample Ref.:	**Generic Assessment Criteria (GAC) Residential End Use with Homegrown Produce (SOM 1%)**		4C-H5	4C-H5	4C-H5	4C-H5-V	4C-H6	4C-H6	4C-H6	4C-H6-V	4C-I1	4C-I1	4C-I2	4C-I2	4C-I2	4C-I2-V	4C-I3	4C-I3	4C-I4	4C-I4	4C-I4-V	4C-I5	4C-I5	4C-I6	4C-I6	4C-I6-V	4C-I7	4C-I7	4C-I7-V	4C-J1	4C-J1
			Sample Type:																															
			Top Depth (m):			0.50-0.50	1.00-1.00	1.80-1.80	2.50-2.50	0.50-0.50	1.00-1.00	1.50-1.50	3.30-3.30	0.50-0.50	1.10-1.10	0.50-0.50	1.00-1.00	1.50-1.50	1.70-1.70	0.50-0.50	0.80-0.80	0.50-0.50	1.00-1.00	2.50-2.50	0.50-0.50	1.00-1.00	0.50-0.50	1.00-1.00	2.20-2.20	0.50-0.50	1.00-1.00	1.80-1.80	0.50-0.50	1.00-1.00
			Bottom Depth (m):																															
			Date Sampled:			11/10/2018	11/10/2018	11/10/2018	11/10/2018	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	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
			Asbestos Lab:																															
Determinand	**Accred.**	**SOP**	**Units**	**LOD**																														
ACM Type	U	2192		N/A																														
Asbestos Identification	U	2192		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
Asbestos by Gravimetry	U	2192	%	0.001		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-										
Total Asbestos	U	2192	%	0.001		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-										
Moisture	N	2030	%	0.020		4.59	6.15	4.21	7.98	4.9	29.8	8.22	3.81	47.8	7.83	26.4	27.1	10.1	1.26	4.19	4.22	4.38	3.78	1.02	9.3	11	7.2	10	28	6.9	10	24	11	8.9
Soil Colour	N	2040		N/A		Dark Brown	Dark Brown	Dark Brown	Black	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Black	Black	Black	Black	Black	Grey	Dark Brown	Black	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Grey	Dark Brown	Dark Brown	Grey	Dark Brown	Dark Brown
Other Material	N	2040		N/A		Stones	Stones	Stones	Vegetation	Crushed Brick	Stones	Crushed Brick	Vegetation	Brick	Vegetation	Stones	Stones	Stones	Stones	Vegetation	None	Vegetation	Stones	Stones	Vegetation	Vegetation	Vegetation	Stones	Stones	Vegetation	Stones	Stones	Stones	Stones	Stones
Soil Texture	N	2040		N/A		Sand	Sand	Sandy Loam	Sandy Silt Loam	Sandy Loam	Sandy Loam	Sandy Loam	Silty Clay Loam	Stone/Soil	Stone/Soil	Sand	Sand	Sand	Silty Clay	Stone/Soil	Stone/Soil	Stone/Soil	Stone/Soil	Sandy Clay Loam	Sandy Loam	Sandy Loam	Loamy Sand	Sandy Loam	Sandy Loam	Sand	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam
pH	M	2010		4.0		9.58	9.03	8.89	6.69	10.4	10.8	9.86	7.22	8.81	11.7	9.1	8.64	9.5	8.56	11.6	10.9	10.8	9.21	8.21	10.6	9.19	10.5	12.3	7.85	9.86	10.7	6.91	8.51	8.75
Cyanide (Total)	M	2300	mg/kg	0.5		<1	<1	<1	<1	<1	<1	<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
Ammoniacal Nitrogen	M	2425	mg/kg	0.5		<12	<12	<12	234	<12	<12	<12	141	<12	<12	<12	<12	<12	73.3	<12	<12	<12	<12	<12	<12	<12	<12	<12	194	<12	<12	144	<12	<12
Iron (Total)	N	2430	mg/kg	100		206000	164000	83300	24100	226000	132000	166000	28300	108000	83100	134000	134000	63500	36700	169000	90900	95900	281000	39300	22800	43000	93400	98000	29600	57000	108000	29900	40300	19500
Arsenic	M	2450	mg/kg	1	37	16.8	13.8	12.4	16.1	16.1	10.7	11.1	12.3	8.45	<6	21.3	10.1	8.37	12.6	11.6	16.1	9.11	21.6	14.3	4.13	6.28	9.64	7.28	13.6	7.39	5.68	14.9	8.54	5.87
Cadmium	M	2450	mg/kg	0.1	26	<0.2	<0.2	<0.2	0.219	0.558	<0.2	0.174	<0.02	1.19	<0.2	<0.2	1.56	0.774	0.397	1.46	1.86	<0.2	3.48	<0.02	<0.02	<0.02	<0.02	<0.2	<0.02	0.149	<0.02	<0.02	0.155	0.0664
Chromium	M	2450	mg/kg	1	910	115	101	34.4	39.8	99.3	369	49.5	36.3	36.4	109	214	12.5	171	28.5	91.8	116	52.1	54.4	30.1	19.6	22.3	21.7	462	33.1	41.5	207	31.6	39.8	14.9
Manganese	M	2450	mg/kg	5		11800	9890	3000	422	10500	15500	6130	289	3360	18200	11800	5070	7050	638	7680	9750	8740	8840	1380	6680	4520	4630	29500	575	5450	19100	547	3950	4360
Copper	M	2450	mg/kg	0.5	2400	38.8	25.9	28.6	17.6	43.4	42.6	17.7	16	21.7	17	27.8	36	22.6	9.96	17.8	17.4	25.7	32.7	11.6	4.45	22.2	12.1	18.8	15.4	11.1	10.4	12.6	17.3	11.2
Mercury	M	2450	mg/kg	0.1	1.2	<1.4	<1.4	<1.4	<0.14	<0.14	<1.4	<0.14	<0.14	<0.14	<1.4	<1.4	<0.14	<0.14	<0.14	<0.14	<1.4	<1.4	<1.4	<0.14	<1.4	<0.14	<0.14	<1.4	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14
Nickel	M	2450	mg/kg	0.5	130	47.3	27.5	27.2	29.7	27	238	18	37.2	25.1	11.5	28.6	22.6	15.1	37.3	18.7	19.3	19.6	37.9	39.5	2.96	18.6	16	13.1	31.6	8.84	6.72	30.9	19.1	6.66
Lead	M	2450	mg/kg	0.5	200	55.9	66.2	36.1	45	67.6	26.7	41.6	52.2	76.9	25	113	127	25.5	23.5	53.1	34.4	49.9	96.7	24.1	3.53	8.16	29.1	24.4	30.4	45.8	23.2	25.5	60.4	12.5
Selenium	M	2450	mg/kg	0.2	250	<10	<10	<10	<1	6.15	<10	3.89	<1	1.02	<10	<10	1.37	4.02	<1	1.76	<10	<10	<10	<1	4.58	2.93	<1	13.7	<1	2.56	4.94	<1	2.66	3.1
Vanadium	U	2450	mg/kg	5	410	205	176	104	60.6	309	281	92.1	57.3	50.8	134	375	72.3	124	54.2	143	129	116	162	57.6	64.3	59.3	79	330	53.3	72.4	223	57	49.6	42
Zinc	M	2450	mg/kg	0.5	3700	195	251	114	153	301	138	180	143	261	68.3	394	593	117	117	223	137	163	315	118	32.8	49.4	154	60	113	203	138	107	187	50
Organic Matter	M	2625	%	0.4		4.59	6.15	4.21	7.98	4.9	29.8	8.22	3.81	47.8	7.83	26.4	27.1	10.1	1.26	4.19	4.22	4.38	3.78	1.02	0.94	1.68	1.66	3.26	3.88	6.47	5.14	1.61	15.4	11.7
Aliphatic TPH >C5-C6	N	2680	mg/kg	1	42	<0.01	<0.01	<0.01	0.0116	<0.01	<0.01	<0.01	<0.01	0.0167	0.011	<0.01	<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
Aliphatic TPH >C6-C8	N	2680	mg/kg	1	100	<0.01	<0.01	<0.01	0.0231	<0.01	0.0231	<0.01	<0.01	0.0622	0.0594	<0.01	<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
Aliphatic TPH >C8-C10	M	2680	mg/kg	1	27	<0.01	<0.01	<0.01	0.0182	<0.01	0.0147	<0.01	<0.01	0.0544	0.0583	<0.01	<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
Aliphatic TPH >C10-C12	M	2680	mg/kg	1	130	<0.01	<0.01	<0.01	0.0198	<0.01	0.0274	<0.01	<0.01	0.0866	0.0759	<0.01	<0.01	<0.01	<0.01	0.0594	1.48	0.306	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.0138	0.0236	<0.01	<0.01	<0.01	<0.01
Aliphatic TPH >C12-C16	M	2680	mg/kg	1	1.10E+03	0.453	1.39	<0.1	<0.1	4.72	37.2	2.05	<0.1	46.4	22.4	6.49	5.67	2.64	<0.1	3.95	23.3	9.62	2.77	<0.1	<0.1	<0.1	2.54	11.5	<0.1	41	12	<0.1	3.35	4.65
Aliphatic TPH >C16-C21	M	2680	mg/kg	1	6.50E+04	4.12	6.57	<0.1	<0.1	18.9	114	11.9	<0.1	194	83.7	18.7	13.9	11.2	<0.1	13.9	15.4	11.8	11.2	<0.1	2.1	4.18	11.4	27	<0.1	116	59	<0.1	19.5	32.6
Aliphatic TPH >C21-C35	M	2680	mg/kg	1	6.50E+04	53.4	57.3	11.8	4.21	83.8	92.5	60.5	1.99	154	543	394	215	89.1	<0.1	135	78.8	93.1	83.7	<0.1	30.9	28.9	110	85.1	5.78	821	388	3.64	91.8	134
Aliphatic TPH >C35-C44	N	2680	mg/kg	1	6.50E+04	23.2	33.6	4.98	<0.1	56.4	5.85	10.9	<0.1	58.5	330	417	205	43.8	<0.1	54.9	44.1	60.6	28.8	<0.1	33.9	8.43	38.2	26.2	<0.1	226	98.3	<0.1	25.4	23.5
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5		81.2	98.8	16.8	4.21	164	250	85.3	1.99	452	979	837	439	147	<0.1	208	162	175	126	<0.1	66.9	41.5	162	150	5.78	1210	557	3.64	140	194
Aromatic TPH >C5-C7	N	2680	mg/kg	1	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	1	130	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<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
Aromatic TPH >C8-C10	M	2680	mg/kg	1	34	<0.01	<0.01	<0.01	0.0116	<0.01	<0.01	<0.01	<0.01	0.0355	0.0385	<0.01	<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
Aromatic TPH >C10-C12	M	2680	mg/kg	1	74	<0.01	<0.01	<0.01	0.0132	<0.01	0.0179	<0.01	<0.01	0.0577	0.0506	<0.01	<0.01	<0.01	<0.01	0.0396	0.984	0.204	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.015	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatic TPH >C12-C16	M	2680	mg/kg	1	140	2.51	1.63	0.691	<0.1	3.51	5.95	4.3	<0.1	13.3	6.54	7.45	6.21	2.04	<0.1	4.27	10.2	6.33	1.46	<0.1	<0.1	0.198	2.76	3.35	<0.1	15.8	6.8	<0.1	4.88	2.42
Aromatic TPH >C16-C21	U	2680	mg/kg	1	260	16.9	9.08	3.86	<0.1	14.8	26	16.7	<0.1	109	34.8	34.3	20.8	12.5	<0.1	18.4	10.9	15.3	6.65	<0.1	2.16	1.92	8.29	15.7	1.97	53.7	31.9	<0.1	21.2	13.1
Aromatic TPH >C21-C35	M	2680	mg/kg	1	1100	54.7	51.8	21.6	22.5	104	66.6	71.6	12.6	159	488	527	247	90.7	<0.1	65.7	40.8	84.8	42.4	<0.1	29.9	19	60.1	77.6	38.5	252	165	9.17	90.9	85.1
Aromatic TPH >C35-C44	N	2680	mg/kg	1	1100	30.5	42.3	10.3	3.36	107	35.2	46.4	1.19	62.6	346	597	272	54.3	<0.1	35.6	40.4	75.9	26.3	<0.1	42.5	9.94	39.1	37.4	7.74	103	78	3.64	35.4	39
Total Aromatic Hydrocarbons	N	2680	mg/kg	5		105	105	36.4	25.8	229	134	139	13.8	344	875	1170	547	160	<0.1	124	102	182	76.8	<0.1	74.5	31.1	110	134	48.2	424	282	12.8	152	140
Total Petroleum Hydrocarbons	N	2680	mg/kg	10		186	204	53.2	30.1	393	384	224	15.8	797	1850	2000	986	306	<0.1	332	267	358	203	<0.1	141	72.5	273	284	54	1630	839	16.4	292	334
Benzene	M	2760	µg/kg	1	87	<90	<90	<90	<90	<90	<90	<90	<90	<180	<90	<180	<180	<180	<9	<90	<90	<90	<90	<9	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90
Toluene	M	2760	µg/kg	1	130000	<70	<70	<70	<70	<70	<70	<70	<70	<140	<70	<140	<140	<140	<7	<70	<70	<70	<70	<7	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70
Ethylbenzene	M	2760	µg/kg	1	47000	<40	<40	<40	<40	<40	<40	<40	<40	<80	<40	<80	<80	<80	<4	<40	<40	<40	<40	<4	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40
m & p-Xylene	M	2760	µg/kg	1	56000	<100	<100	<100	<100	<100	<100	<100	<100	<200	<100	<200	<200	<200	<10	<100	<100	<100	<100	<10	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
o-Xylene	M	2760	µg/kg	1	60000	<100	<100	<100	<100	<100	<100	<100	<100	<200	<100	<200	<200	<200	<10	<100	<100	<100	<100	<10	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
Methyl Tert-Butyl Ether	M	2760	µg/kg	1		<100	<100	<100	<100	<100	<100	<100	<100	<200	<100	<200	<200	<200	<10	<100	<100	<100	<100	<10	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
Naphthalene	M	2800	mg/kg	0.1	15.00	0.608	0.459	0.147	<0.009	0.209	0.268	0.366	<0.009	0.46	0.239	<0.18	0.781	0.0869	<0.009	1.21	0.456	<0.09	0.17	<0.009	0.0173	<0.045	0.106	0.114	0.0145	0.459	0.167	<0.009	0.463	0.0918
Acenaphthylene	N	2800	mg/kg	0.1	170.00	0.458	0.271	0.0745	<0.012	<0.12	0.115	0.179	<0.012	0.535	<0.12	0.6	0.453	<0.06	<0.012	0.153	0.108	<0.12	0.0893	<0.012	<0.012	<0.06	0.0238	0.0201	<0.012	0.145	0.0755	<0.012	0.205	0.0265
Acenaphthene	M	2800	mg/kg	0.1	210.00	<0.16	<0.04	0.0163	<0.008	<0.08	0.024	0.0261	<0.008	<0.08	0.107	<0.16	<0.16	<0.04	<0.008	0.114	0.21	<0.08	<0.04	<0.008	<0.008	<0.04	0.0174	0.0427	<0.008	0.043	0.0282	<0.008	0.0395	0.0153
Fluorene	M	2800	mg/kg	0.1	170.00	0.27	0.162	0.0542	<0.01	<0.1	0.0777	0.0838	<0.01	<0.1	0.111	0.253	<0.2	<0.05	<0.01	0.198	0.17	<0.1	<0.05	<0.01	<0.01	<0.05	0.0194	0.0295	<0.01	0.166	0.058	<0.01	0.123	0.0315
Phenanthrene	M	2800	mg/kg	0.1	95.00	2.12	1.33	0.454	0.0433	0.406	0.638	0.817	<0.015	1.8	0.957	2.79	1.98	0.239	<0.015	1.81	0.87	<0.15	0.485	<0.015	0.0439	<0.075	0.385	0.56	0.0264	1.01	0.545	<0.015	1.31	0.366
Anthracene	M	2800	mg/kg	0.1	2400.00	0.596	0.368	0.123	<0.016	<0.16	0.165	0.229	<0.016	0.492	<0.16	0.751	0.535	<0.08	<0.016	0.376	0.189	<0.16	0.117	<0.016	<0.016	<0.08	0.0656	0.0932	<0.016	0.225	0.123	<0.016	0.352	0.0777
Fluoranthene	M	2800	mg/kg	0.1	280.00	4.09	2.47	0.696	0.0831	0.63	1.1	1.33	<0.017	4.26	1.49	5.64	3.9	0.539	<0.017	1.94	1.03	<0.17	0.898	<0.017	0.0827	0.146	0.502	1	0.0389	1.26	0.784	<0.017	2.87	0.618
Pyrene	M	2800	mg/kg	0.1	620.00	2.82	1.62	0.49	0.064	0.491	0.814	0.999	<0.015	3.35	1.23	4.05	2.81	0.387	<0.015	1.35	0.72	<0.15	0.709	<0.015	0.0697	0.148	0.423	0.908	0.0314	1.42	0.833	<0.015	2.21	0.495
Benzo[a]anthracene	M	2800	mg/kg	0.1	7.20	1.55	0.969	0.288	0.0391	0.32	0.498	0.708	<0.014	2.32	0.549	2.46	1.56	0.266	<0.014	0.9	0.392	<0.14	0.398	<0.014	0.0498	0.0879	0.269	0.571	0.0225	0.766	0.488	<0.014	1.55	0.418
Chrysene	M	2800	mg/kg	0.1	15.00	1.72	0.909	0.276	0.0444	0.33	0.435	0.677	<0.01	1.99	0.682	2.06	1.6	0.294	<0.01	0.815	0.365	<0.1	0.436	<0.01	0.0504	0.126	0.286	0.582	0.0221	0.729	0.459	0.019	1.39	0.398
Benzo[b]fluoranthene	M	2800	mg/kg	0.1	2.60	1.55	1.02	0.346	0.0557	0.323	0.662	1.04	<0.015	3.89	0.646	3.19	1.96	0.614	<0.015	0.913	0.474	<0.15	0.474	<0.015	0.0782	0.0935	0.446	0.779	0.0321	0.864	0.682	0.0211	2.02	0.56
Benzo[k]fluoranthene	M	2800	mg/kg	0.1	77.00	0.825	0.547	0.163	<0.014	0.154	0.277	0.324	<0.014	1.38	0.325	0.966	0.865	0.201	<0.014	0.381	0.158	<0.14	0.254	<0.014	0.0275	<0.07	0.141	0.335	<0.014	0.3	0.23	<0.014	0.728	0.188
Benzo[a]pyrene	M	2800	mg/kg	0.1	2.20	1.75	1.06	0.33	0.0398	0.297	0.494	0.654	<0.015	2.44	0.799	1.99	1.7	0.408	<0.015	0.658	0.331	<0.15	0.532	<0.015	0.0495	0.0989	0.333	0.747	0.0222	0.604	0.52	0.023	1.32	0.426
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.1	27.00	1.26	0.956	0.22	0.0317	0.232	0.51	0.465	<0.018	2.03	0.427	1.44	1.17	0.512	<0.018	0.388	0.263	<0.18	0.396	<0.018	0.0333	<0.09	0.173	0.388	<0.018	0.443	0.566	<0.018	0.846	0.446
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.1	0.24	<0.46	0.151	0.0377	<0.023	<0.23	0.077	0.102	<0.023	0.43	<0.23	<0.46	<0.46	<0.115	<0.023	0.112	0.0555	<0.23	<0.115	<0.023	<0.023	<0.115	0.0591	0.123	<0.023	0.125	0.074	<0.023	0.236	0.0825
Benzo[g,h,i]perylene	M	2800	mg/kg	0.1	320.00	1.27	0.825	0.201	<0.024	0.273	0.428	0.537	<0.024	1.85	0.517	1.36	1.14	0.474	<0.024	0.505	0.267	<0.24	0.475	<0.024	0.0518	<0.12	0.26	0.55	<0.024	0.526	0.404	<0.024	0.96	0.366
Total Of 16 PAH's	N	2800	mg/kg	2		20.9	13.1	3.92	0.401	3.67	6.58	8.53	<0.118	27.2	8.08	27.6	20.4	4.02	<0.118	11.8	6.06	<1.18	5.43	<0.118	0.554	0.7	3.51	6.84	0.21	9.09	6.04	<0.118	16.6	4.6
Resorcinol	M	2920	mg/kg	0.02																														
Phenol	M	2920	mg/kg	0.02	280.00	<0.01	<0.01	<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
Cresols	M	2920	mg/kg	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	<0.01
Xylenols	M	2920	mg/kg	0.02		<0.015	<0.015	<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
1-Naphthol	N	2920	mg/kg	0.02																														
Trimethylphenols	M	2920	mg/kg	0.02																														
Total Phenols	M	2920	mg/kg	0.1	280.00	<0.035	<0.035	<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

P18-669 Llanwern Phase 4G Soil Chemical Screening Results

Project: P18-669						V22	V22	V22	V22	V24	V24	V24	V25	V25	V25	V25	V26	V26	V26	W23	W23	X22	X22	X23	X23	X23	Y22	Y22	Y22	Y23	Y23	Z23	Z23	Z23
Client: Rodgers Leask Environmental				**Job No.:**		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	181020-29	181020-29	181030-48	181030-48	181030-48	181030-48	181030-48	181030-48	181030-48	181030-48	181030-48	181030-48	181030-48	181030-48	181030-48
Quotation No.: Q21-24056				**Sample ID.:**		18548298	18548508	18548523	18548515	18548532	18548543	18548551	18548079	18548087	18548092	18548098	18548111	18548115	18548120	18569431	18569435	18632712	18632782	18632739	18632746	18632759	18632792	18632797	18632810	18632721	18632731	18632818	18632824	18632834
Order No.: .				Client Sample Ref.:	**Generic Assessment Criteria (GAC) Residential End Use with Homegrown Produce (SOM 1%)**	4C-J1	4C-J2	4C-J2	4C-J2	4C-J3	4C-J3	4C-J3	4C-J4	4C-J4	4C-J4	4C-J4-V	4C-J5	4C-J5	4C-J5-V	4C-K2	4C-K2	4E-C1	4E-C1	4E-C2	4E-C2	4E-C2-V	4E-D1	4E-D1	4E-D1-V	4E-D2	4E-D2	4E-E2	4E-E2	4E-E2
				Sample Type:																														
				Top Depth (m):		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	2.00-2.00	0.50-0.50	1.00-1.00	1.70-1.70	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	1.80-1.80	0.25-0.25	1.00-1.00	0.20-0.20	0.50-0.50	1.30-1.30
				Bottom Depth (m):																														
				Date Sampled:		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	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	29/10/2018	29/10/2018	29/10/2018
				Asbestos Lab:																														
Determinand	**Accred.**	**SOP**	**Units**	**LOD**																														
ACM Type	U	2192		N/A																Amosite (Brown) Asbestos										Chrysotile	Chrysotile		
Asbestos Identification	U	2192		N/A		-	Not Detected	-	Not Detected	-	Not Detected	Not Detected	Not Detected	-	Not Detected	-	-	Not Detected	-	Detected	-	Not Detected	-	Not Detected	-	-	Not Detected	-	-	-	Detected	Detected	-	Not Detected
Asbestos by Gravimetry	U	2192	%	0.001																<0.001	-									<0.001	<0.001		
Total Asbestos	U	2192	%	0.001																<0.001	-									<0.001	<0.001		
Moisture	N	2030	%	0.020		16	14	11	15	6.5	11	9.9	8.7	5.5	10	23	6.2	15	32	11	7.4	6.7	7.2	9.6	10	24	6.3	11	25	8.2	5.7	9.1	10	15
Soil Colour	N	2040		N/A		Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Black	Black	Grey	Black	Black	Grey	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Grey	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown
Other Material	N	2040		N/A		Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	None	Vegetation	Stones	Vegetation	Stones	Stones	Stones	Vegetation	Stones	Stones	Vegetation	Stones	Stones	Stones	Vegetation	ncrete/Aggregate	Stones	Vegetation	Stones	Stones
Soil Texture	N	2040		N/A		Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam	Sand	Sand	Silty Clay	Sandy Loam	Sandy Loam	Sandy Loam	Sand	Sand	Loamy Sand	Sandy Loam	Loamy Sand	Loamy Sand	Silty Clay	Loamy Sand	Sand	Loamy Sand	Loamy Sand	Loamy Sand	Sandy Loam	Sand	Loamy Sand
pH	M	2010		4.0		8.3	8.32	9.52	9.96	9.38	9.08	9.31	10.7	11.9	11.9	7.54	11.1	11.4	7.52	11.4	11.2	9.04	9.51	8.98	11.6	8.46	9.62	9.85	8.35	11	11.7	10.8	11.4	11.3
Cyanide (Total)	M	2300	mg/kg	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	7.46	15.8	1.17	<1	<1
Ammoniacal Nitrogen	M	2425	mg/kg	0.5		<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	111	<12	<12	99	<12	<12	<12	<12	<12	<12	341	15.4	19.2	137	<12	<12	<12	<12	<12
Iron (Total)	N	2430	mg/kg	100		217000	90300	73800	93600	78600	70500	81500	50600	167000	148000	38800	108000	109000	28700	63600	27900	47600	57700	80100	63800	33400	32900	33300	34200	57900	201000	53900	57600	67400
Arsenic	M	2450	mg/kg	1	37	11.4	9.25	8.72	10.5	9.31	9.53	8.6	7.08	<6	<6	20.4	17.2	13.5	12.1	9.24	5.93	6.16	6.22	10	12.3	11.1	5.35	6.63	13.7	8.33	7.33	14.8	4.96	7.34
Cadmium	M	2450	mg/kg	0.1	26	<0.2	0.184	<0.02	<0.2	<0.02	3.14	<0.02	0.168	<0.2	<0.2	<0.02	<0.2	<0.2	<0.02	0.0834	0.144	0.388	<0.02	0.893	2.07	<0.02	<0.02	<0.02	<0.02	<0.02	0.342	<0.02	<0.02	0.462
Chromium	M	2450	mg/kg	1	910	<9	40.1	81.7	47.2	18.2	9.74	121	32.8	810	449	33.8	238	115	49.5	51.8	8.4	114	30.8	20.5	36.8	25.6	16.5	32	28.1	126	732	48	95.8	187
Manganese	M	2450	mg/kg	5		14300	4730	10500	4800	4880	3010	9220	4990	34400	43700	995	31700	14700	1180	3270	873	6110	3690	2780	3570	1260	2290	3490	1640	7680	45700	4340	9350	15600
Copper	M	2450	mg/kg	0.5	2400	21.2	17.9	14.5	25.7	43.6	28.8	15.9	10.2	18	30.4	11.4	32.7	61.3	17.4	27.8	8.04	13.2	17.4	31.8	67.5	9.52	7.2	20	10.5	19.5	30	36.2	12.8	15.9
Mercury	M	2450	mg/kg	0.1	1.2	<1.4	<0.14	<0.14	<1.4	<0.14	<0.14	<0.14	<0.14	<1.4	<1.4	<0.14	<1.4	<1.4	<0.14	<0.14	<0.14	<0.14	<0.14	<1.4	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<1.4	<0.14	<0.14	<1.4
Nickel	M	2450	mg/kg	0.5	130	15.7	15	13.3	35.2	14.3	19.5	13.6	9.27	8.79	12.9	42.6	22.2	25.1	29.5	20.2	9.13	15.7	13.6	30.2	35	32	7.56	14.7	36.9	13.5	22.2	17.6	9.88	14.7
Lead	M	2450	mg/kg	0.5	200	28.5	67.1	62.1	56.4	84.5	56.5	41.5	25.6	<7	24.3	29.9	47.8	70.9	35.7	71.3	55.5	63.4	36.7	97.6	113	22.5	15.7	30.5	24.5	28.8	24.1	79.8	23.7	30.2
Selenium	M	2450	mg/kg	0.2	250	<10	1.87	3.76	<10	1.25	<1	3.55	3.2	16.5	18.5	<1	14.4	<10	<1	<1	<1	3.2	1.85	<10	1.47	<1	1.13	2.57	<1	3.53	17.9	1.86	4.92	<10
Vanadium	U	2450	mg/kg	5	410	129	72.9	124	86.2	65.9	60.5	126	58.9	354	394	62.5	268	171	68.4	64.7	21.3	132	65	45.7	37.6	45.3	33.7	45.6	50.4	96.4	397	86.8	116	190
Zinc	M	2450	mg/kg	0.5	3700	81.8	258	248	448	302	239	188	113	23.3	63.3	115	110	318	132	244	90	542	260	332	395	96.5	47.6	293	104	329	69.1	454	77	107
Organic Matter	M	2625	%	0.4		19.3	32.1	10.2	12.3	9.79	59.1	14.9	2.24	1.65	7.31	1.26	8.28	8.03	5.24	4.97	3.33	36.9	37.1	37.2	10.7	0.852	11.8	48.8	1	44	4.19	6.72	59.8	43.4
Aliphatic TPH >C5-C6	N	2680	mg/kg	1	42	<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	<0.02	<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
Aliphatic TPH >C6-C8	N	2680	mg/kg	1	100	<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	<0.02	<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
Aliphatic TPH >C8-C10	M	2680	mg/kg	1	27	<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	<0.02	<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
Aliphatic TPH >C10-C12	M	2680	mg/kg	1	130	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.0263	<0.01	<0.01	<0.01	<0.01	<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	<0.02	<0.02	<0.02
Aliphatic TPH >C12-C16	M	2680	mg/kg	1	1.10E+03	4.31	4.25	2.46	2.22	0.685	1.45	1.16	9.48	2.27	<0.1	<0.1	1.75	<0.1	<0.1	1.29	<0.1	1.86	3.69	3.11	2.48	<0.1	6.9	5.84	<0.1	3.5	7.19	2.26	5.52	7.21
Aliphatic TPH >C16-C21	M	2680	mg/kg	1	6.50E+04	86.9	10.7	9.21	15.5	4.74	5.54	8.23	21.6	8.96	7.83	<0.1	9.72	5.82	<0.1	11.3	1.65	11.9	22.2	13.6	10.8	<0.1	26.7	22.1	<0.1	20.8	59.4	22.7	28.9	26.2
Aliphatic TPH >C21-C35	M	2680	mg/kg	1	6.50E+04	80.6	45.4	30.7	39.2	27.1	24.8	22.8	55.1	26.7	41.1	<0.1	77.1	43.8	5.29	105	37.1	52.3	66.6	52.5	40.6	<0.1	70.4	64.3	<0.1	65.3	118	123	77.6	111
Aliphatic TPH >C35-C44	N	2680	mg/kg	1	6.50E+04	3.84	12.6	12	13.7	12.1	5.51	2.27	29.2	6.27	9.38	<0.1	42.1	14.7	<0.1	30.3	10.1	25.2	19.9	24.2	20.1	<0.1	25.9	18.1	<0.1	20.5	43.3	36.3	12	38.1
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5		176	72.9	54.4	70.7	44.5	37.3	34.5	115	44.2	58.3	<0.1	131	64.3	5.29	148	48.9	91.3	112	93.5	74	<0.1	130	110	<0.1	110	228	184	124	182
Aromatic TPH >C5-C7	N	2680	mg/kg	1	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	<0.02	<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
Aromatic TPH >C7-C8	N	2680	mg/kg	1	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	<0.01	<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	<0.02	<0.02	<0.02
Aromatic TPH >C8-C10	M	2680	mg/kg	1	34	<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	<0.02	<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
Aromatic TPH >C10-C12	M	2680	mg/kg	1	74	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.0175	<0.01	<0.01	<0.01	<0.01	<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	<0.02	<0.02	<0.02
Aromatic TPH >C12-C16	M	2680	mg/kg	1	140	6.68	0.583	2.3	<0.1	<0.1	3.95	2.27	2.16	1.46	1.15	<0.1	1.62	2.52	<0.1	<0.1	0.444	7.28	8.07	5.84	2.72	<0.1	7.07	15.2	<0.1	9.33	4.25	4.35	6.9	6.88
Aromatic TPH >C16-C21	U	2680	mg/kg	1	260	57.4	7	10.2	5.42	4.23	47.2	13.3	7.15	13.6	9.86	<0.1	9.71	11.7	<0.1	1.82	2.35	28.1	46.6	26.1	12.7	<0.1	20.1	89	1.38	66	38.2	18	29.6	34.2
Aromatic TPH >C21-C35	M	2680	mg/kg	1	1100	80.4	30.3	53.5	15.4	10.7	114	43	37.6	68.8	46.7	1.57	70.7	63.4	19.8	22.3	20.4	108	122	96	69.3	3.49	82.9	292	6.82	161	150	78.7	118	155
Aromatic TPH >C35-C44	N	2680	mg/kg	1	1100	18.7	2.97	28.6	1.61	1.21	31.3	13.5	35.4	20.5	17.2	<0.1	53.4	46.5	7.45	3.1	12.5	61	39.1	49.8	42.9	0.173	44.9	78.3	1.06	54.2	60.6	36.5	34.2	62.5
Total Aromatic Hydrocarbons	N	2680	mg/kg	5		163	40.9	94.6	22.4	16.1	197	72.2	82.3	104	74.9	1.57	135	124	27.3	27.2	35.7	204	216	178	128	3.66	155	474	9.25	290	253	138	189	258
Total Petroleum Hydrocarbons	N	2680	mg/kg	10		339	114	149	93.1	60.7	234	107	198	149	133	1.57	266	188	32.5	175	84.5	295	328	271	202	3.66	285	585	9.25	400	481	322	313	440
Benzene	M	2760	µg/kg	1	87	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<180	<90	<90	<90	<90	<90	<90
Toluene	M	2760	µg/kg	1	130000	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	<140	<70	<70	<70	<70	<70	<70
Ethylbenzene	M	2760	µg/kg	1	47000	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<80	<40	<40	<40	<40	<40	<40
m & p-Xylene	M	2760	µg/kg	1	56000	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200	<100	<100	<100	<100	<100	<100
o-Xylene	M	2760	µg/kg	1	60000	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200	<100	<100	<100	<100	<100	<100
Methyl Tert-Butyl Ether	M	2760	µg/kg	1		<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200	<100	<100	<100	<100	<100	<100
Naphthalene	M	2800	mg/kg	0.1	15.00	0.348	0.446	0.297	0.198	0.291	0.221	0.116	0.0522	0.122	0.123	<0.009	0.139	0.0748	<0.009	0.378	0.0957	0.279	0.378	0.219	0.0772	<0.009	0.229	0.465	<0.009	0.36	0.186	0.301	0.143	0.105
Acenaphthylene	N	2800	mg/kg	0.1	170.00	0.142	0.291	0.101	0.137	0.132	0.138	0.273	<0.06	0.0203	<0.012	<0.012	0.0877	0.0258	<0.012	0.114	0.0392	0.22	0.157	0.0976	0.0379	<0.012	0.132	0.192	<0.012	0.18	0.0808	0.198	0.0565	0.0444
Acenaphthene	M	2800	mg/kg	0.1	210.00	0.485	0.0587	0.0335	0.0276	0.0157	0.0214	0.0161	<0.04	0.0168	0.0145	<0.008	<0.04	<0.008	<0.008	0.0213	0.00876	0.043	0.0491	0.027	0.012	<0.008	0.0258	0.111	<0.008	0.0434	0.0631	0.0638	0.0359	0.0283
Fluorene	M	2800	mg/kg	0.1	170.00	0.358	0.24	0.0625	0.111	0.0616	0.0776	0.175	<0.05	0.0279	0.0239	<0.01	<0.05	<0.01	<0.01	0.0461	0.02	0.114	0.101	0.0528	0.0182	<0.01	0.078	0.256	<0.01	0.285	<0.05	0.209	0.0569	0.0469
Phenanthrene	M	2800	mg/kg	0.1	95.00	0.87	1.8	0.534	0.999	0.724	0.906	2.36	0.282	0.93	0.544	<0.015	0.465	0.221	<0.015	0.491	0.206	1.47	1.51	0.685	0.361	<0.015	0.605	2.74	<0.015	4.08	0.968	2.31	0.814	0.596
Anthracene	M	2800	mg/kg	0.1	2400.00	0.158	0.469	0.15	0.219	0.196	0.195	0.409	0.118	0.193	0.128	<0.016	0.102	0.0427	<0.016	0.123	0.0539	0.475	0.365	0.177	0.102	<0.016	0.223	0.735	<0.016	0.773	0.212	0.668	0.187	0.201
Fluoranthene	M	2800	mg/kg	0.1	280.00	0.685	3.27	1.5	1.75	1.31	1.55	3.82	0.692	2.52	1.27	<0.017	0.906	0.41	<0.017	0.883	0.423	3.03	2.46	1.23	1.09	<0.017	1.18	4.71	<0.017	5.47	3.1	4.04	1.34	1.14
Pyrene	M	2800	mg/kg	0.1	620.00	0.478	2.61	1.35	1.28	1	1.17	2.83	0.589	1.86	0.908	<0.015	0.807	0.637	<0.015	0.74	0.336	2.25	1.95	0.932	0.806	<0.015	0.918	3.93	<0.015	3.79	2.88	2.91	1.3	0.93
Benzo[a]anthracene	M	2800	mg/kg	0.1	7.20	0.37	1.87	0.851	0.792	0.672	0.719	1.37	0.329	1.82	0.83	<0.014	0.492	0.472	<0.014	0.52	0.203	1.59	1.29	0.736	0.673	<0.014	0.648	3.13	<0.014	2.32	1.63	1.84	0.942	0.632
Chrysene	M	2800	mg/kg	0.1	15.00	0.323	1.5	0.793	0.75	0.581	0.695	1.26	0.313	1.69	0.855	<0.01	0.556	0.439	<0.01	0.635	0.194	1.51	1.48	0.705	0.638	<0.01	0.679	3	<0.01	2.25	1.91	1.72	1.02	0.698
Benzo[b]fluoranthene	M	2800	mg/kg	0.1	2.60	0.446	1.99	1.22	0.783	0.755	1.06	1.48	0.313	2.61	0.989	<0.015	0.619	0.523	<0.015	0.863	0.218	2.37	1.91	1.12	0.976	<0.015	1.04	4.41	<0.015	3.28	2.98	2.35	1.49	0.952
Benzo[k]fluoranthene	M	2800	mg/kg	0.1	77.00	0.128	0.651	0.389	0.332	0.283	0.349	0.53	0.122	0.798	0.366	<0.014	0.278	0.218	<0.014	0.289	0.107	0.86	0.675	0.338	0.338	<0.014	0.293	1.38	<0.014	1.15	0.94	0.843	0.594	0.297
Benzo[a]pyrene	M	2800	mg/kg	0.1	2.20	0.33	1.66	0.904	0.69	0.559	0.702	1.18	0.271	1.79	0.752	<0.015	0.53	0.486	<0.015	0.458	0.193	1.44	1.13	0.623	0.645	<0.015	0.614	2.93	<0.015	1.95	1.88	1.4	0.908	0.591
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.1	27.00	0.211	1.06	0.967	0.645	0.378	0.487	1.08	0.224	1.8	0.517	<0.018	0.314	0.278	<0.018	0.404	0.158	1.31	0.89	0.452	0.554	<0.018	0.388	2.54	<0.018	1.74	1.34	1.23	0.741	0.408
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.1	0.24	0.0748	0.306	0.135	0.107	0.104	0.126	0.159	<0.115	0.325	0.157	<0.023	<0.115	0.0896	<0.023	0.0798	0.0311	0.288	0.232	0.124	0.132	<0.023	0.119	0.574	<0.023	0.37	0.288	0.275	0.175	0.0983
Benzo[g,h,i]perylene	M	2800	mg/kg	0.1	320.00	0.255	1.15	0.641	0.469	0.436	0.552	0.832	0.197	1.37	0.602	<0.024	0.457	0.405	<0.024	0.434	0.193	1.08	0.742	0.465	0.415	<0.024	0.458	1.98	<0.024	1.3	1.53	0.879	0.603	0.458
Total Of 16 PAH's	N	2800	mg/kg	2		5.66	19.4	9.92	9.29	7.5	8.97	17.9	3.5	17.9	8.08	<0.118	5.75	4.32	<0.118	6.48	2.48	18.3	15.3	7.98	6.87	<0.118	7.64	33.1	<0.118	29.4	20	21.2	10.4	7.22
Resorcinol	M	2920	mg/kg	0.02																														
Phenol	M	2920	mg/kg	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	0.02		<0.01	0.0116	<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	0.0107	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Xylenols	M	2920	mg/kg	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	<0.015
1-Naphthol	N	2920	mg/kg	0.02																														
Trimethylphenols	M	2920	mg/kg	0.02																														
Total Phenols	M	2920	mg/kg	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						Z23	W25	W25	Y25	Y25	Y25	Z25	Z25	Z25	AA25	AA25	AA25	AA26	AA26	AA27	AA27	AA28	AA28	AA25	AA26	AA27	AA28	AC25	AC25	AC25	AB27	AB27	AB27	W29
Client: Rodgers Leask Environmental				**Job No.:**		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	181031-51	181031-51	181031-51	181031-51	181031-51	181031-51	181031-51	181031-51	181031-51	181031-51	181101-44
Quotation No.: Q21-24056				**Sample ID.:**		18632842	18632769	18632775	18639087	18639150	18639228	18639237	18639243	18639248	18639252	18639257	18639262	18639127	18639132	18639144	18639155	18639201	18639205	18639218	18639137	18639169	18639212	18639109	18639115	18639121	18639174	18639180	18639188	18646138
Order No.: .				Client Sample Ref.:	**Generic Assessment Criteria (GAC) Residential End Use with Homegrown Produce (SOM 1%)**	4E-E2-V	4E-B4	4E-B4	4E-C4	4E-C4	4E-C4-V	4E-D4	4E-D4	4E-D4-V	4E-E4	4E-E4	4E-E4	4E-E5	4E-E5	4E-E6	4E-E6	4E-E7	4E-E7	4E-E4-V	4E-E5-V	4E-E6-V	4E-E7-V	4E-G4	4E-G4	4E-G4-V	4E-F6	4E-F6	4E-F6-V	4E-A8
				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
				Top Depth (m):		2.60-2.60	0.50-0.50	1.00-1.00	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	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	1.00-1.00	1.90-1.90	0.30-0.30	0.80-0.80	1.55-1.55	0.50-0.50
				Bottom Depth (m):																														
				Date Sampled:		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	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	10/31/2018
				Asbestos Lab:																														
Determinand	**Accred.**	**SOP**	**Units**	**LOD**																														
ACM Type	U	2192		N/A			Chrysotile													Chrysotile, Amosite		Chrysotile												
Asbestos Identification	U	2192		N/A		-	Detected	-	Not Detected	-	-	Not Detected	-	-	Not Detected	-	Not Detected	Not Detected	-	Detected	-	Detected	-	-	-	-	-	-	Not Detected	-	-	Not Detected	-	-	-
Asbestos by Gravimetry	U	2192	%	0.001			<0.001		-	-	-	-	-	-	-	-	-	-	-	0.0174	-	<0.001	-	-	-	-	-	-	-	-	-	-	-	-
Total Asbestos	U	2192	%	0.001			<0.001		-	-	-	-	-	-	-	-	-	-	-	0.0191	-	<0.001	-	-	-	-	-	-	-	-	-	-	-	-
Moisture	N	2030	%	0.020		33	7.1	5.7	5.2	6.8	26	20	13	23	6.6	14	12	12	10	7.9	10	6.1	3.8	23	32	24	32	6	5.9	22	8.8	8.8	31	7.5
Soil Colour	N	2040		N/A		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	Grey	Grey	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Grey	Dark Brown	Dark Brown	Dark Brown
Other Material	N	2040		N/A		Vegetation	Vegetation	Stones	Stones	Stones	None	Vegetation	Vegetation	None	Stones	Vegetation	Vegetation	Vegetation	Stones	Vegetation	Vegetation	Stones	Stones	Vegetation	None	None	None	Stones	Vegetation	Vegetation	Vegetation	Stones	Vegetation	Stones
Soil Texture	N	2040		N/A		Silty Clay Loam	Sandy Loam	Loamy Sand	Sandy Loam	Sandy Loam	Silty Clay	Sandy Loam	Sandy Loam	Silty Clay	Sand	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam	Sand	Sandy Loam	Sandy Loam	Sandy Clay Loam	Silty Clay Loam	Clay	Silty Clay Loam	Sandy Loam	Sandy Loam	Loamy Sand	Sandy Loam	Sandy Loam	Sandy Clay	Sand
pH	M	2010		4.0		7.2	9.45	9.15	11.2	12.6	6.54	8.35	11.8	8.06	8.94	8.86	10.9	12.1	12.2	11.8	12.2	9.95	12.6	8.12	6.64	7.63	7.18	10.1	9.46	8.63	12.7	12.1	6.87	10.8
Cyanide (Total)	M	2300	mg/kg	0.5		<1	<1	<1	<1	<1	<1	<1	<1	<1	20.9	18.5	12.7	<1	<1	<1	3.56	<1	<1	<1	<1	<1	<1	<1	1.98	<1	<1	1.02	<1	<1
Ammoniacal Nitrogen	M	2425	mg/kg	0.5		353	<12	<12	<12	<12	194	<12	<12	164	<12	<12	<12	<12	<12	<12	<12	<12	<12	205	190	102	378	<12	<12	68	<12	<12	216	<12
Iron (Total)	N	2430	mg/kg	100		24600	210000	216000	160000	223000	49700	51700	151000	41500	43800	41500	43600	130000	92900	125000	185000	114000	188000	40000	34400	41300	39900	38700	52300	38300	129000	112000	39800	133000
Arsenic	M	2450	mg/kg	1	37	13.3	11.5	9.31	9.76	12.8	16.1	10.4	8.56	15.2	10.5	12.1	11.2	<6	<6	10.3	8.95	13.4	5.77	12.4	13.1	13.6	14	10.8	10.9	14.2	4.75	<6	11.9	<6
Cadmium	M	2450	mg/kg	0.1	26	<0.02	<0.2	<0.2	<0.2	<0.2	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.2	<0.2	<0.2	<0.02	<0.2	<0.02	<0.02	<0.02	<0.02	<0.02	0.129	<0.02	<0.02	<0.02	<0.2	<0.02	<0.2
Chromium	M	2450	mg/kg	1	910	35	75.9	<9	150	388	46.6	16.2	480	36.4	34	37.7	69.8	454	369	220	297	60.5	466	31.7	37.7	33.7	35.9	38.9	36.2	30.3	352	439	41.4	<9
Manganese	M	2450	mg/kg	5		188	9030	3260	11200	28300	1260	3220	35900	866	3750	4240	5570	28800	22300	18000	32400	4850	49400	1390	267	736	349	3590	2860	1710	29500	32200	639	2070
Copper	M	2450	mg/kg	0.5	2400	15.3	26.1	<14	<14	286	14.2	14.7	23.9	10.6	17.9	26.2	21.1	19	<14	26.7	24.8	17.1	12.5	10.3	16.3	11.8	22.5	31.2	107	12.2	12.4	<14	13.7	<14
Mercury	M	2450	mg/kg	0.1	1.2	<0.14	<1.4	<1.4	<1.4	<1.4	<0.14	<0.14	<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	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<1.4	<0.14	<1.4
Nickel	M	2450	mg/kg	0.5	130	25.1	34.1	20.3	17.1	36.3	43.7	18.4	14.4	43	13.3	15.5	18	13.5	6.83	22.5	14.2	21.1	5.87	34	27.7	38.8	30.4	28.1	33	35.1	6.38	8.31	30.3	37.5
Lead	M	2450	mg/kg	0.5	200	31.6	144	55.6	38.2	31.2	29.3	23.5	19.6	27.8	33	24.7	58.6	16.6	21.8	20	2.92	74.8	<0.7	22.7	45.1	24.5	39.1	72.6	112	23.8	0.992	10.5	32	41.9
Selenium	M	2450	mg/kg	0.2	250	<1	<10	<10	<10	16.4	<1	1.72	13.1	<1	2.36	2.91	3.3	19.3	12	13.3	10.2	<10	13.9	<1	<1	<1	<1	2.25	1.6	<1	10.8	21.1	<1	<10
Vanadium	U	2450	mg/kg	5	410	50.9	168	98	179	405	71.4	52.3	443	61.6	59.2	92.1	84.3	508	335	249	360	95	439	53.6	57.8	56.5	58	87.9	64.4	52.9	283	379	65.9	163
Zinc	M	2450	mg/kg	0.5	3700	112	467	236	164	122	129	109	92.3	117	97.9	103	156	43.3	45.1	56.1	53.8	239	14.6	103	129	107	165	151	864	104	30.9	30.2	114	145
Organic Matter	M	2625	%	0.4		5.03	7.59	3.28	7.28	2.64	1.48	29	8.4	1.15	32.2	45.2	31.7	7.36	27.8	1.52	1.14	2.1	1.19	1.05	5.78	1.23	5.65	22.8	28.3	0.953	1.25	0.972	3.78	51.4
Aliphatic TPH >C5-C6	N	2680	mg/kg	1	42	<0.02	<0.02	<0.02	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.02	<0.02	<0.01	<0.02	0.0311	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02
Aliphatic TPH >C6-C8	N	2680	mg/kg	1	100	<0.02	<0.02	0.0361	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.02	<0.02	<0.02	0.0463	0.0155	0.0391	0.0111	<0.02	0.0561	0.0715	<0.01	<0.02	0.124	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02
Aliphatic TPH >C8-C10	M	2680	mg/kg	1	27	<0.02	<0.02	0.035	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.02	<0.02	<0.02	0.0328	0.0155	0.0467	<0.01	<0.02	0.619	0.195	<0.01	<0.02	0.891	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02
Aliphatic TPH >C10-C12	M	2680	mg/kg	1	130	<0.02	<0.02	0.0552	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.02	<0.02	<0.02	0.276	0.164	0.981	0.0477	<0.02	0.74	0.542	<0.01	<0.02	1.53	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02
Aliphatic TPH >C12-C16	M	2680	mg/kg	1	1.10E+03	<0.1	0.132	2.13	3.7	4.04	<0.1	1.61	8.13	<0.1	5.28	3.06	4.72	5.34	1.38	23.5	1.25	0.683	8.03	70.9	<0.1	<0.1	<0.1	0.233	1.25	<0.1	0.718	14.5	<0.1	5.47
Aliphatic TPH >C16-C21	M	2680	mg/kg	1	6.50E+04	<0.1	4.21	9.81	35.9	21.7	1.14	19	29.4	<0.1	20.9	21.4	21.6	28.6	11.1	109	7.31	3.8	13	67.6	<0.1	<0.1	<0.1	9.83	10.3	<0.1	5.58	75.1	<0.1	23.9
Aliphatic TPH >C21-C35	M	2680	mg/kg	1	6.50E+04	4.89	49.6	82.2	64.9	83.4	1.79	80.5	65.9	<0.1	51.3	33.7	43	61.1	35.4	119	28.8	41.6	73.8	14.1	5.27	<0.1	5.15	46.5	64.8	<0.1	18.2	63.1	1.71	131
Aliphatic TPH >C35-C44	M	2680	mg/kg	1	6.50E+04	<0.1	17.7	35.8	16.2	27.7	<0.1	14.8	7.3	<0.1	7.89	4.55	8.94	18.7	8.93	52.1	16	16.3	20.4	<0.1	<0.1	<0.1	<0.1	17.4	29.7	<0.1	8.55	36.3	<0.1	27.3
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5		4.89	71.7	130	121	137	2.93	116	111	<0.1	85.5	62.7	78.3	114	56.9	304	53.4	62.4	115	153	5.27	<0.1	5.15	73.9	106	<0.1	33	189	1.71	188
Aromatic TPH >C5-C7	N	2680	mg/kg	1	70	<0.02	<0.02	<0.02	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	0.156	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02
Aromatic TPH >C7-C8	N	2680	mg/kg	1	130	<0.02	<0.02	<0.02	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	0.373	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02
Aromatic TPH >C8-C10	M	2680	mg/kg	1	34	<0.02	<0.02	0.0233	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.02	<0.02	<0.02	0.0215	<0.01	0.0315	<0.01	<0.02	0.412	0.13	<0.01	<0.02	0.593	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02
Aromatic TPH >C10-C12	M	2680	mg/kg	1	74	<0.02	<0.02	0.0371	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.02	<0.02	<0.02	0.184	0.11	0.654	0.0311	<0.02	0.494	0.361	<0.01	<0.02	1.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02
Aromatic TPH >C12-C16	M	2680	mg/kg	1	140	<0.1	2.49	2.8	2.98	0.856	0.23	5.57	2.76	<0.1	10.4	6.3	7.22	2.3	2.16	5.66	1.7	1.97	3.21	21.8	<0.1	<0.1	<0.1	3.58	1.6	<0.1	0.197	3.18	<0.1	3.33
Aromatic TPH >C16-C21	U	2680	mg/kg	1	260	1.3	10.7	11.3	29.3	13.3	1.42	22.6	18.4	<0.1	86.9	39.7	55	16.2	17.1	45.8	8.59	8.5	34.8	26.2	0.268	<0.1	<0.1	56.6	16.3	<0.1	4.06	25.8	<0.1	15.9
Aromatic TPH >C21-C35	M	2680	mg/kg	1	1100	39.8	52.3	61.1	91.2	79.2	6.09	107	96.4	<0.1	358	149	189	80.3	73.3	136	68.6	45.3	216	9.14	25.1	<0.1	50.5	174	93.1	1.53	24.4	85.4	11.3	65.3
Aromatic TPH >C35-C44	N	2680	mg/kg	1	1100	8.98	28.4	44.9	33.6	33.6	3.1	31.6	35.7	<0.1	84.7	36.3	53.5	30.4	25.3	86.9	50.5	28.7	76.5	1.62	3.81	<0.1	7.63	64.5	43.7	2.26	14.5	51.3	1.67	28.9
Total Aromatic Hydrocarbons	N	2680	mg/kg	5		50.1	94	120	157	127	10.8	166	153	<0.1	540	232	305	129	118	275	129	84.5	330	58.8	29.2	<0.1	58.2	299	155	3.78	43.1	166	13	113
Total Petroleum Hydrocarbons	N	2680	mg/kg	10		55	166	250	278	264	13.8	282	264	<0.1	626	294	383	244	175	580	183	147	448	213	34.4	<0.1	67.5	373	261	3.78	76.1	355	14.7	301
Benzene	M	2760	µg/kg	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	1	130000	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	102	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70	<70
Ethylbenzene	M	2760	µg/kg	1	47000	<40	<40	<40	<40	<40	<40	<40	<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	1	56000	<100	<100	<100	<100	<100	<100	<100	<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	1	60000	<100	<100	<100	<100	<100	<100	<100	<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	1		<100	<100	<100	<100	<100	<100	<100	<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	0.1	15.00	<0.009	0.299	0.228	<0.13	<0.13	<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	<0.13	0.436	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13
Acenaphthylene	N	2800	mg/kg	0.1	170.00	<0.012	0.174	0.142	0.234	0.112	<0.012	0.0516	0.0778	<0.012	0.8	1.39	0.571	<0.012	<0.012	0.155	<0.012	0.116	<0.06	<0.012	<0.012	<0.012	<0.012	0.236	0.446	<0.012	<0.012	<0.06	<0.012	0.206
Acenaphthene	M	2800	mg/kg	0.1	210.00	<0.008	0.0296	0.0225	<0.04	0.0609	<0.008	0.0285	0.0739	<0.008	0.221	0.396	0.192	0.047	0.0583	<0.04	0.0292	0.0186	0.255	<0.008	<0.008	<0.008	0.0282	0.0494	0.088	<0.008	<0.008	<0.04	<0.008	0.0245
Fluorene	M	2800	mg/kg	0.1	170.00	<0.01	0.182	0.078	0.0945	0.0881	<0.01	0.075	0.0665	<0.01	0.488	1.11	0.464	0.0266	0.0265	<0.05	<0.01	0.0597	0.107	0.0344	<0.01	<0.01	<0.01	0.123	0.365	<0.01	<0.01	<0.05	<0.01	0.193
Phenanthrene	M	2800	mg/kg	0.1	95.00	<0.015	1.29	0.848	1.74	2.34	0.0452	0.549	0.904	<0.015	5.81	10.3	5.03	0.513	0.803	0.361	0.185	0.659	2.93	0.0718	<0.015	<0.015	0.024	1.54	2.81	<0.015	0.22	0.176	<0.015	1.33
Anthracene	M	2800	mg/kg	0.1	2400.00	<0.016	0.394	0.226	0.404	0.503	<0.016	0.158	0.232	<0.016	1.45	2.83	1.36	0.112	0.145	<0.08	0.0302	0.188	0.484	0.0258	<0.016	<0.016	<0.016	0.475	0.779	<0.016	0.0206	<0.08	<0.016	0.478
Fluoranthene	M	2800	mg/kg	0.1	280.00	<0.017	1.84	1.62	3.08	6.33	0.0694	0.738	2.53	<0.017	10.7	16.6	7.72	1.21	1.35	1.22	0.745	1.02	7.16	0.024	<0.017	<0.017	0.0335	3.33	5.18	<0.017	0.624	0.648	<0.017	2.16
Pyrene	M	2800	mg/kg	0.1	620.00	<0.015	1.38	1.3	2.43	4.32	0.0569	0.594	2.36	<0.015	8.71	13.1	6.06	1.1	1.23	1.35	0.777	0.727	6.84	0.0201	<0.015	<0.015	0.0253	2.64	3.98	<0.015	0.546	0.711	<0.015	1.68
Benzo[a]anthracene	M	2800	mg/kg	0.1	7.20	<0.014	0.897	0.837	1.62	3.05	0.0336	0.456	1.65	<0.014	6.21	8.9	4.25	0.787	0.853	1.25	0.712	0.551	5.4	<0.014	<0.014	<0.014	<0.014	2.17	2.96	<0.014	0.249	0.519	<0.014	0.987
Chrysene	M	2800	mg/kg	0.1	15.00	<0.01	0.946	0.792	1.55	3.27	0.0416	0.463	1.95	<0.01	6.2	7.02	4.12	0.799	0.828	1.56	0.831	0.512	6.03	<0.01	<0.01	<0.01	0.0162	2.02	2.96	<0.01	0.287	0.565	<0.01	0.929
Benzo[b]fluoranthene	M	2800	mg/kg	0.1	2.60	<0.015	1.29	1.25	2.62	4.82	0.0623	0.658	3.17	<0.015	9.9	12.9	6.61	1.29	1.06	2.73	1.46	0.511	8.32	<0.015	<0.015	<0.015	<0.015	3.58	5.19	<0.015	0.34	1.17	<0.015	1.36
Benzo[k]fluoranthene	M	2800	mg/kg	0.1	77.00	<0.014	0.521	0.436	0.808	1.69	0.03	0.181	1.15	<0.014	3.52	3.69	2.16	0.458	0.462	1.09	0.496	0.234	3.3	<0.014	<0.014	<0.014	<0.014	1.59	1.67	<0.014	0.15	0.394	<0.014	0.509
Benzo[a]pyrene	M	2800	mg/kg	0.1	2.20	<0.015	0.804	0.771	1.62	3.06	0.0387	0.397	2.15	<0.015	6.78	8.46	4.06	0.918	0.887	1.96	1.02	0.464	6.2	<0.015	<0.015	<0.015	<0.015	2.29	3.48	<0.015	0.255	0.745	<0.015	0.817
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.1	27.00	<0.018	0.736	0.726	1.01	1.88	0.0323	0.242	1.75	<0.018	4.16	4.8	3.58	0.504	0.546	1.2	0.554	0.333	5.77	<0.018	<0.018	<0.018	<0.018	1.55	2.79	<0.018	0.183	0.497	<0.018	0.567
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.1	0.24	<0.023	0.161	0.13	0.311	0.598	<0.023	0.0958	0.401	<0.023	1.34	1.49	1.02	0.172	0.146	0.376	0.181	0.0828	0.822	<0.023	<0.023	<0.023	<0.023	0.488	0.824	<0.023	0.0451	0.148	<0.023	0.124
Benzo[g,h,i]perylene	M	2800	mg/kg	0.1	320.00	<0.024	0.584	0.549	1.19	2.04	0.0355	0.315	1.69	<0.024	4.93	5.81	3.45	0.635	0.608	1.48	0.71	0.365	4.05	<0.024	<0.024	<0.024	<0.024	2	3.61	<0.024	0.206	0.604	<0.024	0.515
Total Of 16 PAH's	N	2800	mg/kg	2		<0.118	11.5	9.95	19.6	34.6	0.461	5.14	20.3	<0.118	73.6	101	52.2	8.63	9.11	14.7	7.77	6.13	59.7	0.203	<0.118	<0.118	0.672	24.6	37.8	<0.118	3.18	6.17	<0.118	12.4
Resorcinol	M	2920	mg/kg	0.02																														
Phenol	M	2920	mg/kg	0.02	280.00	<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	0.0444	<0.01	0.0104	<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	0.02		<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	0.0111	<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	0.02		<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	0.1	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	0.0555	<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						W29	W29	AE27	AE27	AE27	AE27	AC28	AD29	AD29	AC28	AD29	AE29	AE29	W28	W28	X28	X28	Z28	Z28	X28	X28	X28	AD25	AD25	AD25	AE25	AE25	AE25	AE26
Client: Rodgers Leask Environmental			**Job No.:**			181101-44	181101-44	181107-11	181107-11	181107-11	181107-11	181121-47	181121-47	181121-47	181121-47	181121-47	181121-47	181121-47	181102-43	181102-43	181102-43	181102-43	181102-43	181102-43	181102-43	181102-43	181102-43	181106-25	181106-25	181106-25	181106-25	181106-25	181106-25	181106-25
Quotation No.: Q21-24056			**Sample ID.:**			18646160	18646164	18681153	18681237	18681241	18681247	18786527	18786511	18786517	18786535	18786522	18786500	18786505	18653991	18653998	18654016	18654023	18654118	18653985	18654030	18654036	18654042	18673542	18673546	18673558	18673497	18673509	18673513	18673527
Order No.: .			Client Sample Ref.:	**Generic Assessment Criteria (GAC) Residential End Use with Homegrown Produce (SOM 1%)**		4E-A8	4E-A8V	4G-B7-V	4G-B8	4G-B8	4G-B8-V	4G-A7	4G-A8	4G-A8	4G-A7-V	4G-A8-V	4G-B9	4G-B9-V	4E-A7	4E-A7	4E-B7	4E-B7V	4E-D7	4E-D7V	4E-C7	4E-C7	4E-C7V	4G-A6	4G-A6	4G-A6-V	4G-B5	4G-B5	4G-B5-V	4G-B6
			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	SOLID
			Top Depth (m):			1.00-1.00	1.70-1.70	1.20-1.20	0.40-0.40	0.80-0.80	1.60-1.60	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	0.40-0.40	0.90-0.90	0.50-0.50	1.60-1.60	0.50-0.50	1.90-1.90	0.50-0.50	1.00-1.00	1.80-1.80	0.50-0.50	0.70-0.70	2.80-2.80	0.50-0.50	1.00-1.00	2.10-2.10	0.50-0.50
			Bottom Depth (m):																															
			Date Sampled:			10/31/2018	10/31/2018	11/6/2018	11/6/2018	11/6/2018	11/6/2018	20/11/2018	20/11/2018	20/11/2018	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	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	05/11/2018
			Asbestos Lab:																															
Determinand	**Accred.**	**SOP**	**Units**	**LOD**																														
ACM Type	U	2192		N/A		Chrysotile				Chrysotile																								
Asbestos Identification	U	2192		N/A		Detected	-	-	-	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	-	-	-	0.0028	-	-	-	-	-	-	-	-	-															
Total Asbestos	U	2192	%	0.001		<0.001	-	-	-	0.0028	-	-	-	-	-	-	-	-	-															
Moisture	N	2030	%	0.020		7.7	23	30	6	6.7	34	9.2	8.2	4.6	22	28	7.6	22	9.4	14	7.2	24	15	31	7.7	13	38	14	14	72	7.7	7.1	21	9.7
Soil Colour	N	2040		N/A		Dark Brown	Dark Brown	Black	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Light Brown	Dark Brown	Grey	Grey	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
Other Material	N	2040		N/A		Stones	Vegetation	Vegetation	Stones	Stones	Vegetation	Stones	Stones	Stones	None	None	Stones	Stones	Vegetation	Stones	Stones	Stones	Stones	Vegetation	Stones	Stones	Stones	Stones	Stones	Vegetation	Stones	Stones	None	Vegetation
Soil Texture	N	2040		N/A		Loamy Sand	Silty Clay	Clay	Loamy Sand	Loamy Sand	Clay	Sandy Loam	Loamy Sand	Sand	Clay	Clay	Sandy Loam	Silty Clay Loam	Sandy Loam	Stone/Soil	Stone/Soil	Silty Clay Loam	Loamy Sand	Sandy Loam	Sand	Sand	Clay	Sand	Sandy Clay	Loamy Sand	Sand	Loamy Sand	Silty Clay	Sandy Loam
pH	M	2010		4.0		12.5	8.14	7.43	10.6	12.2	7.54	10.7	10.1	11.4	8.76	7.48	11.7	8.48	10.3	11.6	12.7	7.89	10.3	7.87	10.4	11.4	8.25	11.9	11.6	6.85	8.81	12.3	8.16	10.5
Cyanide (Total)	M	2300	mg/kg	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	0.5		<12	76.4	235	22.5	<12	264	<12	<12	<12	59.7	202	<12	113	<12	<12	21	130	28.2	262	13.6	<12	269	22.7	<12	97.3	<12	<12	<12	15.6
Iron (Total)	N	2430	mg/kg	100		66500	38900	27900	205000	177000	28000	43400	91800	26700	38300	22300	196000	23600	183000	134000	220000	38200	77100	42200	174000	152000	68100	165000	159000	13200	25000	207000	31500	58700
Arsenic	M	2450	mg/kg	1	37	5.52	18.9	9.92	12	<6	10.8	6.83	7.85	2.33	12.4	11	7.56	8.08	13.6	<6	10.5	19.1	12.2	15	15.3	9.98	15.5	13.8	<6	10.2	8.81	<6	141	10.7
Cadmium	M	2450	mg/kg	0.1	26	<0.02	0.3	<0.02	<0.2	<0.2	<0.02	<0.02	0.686	0.604	0.267	0.264	1.84	<0.02	<0.2	<0.2	<0.2	0.316	<0.2	<0.2	<0.2	<0.2	<0.02	1.19	<0.2	0.222	0.245	<0.2	0.408	0.932
Chromium	M	2450	mg/kg	1	910	115	27	33.3	65.8	397	31	33	245	49.4	74.3	33.1	403	25.9	188	359	775	40.8	<9	39.8	63.2	168	115	240	533	3.2	21.7	763	26.9	79.1
Manganese	M	2450	mg/kg	5		13100	1750	277	7300	413	274	4350	15700	2950	2710	328	3380	650	11500	26600	33000	523	1940	1300	11400	7850	6170	23700	30100	292	1110	4310	1050	6010
Copper	M	2450	mg/kg	0.5	2400	11.1	12.1	19.6	84.5	26.4	12.9	10.7	19.2	4.82	12	14.7	62.8	7.73	25.1	20	34.4	11.4	<14	<14	25.3	24.9	23.3	32.3	15.9	15.6	26.5	28.3	66	23
Mercury	M	2450	mg/kg	0.1	1.2	<0.14	<0.14	<0.14	<1.4	<1.4	<0.14	<0.14	<1.4	<0.14	<0.14	<0.14	<1.4	<0.14	<1.4	<1.4	<1.4	<0.14	<1.4	<1.4	<1.4	<1.4	<0.14	<0.14	<1.4	<0.14	<0.14	<1.4	<0.14	<0.14
Nickel	M	2450	mg/kg	0.5	130	7.78	42.1	28	54.3	15.4	24.3	13.1	18.9	2.88	36	30.9	24.3	31.1	21.6	14.6	26.4	39.3	14.3	29.4	31.6	24.2	22.1	22.3	12.7	9.29	24.5	12	33	17.5
Lead	M	2450	mg/kg	0.5	200	48.9	28.8	32	107	26.2	34.3	32.4	37.2	28.5	24.8	29.7	30.4	20	86.7	36	31.2	29.4	94.4	39.8	116	91.6	45.3	30.1	14.3	4.61	25.2	19.4	29.4	54.8
Selenium	M	2450	mg/kg	0.2	250	6.07	<1	<1	<10	20.9	<1	1.3	<10	<1	1.04	<1	15.6	<1	<10	10.9	22	<1	<10	<10	<10	<10	2.88	6.38	15.5	1.55	<1	24.3	<1	2.33
Vanadium	U	2450	mg/kg	5	410	117	54.2	47.4	106	416	48.6	58.8	225	38.8	89.4	54.1	453	43.3	276	419	591	66.9	43.7	63.9	226	140	108	430	985	10.5	40.4	702	48.4	113
Zinc	M	2450	mg/kg	0.5	3700	201	116	142	446	89.5	101	114	112	109	97.8	108	69.1	83.5	346	85.9	97.6	108	270	106	422	323	149	99.3	50.6	47.1	45.1	51.8	130	332
Organic Matter	M	2625	%	0.4		4.91	0.905	3.64	14.3	<0.35	6.26	24.8	6.1	10.8	1.56	4.14	9.64	0.85	6.81	8.45	1.56	1.61	2.78	5.07	6.84	27.1	9.19	5.69	3.22	59.8	9.03	1.08	0.926	6.47
Aliphatic TPH >C5-C6	N	2680	mg/kg	1	42	0.0336	<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	<0.01	<0.2	<0.02	<0.02	<0.02	<0.02	<0.02	0.0697	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatic TPH >C6-C8	N	2680	mg/kg	1	100	0.137	<0.02	<0.02	<0.02	0	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.172	3.32	0.0377	<0.02	<0.02	0.0526	0.0314	<0.02	0.219	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatic TPH >C8-C10	M	2680	mg/kg	1	27	0.444	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	2.5	46.7	0.0237	<0.02	<0.02	0.092	0.0238	<0.02	0.481	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatic TPH >C10-C12	M	2680	mg/kg	1	130	2.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	7.19	112	0.109	<0.02	<0.02	0.139	<0.02	<0.02	0.881	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatic TPH >C12-C16	M	2680	mg/kg	1	1.10E+03	34.2	<0.1	<0.1	2.6	2.13	<0.1	0.793	2.71	0.593	<0.1	0.156	1.85	<0.1	77.4	177	1.71	0.174	<0.1	0.53	4.01	2.92	1.63	2.03	1.5	0.546	1.67	1.61	<0.1	15
Aliphatic TPH >C16-C21	M	2680	mg/kg	1	6.50E+04	79.4	<0.1	<0.1	21.8	9.8	<0.1	4.98	26.9	5.21	<0.1	<0.1	9.2	<0.1	108	170	10.9	<0.1	1.25	1.63	14.2	9.06	5.65	8.87	3.86	<0.1	4.36	7.42	<0.1	13.4
Aliphatic TPH >C21-C35	M	2680	mg/kg	1	6.50E+04	404	<0.1	7.61	226	60.1	6.58	60.5	167	24.7	<0.1	0.692	60.7	<0.1	425	561	90.5	0.286	17.7	16.1	97.9	42	55.3	53.5	21.9	42.8	11.9	51.5	<0.1	121
Aliphatic TPH >C35-C44	N	2680	mg/kg	1	6.50E+04	91.4	<0.1	<0.1	76.7	23.4	<0.1	17.2	45.8	4.74	<0.1	0.235	13.7	<0.1	86.1	178	38.7	0.525	1.63	3.55	116	17.3	10.8	25.2	15.1	<0.1	1.46	8.9	<0.1	91.6
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5		609	<0.1	7.61	327	95.5	6.58	83.5	242	35.2	<0.1	1.08	85.4	<0.1	4100	4410	202	<0.1	205	20.1	255	120	37.2	89.6	42.3	43.3	19.4	69.4	<0.1	241
Aromatic TPH >C5-C7	N	2680	mg/kg	1	70	<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	<0.2	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.0956	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatic TPH >C7-C8	N	2680	mg/kg	1	130	0.0314	<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	<0.2	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.0308	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatic TPH >C8-C10	M	2680	mg/kg	1	34	0.296	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	1.67	31.1	<0.02	<0.02	<0.02	0.0613	<0.02	<0.02	0.321	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatic TPH >C10-C12	M	2680	mg/kg	1	74	1.36	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	7.19	112	0.109	<0.02	<0.02	0.139	<0.02	<0.02	0.881	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatic TPH >C12-C16	M	2680	mg/kg	1	140	22.4	<0.1	<0.1	4.83	0.595	<0.1	1.82	2.11	0.867	<0.1	0.122	1.44	<0.1	77.4	177	1.71	0.174	<0.1	0.53	4.01	2.92	1.63	1.41	<0.1	2.52	1.18	0.435	<0.1	5.94
Aromatic TPH >C16-C21	U	2680	mg/kg	1	260	213	<0.1	<0.1	36.8	6.37	<0.1	7.24	11.8	6.21	<0.1	<0.1	17.7	<0.1	108	170	10.9	<0.1	1.25	1.63	14.2	9.06	5.65	12.4	5.95	8	5.16	13.2	0.34	13.9
Aromatic TPH >C21-C35	M	2680	mg/kg	1	1100	449	2.3	11.5	187	45.2	29.2	50.3	109	16.8	4.61	3.67	130	<0.1	425	561	90.5	0.286	17.7	16.1	97.9	42	55.3	98	57	159	18.6	108	3.05	229
Aromatic TPH >C35-C44	N	2680	mg/kg	1	1100	123	3.01	1.98	115	27.6	3.75	22.5	60.2	4.96	0.547	0.395	42.1	<0.1	86.1	178	38.7	0.525	1.63	3.55	116	17.3	10.8	41	20	32.5	6.72	35.5	0.95	228
Total Aromatic Hydrocarbons	N	2680	mg/kg	5		808	5.32	13.5	343	79.7	32.9	81.8	183	28.9	5.16	4.18	192	<0.1	696	1090	142	0.986	20.6	21.8	232	71.3	73.4	153	82.9	202	31.6	157	4.34	476
Total Petroleum Hydrocarbons	N	2680	mg/kg	10		1420	5.32	21.1	671	175	39.5	165	425	64.1	5.16	5.27	277	<0.1	4820	5850	344	0.986	226	42.4	488	191	114	242	125	245	51.1	226	4.34	717
Benzene	M	2760	µg/kg	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	1	130000	<70	<70	<70	<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
Ethylbenzene	M	2760	µg/kg	1	47000	<40	<40	<40	<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
m & p-Xylene	M	2760	µg/kg	1	56000	<100	<100	<100	<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
o-Xylene	M	2760	µg/kg	1	60000	<100	<100	<100	<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
Methyl Tert-Butyl Ether	M	2760	µg/kg	1		<100	<100	<100	<100	<100	<100	<100	<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	0.1	15.00	0.691	<0.13	<0.13	<0.13	<0.13	<0.13	0.105	0.167	0.0268	<0.009	<0.009	0.0951	<0.009	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	0.0835	0.0332	<0.09	0.136	0.0272	<0.009	0.243
Acenaphthylene	N	2800	mg/kg	0.1	170.00	0.184	<0.012	<0.012	0.185	<0.06	<0.012	0.0402	<0.12	<0.012	<0.012	<0.012	0.0328	<0.012	0.0927	<0.012	0.0154	<0.012	0.0359	<0.012	0.0431	<0.012	<0.012	0.0272	<0.012	<0.12	0.0501	<0.012	<0.012	0.21
Acenaphthene	M	2800	mg/kg	0.1	210.00	<0.04	<0.008	<0.008	<0.04	<0.04	<0.008	0.0159	<0.08	0.0113	<0.008	<0.008	0.124	<0.008	0.00918	0.244	0.0444	<0.008	<0.008	0.0505	0.0173	<0.008	0.0216	0.0511	0.0303	<0.08	0.00892	0.0342	<0.008	0.0287
Fluorene	M	2800	mg/kg	0.1	170.00	0.252	<0.01	<0.01	0.11	<0.05	<0.01	0.0223	<0.1	0.0178	<0.01	<0.01	0.0574	<0.01	0.0784	0.0957	0.0211	<0.01	0.0155	0.0178	0.029	<0.01	<0.01	0.033	0.0139	<0.1	0.0357	0.0126	<0.01	0.126
Phenanthrene	M	2800	mg/kg	0.1	95.00	2.83	0.0333	<0.015	1.03	0.195	<0.015	0.239	0.432	0.186	<0.015	<0.015	1.13	<0.015	0.511	0.583	0.427	<0.015	0.15	0.141	0.291	0.376	0.0871	0.464	0.276	<0.15	0.306	0.616	<0.015	0.999
Anthracene	M	2800	mg/kg	0.1	2400.00	0.59	<0.016	<0.016	0.235	<0.08	<0.016	0.0897	0.254	0.0357	<0.016	<0.016	0.247	<0.016	0.144	0.0602	0.0662	<0.016	0.0411	<0.016	0.0747	0.0938	<0.016	0.111	0.0463	<0.16	0.0824	0.0602	<0.016	0.374
Fluoranthene	M	2800	mg/kg	0.1	280.00	3.38	0.0686	<0.017	1.9	0.393	0.0304	0.497	1.06	0.221	0.0387	<0.017	3.18	<0.017	0.781	0.33	1.24	<0.017	0.195	0.216	0.492	0.576	0.175	1.79	1.2	<0.17	0.445	1.52	<0.017	2.13
Pyrene	M	2800	mg/kg	0.1	620.00	2.27	0.0474	<0.015	1.41	0.328	0.025	0.408	0.903	0.216	0.0401	<0.015	3.43	<0.015	0.798	0.564	1.39	<0.015	0.171	0.192	0.388	0.43	0.224	1.84	1.26	<0.15	0.379	1.45	<0.015	1.67
Benzo[a]anthracene	M	2800	mg/kg	0.1	7.20	1.21	0.0255	<0.014	0.794	0.172	<0.014	0.333	0.486	0.178	0.0383	<0.014	2.57	<0.014	0.315	0.116	0.923	<0.014	0.0983	0.103	0.247	0.192	0.142	1.46	1.04	<0.14	0.328	1.22	<0.014	1.15
Chrysene	M	2800	mg/kg	0.1	15.00	1.05	0.0222	<0.01	0.696	0.171	0.0202	0.375	0.608	0.189	0.0441	<0.01	2.73	<0.01	0.307	0.311	1.02	<0.01	0.11	0.115	0.256	0.574	0.153	1.47	1.14	<0.1	0.305	1.29	<0.01	1.05
Benzo[b]fluoranthene	M	2800	mg/kg	0.1	2.60	1.23	0.0282	<0.015	0.858	0.167	0.0314	0.582	0.95	0.355	0.0658	<0.015	4.91	<0.015	0.352	0.389	1.09	<0.015	0.16	0.107	0.267	0.376	0.155	1.62	1.07	<0.15	0.519	1.61	<0.015	1.24
Benzo[k]fluoranthene	M	2800	mg/kg	0.1	77.00	0.491	<0.014	<0.014	0.363	0.102	<0.014	0.219	0.318	0.0971	0.0198	<0.014	1.73	<0.014	0.157	0.14	0.624	<0.014	0.0491	0.0548	0.106	<0.014	0.0746	0.914	0.695	<0.14	0.201	0.718	<0.014	0.47
Benzo[a]pyrene	M	2800	mg/kg	0.1	2.20	1.04	0.0198	<0.015	0.726	0.187	<0.015	0.371	0.58	0.214	0.0669	<0.015	3.19	<0.015	0.291	0.131	1.16	<0.015	0.0817	0.103	0.238	0.209	0.154	1.96	1.39	<0.15	0.316	1.63	<0.015	1.13
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.1	27.00	0.815	<0.018	<0.018	0.469	0.114	<0.018	0.19	0.328	0.149	0.0378	<0.018	2.58	<0.018	0.217	0.174	0.743	<0.018	0.063	0.0774	0.157	0.19	0.106	1.34	0.875	<0.18	0.227	0.96	<0.018	0.729
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.1	0.24	0.187	<0.023	<0.023	0.123	<0.115	<0.023	0.0599	<0.23	0.0391	<0.023	<0.023	0.539	<0.023	0.0566	0.0382	0.178	<0.023	<0.023	<0.023	0.0467	0.0336	<0.023	0.283	0.207	<0.23	0.0744	0.264	<0.023	0.209
Benzo[g,h,i]perylene	M	2800	mg/kg	0.1	320.00	0.783	<0.024	<0.024	0.566	0.147	<0.024	0.25	0.435	0.158	0.0502	<0.024	2.24	<0.024	0.265	0.208	0.895	<0.024	0.0688	0.0861	0.206	0.167	0.106	1.32	0.946	<0.24	0.24	1.11	<0.024	0.862
Total Of 16 PAH's	N	2800	mg/kg	2		16.6	0.271	<0.118	9.75	1.98	<0.118	3.8	6.52	2.09	0.402	<0.118	28.8	<0.118	4.56	3.42	9.91	<0.118	1.35	2.6	2.95	3.22	1.61							
Resorcinol	M	2920	mg/kg	0.02																														
Phenol	M	2920	mg/kg	0.02	280.00	0.0325	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.011	<0.01	0.0108	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.0323	<0.01	<0.01
Cresols	M	2920	mg/kg	0.02		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	<0.01	<0.01	<0.01	<0.01
Xylenols	M	2920	mg/kg	0.02		0.0217	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	0.055	<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
1-Naphthol	N	2920	mg/kg	0.02																														
Trimethylphenols	M	2920	mg/kg	0.02																														
Total Phenols	M	2920	mg/kg	0.1	280.00	0.0759	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	0.066	<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

P18-669 Llanwern Phase 4G Soil Chemical Screening Results

Project: P18-669						AE26	AE26
Client: Rodgers Leask Environmental			Job No.:			181106-25	181106-25
Quotation No.: Q21-24056			Sample ID.:		Generic Assessment Criteria (GAC) Residential End Use with Homegrown Produce (SOM 1%)	18673532	18673538
Order No.: .			Client Sample Ref.:			4G-B6	4G-B6-V
			Sample Type:			SOLID	SOLID
			Top Depth (m):			0.90-0.90	1.80-1.80
			Bottom Depth (m):				
			Date Sampled:			05/11/2018	05/11/2018
			Asbestos Lab:				
Determinand	**Accred.**	**SOP**	**Units**	**LOD**			
ACM Type	U	2192		N/A			
Asbestos Identification	U	2192		N/A		Not Detected	-
Asbestos by Gravimetry	U	2192	%	0.001			
Total Asbestos	U	2192	%	0.001			
Moisture	N	2030	%	0.020		9.4	24
Soil Colour	N	2040		N/A		Dark Brown	Dark Brown
Other Material	N	2040		N/A		Vegetation	Vegetation
Soil Texture	N	2040		N/A		Sandy Loam	Sandy Loam
pH	M	2010		4.0		11.9	7.58
Cyanide (Total)	M	2300	mg/kg	0.5		<1	<1
Ammoniacal Nitrogen	M	2425	mg/kg	0.5		<12	200
Iron (Total)	N	2430	mg/kg	100		115000	33400
Arsenic	M	2450	mg/kg	1	37	<6	11.8
Cadmium	M	2450	mg/kg	0.1	26	<0.2	0.317
Chromium	M	2450	mg/kg	1	910	421	38.6
Manganese	M	2450	mg/kg	5		2070	688
Copper	M	2450	mg/kg	0.5	2400	16.1	11.5
Mercury	M	2450	mg/kg	0.1	1.2	<1.4	<0.14
Nickel	M	2450	mg/kg	0.5	130	12.2	36.1
Lead	M	2450	mg/kg	0.5	200	18.3	28
Selenium	M	2450	mg/kg	0.2	250	12	<1
Vanadium	U	2450	mg/kg	5	410	286	62.5
Zinc	M	2450	mg/kg	0.5	3700	75.2	97.7
Organic Matter	M	2625	%	0.4		4.26	1.86
Aliphatic TPH >C5-C6	N	2680	mg/kg	1	42	<0.02	<0.02
Aliphatic TPH >C6-C8	N	2680	mg/kg	1	100	<0.02	<0.02
Aliphatic TPH >C8-C10	M	2680	mg/kg	1	27	<0.02	<0.02
Aliphatic TPH >C10-C12	M	2680	mg/kg	1	130	<0.02	<0.02
Aliphatic TPH >C12-C16	M	2680	mg/kg	1	1.10E+03	2.03	<0.1
Aliphatic TPH >C16-C21	M	2680	mg/kg	1	6.50E+04	9.5	<0.1
Aliphatic TPH >C21-C35	M	2680	mg/kg	1	6.50E+04	74.1	2.07
Aliphatic TPH >C35-C44	N	2680	mg/kg	1	6.50E+04	47.5	<0.1
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5		133	2.07
Aromatic TPH >C5-C7	N	2680	mg/kg	1	70	<0.02	<0.02
Aromatic TPH >C7-C8	N	2680	mg/kg	1	130	<0.02	<0.02
Aromatic TPH >C8-C10	M	2680	mg/kg	1	34	<0.02	<0.02
Aromatic TPH >C10-C12	M	2680	mg/kg	1	74	<0.02	<0.02
Aromatic TPH >C12-C16	M	2680	mg/kg	1	140	2.16	<0.1
Aromatic TPH >C16-C21	U	2680	mg/kg	1	260	10.7	<0.1
Aromatic TPH >C21-C35	M	2680	mg/kg	1	1100	108	5.95
Aromatic TPH >C35-C44	N	2680	mg/kg	1	1100	74.8	0.607
Total Aromatic Hydrocarbons	N	2680	mg/kg	5		196	6.55
Total Petroleum Hydrocarbons	N	2680	mg/kg	10		329	8.62
Benzene	M	2760	µg/kg	1	87	<90	<90
Toluene	M	2760	µg/kg	1	130000	<70	<70
Ethylbenzene	M	2760	µg/kg	1	47000	<40	<40
m & p-Xylene	M	2760	µg/kg	1	56000	<100	<100
o-Xylene	M	2760	µg/kg	1	60000	<100	<100
Methyl Tert-Butyl Ether	M	2760	µg/kg	1		<100	<100
Naphthalene	M	2800	mg/kg	0.1	15.00	0.141	<0.009
Acenaphthylene	N	2800	mg/kg	0.1	170.00	0.0648	<0.012
Acenaphthene	M	2800	mg/kg	0.1	210.00	0.0184	<0.008
Fluorene	M	2800	mg/kg	0.1	170.00	0.0337	<0.01
Phenanthrene	M	2800	mg/kg	0.1	95.00	0.393	<0.015
Anthracene	M	2800	mg/kg	0.1	2400.00	0.119	<0.016
Fluoranthene	M	2800	mg/kg	0.1	280.00	0.966	<0.017
Pyrene	M	2800	mg/kg	0.1	620.00	0.88	<0.015
Benzo[a]anthracene	M	2800	mg/kg	0.1	7.20	0.662	<0.014
Chrysene	M	2800	mg/kg	0.1	15.00	0.714	<0.01
Benzo[b]fluoranthene	M	2800	mg/kg	0.1	2.60	0.747	<0.015
Benzo[k]fluoranthene	M	2800	mg/kg	0.1	77.00	0.373	<0.014
Benzo[a]pyrene	M	2800	mg/kg	0.1	2.20	0.775	<0.015
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.1	27.00	0.614	<0.018
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.1	0.24	0.135	<0.023
Benzo[g,h,i]perylene	M	2800	mg/kg	0.1	320.00	0.638	<0.024
Total Of 16 PAH's	N	2800	mg/kg	2			
Resorcinol	M	2920	mg/kg	0.02			
Phenol	M	2920	mg/kg	0.02	280.00	<0.01	<0.01
Cresols	M	2920	mg/kg	0.02		<0.01	<0.01
Xylenols	M	2920	mg/kg	0.02		<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	0.1	280.00	<0.035	<0.035

Unit 7-8 Hawarden Business Park
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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																						

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	

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)			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
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	
Ammonium Soil by Titration	All	NDPs: 0 Tests: 28		X		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	
CEN Readings	All	NDPs: 0 Tests: 22						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
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 22						X			X			X			X			X	
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 22						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: 22						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		
GRO by GC-FID (W)	All	NDPs: 0 Tests: 22						X			X			X			X			X	
Mercury Dissolved	All	NDPs: 0 Tests: 22						X			X			X			X			X	

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

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

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

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		

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-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

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-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

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

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

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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**			
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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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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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)	0.091	**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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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)	0.090	**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** 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	0.013	<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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CERTIFICATE OF ANALYSIS

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

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
Llan Coed House
Suite 24
Coed Darcy
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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			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			

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	

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

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 #					

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-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	

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.	Depth (m)	Sample Type	Date Sampled	Sample Time	Date Received	SDG Ref	Lab Sample No.(s)	AGS Reference
			4C-H5	0.50 - 0.50	Soil/Solid (S)	11/10/2018	00:00	12/10/2018	181012-49	18511954	
			4C-H5	1.00 - 1.00	Soil/Solid (S)	11/10/2018	00:00	12/10/2018	181012-49	18512026	
			4C-H5	1.80 - 1.80	Soil/Solid (S)	11/10/2018	00:00	12/10/2018	181012-49	18512107	
			4C-H1-V	1.60 - 1.60	Soil/Solid (S)	11/10/2018	00:00	12/10/2018	181012-49	18512113	
			4C-H2-V	1.80 - 1.80	Soil/Solid (S)	11/10/2018	00:00	12/10/2018	181012-49	18512103	
			4C-H4-V	2.00 - 2.00	Soil/Solid (S)	11/10/2018	00:00	12/10/2018	181012-49	18512154	
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						

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-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

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

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-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

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-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

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-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

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-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 (#)

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

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)	0.092	**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

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)	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

22/10/2018 16:04:20

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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

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)	0.101	**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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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**			
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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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)	0.094	**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** Conc^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)	11.46
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** 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)	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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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)	0.099	**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

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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**			
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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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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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)	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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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)	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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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

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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**			
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

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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**			
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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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** 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)	<0.00001	<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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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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Manor Road (off Manor Lane)
Hawarden
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CH5 3US
Tel: (01244) 528700
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email: hawardencustomerservices@alsglobal.com
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)	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
Mercury Dissolved	All	NDPs: 0 Tests: 38		X			X				X	X			X			X				
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			
Total Sulphur	All	NDPs: 0 Tests: 25			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		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
Metals in solid samples by OES	All	NDPs: 0 Tests: 50	18548433	3C-J4		0.70 - 1.30	250g Amber Jar (ALE210)	S
PAH by GCMS	All	NDPs: 0 Tests: 50						
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 38					60g VOC (ALE215)	
pH	All	NDPs: 0 Tests: 50					1kg TUB	
pH Value	All	NDPs: 0 Tests: 38					250g Amber Jar (ALE210)	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 50					60g VOC (ALE215)	
Sample description	All	NDPs: 0 Tests: 50					1kg TUB	
Total Organic Carbon	All	NDPs: 0 Tests: 50					250g Amber Jar (ALE210)	
Total Sulphate	All	NDPs: 0 Tests: 25					60g VOC (ALE215)	
Total Sulphur	All	NDPs: 0 Tests: 25					1kg TUB	
TPH CWG (W)	All	NDPs: 0 Tests: 38					250g Amber Jar (ALE210)	
TPH CWG GC (S)	All	NDPs: 0 Tests: 50					60g VOC (ALE215)	
VOC MS (S)	All	NDPs: 0 Tests: 50					1kg TUB	

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
Metals in solid samples by OES	All	NDPs: 0 Tests: 50	18548447	3C-J4		1.80 - 1.80	250g Amber Jar (ALE210)	S
PAH by GCMS	All	NDPs: 0 Tests: 50						
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 38					60g VOC (ALE215)	
pH	All	NDPs: 0 Tests: 50					1kg TUB	
pH Value	All	NDPs: 0 Tests: 38					250g Amber Jar (ALE210)	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 50					60g VOC (ALE215)	
Sample description	All	NDPs: 0 Tests: 50					1kg TUB	
Total Organic Carbon	All	NDPs: 0 Tests: 50					250g Amber Jar (ALE210)	
Total Sulphate	All	NDPs: 0 Tests: 25					60g VOC (ALE215)	
Total Sulphur	All	NDPs: 0 Tests: 25					1kg TUB	
TPH CWG (W)	All	NDPs: 0 Tests: 38					250g Amber Jar (ALE210)	
TPH CWG GC (S)	All	NDPs: 0 Tests: 50					60g VOC (ALE215)	
VOC MS (S)	All	NDPs: 0 Tests: 50					1kg TUB	

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
Metals in solid samples by OES	All	NDPs: 0 Tests: 50	18548070	4C-J1		0.50 - 0.50	250g Amber Jar (ALE210)	S
PAH by GCMS	All	NDPs: 0 Tests: 50						
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 38					60g VOC (ALE215)	
pH	All	NDPs: 0 Tests: 50					1kg TUB	
pH Value	All	NDPs: 0 Tests: 38					250g Amber Jar (ALE210)	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 50					60g VOC (ALE215)	
Sample description	All	NDPs: 0 Tests: 50					1kg TUB	
Total Organic Carbon	All	NDPs: 0 Tests: 50					250g Amber Jar (ALE210)	
Total Sulphate	All	NDPs: 0 Tests: 25					60g VOC (ALE215)	
Total Sulphur	All	NDPs: 0 Tests: 25					1kg TUB	
TPH CWG (W)	All	NDPs: 0 Tests: 38					250g Amber Jar (ALE210)	
TPH CWG GC (S)	All	NDPs: 0 Tests: 50					60g VOC (ALE215)	
VOC MS (S)	All	NDPs: 0 Tests: 50					1kg TUB	

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
Metals in solid samples by OES	All	NDPs: 0 Tests: 50	18548138	4C-J1		1.00 - 1.00	250g Amber Jar (ALE210)	S
PAH by GCMS	All	NDPs: 0 Tests: 50						
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 38					60g VOC (ALE215)	
pH	All	NDPs: 0 Tests: 50					1kg TUB	
pH Value	All	NDPs: 0 Tests: 38					250g Amber Jar (ALE210)	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 50					60g VOC (ALE215)	
Sample description	All	NDPs: 0 Tests: 50					1kg TUB	
Total Organic Carbon	All	NDPs: 0 Tests: 50					250g Amber Jar (ALE210)	
Total Sulphate	All	NDPs: 0 Tests: 25					60g VOC (ALE215)	
Total Sulphur	All	NDPs: 0 Tests: 25					1kg TUB	
TPH CWG (W)	All	NDPs: 0 Tests: 38					250g Amber Jar (ALE210)	
TPH CWG GC (S)	All	NDPs: 0 Tests: 50					60g VOC (ALE215)	
VOC MS (S)	All	NDPs: 0 Tests: 50					1kg TUB	

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
Metals in solid samples by OES	All	NDPs: 0 Tests: 50	18548298	4C-J1		2.00 - 2.00	250g Amber Jar (ALE210)	S
PAH by GCMS	All	NDPs: 0 Tests: 50						
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 38					60g VOC (ALE215)	
pH	All	NDPs: 0 Tests: 50					1kg TUB	
pH Value	All	NDPs: 0 Tests: 38					250g Amber Jar (ALE210)	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 50					60g VOC (ALE215)	
Sample description	All	NDPs: 0 Tests: 50					1kg TUB	
Total Organic Carbon	All	NDPs: 0 Tests: 50					250g Amber Jar (ALE210)	
Total Sulphate	All	NDPs: 0 Tests: 25					60g VOC (ALE215)	
Total Sulphur	All	NDPs: 0 Tests: 25					1kg TUB	
TPH CWG (W)	All	NDPs: 0 Tests: 38					250g Amber Jar (ALE210)	
TPH CWG GC (S)	All	NDPs: 0 Tests: 50					60g VOC (ALE215)	
VOC MS (S)	All	NDPs: 0 Tests: 50					1kg TUB	

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
Metals in solid samples by OES	All	NDPs: 0 Tests: 50	18548508	4C-J2		0.50 - 0.50	250g Amber Jar (ALE210)	S
PAH by GCMS	All	NDPs: 0 Tests: 50						
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 38					60g VOC (ALE215)	
pH	All	NDPs: 0 Tests: 50					1kg TUB	
pH Value	All	NDPs: 0 Tests: 38					250g Amber Jar (ALE210)	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 50					60g VOC (ALE215)	
Sample description	All	NDPs: 0 Tests: 50					1kg TUB	
Total Organic Carbon	All	NDPs: 0 Tests: 50					250g Amber Jar (ALE210)	
Total Sulphate	All	NDPs: 0 Tests: 25					60g VOC (ALE215)	
Total Sulphur	All	NDPs: 0 Tests: 25					1kg TUB	
TPH CWG (W)	All	NDPs: 0 Tests: 38					250g Amber Jar (ALE210)	
TPH CWG GC (S)	All	NDPs: 0 Tests: 50					60g VOC (ALE215)	
VOC MS (S)	All	NDPs: 0 Tests: 50					1kg TUB	

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
Metals in solid samples by OES	All	NDPs: 0 Tests: 50	18548523	4C-J2		1.00 - 1.00	250g Amber Jar (ALE210)	S
PAH by GCMS	All	NDPs: 0 Tests: 50						
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 38					60g VOC (ALE215)	
pH	All	NDPs: 0 Tests: 50					1kg TUB	
pH Value	All	NDPs: 0 Tests: 38					250g Amber Jar (ALE210)	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 50					60g VOC (ALE215)	
Sample description	All	NDPs: 0 Tests: 50					1kg TUB	
Total Organic Carbon	All	NDPs: 0 Tests: 50					250g Amber Jar (ALE210)	
Total Sulphate	All	NDPs: 0 Tests: 25					60g VOC (ALE215)	
Total Sulphur	All	NDPs: 0 Tests: 25					1kg TUB	
TPH CWG (W)	All	NDPs: 0 Tests: 38					250g Amber Jar (ALE210)	
TPH CWG GC (S)	All	NDPs: 0 Tests: 50					60g VOC (ALE215)	
VOC MS (S)	All	NDPs: 0 Tests: 50					1kg TUB	

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
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
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)	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: 50			X			X		X		X		X		X		X		X	
PAH by GCMS	All	NDPs: 0 Tests: 50			X			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		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		X	
Sample description	All	NDPs: 0 Tests: 50			X			X		X		X		X		X		X		X	
Total Organic Carbon	All	NDPs: 0 Tests: 50			X			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		X	
VOC MS (S)	All	NDPs: 0 Tests: 50	X			X			X		X		X		X		X		X		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
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.
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aq	Aqueous / settled sample.
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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	

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			

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				

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	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

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

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-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

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

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	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

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

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)	0.098	**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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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

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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**			
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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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** 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	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

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)	0.099	**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

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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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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

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)	0.097	**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** 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)	0.0000144	<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

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)	0.104	**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

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)	0.100	**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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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)	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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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

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)	0.095	**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** 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)	<0.00001	<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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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

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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**			
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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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)	0.106	**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

16/11/2018 16:48:06

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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)	0.106	**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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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)	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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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)	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

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)	0.100	**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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Atkins Global Ltd
Project Jonah site office
Llan Coed House
Suite 24
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SA10 6HJ

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	
			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
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
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
			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 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
			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
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

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
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
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	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	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		

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
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 #			

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-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

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

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-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		

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-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

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-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

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-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

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		

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-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.	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						
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 #	<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

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-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

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

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

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

13:11:31 12/11/2018

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

Mcerts Certification does not apply to leachates

12/11/2018 13:12:07

13:11:31 12/11/2018

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

12/11/2018 13:12:07

13:11:31 12/11/2018

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** 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)	0.000885	<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

12/11/2018 13:12:07

13:11:31 12/11/2018

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** 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	0.201	<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

12/11/2018 13:12:07

13:11:31 12/11/2018

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

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**			
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

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)	0.097	**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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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

12/11/2018 13:12:07

13:11:31 12/11/2018

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** 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)	0.00065	<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** Conc^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)	0.0000241	<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** Conc^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)	<0.00001	<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** 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	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** Conc^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)	0.0459	<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** 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	0.868	<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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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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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** Conc^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)	0.0000538	<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** 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)	0.0000167	<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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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)	0.102	**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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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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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 (%)**	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

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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**			
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.

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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:	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
			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
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

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)			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

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	
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		

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-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

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

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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**			
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

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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**			
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

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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

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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

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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

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)	0.101	**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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Atkins Global Ltd
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Llan Coed House
Suite 24
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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)			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	S	S
GRO by GC-FID (W)	All	NDPs: 0 Tests: 19	X			X					X			X					X				
Mercury Dissolved	All	NDPs: 0 Tests: 19	X			X					X			X					X				
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: 19	X			X					X			X					X				
pH	All	NDPs: 0 Tests: 28		X			X		X			X			X		X			X			
pH Value	All	NDPs: 0 Tests: 19	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: 10		X								X								X			
Total Sulphur	All	NDPs: 0 Tests: 10		X								X								X			
TPH CWG (W)	All	NDPs: 0 Tests: 19	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			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	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
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
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 #				

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			

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

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

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** Conc^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)	0.0000185	<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

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)	0.095	**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

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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**			
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

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**			
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

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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

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)	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

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)	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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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)	0.098	**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

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)	0.097	**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

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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**			
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

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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)	0.096	**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

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)	0.094	**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

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)	0.094	**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

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)	0.113	**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

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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

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)	0.105	**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

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)	0.105	**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

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)	0.102	**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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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)	0.102	**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**			
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)	11.03
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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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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Deeside
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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:	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			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
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)			Customer Sample Reference			AGS Reference			Depth (m)			Container			Sample Type
			18646138	18646160	18646164	4E-A8	4E-A8	4E-A8V				0.50 - 0.50	1.00 - 1.00	1.70 - 1.70	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	S
Mercury Dissolved	All	NDPs: 0 Tests: 17	X	X	X													
Metals in solid samples by OES	All	NDPs: 0 Tests: 24				X	X	X										
PAH by GCMS	All	NDPs: 0 Tests: 24				X	X	X										
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 17	X	X	X													
pH	All	NDPs: 0 Tests: 24				X	X	X										
pH Value	All	NDPs: 0 Tests: 17	X	X	X													
Phenols by HPLC (S)	All	NDPs: 0 Tests: 24				X	X	X										
Sample description	All	NDPs: 0 Tests: 24				X	X	X										
Total Organic Carbon	All	NDPs: 0 Tests: 24				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													
TPH CWG GC (S)	All	NDPs: 0 Tests: 24				X	X	X										
VOC MS (S)	All	NDPs: 0 Tests: 24																

			Lab Sample No(s)			Customer Sample Reference			AGS Reference			Depth (m)			Container			Sample Type
			18646172	18646181	18646104	4E-B8	4E-B8	4E-B9				0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	S
Mercury Dissolved	All	NDPs: 0 Tests: 17	X	X	X													
Metals in solid samples by OES	All	NDPs: 0 Tests: 24				X	X	X										
PAH by GCMS	All	NDPs: 0 Tests: 24				X	X	X										
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 17	X	X	X													
pH	All	NDPs: 0 Tests: 24				X	X	X										
pH Value	All	NDPs: 0 Tests: 17	X	X	X													
Phenols by HPLC (S)	All	NDPs: 0 Tests: 24				X	X	X										
Sample description	All	NDPs: 0 Tests: 24				X	X	X										
Total Organic Carbon	All	NDPs: 0 Tests: 24				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													
TPH CWG GC (S)	All	NDPs: 0 Tests: 24				X	X	X										
VOC MS (S)	All	NDPs: 0 Tests: 24																

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	

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-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

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

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

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

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.	Depth (m)	Sample Type	Date Sampled	Sample Time	Date Received	SDG Ref	Lab Sample No.(s)	AGS Reference
			4E-E9	1.50 - 1.50	Soil/Solid (S)	31/10/2018	00:00	01/11/2018	181101-44	18646213	
			4E-E8V	2.00 - 2.00	Soil/Solid (S)	31/10/2018	00:00	01/11/2018	181101-44	18646197	
			4E-E9V	2.10 - 2.10	Soil/Solid (S)	31/10/2018	00:00	01/11/2018	181101-44	18646221	
			4E-F9A	0.50 - 0.50	Soil/Solid (S)	31/10/2018	00:00	01/11/2018	181101-44	18646227	
			4E-F9A	1.00 - 1.00	Soil/Solid (S)	31/10/2018	00:00	01/11/2018	181101-44	18646235	
			4E-F9AV	2.00 - 2.00	Soil/Solid (S)	31/10/2018	00:00	01/11/2018	181101-44	18646052	
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

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**			
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

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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)	0.101	**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
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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)	0.101	**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

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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)	0.095	**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
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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)	0.095	**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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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**			
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

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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**			
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

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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**			
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

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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** 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	0.031	<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
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)	0.103	**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

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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)	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** 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	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** 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	0.121	<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

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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

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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)	0.094	**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

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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)	0.094	**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** 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	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

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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)	0.094	**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** 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)	<0.00001	<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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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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Validated

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

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 (%)**	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) : **8.4**

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:	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)	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
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							
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				
Mercury Dissolved	All	NDPs: 0 Tests: 15		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
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SA - Saline Water
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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 #					

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-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

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

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

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-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** 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	0.388	<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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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

22/11/2018 17:10:59

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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

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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:	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)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
			18673542	4G-A6		0.50 - 0.50	1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			18673546	4G-A6		0.70 - 0.70	1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			18673558	4G-A6-V		2.80 - 2.80	250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			18673562	4G-B3		0.50 - 0.50	1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			18673517	4G-B4		0.30 - 0.30	1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			18673521	4G-B4		0.60 - 0.60	1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			18673497	4G-B5		0.50 - 0.50	1kg TUB	S
							250g Amber Jar (ALE210)	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	
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	
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	
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	
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

16:34:34 20/11/2018

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

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

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** 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)	10.83
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** 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	0.217	<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

20/11/2018 16:34:57

16:34:34 20/11/2018

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** 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)	<0.00001	<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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Validated

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

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**			
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** 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)	11.58
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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Validated

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** Conc^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)	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
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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
Volume Leachant (Litres)	0.889

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:	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.

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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

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
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

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-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						

Component	LOD/Units	Method											
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

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)

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	
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

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

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)

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
			4G-F8-V	2.60 - 2.60	Soil/Solid (S)	20/11/2018	00:00	21/11/2018	181121-47	18786545	
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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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)	0.097	**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
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)	0.097	**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

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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)	0.095	**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

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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)	0.095	**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

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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

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

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

ALS

				Customer Sample ID	4G-C6	4G-C6	4G-C7
				Depth	0.50-0.50	0.80-0.80	0.50-0.50
SDG(s):	181107-11			**AGS Id**			
Customer:	Atkins Global Ltd Llandarcy (7158)			**Sample Type**	SOLID	SOLID	SOLID
Client Reference / Location:	Llanwern			**Sampled Date**	11/6/2018	11/6/2018	11/6/2018
Order no:	LLA510			**Sample Received Date**	11/7/2018	11/7/2018	11/7/2018
				Final Instruction Date	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
				SDG	181107-11	181107-11	181107-11
				Lab Sample Number	18681149	18681204	18681222
				Sample Temperature	8.6	8.6	8.6
Analysis	**Test**	**Method**	**Units**	**LOD**			
Waste Acceptance Crit							
	CEN 10:1 - Temperature	PM115	°C		18.2	18.1	18.8
	CEN 10:1 - pH	PM115	pH Units		9.44	7.98	12.37
	CEN 10:1 - Conductivity @ 20 deg.C	PM115	µS/cm		204	150	3.51
Inorganics							
	CEN 10:1 - Ammoniacal Nitrogen as N	TM099	mg/kg	<2	<2	<2	<2
	CEN 10:1 - Ammoniacal Nitrogen as N	TM099	mg/l	<0.2	<0.2	<0.2	<0.2
	CEN 10:1 - pH	TM256	pH Units	<1	9.17	7.55	12.44
	CEN 10:1 - Cyanide, Total	TM227	mg/kg	<0.5	<0.5	<0.5	<0.5
	CEN 10:1 - Cyanide, Total	TM227	mg/l	<0.05	<0.05	<0.05	<0.05
Filtered (Dissolved) Me							
	CEN 10:1 - Mercury (diss.filt)	TM183	mg/kg	<0.0001	<0.0001	<0.0001	<0.0001
	CEN 10:1 - Mercury (diss.filt)	TM183	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
	CEN 10:1 - Arsenic (diss.filt)	TM152	mg/kg	<0.005	0.0188	0.0472	<0.005
	CEN 10:1 - Arsenic (diss.filt)	TM152	mg/l	<0.0005	0.00188	0.00472	<0.0005
	CEN 10:1 - Cadmium (diss.filt)	TM152	mg/kg	<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
	CEN 10:1 - Chromium (diss.filt)	TM152	mg/kg	<0.01	0.0107	<0.01	0.131
	CEN 10:1 - Chromium (diss.filt)	TM152	mg/l	<0.001	0.00107	<0.001	0.0131

CEN 10:1 - Copper (diss.filt)	TM152	mg/kg	<0.003	0.00935	<0.003	0.0132
CEN 10:1 - Copper (diss.filt)	TM152	mg/l	<0.0003	0.000935	<0.0003	0.00132
CEN 10:1 - Lead (diss.filt)	TM152	mg/kg	<0.002	<0.002	<0.002	0.00763
CEN 10:1 - Lead (diss.filt)	TM152	mg/l	<0.0002	<0.0002	<0.0002	0.000763
CEN 10:1 - Manganese (diss.filt)	TM152	mg/kg	<0.03	<0.03	<0.03	<0.03
CEN 10:1 - Manganese (diss.filt)	TM152	mg/l	<0.003	<0.003	<0.003	<0.003
CEN 10:1 - Nickel (diss.filt)	TM152	mg/kg	<0.004	<0.004	<0.004	<0.004
CEN 10:1 - Nickel (diss.filt)	TM152	mg/l	<0.0004	<0.0004	<0.0004	<0.0004
CEN 10:1 - Selenium (diss.filt)	TM152	mg/kg	<0.01	0.055	0.0128	<0.01
CEN 10:1 - Selenium (diss.filt)	TM152	mg/l	<0.001	0.0055	0.00128	<0.001
CEN 10:1 - Vanadium (diss.filt)	TM152	mg/kg	<0.01	0.295	0.237	0.0262
CEN 10:1 - Vanadium (diss.filt)	TM152	mg/l	<0.001	0.0295	0.0237	0.00262
CEN 10:1 - Zinc (diss.filt)	TM152	mg/kg	<0.01	<0.01	<0.01	0.0875
CEN 10:1 - Zinc (diss.filt)	TM152	mg/l	<0.001	<0.001	<0.001	0.00875
CEN 10:1 - Iron (Dis.Filt)	TM152	mg/kg	<0.19	<0.19	<0.19	<0.19
CEN 10:1 - Iron (Dis.Filt)	TM152	mg/l	<0.019	<0.019	<0.019	<0.019
TPH Criteria Working C						
CEN 10:1 - GRO Surrogate % recovery**	TM245	%		108	102	102
CEN 10:1 - GRO >C5-C12	TM245	mg/kg	<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
CEN 10:1 - Methyl tertiary butyl ether (MTBE)	TM245	mg/kg	<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
CEN 10:1 - Benzene	TM245	mg/kg	<0.07	<0.07	<0.07	<0.07
CEN 10:1 - Benzene	TM245	mg/l	<0.007	<0.007	<0.007	<0.007
CEN 10:1 - Toluene	TM245	mg/kg	<0.04	<0.04	<0.04	<0.04
CEN 10:1 - Toluene	TM245	mg/l	<0.004	<0.004	<0.004	<0.004
CEN 10:1 - Ethylbenzene	TM245	mg/kg	<0.05	<0.05	<0.05	<0.05
CEN 10:1 - Ethylbenzene	TM245	mg/l	<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
CEN 10:1 - m,p-Xylene	TM245	mg/l	<0.008	<0.008	<0.008	<0.008
CEN 10:1 - o-Xylene	TM245	mg/kg	<0.03	<0.03	<0.03	<0.03
CEN 10:1 - o-Xylene	TM245	mg/l	<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
CEN 10:1 - Sum of detected Xylenes	TM245	mg/l	<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
CEN 10:1 - Sum of detected BTEX	TM245	mg/l	<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
CEN 10:1 - Aliphatics >C5-C6	TM245	mg/l	<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
CEN 10:1 - Aliphatics >C6-C8	TM245	mg/l	<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
CEN 10:1 - Aliphatics >C8-C10	TM245	mg/l	<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
CEN 10:1 - Aliphatics >C10-C12	TM245	mg/l	<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
CEN 10:1 - Aliphatics >C12-C16 (aq)	TM174	mg/l	<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
CEN 10:1 - Aliphatics >C16-C21 (aq)	TM174	mg/l	<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
CEN 10:1 - Aliphatics >C21-C35 (aq)	TM174	mg/l	<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
CEN 10:1 - Total Aliphatics >C12-C35 (aq)	TM174	mg/l	<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
CEN 10:1 - Aromatics >EC5-EC7	TM245	mg/l	<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
CEN 10:1 - Aromatics >EC7-EC8	TM245	mg/l	<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
CEN 10:1 - Aromatics >EC8-EC10	TM245	mg/l	<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
CEN 10:1 - Aromatics >EC10-EC12	TM245	mg/l	<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
CEN 10:1 - Aromatics >EC12-EC16 (aq)	TM174	mg/l	<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
CEN 10:1 - Aromatics >EC16-EC21 (aq)	TM174	mg/l	<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
	CEN 10:1 - Aromatics >EC21-EC35 (aq)	TM174	mg/l	<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
	CEN 10:1 - Total Aromatics >EC12-EC35 (aq)	TM174	mg/l	<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
	CEN 10:1 - Total Aliphatics & Aromatics >C5-35 (aq)	TM174	mg/l	<0.01	<0.01	<0.01	<0.01
Polyaromatic Hydroca							
	CEN 10:1 - Naphthalene (aq)	TM178	mg/kg	<0.0001	0.000524	<0.0001	0.00178
	CEN 10:1 - Naphthalene (aq)	TM178	mg/l	<0.00001	0.0000524	<0.00001	0.000178
	CEN 10:1 - Acenaphthene (aq)	TM178	mg/kg	<0.00005	<0.00005	<0.00005	0.00142
	CEN 10:1 - Acenaphthene (aq)	TM178	mg/l	<0.000005	<0.000005	<0.000005	0.000142
	CEN 10:1 - Acenaphthylene (aq)	TM178	mg/kg	<0.00005	0.0000591	<0.00005	0.000209
	CEN 10:1 - Acenaphthylene (aq)	TM178	mg/l	<0.000005	0.00000591	<0.000005	0.0000209
	CEN 10:1 - Fluoranthene (aq)	TM178	mg/kg	<0.00005	0.0005	0.000069	0.0118
	CEN 10:1 - Fluoranthene (aq)	TM178	mg/l	<0.000005	0.00005	0.0000069	0.00118
	CEN 10:1 - Anthracene (aq)	TM178	mg/kg	<0.00005	0.0000993	<0.00005	0.000984
	CEN 10:1 - Anthracene (aq)	TM178	mg/l	<0.000005	0.00000993	<0.000005	0.0000984
	CEN 10:1 - Phenanthrene (aq)	TM178	mg/kg	<0.00005	0.000272	<0.00005	0.00729
	CEN 10:1 - Phenanthrene (aq)	TM178	mg/l	<0.000005	0.0000272	<0.000005	0.000729
	CEN 10:1 - Fluorene (aq)	TM178	mg/kg	<0.00005	<0.00005	<0.00005	0.000865
	CEN 10:1 - Fluorene (aq)	TM178	mg/l	<0.000005	<0.000005	<0.000005	0.0000865
	CEN 10:1 - Chrysene (aq)	TM178	mg/kg	<0.00005	0.000214	<0.00005	0.0011
	CEN 10:1 - Chrysene (aq)	TM178	mg/l	<0.000005	0.0000214	<0.000005	0.00011
	CEN 10:1 - Pyrene (aq)	TM178	mg/kg	<0.00005	0.000444	<0.00005	0.00914
	CEN 10:1 - Pyrene (aq)	TM178	mg/l	<0.000005	0.0000444	<0.000005	0.000914
	CEN 10:1 - Benzo(a)anthracene (aq)	TM178	mg/kg	<0.00005	<0.00005	<0.00005	0.000489
	CEN 10:1 - Benzo(a)anthracene (aq)	TM178	mg/l	<0.000005	<0.000005	<0.000005	0.0000489
	CEN 10:1 - Benzo(b)fluoranthene (aq)	TM178	mg/kg	<0.00005	0.000323	<0.00005	0.000278
	CEN 10:1 - Benzo(b)fluoranthene (aq)	TM178	mg/l	<0.000005	0.0000323	<0.000005	0.0000278
	CEN 10:1 - Benzo(k)fluoranthene (aq)	TM178	mg/kg	<0.00005	0.000238	<0.00005	0.000115
	CEN 10:1 - Benzo(k)fluoranthene (aq)	TM178	mg/l	<0.000005	0.0000238	<0.000005	0.0000115
	CEN 10:1 - Benzo(a)pyrene (aq)	TM178	mg/kg	<0.00002	0.000205	<0.00002	0.0000381

CEN 10:1 - Benzo(a)pyrene (aq)	TM178	mg/l	<0.000002	0.0000205	<0.000002	0.00000381
CEN 10:1 - Dibenzo(a,h)anthracene (aq)	TM178	mg/kg	<0.00005	0.0000573	<0.00005	<0.00005
CEN 10:1 - Dibenzo(a,h)anthracene (aq)	TM178	mg/l	<0.000005	0.00000573	<0.000005	<0.000005
CEN 10:1 - Benzo(g,h,i)perylene (aq)	TM178	mg/kg	<0.00005	0.0000635	<0.00005	<0.00005
CEN 10:1 - Benzo(g,h,i)perylene (aq)	TM178	mg/l	<0.000005	0.00000635	<0.000005	<0.000005
CEN 10:1 - Indeno(1,2,3-cd)pyrene (aq)	TM178	mg/kg	<0.00005	0.000128	<0.00005	<0.00005
CEN 10:1 - Indeno(1,2,3-cd)pyrene (aq)	TM178	mg/l	<0.000005	0.0000128	<0.000005	<0.000005
CEN 10:1 - PAH, Total Detected USEPA 16 (aq)	TM178	mg/kg	<0.00082	0.00313	<0.00082	0.0355
CEN 10:1 - PAH, Total Detected USEPA 16 (aq)	TM178	mg/l	<0.000082	0.000313	<0.000082	0.00355
EPH CWG (Speciated)						
CEN 10:1 - Aliphatics >C16-C35 Aqueous	TM174	mg/kg	<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

ALS

				Customer Sample ID	4G-C7	4G-D1	4G-D1
				Depth	1.00-1.00	0.50-0.50	1.00-1.00
SDG(s):	181107-11			**AGS Id**			
Customer:	Atkins Global Ltd Llandarcy (7158)			**Sample Type**	SOLID	SOLID	SOLID
Client Reference / Location:	Llanwern			**Sampled Date**	11/6/2018	11/6/2018	11/6/2018
Order no:	LLA510			**Sample Received Date**	11/7/2018	11/7/2018	11/7/2018
				Final Instruction Date	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
				SDG	181107-11	181107-11	181107-11
				Lab Sample Number	18681228	18681178	18681182
				Sample Temperature	8.6	8.6	8.6
Analysis	**Test**	**Method**	**Units**	**LOD**			
Waste Acceptance Crit							
	CEN 10:1 - Temperature	PM115	°C		18.5	18.3	18.5
	CEN 10:1 - pH	PM115	pH Units		12.52	10.84	9.69
	CEN 10:1 - Conductivity @ 20 deg.C	PM115	µS/cm		5.65	319	147
Inorganics							
	CEN 10:1 - Ammoniacal Nitrogen as N	TM099	mg/kg	<2	<2	<2	<2
	CEN 10:1 - Ammoniacal Nitrogen as N	TM099	mg/l	<0.2	<0.2	<0.2	<0.2
	CEN 10:1 - pH	TM256	pH Units	<1	12.65	11.08	9.97
	CEN 10:1 - Cyanide, Total	TM227	mg/kg	<0.5	<0.5	<0.5	<0.5
	CEN 10:1 - Cyanide, Total	TM227	mg/l	<0.05	<0.05	<0.05	<0.05
Filtered (Dissolved) Me							
	CEN 10:1 - Mercury (diss.filt)	TM183	mg/kg	<0.0001	<0.0001	0.000136	<0.0001
	CEN 10:1 - Mercury (diss.filt)	TM183	mg/l	<0.00001	<0.00001	0.0000136	<0.00001
	CEN 10:1 - Arsenic (diss.filt)	TM152	mg/kg	<0.005	<0.005	0.0149	0.0594
	CEN 10:1 - Arsenic (diss.filt)	TM152	mg/l	<0.0005	<0.0005	0.00149	0.00594
	CEN 10:1 - Cadmium (diss.filt)	TM152	mg/kg	<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
	CEN 10:1 - Chromium (diss.filt)	TM152	mg/kg	<0.01	0.135	0.04	0.0154
	CEN 10:1 - Chromium (diss.filt)	TM152	mg/l	<0.001	0.0135	0.004	0.00154

CEN 10:1 - Copper (diss.filt)	TM152	mg/kg	<0.003	0.00639	0.0423	0.0111
CEN 10:1 - Copper (diss.filt)	TM152	mg/l	<0.0003	0.000639	0.00423	0.00111
CEN 10:1 - Lead (diss.filt)	TM152	mg/kg	<0.002	0.0253	<0.002	<0.002
CEN 10:1 - Lead (diss.filt)	TM152	mg/l	<0.0002	0.00253	<0.0002	<0.0002
CEN 10:1 - Manganese (diss.filt)	TM152	mg/kg	<0.03	<0.03	<0.03	<0.03
CEN 10:1 - Manganese (diss.filt)	TM152	mg/l	<0.003	<0.003	<0.003	<0.003
CEN 10:1 - Nickel (diss.filt)	TM152	mg/kg	<0.004	<0.004	0.00856	<0.004
CEN 10:1 - Nickel (diss.filt)	TM152	mg/l	<0.0004	<0.0004	0.000856	<0.0004
CEN 10:1 - Selenium (diss.filt)	TM152	mg/kg	<0.01	<0.01	0.0188	0.0221
CEN 10:1 - Selenium (diss.filt)	TM152	mg/l	<0.001	<0.001	0.00188	0.00221
CEN 10:1 - Vanadium (diss.filt)	TM152	mg/kg	<0.01	0.0126	0.561	0.615
CEN 10:1 - Vanadium (diss.filt)	TM152	mg/l	<0.001	0.00126	0.0561	0.0615
CEN 10:1 - Zinc (diss.filt)	TM152	mg/kg	<0.01	0.0608	<0.01	<0.01
CEN 10:1 - Zinc (diss.filt)	TM152	mg/l	<0.001	0.00608	<0.001	<0.001
CEN 10:1 - Iron (Dis.Filt)	TM152	mg/kg	<0.19	<0.19	<0.19	<0.19
CEN 10:1 - Iron (Dis.Filt)	TM152	mg/l	<0.019	<0.019	<0.019	<0.019
TPH Criteria Working C						
CEN 10:1 - GRO Surrogate % recovery**	TM245	%		105	114	107
CEN 10:1 - GRO >C5-C12	TM245	mg/kg	<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
CEN 10:1 - Methyl tertiary butyl ether (MTBE)	TM245	mg/kg	<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
CEN 10:1 - Benzene	TM245	mg/kg	<0.07	<0.07	<0.07	<0.07
CEN 10:1 - Benzene	TM245	mg/l	<0.007	<0.007	<0.007	<0.007
CEN 10:1 - Toluene	TM245	mg/kg	<0.04	<0.04	<0.04	<0.04
CEN 10:1 - Toluene	TM245	mg/l	<0.004	<0.004	<0.004	<0.004
CEN 10:1 - Ethylbenzene	TM245	mg/kg	<0.05	<0.05	<0.05	<0.05
CEN 10:1 - Ethylbenzene	TM245	mg/l	<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
CEN 10:1 - m,p-Xylene	TM245	mg/l	<0.008	<0.008	<0.008	<0.008
CEN 10:1 - o-Xylene	TM245	mg/kg	<0.03	<0.03	<0.03	<0.03
CEN 10:1 - o-Xylene	TM245	mg/l	<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
CEN 10:1 - Sum of detected Xylenes	TM245	mg/l	<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
CEN 10:1 - Sum of detected BTEX	TM245	mg/l	<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
CEN 10:1 - Aliphatics >C5-C6	TM245	mg/l	<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
CEN 10:1 - Aliphatics >C6-C8	TM245	mg/l	<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
CEN 10:1 - Aliphatics >C8-C10	TM245	mg/l	<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
CEN 10:1 - Aliphatics >C10-C12	TM245	mg/l	<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
CEN 10:1 - Aliphatics >C12-C16 (aq)	TM174	mg/l	<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
CEN 10:1 - Aliphatics >C16-C21 (aq)	TM174	mg/l	<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
CEN 10:1 - Aliphatics >C21-C35 (aq)	TM174	mg/l	<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
CEN 10:1 - Total Aliphatics >C12-C35 (aq)	TM174	mg/l	<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
CEN 10:1 - Aromatics >EC5-EC7	TM245	mg/l	<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
CEN 10:1 - Aromatics >EC7-EC8	TM245	mg/l	<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
CEN 10:1 - Aromatics >EC8-EC10	TM245	mg/l	<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
CEN 10:1 - Aromatics >EC10-EC12	TM245	mg/l	<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
CEN 10:1 - Aromatics >EC12-EC16 (aq)	TM174	mg/l	<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
CEN 10:1 - Aromatics >EC16-EC21 (aq)	TM174	mg/l	<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
	CEN 10:1 - Aromatics >EC21-EC35 (aq)	TM174	mg/l	<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
	CEN 10:1 - Total Aromatics >EC12-EC35 (aq)	TM174	mg/l	<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
	CEN 10:1 - Total Aliphatics & Aromatics >C5-35 (aq)	TM174	mg/l	<0.01	<0.01	<0.01	<0.01
Polyaromatic Hydroca							
	CEN 10:1 - Naphthalene (aq)	TM178	mg/kg	<0.0001	0.00244	0.000417	0.000254
	CEN 10:1 - Naphthalene (aq)	TM178	mg/l	<0.00001	0.000244	0.0000417	0.0000254
	CEN 10:1 - Acenaphthene (aq)	TM178	mg/kg	<0.00005	0.00264	0.0000729	0.000106
	CEN 10:1 - Acenaphthene (aq)	TM178	mg/l	<0.000005	0.000264	0.00000729	0.0000106
	CEN 10:1 - Acenaphthylene (aq)	TM178	mg/kg	<0.00005	0.00126	<0.00005	0.0000833
	CEN 10:1 - Acenaphthylene (aq)	TM178	mg/l	<0.000005	0.000126	<0.000005	0.00000833
	CEN 10:1 - Fluoranthene (aq)	TM178	mg/kg	<0.00005	0.0213	0.000335	0.000563
	CEN 10:1 - Fluoranthene (aq)	TM178	mg/l	<0.000005	0.00213	0.0000335	0.0000563
	CEN 10:1 - Anthracene (aq)	TM178	mg/kg	<0.00005	0.00164	0.0000667	0.0000811
	CEN 10:1 - Anthracene (aq)	TM178	mg/l	<0.000005	0.000164	0.00000667	0.00000811
	CEN 10:1 - Phenanthrene (aq)	TM178	mg/kg	<0.00005	0.0171	0.000301	0.000462
	CEN 10:1 - Phenanthrene (aq)	TM178	mg/l	<0.000005	0.00171	0.0000301	0.0000462
	CEN 10:1 - Fluorene (aq)	TM178	mg/kg	<0.00005	0.00237	0.0000624	0.0000593
	CEN 10:1 - Fluorene (aq)	TM178	mg/l	<0.000005	0.000237	0.00000624	0.00000593
	CEN 10:1 - Chrysene (aq)	TM178	mg/kg	<0.00005	0.00185	<0.00005	0.00025
	CEN 10:1 - Chrysene (aq)	TM178	mg/l	<0.000005	0.000185	<0.000005	0.000025
	CEN 10:1 - Pyrene (aq)	TM178	mg/kg	<0.00005	0.0156	0.000277	0.000479
	CEN 10:1 - Pyrene (aq)	TM178	mg/l	<0.000005	0.00156	0.0000277	0.0000479
	CEN 10:1 - Benzo(a)anthracene (aq)	TM178	mg/kg	<0.00005	0.00097	<0.00005	0.000157
	CEN 10:1 - Benzo(a)anthracene (aq)	TM178	mg/l	<0.000005	0.000097	<0.000005	0.0000157
	CEN 10:1 - Benzo(b)fluoranthene (aq)	TM178	mg/kg	<0.00005	0.000617	<0.00005	0.000546
	CEN 10:1 - Benzo(b)fluoranthene (aq)	TM178	mg/l	<0.000005	0.0000617	<0.000005	0.0000546
	CEN 10:1 - Benzo(k)fluoranthene (aq)	TM178	mg/kg	<0.00005	0.00023	<0.00005	0.000247
	CEN 10:1 - Benzo(k)fluoranthene (aq)	TM178	mg/l	<0.000005	0.000023	<0.000005	0.0000247
	CEN 10:1 - Benzo(a)pyrene (aq)	TM178	mg/kg	<0.00002	0.000161	<0.00002	0.000266

	CEN 10:1 - Benzo(a)pyrene (aq)	TM178	mg/l	<0.000002	0.0000161	<0.000002	0.0000266
	CEN 10:1 - Dibenzo(a,h)anthracene (aq)	TM178	mg/kg	<0.00005	<0.00005	<0.00005	<0.00005
	CEN 10:1 - Dibenzo(a,h)anthracene (aq)	TM178	mg/l	<0.000005	<0.000005	<0.000005	<0.000005
	CEN 10:1 - Benzo(g,h,i)perylene (aq)	TM178	mg/kg	<0.00005	<0.00005	<0.00005	0.000348
	CEN 10:1 - Benzo(g,h,i)perylene (aq)	TM178	mg/l	<0.000005	<0.000005	<0.000005	0.0000348
	CEN 10:1 - Indeno(1,2,3-cd)pyrene (aq)	TM178	mg/kg	<0.00005	<0.00005	<0.00005	0.000268
	CEN 10:1 - Indeno(1,2,3-cd)pyrene (aq)	TM178	mg/l	<0.000005	<0.000005	<0.000005	0.0000268
	CEN 10:1 - PAH, Total Detected USEPA 16 (aq)	TM178	mg/kg	<0.00082	0.0682	0.00153	0.00417
	CEN 10:1 - PAH, Total Detected USEPA 16 (aq)	TM178	mg/l	<0.000082	0.00682	0.000153	0.000417
EPH CWG (Speciated)							
	CEN 10:1 - Aliphatics >C16-C35 Aqueous	TM174	mg/kg	<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

ALS

	Customer Sample ID	4G-E1	4G-E1
	Depth	0.50-0.50	1.00-1.00
SDG(s): 181107-11	**AGS Id**		
Customer: Atkins Global Ltd Llandarcy (7158)	**Sample Type**	SOLID	SOLID
Client Reference / Location: Llanwern	**Sampled Date**	11/6/2018	11/6/2018
Order no: LLA510	**Sample Received Date**	11/7/2018	11/7/2018
	Final Instruction Date	11/7/2018	11/7/2018
All results expressed on a dry weight basis	**Report Completed Date**	11/26/2018	11/26/2018
	SDG	181107-11	181107-11
	Lab Sample Number	18681194	18681198
	Sample Temperature	8.6	8.6

Analysis	Test	Method	Units	LOD		
Waste Acceptance Crit						
	CEN 10:1 - Temperature	PM115	°C		18.2	18.5
	CEN 10:1 - pH	PM115	pH Units		8.65	11.18
	CEN 10:1 - Conductivity @ 20 deg.C	PM115	µS/cm		95.1	521
Inorganics						
	CEN 10:1 - Ammoniacal Nitrogen as N	TM099	mg/kg	<2	<2	<2
	CEN 10:1 - Ammoniacal Nitrogen as N	TM099	mg/l	<0.2	<0.2	<0.2
	CEN 10:1 - pH	TM256	pH Units	<1	9.32	11.42
	CEN 10:1 - Cyanide, Total	TM227	mg/kg	<0.5	<0.5	<0.5
	CEN 10:1 - Cyanide, Total	TM227	mg/l	<0.05	<0.05	<0.05
Filtered (Dissolved) Me						
	CEN 10:1 - Mercury (diss.filt)	TM183	mg/kg	<0.0001	<0.0001	0.00021
	CEN 10:1 - Mercury (diss.filt)	TM183	mg/l	<0.00001	<0.00001	0.000021
	CEN 10:1 - Arsenic (diss.filt)	TM152	mg/kg	<0.005	0.0574	0.00511
	CEN 10:1 - Arsenic (diss.filt)	TM152	mg/l	<0.0005	0.00574	0.000511
	CEN 10:1 - Cadmium (diss.filt)	TM152	mg/kg	<0.0008	<0.0008	<0.0008
	CEN 10:1 - Cadmium (diss.filt)	TM152	mg/l	<0.00008	<0.00008	<0.00008
	CEN 10:1 - Chromium (diss.filt)	TM152	mg/kg	<0.01	0.0129	0.0152
	CEN 10:1 - Chromium (diss.filt)	TM152	mg/l	<0.001	0.00129	0.00152

CEN 10:1 - Copper (diss.filt)	TM152	mg/kg	<0.003	0.00757	0.0228
CEN 10:1 - Copper (diss.filt)	TM152	mg/l	<0.0003	0.000757	0.00228
CEN 10:1 - Lead (diss.filt)	TM152	mg/kg	<0.002	0.005	<0.002
CEN 10:1 - Lead (diss.filt)	TM152	mg/l	<0.0002	0.0005	<0.0002
CEN 10:1 - Manganese (diss.filt)	TM152	mg/kg	<0.03	<0.03	<0.03
CEN 10:1 - Manganese (diss.filt)	TM152	mg/l	<0.003	<0.003	<0.003
CEN 10:1 - Nickel (diss.filt)	TM152	mg/kg	<0.004	<0.004	0.00449
CEN 10:1 - Nickel (diss.filt)	TM152	mg/l	<0.0004	<0.0004	0.000449
CEN 10:1 - Selenium (diss.filt)	TM152	mg/kg	<0.01	<0.01	<0.01
CEN 10:1 - Selenium (diss.filt)	TM152	mg/l	<0.001	<0.001	<0.001
CEN 10:1 - Vanadium (diss.filt)	TM152	mg/kg	<0.01	0.303	0.98
CEN 10:1 - Vanadium (diss.filt)	TM152	mg/l	<0.001	0.0303	0.098
CEN 10:1 - Zinc (diss.filt)	TM152	mg/kg	<0.01	0.0209	<0.01
CEN 10:1 - Zinc (diss.filt)	TM152	mg/l	<0.001	0.00209	<0.001
CEN 10:1 - Iron (Dis.Filt)	TM152	mg/kg	<0.19	2.48	<0.19
CEN 10:1 - Iron (Dis.Filt)	TM152	mg/l	<0.019	0.248	<0.019
TPH Criteria Working C					
CEN 10:1 - GRO Surrogate % recovery**	TM245	%		99	103
CEN 10:1 - GRO >C5-C12	TM245	mg/kg	<0.5	<0.5	<0.5
CEN 10:1 - GRO >C5-C12	TM245	mg/l	<0.05	<0.05	<0.05
CEN 10:1 - Methyl tertiary butyl ether (MTBE)	TM245	mg/kg	<0.03	<0.03	<0.03
CEN 10:1 - Methyl tertiary butyl ether (MTBE)	TM245	mg/l	<0.003	<0.003	<0.003
CEN 10:1 - Benzene	TM245	mg/kg	<0.07	<0.07	<0.07
CEN 10:1 - Benzene	TM245	mg/l	<0.007	<0.007	<0.007
CEN 10:1 - Toluene	TM245	mg/kg	<0.04	<0.04	<0.04
CEN 10:1 - Toluene	TM245	mg/l	<0.004	<0.004	<0.004
CEN 10:1 - Ethylbenzene	TM245	mg/kg	<0.05	<0.05	<0.05
CEN 10:1 - Ethylbenzene	TM245	mg/l	<0.005	<0.005	<0.005
CEN 10:1 - m,p-Xylene	TM245	mg/kg	<0.08	<0.08	<0.08
CEN 10:1 - m,p-Xylene	TM245	mg/l	<0.008	<0.008	<0.008
CEN 10:1 - o-Xylene	TM245	mg/kg	<0.03	<0.03	<0.03
CEN 10:1 - o-Xylene	TM245	mg/l	<0.003	<0.003	<0.003

CEN 10:1 - Sum of detected Xylenes	TM245	mg/kg	<0.11	<0.11	<0.11
CEN 10:1 - Sum of detected Xylenes	TM245	mg/l	<0.011	<0.011	<0.011
CEN 10:1 - Sum of detected BTEX	TM245	mg/kg	<0.28	<0.28	<0.28
CEN 10:1 - Sum of detected BTEX	TM245	mg/l	<0.028	<0.028	<0.028
CEN 10:1 - Aliphatics >C5-C6	TM245	mg/kg	<0.1	<0.1	<0.1
CEN 10:1 - Aliphatics >C5-C6	TM245	mg/l	<0.01	<0.01	<0.01
CEN 10:1 - Aliphatics >C6-C8	TM245	mg/kg	<0.1	<0.1	<0.1
CEN 10:1 - Aliphatics >C6-C8	TM245	mg/l	<0.01	<0.01	<0.01
CEN 10:1 - Aliphatics >C8-C10	TM245	mg/kg	<0.1	<0.1	<0.1
CEN 10:1 - Aliphatics >C8-C10	TM245	mg/l	<0.01	<0.01	<0.01
CEN 10:1 - Aliphatics >C10-C12	TM245	mg/kg	<0.1	<0.1	<0.1
CEN 10:1 - Aliphatics >C10-C12	TM245	mg/l	<0.01	<0.01	<0.01
CEN 10:1 - Aliphatics >C12-C16 (aq)	TM174	mg/kg	<0.1	<0.1	<0.1
CEN 10:1 - Aliphatics >C12-C16 (aq)	TM174	mg/l	<0.01	<0.01	<0.01
CEN 10:1 - Aliphatics >C16-C21 (aq)	TM174	mg/kg	<0.1	<0.1	<0.1
CEN 10:1 - Aliphatics >C16-C21 (aq)	TM174	mg/l	<0.01	<0.01	<0.01
CEN 10:1 - Aliphatics >C21-C35 (aq)	TM174	mg/kg	<0.1	<0.1	<0.1
CEN 10:1 - Aliphatics >C21-C35 (aq)	TM174	mg/l	<0.01	<0.01	<0.01
CEN 10:1 - Total Aliphatics >C12-C35 (aq)	TM174	mg/kg	<0.1	<0.1	<0.1
CEN 10:1 - Total Aliphatics >C12-C35 (aq)	TM174	mg/l	<0.01	<0.01	<0.01
CEN 10:1 - Aromatics >EC5-EC7	TM245	mg/kg	<0.1	<0.1	<0.1
CEN 10:1 - Aromatics >EC5-EC7	TM245	mg/l	<0.01	<0.01	<0.01
CEN 10:1 - Aromatics >EC7-EC8	TM245	mg/kg	<0.1	<0.1	<0.1
CEN 10:1 - Aromatics >EC7-EC8	TM245	mg/l	<0.01	<0.01	<0.01
CEN 10:1 - Aromatics >EC8-EC10	TM245	mg/kg	<0.1	<0.1	<0.1
CEN 10:1 - Aromatics >EC8-EC10	TM245	mg/l	<0.01	<0.01	<0.01
CEN 10:1 - Aromatics >EC10-EC12	TM245	mg/kg	<0.1	<0.1	<0.1
CEN 10:1 - Aromatics >EC10-EC12	TM245	mg/l	<0.01	<0.01	<0.01
CEN 10:1 - Aromatics >EC12-EC16 (aq)	TM174	mg/kg	<0.1	<0.1	<0.1
CEN 10:1 - Aromatics >EC12-EC16 (aq)	TM174	mg/l	<0.01	<0.01	<0.01
CEN 10:1 - Aromatics >EC16-EC21 (aq)	TM174	mg/kg	<0.1	<0.1	<0.1
CEN 10:1 - Aromatics >EC16-EC21 (aq)	TM174	mg/l	<0.01	<0.01	<0.01

CEN 10:1 - Aromatics >EC21-EC35 (aq)	TM174	mg/kg	<0.1	<0.1	<0.1
CEN 10:1 - Aromatics >EC21-EC35 (aq)	TM174	mg/l	<0.01	<0.01	<0.01
CEN 10:1 - Total Aromatics >EC12-EC35 (aq)	TM174	mg/kg	<0.1	<0.1	<0.1
CEN 10:1 - Total Aromatics >EC12-EC35 (aq)	TM174	mg/l	<0.01	<0.01	<0.01
CEN 10:1 - Total Aliphatics & Aromatics >C5-35 (aq)	TM174	mg/kg	<0.1	<0.1	<0.1
CEN 10:1 - Total Aliphatics & Aromatics >C5-35 (aq)	TM174	mg/l	<0.01	<0.01	<0.01
Polyaromatic Hydrocar					
CEN 10:1 - Naphthalene (aq)	TM178	mg/kg	<0.0001	0.000281	0.000686
CEN 10:1 - Naphthalene (aq)	TM178	mg/l	<0.00001	0.0000281	0.0000686
CEN 10:1 - Acenaphthene (aq)	TM178	mg/kg	<0.00005	<0.00005	0.000301
CEN 10:1 - Acenaphthene (aq)	TM178	mg/l	<0.000005	<0.000005	0.0000301
CEN 10:1 - Acenaphthylene (aq)	TM178	mg/kg	<0.00005	0.00282	0.0000667
CEN 10:1 - Acenaphthylene (aq)	TM178	mg/l	<0.000005	0.000282	0.00000667
CEN 10:1 - Fluoranthene (aq)	TM178	mg/kg	<0.00005	0.00627	0.00144
CEN 10:1 - Fluoranthene (aq)	TM178	mg/l	<0.000005	0.000627	0.000144
CEN 10:1 - Anthracene (aq)	TM178	mg/kg	<0.00005	0.000447	0.000194
CEN 10:1 - Anthracene (aq)	TM178	mg/l	<0.000005	0.0000447	0.0000194
CEN 10:1 - Phenanthrene (aq)	TM178	mg/kg	<0.00005	0.000631	0.00115
CEN 10:1 - Phenanthrene (aq)	TM178	mg/l	<0.000005	0.0000631	0.000115
CEN 10:1 - Fluorene (aq)	TM178	mg/kg	<0.00005	0.0000843	0.000122
CEN 10:1 - Fluorene (aq)	TM178	mg/l	<0.000005	0.00000843	0.0000122
CEN 10:1 - Chrysene (aq)	TM178	mg/kg	<0.00005	0.00647	0.000293
CEN 10:1 - Chrysene (aq)	TM178	mg/l	<0.000005	0.000647	0.0000293
CEN 10:1 - Pyrene (aq)	TM178	mg/kg	<0.00005	0.00587	0.00334
CEN 10:1 - Pyrene (aq)	TM178	mg/l	<0.000005	0.000587	0.000334
CEN 10:1 - Benzo(a)anthracene (aq)	TM178	mg/kg	<0.00005	0.00424	0.000147
CEN 10:1 - Benzo(a)anthracene (aq)	TM178	mg/l	<0.000005	0.000424	0.0000147
CEN 10:1 - Benzo(b)fluoranthene (aq)	TM178	mg/kg	<0.00005	0.0207	0.000146
CEN 10:1 - Benzo(b)fluoranthene (aq)	TM178	mg/l	<0.000005	0.00207	0.0000146
CEN 10:1 - Benzo(k)fluoranthene (aq)	TM178	mg/kg	<0.00005	0.00882	<0.00005
CEN 10:1 - Benzo(k)fluoranthene (aq)	TM178	mg/l	<0.000005	0.000882	<0.000005
CEN 10:1 - Benzo(a)pyrene (aq)	TM178	mg/kg	<0.00002	0.013	0.0000411

CEN 10:1 - Benzo(a)pyrene (aq)	TM178	mg/l	<0.000002	0.0013	0.00000411
CEN 10:1 - Dibenzo(a,h)anthracene (aq)	TM178	mg/kg	<0.00005	0.00311	<0.00005
CEN 10:1 - Dibenzo(a,h)anthracene (aq)	TM178	mg/l	<0.000005	0.000311	<0.000005
CEN 10:1 - Benzo(g,h,i)perylene (aq)	TM178	mg/kg	<0.00005	0.0251	<0.00005
CEN 10:1 - Benzo(g,h,i)perylene (aq)	TM178	mg/l	<0.000005	0.00251	<0.000005
CEN 10:1 - Indeno(1,2,3-cd)pyrene (aq)	TM178	mg/kg	<0.00005	0.0161	<0.00005
CEN 10:1 - Indeno(1,2,3-cd)pyrene (aq)	TM178	mg/l	<0.000005	0.00161	<0.000005
CEN 10:1 - PAH, Total Detected USEPA 16 (aq)	TM178	mg/kg	<0.00082	0.114	0.00792
CEN 10:1 - PAH, Total Detected USEPA 16 (aq)	TM178	mg/l	<0.000082	0.0114	0.000792
EPH CWG (Speciated)					
CEN 10:1 - Aliphatics >C16-C35 Aqueous	TM174	mg/kg	<0.1	<0.1	<0.1
CEN 10:1 - Aliphatics >C16-C35 Aqueous	TM174	mg/l	<0.01	<0.01	<0.01

Appendix I
Geotechnical Testing

Soil ID	Compaction				General	Particle Distribution							BRE			
						Fines										
	Optimum Moisture Content (%)	Max Dry Density (Mg/m3)	Natural Moisture Content (%)	Assumed/Measured Particle Density (Mg/m3)	Water Content (%)	Clay % (<0.004mm)	Silt % (0.004 - 0.062mm)	% Fines (<0.062)	Sand % (0.062 - 2mm)	Gravel % (2-63mm)	Cobbles % (64-124mm)	Total	Initial Moisture Content %	Wet Density in Mould (Mg/m3)	Dry Density in Mould (Mg/m3)	Total Expansion (%)
4C-G4 (1.5m)	12	2.30		3.3	15.0							0		2.87	2.71	-0.40
4C-G5	12	2.10		2.975	13.0			7	17	76	0	100		2.76	2.63	-0.30
4C-H1 (1.0m)	14	1.92		2.8	18.0							0		2.22	2.39	0.30
4C-H2 (1.5m)	11	1.94		2.6	21.0							0		2.33	2.15	2.00
4C-H4 (1.5m)	11	2.16		3	11.0							0		2.61	2.47	0.60
4C-H5 (1.0m)	10	2.35		3.3	8.9							0		2.97	2.85	0.30
4C-H6	12	2.07		2.9	6.7			7	14	79	0	100		3	2.9	0.30
4C-I1 (1.0m)	12	2.04		2.8	12.0							0		2.62	2.46	0.20
4C-I2 (1.0m)	12	1.90		2.6	9.0							0		2.71	2.6	0.30
4C-I3 (0.8m)	10	2.23		3.1	7.5							0		2.61	2.73	0.00
4C-I4 (0.5m)	10	2.08		2.8	7.9							0		2.82	2.67	0.50
4C-I5	13	2.04		2.9	15.0			6	26	58	10	100		2.34	2.21	0.00
4C-I7 (0.5m)	16	1.77		2.6	17.0			6	10	77	7	100		2.28	2.19	0.00
4C-J1 (1.5m)	11	2.06		2.8	16.0			8	29	63	0	100		2.38	2.25	2.70
4C-J2 (1.0m)	18	1.27		1.7	19.0			12	17	57	14	100		2.33	2.22	0.30
4C-J3 (1.0m)	11	2.12		2.9	12.0							0		2.63	2.52	0.10
4C-K2	9	2.06		2.75	9.7			9	28	55	8	100		2.39	2.28	-0.10
4E-G4	5	2.75		3.4	9.4			4.4	15.6	80	0	100		3.41	3.33	2.10
4E-A7	12	2.22		3.2	13.5			4.1	16.9	79	0	100		2.85	2.76	1.25
4E-A8	12	2.00		2.75	19.7			3.8	13.2	80	3	100		1.9	1.77	0.20
4E-B4	11	2.17		3.05	8.2			3.7	7.3	76	13	100		2.86	2.77	4.25
4E-B7	10	2.03		2.7	12			0	13	87	0	100		2.34	1.98	0.80
4E-C1	10	1.96		2.6	12.4			10	28	62	0	100		1.95	2.04	0.30
4E-C2	10	1.98		2.65	13.2			10.9	21.1	68	0	100		3.07	2.97	0.00
4E-C4	11	2.36		3.4	11.6			9.7	21.3	69	0	100		2.55	2.47	1.70
4E-C7					12			3.9	19.1	77	0	100		3.03	2.93	0.50
4E-D1					45.6			0.5	37.5	50	12	100		2.33	2.24	0.10
4E-D2	11	2.02		2.9	14.8			12.3	22.7	65	0	100		2.08	1.99	1.50
4E-D4	12	2.24		3.2	15.3			5.1	23.9	71	0	100		2.89	2.72	3.40
4E-D7	12	2.38		3.55	9			1.4	6.6	87	5	100		3.05	2.94	1.30
4E-E1	11	2.07		2.85	14.3			3.7	17.3	69	10	100		2.59	2.48	0.70
4E-E2	12	2.19		3.15	15.2			5	19	56	20	100		2.1	1.98	0.25
4E-E4					15.9			9.8	29.2	61	0	100		2.49	2.4	
4E-E5					13.6			3.1	21.9	62	13	100		2.91	2.81	1.80
4E-E6	10	2.38		3.35	8.1			0.3	13.7	86	0	100		3.07	2.98	3.70
4E-E7	11	2.49		3.65	10.6			0.3	15.7	84	0	100		3.05	2.95	2.10
4E-F6	13	2.17		3.25	12			0.7	13.3	86	0	100		2.72	2.62	
4G-A4	11	1.98		2.65	19.4			15.7	29.3	55	0	100		2.4	2.33	0.50
4G-A6	13	2.09		3	17			9.1	8.9	75	7	100		2.7	2.55	0.10
4G-B5	12	2.34		3.45	11.1			2.1	14.9	72	11	100		2.88	2.77	
4G-B6	13	2.41		3.8	8.3			0.9	8.1	86	5	100		3.1	3	10.10
4G-B7	11	2.43		3.45	7.7			0.8	4.2	83	12	100		3.14	3.05	1.70
4G-B8	11	2.38		3.4	11.1			3.8	17.2	79	0	100		2.99	2.9	
No. Tests	39	39		39	43			33	33	33	33	43		43	43	39
Minimum	5.00	1.27		1.70	6.70			0.00	4.20	50.00	0.00	0.00		1.90	1.77	-0.40
Maximum	18.00	2.75		3.80	45.60			15.70	37.50	87.00	20.00	100.00		3.41	3.33	10.10
Average	11.49	2.14		3.01	13.48			5.46	18.18	71.82	4.55	76.74		2.66	2.56	1.16

Appendix J
Geotechnical Laboratory Certificates

St Modwen Developments Limited
Park Point
17 High Street
Longbridge
Birmingham
B31 2UQ

Date: 26 November 2018
Test Report Ref: TR 630483

Order No: BACS-Former Llanwern Steelworks

Contract: The Hawk Site

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Dry Density and Moisture Content Relationship of soil sieve 4.5kg Rammer Method in accordance with BS 1377: 4: 1990 Clause 3.6

SAMPLE DETAILS:

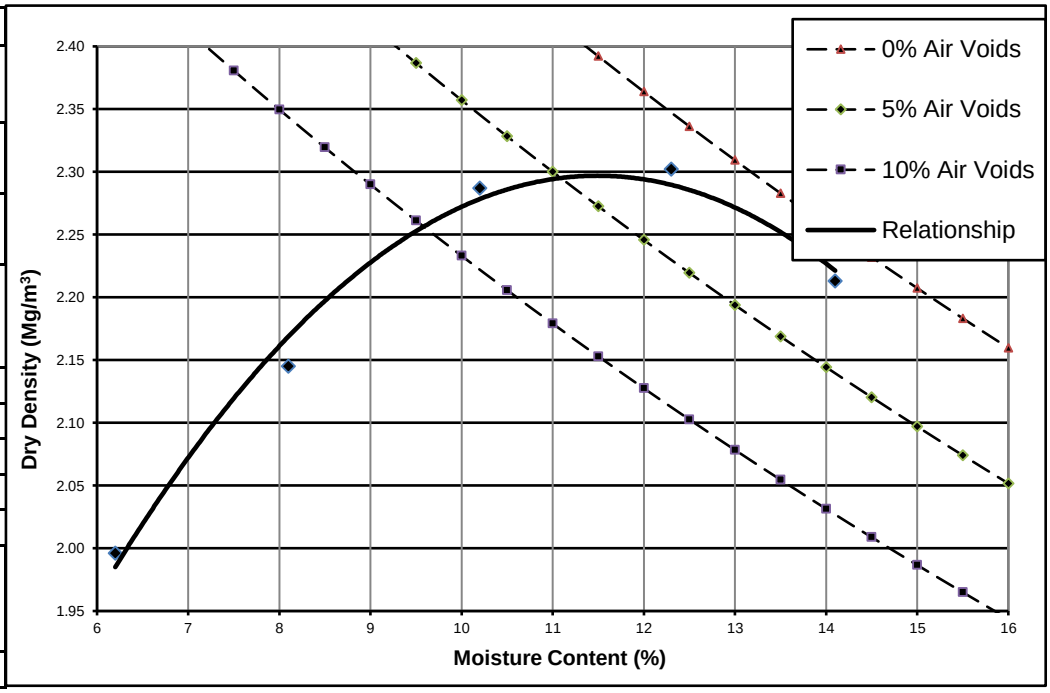
Certificate of sampling received:	**No**	Name of Source:	**Former Llanwern Steelworks**
Laboratory Ref. No:	**S76201**	Method of Sampling:	**Unknown**
Client Ref. :	**4CG4 - 1.5**	Sampled By:	**Client**
Date and Time of Sampling:	**15/10/2018**		
Date of Receipt at Lab:	**18/10/2018**	Unrepresentative lumps present?	
Date of Start of Test:	**18/11/2018**	Sample Preparation Procedure:	**Single**
Sampling Location:	**Former Llanwern Steelworks**	Sample Preparation Method:	**3.2.5.3**
Soil Description:	**Granular**		

RESULTS:

Particle Density: 3.3Mg/m3 (Assumed)

Retained on 37.5mm Sieve:	92 %
Retained on 20mm Sieve:	73 %

Moisture Content (%)	Dry Density Mg/m^3
6.2	2.00
8.1	2.15
10.2	2.29
12.3	2.30
14.1	2.21
Optimum Moisture Content (%)	**Maximum Dry Density Mg/m^3**
12.0	**2.30**



Comments:
None

Report checked and approved by:
S Parry- Didcote
Sharon Parry-Didcote
Aggregate Team Coordinator

St Modwen Developments Limited
Park Point
17 High Street
Longbridge
Birmingham
B31 2UQ

Date: 31 October 2018
Test Report Ref: TR 628662

Order No: BACS-Former Llanwern Steelworks

Contract: The Hawk Site

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Dry Density and Moisture Content Relationship of soil sieve 4.5kg Rammer Method in accordance with BS 1377: 4: 1990 Clause 3.6

SAMPLE DETAILS:

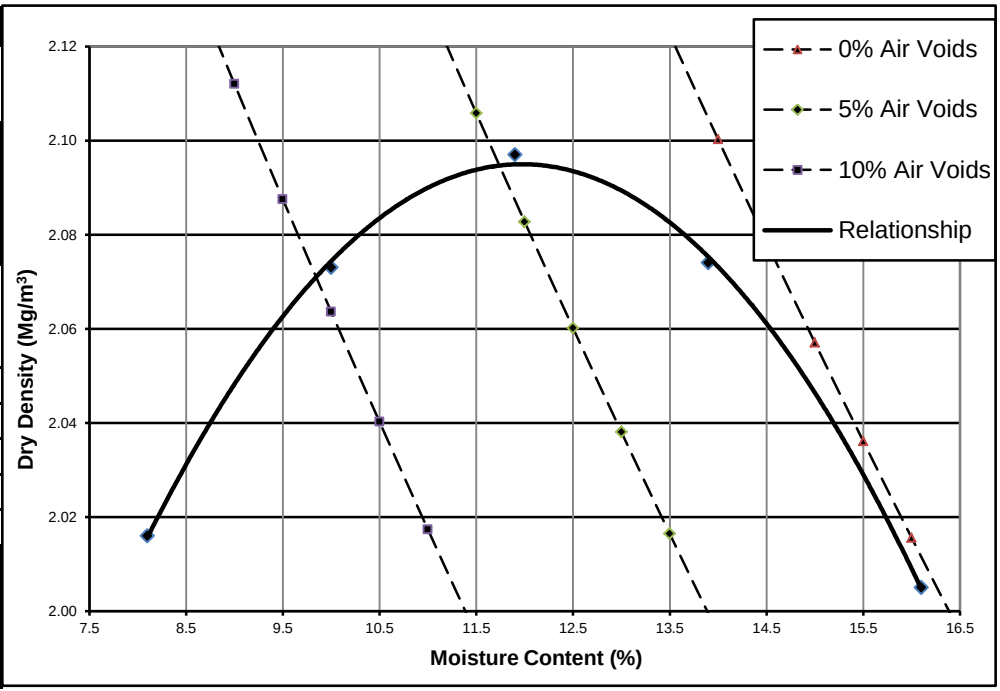
Certificate of sampling received:	**No**	Name of Source:	**Former Llanwern Steelworks**
Laboratory Ref. No:	**S76088**	Method of Sampling:	**Unknown**
Client Ref. :	**4 C G 5**	Sampled By:	**Client**
Date and Time of Sampling:	**Unknown**		
Date of Receipt at Lab:	**15/10/2018**	Unrepresentative lumps present?	**No**
Date of Start of Test:	**26/10/2018**	Sample Preparation Procedure:	**3.2.5.1**
Sampling Location:	**Phase 4C 1.0m**	Sample Preparation Method:	**Single**
Soil Description:	**Granular**		

RESULTS:

Particle Density: 2.975Mg/m3 (Assumed)

Retained on 37.5mm Sieve:	5 %
Retained on 20mm Sieve:	22 %

Moisture Content (%)	Dry Density Mg/m^3
8.1	2.02
10.0	2.07
11.9	2.10
13.9	2.07
16.1	2.01
Optimum Moisture Content (%)	**Maximum Dry Density Mg/m^3**
12.0	**2.10**



Comments:
None

Report checked and approved by:
N. Hughes
Neil Hughes
Aggregate Team Coordinator

celtest
INDEPENDENT MATERIALS TESTING I DIAMOND DRILLING & SAWING

St Modwen Developments Limited
Park Point
17 High Street
Longbridge
Birmingham
B31 2UQ

Date: 26 November 2018
Test Report Ref: TR 630484

Order No: BACS-Former Llanwern Steelworks

Contract: The Hawk Site

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Dry Density and Moisture Content Relationship of soil sieve 4.5kg Rammer Method in accordance with BS 1377: 4: 1990 Clause 3.6

SAMPLE DETAILS:

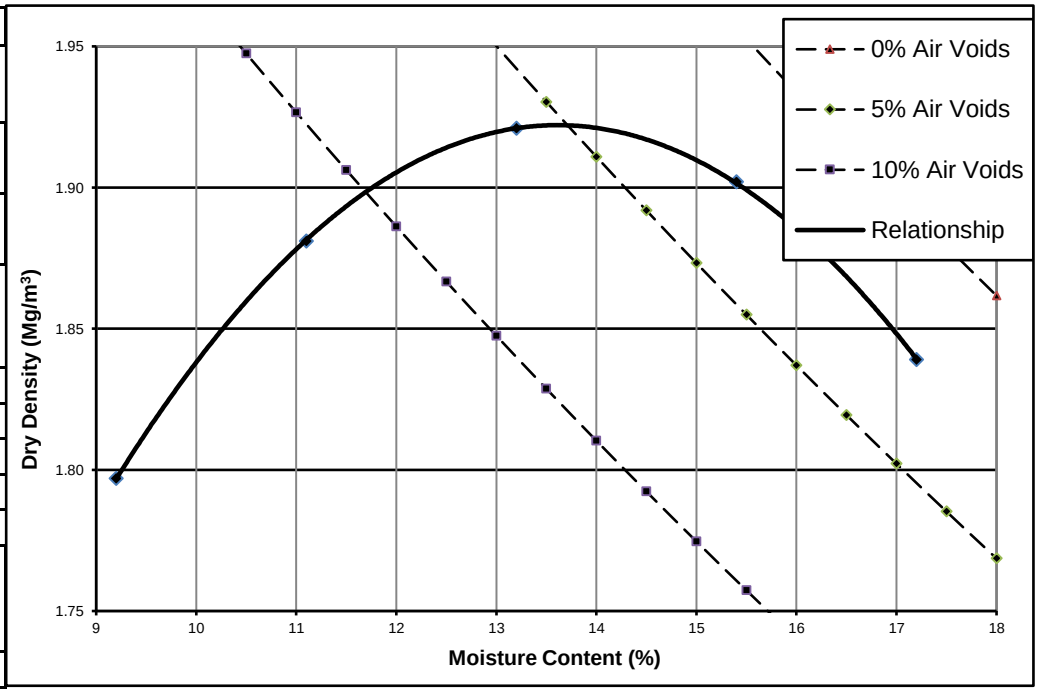
Certificate of sampling received:	**No**	Name of Source:	**Former Llanwern Steelworks**
Laboratory Ref. No:	**S76201**	Method of Sampling:	**Unknown**
Client Ref. :	**4CH1 - 1.0**	Sampled By:	**Client**
Date and Time of Sampling:	**15/10/2018**		
Date of Receipt at Lab:	**18/10/2018**	Unrepresentative lumps present?	
Date of Start of Test:	**19/11/2018**	Sample Preparation Procedure:	**Zone X**
Sampling Location:	**Former Llanwern Steelworks**	Sample Preparation Method:	**Single**
Soil Description:	**Granular**		

RESULTS:

Particle Density: 2.8Mg/m3 (Assumed)

Retained on 37.5mm Sieve:	77 %
Retained on 20mm Sieve:	61 %

Moisture Content (%)	Dry Density Mg/m^3
9.2	1.80
11.1	1.88
13.2	1.92
15.4	1.90
17.2	1.84
Optimum Moisture Content (%)	**Maximum Dry Density Mg/m^3**
14.0	**1.92**



Comments:
None

Report checked and approved by:
S Parry-Didcote
Sharon Parry-Didcote
Aggregate Team Coordinator

celtest
INDEPENDENT MATERIALS TESTING I DIAMOND DRILLING & SAWING

St Modwen Developments Limited
Park Point
17 High Street
Longbridge
Birmingham
B31 2UQ

Date: 20 November 2018
Test Report Ref: TR 630491

Order No: BACS-Former Llanwern Steelworks

Contract: The Hawk Site

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Dry Density and Moisture Content Relationship of soil sieve 4.5kg Rammer Method in accordance with BS 1377: 4: 1990 Clause 3.6

SAMPLE DETAILS:

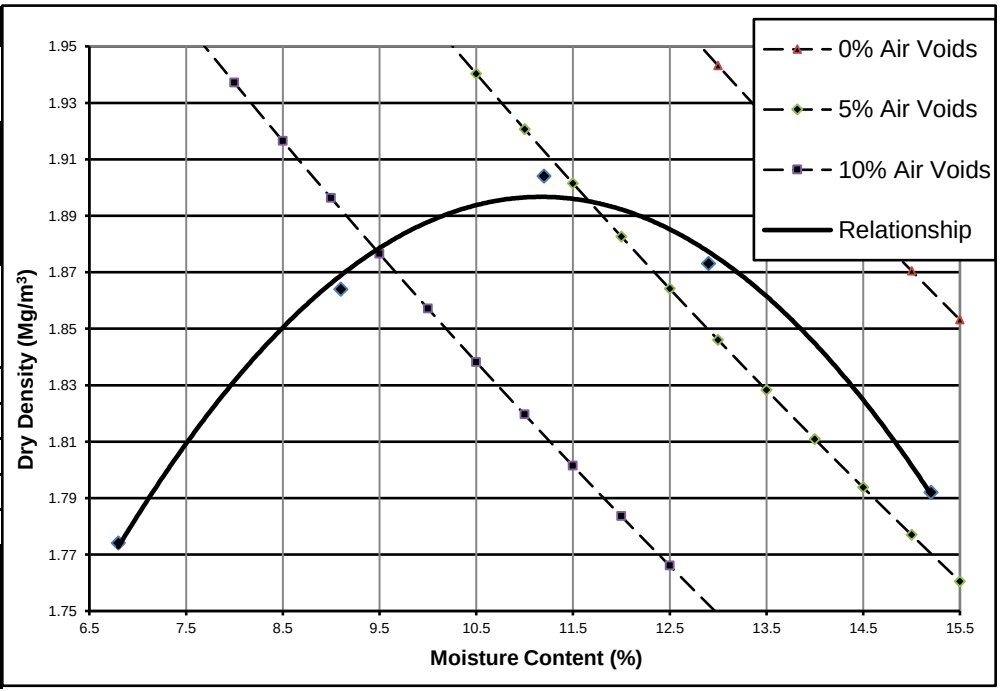
Certificate of sampling received:	**No**	Name of Source:	**Former Llanwern Steelworks**
Laboratory Ref. No:	**S76201**	Method of Sampling:	**Unknown**
Client Ref. :	**4CH2 - 1.5**	Sampled By:	**Client**
Date and Time of Sampling:	**15/10/2018**		
Date of Receipt at Lab:	**18/10/2018**	Unrepresentative lumps present?	**No**
Date of Start of Test:	**18/11/2018**	Sample Preparation Procedure:	**3.2.5.3**
Sampling Location:	**Former Llanwern Steelworks**	Sample Preparation Method:	**Single**
Soil Description:	**Granular**		

RESULTS:

Particle Density: 2.6Mg/m3 (Assumed)

Retained on 37.5mm Sieve:	7 %
Retained on 20mm Sieve:	16 %

Moisture Content (%)	Dry Density Mg/m^3
6.8	1.77
9.1	1.86
11.2	1.90
12.9	1.87
15.2	1.79
Optimum Moisture Content (%)	**Maximum Dry Density Mg/m^3**
11.0	**1.94**



Comments:
None

Report checked and approved by:
N. Hughes
Neil Hughes
Aggregate Team Coordinator