

Project : Leconfield, Cleator Moor		Client :						
Method: JCB Excavator		Co-ordinates: Ground Level :				Start Date: 07/03/07 Finish Date: 07/03/07		
Description	Legend	Reduced Level (mOD)	Depth (m)	Water Strike (m)	Backfill	Sample Test		Notes
						Depth (m)	Type	
TOPSOIL MADE GROUND: Brown sandy gravelly CLAY. Gravel is sub-angular and sub-rounded, fine to coarse slag and mudstone with occasional sub-rounded cobbles of slag at 1mbgl			0.10					
						0.70	D	
						1.80	D	
						2.60	D	
Trial Pit completed at 3.00m bgl			3.00					
Stability: Groundwater Observations: No groundwater encountered Remarks:		<u>Pit Dimensions:</u> Length: - Width: - Orientation:		JOB NUMBER Logged By : Checked By :				AM

WHITE YOUNG GREEN ENVIRONMENTAL

Ground Technologies and Investigations

Regatta House, Clippers Quay, Manchester, M50 3XP
Tel: 0161 872 3223 Fax: 0161 872 3193

Trial Pit
Number **TP10**

Sheet 1 of 1
Scale 1:50

Project : Leconfield, Cleator Moor		Client :						
Method: JCB Excavator		Co-ordinates: Ground Level :				Start Date: 07/03/07 Finish Date: 07/03/07		
Description	Legend	Reduced Level (mOD)	Depth (m)	Water Strike (m)	Backfill	Sample Test		Notes
						Depth (m)	Type	
TOPSOIL with many rootlets.			0.10					
MADE GROUND: Brown very gravelly sandy CLAY. Gravel is sub-angular and angular, fine to coarse slag and mudstone with some rootlets			0.30				0.20	D
MADE GROUND: White, grey and black sub-angular and angular, fine to coarse GRAVEL of slag			1.30				1.00	D
MADE GROUND: Dark brown very sandy gravelly CLAY. Gravel is sub-angular and sub-rounded, fine to coarse slag and mudstone.			3.00				1.60	D
Trial Pit completed at 3.00m bgl								
Stability: Groundwater Observations: No groundwater encountered Remarks:		Pit Dimensions: Length: - Width: - Orientation:		JOB NUMBER Logged By : Checked By : AM				

Project : **Leconfield, Cleator Moor**

Client :

Method: **JCB Excavator**

Co-ordinates:
Ground Level :

Start Date: 07/03/07
Finish Date: 07/03/07

Description	Legend	Reduced Level (mOD)	Depth (m)	Water Strike (m)	Backfill	Sample Test		Notes
						Depth (m)	Type	
TOPSOIL			0.10					
MADE GROUND: White, grey sub-angular and angular, fine to coarse GRAVEL of slag						0.50	D	
			1.80			1.80	D	
MADE GROUND: Grey brown gravelly SAND. Gravel is sub-angular and angular , fine to coarse slag and mudstone						3.00	D	
			3.80					
Trial Pit completed at 3.80m bgl								

Stability:
Groundwater Observations: No groundwater encountered
Remarks:

Pit Dimensions:
Length: -
Width: -
Orientation:

JOB NUMBER

Logged By : AM
Checked By :



Ground Technologies and Investigations

Trial Pit
Number **TP12**

MJT

Project : **Leconfield, Cleator Moor**

Client :

Method: **Wheeled Backhoe Excavator**

Co-ordinates:
Ground Level :

Start Date: 08/03/07
Finish Date: 08/03/07

Description	Legend	Reduced Level (mOD)	Depth (m)	Water Strike (m)	Backfill	Sample Test		Notes
						Depth (m)	Type	
Grass over dark brown slightly clayey TOPSOIL.			0.10					
Firm orange brown occasionally mottled grey sandy slightly gravelly CLAY. Gravel is angular to subangular fine to coarse of sandstone, coal and mudstone.						0.40	D	
						0.60	D	
Firm dark red brown occasionally mottled orange and light grey slightly sandy gravelly CLAY with occasional lenses of decaying vegetation (1 - 5mm). Gravel is angular to subangular fine to coarse of sandstone, coal and mudstone.			0.90					
Firm to stiff dark red brown mottled blue grey slightly gravelly CLAY. Gravel is angular to subangular fine to coarse of mudstone, sandstone and coal. From 1.80m bgl becoming stiff. From 2.00m bgl with occasional pockets of decaying vegetation (1-10mm). From 2.30m bgl occasional cobbles and boulders of sandstone. From 2.40m bgl becoming stiff to very stiff.			1.60			1.50	D	
						1.70	D	
						2.50	D	
			2.80					

Trial Pit completed at 2.80m bgl

Stability:
Groundwater Observations: Groundwater not observed during excavation
Remarks: Trial pit backfilled with arisings upon completion

Pit Dimensions:
Length: 2.8m
Width: 0.8m
Orientation: 270°

JOB NUMBER
Logged By : MJT
Checked By :



Ground Technologies and Investigations

Trial Pit
Number

Logged By : MJT
Checked By :

WHITE YOUNG GREEN ENVIRONMENTAL

Ground Technologies and Investigations

Regatta House, Clippers Quay, Manchester, M50 3XP
Tel: 0161 872 3223 Fax: 0161 872 3193

Trial Pit
Number **TP15**

Sheet 1 of 1

Scale 1:50

Project : **Leconfield, Cleator Moor**

Client :

Method: **Wheeled Backhoe Excavator**

Co-ordinates:
Ground Level :

Start Date: 08/03/07
Finish Date: 08/03/07

Description	Legend	Reduced Level (mOD)	Depth (m)	Water Strike (m)	Backfill	Sample Test		Notes
						Depth (m)	Type	
Rough grass over dark brown soft clayey TOPSOIL with abundant rootlets.			0.25 0.30			0.25	D	
MADE GROUND: Multicoloured sandy angular to subangular fine to coarse GRAVEL of slag, sandstone and coal.				0.70		1.00	D	
MADE GROUND: Multicoloured cobbles and boulders of slag with occasional subangular fine to coarse GRAVEL of sandstone and coal. (Recovered as multicoloured sandy angular to subangular fine to coarse gravel of predominately slag, sandstone and coal).			1.70 1.90			1.60	D	
MADE GROUND: Firm red brown slightly sandy gravelly CLAY with occasional cobbles of brick. Gravel is angular to subangular fine to coarse of brick, sandstone, wood, slag, mudstone and coal.						2.40 2.50	D D	
Firm orange brown occasionally mottled light grey sandy slightly gravelly to gravelly CLAY. Gravel is angular to subangular fine to coarse of mudstone and coal.			2.80					
Trial Pit completed at 2.80m bgl								

Stability:

Groundwater Observations: Seepage at 0.70m bgl.

Remarks:

Breaking out from 0.30m - 1.40m bgl

Trial pit backfilled with arisings upon completion

Breaking out from 0.30m - 1.40m bgl. Trial pit backfilled with arisings upon completion

Pit Dimensions:

Length: 2.7m

Width: 1.3m

Orientation: 235°

JOB NUMBER

Logged By :

MJT

Checked By :

Appendix C – Geochemical Laboratory Testing Results



Unit 7-8 Hawarden Business Park

Manor Road (off Manor Lane)

Hawarden

Deeside

CH5 3US

Tel: (01244) 528700

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Website: www.alsenvironmental.co.uk

WYG Geo-Environment
Quay West at Media City UK
Trafford Warf Palk
Manchester
Lancashire
M17 1HH

Attention: Sara Brennan

CERTIFICATE OF ANALYSIS

Date of report Generation: 30 July 2020
Customer: WYG Geo-Environment
Sample Delivery Group (SDG): 200718-73
Your Reference: A114312-1
Location: Leconfield Industrial Estate
Report No: 561099

This report has been revised and directly supersedes 560879 in its entirety.

We received 25 samples on Saturday July 18, 2020 and 17 of these samples were scheduled for analysis which was completed on Thursday July 30, 2020. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

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

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

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Sonia McWhan

Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 200718-73 Client Reference: A114312-1 Report Number: 561099
Location: Leconfield Industrial Estate Order Number: MAN20/8116/A114312-1/523 Superseded Report: 560879

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
22506723	WS101		0.20	14/07/2020
22506735	WS102	ES1	0.10 - 0.10	13/07/2020
22506739	WS102	ES2	0.50 - 0.50	13/07/2020
22506745	WS102	ES3	1.50 - 1.50	13/07/2020
22506828	WS103	ES1	0.10 - 0.10	13/07/2020
22506832	WS103	ES2	0.60 - 0.60	13/07/2020
22506836	WS103	ES3	1.20 - 1.20	13/07/2020
22506732	WS103	ES4	3.80 - 3.80	13/07/2020
22506816	WS104	ES1	0.10 - 0.10	13/07/2020
22506820	WS104	ES2	0.50 - 0.50	13/07/2020
22506824	WS104	ES3	1.20 - 1.20	13/07/2020
22506728	WS105	ES1	0.10 - 0.10	13/07/2020
22506778	WS105	ES2	0.50 - 0.50	13/07/2020
22506812	WS105	ES3	1.00 - 1.00	13/07/2020
22506750	WS106	ES1	0.05 - 0.05	14/07/2020
22506754	WS106	ES2	0.40 - 0.40	14/07/2020
22506759	WS107	ES1	0.20 - 0.20	14/07/2020
22506763	WS108	ES1	0.10 - 0.10	14/07/2020
22506767	WS108	ES2	0.50 - 0.50	14/07/2020
22506771	WS108	ES3	1.70 - 1.70	14/07/2020
22506787	WS108	ES4	2.20 - 2.20	14/07/2020
22506794	WS109	ES1	0.40 - 0.40	14/07/2020
22506799	WS109	ES2	1.20 - 1.20	14/07/2020
22506803	WS110	ES1	0.40 - 0.40	14/07/2020
22506807	WS110	ES2	1.20 - 1.20	14/07/2020

Maximum Sample/Coolbox Temperature (°C) :

17.4

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.

22506767	WS108	ES2	0.50 - 0.50	250g Amber Jar (ALE210)	S	X		
				1kg TUB with Handle (ALE260)	S			
				60g VOC (ALE215)	S			X
22506759	WS107	ES1	0.20 - 0.20	250g Amber Jar (ALE210)	S	X		
				1kg TUB with Handle (ALE260)	S			
				60g VOC (ALE215)	S			X
22506754	WS106	ES2	0.40 - 0.40	250g Amber Jar (ALE210)	S	X		
				1kg TUB with Handle (ALE260)	S			X
				60g VOC (ALE215)	S			
22506750	WS106	ES1	0.05 - 0.05	250g Amber Jar (ALE210)	S			X
				1kg TUB with Handle (ALE260)	S			
				60g VOC (ALE215)	S			
				250g Amber Jar (ALE210)	S	X		
				1kg TUB with Handle (ALE260)	S			
				60g VOC (ALE215)	S			X
22506778	WS105	ES2	0.50 - 0.50	250g Amber Jar (ALE210)	S			X
				1kg TUB with Handle (ALE260)	S			
				60g VOC (ALE215)	S			
				250g Amber Jar (ALE210)	S	X		
				1kg TUB with Handle (ALE260)	S			
				60g VOC (ALE215)	S			X
22506728	WS105	ES1	0.10 - 0.10	250g Amber Jar (ALE210)	S	X		
				1kg TUB with Handle (ALE260)	S			
				60g VOC (ALE215)	S			
22506820	WS104	ES2	0.50 - 0.50	250g Amber Jar (ALE210)	S			X
				1kg TUB with Handle (ALE260)	S			
				60g VOC (ALE215)	S			
				250g Amber Jar (ALE210)	S	X		
				1kg TUB with Handle (ALE260)	S			
				60g VOC (ALE215)	S			
22506816	WS104	ES1	0.10 - 0.10	250g Amber Jar (ALE210)	S			X
				1kg TUB with Handle (ALE260)	S			
				60g VOC (ALE215)	S			



CERTIFICATE OF ANALYSIS

Validated

SDG: 200718-73 Client Reference: A114312-1 Report Number: 561099
Location: Leconfield Industrial Estate Order Number: MAN20/8116/A114312-1/523 Superseded Report: 560879

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				
						22506767	22506771	22506794	22506803
						WS108	WS108	WS109	WS110
						ES2	ES3	ES1	ES1
						0.50 - 0.50	1.70 - 1.70	0.40 - 0.40	0.40 - 0.40
						60g VOC (ALE215)	250g Amber Jar (ALE210) 1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210) 1kg TUB with Handle (ALE260)	60g VOC (ALE215)
						S	S	S	S
Anions by Kone (soil)	All	NDPs: 0 Tests: 17					X	X	X
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 17				X	X	X	
Boron Water Soluble	All	NDPs: 0 Tests: 17					X	X	X
Chromium III	All	NDPs: 0 Tests: 17					X	X	X
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 17					X	X	X
EPH CWG GC (S)	All	NDPs: 0 Tests: 17					X	X	X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 17				X	X	X	X
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 17					X	X	X
Metals in solid samples by OES	All	NDPs: 0 Tests: 17					X	X	X
PAH by GCMS	All	NDPs: 0 Tests: 17					X	X	X
pH	All	NDPs: 0 Tests: 17					X	X	X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 17					X	X	X
Sample description	All	NDPs: 0 Tests: 17					X	X	X
Total Organic Carbon	All	NDPs: 0 Tests: 17					X	X	X
TPH CWG GC (S)	All	NDPs: 0 Tests: 17					X	X	X



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Results Legend



Test



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)	22506767	22506771	22506794	22506803
Customer Sample Reference	WS108	WS108	WS109	WS110
AGS Reference	ES2	ES3	ES1	ES1
Depth (m)	0.50 - 0.50	1.70 - 1.70	0.40 - 0.40	0.40 - 0.40
Container	60g VOC (ALE215)	250g Amber Jar (ALE210) 1kg TUB with Handle (ALE260) 60g VOC (ALE215)	250g Amber Jar (ALE210) 1kg TUB with Handle (ALE260) 60g VOC (ALE215)	250g Amber Jar (ALE210) 1kg TUB with Handle (ALE260) 60g VOC (ALE215)
Sample Type	S	S	S	S
VOC MS (S)	All	NDPs: 0 Tests: 17		
	X	X	X	X



CERTIFICATE OF ANALYSIS

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SDG: 200718-73 Client Reference: A114312-1 Report Number: 561099
Location: Leconfield Industrial Estate Order Number: MAN20/8116/A114312-1/523 Superseded Report: 560879

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
22506723	WS101	0.20	Black	N/A	Stones	None
22506735	WS102	0.10 - 0.10	Dark Brown	Peat	Vegetation	Stones
22506739	WS102	0.50 - 0.50	Dark Brown	Sand	Stones	Crushed Brick
22506732	WS103	3.80 - 3.80	Grey	Sand	Stones	Vegetation
22506828	WS103	0.10 - 0.10	Dark Brown	Silt Loam	Vegetation	None
22506832	WS103	0.60 - 0.60	Dark Brown	Silt Loam	Crushed Brick	Stones
22506816	WS104	0.10 - 0.10	Dark Brown	Peat	Crushed Brick	Vegetation
22506820	WS104	0.50 - 0.50	Dark Brown	Silt Loam	Crushed Brick	Stones
22506728	WS105	0.10 - 0.10	Dark Brown	Silt Loam	Vegetation	None
22506778	WS105	0.50 - 0.50	Dark Brown	Silt Loam	Crushed Brick	Stones
22506750	WS106	0.05 - 0.05	Dark Brown	Peat	Vegetation	None
22506754	WS106	0.40 - 0.40	Grey	Sand	Stones	Vegetation
22506759	WS107	0.20 - 0.20	Dark Brown	Sand	Crushed Brick	Stones
22506767	WS108	0.50 - 0.50	Dark Brown	Loamy Sand	Crushed Brick	Vegetation
22506771	WS108	1.70 - 1.70	Dark Brown	Sand	Crushed Brick	Vegetation
22506794	WS109	0.40 - 0.40	Dark Brown	Sandy Clay Loam	Crushed Brick	Stones
22506803	WS110	0.40 - 0.40	Dark Brown	Clay Loam	Crushed Brick	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 occurring 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.



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SDG: 200718-73 Client Reference: A114312-1 Report Number: 561099
Location: Leconfield Industrial Estate Order Number: MAN20/8116/A114312-1/523 Superseded Report: 560879

Results Legend			Customer Sample Ref.	WS101	WS102	WS102	WS103	WS103	WS103
#	ISO17025 accredited.								
M	mCERTS accredited.								
aq	Aqueous / settled sample.								
diss.filt	Dissolved / filtered sample.								
tot.unfilt	Total / unfiltered sample.								
*	Subcontracted - refer to subcontractor report for accreditation status.								
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery								
(F)	Trigger breach confirmed								
1-3*5@	Sample deviation (see appendix)								
Component	LOD/Units	Method							
Moisture Content Ratio (% of as received sample)	%	PM024		6.6	12	8.6	18	14	18
Loss on ignition	<0.7 %	TM018						3.05	
Phenol	<0.01 mg/kg	TM062 (S)		<0.01	0.0228	<0.01	<0.01	<0.01	<0.01
Organic Carbon, Total	<0.2 %	TM132						0.83	
Fraction Organic Carbon (FOC)	<0.002	TM132		0.00357	0.0467	0.00463	0.0369	0.0083	0.00844
pH	1 pH Units	TM133		9.32	8.05	11.2	8.08	8.59	11.4
Chromium, Hexavalent	<0.6 mg/kg	TM151		<0.6	<6	<0.6	<6	<0.6	<0.6
Cyanide, Easily liberatable (low level)	<0.5 mg/kg	TM153		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
PCB congener 28	<0.003 mg/kg	TM168						<0.003	
PCB congener 52	<0.003 mg/kg	TM168						<0.003	
PCB congener 101	<0.003 mg/kg	TM168						<0.003	
PCB congener 118	<0.003 mg/kg	TM168						<0.003	
PCB congener 138	<0.003 mg/kg	TM168						<0.003	
PCB congener 153	<0.003 mg/kg	TM168						<0.003	
PCB congener 180	<0.003 mg/kg	TM168						<0.003	
Sum of detected PCB 7 Congeners	<0.021 mg/kg	TM168						<0.021	
PCB congener 81	<0.003 mg/kg	TM168		<0.003					
PCB congener 77	<0.003 mg/kg	TM168		<0.003					
PCB congener 123	<0.003 mg/kg	TM168		<0.003					
PCB congener 114	<0.003 mg/kg	TM168		<0.003					
PCB congener 105	<0.003 mg/kg	TM168		<0.003					
PCB congener 126	<0.003 mg/kg	TM168		<0.003					
PCB congener 167	<0.003 mg/kg	TM168		<0.003					
PCB congener 156	<0.003 mg/kg	TM168		<0.003					
PCB congener 157	<0.003 mg/kg	TM168		<0.003					
PCB congener 169	<0.003 mg/kg	TM168		<0.003					
PCB congener 189	<0.003 mg/kg	TM168		<0.003					
Sum of detected WHO 12 PCBs	<0.036 mg/kg	TM168		<0.036					
Chromium, Trivalent	<0.9 mg/kg	TM181		12	8.38	7.99	11	13.4	1.65
Arsenic	<0.6 mg/kg	TM181		3.2	7.91	4.55	15.1	14.8	12.9
Beryllium	<0.01 mg/kg	TM181		10.1	1.05	11.3	0.837	1.52	16
Cadmium	<0.02 mg/kg	TM181		0.0596	2.53	0.0314	0.624	0.172	0.0977
Chromium	<0.9 mg/kg	TM181		12	8.38	7.99	11	13.4	1.65



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SDG: 200718-73 Client Reference: A114312-1 Report Number: 561099
Location: Leconfield Industrial Estate Order Number: MAN20/8116/A114312-1/523 Superseded Report: 560879

Results Legend			Customer Sample Ref.		WS104	WS104	WS105	WS105	WS106	WS106
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		0.10 - 0.10	0.50 - 0.50	0.10 - 0.10	0.50 - 0.50	0.05 - 0.05	0.40 - 0.40
M	mCERTS accredited.				Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
aq	Aqueous / settled sample.				13/07/2020	13/07/2020	13/07/2020	13/07/2020	14/07/2020	14/07/2020
diss.filt	Dissolved / filtered sample.									
tot.unfilt	Total / unfiltered sample.									
*	Subcontracted - refer to subcontractor report for accreditation status.									
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery									
(F)	Trigger breach confirmed									
1-3*5@	Sample deviation (see appendix)									
Component	LOD/Units	Method								
Moisture Content Ratio (% of as received sample)	%	PM024			25	8.2	43	9.9	31	5.7
Loss on ignition	<0.7 %	TM018					55.2			2.07
							M			M
Phenol	<0.01 mg/kg	TM062 (S)			0.0133	<0.01	<0.01	<0.01	0.0145	<0.01
					M	M	M	M	#	M
Organic Carbon, Total	<0.2 %	TM132					10.2			<0.2
							M			M
Fraction Organic Carbon (FOC)	<0.002	TM132			0.045	0.0182	0.102	0.0233	0.0863	<0.002
					#	#	#	#	#	#
pH	1 pH Units	TM133			7.43	8.87	7.67	9.31	7.2	9.21
					M	M	M	M	#	M
Chromium, Hexavalent	<0.6 mg/kg	TM151			<6	<0.6	<6	<0.6	<12	<0.6
					#	#	#	#	#	#
Cyanide, Easily liberatable (low level)	<0.5 mg/kg	TM153			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
PCB congener 28	<0.003 mg/kg	TM168					<0.003			<0.003
							M			M
PCB congener 52	<0.003 mg/kg	TM168					<0.003			<0.003
							M			M
PCB congener 101	<0.003 mg/kg	TM168					<0.003			<0.003
							M			M
PCB congener 118	<0.003 mg/kg	TM168					<0.003			<0.003
							M			M
PCB congener 138	<0.003 mg/kg	TM168					<0.003			<0.003
							M			M
PCB congener 153	<0.003 mg/kg	TM168					<0.003			<0.003
							M			M
PCB congener 180	<0.003 mg/kg	TM168					<0.003			<0.003
							M			M
Sum of detected PCB 7 Congeners	<0.021 mg/kg	TM168					<0.021			<0.021
Chromium, Trivalent	<0.9 mg/kg	TM181			15.6	7.89	24.3	5.51	11.6	23.7
Arsenic	<0.6 mg/kg	TM181			24.5	12.8	16.7	19.3	28.2	0.87
					M	M	M	M	#	M
Beryllium	<0.01 mg/kg	TM181			1.2	1.73	2.11	2.19	2.25	12.5
					M	M	M	M	#	M
Cadmium	<0.02 mg/kg	TM181			0.523	0.286	0.875	0.16	1.36	<0.02
					M	M	M	M	#	M
Chromium	<0.9 mg/kg	TM181			15.6	7.89	24.3	5.51	11.6	23.7
					M	M	M	M	#	M
Copper	<1.4 mg/kg	TM181			41.4	11.8	52.3	17.7	56.4	2.89
					M	M	M	M	#	M
Lead	<0.7 mg/kg	TM181			155	19.1	185	26.2	284	4.66
					M	M	M	M	#	M
Mercury	<0.14 mg/kg	TM181			0.55	<0.14	<0.14	<0.14	<0.14	<0.14
					M	M	M	M	#	M
Nickel	<0.2 mg/kg	TM181			34.1	15.2	24.9	27.6	28.1	0.77
					M	M	M	M	#	M
Selenium	<1 mg/kg	TM181			1.41	1.25	2.18	1.43	2.02	6.08
					#	#	#	#	#	#
Vanadium	<0.2 mg/kg	TM181			30.2	16.8	24.7	22.7	39.5	34.2
					#	#	#	#	#	#
Zinc	<1.9 mg/kg	TM181			146	25.7	329	40.8	466	7.27
					M	M	M	M	#	M
ANC @ pH 4	<0.03 mol/kg	TM182					0.109			0.291
ANC @ pH 6	<0.03 mol/kg	TM182					<0.03			0.122
Boron, water soluble	<1 mg/kg	TM222			<1	<1	1.52	1.53	<1	1.1
					M	M	M	M	#	M
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243			0.0126	0.0277	0.0211	0.0736	0.03	0.117
					M	M	M	M	#	M
PAH Total 17 (inc Coronene) Moisture Corrected	<10 mg/kg	TM410					<10			<10



CERTIFICATE OF ANALYSIS

Validated

SDG: 200718-73 Client Reference: A114312-1 Report Number: 561099
Location: Leconfield Industrial Estate Order Number: MAN20/8116/A114312-1/523 Superseded Report: 560879

Results Legend			Customer Sample Ref.		WS107	WS108	WS108	WS109	WS110	
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		0.20 - 0.20	0.50 - 0.50	1.70 - 1.70	0.40 - 0.40	0.40 - 0.40	
M	mCERTS accredited.				Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	
aq	Aqueous / settled sample.				14/07/2020	14/07/2020	14/07/2020	14/07/2020	14/07/2020	
diss.filt	Dissolved / filtered sample.									
tot.unfilt	Total / unfiltered sample.				18/07/2020	18/07/2020	18/07/2020	18/07/2020	18/07/2020	
*	Subcontracted - refer to subcontractor report for accreditation status.				200718-73	200718-73	200718-73	200718-73	200718-73	
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery				22506759	22506767	22506771	22506794	22506803	
(F)	Trigger breach confirmed				ES1	ES2	ES3	ES1	ES1	
1-3*5@	Sample deviation (see appendix)									
Component	LOD/Units	Method								
Moisture Content Ratio (% of as received sample)	%	PM024			1.7	7.3	12	0.38	2.8	
Phenol	<0.01 mg/kg	TM062 (S)			<0.01	<0.01	<0.01	<0.01	<0.01	
					M	M	M	M	M	
Fraction Organic Carbon (FOC)	<0.002	TM132			0.00535	0.0175	0.0317	0.0046	0.0174	
					#	#	#	#	#	
pH	1 pH Units	TM133			8.9	9.62	9.3	9.46	8.66	
					M	M	M	M	M	
Chromium, Hexavalent	<0.6 mg/kg	TM151			<0.6	<0.6	<0.6	<0.6	<0.6	
					#	#	#	#	#	
Cyanide, Easily liberatable (low level)	<0.5 mg/kg	TM153			<0.5	<0.5	<0.5	<0.5	<0.5	
PCB congener 118	<0.003 mg/kg	TM168				<0.003				
						M				
PCB congener 81	<0.003 mg/kg	TM168				<0.003				
						M				
PCB congener 77	<0.003 mg/kg	TM168				<0.003				
						M				
PCB congener 123	<0.003 mg/kg	TM168				<0.003				
						M				
PCB congener 114	<0.003 mg/kg	TM168				<0.003				
						M				
PCB congener 105	<0.003 mg/kg	TM168				<0.003				
						M				
PCB congener 126	<0.003 mg/kg	TM168				<0.003				
						M				
PCB congener 167	<0.003 mg/kg	TM168				<0.003				
						M				
PCB congener 156	<0.003 mg/kg	TM168				<0.003				
						M				
PCB congener 157	<0.003 mg/kg	TM168				<0.003				
						M				
PCB congener 169	<0.003 mg/kg	TM168				<0.003				
						M				
PCB congener 189	<0.003 mg/kg	TM168				<0.003				
						M				
Sum of detected WHO 12 PCBs	<0.036 mg/kg	TM168				<0.036				
Chromium, Trivalent	<0.9 mg/kg	TM181			15	14.2	5.89	12.7	11.7	
Arsenic	<0.6 mg/kg	TM181			4.34	17.5	52.3	15.4	9.13	
					M	M	M	M	M	
Beryllium	<0.01 mg/kg	TM181			9.53	3.58	5.02	1.88	0.952	
					M	M	M	M	M	
Cadmium	<0.02 mg/kg	TM181			0.134	0.213	0.247	0.256	0.284	
					M	M	M	M	M	
Chromium	<0.9 mg/kg	TM181			15	14.2	5.89	12.7	11.7	
					M	M	M	M	M	
Copper	<1.4 mg/kg	TM181			5.56	12.1	40.8	17.7	11.3	
					M	M	M	M	M	
Lead	<0.7 mg/kg	TM181			15	23.6	51.5	16.9	12.1	
					M	M	M	M	M	
Mercury	<0.14 mg/kg	TM181			<0.14	<0.14	<0.14	<0.14	<0.14	
					M	M	M	M	M	
Nickel	<0.2 mg/kg	TM181			8.51	21.8	41.9	26.6	19.2	
					M	M	M	M	M	
Selenium	<1 mg/kg	TM181			4.51	1.87	2.63	<1	<1	
					#	#	#	#	#	
Vanadium	<0.2 mg/kg	TM181			23.4	27.2	28.8	21.9	18.2	
					#	#	#	#	#	
Zinc	<1.9 mg/kg	TM181			32.7	32.9	26.4	52.4	24.9	
					M	M	M	M	M	
Boron, water soluble	<1 mg/kg	TM222			<1	1.56	1.75	<1	<1	
					M	M	M	M	M	
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243			0.064	0.183	<0.004	0.0743	0.0091	
					M	M	M	M	M	



CERTIFICATE OF ANALYSIS

Validated

SDG: 200718-73 Client Reference: A114312-1 Report Number: 561099
Location: Leconfield Industrial Estate Order Number: MAN20/8116/A114312-1/523 Superseded Report: 560879

Semi Volatile Organic Compounds

Results Legend			Customer Sample Ref. Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	WS101	WS102	WS103	WS106	WS108	
#	ISO17025 accredited.			0.20	0.50 - 0.50	0.60 - 0.60	0.40 - 0.40	0.50 - 0.50	
M	mCERTS accredited.			Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	
aq	Aqueous / settled sample.			14/07/2020	13/07/2020	13/07/2020	14/07/2020	14/07/2020	
diss.filt	Dissolved / filtered sample.								
tot.unfilt	Total / unfiltered sample.								
*	Subcontracted - refer to subcontractor report for accreditation status.								
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery								
(F)	Trigger breach confirmed								
1-3*5@	Sample deviation (see appendix)								
Component	LOD/Units	Method							
Phenol	<0.1 mg/kg	TM157	<0.1	<0.1	<0.1	<0.1	<0.1		
Pentachlorophenol	<0.1 mg/kg	TM157	<0.1	<0.1	<0.1	<0.1	<0.1		
n-Nitroso-n-dipropylamine	<0.1 mg/kg	TM157	<0.1	<0.1	<0.1	<0.1	<0.1		
Nitrobenzene	<0.1 mg/kg	TM157	<0.1	<0.1	<0.1	<0.1	<0.1		
Isophorone	<0.1 mg/kg	TM157	<0.1	<0.1	<0.1	<0.1	<0.1		
Hexachloroethane	<0.1 mg/kg	TM157	<0.1	<0.1	<0.1	<0.1	<0.1		
Hexachlorocyclopentadiene	<0.1 mg/kg	TM157	<0.2	<0.1	<0.1	<0.1	<0.1		
Hexachlorobutadiene	<0.1 mg/kg	TM157	<0.1	<0.1	<0.1	<0.1	<0.1		
Hexachlorobenzene	<0.1 mg/kg	TM157	<0.1	<0.1	<0.1	<0.1	<0.1		
n-Dioctyl phthalate	<0.1 mg/kg	TM157	<0.1	<0.1	<0.1	<0.1	<0.1		
Dimethyl phthalate	<0.1 mg/kg	TM157	<0.1	<0.1	<0.1	<0.1	<0.1		
Diethyl phthalate	<0.1 mg/kg	TM157	<0.1	<0.1	<0.1	<0.1	<0.1		
n-Dibutyl phthalate	<0.1 mg/kg	TM157	<0.1	<0.1	<0.1	<0.1	<0.1		
Dibenzofuran	<0.1 mg/kg	TM157	<0.1	<0.1	<0.1	<0.1	<0.1		
Carbazole	<0.1 mg/kg	TM157	<0.1	<0.1	<0.1	<0.1	<0.1		
Butylbenzyl phthalate	<0.1 mg/kg	TM157	<0.1	<0.1	<0.1	<0.1	<0.1		
bis(2-Ethylhexyl) phthalate	<0.1 mg/kg	TM157	<0.1	<0.1	<0.1	<0.1	<0.1		
bis(2-Chloroethoxy)methane	<0.1 mg/kg	TM157	<0.1	<0.1	<0.1	<0.1	<0.1		
bis(2-Chloroethyl)ether	<0.1 mg/kg	TM157	<0.1	<0.1	<0.1	<0.1	<0.1		
Azobenzene	<0.1 mg/kg	TM157	<0.1	<0.1	<0.1	<0.1	<0.1		
4-Nitrophenol	<0.1 mg/kg	TM157	<0.1	<0.1	<0.1	<0.1	<0.1		
4-Nitroaniline	<0.1 mg/kg	TM157	<0.1	<0.1	<0.1	<0.1	<0.1		
4-Methylphenol	<0.1 mg/kg	TM157	<0.1	<0.1	<0.1	<0.1	<0.1		
4-Chlorophenylphenylether	<0.1 mg/kg	TM157	<0.1	<0.1	<0.1	<0.1	<0.1		
4-Chloroaniline	<0.1 mg/kg	TM157	<0.1	<0.1	<0.1	<0.1	<0.1		
4-Chloro-3-methylphenol	<0.1 mg/kg	TM157	<0.1	<0.1	<0.1	<0.1	<0.1		
4-Bromophenylphenylether	<0.1 mg/kg	TM157	<0.1	<0.1	<0.1	<0.1	<0.1		
3-Nitroaniline	<0.1 mg/kg	TM157	<0.1	<0.1	<0.1	<0.1	<0.1		
2-Nitrophenol	<0.1 mg/kg	TM157	<0.1	<0.1	<0.1	<0.1	<0.1		
2-Nitroaniline	<0.1 mg/kg	TM157	<0.1	<0.1	<0.1	<0.1	<0.1		
2-Methylphenol	<0.1 mg/kg	TM157	<0.1	<0.1	<0.1	<0.1	<0.1		
1,2,4-Trichlorobenzene	<0.1 mg/kg	TM157	<0.1	<0.1	<0.1	<0.1	<0.1		
2-Chlorophenol	<0.1 mg/kg	TM157	<0.1	<0.1	<0.1	<0.1	<0.1		



CERTIFICATE OF ANALYSIS

Validated

SDG: 200718-73 Client Reference: A114312-1 Report Number: 561099
Location: Leconfield Industrial Estate Order Number: MAN20/8116/A114312-1/523 Superseded Report: 560879

VOC MS (S)

Results Legend			Customer Sample Ref.		WS101	WS102	WS102	WS103	WS103	WS103
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		0.20	0.10 - 0.10	0.50 - 0.50	0.10 - 0.10	0.60 - 0.60	3.80 - 3.80
M	mCERTS accredited.				Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
aq	Aqueous / settled sample.				14/07/2020	13/07/2020	13/07/2020	13/07/2020	13/07/2020	13/07/2020
diss.filt	Dissolved / filtered sample.				18/07/2020	18/07/2020	18/07/2020	18/07/2020	18/07/2020	18/07/2020
tot.unfilt	Total / unfiltered sample.				200718-73	200718-73	200718-73	200718-73	200718-73	200718-73
*	Subcontracted - refer to subcontractor report for accreditation status.				22506723	22506735	22506739	22506828	22506832	22506732
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery					ES1	ES2	ES1	ES2	ES4
(F)	Trigger breach confirmed									
1-3*5@	Sample deviation (see appendix)									
Component	LOD/Units	Method								
Dibromofluoromethane**	%	TM116			108	112	115	107	110	124
Toluene-d8**	%	TM116			98	96.8	97.8	96.7	86.7	96.2
4-Bromofluorobenzene**	%	TM116			89	90.9	85.4	96.1	70.3	88.4
Dichlorodifluoromethane	<0.006 mg/kg	TM116			<0.12		<0.006		<0.006	
Chloromethane	<0.007 mg/kg	TM116			<0.14		<0.007		<0.007	
Vinyl Chloride	<0.006 mg/kg	TM116			<0.12		<0.006		<0.006	
Bromomethane	<0.01 mg/kg	TM116			<0.2		<0.01		<0.01	
Chloroethane	<0.01 mg/kg	TM116			<0.2		<0.01		<0.01	
Trichlorofluoromethane	<0.006 mg/kg	TM116			<0.12		<0.006		<0.006	
1,1-Dichloroethene	<0.01 mg/kg	TM116			<0.2		<0.01		<0.01	
Carbon Disulphide	<0.007 mg/kg	TM116			<0.14		<0.007		<0.007	
Dichloromethane	<0.01 mg/kg	TM116			<0.2		0.0402		0.103	
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116			<0.2	<0.2	<0.01	<0.2	<0.01	<0.01
trans-1,2-Dichloroethene	<0.01 mg/kg	TM116			<0.2		<0.01		<0.01	
1,1-Dichloroethane	<0.008 mg/kg	TM116			<0.16		<0.008		<0.008	
cis-1,2-Dichloroethene	<0.006 mg/kg	TM116			<0.12		<0.006		<0.006	
2,2-Dichloropropane	<0.01 mg/kg	TM116			<0.2		<0.01		<0.01	
Bromochloromethane	<0.01 mg/kg	TM116			<0.2		<0.01		<0.01	
Chloroform	<0.008 mg/kg	TM116			<0.16		<0.008		<0.008	
1,1,1-Trichloroethane	<0.007 mg/kg	TM116			<0.14		<0.007		<0.007	
1,1-Dichloropropene	<0.01 mg/kg	TM116			<0.2		<0.01		<0.01	
Carbontetrachloride	<0.01 mg/kg	TM116			<0.2		<0.01		<0.01	
1,2-Dichloroethane	<0.005 mg/kg	TM116			<0.1		<0.005		<0.005	
Benzene	<0.009 mg/kg	TM116			<0.18	<0.18	<0.009	<0.18	<0.009	<0.009
Trichloroethene	<0.009 mg/kg	TM116			<0.18		<0.009		<0.009	
1,2-Dichloropropane	<0.01 mg/kg	TM116			<0.2		<0.01		<0.01	
Dibromomethane	<0.009 mg/kg	TM116			<0.18		<0.009		<0.009	
Bromodichloromethane	<0.007 mg/kg	TM116			<0.14		<0.007		<0.007	
cis-1,3-Dichloropropene	<0.01 mg/kg	TM116			<0.2		<0.01		<0.01	
Toluene	<0.007 mg/kg	TM116			<0.14	<0.14	<0.007	<0.14	<0.007	<0.007
trans-1,3-Dichloropropene	<0.01 mg/kg	TM116			<0.2		<0.01		<0.01	
1,1,2-Trichloroethane	<0.01 mg/kg	TM116			<0.2		<0.01		<0.01	
1,3-Dichloropropane	<0.007 mg/kg	TM116			<0.14		<0.007		<0.007	



CERTIFICATE OF ANALYSIS

Validated

SDG: 200718-73 Client Reference: A114312-1 Report Number: 561099
Location: Leconfield Industrial Estate Order Number: MAN20/8116/A114312-1/523 Superseded Report: 560879

VOC MS (S)

Results Legend			Customer Sample Ref.		WS101	WS102	WS102	WS103	WS103	WS103
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		0.20	0.10 - 0.10	0.50 - 0.50	0.10 - 0.10	0.60 - 0.60	3.80 - 3.80
M	mCERTS accredited.				Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
aq.	Aqueous / settled sample.				14/07/2020	13/07/2020	13/07/2020	13/07/2020	13/07/2020	13/07/2020
diss.filt	Dissolved / filtered sample.									
tot.unfilt	Total / unfiltered sample.				18/07/2020	18/07/2020	18/07/2020	18/07/2020	18/07/2020	18/07/2020
*	Subcontracted - refer to subcontractor report for accreditation status.				200718-73	200718-73	200718-73	200718-73	200718-73	200718-73
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery				22506723	22506735	22506739	22506828	22506832	22506732
(F)	Trigger breach confirmed					ES1	ES2	ES1	ES2	ES4
1-3*§@	Sample deviation (see appendix)									
Component	LOD/Units	Method								
Tetrachloroethene	<0.005 mg/kg	TM116			<0.1 M		<0.005 M		<0.005 M	
Dibromochloromethane	<0.01 mg/kg	TM116			<0.2 M		<0.01 M		<0.01 M	
1,2-Dibromoethane	<0.01 mg/kg	TM116			<0.2 M		<0.01 M		<0.01 M	
Chlorobenzene	<0.005 mg/kg	TM116			<0.1 M		<0.005 M		<0.005 M	
1,1,1,2-Tetrachloroethane	<0.01 mg/kg	TM116			<0.2 M		<0.01 M		<0.01 M	
Ethylbenzene	<0.004 mg/kg	TM116			<0.08 M	<0.08 #	<0.004 M	<0.08 M	<0.004 M	<0.004 M
p/m-Xylene	<0.01 mg/kg	TM116			<0.2 #	<0.2 #	<0.01 #	<0.2 #	<0.01 #	<0.01 #
o-Xylene	<0.01 mg/kg	TM116			<0.2 M	<0.2 #	<0.01 M	<0.2 M	<0.01 M	<0.01 M
Styrene	<0.01 mg/kg	TM116			<0.2 #		<0.01 #		<0.01 #	
Bromoform	<0.01 mg/kg	TM116			<0.2 M		<0.01 M		<0.01 M	
Isopropylbenzene	<0.005 mg/kg	TM116			<0.1 #		<0.005 #		<0.005 #	
1,1,2,2-Tetrachloroethane	<0.01 mg/kg	TM116			<0.2 #		<0.01 #		<0.01 #	
1,2,3-Trichloropropane	<0.016 mg/kg	TM116			<0.32 M		<0.016 M		<0.016 M	
Bromobenzene	<0.01 mg/kg	TM116			<0.2 M		<0.01 M		<0.01 M	
Propylbenzene	<0.01 mg/kg	TM116			<0.2 M		<0.01 M		<0.01 M	
2-Chlorotoluene	<0.009 mg/kg	TM116			<0.18 M		<0.009 M		<0.009 M	
1,3,5-Trimethylbenzene	<0.008 mg/kg	TM116			<0.16 M		<0.008 M		<0.008 M	
4-Chlorotoluene	<0.01 mg/kg	TM116			<0.2 M		<0.01 M		<0.01 M	
tert-Butylbenzene	<0.014 mg/kg	TM116			<0.28 M		<0.014 M		<0.014 M	
1,2,4-Trimethylbenzene	<0.009 mg/kg	TM116			<0.18 #		<0.009 #		<0.009 #	
sec-Butylbenzene	<0.01 mg/kg	TM116			<0.2		<0.01		<0.01	
4-Isopropyltoluene	<0.01 mg/kg	TM116			<0.2 M		<0.01 M		<0.01 M	
1,3-Dichlorobenzene	<0.008 mg/kg	TM116			<0.16 M		<0.008 M		<0.008 M	
1,4-Dichlorobenzene	<0.005 mg/kg	TM116			<0.1 M		<0.005 M		<0.005 M	
n-Butylbenzene	<0.011 mg/kg	TM116			<0.22		<0.011		<0.011	
1,2-Dichlorobenzene	<0.01 mg/kg	TM116			<0.2 M		<0.01 M		<0.01 M	
1,2-Dibromo-3-chloropropane	<0.014 mg/kg	TM116			<0.28 M		<0.014 M		<0.014 M	
Tert-amyl methyl ether	<0.01 mg/kg	TM116			<0.2 #		<0.01 #		<0.01 #	
1,2,4-Trichlorobenzene	<0.02 mg/kg	TM116			<0.4		<0.02		<0.02	
Hexachlorobutadiene	<0.02 mg/kg	TM116			<0.4		<0.02		<0.02	
Naphthalene	<0.013 mg/kg	TM116			<0.26 M		<0.013 M		<0.013 M	
1,2,3-Trichlorobenzene	<0.02 mg/kg	TM116			<0.4 #		<0.02 #		<0.02 #	
VOC TIC		TM116			Not Detected		Not Detected		Not Detected	



VOC MS (\$)

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CERTIFICATE OF ANALYSIS

Validated

SDG: 200718-73 Client Reference: A114312-1 Report Number: 561099
Location: Leconfield Industrial Estate Order Number: MAN20/8116/A114312-1/523 Superseded Report: 560879

VOC MS (S)

Results Legend			Customer Sample Ref.		WS104	WS104	WS105	WS105	WS106	WS106
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	WS104	0.10 - 0.10	0.50 - 0.50	0.10 - 0.10	0.50 - 0.50	0.05 - 0.05	0.40 - 0.40
M	mCERTS accredited.				Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
aq	Aqueous / settled sample.				13/07/2020	13/07/2020	13/07/2020	13/07/2020	14/07/2020	14/07/2020
diss.filt	Dissolved / filtered sample.				18/07/2020	18/07/2020	18/07/2020	18/07/2020	18/07/2020	18/07/2020
tot.unfilt	Total / unfiltered sample.				200718-73	200718-73	200718-73	200718-73	200718-73	200718-73
*	Subcontracted - refer to subcontractor report for accreditation status.				22506816	22506820	22506728	22506778	22506750	22506754
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery				ES1	ES2	ES1	ES2	ES1	ES2
(F)	Trigger breach confirmed									
1-3*5@	Sample deviation (see appendix)									
Component	LOD/Units	Method								
Dibromofluoromethane**	%	TM116			107	127	109	119	107	125
Toluene-d8**	%	TM116			94.9	94.5	93.3	86.2	98.7	99
4-Bromofluorobenzene**	%	TM116			97.8	70.3	95.7	70.1	101	87.8
Dichlorodifluoromethane	<0.006 mg/kg	TM116								<0.006 M
Chloromethane	<0.007 mg/kg	TM116								<0.007 #
Vinyl Chloride	<0.006 mg/kg	TM116								<0.006 M
Bromomethane	<0.01 mg/kg	TM116								<0.01 M
Chloroethane	<0.01 mg/kg	TM116								<0.01 M
Trichlorofluoromethane	<0.006 mg/kg	TM116								<0.006 M
1,1-Dichloroethene	<0.01 mg/kg	TM116								<0.01 #
Carbon Disulphide	<0.007 mg/kg	TM116								<0.007 M
Dichloromethane	<0.01 mg/kg	TM116								0.0194 #
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116			<0.2 #	<0.01 M	<0.2 M	<0.01 M	<0.2 #	<0.01 M
trans-1,2-Dichloroethene	<0.01 mg/kg	TM116								<0.01 M
1,1-Dichloroethane	<0.008 mg/kg	TM116								<0.008 M
cis-1,2-Dichloroethene	<0.006 mg/kg	TM116								<0.006 M
2,2-Dichloropropane	<0.01 mg/kg	TM116								<0.01 M
Bromochloromethane	<0.01 mg/kg	TM116								<0.01 M
Chloroform	<0.008 mg/kg	TM116								<0.008 M
1,1,1-Trichloroethane	<0.007 mg/kg	TM116								<0.007 M
1,1-Dichloropropene	<0.01 mg/kg	TM116								<0.01 M
Carbontetrachloride	<0.01 mg/kg	TM116								<0.01 M
1,2-Dichloroethane	<0.005 mg/kg	TM116								<0.005 M
Benzene	<0.009 mg/kg	TM116			<0.18 #	<0.009 M	<0.18 M	<0.009 M	<0.18 #	<0.009 M
Trichloroethene	<0.009 mg/kg	TM116								<0.009 #
1,2-Dichloropropane	<0.01 mg/kg	TM116								<0.01 M
Dibromomethane	<0.009 mg/kg	TM116								<0.009 M
Bromodichloromethane	<0.007 mg/kg	TM116								<0.007 M
cis-1,3-Dichloropropene	<0.01 mg/kg	TM116								<0.01 M
Toluene	<0.007 mg/kg	TM116			<0.14 #	<0.007 M	<0.14 M	<0.007 M	<0.14 #	<0.007 M
trans-1,3-Dichloropropene	<0.01 mg/kg	TM116								<0.01 M
1,1,2-Trichloroethane	<0.01 mg/kg	TM116								<0.01 M
1,3-Dichloropropane	<0.007 mg/kg	TM116								<0.007 M



CERTIFICATE OF ANALYSIS

Validated

SDG: 200718-73 Client Reference: A114312-1 Report Number: 561099
Location: Leconfield Industrial Estate Order Number: MAN20/8116/A114312-1/523 Superseded Report: 560879

VOC MS (S)

Results Legend			Customer Sample Ref.		WS104	WS104	WS105	WS105	WS106	WS106
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	TM116	0.10 - 0.10	0.50 - 0.50	0.10 - 0.10	0.50 - 0.50	0.05 - 0.05	0.40 - 0.40
M	mCERTS accredited.				Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
aq	Aqueous / settled sample.				13/07/2020	13/07/2020	13/07/2020	13/07/2020	14/07/2020	14/07/2020
diss.filt	Dissolved / filtered sample.									
tot.unfilt	Total / unfiltered sample.				18/07/2020	18/07/2020	18/07/2020	18/07/2020	18/07/2020	18/07/2020
*	Subcontracted - refer to subcontractor report for accreditation status.				200718-73	200718-73	200718-73	200718-73	200718-73	200718-73
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery				22506816	22506820	22506728	22506778	22506750	22506754
(F)	Trigger breach confirmed				ES1	ES2	ES1	ES2	ES1	ES2
1-3+§@	Sample deviation (see appendix)									
Component	LOD/Units	Method								
Tetrachloroethene	<0.005 mg/kg	TM116							<0.005 M	
Dibromochloromethane	<0.01 mg/kg	TM116							<0.01 M	
1,2-Dibromoethane	<0.01 mg/kg	TM116							<0.01 M	
Chlorobenzene	<0.005 mg/kg	TM116							<0.005 M	
1,1,1,2-Tetrachloroethane	<0.01 mg/kg	TM116							<0.01 M	
Ethylbenzene	<0.004 mg/kg	TM116	<0.08	#	<0.004	M	<0.08	M	<0.004	#
p/m-Xylene	<0.01 mg/kg	TM116	<0.2	#	<0.01	#	<0.2	#	<0.01	#
o-Xylene	<0.01 mg/kg	TM116	<0.2	#	<0.01	M	<0.2	M	<0.01	#
Styrene	<0.01 mg/kg	TM116							<0.01	#
Bromoform	<0.01 mg/kg	TM116							<0.01	M
Isopropylbenzene	<0.005 mg/kg	TM116							<0.005	#
1,1,2,2-Tetrachloroethane	<0.01 mg/kg	TM116							<0.01	#
1,2,3-Trichloropropane	<0.016 mg/kg	TM116							<0.016	M
Bromobenzene	<0.01 mg/kg	TM116							<0.01	M
Propylbenzene	<0.01 mg/kg	TM116							<0.01	M
2-Chlorotoluene	<0.009 mg/kg	TM116							<0.009	M
1,3,5-Trimethylbenzene	<0.008 mg/kg	TM116							<0.008	M
4-Chlorotoluene	<0.01 mg/kg	TM116							<0.01	M
tert-Butylbenzene	<0.014 mg/kg	TM116							<0.014	M
1,2,4-Trimethylbenzene	<0.009 mg/kg	TM116							<0.009	#
sec-Butylbenzene	<0.01 mg/kg	TM116							<0.01	
4-Isopropyltoluene	<0.01 mg/kg	TM116							<0.01	M
1,3-Dichlorobenzene	<0.008 mg/kg	TM116							<0.008	M
1,4-Dichlorobenzene	<0.005 mg/kg	TM116							<0.005	M
n-Butylbenzene	<0.011 mg/kg	TM116							<0.011	
1,2-Dichlorobenzene	<0.01 mg/kg	TM116							<0.01	M
1,2-Dibromo-3-chloropropane	<0.014 mg/kg	TM116							<0.014	M
Tert-amyl methyl ether	<0.01 mg/kg	TM116							<0.01	#
1,2,4-Trichlorobenzene	<0.02 mg/kg	TM116							<0.02	
Hexachlorobutadiene	<0.02 mg/kg	TM116							<0.02	
Naphthalene	<0.013 mg/kg	TM116							<0.013	M
1,2,3-Trichlorobenzene	<0.02 mg/kg	TM116							<0.02	#
VOC TIC		TM116								Not Detected



VOC MS (S)

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CERTIFICATE OF ANALYSIS

Validated

SDG: 200718-73 Client Reference: A114312-1 Report Number: 561099
Location: Leconfield Industrial Estate Order Number: MAN20/8116/A114312-1/523 Superseded Report: 560879

VOC MS (S)

Results Legend			Customer Sample Ref.		WS107	WS108	WS108	WS109	WS110	
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.20 - 0.20 Soil/Solid (S) 14/07/2020 18/07/2020 200718-73 22506759 ES1	0.50 - 0.50 Soil/Solid (S) 14/07/2020 18/07/2020 200718-73 22506767 ES2	1.70 - 1.70 Soil/Solid (S) 14/07/2020 18/07/2020 200718-73 22506771 ES3	0.40 - 0.40 Soil/Solid (S) 14/07/2020 18/07/2020 200718-73 22506794 ES1	0.40 - 0.40 Soil/Solid (S) 14/07/2020 18/07/2020 200718-73 22506803 ES1		
M	mCERTS accredited.									
aq	Aqueous / settled sample.									
diss.filt	Dissolved / filtered sample.									
tot.unfilt	Total / unfiltered sample.									
*	Subcontracted - refer to subcontractor report for accreditation status.									
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery									
(F)	Trigger breach confirmed									
1-3*§@	Sample deviation (see appendix)									
Component	LOD/Units	Method								
Dibromofluoromethane**	%	TM116		137	106	131	101	106		
Toluene-d8**	%	TM116		94.5	98.8	101	87.2	96.9		
4-Bromofluorobenzene**	%	TM116		88.1	95.8	85.7	70	101		
Dichlorodifluoromethane	<0.006 mg/kg	TM116			<0.12					
Chloromethane	<0.007 mg/kg	TM116			<0.14					
Vinyl Chloride	<0.006 mg/kg	TM116			<0.12					
Bromomethane	<0.01 mg/kg	TM116			<0.2					
Chloroethane	<0.01 mg/kg	TM116			<0.2					
Trichlorofluoromethane	<0.006 mg/kg	TM116			<0.12					
1,1-Dichloroethene	<0.01 mg/kg	TM116			<0.2					
Carbon Disulphide	<0.007 mg/kg	TM116			<0.14					
Dichloromethane	<0.01 mg/kg	TM116			<0.2					
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.01	<0.2	<0.01	<0.01	<0.2		
trans-1,2-Dichloroethene	<0.01 mg/kg	TM116			<0.2					
1,1-Dichloroethane	<0.008 mg/kg	TM116			<0.16					
cis-1,2-Dichloroethene	<0.006 mg/kg	TM116			<0.12					
2,2-Dichloropropane	<0.01 mg/kg	TM116			<0.2					
Bromochloromethane	<0.01 mg/kg	TM116			<0.2					
Chloroform	<0.008 mg/kg	TM116			<0.16					
1,1,1-Trichloroethane	<0.007 mg/kg	TM116			<0.14					
1,1-Dichloropropene	<0.01 mg/kg	TM116			<0.2					
Carbontetrachloride	<0.01 mg/kg	TM116			<0.2					
1,2-Dichloroethane	<0.005 mg/kg	TM116			<0.1					
Benzene	<0.009 mg/kg	TM116		<0.009	<0.18	<0.009	<0.009	<0.18		
Trichloroethene	<0.009 mg/kg	TM116			<0.18					
1,2-Dichloropropane	<0.01 mg/kg	TM116			<0.2					
Dibromomethane	<0.009 mg/kg	TM116			<0.18					
Bromodichloromethane	<0.007 mg/kg	TM116			<0.14					
cis-1,3-Dichloropropene	<0.01 mg/kg	TM116			<0.2					
Toluene	<0.007 mg/kg	TM116		<0.007	<0.14	<0.007	<0.007	<0.14		
trans-1,3-Dichloropropene	<0.01 mg/kg	TM116			<0.2					
1,1,2-Trichloroethane	<0.01 mg/kg	TM116			<0.2					
1,3-Dichloropropane	<0.007 mg/kg	TM116			<0.14					



CERTIFICATE OF ANALYSIS

Validated

SDG: 200718-73 Client Reference: A114312-1 Report Number: 561099
Location: Leconfield Industrial Estate Order Number: MAN20/8116/A114312-1/523 Superseded Report: 560879

VOC MS (S)

Results Legend			Customer Sample Ref.		WS107	WS108	WS108	WS109	WS110	
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		0.20 - 0.20	0.50 - 0.50	1.70 - 1.70	0.40 - 0.40	0.40 - 0.40	
M	mCERTS accredited.				Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	
aq	Aqueous / settled sample.				14/07/2020	14/07/2020	14/07/2020	14/07/2020	14/07/2020	
diss.filt	Dissolved / filtered sample.									
tot.unfilt	Total / unfiltered sample.				18/07/2020	18/07/2020	18/07/2020	18/07/2020	18/07/2020	
*	Subcontracted - refer to subcontractor report for accreditation status.				200718-73	200718-73	200718-73	200718-73	200718-73	
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery				22506759	22506767	22506771	22506794	22506803	
(F)	Trigger breach confirmed				ES1	ES2	ES3	ES1	ES1	
1-3+§@	Sample deviation (see appendix)									
Component	LOD/Units	Method								
Tetrachloroethene	<0.005 mg/kg	TM116				<0.1 M				
Dibromochloromethane	<0.01 mg/kg	TM116				<0.2 M				
1,2-Dibromoethane	<0.01 mg/kg	TM116				<0.2 M				
Chlorobenzene	<0.005 mg/kg	TM116				<0.1 M				
1,1,1,2-Tetrachloroethane	<0.01 mg/kg	TM116				<0.2 M				
Ethylbenzene	<0.004 mg/kg	TM116	<0.004 M		<0.08 M	<0.004 M	<0.004 M	<0.08 M		
p/m-Xylene	<0.01 mg/kg	TM116	<0.01 #		<0.2 #	<0.01 #	<0.01 #	<0.2 #		
o-Xylene	<0.01 mg/kg	TM116	<0.01 M		<0.2 M	<0.01 M	<0.01 M	<0.2 M		
Styrene	<0.01 mg/kg	TM116			<0.2 #					
Bromoform	<0.01 mg/kg	TM116			<0.2 M					
Isopropylbenzene	<0.005 mg/kg	TM116			<0.1 #					
1,1,2,2-Tetrachloroethane	<0.01 mg/kg	TM116			<0.2 #					
1,2,3-Trichloropropane	<0.016 mg/kg	TM116			<0.32 M					
Bromobenzene	<0.01 mg/kg	TM116			<0.2 M					
Propylbenzene	<0.01 mg/kg	TM116			<0.2 M					
2-Chlorotoluene	<0.009 mg/kg	TM116			<0.18 M					
1,3,5-Trimethylbenzene	<0.008 mg/kg	TM116			<0.16 M					
4-Chlorotoluene	<0.01 mg/kg	TM116			<0.2 M					
tert-Butylbenzene	<0.014 mg/kg	TM116			<0.28 M					
1,2,4-Trimethylbenzene	<0.009 mg/kg	TM116			<0.18 #					
sec-Butylbenzene	<0.01 mg/kg	TM116			<0.2					
4-Isopropyltoluene	<0.01 mg/kg	TM116			<0.2 M					
1,3-Dichlorobenzene	<0.008 mg/kg	TM116			<0.16 M					
1,4-Dichlorobenzene	<0.005 mg/kg	TM116			<0.1 M					
n-Butylbenzene	<0.011 mg/kg	TM116			<0.22					
1,2-Dichlorobenzene	<0.01 mg/kg	TM116			<0.2 M					
1,2-Dibromo-3-chloropropane	<0.014 mg/kg	TM116			<0.28 M					
Tert-amyl methyl ether	<0.01 mg/kg	TM116			<0.2 #					
1,2,4-Trichlorobenzene	<0.02 mg/kg	TM116			<0.4					
Hexachlorobutadiene	<0.02 mg/kg	TM116			<0.4					
Naphthalene	<0.013 mg/kg	TM116			<0.26 M					
1,2,3-Trichlorobenzene	<0.02 mg/kg	TM116			<0.4 #					
VOC TIC		TM116			Not Detected					



VOC MS (S)

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CERTIFICATE OF ANALYSIS

Validated

SDG: 200718-73 **Client Reference:** A114312-1 **Report Number:** 561099
Location: Leconfield Industrial Estate **Order Number:** MAN20/8116/A114312-1/523 **Superseded Report:** 560879

Asbestos Identification - Solid Samples

Results Legend

ISO17025 accredited.
M mCERTS accredited.
* Subcontracted test.
(F) Trigger breach confirmed
1-5&*\$@ Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WS101 0.20 SOLID 14/07/2020 00:00:00 18/07/2020 13:34:00 200718-73 22506723 TM048	28/07/2020	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WS102ES1 0.10 - 0.10 SOLID 13/07/2020 00:00:00 18/07/2020 13:34:00 200718-73 22506735 TM048	27/07/2020	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WS102ES2 0.50 - 0.50 SOLID 13/07/2020 00:00:00 18/07/2020 13:34:00 200718-73 22506739 TM048	23/07/2020	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 Received SDG Original Sample Method Number	WS103ES1 0.10 - 0.10 SOLID 13/07/2020 00:00:00 18/07/2020 13:34:00 200718-73 22506828 TM048	23/07/2020	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 Received SDG Original Sample Method Number	WS103ES2 0.60 - 0.60 SOLID 13/07/2020 00:00:00 18/07/2020 13:34:00 200718-73 22506832 TM048	22/07/2020	Barbara Urbanek-Wals h	Loose fibres in soil.	Not Detected (#)	Trace (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WS103ES4 3.80 - 3.80 SOLID 13/07/2020 00:00:00 18/07/2020 13:34:00 200718-73 22506732 TM048	23/07/2020	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WS104ES1 0.10 - 0.10 SOLID 13/07/2020 00:00:00 18/07/2020 13:34:00 200718-73 22506816 TM048	23/07/2020	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 Received SDG Original Sample Method Number	WS104ES2 0.50 - 0.50 SOLID 13/07/2020 00:00:00 18/07/2020 13:34:00 200718-73 22506820 TM048	23/07/2020	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



CERTIFICATE OF ANALYSIS

Validated

SDG: 200718-73 **Client Reference:** A114312-1 **Report Number:** 561099
Location: Leconfield Industrial Estate **Order Number:** MAN20/8116/A114312-1/523 **Superseded Report:** 560879

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WS105ES1 0.10 - 0.10 SOLID 13/07/2020 00:00:00 18/07/2020 13:34:00 200718-73 22506728 TM048	24/07/2020	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WS105ES2 0.50 - 0.50 SOLID 13/07/2020 00:00:00 18/07/2020 13:34:00 200718-73 22506778 TM048	23/07/2020	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WS106ES1 0.05 - 0.05 SOLID 14/07/2020 00:00:00 18/07/2020 13:34:00 200718-73 22506750 TM048	23/07/2020	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 Received SDG Original Sample Method Number	WS106ES2 0.40 - 0.40 SOLID 14/07/2020 00:00:00 18/07/2020 13:34:00 200718-73 22506754 TM048	23/07/2020	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WS107ES1 0.20 - 0.20 SOLID 14/07/2020 00:00:00 18/07/2020 13:34:00 200718-73 22506759 TM048	23/07/20	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 Received SDG Original Sample Method Number	WS108ES2 0.50 - 0.50 SOLID 14/07/2020 00:00:00 18/07/2020 13:34:00 200718-73 22506767 TM048	23/07/2020	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 Received SDG Original Sample Method Number	WS108ES3 1.70 - 1.70 SOLID 14/07/2020 00:00:00 18/07/2020 13:34:00 200718-73 22506771 TM048	23/07/20	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 Received SDG Original Sample Method Number	WS109ES1 0.40 - 0.40 SOLID 14/07/2020 00:00:00 18/07/2020 13:34:00 200718-73 22506794 TM048	23/07/2020	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WS110ES1 0.40 - 0.40 SOLID 14/07/2020 00:00:00 18/07/2020 13:34:00 200718-73 22506803 TM048	23/07/20	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



CERTIFICATE OF ANALYSIS

Validated

SDG:	200718-73	Client Reference:	A114312-1	Report Number:	561099
Location:	Leconfield Industrial Estate	Order Number:	MAN20/8116/A114312-1/523	Superseded Report:	560879

Asbestos Quantification - Full

Results Legend

ISO17025 accredited.
M mCERIS accredited.
* Subcontracted test.
(F) Trigger breach confirmed
1-5&*S@ Sample deviation (see appendix)

		Additional Asbestos Components	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM	Asbestos Quantification - Total - %
Cust. Sample Ref.	WS103ES2	None (#)	N/C	<0.001 (#)	<0.001 (#)	<0.001 (#)
Depth (m)	0.60 - 0.60					
Sample Type	SOLID					
Date Sampled	13/07/2020 00:00:00					
Date Received	18/07/2020 13:34:00					
SDG	200718-73					
Original Sample	22506832					
Method Number	TM304					



CERTIFICATE OF ANALYSIS

Validated

SDG: 200718-73 Client Reference: A114312-1 Report Number: 561099
Location: Leconfield Industrial Estate Order Number: MAN20/8116/A114312-1/523 Superseded Report: 560879

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		Site Location	Leconfield Industrial Estate
Mass Sample taken (kg)	0.150	Natural Moisture Content (%)	65.8
Mass of dry sample (kg)	0.090	Dry Matter Content (%)	60.3
Particle Size <4mm	>95%		

Case

SDG	200718-73
Lab Sample Number(s)	22506728
Sampled Date	13-Jul-2020
Customer Sample Ref.	WS105 ES1
Depth (m)	0.10 - 0.10

Landfill Waste Acceptance Criteria Limits

Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
3	5	6
-	-	10
-	-	-
1	-	-
500	-	-
100	-	-
-	>6	-
-	-	-
-	-	-

Solid Waste Analysis

Result

Total Organic Carbon (%)	10.2
Loss on Ignition (%)	55.2
Sum of BTEX (mg/kg)	-
Sum of 7 PCBs (mg/kg)	<0.021
Mineral Oil (mg/kg)	1010
PAH Sum of 17 (mg/kg)	<10
pH (pH Units)	7.67
ANC to pH 6 (mol/kg)	<0.03
ANC to pH 4 (mol/kg)	0.109

Eluate Analysis

C₂

Concⁿ in 10:1 eluate (mg/l)

A₂

10:1 concⁿ leached (mg/kg)

Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg

	Result	Limit of Detection	Result	Limit of Detection			
Arsenic	0.000518	<0.0005	0.00518	<0.005	0.5	2	25
Barium	0.16	<0.0002	1.6	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	<0.001	<0.001	<0.01	<0.01	0.5	10	70
Copper	0.0049	<0.0003	0.049	<0.003	2	50	100
Mercury Dissolved (CVAf)	0.0000118	<0.00001	0.000118	<0.0001	0.01	0.2	2
Molybdenum	<0.003	<0.003	<0.03	<0.03	0.5	10	30
Nickel	0.000565	<0.0004	0.00565	<0.004	0.4	10	40
Lead	0.00254	<0.0002	0.0254	<0.002	0.5	10	50
Antimony	<0.001	<0.001	<0.01	<0.01	0.06	0.7	5
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7
Zinc	0.0121	<0.001	0.121	<0.01	4	50	200
Chloride	<2	<2	<20	<20	800	15000	25000
Fluoride	<0.5	<0.5	<5	<5	10	150	500
Sulphate (soluble)	<2	<2	<20	<20	1000	20000	50000
Total Dissolved Solids	94	<5	940	<50	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	6.45	<3	64.5	<30	500	800	1000

Leach Test Information

Date Prepared	21-Jul-2020
pH (pH Units)	7.80
Conductivity (µS/cm)	115.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.840

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALS Environmental cannot be held responsible for any discrepancies with current legislation
Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

Validated

SDG: 200718-73 Client Reference: A114312-1 Report Number: 561099
Location: Leconfield Industrial Estate Order Number: MAN20/8116/A114312-1/523 Superseded Report: 560879

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		Site Location	Leconfield Industrial Estate
Mass Sample taken (kg)	0.097	Natural Moisture Content (%)	8.01
Mass of dry sample (kg)	0.090	Dry Matter Content (%)	92.6
Particle Size <4mm	>95%		

Case		Landfill Waste Acceptance Criteria Limits
SDG	200718-73	
Lab Sample Number(s)	22506754	
Sampled Date	14-Jul-2020	
Customer Sample Ref.	WS106 ES2	
Depth (m)	0.40 - 0.40	

Solid Waste Analysis	Result	Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Total Organic Carbon (%)	<0.2	3	5	6
Loss on Ignition (%)	2.07	-	-	10
Sum of BTEX (mg/kg)	-	-	-	-
Sum of 7 PCBs (mg/kg)	<0.021	1	-	-
Mineral Oil (mg/kg)	<5	500	-	-
PAH Sum of 17 (mg/kg)	<10	100	-	-
pH (pH Units)	9.21	-	>6	-
ANC to pH 6 (mol/kg)	0.122	-	-	-
ANC to pH 4 (mol/kg)	0.291	-	-	-

Eluate Analysis	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Result	Limit of Detection	Result	Limit of Detection			
Arsenic	<0.0005	<0.0005	<0.005	<0.005	0.5	2	25
Barium	0.118	<0.0002	1.18	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	<0.001	<0.001	<0.01	<0.01	0.5	10	70
Copper	0.000917	<0.0003	0.00917	<0.003	2	50	100
Mercury Dissolved (CVAf)	0.0000253	<0.00001	0.000253	<0.0001	0.01	0.2	2
Molybdenum	<0.003	<0.003	<0.03	<0.03	0.5	10	30
Nickel	0.000405	<0.0004	0.00405	<0.004	0.4	10	40
Lead	<0.0002	<0.0002	<0.002	<0.002	0.5	10	50
Antimony	<0.001	<0.001	<0.01	<0.01	0.06	0.7	5
Selenium	0.00477	<0.001	0.0477	<0.01	0.1	0.5	7
Zinc	<0.001	<0.001	<0.01	<0.01	4	50	200
Chloride	6.3	<2	63	<20	800	15000	25000
Fluoride	4	<1	40	<10	10	150	500
Sulphate (soluble)	73.1	<2	731	<20	1000	20000	50000
Total Dissolved Solids	162	<5	1620	<50	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	4.38	<3	43.8	<30	500	800	1000

Leach Test Information

Date Prepared	20-Jul-2020
pH (pH Units)	9.64
Conductivity (µS/cm)	220.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.893

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
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CERTIFICATE OF ANALYSIS

Validated

SDG: 200718-73 Client Reference: A114312-1 Report Number: 561099
Location: Leconfield Industrial Estate Order Number: MAN20/8116/A114312-1/523 Superseded Report: 560879

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		Site Location	Leconfield Industrial Estate
Mass Sample taken (kg)	0.099	Natural Moisture Content (%)	9.84
Mass of dry sample (kg)	0.090	Dry Matter Content (%)	91
Particle Size <4mm	>95%		

Case		Landfill Waste Acceptance Criteria Limits
SDG	200718-73	
Lab Sample Number(s)	22506832	
Sampled Date	13-Jul-2020	
Customer Sample Ref.	WS103 ES2	
Depth (m)	0.60 - 0.60	

Solid Waste Analysis	Result	Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Total Organic Carbon (%)	0.83	3	5	6
Loss on Ignition (%)	3.05	-	-	10
Sum of BTEX (mg/kg)	-	-	-	-
Sum of 7 PCBs (mg/kg)	<0.021	1	-	-
Mineral Oil (mg/kg)	<5	500	-	-
PAH Sum of 17 (mg/kg)	<10	100	-	-
pH (pH Units)	8.59	-	>6	-
ANC to pH 6 (mol/kg)	0.0504	-	-	-
ANC to pH 4 (mol/kg)	0.0771	-	-	-

Eluate Analysis	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Result	Limit of Detection	Result	Limit of Detection			
Arsenic	0.00128	<0.0005	0.0128	<0.005	0.5	2	25
Barium	0.667	<0.0002	6.67	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	<0.001	<0.001	<0.01	<0.01	0.5	10	70
Copper	0.00168	<0.0003	0.0168	<0.003	2	50	100
Mercury Dissolved (CVAf)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2
Molybdenum	0.00499	<0.003	0.0499	<0.03	0.5	10	30
Nickel	<0.0004	<0.0004	<0.004	<0.004	0.4	10	40
Lead	<0.0002	<0.0002	<0.002	<0.002	0.5	10	50
Antimony	0.0011	<0.001	0.011	<0.01	0.06	0.7	5
Selenium	0.00106	<0.001	0.0106	<0.01	0.1	0.5	7
Zinc	0.00822	<0.001	0.0822	<0.01	4	50	200
Chloride	<2	<2	<20	<20	800	15000	25000
Fluoride	4.22	<1	42.2	<10	10	150	500
Sulphate (soluble)	13	<2	130	<20	1000	20000	50000
Total Dissolved Solids	97.6	<5	976	<50	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	<3	<3	<30	<30	500	800	1000

Leach Test Information

Date Prepared	21-Jul-2020
pH (pH Units)	8.39
Conductivity (µS/cm)	120.00
Temperature (°C)	19.10
Volume Leachant (Litres)	0.891

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALS Environmental cannot be held responsible for any discrepancies with current legislation
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30/07/2020 08:22:47



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SDG: 200718-73 Client Reference: A114312-1 Report Number: 561099
Location: Leconfield Industrial Estate Order Number: MAN20/8116/A114312-1/523 Superseded Report: 560879

Table of Results - Appendix

Method No	Reference	Description
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
TM018	BS 1377: Part 3 1990	Determination of Loss on Ignition
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM090	Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water
TM104	Method 4500F, AWWA/APHA, 20th Ed., 1999	Determination of Fluoride using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM123	BS 2690: Part 121:1981	The Determination of Total Dissolved Solids in Water
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
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser
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
TM157	HP 6890 Gas Chromatograph (GC) system and HP 5973 Mass Selective Detector (MSD).	Determination of SVOC in Soils by GC-MS extracted by sonication in DCM/Acetone
TM168	EPA Method 8082, Polychlorinated Biphenyls by Gas Chromatography	Determination of WHO12 and EC7 Polychlorinated Biphenyl Congeners by GC-MS in Soils
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM182	CEN/TC 292 - WI 292046-characterization of waste-leaching Behaviour Tests- Acid and Base Neutralization Capacity Test	Determination of Acid Neutralisation Capacity (ANC) Using Autotitration in Soils
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
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM222	In-House Method	Determination of Hot Water Soluble Boron in Soils (10:1 Water:soil) by IRIS Emission Spectrometer
TM243		Mixed Anions In Soils By Kone
TM259	by HPLC	Determination of Phenols in Waters and Leachates by HPLC
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only
TM410	Shaker extraction-In house coronene method	Determination of Coronene in soils by GCMS
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID
TM415	Analysis of Petroleum Hydrocarbons in Environmental Media.	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

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



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SDG: 200718-73 Client Reference: A114312-1 Report Number: 561099
Location: Leconfield Industrial Estate Order Number: MAN20/8116/A114312-1/523 Superseded Report: 560879

Test Completion Dates

Lab Sample No(s)
Customer Sample Ref.

AGS Ref.
Depth
Type

	22506723	22506735	22506739	22506732	22506828	22506832	22506816	22506820	22506728	22506778
	WS101	WS102	WS102	WS103	WS103	WS103	WS104	WS104	WS105	WS105
		ES1	ES2	ES4	ES1	ES2	ES1	ES2	ES1	ES2
	0.20	0.10 - 0.10	0.50 - 0.50	3.80 - 3.80	0.10 - 0.10	0.60 - 0.60	0.10 - 0.10	0.50 - 0.50	0.10 - 0.10	0.50 - 0.50
	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)
ANC at pH4 and ANC at pH 6						23-Jul-2020			23-Jul-2020	
Anions by Kone (soil)	27-Jul-2020	23-Jul-2020	23-Jul-2020	23-Jul-2020	23-Jul-2020	23-Jul-2020	23-Jul-2020	23-Jul-2020	23-Jul-2020	23-Jul-2020
Anions by Kone (w)						23-Jul-2020			23-Jul-2020	
Asbestos ID in Solid Samples	28-Jul-2020	27-Jul-2020	23-Jul-2020	23-Jul-2020	23-Jul-2020	22-Jul-2020	23-Jul-2020	23-Jul-2020	24-Jul-2020	23-Jul-2020
Asbestos Quantification - Full						30-Jul-2020				
Boron Water Soluble	27-Jul-2020	23-Jul-2020	23-Jul-2020	23-Jul-2020	23-Jul-2020	23-Jul-2020	23-Jul-2020	23-Jul-2020	23-Jul-2020	23-Jul-2020
CEN 10:1 Leachate (1 Stage)						21-Jul-2020			21-Jul-2020	
CEN Readings						24-Jul-2020			24-Jul-2020	
Chromium III	28-Jul-2020	23-Jul-2020	24-Jul-2020	23-Jul-2020	23-Jul-2020	23-Jul-2020	23-Jul-2020	22-Jul-2020	23-Jul-2020	23-Jul-2020
Coronene						23-Jul-2020			23-Jul-2020	
Cyanide Comp/Free/Total/Thiocyanate	24-Jul-2020	22-Jul-2020	22-Jul-2020	22-Jul-2020	22-Jul-2020	22-Jul-2020	22-Jul-2020	22-Jul-2020	22-Jul-2020	22-Jul-2020
Dissolved Metals by ICP-MS						25-Jul-2020			25-Jul-2020	
Dissolved Organic/Inorganic Carbon						24-Jul-2020			24-Jul-2020	
EPH by GCxGC-FID						23-Jul-2020			23-Jul-2020	
EPH CWG GC (S)	24-Jul-2020	22-Jul-2020	22-Jul-2020	22-Jul-2020	22-Jul-2020	22-Jul-2020	22-Jul-2020	22-Jul-2020	22-Jul-2020	22-Jul-2020
Fluoride						24-Jul-2020			24-Jul-2020	
GRO by GC-FID (S)	24-Jul-2020	22-Jul-2020	22-Jul-2020	22-Jul-2020	22-Jul-2020	22-Jul-2020	22-Jul-2020	22-Jul-2020	22-Jul-2020	22-Jul-2020
Hexavalent Chromium (s)	27-Jul-2020	22-Jul-2020	22-Jul-2020	23-Jul-2020	23-Jul-2020	23-Jul-2020	23-Jul-2020	21-Jul-2020	22-Jul-2020	23-Jul-2020
Loss on Ignition in soils						22-Jul-2020			23-Jul-2020	
Mercury Dissolved						24-Jul-2020			24-Jul-2020	
Metals in solid samples by OES	28-Jul-2020	23-Jul-2020	24-Jul-2020	23-Jul-2020	22-Jul-2020	23-Jul-2020	22-Jul-2020	22-Jul-2020	23-Jul-2020	23-Jul-2020
Moisture at 105C						21-Jul-2020			21-Jul-2020	
PAH 16 & 17 Calc						24-Jul-2020			24-Jul-2020	
PAH by GCMS	26-Jul-2020	24-Jul-2020	26-Jul-2020	25-Jul-2020	26-Jul-2020	24-Jul-2020	25-Jul-2020	25-Jul-2020	24-Jul-2020	25-Jul-2020
PCBs by GCMS	28-Jul-2020					23-Jul-2020			23-Jul-2020	
pH	26-Jul-2020	21-Jul-2020	21-Jul-2020	21-Jul-2020	21-Jul-2020	20-Jul-2020	21-Jul-2020	23-Jul-2020	21-Jul-2020	21-Jul-2020
Phenols by HPLC (S)	27-Jul-2020	24-Jul-2020	23-Jul-2020	23-Jul-2020	23-Jul-2020	23-Jul-2020	24-Jul-2020	23-Jul-2020	23-Jul-2020	24-Jul-2020
Phenols by HPLC (W)						27-Jul-2020			27-Jul-2020	
Sample description	22-Jul-2020	19-Jul-2020	19-Jul-2020	19-Jul-2020	19-Jul-2020	19-Jul-2020	19-Jul-2020	19-Jul-2020	19-Jul-2020	19-Jul-2020
Semi Volatile Organic Compounds	24-Jul-2020		21-Jul-2020			21-Jul-2020				
Total Dissolved Solids						23-Jul-2020			23-Jul-2020	
Total Organic Carbon	27-Jul-2020	24-Jul-2020	24-Jul-2020	23-Jul-2020	24-Jul-2020	24-Jul-2020	23-Jul-2020	24-Jul-2020	23-Jul-2020	24-Jul-2020
TPH CWG GC (S)	24-Jul-2020	22-Jul-2020	22-Jul-2020	22-Jul-2020	22-Jul-2020	22-Jul-2020	22-Jul-2020	22-Jul-2020	22-Jul-2020	22-Jul-2020
VOC MS (S)	24-Jul-2020	23-Jul-2020	22-Jul-2020	22-Jul-2020	23-Jul-2020	22-Jul-2020	23-Jul-2020	22-Jul-2020	23-Jul-2020	22-Jul-2020



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Lab Sample No(s)
Customer Sample Ref.

AGS Ref.
Depth
Type

	22506750	22506754	22506759	22506767	22506771	22506794	22506803
	WS106	WS106	WS107	WS108	WS108	WS109	WS110
	ES1	ES2	ES1	ES2	ES3	ES1	ES1
	0.05 - 0.05	0.40 - 0.40	0.20 - 0.20	0.50 - 0.50	1.70 - 1.70	0.40 - 0.40	0.40 - 0.40
	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
ANC at pH4 and ANC at pH 6		23-Jul-2020					
Anions by Kone (soil)	23-Jul-2020	23-Jul-2020	23-Jul-2020	23-Jul-2020	23-Jul-2020	23-Jul-2020	23-Jul-2020
Anions by Kone (w)		22-Jul-2020					
Asbestos ID in Solid Samples	23-Jul-2020	23-Jul-2020	23-Jul-2020	23-Jul-2020	23-Jul-2020	23-Jul-2020	23-Jul-2020
Boron Water Soluble	23-Jul-2020	23-Jul-2020	23-Jul-2020	23-Jul-2020	23-Jul-2020	23-Jul-2020	23-Jul-2020
CEN 10:1 Leachate (1 Stage)		20-Jul-2020					
CEN Readings		24-Jul-2020					
Chromium III	24-Jul-2020	24-Jul-2020	24-Jul-2020	24-Jul-2020	22-Jul-2020	24-Jul-2020	22-Jul-2020
Coronene		23-Jul-2020					
Cyanide Comp/Free/Total/Thiocyanate	22-Jul-2020	22-Jul-2020	22-Jul-2020	22-Jul-2020	22-Jul-2020	22-Jul-2020	22-Jul-2020
Dissolved Metals by ICP-MS		24-Jul-2020					
Dissolved Organic/Inorganic Carbon		23-Jul-2020					
EPH by GCxGC-FID		23-Jul-2020					
EPH CWG GC (S)	22-Jul-2020	22-Jul-2020	22-Jul-2020	22-Jul-2020	22-Jul-2020	22-Jul-2020	22-Jul-2020
Fluoride		23-Jul-2020					
GRO by GC-FID (S)	22-Jul-2020	22-Jul-2020	22-Jul-2020	22-Jul-2020	22-Jul-2020	22-Jul-2020	22-Jul-2020
Hexavalent Chromium (s)	22-Jul-2020	22-Jul-2020	24-Jul-2020	23-Jul-2020	22-Jul-2020	23-Jul-2020	22-Jul-2020
Loss on Ignition in soils		23-Jul-2020					
Mercury Dissolved		23-Jul-2020					
Metals in solid samples by OES	24-Jul-2020	24-Jul-2020	24-Jul-2020	24-Jul-2020	22-Jul-2020	24-Jul-2020	22-Jul-2020
Moisture at 105C		20-Jul-2020					
PAH 16 & 17 Calc		24-Jul-2020					
PAH by GCMS	24-Jul-2020	24-Jul-2020	25-Jul-2020	23-Jul-2020	23-Jul-2020	25-Jul-2020	24-Jul-2020
PCBs by GCMS		23-Jul-2020		23-Jul-2020			
pH	23-Jul-2020	21-Jul-2020	20-Jul-2020	21-Jul-2020	21-Jul-2020	21-Jul-2020	21-Jul-2020
Phenols by HPLC (S)	23-Jul-2020	23-Jul-2020	23-Jul-2020	24-Jul-2020	23-Jul-2020	23-Jul-2020	24-Jul-2020
Phenols by HPLC (W)		28-Jul-2020					
Sample description	19-Jul-2020	19-Jul-2020	19-Jul-2020	19-Jul-2020	19-Jul-2020	19-Jul-2020	19-Jul-2020
Semi Volatile Organic Compounds		21-Jul-2020		21-Jul-2020			
Total Dissolved Solids		23-Jul-2020					
Total Organic Carbon	24-Jul-2020	23-Jul-2020	24-Jul-2020	24-Jul-2020	23-Jul-2020	23-Jul-2020	23-Jul-2020
TPH CWG GC (S)	22-Jul-2020	22-Jul-2020	22-Jul-2020	22-Jul-2020	22-Jul-2020	22-Jul-2020	22-Jul-2020
VOC MS (S)	23-Jul-2020	22-Jul-2020	22-Jul-2020	23-Jul-2020	22-Jul-2020	22-Jul-2020	23-Jul-2020



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ASSOCIATED AQC DATA

ANC at pH4 and ANC at pH 6

Component	Method Code	QC 2262
ANC pH_4 dry soil	TM182	94.13 91.79 : 114.66

Anions by Kone (soil)

Component	Method Code	QC 2288
Chloride (soluble)	TM243	156.99 92.11 : 107.89
Water Soluble Sulphate as SO4 2:1 Extract	TM243	166.82 70.00 : 130.00

Anions by Kone (w)

Component	Method Code	QC 2237	QC 2208
Chloride	TM184	106.0 92.93 : 115.43	108.0 92.93 : 115.43
Sulphate (soluble)	TM184	96.0 90.53 : 113.03	97.6 90.53 : 113.03

Boron Water Soluble

Component	Method Code	QC 2286	QC 2298	QC 2270	QC 2220	QC 2275
Water Soluble Boron	TM222	98.5 85.80 : 112.50	99.5 85.80 : 112.50	99.0 85.80 : 112.50	100.0 85.80 : 112.50	98.5 85.80 : 112.50

Coronene

Component	Method Code	QC 2245
Coronene RAW	TM410	123.0 79.43 : 137.78

Cyanide Comp/Free/Total/Thiocyanate

Component	Method Code	QC 2238	QC 2269	QC 2284	QC 2209	QC 2230	QC 2226
Free Cyanide	TM153	88.81 78.61 : 114.43	87.72 78.61 : 114.43	88.22 78.61 : 114.43	91.88 78.61 : 114.43	91.09 78.61 : 114.43	88.91 78.61 : 114.43
Thiocyanate	TM153	96.15 90.48 : 109.52	96.15 90.48 : 109.52	96.15 90.48 : 109.52	99.36 90.48 : 109.52	98.08 90.48 : 109.52	100.64 90.48 : 109.52
Total Cyanide	TM153	90.21 81.22 : 113.17	90.91 81.22 : 113.17	89.51 81.22 : 113.17	94.41 81.22 : 113.17	93.01 81.22 : 113.17	96.5 81.22 : 113.17



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Dissolved Metals by ICP-MS

Component	Method Code	QC 2286	QC 2284
Aluminium	TM152	101.67 94.21 : 111.52	102.67 94.21 : 111.52
Antimony	TM152	99.33 88.37 : 130.57	101.33 88.37 : 130.57
Arsenic	TM152	100.17 92.62 : 113.52	102.0 92.62 : 113.52
Barium	TM152	97.33 88.62 : 113.14	102.67 88.62 : 113.14
Beryllium	TM152	104.83 89.98 : 116.88	100.5 89.98 : 116.88
Bismuth	TM152	103.33 92.62 : 115.02	102.67 92.62 : 115.02
Boron	TM152	106.67 86.31 : 120.88	106.33 86.31 : 120.88
Cadmium	TM152	101.33 93.85 : 111.65	101.17 93.85 : 111.65
Calcium	TM152	103.33 89.20 : 126.91	102.67 89.20 : 126.91
Chromium	TM152	101.17 92.22 : 109.85	102.17 92.22 : 109.85
Cobalt	TM152	94.67 85.01 : 114.87	98.67 85.01 : 114.87
Copper	TM152	101.0 89.87 : 119.73	101.83 89.87 : 119.73
Iron	TM152	98.0 93.02 : 113.86	102.67 93.02 : 113.86
Lead	TM152	99.5 91.11 : 116.98	103.67 91.11 : 116.98
Lithium	TM152	108.83 91.30 : 123.00	99.33 91.30 : 123.00
Magnesium	TM152	102.67 89.60 : 116.61	102.67 89.60 : 116.61
Manganese	TM152	101.83 93.97 : 112.46	105.5 93.97 : 112.46
Molybdenum	TM152	100.17 89.07 : 110.96	101.33 89.07 : 110.96
Nickel	TM152	100.5 93.70 : 112.15	102.33 93.70 : 112.15
Phosphorus	TM152	99.33 89.24 : 114.18	99.67 89.24 : 114.18
Potassium	TM152	99.33 93.20 : 115.55	103.33 93.20 : 115.55
Selenium	TM152	102.67 91.69 : 117.12	101.0 91.69 : 117.12
Silver	TM152	110.17 90.93 : 121.73	112.5 90.93 : 121.73
Sodium	TM152	101.33 92.42 : 113.24	102.0 92.42 : 113.24
Strontium	TM152	95.33 92.14 : 116.24	101.67 92.14 : 116.24
Tellurium	TM152	96.83 89.88 : 111.78	101.33 89.88 : 111.78
Thallium	TM152	85.0 82.43 : 113.83	98.5 82.43 : 113.83



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Dissolved Metals by ICP-MS

		QC 2286	QC 2284
Tin	TM152	100.17 94.62 : 107.79	102.67 94.62 : 107.79
Titanium	TM152	102.33 90.29 : 115.23	105.83 90.29 : 115.23
Tungsten	TM152	104.33 77.61 : 132.31	99.83 77.61 : 132.31
Uranium	TM152	95.17 86.97 : 115.76	97.5 86.97 : 115.76
Vanadium	TM152	94.83 89.61 : 115.48	99.5 89.61 : 115.48
Zinc	TM152	101.0 87.51 : 116.26	103.67 87.51 : 116.26

Dissolved Organic/Inorganic Carbon

Component	Method Code	QC 2270	QC 2220
Dissolved Inorganic Carbon	TM090	104.67 93.58 : 112.28	102.5 91.27 : 109.87
Dissolved Organic Carbon	TM090	104.83 96.28 : 110.58	100.67 96.58 : 107.98

EPH CWG GC (S)

Component	Method Code	QC 2222	QC 2278
EPH >C8-C40 Raw	TM414	87.16 58.74 : 124.10	84.64 58.74 : 124.10
Total Aliphatics Raw	TM414	90.64 64.15 : 136.53	89.38 64.15 : 136.53
Total Aromatics Raw	TM414	111.76 57.33 : 145.15	98.49 57.33 : 145.15

Fluoride

Component	Method Code	QC 2209	QC 2201
Fluoride	TM104	106.67 95.51 : 107.24	102.67 95.51 : 107.24

GRO by GC-FID (S)

Component	Method Code	QC 2237	QC 2289
QC	TM089	97.39 70.75 : 114.19	92.19 70.34 : 111.95

Hexavalent Chromium (s)



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Hexavalent Chromium (s)

Component	Method Code	QC 2278	QC 2221	QC 2235	QC 2235	QC 2258	QC 2214
Hexavalent Chromium	TM151	98.0 95.60 : 107.60	98.0 95.60 : 107.60	100.0 95.60 : 107.60	98.0 95.60 : 107.60	100.0 95.60 : 107.60	100.0 95.60 : 107.60

Loss on Ignition in soils

Component	Method Code	QC 2201	QC 2291
Loss on Ignition	TM018	93.84 87.56 : 104.24	93.6 87.56 : 104.24

Mercury Dissolved

Component	Method Code	QC 2213	QC 2252	QC 2267
Mercury Dissolved (CVAf)	TM183	105.0 76.80 : 117.12	91.3 76.80 : 117.12	93.4 76.80 : 117.12

Metals in solid samples by OES

Component	Method Code	QC 2231	QC 2236	QC 2256	QC 2277	QC 2224	QC 2295
Aluminium	TM181	100.88 73.56 : 108.85	105.31 73.56 : 108.85	109.73 73.56 : 108.85	94.69 73.56 : 108.85	92.92 73.56 : 108.85	88.5 73.56 : 108.85
Antimony	TM181	99.19 76.89 : 111.24	103.25 76.89 : 111.24	94.31 76.89 : 111.24	91.87 76.89 : 111.24	98.78 76.89 : 111.24	84.55 76.89 : 111.24
Arsenic	TM181	101.74 88.53 : 111.01	106.1 88.53 : 111.01	104.94 88.53 : 111.01	100.58 88.53 : 111.01	102.03 88.53 : 111.01	100.58 88.53 : 111.01
Barium	TM181	94.5 77.67 : 105.35	102.75 77.67 : 105.35	102.75 77.67 : 105.35	96.33 77.67 : 105.35	96.33 77.67 : 105.35	97.25 77.67 : 105.35
Beryllium	TM181	93.66 85.44 : 109.61	100.75 85.44 : 109.61	103.36 85.44 : 109.61	97.01 85.44 : 109.61	101.12 85.44 : 109.61	97.01 85.44 : 109.61
Boron	TM181	93.7 73.51 : 104.66	95.13 73.51 : 104.66	99.43 73.51 : 104.66	91.4 73.51 : 104.66	90.26 73.51 : 104.66	88.54 73.51 : 104.66
Cadmium	TM181	88.07 77.67 : 104.12	95.88 77.67 : 104.12	89.71 77.67 : 104.12	88.48 77.67 : 104.12	97.12 77.67 : 104.12	88.48 77.67 : 104.12
Chromium	TM181	95.54 86.11 : 106.21	101.42 86.11 : 106.21	101.22 86.11 : 106.21	97.16 86.11 : 106.21	97.97 86.11 : 106.21	95.13 86.11 : 106.21
Cobalt	TM181	92.77 84.60 : 104.13	96.86 84.60 : 104.13	95.28 84.60 : 104.13	91.51 84.60 : 104.13	93.4 84.60 : 104.13	91.51 84.60 : 104.13
Copper	TM181	91.55 82.40 : 105.45	96.48 82.40 : 105.45	95.6 82.40 : 105.45	92.25 82.40 : 105.45	93.49 82.40 : 105.45	92.08 82.40 : 105.45
Iron	TM181	91.27 82.95 : 110.58	99.21 82.95 : 110.58	107.14 82.95 : 110.58	102.38 82.95 : 110.58	95.24 82.95 : 110.58	88.1 82.95 : 110.58
Lead	TM181	92.12 78.24 : 104.05	95.95 78.24 : 104.05	97.07 78.24 : 104.05	90.77 78.24 : 104.05	94.59 78.24 : 104.05	92.34 78.24 : 104.05
Manganese	TM181	102.22 94.29 : 119.51	109.72 94.29 : 119.51	118.33 94.29 : 119.51	108.06 94.29 : 119.51	115.56 94.29 : 119.51	107.5 94.29 : 119.51



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Metals in solid samples by OES

		QC 2231	QC 2236	QC 2256	QC 2277	QC 2224	QC 2295
Mercury	TM181	90.58 83.16 : 107.81	94.93 83.16 : 107.81	95.65 83.16 : 107.81	92.03 83.16 : 107.81	91.3 83.16 : 107.81	93.24 83.16 : 107.81
Molybdenum	TM181	98.77 87.11 : 106.87	104.12 87.11 : 106.87	101.23 87.11 : 106.87	97.53 87.11 : 106.87	101.23 87.11 : 106.87	95.47 87.11 : 106.87
Nickel	TM181	94.13 80.26 : 102.28	98.53 80.26 : 102.28	97.56 80.26 : 102.28	91.69 80.26 : 102.28	96.09 80.26 : 102.28	92.42 80.26 : 102.28
Phosphorus	TM181	105.86 94.56 : 124.28	110.3 94.56 : 124.28	111.92 94.56 : 124.28	105.45 94.56 : 124.28	108.48 94.56 : 124.28	106.46 94.56 : 124.28
Selenium	TM181	99.22 82.28 : 110.48	105.1 82.28 : 110.48	104.31 82.28 : 110.48	98.43 82.28 : 110.48	102.75 82.28 : 110.48	100.0 82.28 : 110.48
Strontium	TM181	89.09 79.13 : 102.79	94.21 79.13 : 102.79	95.55 79.13 : 102.79	92.87 79.13 : 102.79	90.2 79.13 : 102.79	89.98 79.13 : 102.79
Thallium	TM181	63.72 82.94 : 111.86	105.75 82.94 : 111.86	100.88 82.94 : 111.86	98.67 82.94 : 111.86	99.12 82.94 : 111.86	97.35 82.94 : 111.86
Tin	TM181	96.96 86.72 : 110.03	101.9 86.72 : 110.03	105.32 86.72 : 110.03	98.48 86.72 : 110.03	101.14 86.72 : 110.03	99.62 86.72 : 110.03
Titanium	TM181	90.84 66.23 : 102.06	93.89 66.23 : 102.06	106.11 66.23 : 102.06	84.73 66.23 : 102.06	83.21 66.23 : 102.06	81.68 66.23 : 102.06
Vanadium	TM181	97.07 86.19 : 109.45	102.93 86.19 : 109.45	104.76 86.19 : 109.45	100.0 86.19 : 109.45	97.8 86.19 : 109.45	94.87 86.19 : 109.45
Zinc	TM181	99.59 84.68 : 113.99	102.87 84.68 : 113.99	102.87 84.68 : 113.99	95.48 84.68 : 113.99	101.03 84.68 : 113.99	95.28 84.68 : 113.99

Component	Method Code	QC 2231	QC 2222
Aluminium	TM181	92.92 73.56 : 108.85	88.5 73.56 : 108.85
Antimony	TM181	97.97 76.89 : 111.24	76.42 76.89 : 111.24
Arsenic	TM181	102.03 88.53 : 111.01	98.84 88.53 : 111.01
Barium	TM181	97.25 77.67 : 105.35	88.72 77.67 : 105.35
Beryllium	TM181	100.0 85.44 : 109.61	97.76 85.44 : 109.61
Boron	TM181	87.11 73.51 : 104.66	86.82 73.51 : 104.66
Cadmium	TM181	92.18 77.67 : 104.12	85.19 77.67 : 104.12
Chromium	TM181	96.15 86.11 : 106.21	94.73 86.11 : 106.21
Cobalt	TM181	92.77 84.60 : 104.13	90.25 84.60 : 104.13
Copper	TM181	93.49 82.40 : 105.45	89.79 82.40 : 105.45
Iron	TM181	95.24 82.95 : 110.58	86.51 82.95 : 110.58
Lead	TM181	94.37 78.24 : 104.05	90.32 78.24 : 104.05
Manganese	TM181	110.56 94.29 : 119.51	104.44 94.29 : 119.51
Mercury	TM181	94.2 83.16 : 107.81	92.27 83.16 : 107.81
Molybdenum	TM181	100.82 87.11 : 106.87	92.59 87.11 : 106.87



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Metals in solid samples by OES

		QC 2231	QC 2222
Nickel	TM181	94.87 80.26 : 102.28	92.18 80.26 : 102.28
Phosphorus	TM181	107.27 94.56 : 124.28	106.46 94.56 : 124.28
Selenium	TM181	101.96 82.28 : 110.48	98.82 82.28 : 110.48
Strontium	TM181	91.09 79.13 : 102.79	89.31 79.13 : 102.79
Thallium	TM181	99.12 82.94 : 111.86	95.58 82.94 : 111.86
Tin	TM181	100.76 86.72 : 110.03	96.96 86.72 : 110.03
Titanium	TM181	78.63 66.23 : 102.06	81.68 66.23 : 102.06
Vanadium	TM181	96.34 86.19 : 109.45	95.97 86.19 : 109.45
Zinc	TM181	97.54 84.68 : 113.99	95.69 84.68 : 113.99

PAH by GCMS

Component	Method Code	QC 2281	QC 2239	QC 2287	QC 2227	QC 2238	QC 2204
Acenaphthene	TM218	97.0 76.79 : 103.90	87.5 80.97 : 105.99	86.0 76.79 : 103.90	88.0 73.47 : 109.80	88.5 76.79 : 103.90	86.5 76.79 : 103.90
Acenaphthylene	TM218	95.0 78.40 : 108.66	83.5 74.76 : 107.36	85.5 78.40 : 108.66	87.0 70.00 : 130.00	85.5 78.40 : 108.66	84.5 78.40 : 108.66
Anthracene	TM218	96.5 71.94 : 101.94	81.0 73.04 : 106.97	84.5 71.94 : 101.94	85.0 68.68 : 111.89	83.5 71.94 : 101.94	83.0 71.94 : 101.94
Benz(a)anthracene	TM218	95.5 73.77 : 119.26	83.0 68.79 : 119.64	87.5 73.77 : 119.26	76.5 68.12 : 118.39	89.0 73.77 : 119.26	87.0 73.77 : 119.26
Benzo(a)pyrene	TM218	93.5 73.20 : 114.18	82.5 66.17 : 117.52	89.5 73.20 : 114.18	75.0 71.72 : 115.31	92.0 73.20 : 114.18	86.0 73.20 : 114.18
Benzo(b)fluoranthene	TM218	88.5 75.36 : 117.58	82.5 66.40 : 118.34	83.0 75.36 : 117.58	70.0 66.89 : 120.40	86.0 75.36 : 117.58	82.0 75.36 : 117.58
Benzo(ghi)perylene	TM218	83.5 70.73 : 116.12	79.0 67.68 : 112.07	83.5 70.73 : 116.12	75.5 67.82 : 118.49	92.0 70.73 : 116.12	82.5 70.73 : 116.12
Benzo(k)fluoranthene	TM218	90.0 75.98 : 116.59	82.5 72.84 : 114.66	86.0 75.98 : 116.59	79.5 73.10 : 117.03	96.0 75.98 : 116.59	85.0 75.98 : 116.59
Chrysene	TM218	89.5 74.82 : 114.18	81.0 68.39 : 115.56	82.5 74.82 : 114.18	75.5 69.58 : 115.47	88.0 74.82 : 114.18	83.5 74.82 : 114.18
Dibenzo(ah)anthracene	TM218	83.5 69.17 : 115.30	78.5 69.03 : 110.45	81.5 69.17 : 115.30	76.0 67.32 : 121.35	90.5 69.17 : 115.30	76.0 69.17 : 115.30
Fluoranthene	TM218	95.0 75.88 : 112.84	83.0 69.37 : 117.19	86.0 75.88 : 112.84	81.5 75.16 : 117.28	78.0 75.88 : 112.84	80.5 75.88 : 112.84
Fluorene	TM218	96.5 78.29 : 103.91	84.0 75.38 : 105.98	85.5 78.29 : 103.91	88.0 73.81 : 108.66	86.5 78.29 : 103.91	85.5 78.29 : 103.91
Indeno(123cd)pyrene	TM218	88.0 70.26 : 117.95	75.5 65.91 : 113.61	83.5 70.26 : 117.95	71.0 68.91 : 117.62	95.0 70.26 : 117.95	80.0 70.26 : 117.95
Naphthalene	TM218	87.5 74.70 : 101.83	83.0 71.40 : 105.87	83.5 74.70 : 101.83	84.0 72.12 : 106.18	85.5 74.70 : 101.83	85.0 74.70 : 101.83
Phenanthrene	TM218	97.0 72.24 : 102.15	83.0 74.04 : 109.30	86.0 72.24 : 102.15	85.0 69.01 : 113.72	80.0 72.24 : 102.15	80.5 72.24 : 102.15
Pyrene	TM218	95.5 71.98 : 105.95	81.0 69.68 : 115.27	85.0 71.98 : 105.95	81.5 75.68 : 119.23	79.5 71.98 : 105.95	82.5 71.98 : 105.95



CERTIFICATE OF ANALYSIS

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PAH by GCMS

Component	Method Code	QC 2241	QC 2224
Acenaphthene	TM218	100.5 80.97 : 105.99	99.5 80.97 : 105.99
Acenaphthylene	TM218	98.0 74.76 : 107.36	98.0 74.76 : 107.36
Anthracene	TM218	99.5 73.04 : 106.97	101.5 73.04 : 106.97
Benz(a)anthracene	TM218	99.5 68.79 : 119.64	109.5 68.79 : 119.64
Benzo(a)pyrene	TM218	98.0 66.17 : 117.52	101.0 66.17 : 117.52
Benzo(b)fluoranthene	TM218	96.0 66.40 : 118.34	101.0 66.40 : 118.34
Benzo(ghi)perylene	TM218	91.0 67.68 : 112.07	100.0 67.68 : 112.07
Benzo(k)fluoranthene	TM218	91.0 72.84 : 114.66	101.5 72.84 : 114.66
Chrysene	TM218	95.0 68.39 : 115.56	99.0 68.39 : 115.56
Dibenzo(ah)anthracene	TM218	94.5 69.03 : 110.45	99.5 69.03 : 110.45
Fluoranthene	TM218	97.5 69.37 : 117.19	102.5 69.37 : 117.19
Fluorene	TM218	98.5 75.38 : 105.98	100.0 75.38 : 105.98
Indeno(123cd)pyrene	TM218	92.0 65.91 : 113.61	98.5 65.91 : 113.61
Naphthalene	TM218	92.0 71.40 : 105.87	94.5 71.40 : 105.87
Phenanthrene	TM218	98.0 74.04 : 109.30	101.5 74.04 : 109.30
Pyrene	TM218	98.5 69.68 : 115.27	105.5 69.68 : 115.27

PCBs by GCMS

Component	Method Code	QC 2251	QC 2295	QC 2238
PCB congener 101	TM168	84.4 79.46 : 109.70	91.1 79.46 : 109.70	96.7 79.46 : 109.70
PCB congener 105	TM168	73.0 66.33 : 105.75	79.2 66.33 : 105.75	82.1 66.33 : 105.75
PCB congener 114	TM168	72.5 66.41 : 106.49	79.3 66.41 : 106.49	81.8 66.41 : 106.49
PCB congener 118	TM168	79.3 70.33 : 110.29	86.6 70.33 : 110.29	90.1 70.33 : 110.29
PCB congener 123	TM168	68.0 65.01 : 99.81	75.0 65.01 : 99.81	74.4 65.01 : 99.81
PCB congener 126	TM168	71.7 59.31 : 109.23	80.4 59.31 : 109.23	78.2 59.31 : 109.23
PCB congener 138	TM168	72.0 63.95 : 107.63	79.1 63.95 : 107.63	78.0 63.95 : 107.63
PCB congener 153	TM168	72.8 62.65 : 108.85	81.6 62.65 : 108.85	85.1 62.65 : 108.85
PCB congener 156	TM168	69.6 61.69 : 112.27	79.9 61.69 : 112.27	77.6 61.69 : 112.27



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PCBs by GCMS

		QC 2251	QC 2295	QC 2238
PCB congener 157	TM168	68.2 67.15 : 109.93	77.8 67.15 : 109.93	74.3 67.15 : 109.93
PCB congener 167	TM168	70.1 65.58 : 109.14	78.4 65.58 : 109.14	79.1 65.58 : 109.14
PCB congener 169	TM168	67.4 56.84 : 112.10	77.8 56.84 : 112.10	74.4 56.84 : 112.10
PCB congener 180	TM168	74.7 66.99 : 111.63	82.4 66.99 : 111.63	85.6 66.99 : 111.63
PCB congener 189	TM168	69.0 57.75 : 112.59	78.6 57.75 : 112.59	71.9 57.75 : 112.59
PCB congener 28	TM168	84.3 73.68 : 105.96	85.1 73.68 : 105.96	89.6 73.68 : 105.96
PCB congener 52	TM168	79.9 67.24 : 107.62	83.3 67.24 : 107.62	87.5 67.24 : 107.62
PCB congener 77	TM168	72.7 64.87 : 108.49	77.0 64.87 : 108.49	83.4 64.87 : 108.49
PCB congener 81	TM168	75.5 70.78 : 110.80	80.7 70.78 : 110.80	87.5 70.78 : 110.80

pH

Component	Method Code	QC 2225	QC 2218	QC 2221	QC 2238	QC 2218	QC 2280
pH	TM133	100.66 98.47 : 102.33	100.79 98.81 : 101.99	100.53 98.81 : 101.99	100.53 98.47 : 102.33	100.13 98.81 : 101.99	100.26 98.47 : 102.33

Phenols by HPLC (S)

Component	Method Code	QC 2259	QC 2228	QC 2223	QC 2272	QC 2253
2,3,5 Trimethyl-Phenol by HPLC (S)	TM062 (S)	101.95 65.50 : 89.50	103.25 65.50 : 89.50	103.25 65.50 : 89.50	100.0 83.23 : 109.71	93.51 65.50 : 89.50
2-Isopropyl Phenol by HPLC (S)	TM062 (S)	96.49 84.00 : 124.00	97.66 84.00 : 124.00	98.25 84.00 : 124.00	87.72 76.34 : 104.11	92.4 84.00 : 124.00
Catechol by HPLC (S)	TM062 (S)	66.67 19.39 : 135.70	81.9 19.39 : 135.70	76.19 19.39 : 135.70	66.67 22.43 : 157.02	0.95 19.39 : 135.70
Cresols by HPLC (S)	TM062 (S)	104.38 81.00 : 112.20	101.67 81.00 : 112.20	103.13 81.00 : 112.20	98.54 90.22 : 116.89	96.66 81.00 : 112.20
Napthol by HPLC (S)	TM062 (S)	104.29 57.50 : 102.50	109.29 57.50 : 102.50	108.57 57.50 : 102.50	112.86 75.62 : 124.38	84.29 57.50 : 102.50
Phenol by HPLC (S)	TM062 (S)	110.6 88.67 : 124.67	113.25 88.67 : 124.67	114.57 88.67 : 124.67	100.0 79.53 : 120.47	106.62 88.67 : 124.67
Resorcinol HPLC (S)	TM062 (S)	104.4 69.99 : 127.22	106.92 69.99 : 127.22	108.18 69.99 : 127.22	91.82 71.43 : 129.59	95.6 69.99 : 127.22
Xylenols by HPLC (S)	TM062 (S)	100.0 95.22 : 115.89	102.81 95.22 : 115.89	103.23 95.22 : 115.89	97.29 89.90 : 107.23	95.63 95.22 : 115.89

Phenols by HPLC (W)



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Phenols by HPLC (W)

Component	Method Code	QC 2212	QC 2232
2,3,5 Trimethyl-Phenol by HPLC (W)	TM259	106.0 84.40 : 108.40	100.0 91.00 : 109.00
2-Isopropyl Phenol by HPLC (W)	TM259	110.0 87.00 : 117.00	96.0 85.00 : 109.00
Cresols by HPLC (W)	TM259	110.0 88.33 : 114.33	101.67 93.00 : 115.00
Naphthol by HPLC (W)	TM259	106.0 92.60 : 116.60	108.0 86.00 : 128.00
Phenol by HPLC (W)	TM259	112.0 86.80 : 112.60	102.0 88.24 : 111.76
Xylenols by HPLC (W)	TM259	108.33 87.00 : 110.00	100.5 93.33 : 107.33

Semi Volatile Organic Compounds

Component	Method Code	QC 2298
4-Bromophenylphenylether (Soil)	TM157	99.5 66.75 : 125.25
Benzo(a)anthracene (Soil)	TM157	102.0 67.40 : 120.50
Hexachlorobutadiene (Soil)	TM157	99.5 68.25 : 126.75
Naphthalene (Soil)	TM157	99.0 67.55 : 125.45
Nitrobenzene (Soil)	TM157	101.0 66.50 : 123.50
Phenol (Soil)	TM157	102.0 69.92 : 114.02

Total Dissolved Solids

Component	Method Code	QC 2229	QC 2242
Total Dissolved Solids	TM123	98.7 97.30 : 100.92	100.0 97.30 : 100.92

Total Organic Carbon

Component	Method Code	QC 2260	QC 2269	QC 2219	QC 2263	QC 2279	QC 2293
Total Organic Carbon	TM132	97.66 87.02 : 113.45	95.31 87.02 : 113.45	98.83 87.02 : 113.45	92.19 87.02 : 113.45	105.86 87.02 : 113.45	105.08 87.02 : 113.45

VOC MS (S)



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VOC MS (S)

Component	Method Code	QC 2252	QC 2263	QC 2214	QC 2209
1,1,1,2-tetrachloroethane	TM116	103.2 84.84 : 116.25	108.2 79.10 : 119.66	105.8 79.10 : 119.66	103.0 84.84 : 116.25
1,1,1-Trichloroethane	TM116	99.6 73.73 : 118.05	108.6 87.51 : 115.37	111.8 87.51 : 115.37	99.8 73.73 : 118.05
1,1,2-Trichloroethane	TM116	105.2 77.12 : 116.04	104.8 75.16 : 112.70	109.8 75.16 : 112.70	100.2 77.12 : 116.04
1,1-Dichloroethane	TM116	109.4 74.46 : 129.15	111.0 86.77 : 122.11	109.6 86.77 : 122.11	104.8 74.46 : 129.15
1,2-Dichloroethane	TM116	123.0 92.38 : 131.65	119.0 90.04 : 132.28	122.2 90.04 : 132.28	116.4 92.38 : 131.65
1,4-Dichlorobenzene	TM116	97.6 83.64 : 126.18	99.0 84.04 : 124.40	97.8 84.04 : 124.40	102.4 83.64 : 126.18
2-Chlorotoluene	TM116	90.4 75.26 : 110.11	86.8 73.76 : 115.43	83.2 73.76 : 115.43	98.6 75.26 : 110.11
4-Chlorotoluene	TM116	88.8 66.90 : 112.46	84.6 72.48 : 112.82	83.8 72.48 : 112.82	93.4 66.90 : 112.46
Benzene	TM116	103.6 88.60 : 113.80	99.6 84.29 : 112.22	102.8 84.29 : 112.22	103.8 88.60 : 113.80
Carbon Disulphide	TM116	104.2 74.91 : 122.14	102.4 75.11 : 124.81	98.2 75.11 : 124.81	101.0 74.91 : 122.14
Carbontetrachloride	TM116	106.6 80.31 : 124.50	111.6 82.35 : 126.46	113.0 82.35 : 126.46	106.0 80.31 : 124.50
Chlorobenzene	TM116	104.2 83.81 : 114.18	102.4 82.88 : 122.42	99.8 82.88 : 122.42	104.8 83.81 : 114.18
Chloroform	TM116	111.8 87.40 : 122.49	114.6 90.35 : 120.38	116.0 90.35 : 120.38	108.2 87.40 : 122.49
Chloromethane	TM116	99.8 65.89 : 136.93	99.8 65.80 : 138.88	97.6 65.80 : 138.88	93.6 65.89 : 136.93
Cis-1,2-Dichloroethene	TM116	104.2 80.67 : 126.72	106.2 78.27 : 128.90	104.2 78.27 : 128.90	100.6 80.67 : 126.72
Dibromomethane	TM116	114.0 76.06 : 125.74	104.8 76.00 : 120.73	105.6 76.00 : 120.73	100.8 76.06 : 125.74
Dichloromethane	TM116	118.2 81.11 : 133.25	113.0 93.91 : 130.46	121.6 93.91 : 130.46	111.0 81.11 : 133.25
Ethylbenzene	TM116	92.2 75.92 : 110.41	93.0 70.95 : 113.07	91.8 70.95 : 113.07	100.2 75.92 : 110.41
Hexachlorobutadiene	TM116	76.0 12.82 : 152.73	55.0 14.55 : 147.92	54.8 14.55 : 147.92	98.2 12.82 : 152.73
Isopropylbenzene	TM116	69.6 55.79 : 97.59	73.4 52.00 : 108.19	74.6 52.00 : 108.19	90.2 55.79 : 97.59
Naphthalene	TM116	103.2 80.86 : 128.81	92.4 80.29 : 135.77	96.6 80.29 : 135.77	108.2 80.86 : 128.81
o-Xylene	TM116	83.6 69.99 : 108.74	85.2 64.92 : 98.85	86.8 64.92 : 98.85	91.6 69.99 : 108.74
p/m-Xylene	TM116	88.3 68.32 : 108.91	87.2 72.04 : 104.04	82.9 72.04 : 104.04	96.1 68.32 : 108.91
Sec-Butylbenzene	TM116	57.0 38.50 : 101.50	62.8 27.03 : 135.73	65.0 27.03 : 135.73	91.8 38.50 : 101.50
Tetrachloroethene	TM116	102.6 76.95 : 121.02	101.2 81.43 : 126.65	101.4 81.43 : 126.65	111.0 76.95 : 121.02
Toluene	TM116	98.0 74.24 : 107.42	92.4 82.44 : 103.50	94.0 82.44 : 103.50	99.4 74.24 : 107.42
Trichloroethene	TM116	99.6 77.61 : 111.54	99.4 79.80 : 112.33	103.0 79.80 : 112.33	101.8 77.61 : 111.54



CERTIFICATE OF ANALYSIS

Validated

SDG: 200718-73 **Client Reference:** A114312-1 **Report Number:** 561099
Location: Leconfield Industrial Estate **Order Number:** MAN20/8116/A114312-1/523 **Superseded Report:** 560879

VOC MS (S)

		QC 2252	QC 2263	QC 2214	QC 2209
Trichlorofluoromethane	TM116	114.0 84.55 : 133.27	116.0 86.68 : 126.82	117.4 86.68 : 126.82	111.0 84.55 : 133.27
Vinyl Chloride	TM116	106.2 68.02 : 143.37	103.0 69.66 : 136.55	99.8 69.66 : 136.55	103.4 68.02 : 143.37

The above information details the reference name of the analytical quality control sample (AQC) that has been run with the samples contained in this report for the different methods of analysis .

The figure detailed is the percentage recovery result for the AQC .

The subscript numbers below are the percentage recovery lower control limit (LCL) and the upper control limit (UCL). The percentage recovery result for the AQC should be between these limits to be statistically in control .



CERTIFICATE OF ANALYSIS

SDG:	200718-73	Client Reference:	A114312-1	Report Number:	561099
Location:	Leconfield Industrial Estate	Order Number:	MAN20/8116/A114312-1/Superseded Report:		560879

Appendix

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

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

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

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

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

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

7. Results relate only to the items tested.

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

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

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

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

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

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

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

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

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

General

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

18. Sample Deviations

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

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
§	Sampled on date not provided
◆	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples

19. Asbestos

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

Identification of Asbestos in Bulk Materials & Soils

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

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

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

Visual Estimation Of Fibre Content

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

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.
Standing Committee of Analysts, *The Quantification of Asbestos in Soil* (2017).

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

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



WYG Geo-Environment
Quay West at Media City UK
Trafford Warf Palk
Manchester
Lancashire
M17 1HH

Attention: Sara Brennan

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Website: www.alsenvironmental.co.uk

CERTIFICATE OF ANALYSIS

Date of report Generation:	24 August 2020
Customer:	WYG Geo-Environment
Sample Delivery Group (SDG):	200812-66
Your Reference:	A114312-1
Location:	Leconfield Industrial Estate
Report No:	564257

We received 15 samples on Wednesday August 12, 2020 and 15 of these samples were scheduled for analysis which was completed on Monday August 24, 2020. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

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

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

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Sonia McWhan

Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 200812-66 **Client Reference:** A114312-1 **Report Number:** 564257
Location: Leconfield Industrial Estate **Order Number:** MAN20/8116/A114312-1/523 **Superseded Report:**

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
22641107	CP101	ES1	0.50 - 0.50	05/08/2020
22641092	CP103	ES1	0.20 - 0.20	05/08/2020
22641102	CP103	ES2	0.50 - 0.50	05/08/2020
22641047	CP105	ES1	0.10 - 0.10	05/08/2020
22641085	CP105	ES2	0.70 - 0.70	05/08/2020
22641122	RBH102	ES1	0.20 - 0.20	06/08/2020
22641126	RBH102	ES2	0.70 - 0.70	06/08/2020
22641130	RBH103	ES1	0.50 - 0.50	06/08/2020
22641062	RBH105	ES1	0.20 - 0.20	06/08/2020
22641054	RBH106	ES1	0.05 - 0.05	06/08/2020
22641066	RBH107	ES1	0.50 - 0.50	06/08/2020
22641071	RBH108	ES1	0.50 - 0.50	06/08/2020
22641075	RBH109	ES1	0.10 - 0.10	06/08/2020
22641081	RBH109	ES2	0.40 - 0.40	06/08/2020
22641115	RBH112	ES1	1.30 - 1.30	06/08/2020

Maximum Sample/Coolbox Temperature (°C) :

16.2

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.



CERTIFICATE OF ANALYSIS

Validated

SDG: 200812-66 Client Reference: A114312-1 Report Number: 564257
Location: Leconfield Industrial Estate Order Number: MAN20/8116/A114312-1/523 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
DWW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Results Legend	Lab Sample No(s)		Customer Sample Reference		AGS Reference		Depth (m)		Container		Sample Type	
	22641126	RBH102	ES2	0.70 - 0.70	1kg TUB with Handle (ALE260)	S						
	22641122	RBH102	ES1	0.20 - 0.20	60g VOC (ALE215)	S						
	22641085	CP105	ES2	0.70 - 0.70	250g Amber Jar (ALE210)	S						
	22641047	CP105	ES1	0.10 - 0.10	1kg TUB with Handle (ALE260)	S						
	22641102	CP103	ES2	0.50 - 0.50	250g Amber Jar (ALE210)	S						
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 15										
Loss on Ignition in soils	All	NDPs: 0 Tests: 3										
Mercury Dissolved	All	NDPs: 0 Tests: 3										
Metals in solid samples by OES	All	NDPs: 0 Tests: 15										
PAH 16 & 17 Calc	All	NDPs: 0 Tests: 3										
PAH by GCMS	All	NDPs: 0 Tests: 15										
PCBs by GCMS	All	NDPs: 0 Tests: 4										
pH	All	NDPs: 0 Tests: 15										
Phenols by HPLC (S)	All	NDPs: 0 Tests: 15										
Phenols by HPLC (W)	All	NDPs: 0 Tests: 3										
Sample description	All	NDPs: 0 Tests: 15										
Semi Volatile Organic Compounds	All	NDPs: 0 Tests: 4										
Total Dissolved Solids	All	NDPs: 0 Tests: 3										
Total Organic Carbon	All	NDPs: 0 Tests: 15										
TPH CWG GC (S)	All	NDPs: 0 Tests: 15										

22641081	RBH109	ES2	0.40 - 0.40	1kg TUB with Handle (ALE260)	S		
22641075	RBH109	ES1	0.10 - 0.10	60g VOC (ALE215)	S	X	
				250g Amber Jar (ALE210)	S		
				1kg TUB with Handle (ALE260)	S		
22641071	RBH108	ES1	0.50 - 0.50	60g VOC (ALE215)	S	X	
				250g Amber Jar (ALE210)	S		
				1kg TUB with Handle (ALE260)	S		
22641066	RBH107	ES1	0.50 - 0.50	60g VOC (ALE215)	S	X	
				250g Amber Jar (ALE210)	S		
				1kg TUB with Handle (ALE260)	S		
22641054	RBH106	ES1	0.05 - 0.05	60g VOC (ALE215)	S	X	
				250g Amber Jar (ALE210)	S		
				1kg TUB with Handle (ALE260)	S		
22641062	RBH105	ES1	0.20 - 0.20	60g VOC (ALE215)	S	X	
				250g Amber Jar (ALE210)	S		
				1kg TUB with Handle (ALE260)	S		
22641130	RBH103	ES1	0.50 - 0.50	60g VOC (ALE215)	S	X	
				250g Amber Jar (ALE210)	S		
				1kg TUB with Handle (ALE260)	S		
				250g Amber Jar (ALE210)	S		
				1kg TUB with Handle (ALE260)	S		
22641126	RBH102	ES2	0.70 - 0.70	60g VOC (ALE215)	S	X	
				250g Amber Jar (ALE210)	S		



CERTIFICATE OF ANALYSIS

Validated

SDG: 200812-66 Client Reference: A114312-1 Report Number: 564257
Location: Leconfield Industrial Estate Order Number: MAN20/8116/A114312-1/523 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

Results Legend	Lab Sample No(s)		22641081		22641115	
	Customer Sample Reference		RBH109		RBH112	
	AGS Reference		ES2		ES1	
	Depth (m)		0.40 - 0.40		1.30 - 1.30	
	Container		250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)
	Sample Type		S	S	S	S
Anions by Kone (soil)	All	NDPs: 0 Tests: 15	X			X
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 15			X	
Boron Water Soluble	All	NDPs: 0 Tests: 15	X			X
Chromium III	All	NDPs: 0 Tests: 15	X			X
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 15	X			X
EPH CWG GC (S)	All	NDPs: 0 Tests: 15	X			X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 15		X		X
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 15	X			X
Metals in solid samples by OES	All	NDPs: 0 Tests: 15	X			X
PAH by GCMS	All	NDPs: 0 Tests: 15	X			X
PCBs by GCMS	All	NDPs: 0 Tests: 4				X
pH	All	NDPs: 0 Tests: 15	X			X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 15	X			X
Sample description	All	NDPs: 0 Tests: 15	X			X
Semi Volatile Organic Compounds	All	NDPs: 0 Tests: 4				X



CERTIFICATE OF ANALYSIS

Validated

SDG: 200812-66 Client Reference: A114312-1 Report Number: 564257
Location: Leconfield Industrial Estate Order Number: MAN20/8116/A114312-1/523 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)		22641081		22641115	
	Customer Sample Reference		RBH109		RBH112	
	AGS Reference		ES2		ES1	
	Depth (m)		0.40 - 0.40		1.30 - 1.30	
	Container		250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)
	Sample Type		S	S	S	S
Total Organic Carbon	All	NDPs: 0 Tests: 15	X		X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 15	X		X	
VOC MS (S)	All	NDPs: 0 Tests: 14		X		X



CERTIFICATE OF ANALYSIS

Validated

SDG: 200812-66 Client Reference: A114312-1 Report Number: 564257
Location: Leconfield Industrial Estate Order Number: MAN20/8116/A114312-1/523 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
22641107	CP101	0.50 - 0.50	Light Brown	Silty Clay	Stones	None
22641092	CP103	0.20 - 0.20	Dark Brown	Silt Loam	Stones	Vegetation
22641102	CP103	0.50 - 0.50	Dark Brown	Silty Clay Loam	Stones	Vegetation
22641047	CP105	0.10 - 0.10	Dark Brown	Silt Loam	Stones	Vegetation
22641085	CP105	0.70 - 0.70	Dark Brown	Sandy Loam	Vegetation	Stones
22641122	RBH102	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	Vegetation
22641126	RBH102	0.70 - 0.70	Dark Brown	Sandy Loam	Vegetation	Stones
22641130	RBH103	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	Vegetation
22641062	RBH105	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	Vegetation
22641054	RBH106	0.05 - 0.05	Dark Brown	Sandy Loam	Stones	Vegetation
22641066	RBH107	0.50 - 0.50	Dark Brown	Sandy Loam	Vegetation	Stones
22641071	RBH108	0.50 - 0.50	Dark Brown	Sandy Loam	Vegetation	Stones
22641075	RBH109	0.10 - 0.10	Dark Brown	Sandy Loam	Vegetation	Stones
22641081	RBH109	0.40 - 0.40	Dark Brown	Sandy Loam	Vegetation	Stones
22641115	RBH112	1.30 - 1.30	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 occurring 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

Validated

SDG: 200812-66 Client Reference: A114312-1 Report Number: 564257
Location: Leconfield Industrial Estate Order Number: MAN20/8116/A114312-1/523 Superseded Report:

Results Legend			Customer Sample Ref.		CP101	CP103	CP103	CP105	CP105	RBH102
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		0.50 - 0.50	0.20 - 0.20	0.50 - 0.50	0.10 - 0.10	0.70 - 0.70	0.20 - 0.20
M	mCERTS accredited.				Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
aq	Aqueous / settled sample.				05/08/2020	05/08/2020	05/08/2020	05/08/2020	05/08/2020	06/08/2020
diss.filt	Dissolved / filtered sample.				12/08/2020	12/08/2020	12/08/2020	12/08/2020	12/08/2020	12/08/2020
tot.unfilt	Total / unfiltered sample.				200812-66	200812-66	200812-66	200812-66	200812-66	200812-66
Subcontracted - refer to subcontractor report for accreditation status.					22641107	22641092	22641102	22641047	22641085	22641122
% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery					ES1	ES1	ES2	ES1	ES2	ES1
(F) Trigger breach confirmed										
1-3*5@ Sample deviation (see appendix)										
Component	LOD/Units	Method								
Moisture Content Ratio (% of as received sample)	%	PM024			15	28	14	33	18	17
Loss on ignition	<0.7 %	TM018			2.26		3.5			
					M		M			
Phenol	<0.01 mg/kg	TM062 (S)			0.0236	<0.01	<0.01	<0.01	<0.01	<0.01
					M	M	M	M	M	M
Organic Carbon, Total	<0.2 %	TM132			0.847		0.688			
					M		M			
Fraction Organic Carbon (FOC)	<0.002	TM132			0.00847	0.0257	0.00688	0.0443	0.0147	0.00797
					#	#	#	#	#	#
pH	1 pH Units	TM133			11.3	7.49	8.96	7.43	7.88	8.16
					M	M	M	M	M	M
Chromium, Hexavalent	<0.6 mg/kg	TM151			<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
					#	#	#	#	#	#
Cyanide, Easily liberatable (low level)	<0.5 mg/kg	TM153			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
PCB congener 28	<0.003 mg/kg	TM168			<0.003		<0.003			
					M		M			
PCB congener 52	<0.003 mg/kg	TM168			<0.003		<0.003			
					M		M			
PCB congener 101	<0.003 mg/kg	TM168			<0.003		<0.003			
					M		M			
PCB congener 118	<0.003 mg/kg	TM168			<0.003		<0.003			
					M		M			
PCB congener 138	<0.003 mg/kg	TM168			<0.003		<0.003			
					M		M			
PCB congener 153	<0.003 mg/kg	TM168			<0.003		<0.003			
					M		M			
PCB congener 180	<0.003 mg/kg	TM168			<0.003		<0.003			
					M		M			
Sum of detected PCB 7 Congeners	<0.021 mg/kg	TM168			<0.021		<0.021			
PCB congener 81	<0.003 mg/kg	TM168			<0.003					
					M					
PCB congener 77	<0.003 mg/kg	TM168			<0.003					
					M					
PCB congener 123	<0.003 mg/kg	TM168			<0.003					
					M					
PCB congener 114	<0.003 mg/kg	TM168			<0.003					
					M					
PCB congener 105	<0.003 mg/kg	TM168			<0.003					
					M					
PCB congener 126	<0.003 mg/kg	TM168			<0.003					
					M					
PCB congener 167	<0.003 mg/kg	TM168			<0.003					
					M					
PCB congener 156	<0.003 mg/kg	TM168			<0.003					
					M					
PCB congener 157	<0.003 mg/kg	TM168			<0.003					
					M					
PCB congener 169	<0.003 mg/kg	TM168			<0.003					
					M					
PCB congener 189	<0.003 mg/kg	TM168			<0.003					
					M					
Sum of detected WHO 12 PCBs	<0.036 mg/kg	TM168			<0.036					
Chromium, Trivalent	<0.9 mg/kg	TM181			16.3	22.9	13.2	18.6	16.4	16.8
Arsenic	<0.6 mg/kg	TM181			8.37	14.3	8.63	12.1	13.3	10.3
					M	M	M	M	M	M
Beryllium	<0.01 mg/kg	TM181			1.15	1.32	2.66	1.37	0.797	2.27
					M	M	M	M	M	M
Cadmium	<0.02 mg/kg	TM181			0.0414	0.0522	0.0352	0.107	<0.02	<0.02
					M	M	M	M	M	M
Chromium	<0.9 mg/kg	TM181			16.3	22.9	13.2	18.6	16.4	16.8
					M	M	M	M	M	M



CERTIFICATE OF ANALYSIS

Validated

SDG: 200812-66 Client Reference: A114312-1 Report Number: 564257
Location: Leconfield Industrial Estate Order Number: MAN20/8116/A114312-1/523 Superseded Report:

Results Legend			Customer Sample Ref.		RBH102	RBH103	RBH105	RBH106	RBH107	RBH108
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		0.70 - 0.70	0.50 - 0.50	0.20 - 0.20	0.05 - 0.05	0.50 - 0.50	0.50 - 0.50
M	mCERTS accredited.				Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
aq	Aqueous / settled sample.				06/08/2020	06/08/2020	06/08/2020	06/08/2020	06/08/2020	06/08/2020
diss.filt	Dissolved / filtered sample.				12/08/2020	12/08/2020	12/08/2020	12/08/2020	12/08/2020	12/08/2020
tot.unfilt	Total / unfiltered sample.				200812-66	200812-66	200812-66	200812-66	200812-66	200812-66
+	Subcontracted - refer to subcontractor report for accreditation status.				22641126	22641130	22641062	22641054	22641066	22641071
..	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery				ES2	ES1	ES1	ES1	ES1	ES1
(F)	Trigger breach confirmed									
1-3*5@	Sample deviation (see appendix)									
Component	LOD/Units	Method								
Moisture Content Ratio (% of as received sample)	%	PM024			12	17	23	12	9.8	13
Loss on ignition	<0.7 %	TM018				4.49				
						M				
Phenol	<0.01 mg/kg	TM062 (S)			<0.01	<0.01	0.144	<0.01	<0.01	<0.01
					M	M	M	M	M	M
Organic Carbon, Total	<0.2 %	TM132				1.97				
						M				
Fraction Organic Carbon (FOC)	<0.002	TM132			0.00676	0.0197	0.0362	0.0104	0.00588	0.016
					#	#	#	#	#	#
pH	1 pH Units	TM133			8.66	8.91	7.53	9.01	10	8.57
					M	M	M	M	M	M
Chromium, Hexavalent	<0.6 mg/kg	TM151			<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
					#	#	#	#	#	#
Cyanide, Easily liberatable (low level)	<0.5 mg/kg	TM153			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
PCB congener 28	<0.003 mg/kg	TM168				<0.003				
						M				
PCB congener 52	<0.003 mg/kg	TM168				<0.003				
						M				
PCB congener 101	<0.003 mg/kg	TM168				<0.003				
						M				
PCB congener 118	<0.003 mg/kg	TM168				<0.003				
						M				
PCB congener 138	<0.003 mg/kg	TM168				<0.003				
						M				
PCB congener 153	<0.003 mg/kg	TM168				<0.003				
						M				
PCB congener 180	<0.003 mg/kg	TM168				<0.003				
						M				
Sum of detected PCB 7 Congeners	<0.021 mg/kg	TM168				<0.021				
Chromium, Trivalent	<0.9 mg/kg	TM181			16.6	11.5	13.3	12.2	16	20.4
Arsenic	<0.6 mg/kg	TM181			14.3	11.7	9.83	16.4	9.57	17.5
					M	M	M	M	M	M
Beryllium	<0.01 mg/kg	TM181			1.36	4.02	1.48	9.53	2.45	1.39
					M	M	M	M	M	M
Cadmium	<0.02 mg/kg	TM181			<0.02	0.152	0.0827	0.105	<0.02	<0.02
					M	M	M	M	M	M
Chromium	<0.9 mg/kg	TM181			16.6	11.5	13.3	12.2	16	20.4
					M	M	M	M	M	M
Copper	<1.4 mg/kg	TM181			32.5	13.9	14.5	13.8	11	22
					M	M	M	M	M	M
Lead	<0.7 mg/kg	TM181			11	172	45.1	36.8	7.01	17.2
					M	M	M	M	M	M
Mercury	<0.14 mg/kg	TM181			<0.14	<0.14	<0.14	<0.14	<0.14	<0.14
					M	M	M	M	M	M
Nickel	<0.2 mg/kg	TM181			18.3	13.5	12.7	10.1	16.7	23.2
					M	M	M	M	M	M
Selenium	<1 mg/kg	TM181			<1	<1	1.32	2.95	<1	<1
					#	#	#	#	#	#
Vanadium	<0.2 mg/kg	TM181			21.3	18.8	23	17.7	18.2	26
					#	#	#	#	#	#
Zinc	<1.9 mg/kg	TM181			25.3	105	71.4	95.8	24.3	39.5
					M	M	M	M	M	M
ANC @ pH 4	<0.03 mol/kg	TM182				0.333				
ANC @ pH 6	<0.03 mol/kg	TM182				0.159				
Boron, water soluble	<1 mg/kg	TM222			<1	<1	<1	<1	<1	<1
					M	M	M	M	M	M
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243			0.137	0.0758	0.0382	0.0562	0.0403	0.0645
					M	M	M	M	M	M
PAH Total 17 (inc Coronene) Moisture Corrected	<10 mg/kg	TM410				<10				



CERTIFICATE OF ANALYSIS

Validated

SDG: 200812-66 Client Reference: A114312-1 Report Number: 564257
Location: Leconfield Industrial Estate Order Number: MAN20/8116/A114312-1/523 Superseded Report:

Results Legend			Customer Sample Ref.					
#	ISO17025 accredited.		RBH109	RBH109	RBH112			
M	mCERTS accredited.							
aq	Aqueous / settled sample.							
diss.filt	Dissolved / filtered sample.							
tot.unfilt	Total / unfiltered sample.							
*	Subcontracted - refer to subcontractor report for accreditation status.							
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery							
(F)	Trigger breach confirmed							
1-3*5@	Sample deviation (see appendix)							
Component	LOD/Units	Method	Depth (m)	Sample Type	Date Sampled	Sample Time	Date Received	SDG Ref
Moisture Content Ratio (% of as received sample)	%	PM024	0.10 - 0.10	Soil/Solid (S)	06/08/2020		12/08/2020	200812-66
Phenol	<0.01 mg/kg	TM062 (S)	0.40 - 0.40	Soil/Solid (S)	06/08/2020		12/08/2020	200812-66
Fraction Organic Carbon (FOC)	<0.002	TM132	1.30 - 1.30	Soil/Solid (S)	06/08/2020		12/08/2020	200812-66
pH	1 pH Units	TM133	0.10 - 0.10	Soil/Solid (S)	06/08/2020		12/08/2020	200812-66
Chromium, Hexavalent	<0.6 mg/kg	TM151	0.40 - 0.40	Soil/Solid (S)	06/08/2020		12/08/2020	200812-66
Cyanide, Easily liberatable (low level)	<0.5 mg/kg	TM153	0.10 - 0.10	Soil/Solid (S)	06/08/2020		12/08/2020	200812-66
PCB congener 118	<0.003 mg/kg	TM168	0.40 - 0.40	Soil/Solid (S)	06/08/2020		12/08/2020	200812-66
PCB congener 81	<0.003 mg/kg	TM168	0.10 - 0.10	Soil/Solid (S)	06/08/2020		12/08/2020	200812-66
PCB congener 77	<0.003 mg/kg	TM168	0.40 - 0.40	Soil/Solid (S)	06/08/2020		12/08/2020	200812-66
PCB congener 123	<0.003 mg/kg	TM168	0.10 - 0.10	Soil/Solid (S)	06/08/2020		12/08/2020	200812-66
PCB congener 114	<0.003 mg/kg	TM168	0.40 - 0.40	Soil/Solid (S)	06/08/2020		12/08/2020	200812-66
PCB congener 105	<0.003 mg/kg	TM168	0.10 - 0.10	Soil/Solid (S)	06/08/2020		12/08/2020	200812-66
PCB congener 126	<0.003 mg/kg	TM168	0.40 - 0.40	Soil/Solid (S)	06/08/2020		12/08/2020	200812-66
PCB congener 167	<0.003 mg/kg	TM168	0.10 - 0.10	Soil/Solid (S)	06/08/2020		12/08/2020	200812-66
PCB congener 156	<0.003 mg/kg	TM168	0.40 - 0.40	Soil/Solid (S)	06/08/2020		12/08/2020	200812-66
PCB congener 157	<0.003 mg/kg	TM168	0.10 - 0.10	Soil/Solid (S)	06/08/2020		12/08/2020	200812-66
PCB congener 169	<0.003 mg/kg	TM168	0.40 - 0.40	Soil/Solid (S)	06/08/2020		12/08/2020	200812-66
PCB congener 189	<0.003 mg/kg	TM168	0.10 - 0.10	Soil/Solid (S)	06/08/2020		12/08/2020	200812-66
Sum of detected WHO 12 PCBs	<0.036 mg/kg	TM168	0.40 - 0.40	Soil/Solid (S)	06/08/2020		12/08/2020	200812-66
Chromium, Trivalent	<0.9 mg/kg	TM181	0.10 - 0.10	Soil/Solid (S)	06/08/2020		12/08/2020	200812-66
Arsenic	<0.6 mg/kg	TM181	0.40 - 0.40	Soil/Solid (S)	06/08/2020		12/08/2020	200812-66
Beryllium	<0.01 mg/kg	TM181	0.10 - 0.10	Soil/Solid (S)	06/08/2020		12/08/2020	200812-66
Cadmium	<0.02 mg/kg	TM181	0.40 - 0.40	Soil/Solid (S)	06/08/2020		12/08/2020	200812-66
Chromium	<0.9 mg/kg	TM181	0.10 - 0.10	Soil/Solid (S)	06/08/2020		12/08/2020	200812-66
Copper	<1.4 mg/kg	TM181	0.40 - 0.40	Soil/Solid (S)	06/08/2020		12/08/2020	200812-66
Lead	<0.7 mg/kg	TM181	0.10 - 0.10	Soil/Solid (S)	06/08/2020		12/08/2020	200812-66
Mercury	<0.14 mg/kg	TM181	0.40 - 0.40	Soil/Solid (S)	06/08/2020		12/08/2020	200812-66
Nickel	<0.2 mg/kg	TM181	0.10 - 0.10	Soil/Solid (S)	06/08/2020		12/08/2020	200812-66
Selenium	<1 mg/kg	TM181	0.40 - 0.40	Soil/Solid (S)	06/08/2020		12/08/2020	200812-66
Vanadium	<0.2 mg/kg	TM181	0.10 - 0.10	Soil/Solid (S)	06/08/2020		12/08/2020	200812-66
Zinc	<1.9 mg/kg	TM181	0.40 - 0.40	Soil/Solid (S)	06/08/2020		12/08/2020	200812-66
Boron, water soluble	<1 mg/kg	TM222	0.10 - 0.10	Soil/Solid (S)	06/08/2020		12/08/2020	200812-66
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243	0.40 - 0.40	Soil/Solid (S)	06/08/2020		12/08/2020	200812-66



CERTIFICATE OF ANALYSIS

Validated

SDG: 200812-66 Client Reference: A114312-1 Report Number: 564257
Location: Leconfield Industrial Estate Order Number: MAN20/8116/A114312-1/523 Superseded Report:

Semi Volatile Organic Compounds

Results Legend			Customer Sample Ref.	CP101	CP105	RBH108	RBH112		
#	ISO17025 accredited.								
M	mCERTS accredited.								
aq	Aqueous / settled sample.								
diss.filt	Dissolved / filtered sample.								
tot.unfilt	Total / unfiltered sample.								
*	Subcontracted - refer to subcontractor report for accreditation status.								
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery								
(F)	Trigger breach confirmed								
1-3*5@	Sample deviation (see appendix)								
Component	LOD/Units	Method	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.50 - 0.50 Soil/Solid (S) 05/08/2020	0.70 - 0.70 Soil/Solid (S) 05/08/2020	0.50 - 0.50 Soil/Solid (S) 06/08/2020	1.30 - 1.30 Soil/Solid (S) 06/08/2020		
Phenol	<0.1 mg/kg	TM157		<0.2	<0.1	<0.1	<0.1		
Pentachlorophenol	<0.1 mg/kg	TM157		<0.2	<0.1	<0.1	<0.1		
n-Nitroso-n-dipropylamine	<0.1 mg/kg	TM157		<0.2	<0.1	<0.1	<0.1		
Nitrobenzene	<0.1 mg/kg	TM157		<0.2	<0.1	<0.1	<0.1		
Isophorone	<0.1 mg/kg	TM157		<0.2	<0.1	<0.1	<0.1		
Hexachloroethane	<0.1 mg/kg	TM157		<0.2	<0.1	<0.1	<0.1		
Hexachlorocyclopentadiene	<0.1 mg/kg	TM157		<0.4	<0.2	<0.2	<0.2		
Hexachlorobutadiene	<0.1 mg/kg	TM157		<0.2	<0.1	<0.1	<0.1		
Hexachlorobenzene	<0.1 mg/kg	TM157		<0.2	<0.1	<0.1	<0.1		
n-Dioctyl phthalate	<0.1 mg/kg	TM157		<0.2	<0.1	<0.1	<0.1		
Dimethyl phthalate	<0.1 mg/kg	TM157		<0.2	<0.1	<0.1	<0.1		
Diethyl phthalate	<0.1 mg/kg	TM157		<0.2	<0.1	<0.1	<0.1		
n-Butyl phthalate	<0.1 mg/kg	TM157		<0.2	<0.1	<0.1	<0.1		
Dibenzofuran	<0.1 mg/kg	TM157		0.248	<0.1	<0.1	<0.1		
Carbazole	<0.1 mg/kg	TM157		<0.2	<0.1	<0.1	<0.1		
Butylbenzyl phthalate	<0.1 mg/kg	TM157		<0.2	<0.1	<0.1	<0.1		
bis(2-Ethylhexyl) phthalate	<0.1 mg/kg	TM157		<0.2	<0.1	<0.1	<0.1		
bis(2-Chloroethoxy)methane	<0.1 mg/kg	TM157		<0.2	<0.1	<0.1	<0.1		
bis(2-Chloroethyl)ether	<0.1 mg/kg	TM157		<0.2	<0.1	<0.1	<0.1		
Azobenzene	<0.1 mg/kg	TM157		<0.2	<0.1	<0.1	<0.1		
4-Nitrophenol	<0.1 mg/kg	TM157		<0.2	<0.1	<0.1	<0.1		
4-Nitroaniline	<0.1 mg/kg	TM157		<0.2	<0.1	<0.1	<0.1		
4-Methylphenol	<0.1 mg/kg	TM157		<0.2	<0.1	<0.1	<0.1		
4-Chlorophenylphenylether	<0.1 mg/kg	TM157		<0.2	<0.1	<0.1	<0.1		
4-Chloroaniline	<0.1 mg/kg	TM157		<0.2	<0.1	<0.1	<0.1		
4-Chloro-3-methylphenol	<0.1 mg/kg	TM157		<0.2	<0.1	<0.1	<0.1		
4-Bromophenylphenylether	<0.1 mg/kg	TM157		<0.2	<0.1	<0.1	<0.1		
3-Nitroaniline	<0.1 mg/kg	TM157		<0.2	<0.1	<0.1	<0.1		
2-Nitrophenol	<0.1 mg/kg	TM157		<0.2	<0.1	<0.1	<0.1		
2-Nitroaniline	<0.1 mg/kg	TM157		<0.2	<0.1	<0.1	<0.1		
2-Methylphenol	<0.1 mg/kg	TM157		<0.2	<0.1	<0.1	<0.1		
1,2,4-Trichlorobenzene	<0.1 mg/kg	TM157		<0.2	<0.1	<0.1	<0.1		
2-Chlorophenol	<0.1 mg/kg	TM157		<0.2	<0.1	<0.1	<0.1		



CERTIFICATE OF ANALYSIS

Validated

SDG: 200812-66 Client Reference: A114312-1 Report Number: 564257
Location: Leconfield Industrial Estate Order Number: MAN20/8116/A114312-1/523 Superseded Report:

Semi Volatile Organic Compounds

Results Legend			Customer Sample Ref.	CP101	CP105	RBH108	RBH112		
#	ISO17025 accredited.								
M	mCERTS accredited.								
aq	Aqueous / settled sample.								
diss.filt	Dissolved / filtered sample.								
tot.unfilt	Total / unfiltered sample.								
*	Subcontracted - refer to subcontractor report for accreditation status.								
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery								
(F)	Trigger breach confirmed								
1-3*§@	Sample deviation (see appendix)								
Component	LOD/Units	Method	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.50 - 0.50 Soil/Solid (S) 05/08/2020	0.70 - 0.70 Soil/Solid (S) 05/08/2020	0.50 - 0.50 Soil/Solid (S) 06/08/2020	1.30 - 1.30 Soil/Solid (S) 06/08/2020		
2,6-Dinitrotoluene	<0.1 mg/kg	TM157		<0.2	<0.1	<0.1	<0.1		
2,4-Dinitrotoluene	<0.1 mg/kg	TM157		<0.2	<0.1	<0.1	<0.1		
2,4-Dimethylphenol	<0.1 mg/kg	TM157		<0.2	<0.1	<0.1	<0.1		
2,4-Dichlorophenol	<0.1 mg/kg	TM157		<0.2	<0.1	<0.1	<0.1		
2,4,6-Trichlorophenol	<0.1 mg/kg	TM157		<0.2	<0.1	<0.1	<0.1		
2,4,5-Trichlorophenol	<0.1 mg/kg	TM157		<0.2	<0.1	<0.1	<0.1		
1,4-Dichlorobenzene	<0.1 mg/kg	TM157		<0.2	<0.1	<0.1	<0.1		
1,3-Dichlorobenzene	<0.1 mg/kg	TM157		<0.2	<0.1	<0.1	<0.1		
1,2-Dichlorobenzene	<0.1 mg/kg	TM157		<0.2	<0.1	<0.1	<0.1		
2-Chloronaphthalene	<0.1 mg/kg	TM157		<0.2	<0.1	<0.1	<0.1		
2-Methylnaphthalene	<0.1 mg/kg	TM157		<0.2	<0.1	<0.1	<0.1		
Acenaphthylene	<0.1 mg/kg	TM157		<0.2	<0.1	<0.1	<0.1		
Acenaphthene	<0.1 mg/kg	TM157		0.625	<0.1	<0.1	<0.1		
Anthracene	<0.1 mg/kg	TM157		0.732	<0.1	<0.1	<0.1		
Benzo(a)anthracene	<0.1 mg/kg	TM157		2.81	<0.1	<0.1	<0.1		
Benzo(b)fluoranthene	<0.1 mg/kg	TM157		1.4	<0.1	<0.1	<0.1		
Benzo(k)fluoranthene	<0.1 mg/kg	TM157		2.22	<0.1	<0.1	<0.1		
Benzo(a)pyrene	<0.1 mg/kg	TM157		1.81	<0.1	<0.1	<0.1		
Benzo(g,h,i)perylene	<0.1 mg/kg	TM157		0.791	<0.1	<0.1	<0.1		
Chrysene	<0.1 mg/kg	TM157		2.68	<0.1	<0.1	<0.1		
Fluoranthene	<0.1 mg/kg	TM157		6.07	<0.1	<0.1	<0.1		
Fluorene	<0.1 mg/kg	TM157		0.378	<0.1	<0.1	<0.1		
Indeno(1,2,3-cd)pyrene	<0.1 mg/kg	TM157		0.909	<0.1	<0.1	<0.1		
Phenanthrene	<0.1 mg/kg	TM157		2.97	<0.1	<0.1	<0.1		
Pyrene	<0.1 mg/kg	TM157		5.13	<0.1	<0.1	<0.1		
Naphthalene	<0.1 mg/kg	TM157		<0.2	<0.1	<0.1	<0.1		
Dibenzo(a,h)anthracene	<0.1 mg/kg	TM157		<0.2	<0.1	<0.1	<0.1		
Bis(2-chloroisopropyl) ether	<0.1 mg/kg	TM157		<0.2	<0.1	<0.1	<0.1		
TIC report		TM157		Not Detected	Not Detected	Not Detected	Not Detected		
Total SVOC TIC	<0.1 mg/kg	TM157		<2	<1	<1	<1		



CERTIFICATE OF ANALYSIS

Validated

SDG: 200812-66 Client Reference: A114312-1 Report Number: 564257
Location: Leconfield Industrial Estate Order Number: MAN20/8116/A114312-1/523 Superseded Report:

VOC MS (S)

Results Legend			Customer Sample Ref.		CP101	CP103	CP105	CP105	RBH102	RBH102
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		0.50 - 0.50	0.20 - 0.20	0.10 - 0.10	0.70 - 0.70	0.20 - 0.20	0.70 - 0.70
M	mCERTS accredited.				Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
aq	Aqueous / settled sample.				05/08/2020	05/08/2020	05/08/2020	05/08/2020	06/08/2020	06/08/2020
diss.filt	Dissolved / filtered sample.				12/08/2020	12/08/2020	12/08/2020	12/08/2020	12/08/2020	12/08/2020
tot.unfilt	Total / unfiltered sample.				200812-66	200812-66	200812-66	200812-66	200812-66	200812-66
Subcontracted - refer to subcontractor report for accreditation status.					22641107	22641092	22641047	22641085	22641122	22641126
% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery					ES1	ES1	ES1	ES2	ES1	ES2
(F)	Trigger breach confirmed									
1-3*5@	Sample deviation (see appendix)									
Component	LOD/Units	Method								
Dibromofluoromethane**	%	TM116			114	114	115	119	117	113
Toluene-d8**	%	TM116			93.9	94.1	99.9	90	93.7	94.7
4-Bromofluorobenzene**	%	TM116			79.7	70.8	94	71.4	71.8	70.2
Dichlorodifluoromethane	<0.006 mg/kg	TM116			<0.006			<0.006		
Chloromethane	<0.007 mg/kg	TM116			<0.007			<0.007		
Vinyl Chloride	<0.006 mg/kg	TM116			<0.006			<0.006		
Bromomethane	<0.01 mg/kg	TM116			<0.01			<0.01		
Chloroethane	<0.01 mg/kg	TM116			<0.01			<0.01		
Trichlorofluoromethane	<0.006 mg/kg	TM116			<0.006			<0.006		
1,1-Dichloroethene	<0.01 mg/kg	TM116			<0.01			<0.01		
Carbon Disulphide	<0.007 mg/kg	TM116			0.00949			<0.007		
Dichloromethane	<0.01 mg/kg	TM116			0.0275			0.0321		
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116			<0.01	<0.01	<0.2	<0.01	<0.01	<0.01
trans-1,2-Dichloroethene	<0.01 mg/kg	TM116			<0.01			<0.01		
1,1-Dichloroethane	<0.008 mg/kg	TM116			<0.008			<0.008		
cis-1,2-Dichloroethene	<0.006 mg/kg	TM116			<0.006			<0.006		
2,2-Dichloropropane	<0.01 mg/kg	TM116			<0.01			<0.01		
Bromochloromethane	<0.01 mg/kg	TM116			<0.01			<0.01		
Chloroform	<0.008 mg/kg	TM116			<0.008			<0.008		
1,1,1-Trichloroethane	<0.007 mg/kg	TM116			<0.007			<0.007		
1,1-Dichloropropene	<0.01 mg/kg	TM116			<0.01			<0.01		
Carbontetrachloride	<0.01 mg/kg	TM116			<0.01			<0.01		
1,2-Dichloroethane	<0.005 mg/kg	TM116			<0.005			<0.005		
Benzene	<0.009 mg/kg	TM116			<0.009	<0.009	<0.18	<0.009	<0.009	<0.009
Trichloroethene	<0.009 mg/kg	TM116			<0.009			<0.009		
1,2-Dichloropropane	<0.01 mg/kg	TM116			<0.01			<0.01		
Dibromomethane	<0.009 mg/kg	TM116			<0.009			<0.009		
Bromodichloromethane	<0.007 mg/kg	TM116			<0.007			<0.007		
cis-1,3-Dichloropropene	<0.01 mg/kg	TM116			<0.01			<0.01		
Toluene	<0.007 mg/kg	TM116			<0.007	<0.007	<0.14	<0.007	<0.007	<0.007
trans-1,3-Dichloropropene	<0.01 mg/kg	TM116			<0.01			<0.01		
1,1,2-Trichloroethane	<0.01 mg/kg	TM116			<0.01			<0.01		
1,3-Dichloropropane	<0.007 mg/kg	TM116			<0.007			<0.007		



CERTIFICATE OF ANALYSIS

Validated

SDG: 200812-66 Client Reference: A114312-1 Report Number: 564257
Location: Leconfield Industrial Estate Order Number: MAN20/8116/A114312-1/523 Superseded Report:

VOC MS (S)

Results Legend			Customer Sample Ref.	CP101	CP103	CP105	CP105	RBH102	RBH102
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		0.50 - 0.50	0.20 - 0.20	0.10 - 0.10	0.70 - 0.70	0.20 - 0.20	0.70 - 0.70
M	mCERTS accredited.			Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
aq	Aqueous / settled sample.			05/08/2020	05/08/2020	05/08/2020	05/08/2020	06/08/2020	06/08/2020
diss.filt	Dissolved / filtered sample.								
tot.unfilt	Total / unfiltered sample.								
*	Subcontracted - refer to subcontractor report for accreditation status.								
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery								
(F)	Trigger breach confirmed								
1-345@	Sample deviation (see appendix)								
Component	LOD/Units	Method							
Tetrachloroethene	<0.005 mg/kg	TM116	<0.005 M			<0.005 M			
Dibromochloromethane	<0.01 mg/kg	TM116	<0.01 M			<0.01 M			
1,2-Dibromoethane	<0.01 mg/kg	TM116	<0.01 M			<0.01 M			
Chlorobenzene	<0.005 mg/kg	TM116	<0.005 M			<0.005 M			
1,1,1,2-Tetrachloroethane	<0.01 mg/kg	TM116	<0.01 M			<0.01 M			
Ethylbenzene	<0.004 mg/kg	TM116	<0.004 M	<0.004 M	<0.08 M	<0.004 M	<0.004 M	<0.004 M	
p/m-Xylene	<0.01 mg/kg	TM116	<0.01 #	<0.01 #	<0.2 #	<0.01 #	<0.01 #	<0.01 #	
o-Xylene	<0.01 mg/kg	TM116	<0.01 M	<0.01 M	<0.2 M	<0.01 M	<0.01 M	<0.01 M	
Styrene	<0.01 mg/kg	TM116	<0.01 #			<0.01 #			
Bromoform	<0.01 mg/kg	TM116	<0.01 M			<0.01 M			
Isopropylbenzene	<0.005 mg/kg	TM116	<0.005 #			<0.005 #			
1,1,2,2-Tetrachloroethane	<0.01 mg/kg	TM116	<0.01 #			<0.01 #			
1,2,3-Trichloropropane	<0.016 mg/kg	TM116	<0.016 M			<0.016 M			
Bromobenzene	<0.01 mg/kg	TM116	<0.01 M			<0.01 M			
Propylbenzene	<0.01 mg/kg	TM116	<0.01 M			<0.01 M			
2-Chlorotoluene	<0.009 mg/kg	TM116	<0.009 M			<0.009 M			
1,3,5-Trimethylbenzene	<0.008 mg/kg	TM116	<0.008 M			<0.008 M			
4-Chlorotoluene	<0.01 mg/kg	TM116	<0.01 M			<0.01 M			
tert-Butylbenzene	<0.014 mg/kg	TM116	<0.014 M			<0.014 M			
1,2,4-Trimethylbenzene	<0.009 mg/kg	TM116	<0.009 #			<0.009 #			
sec-Butylbenzene	<0.01 mg/kg	TM116	<0.01			<0.01			
4-Isopropyltoluene	<0.01 mg/kg	TM116	<0.01 M			<0.01 M			
1,3-Dichlorobenzene	<0.008 mg/kg	TM116	<0.008 M			<0.008 M			
1,4-Dichlorobenzene	<0.005 mg/kg	TM116	<0.005 M			<0.005 M			
n-Butylbenzene	<0.011 mg/kg	TM116	<0.011			<0.011			
1,2-Dichlorobenzene	<0.01 mg/kg	TM116	<0.01 M			<0.01 M			
1,2-Dibromo-3-chloropropane	<0.014 mg/kg	TM116	<0.014 M			<0.014 M			
Tert-amyl methyl ether	<0.01 mg/kg	TM116	<0.01 #			<0.01 #			
1,2,4-Trichlorobenzene	<0.02 mg/kg	TM116	<0.02			<0.02			
Hexachlorobutadiene	<0.02 mg/kg	TM116	<0.02			<0.02			
Naphthalene	<0.013 mg/kg	TM116	0.244 M			<0.013 M			
1,2,3-Trichlorobenzene	<0.02 mg/kg	TM116	<0.02 #			<0.02 #			
VOC TIC		TM116	Not Detected			Not Detected			



CERTIFICATE OF ANALYSIS

Validated

SDG: 200812-66 Client Reference: A114312-1 Report Number: 564257
Location: Leconfield Industrial Estate Order Number: MAN20/8116/A114312-1/523 Superseded Report:

VOC MS (S)

Results Legend			Customer Sample Ref.		RBH103	RBH105	RBH106	RBH107	RBH108	RBH109
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		0.50 - 0.50	0.20 - 0.20	0.05 - 0.05	0.50 - 0.50	0.50 - 0.50	0.10 - 0.10
M	mCERTS accredited.				Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
aq	Aqueous / settled sample.				06/08/2020	06/08/2020	06/08/2020	06/08/2020	06/08/2020	06/08/2020
diss.filt	Dissolved / filtered sample.				12/08/2020	12/08/2020	12/08/2020	12/08/2020	12/08/2020	12/08/2020
tot.unfilt	Total / unfiltered sample.				200812-66	200812-66	200812-66	200812-66	200812-66	200812-66
Subcontracted - refer to subcontractor report for accreditation status.					22641130	22641062	22641054	22641066	22641071	22641075
% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery					ES1	ES1	ES1	ES1	ES1	ES1
(F)	Trigger breach confirmed									
1-3*5@	Sample deviation (see appendix)									
Component	LOD/Units	Method								
Dibromofluoromethane**	%	TM116			121	114	116	116	115	117
Toluene-d8**	%	TM116			99.5	99.9	99	99.6	100	89.7
4-Bromofluorobenzene**	%	TM116			94.5	96.1	94	93.2	96.1	71.3
Dichlorodifluoromethane	<0.006 mg/kg	TM116							<0.12	
Chloromethane	<0.007 mg/kg	TM116							<0.14	
Vinyl Chloride	<0.006 mg/kg	TM116							<0.12	
Bromomethane	<0.01 mg/kg	TM116							<0.2	
Chloroethane	<0.01 mg/kg	TM116							<0.2	
Trichlorofluoromethane	<0.006 mg/kg	TM116							<0.12	
1,1-Dichloroethene	<0.01 mg/kg	TM116							<0.2	
Carbon Disulphide	<0.007 mg/kg	TM116							<0.14	
Dichloromethane	<0.01 mg/kg	TM116							<0.2	
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116			<0.2	<0.2	<0.2	<0.2	<0.2	<0.01
trans-1,2-Dichloroethene	<0.01 mg/kg	TM116							<0.2	
1,1-Dichloroethane	<0.008 mg/kg	TM116							<0.16	
cis-1,2-Dichloroethene	<0.006 mg/kg	TM116							<0.12	
2,2-Dichloropropane	<0.01 mg/kg	TM116							<0.2	
Bromochloromethane	<0.01 mg/kg	TM116							<0.2	
Chloroform	<0.008 mg/kg	TM116							<0.16	
1,1,1-Trichloroethane	<0.007 mg/kg	TM116							<0.14	
1,1-Dichloropropene	<0.01 mg/kg	TM116							<0.2	
Carbontetrachloride	<0.01 mg/kg	TM116							<0.2	
1,2-Dichloroethane	<0.005 mg/kg	TM116							<0.1	
Benzene	<0.009 mg/kg	TM116			<0.18	<0.18	<0.18	<0.18	<0.18	<0.009
Trichloroethene	<0.009 mg/kg	TM116							<0.18	
1,2-Dichloropropane	<0.01 mg/kg	TM116							<0.2	
Dibromomethane	<0.009 mg/kg	TM116							<0.18	
Bromodichloromethane	<0.007 mg/kg	TM116							<0.14	
cis-1,3-Dichloropropene	<0.01 mg/kg	TM116							<0.2	
Toluene	<0.007 mg/kg	TM116			<0.14	<0.14	<0.14	<0.14	<0.14	<0.007
trans-1,3-Dichloropropene	<0.01 mg/kg	TM116							<0.2	
1,1,2-Trichloroethane	<0.01 mg/kg	TM116							<0.2	
1,3-Dichloropropane	<0.007 mg/kg	TM116							<0.14	



CERTIFICATE OF ANALYSIS

Validated

SDG: 200812-66 Client Reference: A114312-1 Report Number: 564257
Location: Leconfield Industrial Estate Order Number: MAN20/8116/A114312-1/523 Superseded Report:

VOC MS (S)

Results Legend			Customer Sample Ref.		RBH103	RBH105	RBH106	RBH107	RBH108	RBH109
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		0.50 - 0.50	0.20 - 0.20	0.05 - 0.05	0.50 - 0.50	0.50 - 0.50	0.10 - 0.10
M	mCERTS accredited.				Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
aq.	Aqueous / settled sample.				06/08/2020	06/08/2020	06/08/2020	06/08/2020	06/08/2020	06/08/2020
diss.filt	Dissolved / filtered sample.									
tot.unfilt	Total / unfiltered sample.				12/08/2020	12/08/2020	12/08/2020	12/08/2020	12/08/2020	12/08/2020
*	Subcontracted - refer to subcontractor report for accreditation status.				200812-66	200812-66	200812-66	200812-66	200812-66	200812-66
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery				22641130	22641062	22641054	22641066	22641071	22641075
(F)	Trigger breach confirmed				ES1	ES1	ES1	ES1	ES1	ES1
1-3+9@	Sample deviation (see appendix)									
Component	LOD/Units	Method								
Tetrachloroethene	<0.005 mg/kg	TM116							<0.1 M	
Dibromochloromethane	<0.01 mg/kg	TM116							<0.2 M	
1,2-Dibromoethane	<0.01 mg/kg	TM116							<0.2 M	
Chlorobenzene	<0.005 mg/kg	TM116							<0.1 M	
1,1,1,2-Tetrachloroethane	<0.01 mg/kg	TM116							<0.2 M	
Ethylbenzene	<0.004 mg/kg	TM116	<0.08 M	<0.08 M	<0.08 M	<0.08 M	<0.08 M	<0.08 M	<0.004 M	
p/m-Xylene	<0.01 mg/kg	TM116	<0.2 #	<0.2 #	<0.2 #	<0.2 #	<0.2 #	<0.2 #	<0.01 #	
o-Xylene	<0.01 mg/kg	TM116	<0.2 M	<0.2 M	<0.2 M	<0.2 M	<0.2 M	<0.2 M	<0.01 M	
Styrene	<0.01 mg/kg	TM116						<0.2 #		
Bromoform	<0.01 mg/kg	TM116						<0.2 M		
Isopropylbenzene	<0.005 mg/kg	TM116						<0.1 #		
1,1,2,2-Tetrachloroethane	<0.01 mg/kg	TM116						<0.2 #		
1,2,3-Trichloropropane	<0.016 mg/kg	TM116						<0.32 M		
Bromobenzene	<0.01 mg/kg	TM116						<0.2 M		
Propylbenzene	<0.01 mg/kg	TM116						<0.2 M		
2-Chlorotoluene	<0.009 mg/kg	TM116						<0.18 M		
1,3,5-Trimethylbenzene	<0.008 mg/kg	TM116						<0.16 M		
4-Chlorotoluene	<0.01 mg/kg	TM116						<0.2 M		
tert-Butylbenzene	<0.014 mg/kg	TM116						<0.28 M		
1,2,4-Trimethylbenzene	<0.009 mg/kg	TM116						<0.18 #		
sec-Butylbenzene	<0.01 mg/kg	TM116						<0.2		
4-Isopropyltoluene	<0.01 mg/kg	TM116						<0.2 M		
1,3-Dichlorobenzene	<0.008 mg/kg	TM116						<0.16 M		
1,4-Dichlorobenzene	<0.005 mg/kg	TM116						<0.1 M		
n-Butylbenzene	<0.011 mg/kg	TM116						<0.22		
1,2-Dichlorobenzene	<0.01 mg/kg	TM116						<0.2 M		
1,2-Dibromo-3-chloropropane	<0.014 mg/kg	TM116						<0.28 M		
Tert-amyl methyl ether	<0.01 mg/kg	TM116						<0.2 #		
1,2,4-Trichlorobenzene	<0.02 mg/kg	TM116						<0.4		
Hexachlorobutadiene	<0.02 mg/kg	TM116						<0.4		
Naphthalene	<0.013 mg/kg	TM116						<0.26 M		
1,2,3-Trichlorobenzene	<0.02 mg/kg	TM116						<0.4 #		
VOC TIC		TM116						Not Detected		



CERTIFICATE OF ANALYSIS

Validated

SDG: 200812-66 Client Reference: A114312-1 Report Number: 564257
Location: Leconfield Industrial Estate Order Number: MAN20/8116/A114312-1/523 Superseded Report:

VOC MS (S)

Results Legend			Customer Sample Ref.				
#	ISO17025 accredited.		Depth (m)	RBH109	RBH112		
M	mCERTS accredited.						
aq	Aqueous / settled sample.						
diss.filt	Dissolved / filtered sample.						
tot.unfilt	Total / unfiltered sample.						
*	Subcontracted - refer to subcontractor report for accreditation status.		Sample Type	0.40 - 0.40	1.30 - 1.30		
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		Date Sampled	Soil/Solid (S)	Soil/Solid (S)		
(F)	Trigger breach confirmed		Sample Time	06/08/2020	06/08/2020		
1-3*5@	Sample deviation (see appendix)		Date Received	12/08/2020	12/08/2020		
			SDG Ref	200812-66	200812-66		
			Lab Sample No.(s)	22641081	22641115		
			AGS Reference	ES2	ES1		
Component	LOD/Units	Method					
Dibromofluoromethane**	%	TM116	129	112			
Toluene-d8**	%	TM116	96.6	99.2			
4-Bromofluorobenzene**	%	TM116	78.4	95.5			
Dichlorodifluoromethane	<0.006 mg/kg	TM116		<0.006	M		
Chloromethane	<0.007 mg/kg	TM116		<0.007	#		
Vinyl Chloride	<0.006 mg/kg	TM116		<0.006	M		
Bromomethane	<0.01 mg/kg	TM116		<0.01	M		
Chloroethane	<0.01 mg/kg	TM116		<0.01	M		
Trichlorofluoromethane	<0.006 mg/kg	TM116		<0.006	M		
1,1-Dichloroethene	<0.01 mg/kg	TM116		<0.01	#		
Carbon Disulphide	<0.007 mg/kg	TM116		<0.007	M		
Dichloromethane	<0.01 mg/kg	TM116		<0.01	#		
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116	<0.01	<0.01	M		
trans-1,2-Dichloroethene	<0.01 mg/kg	TM116		<0.01	M		
1,1-Dichloroethane	<0.008 mg/kg	TM116		<0.008	M		
cis-1,2-Dichloroethene	<0.006 mg/kg	TM116		<0.006	M		
2,2-Dichloropropane	<0.01 mg/kg	TM116		<0.01			
Bromochloromethane	<0.01 mg/kg	TM116		<0.01	M		
Chloroform	<0.008 mg/kg	TM116		<0.008	M		
1,1,1-Trichloroethane	<0.007 mg/kg	TM116		<0.007	M		
1,1-Dichloropropene	<0.01 mg/kg	TM116		<0.01	M		
Carbontetrachloride	<0.01 mg/kg	TM116		<0.01	M		
1,2-Dichloroethane	<0.005 mg/kg	TM116		<0.005	M		
Benzene	<0.009 mg/kg	TM116	<0.009	<0.009	M		
Trichloroethene	<0.009 mg/kg	TM116		<0.009	#		
1,2-Dichloropropane	<0.01 mg/kg	TM116		<0.01	M		
Dibromomethane	<0.009 mg/kg	TM116		<0.009	M		
Bromodichloromethane	<0.007 mg/kg	TM116		<0.007	M		
cis-1,3-Dichloropropene	<0.01 mg/kg	TM116		<0.01	M		
Toluene	<0.007 mg/kg	TM116	<0.007	<0.007	M		
trans-1,3-Dichloropropene	<0.01 mg/kg	TM116		<0.01			
1,1,2-Trichloroethane	<0.01 mg/kg	TM116		<0.01	M		
1,3-Dichloropropane	<0.007 mg/kg	TM116		<0.007	M		



CERTIFICATE OF ANALYSIS

Validated

SDG: 200812-66 Client Reference: A114312-1 Report Number: 564257
Location: Leconfield Industrial Estate Order Number: MAN20/8116/A114312-1/523 Superseded Report:

VOC MS (S)

Results Legend		Customer Sample Ref.	RBH109	RBH112				
#	ISO17025 accredited.							
M	mCERTS accredited.							
sq	Aqueous / settled sample.							
dis.filt	Dissolved / filtered sample.							
tot.unfilt	Total / unfiltered sample.							
*	Subcontracted - refer to subcontractor report for accreditation status.							
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery							
(F)	Trigger breach confirmed							
1-3+§@	Sample deviation (see appendix)							
Component	LOD/Units	Method						
Tetrachloroethene	<0.005 mg/kg	TM116		<0.005	M			
Dibromochloromethane	<0.01 mg/kg	TM116		<0.01	M			
1,2-Dibromoethane	<0.01 mg/kg	TM116		<0.01	M			
Chlorobenzene	<0.005 mg/kg	TM116		<0.005	M			
1,1,1,2-Tetrachloroethane	<0.01 mg/kg	TM116		<0.01	M			
Ethylbenzene	<0.004 mg/kg	TM116	<0.004	<0.004	M			
p/m-Xylene	<0.01 mg/kg	TM116	<0.01	<0.01	#			
o-Xylene	<0.01 mg/kg	TM116	<0.01	<0.01	M			
Styrene	<0.01 mg/kg	TM116		<0.01	#			
Bromoform	<0.01 mg/kg	TM116		<0.01	M			
Isopropylbenzene	<0.005 mg/kg	TM116		<0.005	#			
1,1,2,2-Tetrachloroethane	<0.01 mg/kg	TM116		<0.01	#			
1,2,3-Trichloropropane	<0.016 mg/kg	TM116		<0.016	M			
Bromobenzene	<0.01 mg/kg	TM116		<0.01	M			
Propylbenzene	<0.01 mg/kg	TM116		<0.01	M			
2-Chlorotoluene	<0.009 mg/kg	TM116		<0.009	M			
1,3,5-Trimethylbenzene	<0.008 mg/kg	TM116		<0.008	M			
4-Chlorotoluene	<0.01 mg/kg	TM116		<0.01	M			
tert-Butylbenzene	<0.014 mg/kg	TM116		<0.014	M			
1,2,4-Trimethylbenzene	<0.009 mg/kg	TM116		<0.009	#			
sec-Butylbenzene	<0.01 mg/kg	TM116		<0.01				
4-Isopropyltoluene	<0.01 mg/kg	TM116		<0.01	M			
1,3-Dichlorobenzene	<0.008 mg/kg	TM116		<0.008	M			
1,4-Dichlorobenzene	<0.005 mg/kg	TM116		<0.005	M			
n-Butylbenzene	<0.011 mg/kg	TM116		<0.011				
1,2-Dichlorobenzene	<0.01 mg/kg	TM116		<0.01	M			
1,2-Dibromo-3-chloropropane	<0.014 mg/kg	TM116		<0.014	M			
Tert-amyl methyl ether	<0.01 mg/kg	TM116		<0.01	#			
1,2,4-Trichlorobenzene	<0.02 mg/kg	TM116		<0.02				
Hexachlorobutadiene	<0.02 mg/kg	TM116		<0.02				
Naphthalene	<0.013 mg/kg	TM116		<0.013	M			
1,2,3-Trichlorobenzene	<0.02 mg/kg	TM116		<0.02	#			
VOC TIC		TM116		Not Detected				



M	mCERTS accr
aq	Aqueous / set

06:44:47 24/08/2020



CERTIFICATE OF ANALYSIS

Validated

SDG: 200812-66 **Client Reference:** A114312-1 **Report Number:** 564257
Location: Leconfield Industrial Estate **Order Number:** MAN20/8116/A114312-1/523 **Superseded Report:**

Asbestos Identification - Solid Samples

Results Legend

ISO17025 accredited.
M mCERIS accredited.
* Subcontracted test.
(F) Trigger breach confirmed
1-5&*\$@ Sample deviation (see appendix)

* mCERTS accredited. (F) Subcontracted test. Trigger breach confirmed 1-5&+§@ Sample deviation (see appendix)		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	CP101ES1 0.50 - 0.50 SOLID 05/08/2020 00:00:00 12/08/2020 10:55:00 200812-66 22641107 TM048	17/08/2020	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	CP103ES1 0.20 - 0.20 SOLID 05/08/2020 00:00:00 12/08/2020 10:55:00 200812-66 22641092 TM048	17/08/2020	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	CP103ES2 0.50 - 0.50 SOLID 05/08/2020 00:00:00 12/08/2020 10:55:00 200812-66 22641102 TM048	18/08/2020	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	CP105ES1 0.10 - 0.10 SOLID 05/08/2020 00:00:00 12/08/2020 10:55:00 200812-66 22641047 TM048	18/08/2020	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 Received SDG Original Sample Method Number	CP105ES2 0.70 - 0.70 SOLID 05/08/2020 00:00:00 12/08/2020 10:55:00 200812-66 22641085 TM048	17/08/2020	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	RBH102ES1 0.20 - 0.20 SOLID 06/08/2020 00:00:00 12/08/2020 10:55:00 200812-66 22641122 TM048	18/08/2020	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 Received SDG Original Sample Method Number	RBH102ES2 0.70 - 0.70 SOLID 06/08/2020 00:00:00 12/08/2020 10:55:00 200812-66 22641126 TM048	17/08/2020	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	RBH103ES1 0.50 - 0.50 SOLID 06/08/2020 00:00:00 12/08/2020 10:55:00 200812-66 22641130 TM048	18/08/2020	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



CERTIFICATE OF ANALYSIS

Validated

SDG: 200812-66 **Client Reference:** A114312-1 **Report Number:** 564257
Location: Leconfield Industrial Estate **Order Number:** MAN20/8116/A114312-1/523 **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 Received SDG Original Sample Method Number	RBH105ES1 0.20 - 0.20 SOLID 06/08/2020 00:00:00 12/08/2020 10:55:00 200812-66 22641062 TM048	17/08/2020	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 Received SDG Original Sample Method Number	RBH106ES1 0.05 - 0.05 SOLID 06/08/2020 00:00:00 12/08/2020 10:55:00 200812-66 22641054 TM048	17/08/2020	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	RBH107ES1 0.50 - 0.50 SOLID 06/08/2020 00:00:00 12/08/2020 10:55:00 200812-66 22641066 TM048	17/08/2020	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 Received SDG Original Sample Method Number	RBH108ES1 0.50 - 0.50 SOLID 06/08/2020 00:00:00 12/08/2020 10:55:00 200812-66 22641071 TM048	17/08/2020	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	RBH109ES1 0.10 - 0.10 SOLID 06/08/2020 00:00:00 12/08/2020 10:55:00 200812-66 22641075 TM048	17/08/2020	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 Received SDG Original Sample Method Number	RBH109ES2 0.40 - 0.40 SOLID 06/08/2020 00:00:00 12/08/2020 10:55:00 200812-66 22641081 TM048	17/08/2020	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 Received SDG Original Sample Method Number	RBH112ES1 1.30 - 1.30 SOLID 06/08/2020 00:00:00 12/08/2020 10:55:00 200812-66 22641115 TM048	18/08/2020	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



CERTIFICATE OF ANALYSIS

Validated

SDG: 200812-66 Client Reference: A114312-1 Report Number: 564257
Location: Leconfield Industrial Estate Order Number: MAN20/8116/A114312-1/523 Superseded Report:

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		Site Location	Leconfield Industrial Estate
Mass Sample taken (kg)	0.111	Natural Moisture Content (%)	23.6
Mass of dry sample (kg)	0.090	Dry Matter Content (%)	80.9
Particle Size <4mm	>95%		

Case		Landfill Waste Acceptance Criteria Limits
SDG	200812-66	
Lab Sample Number(s)	22641102	
Sampled Date	05-Aug-2020	
Customer Sample Ref.	CP103 ES2	
Depth (m)	0.50 - 0.50	

Solid Waste Analysis	Result	Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Total Organic Carbon (%)	0.688	3	5	6
Loss on Ignition (%)	3.5	-	-	10
Sum of BTEX (mg/kg)	-	-	-	-
Sum of 7 PCBs (mg/kg)	<0.021	1	-	-
Mineral Oil (mg/kg)	<5	500	-	-
PAH Sum of 17 (mg/kg)	<10	100	-	-
pH (pH Units)	8.96	-	>6	-
ANC to pH 6 (mol/kg)	0.116	-	-	-
ANC to pH 4 (mol/kg)	0.167	-	-	-

Eluate Analysis	C2 Conc ⁿ in 10:1 eluate (mg/l)		A2 10:1 conc ⁿ leached (mg/kg)		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Result	Limit of Detection	Result	Limit of Detection			
Arsenic	0.00485	<0.0005	0.0485	<0.005	0.5	2	25
Barium	0.127	<0.0002	1.27	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	<0.001	<0.001	<0.01	<0.01	0.5	10	70
Copper	0.00292	<0.0003	0.0292	<0.003	2	50	100
Mercury Dissolved (CVAF)	0.000316	<0.00001	0.00316	<0.0001	0.01	0.2	2
Molybdenum	<0.003	<0.003	<0.03	<0.03	0.5	10	30
Nickel	<0.0004	<0.0004	<0.004	<0.004	0.4	10	40
Lead	0.000618	<0.0002	0.00618	<0.002	0.5	10	50
Antimony	0.00111	<0.001	0.0111	<0.01	0.06	0.7	5
Selenium	0.00213	<0.001	0.0213	<0.01	0.1	0.5	7
Zinc	<0.001	<0.001	<0.01	<0.01	4	50	200
Chloride	3.9	<2	39	<20	800	15000	25000
Fluoride	2.73	<0.5	27.3	<5	10	150	500
Sulphate (soluble)	14.7	<2	147	<20	1000	20000	50000
Total Dissolved Solids	87	<5	870	<50	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	3.45	<3	34.5	<30	500	800	1000

Leach Test Information

Date Prepared	15-Aug-2020
pH (pH Units)	7.65
Conductivity (µS/cm)	114.00
Temperature (°C)	20.20
Volume Leachant (Litres)	0.879

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALS Environmental cannot be held responsible for any discrepancies with current legislation
Mcerts Certification does not apply to leachates
24/08/2020 06:45:22



CERTIFICATE OF ANALYSIS

Validated

SDG: 200812-66 Client Reference: A114312-1 Report Number: 564257
Location: Leconfield Industrial Estate Order Number: MAN20/8116/A114312-1/523 Superseded Report:

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		Site Location	Leconfield Industrial Estate
Mass Sample taken (kg)	0.106	Natural Moisture Content (%)	17
Mass of dry sample (kg)	0.090	Dry Matter Content (%)	85.5
Particle Size <4mm	>95%		

Case	
SDG	200812-66
Lab Sample Number(s)	22641107
Sampled Date	05-Aug-2020
Customer Sample Ref.	CP101 ES1
Depth (m)	0.50 - 0.50

Landfill Waste Acceptance Criteria Limits

Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
3	5	6
-	-	10
-	-	-
1	-	-
500	-	-
100	-	-
-	>6	-
-	-	-
-	-	-

Solid Waste Analysis	Result
Total Organic Carbon (%)	0.847
Loss on Ignition (%)	2.26
Sum of BTEX (mg/kg)	-
Sum of 7 PCBs (mg/kg)	<0.021
Mineral Oil (mg/kg)	7.65
PAH Sum of 17 (mg/kg)	18.9
pH (pH Units)	11.3
ANC to pH 6 (mol/kg)	0.13
ANC to pH 4 (mol/kg)	0.18

Eluate Analysis	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Result	Limit of Detection	Result	Limit of Detection			
Arsenic	0.0158	<0.0005	0.158	<0.005	0.5	2	25
Barium	0.0572	<0.0002	0.572	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	<0.001	<0.001	<0.01	<0.01	0.5	10	70
Copper	0.00397	<0.0003	0.0397	<0.003	2	50	100
Mercury Dissolved (CVAf)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2
Molybdenum	<0.003	<0.003	<0.03	<0.03	0.5	10	30
Nickel	0.000696	<0.0004	0.00696	<0.004	0.4	10	40
Lead	<0.0002	<0.0002	<0.002	<0.002	0.5	10	50
Antimony	0.00222	<0.001	0.0222	<0.01	0.06	0.7	5
Selenium	0.00817	<0.001	0.0817	<0.01	0.1	0.5	7
Zinc	<0.001	<0.001	<0.01	<0.01	4	50	200
Chloride	8.5	<2	85	<20	800	15000	25000
Fluoride	0.761	<0.5	7.61	<5	10	150	500
Sulphate (soluble)	22.2	<2	222	<20	1000	20000	50000
Total Dissolved Solids	104	<5	1040	<50	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	4.64	<3	46.4	<30	500	800	1000

Leach Test Information

Date Prepared	14-Aug-2020
pH (pH Units)	10.64
Conductivity (µS/cm)	191.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.884

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
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CERTIFICATE OF ANALYSIS

Validated

SDG: 200812-66 Client Reference: A114312-1 Report Number: 564257
 Location: Leconfield Industrial Estate Order Number: MAN20/8116/A114312-1/523 Superseded Report:

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		Site Location	Leconfield Industrial Estate
Mass Sample taken (kg)	0.107	Natural Moisture Content (%)	19.2
Mass of dry sample (kg)	0.090	Dry Matter Content (%)	83.9
Particle Size <4mm	>95%		

Case

SDG	200812-66
Lab Sample Number(s)	22641130
Sampled Date	06-Aug-2020
Customer Sample Ref.	RBH103 ES1
Depth (m)	0.50 - 0.50

Landfill Waste Acceptance Criteria Limits

Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
3	5	6
-	-	10
-	-	-
1	-	-
500	-	-
100	-	-
-	>6	-
-	-	-
-	-	-

Solid Waste Analysis

Result

Total Organic Carbon (%)	1.97
Loss on Ignition (%)	4.49
Sum of BTEX (mg/kg)	-
Sum of 7 PCBs (mg/kg)	<0.021
Mineral Oil (mg/kg)	<5
PAH Sum of 17 (mg/kg)	<10
pH (pH Units)	8.91
ANC to pH 6 (mol/kg)	0.159
ANC to pH 4 (mol/kg)	0.333

Eluate Analysis

C₂

Concⁿ in 10:1 eluate (mg/l)

A₂

10:1 concⁿ leached (mg/kg)

Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg

	Result	Limit of Detection	Result	Limit of Detection			
Arsenic	0.00481	<0.0005	0.0481	<0.005	0.5	2	25
Barium	0.191	<0.0002	1.91	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	<0.001	<0.001	<0.01	<0.01	0.5	10	70
Copper	0.00102	<0.0003	0.0102	<0.003	2	50	100
Mercury Dissolved (CVAf)	0.000017	<0.00001	0.00017	<0.0001	0.01	0.2	2
Molybdenum	0.00302	<0.003	0.0302	<0.03	0.5	10	30
Nickel	<0.0004	<0.0004	<0.004	<0.004	0.4	10	40
Lead	0.00299	<0.0002	0.0299	<0.002	0.5	10	50
Antimony	0.00336	<0.001	0.0336	<0.01	0.06	0.7	5
Selenium	0.00172	<0.001	0.0172	<0.01	0.1	0.5	7
Zinc	0.0011	<0.001	0.011	<0.01	4	50	200
Chloride	<2	<2	<20	<20	800	15000	25000
Fluoride	4.45	<1	44.5	<10	10	150	500
Sulphate (soluble)	20.3	<2	203	<20	1000	20000	50000
Total Dissolved Solids	88.1	<5	881	<50	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	<3	<3	<30	<30	500	800	1000

Leach Test Information

Date Prepared	15-Aug-2020
pH (pH Units)	8.84
Conductivity (µS/cm)	115.00
Temperature (°C)	20.10
Volume Leachant (Litres)	0.883

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SDG: 200812-66 Client Reference: A114312-1 Report Number: 564257
Location: Leconfield Industrial Estate Order Number: MAN20/8116/A114312-1/523 Superseded Report:

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM018	BS 1377: Part 3 1990	Determination of Loss on Ignition
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM090	Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water
TM104	Method 4500F, AWWA/APHA, 20th Ed., 1999	Determination of Fluoride using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM123	BS 2690: Part 121:1981	The Determination of Total Dissolved Solids in Water
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
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser
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
TM157	HP 6890 Gas Chromatograph (GC) system and HP 5973 Mass Selective Detector (MSD).	Determination of SVOC in Soils by GC-MS extracted by sonication in DCM/Acetone
TM168	EPA Method 8082, Polychlorinated Biphenyls by Gas Chromatography	Determination of WHO12 and EC7 Polychlorinated Biphenyl Congeners by GC-MS in Soils
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM182	CEN/TC 292 - WI 292046-characterization of waste-leaching Behaviour Tests- Acid and Base Neutralization Capacity Test	Determination of Acid Neutralisation Capacity (ANC) Using Autotitration in Soils
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
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM222	In-House Method	Determination of Hot Water Soluble Boron in Soils (10:1 Water:soil) by IRIS Emission Spectrometer
TM243		Mixed Anions In Soils By Kone
TM259	by HPLC	Determination of Phenols in Waters and Leachates by HPLC
TM410	Shaker extraction-In house coronene method	Determination of Coronene in soils by GCMS
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID
TM415	Analysis of Petroleum Hydrocarbons in Environmental Media.	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

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



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SDG: 200812-66 Client Reference: A114312-1 Report Number: 564257
Location: Leconfield Industrial Estate Order Number: MAN20/8116/A114312-1/523 Superseded Report:

Test Completion Dates

Lab Sample No(s)	22641107	22641092	22641102	22641047	22641085	22641122	22641126	22641130	22641062	22641054
Customer Sample Ref.	CP101	CP103	CP103	CP105	CP105	RBH102	RBH102	RBH103	RBH105	RBH106
AGS Ref.	ES1	ES1	ES2	ES1	ES2	ES1	ES2	ES1	ES1	ES1
Depth	0.50 - 0.50	0.20 - 0.20	0.50 - 0.50	0.10 - 0.10	0.70 - 0.70	0.20 - 0.20	0.70 - 0.70	0.50 - 0.50	0.20 - 0.20	0.05 - 0.05
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)
ANC at pH4 and ANC at pH 6	19-Aug-2020		19-Aug-2020					19-Aug-2020		
Anions by Kone (soil)	19-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020
Anions by Kone (w)	17-Aug-2020		19-Aug-2020					19-Aug-2020		
Asbestos ID in Solid Samples	17-Aug-2020	17-Aug-2020	18-Aug-2020	18-Aug-2020	17-Aug-2020	18-Aug-2020	17-Aug-2020	18-Aug-2020	17-Aug-2020	17-Aug-2020
Boron Water Soluble	19-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020
CEN 10:1 Leachate (1 Stage)	14-Aug-2020		15-Aug-2020					15-Aug-2020		
CEN Readings	15-Aug-2020		19-Aug-2020					19-Aug-2020		
Chromium III	19-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020
Coronene	18-Aug-2020		18-Aug-2020					18-Aug-2020		
Cyanide Comp/Free/Total/Thiocyanate	19-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020	18-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020
Dissolved Metals by ICP-MS	18-Aug-2020		19-Aug-2020					19-Aug-2020		
Dissolved Organic/Inorganic Carbon	17-Aug-2020		19-Aug-2020					19-Aug-2020		
EPH by GCxGC-FID	20-Aug-2020		18-Aug-2020					18-Aug-2020		
EPH CWG GC (S)	19-Aug-2020	19-Aug-2020	18-Aug-2020	19-Aug-2020	17-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020
Fluoride	18-Aug-2020		19-Aug-2020					19-Aug-2020		
GRO by GC-FID (S)	18-Aug-2020	18-Aug-2020	18-Aug-2020	19-Aug-2020	18-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020
Hexavalent Chromium (s)	19-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020	17-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020
Loss on Ignition in soils	19-Aug-2020		19-Aug-2020					18-Aug-2020		
Mercury Dissolved	19-Aug-2020		24-Aug-2020					24-Aug-2020		
Metals in solid samples by OES	19-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020	18-Aug-2020	18-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020
Moisture at 105C	14-Aug-2020		15-Aug-2020					15-Aug-2020		
PAH 16 & 17 Calc	18-Aug-2020		18-Aug-2020					17-Aug-2020		
PAH by GCMS	18-Aug-2020	18-Aug-2020	18-Aug-2020	18-Aug-2020	17-Aug-2020	18-Aug-2020	18-Aug-2020	18-Aug-2020	18-Aug-2020	18-Aug-2020
PCBs by GCMS	19-Aug-2020		19-Aug-2020					18-Aug-2020		
pH	14-Aug-2020	14-Aug-2020	14-Aug-2020	14-Aug-2020	17-Aug-2020	17-Aug-2020	17-Aug-2020	17-Aug-2020	17-Aug-2020	14-Aug-2020
Phenols by HPLC (S)	18-Aug-2020	18-Aug-2020	18-Aug-2020	18-Aug-2020	18-Aug-2020	18-Aug-2020	18-Aug-2020	18-Aug-2020	18-Aug-2020	18-Aug-2020
Phenols by HPLC (W)	18-Aug-2020		19-Aug-2020					19-Aug-2020		
Sample description	14-Aug-2020	14-Aug-2020	14-Aug-2020	14-Aug-2020	13-Aug-2020	13-Aug-2020	13-Aug-2020	14-Aug-2020	14-Aug-2020	14-Aug-2020
Semi Volatile Organic Compounds	18-Aug-2020				18-Aug-2020					
Total Dissolved Solids	17-Aug-2020		19-Aug-2020					19-Aug-2020		
Total Organic Carbon	19-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020
TPH CWG GC (S)	19-Aug-2020	19-Aug-2020	18-Aug-2020	19-Aug-2020	18-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020
VOC MS (S)	18-Aug-2020	18-Aug-2020		19-Aug-2020	18-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020

Lab Sample No(s)	22641066	22641071	22641075	22641081	22641115
Customer Sample Ref.	RBH107	RBH108	RBH109	RBH109	RBH112
AGS Ref.	ES1	ES1	ES1	ES2	ES1
Depth	0.50 - 0.50	0.50 - 0.50	0.10 - 0.10	0.40 - 0.40	1.30 - 1.30
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Anions by Kone (soil)	19-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020
Asbestos ID in Solid Samples	17-Aug-2020	17-Aug-2020	17-Aug-2020	17-Aug-2020	19-Aug-2020
Boron Water Soluble	19-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020
Chromium III	19-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020
Cyanide Comp/Free/Total/Thiocyanate	19-Aug-2020	18-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020
EPH CWG GC (S)	17-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020
GRO by GC-FID (S)	19-Aug-2020	19-Aug-2020	18-Aug-2020	18-Aug-2020	18-Aug-2020
Hexavalent Chromium (s)	17-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020
Metals in solid samples by OES	19-Aug-2020	18-Aug-2020	18-Aug-2020	18-Aug-2020	19-Aug-2020
PAH by GCMS	14-Aug-2020	20-Aug-2020	18-Aug-2020	18-Aug-2020	18-Aug-2020
PCBs by GCMS					19-Aug-2020
pH	18-Aug-2020	17-Aug-2020	17-Aug-2020	17-Aug-2020	17-Aug-2020
Phenols by HPLC (S)	17-Aug-2020	18-Aug-2020	18-Aug-2020	18-Aug-2020	18-Aug-2020
Sample description	13-Aug-2020	13-Aug-2020	13-Aug-2020	13-Aug-2020	14-Aug-2020
Semi Volatile Organic Compounds		18-Aug-2020			18-Aug-2020
Total Organic Carbon	19-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020
TPH CWG GC (S)	19-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020	19-Aug-2020
VOC MS (S)	19-Aug-2020	19-Aug-2020	18-Aug-2020	18-Aug-2020	19-Aug-2020



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ASSOCIATED AQC DATA

ANC at pH4 and ANC at pH 6

Component	Method Code	QC 2213
ANC pH_4 dry soil	TM182	100.59 91.79 : 114.66

Anions by Kone (soil)

Component	Method Code	QC 2241
Chloride (soluble)	TM243	145.6 92.10 : 107.90
Water Soluble Sulphate as SO4 2:1 Extract	TM243	173.83 70.00 : 130.00

Anions by Kone (w)

Component	Method Code	QC 2217	QC 2250
Chloride	TM184	101.0 92.93 : 115.43	97.0 94.04 : 108.61
Sulphate (soluble)	TM184	96.0 90.53 : 113.03	101.2 91.99 : 109.30

Boron Water Soluble

Component	Method Code	QC 2226	QC 2271	QC 2256	QC 2269
Water Soluble Boron	TM222	94.0 85.80 : 112.50	91.0 85.80 : 112.50	95.5 85.80 : 112.50	92.5 85.80 : 112.50

Coronene

Component	Method Code	QC 2225	QC 2205
Coronene RAW	TM410	104.0 79.43 : 137.78	107.5 79.43 : 137.78

Cyanide Comp/Free/Total/Thiocyanate

Component	Method Code	QC 2211	QC 2289
Free Cyanide	TM153	92.87 78.61 : 114.43	85.05 78.61 : 114.43
Thiocyanate	TM153	107.05 90.48 : 109.52	100.64 90.48 : 109.52
Total Cyanide	TM153	89.51 76.80 : 112.96	85.31 76.80 : 112.96



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Dissolved Metals by ICP-MS

Component	Method Code	QC 2210	QC 2268
Aluminium	TM152	99.33 90.78 : 110.89	98.33 90.78 : 110.89
Antimony	TM152	97.0 77.22 : 119.42	95.17 77.22 : 119.42
Arsenic	TM152	97.67 86.77 : 107.67	95.17 86.77 : 107.67
Barium	TM152	99.67 87.86 : 110.23	97.17 87.86 : 110.23
Beryllium	TM152	100.17 86.19 : 112.98	98.67 86.19 : 112.98
Bismuth	TM152	96.67 84.06 : 106.46	97.0 84.06 : 106.46
Borate	TM152	103.09 88.00 : 112.00	103.7 88.00 : 112.00
Boron	TM152	103.33 83.92 : 114.90	103.67 83.92 : 114.90
Cadmium	TM152	99.83 88.89 : 106.69	97.83 88.89 : 106.69
Calcium	TM152	95.33 80.24 : 117.95	93.33 80.24 : 117.95
Chromium	TM152	98.0 83.22 : 110.16	96.67 83.22 : 110.16
Cobalt	TM152	94.67 82.49 : 112.36	92.33 82.49 : 112.36
Copper	TM152	96.5 83.14 : 113.00	95.0 83.14 : 113.00
Iron	TM152	99.33 88.40 : 109.24	97.33 88.40 : 109.24
Lead	TM152	96.83 83.71 : 109.58	97.83 83.71 : 109.58
Lithium	TM152	98.33 84.50 : 114.28	99.17 84.50 : 114.28
Magnesium	TM152	96.0 87.56 : 114.57	94.67 87.56 : 114.57
Manganese	TM152	101.0 93.05 : 112.42	99.5 93.05 : 112.42
Molybdenum	TM152	96.83 85.53 : 107.42	95.0 85.53 : 107.42
Nickel	TM152	98.17 88.05 : 106.42	96.17 88.05 : 106.42
Phosphorus	TM152	94.33 82.76 : 107.72	93.17 82.76 : 107.72
Potassium	TM152	94.67 88.45 : 106.42	94.0 88.45 : 106.42
Selenium	TM152	98.33 85.61 : 111.03	96.67 85.61 : 111.03
Silver	TM152	109.0 95.35 : 113.25	105.83 95.35 : 113.25
Sodium	TM152	95.33 88.32 : 106.30	94.0 88.32 : 106.30
Strontium	TM152	97.33 83.77 : 107.87	97.0 83.77 : 107.87
Tellurium	TM152	97.0 82.83 : 104.73	93.83 82.83 : 104.73



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Dissolved Metals by ICP-MS

		QC 2210	QC 2268
Thallium	TM152	86.67 77.47 : 113.87	88.83 77.47 : 113.87
Tin	TM152	97.67 91.00 : 109.00	96.33 91.00 : 109.00
Titanium	TM152	99.67 87.29 : 108.31	100.17 87.29 : 108.31
Tungsten	TM152	98.0 68.27 : 122.97	96.33 68.27 : 122.97
Uranium	TM152	95.83 82.46 : 105.16	97.17 82.46 : 105.16
Vanadium	TM152	100.67 88.43 : 114.30	95.83 88.43 : 114.30
Zinc	TM152	99.0 85.57 : 114.31	97.0 85.57 : 114.31

Dissolved Organic/Inorganic Carbon

Component	Method Code	QC 2285	QC 2260
Dissolved Inorganic Carbon	TM090	100.33 93.58 : 112.28	101.33 91.27 : 109.87
Dissolved Organic Carbon	TM090	102.67 96.28 : 110.58	99.5 96.58 : 107.98

EPH by GCxGC-FID

Component	Method Code	QC 2262	QC 2269
EPH >C10-C40 Raw	TM415	105.03 59.15 : 115.05	86.49 56.36 : 129.92

EPH CWG GC (S)

Component	Method Code	QC 2252	QC 2236	QC 2283
EPH >C8-C40 Raw	TM414	115.79 57.98 : 125.66	97.07 63.60 : 123.90	86.78 56.39 : 129.94
Total Aliphatics Raw	TM414	122.01 64.55 : 136.91	100.13 63.17 : 134.64	90.48 62.55 : 133.12
Total Aromatics Raw	TM414	136.63 55.89 : 144.43	130.53 57.00 : 150.27	109.53 57.00 : 150.27

Fluoride

Component	Method Code	QC 2268	QC 2227
Fluoride	TM104	104.0 95.51 : 107.24	101.33 95.51 : 107.24

GRO by GC-FID (S)



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GRO by GC-FID (S)

Component	Method Code	QC 2299	QC 2216	QC 2268
QC	TM089	98.19 70.75 : 114.19	88.68 70.34 : 111.95	95.66 70.75 : 114.19

Hexavalent Chromium (s)

Component	Method Code	QC 2220	QC 2238	QC 2268	QC 2282
Hexavalent Chromium	TM151	102.0 95.60 : 107.60	102.0 95.60 : 107.60	102.0 95.60 : 107.60	102.0 95.60 : 107.60

Loss on Ignition in soils

Component	Method Code	QC 2287	QC 2267
Loss on Ignition	TM018	94.79 87.56 : 104.24	92.42 87.56 : 104.24

Mercury Dissolved

Component	Method Code	QC 2275	QC 2209
Mercury Dissolved (CVAf)	TM183	98.6 76.80 : 117.12	112.0 76.80 : 117.12

Metals in solid samples by OES

Component	Method Code	QC 2256	QC 2260	QC 2214	QC 2291
Aluminium	TM181	90.27 77.46 : 123.98	92.92 77.46 : 123.98	102.65 73.56 : 108.85	99.12 77.46 : 123.98
Antimony	TM181	101.22 87.04 : 111.16	101.22 87.04 : 111.16	102.44 76.89 : 111.24	104.88 87.04 : 111.16
Arsenic	TM181	99.42 87.34 : 110.87	100.29 87.34 : 110.87	99.71 88.53 : 111.01	102.03 87.34 : 110.87
Barium	TM181	94.5 80.73 : 115.16	87.89 80.73 : 115.16	90.64 77.67 : 105.35	89.63 80.73 : 115.16
Beryllium	TM181	98.88 89.47 : 112.97	96.27 89.47 : 112.97	98.51 85.44 : 109.61	100.37 89.47 : 112.97
Boron	TM181	88.54 76.57 : 104.15	85.96 76.57 : 104.15	93.98 73.51 : 104.66	110.89 76.57 : 104.15
Cadmium	TM181	84.36 78.94 : 102.43	87.24 78.94 : 102.43	85.6 77.67 : 104.12	93.42 78.94 : 102.43
Chromium	TM181	94.32 77.55 : 104.47	92.49 77.55 : 104.47	93.71 86.11 : 106.21	96.55 77.55 : 104.47



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Metals in solid samples by OES

		QC 2256	QC 2260	QC 2214	QC 2291
Cobalt	TM181	89.62 82.95 : 107.41	89.31 82.95 : 107.41	90.25 84.60 : 104.13	92.14 82.95 : 107.41
Copper	TM181	95.95 84.36 : 106.14	94.19 84.36 : 106.14	94.01 82.40 : 105.45	98.06 84.36 : 106.14
Iron	TM181	88.1 81.43 : 115.79	93.65 81.43 : 115.79	98.41 82.95 : 110.58	96.83 81.43 : 115.79
Lead	TM181	90.54 81.95 : 107.63	97.75 81.95 : 107.63	89.19 78.24 : 104.05	92.34 81.95 : 107.63
Manganese	TM181	112.22 94.29 : 119.51	109.17 94.29 : 119.51	110.83 94.29 : 119.51	112.5 94.29 : 119.51
Mercury	TM181	91.06 82.73 : 106.36	89.13 82.73 : 106.36	91.3 83.16 : 107.81	92.75 82.73 : 106.36
Molybdenum	TM181	95.06 86.61 : 111.07	94.24 86.61 : 111.07	98.77 87.11 : 106.87	99.18 86.61 : 111.07
Nickel	TM181	91.2 79.72 : 103.80	90.46 79.72 : 103.80	90.95 80.26 : 102.28	93.15 79.72 : 103.80
Phosphorus	TM181	112.12 92.65 : 125.47	104.85 92.65 : 125.47	108.28 94.56 : 124.28	110.3 92.65 : 125.47
Selenium	TM181	96.47 88.36 : 111.25	96.86 88.36 : 111.25	97.25 82.28 : 110.48	101.96 88.36 : 111.25
Strontium	TM181	91.09 83.94 : 111.48	89.09 83.94 : 111.48	88.64 79.13 : 102.79	97.33 83.94 : 111.48
Thallium	TM181	100.88 88.60 : 116.73	98.67 88.60 : 116.73	101.33 82.94 : 111.86	102.21 88.60 : 116.73
Tin	TM181	96.2 89.77 : 112.62	97.72 89.77 : 112.62	97.72 86.72 : 110.03	98.86 89.77 : 112.62
Titanium	TM181	83.21 66.29 : 105.96	80.92 66.29 : 105.96	85.5 66.23 : 102.06	87.79 66.29 : 105.96
Vanadium	TM181	96.34 75.51 : 108.87	94.14 75.51 : 108.87	99.27 86.19 : 109.45	101.1 75.51 : 108.87
Zinc	TM181	96.92 84.02 : 111.24	96.3 84.02 : 111.24	96.51 84.68 : 113.99	99.59 84.02 : 111.24

PAH by GCMS

Component	Method Code	QC 2294	QC 2249	QC 2250	QC 2214	QC 2200	QC 2296
Acenaphthene	TM218	94.0 73.47 : 109.80	92.5 80.97 : 105.99	96.0 76.79 : 103.90	97.0 73.47 : 109.80	95.0 80.97 : 105.99	98.0 73.47 : 109.80
Acenaphthylene	TM218	94.5 70.00 : 130.00	91.0 74.76 : 107.36	96.0 78.40 : 108.66	96.0 70.00 : 130.00	93.5 74.76 : 107.36	97.0 70.00 : 130.00
Anthracene	TM218	96.0 68.68 : 111.89	91.0 73.04 : 106.97	92.0 70.90 : 109.22	97.5 68.68 : 111.89	94.5 73.04 : 106.97	101.5 68.68 : 111.89
Benz(a)anthracene	TM218	100.5 68.12 : 118.39	90.0 68.79 : 119.64	89.0 73.77 : 119.26	102.5 68.12 : 118.39	94.5 68.79 : 119.64	102.5 68.12 : 118.39
Benzo(a)pyrene	TM218	99.0 71.72 : 115.31	86.0 66.17 : 117.52	88.0 73.20 : 114.18	98.0 71.72 : 115.31	93.5 66.17 : 117.52	93.0 71.72 : 115.31
Benzo(b)fluoranthene	TM218	94.5 66.89 : 120.40	90.0 66.40 : 118.34	92.0 75.36 : 117.58	95.5 66.89 : 120.40	94.0 66.40 : 118.34	94.5 66.89 : 120.40
Benzo(ghi)perylene	TM218	96.0 67.82 : 118.49	89.5 67.68 : 112.07	84.5 70.73 : 116.12	91.5 67.82 : 118.49	89.5 67.68 : 112.07	84.5 67.82 : 118.49
Benzo(k)fluoranthene	TM218	100.5 73.10 : 117.03	83.5 72.84 : 114.66	89.0 75.98 : 116.59	103.0 73.10 : 117.03	92.5 72.84 : 114.66	96.0 73.10 : 117.03
Chrysene	TM218	100.5 69.58 : 115.47	85.5 68.39 : 115.56	89.0 74.82 : 114.18	106.0 69.58 : 115.47	93.5 68.39 : 115.56	103.0 69.58 : 115.47



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PAH by GCMS

		QC 2294	QC 2249	QC 2250	QC 2214	QC 2200	QC 2296
Dibenzo(ah)anthracene	TM218	90.5 67.32 : 121.35	88.0 69.03 : 110.45	85.5 69.17 : 115.30	87.5 67.32 : 121.35	83.0 69.03 : 110.45	82.0 67.32 : 121.35
Fluoranthene	TM218	100.5 75.16 : 117.28	93.5 69.37 : 117.19	85.5 75.88 : 112.84	107.5 75.16 : 117.28	100.0 69.37 : 117.19	110.0 75.16 : 117.28
Fluorene	TM218	93.5 73.81 : 108.66	91.5 75.38 : 105.98	96.5 76.66 : 107.56	99.5 73.81 : 108.66	95.5 75.38 : 105.98	100.0 73.81 : 108.66
Indeno(123cd)pyrene	TM218	101.0 68.91 : 117.62	82.0 65.91 : 113.61	94.5 70.26 : 117.95	94.0 68.91 : 117.62	84.5 65.91 : 113.61	83.0 68.91 : 117.62
Naphthalene	TM218	87.0 72.12 : 106.18	90.0 71.40 : 105.87	92.0 74.70 : 101.83	89.5 72.12 : 106.18	92.0 71.40 : 105.87	88.0 72.12 : 106.18
Phenanthrene	TM218	96.5 69.01 : 113.72	92.5 74.04 : 109.30	92.0 73.62 : 109.34	103.5 69.01 : 113.72	98.5 74.04 : 109.30	106.5 69.01 : 113.72
Pyrene	TM218	100.0 75.68 : 119.23	93.0 69.68 : 115.27	87.0 71.46 : 117.00	106.0 75.68 : 119.23	99.5 69.68 : 115.27	107.5 75.68 : 119.23

Component	Method Code	QC 2206
Acenaphthene	TM218	93.5 73.47 : 109.80
Acenaphthylene	TM218	94.0 70.00 : 130.00
Anthracene	TM218	90.0 68.68 : 111.89
Benz(a)anthracene	TM218	96.0 68.12 : 118.39
Benzo(a)pyrene	TM218	91.5 71.72 : 115.31
Benzo(b)fluoranthene	TM218	87.5 66.89 : 120.40
Benzo(ghi)perylene	TM218	93.0 67.82 : 118.49
Benzo(k)fluoranthene	TM218	92.5 73.10 : 117.03
Chrysene	TM218	93.5 69.58 : 115.47
Dibenzo(ah)anthracene	TM218	91.5 67.32 : 121.35
Fluoranthene	TM218	94.5 75.16 : 117.28
Fluorene	TM218	92.0 73.81 : 108.66
Indeno(123cd)pyrene	TM218	89.0 68.91 : 117.62
Naphthalene	TM218	88.5 72.12 : 106.18
Phenanthrene	TM218	93.0 69.01 : 113.72
Pyrene	TM218	94.5 75.68 : 119.23

PCBs by GCMS



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PCBs by GCMS

Component	Method Code	QC 2228	QC 2211
PCB congener 101	TM168	96.2 79.46 : 109.70	109.0 79.46 : 109.70
PCB congener 105	TM168	82.1 66.33 : 105.75	97.0 66.33 : 105.75
PCB congener 114	TM168	82.5 66.41 : 106.49	97.6 66.41 : 106.49
PCB congener 118	TM168	89.4 70.33 : 110.29	101.0 70.33 : 110.29
PCB congener 123	TM168	77.8 65.01 : 99.81	90.1 65.01 : 99.81
PCB congener 126	TM168	78.2 59.31 : 109.23	94.8 59.31 : 109.23
PCB congener 138	TM168	80.3 63.95 : 107.63	95.0 63.95 : 107.63
PCB congener 153	TM168	80.9 62.65 : 108.85	98.6 62.65 : 108.85
PCB congener 156	TM168	81.3 61.69 : 112.27	95.7 61.69 : 112.27
PCB congener 157	TM168	78.5 67.15 : 109.93	92.7 67.15 : 109.93
PCB congener 167	TM168	82.2 65.58 : 109.14	97.7 65.58 : 109.14
PCB congener 169	TM168	75.5 56.84 : 112.10	93.1 56.84 : 112.10
PCB congener 180	TM168	84.4 66.99 : 111.63	97.1 66.99 : 111.63
PCB congener 189	TM168	77.0 57.75 : 112.59	93.5 57.75 : 112.59
PCB congener 28	TM168	90.4 73.68 : 105.96	102.0 73.68 : 105.96
PCB congener 52	TM168	85.6 67.24 : 107.62	97.9 67.24 : 107.62
PCB congener 77	TM168	82.8 64.87 : 108.49	94.9 64.87 : 108.49
PCB congener 81	TM168	88.1 70.78 : 110.80	101.0 70.78 : 110.80

pH

Component	Method Code	QC 2260	QC 2288	QC 2262	QC 2267
pH	TM133	101.19 98.68 : 102.65	101.19 98.68 : 102.65	100.4 98.68 : 102.65	101.85 98.68 : 102.65

Phenols by HPLC (S)

Component	Method Code	QC 2286	QC 2241	QC 2258
2,3,5 Trimethyl-Phenol by HPLC (S)	TM062 (S)	107.14 65.50 : 89.50	100.65 65.50 : 89.50	95.45 83.23 : 109.71
2-Isopropyl Phenol by HPLC (S)	TM062 (S)	101.75 84.00 : 124.00	93.57 84.00 : 124.00	83.04 76.34 : 104.11
Catechol by HPLC (S)	TM062 (S)	92.38 19.39 : 135.70	90.48 19.39 : 135.70	90.48 22.43 : 157.02



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Phenols by HPLC (S)

		QC 2286	QC 2241	QC 2258
Cresols by HPLC (S)	TM062 (S)	100.0 81.00 : 112.20	99.16 81.00 : 112.20	90.4 90.22 : 116.89
Napthol by HPLC (S)	TM062 (S)	120.0 57.50 : 102.50	115.71 57.50 : 102.50	127.14 75.62 : 124.38
Phenol by HPLC (S)	TM062 (S)	113.91 88.67 : 124.67	106.62 88.67 : 124.67	103.97 79.53 : 120.47
Resorcinol HPLC (S)	TM062 (S)	110.69 69.99 : 127.22	100.63 69.99 : 127.22	103.14 71.43 : 129.59
Xylenols by HPLC (S)	TM062 (S)	105.21 95.22 : 115.89	97.6 95.22 : 115.89	95.31 89.90 : 107.23

Phenols by HPLC (W)

Component	Method Code	QC 2220	QC 2268
2,3,5 Trimethyl-Phenol by HPLC (W)	TM259	97.0 91.00 : 109.00	95.0 84.50 : 111.50
2-Isopropyl Phenol by HPLC (W)	TM259	94.0 85.00 : 109.00	94.0 84.55 : 110.90
Cresols by HPLC (W)	TM259	97.33 93.00 : 115.00	95.67 90.00 : 112.00
Napthol by HPLC (W)	TM259	109.0 86.00 : 128.00	115.0 82.00 : 124.00
Phenol by HPLC (W)	TM259	99.0 88.24 : 111.76	100.0 86.80 : 112.60
Xylenols by HPLC (W)	TM259	98.83 93.33 : 107.33	101.5 94.74 : 115.71

Semi Volatile Organic Compounds

Component	Method Code	QC 2268
4-Bromophenylphenylether (Soil)	TM157	81.0 66.75 : 125.25
Benzo(a)anthracene (Soil)	TM157	87.5 67.40 : 120.50
Hexachlorobutadiene (Soil)	TM157	86.0 68.25 : 126.75
Naphthalene (Soil)	TM157	86.5 67.55 : 125.45
Nitrobenzene (Soil)	TM157	88.5 66.50 : 123.50
Phenol (Soil)	TM157	90.5 69.92 : 114.02

Total Dissolved Solids

Component	Method Code	QC 2230	QC 2238	QC 2243
Total Dissolved Solids	TM123	98.3 97.30 : 100.92	99.2 97.30 : 100.92	99.2 97.30 : 100.92

Total Organic Carbon



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Total Organic Carbon

Component	Method Code	QC 2297	QC 2216	QC 2237	QC 2239	QC 2270
Total Organic Carbon	TM132	106.25 84.82 : 117.61	109.77 84.82 : 117.61	108.98 84.82 : 117.61	107.81 84.82 : 117.61	115.63 84.82 : 117.61

VOC MS (S)

Component	Method Code	QC 2246	QC 2283	QC 2217
1,1,1,2-tetrachloroethane	TM116	99.8 79.10 : 119.66	96.0 84.84 : 116.25	110.4 79.10 : 119.66
1,1,1-Trichloroethane	TM116	99.2 87.51 : 115.37	92.2 73.73 : 118.05	98.8 87.51 : 115.37
1,1,2-Trichloroethane	TM116	105.8 75.16 : 112.70	98.8 77.12 : 116.04	97.2 75.16 : 112.70
1,1-Dichloroethane	TM116	108.8 86.77 : 122.11	102.8 74.46 : 129.15	104.0 86.77 : 122.11
1,2-Dichloroethane	TM116	106.8 90.04 : 132.28	111.8 92.38 : 131.65	110.6 90.04 : 132.28
1,4-Dichlorobenzene	TM116	100.6 80.81 : 125.07	101.4 83.64 : 126.18	100.6 80.81 : 125.07
2-Chlorotoluene	TM116	90.2 73.76 : 115.43	93.0 75.26 : 110.11	95.0 73.76 : 115.43
4-Chlorotoluene	TM116	88.6 72.48 : 112.82	89.0 66.90 : 112.46	96.8 72.48 : 112.82
Benzene	TM116	101.6 84.29 : 112.22	98.4 88.60 : 113.80	101.8 84.29 : 112.22
Carbon Disulphide	TM116	101.8 75.11 : 124.81	100.0 74.91 : 122.14	103.2 75.11 : 124.81
Carbontetrachloride	TM116	105.4 82.35 : 126.46	99.0 80.31 : 124.50	105.4 82.35 : 126.46
Chlorobenzene	TM116	101.0 82.88 : 122.42	97.8 83.81 : 114.18	102.2 82.88 : 122.42
Chloroform	TM116	107.4 90.35 : 120.38	104.0 87.40 : 122.49	105.0 90.35 : 120.38
Chloromethane	TM116	84.6 65.80 : 138.88	103.0 65.89 : 136.93	86.0 65.80 : 138.88
Cis-1,2-Dichloroethene	TM116	105.8 78.27 : 128.90	98.2 80.67 : 126.72	100.6 78.27 : 128.90
Dibromomethane	TM116	100.6 76.00 : 120.73	97.4 76.06 : 125.74	99.8 76.00 : 120.73
Dichloromethane	TM116	113.4 91.49 : 127.63	110.4 81.11 : 133.25	113.2 91.49 : 127.63
Ethylbenzene	TM116	94.2 70.95 : 113.07	87.0 75.92 : 110.41	97.2 70.95 : 113.07
Hexachlorobutadiene	TM116	71.8 14.55 : 147.92	73.2 12.82 : 152.73	69.4 14.55 : 147.92
Isopropylbenzene	TM116	86.0 52.00 : 108.19	73.0 55.79 : 97.59	85.2 52.00 : 108.19
Naphthalene	TM116	101.8 80.29 : 135.77	103.8 80.86 : 128.81	98.4 80.29 : 135.77
o-Xylene	TM116	89.0 64.92 : 98.85	81.0 69.99 : 108.74	90.4 64.92 : 98.85



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VOC MS (S)

		QC 2246	QC 2283	QC 2217
p/m-Xylene	TM116	91.0 72.04 : 104.04	84.3 68.32 : 108.91	95.4 72.04 : 104.04
Sec-Butylbenzene	TM116	82.4 27.03 : 135.73	72.8 38.50 : 101.50	79.4 27.03 : 135.73
Tetrachloroethene	TM116	104.0 81.43 : 126.65	94.6 76.95 : 121.02	110.0 81.43 : 126.65
Toluene	TM116	96.6 82.44 : 103.50	88.2 74.24 : 107.42	95.6 82.44 : 103.50
Trichloroethene	TM116	101.4 79.80 : 112.33	94.6 77.61 : 111.54	100.0 79.80 : 112.33
Trichlorofluoromethane	TM116	105.2 86.68 : 126.82	104.2 84.55 : 133.27	105.8 86.68 : 126.82
Vinyl Chloride	TM116	103.6 69.66 : 136.55	106.0 68.02 : 143.37	101.6 69.66 : 136.55

The above information details the reference name of the analytical quality control sample (AQC) that has been run with the samples contained in this report for the different methods of analysis .

The figure detailed is the percentage recovery result for the AQC .

The subscript numbers below are the percentage recovery lower control limit (LCL) and the upper control limit (UCL). The percentage recovery result for the AQC should be between these limits to be statistically in control .



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Appendix

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

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

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

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

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

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

7. Results relate only to the items tested.

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

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

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

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

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

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

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

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

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

General

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

18. Sample Deviations

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

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
§	Sampled on date not provided
◆	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples

19. Asbestos

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

Identification of Asbestos in Bulk Materials & Soils

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

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

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

Visual Estimation Of Fibre Content

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

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.
Standing Committee of Analysts, *The Quantification of Asbestos in Soil* (2017).

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

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



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WYG Geo-Environment
Quay West at Media City UK
Trafford Warf Palk
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Lancashire
M17 1HH

Attention: Sara Brennan

CERTIFICATE OF ANALYSIS

Date of report Generation: 29 September 2020
Customer: WYG Geo-Environment
Sample Delivery Group (SDG): 200919-14
Your Reference: A114312-1
Location: Leconfield Industrial Estate
Report No: 569154

This report has been revised and directly supersedes 568932 in its entirety.

We received 7 samples on Saturday September 19, 2020 and 7 of these samples were scheduled for analysis which was completed on Tuesday September 29, 2020. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

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

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

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Sonia McWhan

Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 200919-14

Client Reference: A114312-1

Report Number: 569154

Location: Leconfield Industrial Estate

Order Number: A114312-1

Superseded Report: 568932

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
22858484	CP102	EW1	0.00 - 0.00	18/09/2020
22858514	CP104	EW1	0.00 - 0.00	18/09/2020
22858473	RBH101	EW1	0.00 - 0.00	18/09/2020
22858503	RBH107	EW1	0.00 - 0.00	18/09/2020
22858535	RBH109	EW1	0.00 - 0.00	18/09/2020
22858526	WS108	EW1	0.00 - 0.00	18/09/2020
22858495	WS109	EW1	0.00 - 0.00	18/09/2020

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



CERTIFICATE OF ANALYSIS

Validated

SDG: 200919-14 Client Reference: A114312-1 Report Number: 569154
Location: Leconfield Industrial Estate Order Number: A114312-1 Superseded Report: 568932

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

Results Legend	Lab Sample No(s)		22858484	22858514	22858526	22858495
	Customer Sample Reference		CP102	CP104	WS108	WS109
	AGS Reference		EW1	EW1	EW1	EW1
	Depth (m)		0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
	Container		0.5l glass bottle (ALE227)	0.5l glass bottle (ALE227)	0.5l glass bottle (ALE227)	0.5l glass bottle (ALE227)
	Sample Type		GW	GW	GW	GW
Alkalinity as CaCO ₃	All	NDPs: 0 Tests: 4	X	X	X	
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 4		X	X	
Anions by Kone (w)	All	NDPs: 0 Tests: 4	X	X	X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 4				X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 4		X		
Dissolved Organic/Inorganic Carbon	All	NDPs: 0 Tests: 4	X		X	X
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 4	X	X	X	X
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 4	X	X	X	X
GRO by GC-FID (W)	All	NDPs: 0 Tests: 4		X		X
Mercury Dissolved	All	NDPs: 0 Tests: 4				
Nitrite by Kone (w)	All	NDPs: 0 Tests: 4				
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 4	X	X	X	X
pH Value	All	NDPs: 0 Tests: 4	X	X	X	
Phenols by HPLC (W)	All	NDPs: 0 Tests: 4		X		
SVOC MS (W) - Aqueous	All	NDPs: 0 Tests: 4	X	X	X	X



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SDG: 200919-14 Client Reference: A114312-1 Report Number: 569154
Location: Leconfield Industrial Estate Order Number: A114312-1 Superseded Report: 568932

SVOC MS (W) - Aqueous

Results Legend			Customer Sample Ref.		CP102	CP104	WS108	WS109		
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
M	mCERTS accredited.				Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)		
aq	Aqueous / settled sample.				18/09/2020	18/09/2020	18/09/2020	18/09/2020		
diss.filt	Dissolved / filtered sample.				19/09/2020	19/09/2020	19/09/2020	19/09/2020		
tot.unfilt	Total / unfiltered sample.				200919-14	200919-14	200919-14	200919-14		
+	Subcontracted - refer to subcontractor report for accreditation status.				22858484	22858514	22858526	22858495		
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery				EW1	EW1	EW1	EW1		
(F)	Trigger breach confirmed									
1-3*5@	Sample deviation (see appendix)									
Component	LOD/Units	Method								
1,2,4-Trichlorobenzene (aq)	<1 µg/l	TM176			<1	<1	<50	<50		
					#	#	#	#		
1,2-Dichlorobenzene (aq)	<1 µg/l	TM176			<1	<1	<50	<50		
					#	#	#	#		
1,3-Dichlorobenzene (aq)	<1 µg/l	TM176			<1	<1	<50	<50		
					#	#	#	#		
1,4-Dichlorobenzene (aq)	<1 µg/l	TM176			<1	<1	<50	<50		
					#	#	#	#		
2,4,5-Trichlorophenol (aq)	<1 µg/l	TM176			<1	<1	<50	<50		
					#	#	#	#		
2,4,6-Trichlorophenol (aq)	<1 µg/l	TM176			<1	<1	<50	<50		
					#	#	#	#		
2,4-Dichlorophenol (aq)	<1 µg/l	TM176			<1	<1	<50	<50		
					#	#	#	#		
2,4-Dimethylphenol (aq)	<1 µg/l	TM176			<1	<1	<50	<50		
					#	#	#	#		
2,4-Dinitrotoluene (aq)	<1 µg/l	TM176			<1	<1	<50	<50		
					#	#	#	#		
2,6-Dinitrotoluene (aq)	<1 µg/l	TM176			<1	<1	<50	<50		
					#	#	#	#		
2-Chloronaphthalene (aq)	<1 µg/l	TM176			<1	<1	<50	<50		
					#	#	#	#		
2-Chlorophenol (aq)	<1 µg/l	TM176			<1	<1	<50	<50		
					#	#	#	#		
2-Methylnaphthalene (aq)	<1 µg/l	TM176			<1	<1	<50	<50		
					#	#	#	#		
2-Methylphenol (aq)	<1 µg/l	TM176			<1	<1	<50	<50		
					#	#	#	#		
2-Nitroaniline (aq)	<1 µg/l	TM176			<1	<1	<50	<50		
					#	#	#	#		
2-Nitrophenol (aq)	<1 µg/l	TM176			<1	<1	<50	<50		
					#	#	#	#		
3-Nitroaniline (aq)	<1 µg/l	TM176			<1	<1	<50	<50		
					#	#	#	#		
4-Bromophenylphenylether (aq)	<1 µg/l	TM176			<1	<1	<50	<50		
					#	#	#	#		
4-Chloro-3-methylphenol (aq)	<1 µg/l	TM176			<1	<1	<50	<50		
					#	#	#	#		
4-Chloroaniline (aq)	<1 µg/l	TM176			<1	<1	<50	<50		
4-Chlorophenylphenylether (aq)	<1 µg/l	TM176			<1	<1	<50	<50		
					#	#	#	#		
4-Methylphenol (aq)	<1 µg/l	TM176			<1	<1	<50	<50		
					#	#	#	#		
4-Nitroaniline (aq)	<1 µg/l	TM176			<1	<1	<50	<50		
					#	#	#	#		
4-Nitrophenol (aq)	<1 µg/l	TM176			<1	<1	<50	<50		
Azobenzene (aq)	<1 µg/l	TM176			<1	<1	<50	<50		
					#	#	#	#		
bis(2-Chloroethyl)ether (aq)	<1 µg/l	TM176			<1	<1	<50	<50		
					#	#	#	#		
bis(2-Chloroethoxy)methane (aq)	<1 µg/l	TM176			<1	<1	<50	<50		
					#	#	#	#		
bis(2-Ethylhexyl) phthalate (aq)	<2 µg/l	TM176			5.84	2.85	<100	<100		
					#	#	#	#		
Butylbenzyl phthalate (aq)	<1 µg/l	TM176			<1	<1	<50	<50		
					#	#	#	#		
Benzo(k)fluoranthene (aq)	<1 µg/l	TM176			<1	<1	<50	<50		
					#	#	#	#		
Carbazole (aq)	<1 µg/l	TM176			<1	<1	<50	<50		
					#	#	#	#		
Dibenzofuran (aq)	<1 µg/l	TM176			<1	<1	<50	<50		
					#	#	#	#		
n-Dibutyl phthalate (aq)	<1 µg/l	TM176			<1	<1	<50	<50		
					#	#	#	#		



CERTIFICATE OF ANALYSIS

Validated

SDG: 200919-14 Client Reference: A114312-1 Report Number: 569154
Location: Leconfield Industrial Estate Order Number: A114312-1 Superseded Report: 568932

TPH CWG (W)

Results Legend			Customer Sample Ref.		CP102	CP104	WS108	WS109		
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	CP102	CP104	WS108	WS109			
M	mCERTS accredited.									
aq	Aqueous / settled sample.									
diss.filt	Dissolved / filtered sample.									
tot.unfilt	Total / unfiltered sample.									
*	Subcontracted - refer to subcontractor report for accreditation status.									
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery									
(F)	Trigger breach confirmed									
1-3*5@	Sample deviation (see appendix)									
Component	LOD/Units	Method								
GRO Surrogate % recovery**	%	TM245		93	102	103	94			
GRO >C5-C12	<50 µg/l	TM245		<50	<50	<50	<50			
				#	#	#	#			
Methyl tertiary butyl ether (MTBE)	<3 µg/l	TM245		<3	<3	<3	<3			
				#	#	#	#			
Benzene	<7 µg/l	TM245		<7	<7	<7	<7			
				#	#	#	#			
Toluene	<4 µg/l	TM245		<4	<4	<4	<4			
				#	#	#	#			
Ethylbenzene	<5 µg/l	TM245		<5	<5	<5	<5			
				#	#	#	#			
m,p-Xylene	<8 µg/l	TM245		<8	<8	<8	<8			
				#	#	#	#			
o-Xylene	<3 µg/l	TM245		<3	<3	<3	<3			
				#	#	#	#			
Sum of detected Xylenes	<11 µg/l	TM245		<11	<11	<11	<11			
Sum of detected BTEX	<28 µg/l	TM245		<28	<28	<28	<28			
Aliphatics >C5-C6	<10 µg/l	TM245		<10	<10	<10	<10			
Aliphatics >C6-C8	<10 µg/l	TM245		<10	<10	<10	<10			
Aliphatics >C8-C10	<10 µg/l	TM245		<10	<10	<10	<10			
Aliphatics >C10-C12	<10 µg/l	TM245		<10	<10	<10	<10			
Aliphatics >C12-C16 (aq)	<10 µg/l	TM174		<10	<10	103	51			
Aliphatics >C16-C21 (aq)	<10 µg/l	TM174		<10	<10	526	73			
Aliphatics >C21-C35 (aq)	<10 µg/l	TM174		14	120	11100	675			
Total Aliphatics >C12-C35 (aq)	<10 µg/l	TM174		14	120	11700	799			
Aromatics >EC5-EC7	<10 µg/l	TM245		<10	<10	<10	<10			
Aromatics >EC7-EC8	<10 µg/l	TM245		<10	<10	<10	<10			
Aromatics >EC8-EC10	<10 µg/l	TM245		<10	<10	<10	<10			
Aromatics >EC10-EC12	<10 µg/l	TM245		<10	<10	<10	<10			
Aromatics >EC12-EC16 (aq)	<10 µg/l	TM174		<10	<10	112	38			
Aromatics >EC16-EC21 (aq)	<10 µg/l	TM174		<10	<10	234	37			
Aromatics >EC21-EC35 (aq)	<10 µg/l	TM174		17	<10	2750	206			
Total Aromatics >EC12-EC35 (aq)	<10 µg/l	TM174		17	<10	3100	281			
Total Aliphatics & Aromatics >C5-35 (aq)	<10 µg/l	TM174		31	120	14800	1080			
Aliphatics >C16-C35 Aqueous	<10 µg/l	TM174		14	120	11600	748			



CERTIFICATE OF ANALYSIS

Validated

SDG: 200919-14 Client Reference: A114312-1 Report Number: 569154
Location: Leconfield Industrial Estate Order Number: A114312-1 Superseded Report: 568932

VOC MS (W)

Results Legend			Customer Sample Ref.		CP102	CP104	WS108	WS109		
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
M	mCERTS accredited.				Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)		
aq	Aqueous / settled sample.				18/09/2020	18/09/2020	18/09/2020	18/09/2020		
diss.filt	Dissolved / filtered sample.				19/09/2020	19/09/2020	19/09/2020	19/09/2020		
tot.unfilt	Total / unfiltered sample.				200919-14	200919-14	200919-14	200919-14		
*	Subcontracted - refer to subcontractor report for accreditation status.				22858484	22858514	22858526	22858495		
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery				EW1	EW1	EW1	EW1		
(F)	Trigger breach confirmed									
1-3*5@	Sample deviation (see appendix)									
Component	LOD/Units	Method								
Dibromofluoromethane**	%	TM208			107	106	107	108		
Toluene-d8**	%	TM208			95.8	95.5	95.9	95.9		
4-Bromofluorobenzene**	%	TM208			96.3	95.4	97.2	96.5		
Dichlorodifluoromethane	<1 µg/l	TM208			<1	<1	<1	<1		
Chloromethane	<1 µg/l	TM208			#	#	#	#		
Vinyl chloride	<1 µg/l	TM208			#	#	#	#		
Bromomethane	<1 µg/l	TM208			#	#	#	#		
Chloroethane	<1 µg/l	TM208			#	#	#	#		
Trichlorofluoromethane	<1 µg/l	TM208			#	#	#	#		
1,1-Dichloroethene	<1 µg/l	TM208			#	#	#	#		
Carbon disulphide	<1 µg/l	TM208			#	#	#	#		
Dichloromethane	<3 µg/l	TM208			#	#	#	#		
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208			#	#	#	#		
trans-1,2-Dichloroethene	<1 µg/l	TM208			#	#	#	#		
1,1-Dichloroethane	<1 µg/l	TM208			#	#	#	#		
cis-1,2-Dichloroethene	<1 µg/l	TM208			#	#	#	#		
2,2-Dichloropropane	<1 µg/l	TM208								
Bromochloromethane	<1 µg/l	TM208			#	#	#	#		
Chloroform	<1 µg/l	TM208			#	#	#	#		
1,1,1-Trichloroethane	<1 µg/l	TM208			#	#	#	#		
1,1-Dichloropropene	<1 µg/l	TM208			#	#	#	#		
Carbontetrachloride	<1 µg/l	TM208			#	#	#	#		
1,2-Dichloroethane	<1 µg/l	TM208			#	#	#	#		
Benzene	<1 µg/l	TM208			#	#	#	#		
Trichloroethene	<1 µg/l	TM208			#	#	#	#		
1,2-Dichloropropane	<1 µg/l	TM208			#	#	#	#		
Dibromomethane	<1 µg/l	TM208			#	#	#	#		
Bromodichloromethane	<1 µg/l	TM208			#	#	#	#		
cis-1,3-Dichloropropene	<1 µg/l	TM208			#	#	#	#		
Toluene	<1 µg/l	TM208			#	#	#	#		
trans-1,3-Dichloropropene	<1 µg/l	TM208			#	#	#	#		
1,1,2-Trichloroethane	<1 µg/l	TM208			#	#	#	#		
1,3-Dichloropropane	<1 µg/l	TM208			#	#	#	#		



CERTIFICATE OF ANALYSIS

Validated

SDG: 200919-14 Client Reference: A114312-1 Report Number: 569154
Location: Leconfield Industrial Estate Order Number: A114312-1 Superseded Report: 568932

VOC MS (W)

Results Legend			Customer Sample Ref.		CP102	CP104	WS108	WS109		
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
M	mCERTS accredited.				Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)		
sq	Aqueous / settled sample.				18/09/2020	18/09/2020	18/09/2020	18/09/2020		
diss.filt	Dissolved / filtered sample.									
tot.unfilt	Total / unfiltered sample.				19/09/2020	19/09/2020	19/09/2020	19/09/2020		
*	Subcontracted - refer to subcontractor report for accreditation status.				200919-14	200919-14	200919-14	200919-14		
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery				22858484	22858514	22858526	22858495		
(F)	Trigger breach confirmed				EW1	EW1	EW1	EW1		
1-3+5@	Sample deviation (see appendix)									
Component	LOD/Units	Method								
Tetrachloroethene	<1 µg/l	TM208			<1	<1	<1	<1		
					#	#	#	#		
Dibromochloromethane	<1 µg/l	TM208			<1	<1	<1	<1		
					#	#	#	#		
1,2-Dibromoethane	<1 µg/l	TM208			<1	<1	<1	<1		
					#	#	#	#		
Chlorobenzene	<1 µg/l	TM208			<1	<1	<1	<1		
					#	#	#	#		
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208			<1	<1	<1	<1		
					#	#	#	#		
Ethylbenzene	<1 µg/l	TM208			<1	<1	<1	<1		
					#	#	#	#		
m,p-Xylene	<1 µg/l	TM208			<1	<1	<1	<1		
					#	#	#	#		
o-Xylene	<1 µg/l	TM208			<1	<1	<1	<1		
					#	#	#	#		
Styrene	<1 µg/l	TM208			<1	<1	<1	<1		
					#	#	#	#		
Bromoform	<1 µg/l	TM208			<1	<1	<1	<1		
					#	#	#	#		
Isopropylbenzene	<1 µg/l	TM208			<1	<1	<1	<1		
					#	#	#	#		
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208			<1	<1	<1	<1		
					#	#	#	#		
1,2,3-Trichloropropane	<1 µg/l	TM208			<1	<1	<1	<1		
					#	#	#	#		
Bromobenzene	<1 µg/l	TM208			<1	<1	<1	<1		
					#	#	#	#		
Propylbenzene	<1 µg/l	TM208			<1	<1	<1	<1		
					#	#	#	#		
2-Chlorotoluene	<1 µg/l	TM208			<1	<1	<1	<1		
					#	#	#	#		
1,3,5-Trimethylbenzene	<1 µg/l	TM208			<1	<1	<1	<1		
					#	#	#	#		
4-Chlorotoluene	<1 µg/l	TM208			<1	<1	<1	<1		
					#	#	#	#		
tert-Butylbenzene	<1 µg/l	TM208			<1	<1	<1	<1		
					#	#	#	#		
1,2,4-Trimethylbenzene	<1 µg/l	TM208			<1	<1	<1	<1		
					#	#	#	#		
sec-Butylbenzene	<1 µg/l	TM208			<1	<1	<1	<1		
					#	#	#	#		
4-iso-Propyltoluene	<1 µg/l	TM208			<1	<1	<1	<1		
					#	#	#	#		
1,3-Dichlorobenzene	<1 µg/l	TM208			<1	<1	<1	<1		
					#	#	#	#		
1,4-Dichlorobenzene	<1 µg/l	TM208			<1	<1	<1	<1		
					#	#	#	#		
n-Butylbenzene	<1 µg/l	TM208			<1	<1	<1	<1		
					#	#	#	#		
1,2-Dichlorobenzene	<1 µg/l	TM208			<1	<1	<1	<1		
					#	#	#	#		
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208			<1	<1	<1	<1		
1,2,4-Trichlorobenzene	<1 µg/l	TM208			<1	<1	<1	<1		
					#	#	#	#		
Hexachlorobutadiene	<1 µg/l	TM208			<1	<1	<1	<1		
					#	#	#	#		
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208			<1	<1	<1	<1		
					#	#	#	#		
Naphthalene	<1 µg/l	TM208			<1	<1	<1	<1		
					#	#	#	#		
1,2,3-Trichlorobenzene	<1 µg/l	TM208			<1	<1	<1	<1		
					#	#	#	#		
1,3,5-Trichlorobenzene	<1 µg/l	TM208			<1	<1	<1	<1		



VOC MS (W)

15:54:41 29/09/2020



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SDG:	200919-14	Client Reference:	A114312-1	Report Number:	569154
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Table of Results - Appendix

Method No	Reference	Description
TM043	Method 2320B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part109 1984	Determination of alkalinity in aqueous samples
TM090	Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM176	EPA 8270D Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of SVOCs in Water by GCMS
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
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
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM208	Modified: US EPA Method 8260b & 624	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters
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
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
TM259	by HPLC	Determination of Phenols in Waters and Leachates by HPLC

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).



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Test Completion Dates

Lab Sample No(s)	22858484	22858514	22858526	22858495
Customer Sample Ref.	CP102	CP104	WS108	WS109
AGS Ref.	EW1	EW1	EW1	EW1
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Ground Water	Ground Water	Ground Water	Ground Water
Alkalinity as CaCO ₃	23-Sep-2020	23-Sep-2020	24-Sep-2020	23-Sep-2020
Ammoniacal Nitrogen	24-Sep-2020	24-Sep-2020	24-Sep-2020	25-Sep-2020
Anions by Kone (w)	25-Sep-2020	25-Sep-2020	25-Sep-2020	25-Sep-2020
Cyanide Comp/Free/Total/Thiocyanate	25-Sep-2020	25-Sep-2020	25-Sep-2020	25-Sep-2020
Dissolved Metals by ICP-MS	25-Sep-2020	24-Sep-2020	24-Sep-2020	24-Sep-2020
Dissolved Organic/Inorganic Carbon	26-Sep-2020	26-Sep-2020	26-Sep-2020	26-Sep-2020
EPH CWG (Aliphatic) Aqueous GC (W)	25-Sep-2020	26-Sep-2020	26-Sep-2020	25-Sep-2020
EPH CWG (Aromatic) Aqueous GC (W)	25-Sep-2020	26-Sep-2020	26-Sep-2020	25-Sep-2020
GRO by GC-FID (W)	26-Sep-2020	26-Sep-2020	26-Sep-2020	26-Sep-2020
Mercury Dissolved	25-Sep-2020	25-Sep-2020	25-Sep-2020	25-Sep-2020
Nitrite by Kone (w)	24-Sep-2020	25-Sep-2020	24-Sep-2020	25-Sep-2020
PAH Spec MS - Aqueous (W)	28-Sep-2020	28-Sep-2020	28-Sep-2020	28-Sep-2020
pH Value	24-Sep-2020	24-Sep-2020	24-Sep-2020	24-Sep-2020
Phenols by HPLC (W)	25-Sep-2020	25-Sep-2020	25-Sep-2020	25-Sep-2020
SVOC MS (W) - Aqueous	29-Sep-2020	29-Sep-2020	29-Sep-2020	29-Sep-2020
TPH CWG (W)	26-Sep-2020	26-Sep-2020	26-Sep-2020	26-Sep-2020
VOC MS (W)	25-Sep-2020	25-Sep-2020	25-Sep-2020	25-Sep-2020



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ASSOCIATED AQC DATA

Alkalinity as CaCO₃

Component	Method Code	QC 2286	QC 2208
Total Alkalinity as CaCO ₃	TM043	101.01 96.40 : 105.98	98.48 96.40 : 105.98

Ammoniacal Nitrogen

Component	Method Code	QC 2257	QC 2217
Ammoniacal Nitrogen as N	TM099	100.0 93.14 : 108.60	99.2 93.14 : 108.60

Anions by Kone (w)

Component	Method Code	QC 2270	QC 2287
Chloride	TM184	99.0 94.04 : 108.61	100.0 94.04 : 108.61
Sulphate (soluble)	TM184	99.6 91.99 : 109.30	101.2 91.99 : 109.30
TON as NO ₃	TM184	104.5 92.98 : 109.90	103.0 92.98 : 109.90

Cyanide Comp/Free/Total/Thiocyanate

Component	Method Code	QC 2213	QC 2252
Free Cyanide (W)	TM227	106.75 90.50 : 114.50	105.75 90.50 : 114.50
Thiocyanate (W)	TM227	102.75 90.50 : 113.00	104.25 90.50 : 113.00
Total Cyanide (W)	TM227	103.5 91.75 : 112.75	104.25 91.75 : 112.75

Dissolved Metals by ICP-MS

Component	Method Code	QC 2261	QC 2207	QC 2204
Aluminium	TM152	102.0 94.21 : 111.52	101.33 94.21 : 111.52	100.0 94.21 : 111.52
Antimony	TM152	99.83 88.37 : 130.57	97.5 88.37 : 130.57	98.67 88.37 : 130.57
Arsenic	TM152	98.67 92.62 : 113.52	97.33 92.62 : 113.52	98.83 92.62 : 113.52
Barium	TM152	102.67 88.62 : 113.14	101.0 88.62 : 113.14	102.83 88.62 : 113.14
Beryllium	TM152	95.67 89.98 : 116.88	95.33 89.98 : 116.88	93.0 89.98 : 116.88
Bismuth	TM152	100.17 92.62 : 115.02	98.33 92.62 : 115.02	98.5 92.62 : 115.02
Boron	TM152	103.67 86.31 : 120.88	102.33 86.31 : 120.88	99.67 86.31 : 120.88



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Dissolved Metals by ICP-MS

		QC 2261	QC 2207	QC 2204
Cadmium	TM152	102.33 93.85 : 111.65	102.67 93.85 : 111.65	99.5 93.85 : 111.65
Calcium	TM152	100.67 89.20 : 126.91	100.0 89.20 : 126.91	101.33 89.20 : 126.91
Chromium	TM152	100.67 92.22 : 109.85	100.33 92.22 : 109.85	100.67 92.22 : 109.85
Cobalt	TM152	99.5 85.01 : 114.87	97.5 85.01 : 114.87	97.83 85.01 : 114.87
Copper	TM152	102.33 89.87 : 119.73	101.17 89.87 : 119.73	101.83 89.87 : 119.73
Iron	TM152	100.0 93.02 : 113.86	98.67 93.02 : 113.86	99.33 93.02 : 113.86
Lead	TM152	103.5 91.11 : 116.98	101.83 91.11 : 116.98	102.17 91.11 : 116.98
Lithium	TM152	102.67 91.30 : 123.00	100.67 91.30 : 123.00	99.17 91.30 : 123.00
Magnesium	TM152	97.33 89.60 : 116.61	96.67 89.60 : 116.61	97.33 89.60 : 116.61
Manganese	TM152	100.67 93.97 : 112.46	99.83 93.97 : 112.46	100.0 93.97 : 112.46
Molybdenum	TM152	97.83 89.07 : 110.96	95.5 89.07 : 110.96	97.67 89.07 : 110.96
Nickel	TM152	102.17 93.70 : 112.15	100.33 93.70 : 112.15	100.33 93.70 : 112.15
Phosphorus	TM152	101.0 89.24 : 114.18	98.17 89.24 : 114.18	98.83 89.24 : 114.18
Potassium	TM152	100.0 93.20 : 115.55	99.33 93.20 : 115.55	100.67 93.20 : 115.55
Selenium	TM152	98.67 91.69 : 117.12	95.83 91.69 : 117.12	98.33 91.69 : 117.12
Silver	TM152	101.17 90.93 : 121.73	99.67 90.93 : 121.73	101.17 90.93 : 121.73
Sodium	TM152	99.33 92.42 : 113.24	98.67 92.42 : 113.24	99.33 92.42 : 113.24
Strontium	TM152	102.67 92.14 : 116.24	99.67 92.14 : 116.24	102.0 92.14 : 116.24
Tellurium	TM152	97.67 89.88 : 111.78	96.83 89.88 : 111.78	97.83 89.88 : 111.78
Thallium	TM152	97.0 82.43 : 113.83	96.0 82.43 : 113.83	95.83 82.43 : 113.83
Tin	TM152	102.17 94.62 : 107.79	99.67 94.62 : 107.79	101.33 94.62 : 107.79
Titanium	TM152	102.33 90.29 : 115.23	101.0 90.29 : 115.23	100.17 90.29 : 115.23
Tungsten	TM152	100.17 77.61 : 132.31	99.17 77.61 : 132.31	101.17 77.61 : 132.31
Uranium	TM152	100.67 86.97 : 115.76	98.33 86.97 : 115.76	99.17 86.97 : 115.76
Vanadium	TM152	103.0 89.61 : 115.48	104.67 89.61 : 115.48	103.17 89.61 : 115.48
Zinc	TM152	101.67 87.51 : 116.26	101.0 87.51 : 116.26	101.0 87.51 : 116.26

Dissolved Organic/Inorganic Carbon



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Dissolved Organic/Inorganic Carbon

Component	Method Code	QC 2291
Dissolved Inorganic Carbon	TM090	105.83 91.27 : 109.87
Dissolved Organic Carbon	TM090	102.5 96.58 : 107.98

EPH CWG (Aliphatic) Aqueous GC (W)

Component	Method Code	QC 2247	QC 2258	QC 2275
Total Aliphatics >C10-C40	TM174	97.03 65.58 : 141.57	103.96 65.58 : 141.57	85.64 69.79 : 134.39

EPH CWG (Aromatic) Aqueous GC (W)

Component	Method Code	QC 2276	QC 2286	QC 2209
Total Aromatics >EC10-EC40	TM174	98.78 60.75 : 129.09	91.95 60.75 : 129.09	94.39 59.92 : 128.54

GRO by GC-FID (W)

Component	Method Code	QC 2291
Benzene by GC	TM245	95.0 83.48 : 117.21
Ethylbenzene by GC	TM245	98.5 84.11 : 114.89
m & p Xylene by GC	TM245	96.5 83.73 : 116.33
MTBE GC-FID	TM245	96.5 84.42 : 117.50
o Xylene by GC	TM245	97.0 85.03 : 117.59
QC	TM245	93.83 60.71 : 137.65
Toluene by GC	TM245	96.0 84.73 : 116.85

Mercury Dissolved

Component	Method Code	QC 2244	QC 2278	QC 2211
Mercury Dissolved (CVAf)	TM183	90.6 69.30 : 128.70	93.4 69.30 : 128.70	103.0 69.30 : 128.70

PAH Spec MS - Aqueous (W)



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PAH Spec MS - Aqueous (W)

Component	Method Code	QC 2201	QC 2287	QC 2234
Acenaphthene by GCMS	TM178	109.2 90.45 : 118.63	108.0 97.60 : 116.80	110.4 97.60 : 116.80
Acenaphthylene by GCMS	TM178	110.8 90.13 : 116.27	106.8 89.20 : 113.20	108.4 89.20 : 113.20
Anthracene by GCMS	TM178	104.4 92.40 : 114.00	105.2 92.40 : 116.40	102.8 92.40 : 116.40
Benz(a)anthracene by GCMS	TM178	100.0 89.51 : 117.69	99.2 84.40 : 110.80	98.8 84.40 : 110.80
Benzo(a)pyrene by GCMS	TM178	103.6 89.43 : 118.57	101.2 87.20 : 106.40	102.0 87.20 : 106.40
Benzo(b)fluoranthene by GCMS	TM178	106.0 87.80 : 121.80	93.6 84.80 : 111.20	94.8 84.80 : 111.20
Benzo(ghi)perylene by GCMS	TM178	100.4 87.10 : 119.30	108.4 93.60 : 112.80	105.2 93.60 : 112.80
Benzo(k)fluoranthene by GCMS	TM178	106.0 93.23 : 123.57	98.0 90.40 : 119.20	102.4 90.40 : 119.20
Chrysene by GCMS	TM178	103.6 88.68 : 116.92	108.4 96.80 : 113.60	106.8 96.80 : 113.60
Dibenzo(ah)anthracene by GCMS	TM178	96.4 86.24 : 118.56	94.8 88.00 : 112.00	100.4 88.00 : 112.00
Fluoranthene by GCMS	TM178	104.4 86.04 : 121.96	104.4 93.49 : 118.20	109.2 93.49 : 118.20
Fluorene by GCMS	TM178	110.0 90.76 : 121.24	106.8 94.39 : 118.66	110.0 94.39 : 118.66
Indeno(123cd)pyrene by GCMS	TM178	98.4 88.39 : 119.61	102.4 90.40 : 114.40	100.0 90.40 : 114.40
Naphthalene by GCMS	TM178	109.6 89.40 : 121.80	107.6 94.00 : 115.60	111.6 94.00 : 115.60
Phenanthrene by GCMS	TM178	105.6 90.41 : 119.19	106.4 94.80 : 114.00	104.8 94.80 : 114.00
Pyrene by GCMS	TM178	102.8 91.00 : 120.20	109.6 96.40 : 115.60	113.6 96.40 : 115.60

pH Value

Component	Method Code	QC 2255
pH	TM256	101.21 100.13 : 103.37

Phenols by HPLC (W)

Component	Method Code	QC 2295	QC 2262
2,3,5 Trimethyl-Phenol by HPLC (W)	TM259	101.0 91.00 : 109.00	100.0 91.00 : 109.00
2-Isopropyl Phenol by HPLC (W)	TM259	96.0 85.00 : 109.00	95.0 85.00 : 109.00
Cresols by HPLC (W)	TM259	103.0 93.00 : 115.00	103.67 93.00 : 115.00
Napthol by HPLC (W)	TM259	118.0 86.00 : 128.00	120.0 86.00 : 128.00
Phenol by HPLC (W)	TM259	102.0 88.24 : 111.76	106.0 88.24 : 111.76



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Phenols by HPLC (W)

		QC 2295	QC 2262
Xylenols by HPLC (W)	TM259	104.33 93.33 : 107.33	104.17 93.33 : 107.33

SVOC MS (W) - Aqueous

Component	Method Code	QC 2295
4-Bromophenylphenylether	TM176	96.8 52.80 : 111.84
Benzo(a)anthracene	TM176	99.2 59.28 : 107.76
Benzo(a)pyrene	TM176	92.0 54.40 : 105.76
Butylbenzyl phthalate	TM176	96.0 51.68 : 117.92
Hexachlorobutadiene	TM176	81.6 48.64 : 95.68
Naphthalene	TM176	101.6 63.04 : 111.04
Nitrobenzene	TM176	97.6 59.92 : 108.40
Phenol	TM176	66.96 36.88 : 72.40

VOC MS (W)

Component	Method Code	QC 2249
1,1,1,2-Tetrachloroethane	TM208	93.5 79.47 : 113.27
1,1,1-Trichloroethane	TM208	88.5 81.01 : 112.00
1,1-Dichloroethane	TM208	88.0 82.09 : 116.41
1,2-Dichloroethane	TM208	95.5 80.28 : 123.63
2-Chlorotoluene	TM208	92.0 83.31 : 110.91
4-Chlorotoluene	TM208	92.5 84.01 : 111.46
Benzene	TM208	91.5 87.46 : 118.30
Bromomethane	TM208	92.0 76.99 : 118.39
Carbontetrachloride	TM208	93.5 81.73 : 114.22
Chlorobenzene	TM208	93.5 90.24 : 109.71
Chloroform	TM208	99.0 83.67 : 118.08
Chloromethane	TM208	78.0 70.42 : 127.06
Cis-1,2-Dichloroethene	TM208	98.5 83.95 : 112.60
Dichloromethane	TM208	97.0 81.65 : 120.83



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VOC MS (W)

		QC 2249
Ethylbenzene	TM208	91.0 85.59 : 106.44
Hexachlorobutadiene	TM208	85.0 66.83 : 108.27
o-Xylene	TM208	91.5 78.40 : 110.68
p/m-Xylene	TM208	90.75 82.64 : 112.12
Tert-butyl methyl ether	TM208	88.0 68.23 : 127.69
Tetrachloroethene	TM208	93.5 81.10 : 112.63
Toluene	TM208	90.0 87.40 : 109.78
Trichloroethene	TM208	91.5 81.17 : 111.80
Vinyl Chloride	TM208	81.5 72.73 : 123.40

The above information details the reference name of the analytical quality control sample (AQC) that has been run with the samples contained in this report for the different methods of analysis.

The figure detailed is the percentage recovery result for the AQC.

The subscript numbers below are the percentage recovery lower control limit (LCL) and the upper control limit (UCL). The percentage recovery result for the AQC should be between these limits to be statistically in control.



CERTIFICATE OF ANALYSIS

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Appendix

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

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

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

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

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

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

7. Results relate only to the items tested.

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

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

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

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

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

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

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

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

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

General

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

18. Sample Deviations

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

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
§	Sampled on date not provided
◆	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples

19. Asbestos

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

Identification of Asbestos in Bulk Materials & Soils

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

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

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

Visual Estimation Of Fibre Content

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

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.
Standing Committee of Analysts, *The Quantification of Asbestos in Soil* (2017).

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

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



WYG Geo-Environment
Quay West at Media City UK
Trafford Warf Palk
Manchester
Lancashire
M17 1HH

Attention: Sara Brennan

Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US
Tel: (01244) 528700
Fax: (01244) 528701
email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

CERTIFICATE OF ANALYSIS

Date of report Generation:	30 September 2020
Customer:	WYG Geo-Environment
Sample Delivery Group (SDG):	200922-100
Your Reference:	A114312-1
Location:	Leconfield Industrial Estate
Report No:	569258

We received 3 samples on Saturday September 19, 2020 and 1 of these samples were scheduled for analysis which was completed on Wednesday September 30, 2020. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

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

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

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Sonia McWhan

Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 200922-100

Client Reference: A114312-1

Report Number: 569258

Location: Leconfield Industrial Estate

Order Number: A114312-1

Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
22874859	RBH104	ES1	0.10 - 0.10	17/09/2020
22874863	RBH104	ES2	0.30 - 0.30	17/09/2020
22874871	RBH104	ES3	0.60 - 0.60	17/09/2020

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



CERTIFICATE OF ANALYSIS

Validated

SDG: 200922-100 Client Reference: A114312-1 Report Number: 569258
Location: Leconfield Industrial Estate Order Number: A114312-1 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)

22874863

Customer Sample Reference

RBH104

AGS Reference

ES2

Depth (m)

0.30 - 0.30

Container

60g VOC (ALE215)
250g Amber Jar (ALE210)
1kg TUB with Handle (ALE260)

Sample Type

S S S

Anions by Kone (soil)	All	NDPs: 0 Tests: 1		X	
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 1	X		
Boron Water Soluble	All	NDPs: 0 Tests: 1		X	
Chromium III	All	NDPs: 0 Tests: 1		X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 1		X	
EPH CWG GC (S)	All	NDPs: 0 Tests: 1		X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 1			X
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 1		X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 1		X	
PAH by GCMS	All	NDPs: 0 Tests: 1		X	
pH	All	NDPs: 0 Tests: 1		X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 1		X	
Sample description	All	NDPs: 0 Tests: 1		X	
Semi Volatile Organic Compounds	All	NDPs: 0 Tests: 1		X	
Total Organic Carbon	All	NDPs: 0 Tests: 1		X	



CERTIFICATE OF ANALYSIS

Validated

SDG: 200922-100 Client Reference: A114312-1 Report Number: 569258
Location: Leconfield Industrial Estate Order Number: A114312-1 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)

22874863

Customer Sample Reference

RBH104

AGS Reference

ES2

Depth (m)

0.30 - 0.30

Container

1kg TUB with Handle (ALE260)

250g Amber Jar (ALE210)

60g VOC (ALE215)

Sample Type

S

S

S

TPH CWG GC (S)

All

NDPs: 0
Tests: 1

X

VOC MS (S)

All

NDPs: 0
Tests: 1

X



CERTIFICATE OF ANALYSIS

Validated

SDG: 200922-100

Client Reference: A114312-1

Report Number: 569258

Location: Leconfield Industrial Estate

Order Number: A114312-1

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
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
22874863	RBH104	0.30 - 0.30	Dark Brown	Loamy Sand	Stones	None

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

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring 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

Validated

SDG: 200922-100 Client Reference: A114312-1 Report Number: 569258
Location: Leconfield Industrial Estate Order Number: A114312-1 Superseded Report:

Semi Volatile Organic Compounds

Results Legend			Customer Sample Ref.				
#	ISO17025 accredited.						
M	mCERTS accredited.						
aq	Aqueous / settled sample.						
diss.filt	Dissolved / filtered sample.						
tot.unfilt	Total / unfiltered sample.						
*	Subcontracted - refer to subcontractor report for accreditation status.						
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery						
(F)	Trigger breach confirmed						
1-3*5@	Sample deviation (see appendix)						
Component	LOD/Units	Method	Depth (m)	Sample Type	Date Sampled	Sample Time	Date Received
Phenol	<0.1 mg/kg	TM157	0.30 - 0.30	Soil/Solid (S)	17/09/2020		19/09/2020
Pentachlorophenol	<0.1 mg/kg	TM157					200922-100
n-Nitroso-n-dipropylamine	<0.1 mg/kg	TM157					22874863
Nitrobenzene	<0.1 mg/kg	TM157					ES2
Isophorone	<0.1 mg/kg	TM157					
Hexachloroethane	<0.1 mg/kg	TM157					
Hexachlorocyclopentadiene	<0.1 mg/kg	TM157					
Hexachlorobutadiene	<0.1 mg/kg	TM157					
Hexachlorobenzene	<0.1 mg/kg	TM157					
n-Dioctyl phthalate	<0.1 mg/kg	TM157					
Dimethyl phthalate	<0.1 mg/kg	TM157					
Diethyl phthalate	<0.1 mg/kg	TM157					
n-Dibutyl phthalate	<0.1 mg/kg	TM157					
Dibenzofuran	<0.1 mg/kg	TM157					
Carbazole	<0.1 mg/kg	TM157					
Butylbenzyl phthalate	<0.1 mg/kg	TM157					
bis(2-Ethylhexyl) phthalate	<0.1 mg/kg	TM157					
bis(2-Chloroethoxy)methane	<0.1 mg/kg	TM157					
bis(2-Chloroethyl)ether	<0.1 mg/kg	TM157					
Azobenzene	<0.1 mg/kg	TM157					
4-Nitrophenol	<0.1 mg/kg	TM157					
4-Nitroaniline	<0.1 mg/kg	TM157					
4-Methylphenol	<0.1 mg/kg	TM157					
4-Chlorophenylphenylether	<0.1 mg/kg	TM157					
4-Chloroaniline	<0.1 mg/kg	TM157					
4-Chloro-3-methylphenol	<0.1 mg/kg	TM157					
4-Bromophenylphenylether	<0.1 mg/kg	TM157					
3-Nitroaniline	<0.1 mg/kg	TM157					
2-Nitrophenol	<0.1 mg/kg	TM157					
2-Nitroaniline	<0.1 mg/kg	TM157					
2-Methylphenol	<0.1 mg/kg	TM157					
1,2,4-Trichlorobenzene	<0.1 mg/kg	TM157					
2-Chlorophenol	<0.1 mg/kg	TM157					



CERTIFICATE OF ANALYSIS

Validated

SDG: 200922-100 Client Reference: A114312-1 Report Number: 569258
Location: Leconfield Industrial Estate Order Number: A114312-1 Superseded Report:

VOC MS (S)

Results Legend			Customer Sample Ref.				
#	ISO17025 accredited.		RBH104				
M	mCERTS accredited.						
aq	Aqueous / settled sample.						
diss.filt	Dissolved / filtered sample.						
tot.unfilt	Total / unfiltered sample.						
*	Subcontracted - refer to subcontractor report for accreditation status.						
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery						
(F)	Trigger breach confirmed						
1-3*5@	Sample deviation (see appendix)						
			Depth (m)	0.30 - 0.30			
			Sample Type	Soil/Solid (S)			
			Date Sampled	17/09/2020			
			Sample Time				
			Date Received	19/09/2020			
			SDG Ref	200922-100			
			Lab Sample No.(s)	22874863			
			AGS Reference	ES2			
Component	LOD/Units	Method					
Dibromofluoromethane**	%	TM116	127				
Toluene-d8**	%	TM116	87.8				
4-Bromofluorobenzene**	%	TM116	78.5				
Dichlorodifluoromethane	<0.006 mg/kg	TM116	<0.006				
Chloromethane	<0.007 mg/kg	TM116	<0.007				
Vinyl Chloride	<0.006 mg/kg	TM116	<0.006				
Bromomethane	<0.01 mg/kg	TM116	<0.01				
Chloroethane	<0.01 mg/kg	TM116	<0.01				
Trichlorofluoromethane	<0.006 mg/kg	TM116	<0.006				
1,1-Dichloroethene	<0.01 mg/kg	TM116	<0.01				
Carbon Disulphide	<0.007 mg/kg	TM116	<0.007				
Dichloromethane	<0.01 mg/kg	TM116	<0.01				
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116	<0.01				
trans-1,2-Dichloroethene	<0.01 mg/kg	TM116	<0.01				
1,1-Dichloroethane	<0.008 mg/kg	TM116	<0.008				
cis-1,2-Dichloroethene	<0.006 mg/kg	TM116	<0.006				
2,2-Dichloropropane	<0.01 mg/kg	TM116	<0.01				
Bromochloromethane	<0.01 mg/kg	TM116	<0.01				
Chloroform	<0.008 mg/kg	TM116	<0.008				
1,1,1-Trichloroethane	<0.007 mg/kg	TM116	<0.007				
1,1-Dichloropropene	<0.01 mg/kg	TM116	<0.01				
Carbontetrachloride	<0.01 mg/kg	TM116	<0.01				
1,2-Dichloroethane	<0.005 mg/kg	TM116	<0.005				
Benzene	<0.009 mg/kg	TM116	<0.009				
Trichloroethene	<0.009 mg/kg	TM116	<0.009				
1,2-Dichloropropane	<0.01 mg/kg	TM116	<0.01				
Dibromomethane	<0.009 mg/kg	TM116	<0.009				
Bromodichloromethane	<0.007 mg/kg	TM116	<0.007				
cis-1,3-Dichloropropene	<0.01 mg/kg	TM116	<0.01				
Toluene	<0.007 mg/kg	TM116	<0.007				
trans-1,3-Dichloropropene	<0.01 mg/kg	TM116	<0.01				
1,1,2-Trichloroethane	<0.01 mg/kg	TM116	<0.01				
1,3-Dichloropropane	<0.007 mg/kg	TM116	<0.007				



CERTIFICATE OF ANALYSIS

Validated

SDG: 200922-100 Client Reference: A114312-1 Report Number: 569258
Location: Leconfield Industrial Estate Order Number: A114312-1 Superseded Report:

VOC MS (S)

Results Legend		Customer Sample Ref.	RBH104				
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.30 - 0.30 Soil/Solid (S) 17/09/2020 19/09/2020 200922-100 22874863 ES2				
M	mCERTS accredited.						
sq	Aqueous / settled sample.						
dis.filt	Dissolved / filtered sample.						
tot.unfilt	Total / unfiltered sample.						
*	Subcontracted - refer to subcontractor report for accreditation status.						
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery						
(F)	Trigger breach confirmed						
1-3+§@	Sample deviation (see appendix)						
Component	LOD/Units	Method					
Tetrachloroethene	<0.005 mg/kg	TM116	<0.005	M			
Dibromochloromethane	<0.01 mg/kg	TM116	<0.01	M			
1,2-Dibromoethane	<0.01 mg/kg	TM116	<0.01	M			
Chlorobenzene	<0.005 mg/kg	TM116	<0.005	M			
1,1,1,2-Tetrachloroethane	<0.01 mg/kg	TM116	<0.01	M			
Ethylbenzene	<0.004 mg/kg	TM116	<0.004	M			
p/m-Xylene	<0.01 mg/kg	TM116	<0.01	#			
o-Xylene	<0.01 mg/kg	TM116	<0.01	M			
Styrene	<0.01 mg/kg	TM116	<0.01	#			
Bromoform	<0.01 mg/kg	TM116	<0.01	M			
Isopropylbenzene	<0.005 mg/kg	TM116	<0.005	#			
1,1,2,2-Tetrachloroethane	<0.01 mg/kg	TM116	<0.01	#			
1,2,3-Trichloropropane	<0.016 mg/kg	TM116	<0.016	M			
Bromobenzene	<0.01 mg/kg	TM116	<0.01	M			
Propylbenzene	<0.01 mg/kg	TM116	<0.01	M			
2-Chlorotoluene	<0.009 mg/kg	TM116	<0.009	M			
1,3,5-Trimethylbenzene	<0.008 mg/kg	TM116	<0.008	M			
4-Chlorotoluene	<0.01 mg/kg	TM116	<0.01	M			
tert-Butylbenzene	<0.014 mg/kg	TM116	<0.014	M			
1,2,4-Trimethylbenzene	<0.009 mg/kg	TM116	<0.009	#			
sec-Butylbenzene	<0.01 mg/kg	TM116	<0.01				
4-Isopropyltoluene	<0.01 mg/kg	TM116	<0.01	M			
1,3-Dichlorobenzene	<0.008 mg/kg	TM116	<0.008	M			
1,4-Dichlorobenzene	<0.005 mg/kg	TM116	<0.005	M			
n-Butylbenzene	<0.011 mg/kg	TM116	<0.011				
1,2-Dichlorobenzene	<0.01 mg/kg	TM116	<0.01	M			
1,2-Dibromo-3-chloropropane	<0.014 mg/kg	TM116	<0.014	M			
Tert-amyl methyl ether	<0.01 mg/kg	TM116	<0.01	#			
1,2,4-Trichlorobenzene	<0.02 mg/kg	TM116	<0.02				
Hexachlorobutadiene	<0.02 mg/kg	TM116	<0.02				
Naphthalene	<0.013 mg/kg	TM116	<0.013	M			
1,2,3-Trichlorobenzene	<0.02 mg/kg	TM116	<0.02	#			
VOC TIC		TM116	Not Detected				



CERTIFICATE OF ANALYSIS

Validated

SDG:	200922-100	Client Reference:	A114312-1	Report Number:	569258
Location:	Leconfield Industrial Estate	Order Number:	A114312-1	Superseded Report:	

Asbestos Identification - Solid Samples

Results Legend

ISO17025 accredited.
M mCERTS accredited.
* Subcontracted test.
(F) Trigger breach confirmed
1-5&*\$\$@ Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref.	RBH104ES2	29/09/2020	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Depth (m)	0.30 - 0.30										
Sample Type	SOLID										
Date Sampled	17/09/2020 00:00:00										
Date Received	19/09/2020 05:00:00										
SDG	200922-100										
Original Sample	22874863										
Method Number	TM048										



CERTIFICATE OF ANALYSIS

Validated

SDG: 200922-100 **Client Reference:** A114312-1 **Report Number:** 569258
Location: Leconfield Industrial Estate **Order Number:** A114312-1 **Superseded Report:**

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser
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
TM157	HP 6890 Gas Chromatograph (GC) system and HP 5973 Mass Selective Detector (MSD).	Determination of SVOC in Soils by GC-MS extracted by sonication in DCM/Acetone
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM222	In-House Method	Determination of Hot Water Soluble Boron in Soils (10:1 Water:soil) by IRIS Emission Spectrometer
TM243		Mixed Anions In Soils By Kone
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

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



CERTIFICATE OF ANALYSIS

Validated

SDG: 200922-100

Client Reference: A114312-1

Report Number: 569258

Location: Leconfield Industrial Estate

Order Number: A114312-1

Superseded Report:

Test Completion Dates

Lab Sample No(s)	22874863
Customer Sample Ref.	RBH104
AGS Ref.	ES2
Depth	0.30 - 0.30
Type	Soil/Solid (S)

Anions by Kone (soil)	29-Sep-2020
Asbestos ID in Solid Samples	29-Sep-2020
Boron Water Soluble	28-Sep-2020
Chromium III	29-Sep-2020
Cyanide Comp/Free/Total/Thiocyanate	29-Sep-2020
EPH CWG GC (S)	29-Sep-2020
GRO by GC-FID (S)	30-Sep-2020
Hexavalent Chromium (s)	29-Sep-2020
Metals in solid samples by OES	28-Sep-2020
PAH by GCMS	28-Sep-2020
pH	28-Sep-2020
Phenols by HPLC (S)	28-Sep-2020
Sample description	24-Sep-2020
Semi Volatile Organic Compounds	28-Sep-2020
Total Organic Carbon	29-Sep-2020
TPH CWG GC (S)	30-Sep-2020
VOC MS (S)	29-Sep-2020



CERTIFICATE OF ANALYSIS

Validated

SDG: 200922-100

Client Reference: A114312-1

Report Number: 569258

Location: Leconfield Industrial Estate

Order Number: A114312-1

Superseded Report:

ASSOCIATED AQC DATA

Anions by Kone (soil)

Component	Method Code	QC 2267
Chloride (soluble)	TM243	155.44 91.77 : 114.35
Water Soluble Sulphate as SO4 2:1 Extract	TM243	158.41 70.00 : 130.00

Boron Water Soluble

Component	Method Code	QC 2204
Water Soluble Boron	TM222	86.5 77.30 : 106.22

Cyanide Comp/Free/Total/Thiocyanate

Component	Method Code	QC 2245
Free Cyanide	TM153	85.84 78.61 : 114.43
Thiocyanate	TM153	97.44 90.48 : 109.52
Total Cyanide	TM153	88.11 76.80 : 112.96

EPH CWG GC (S)

Component	Method Code	QC 2256
EPH >C8-C40 Raw	TM414	98.67 56.39 : 129.94
Total Aliphatics Raw	TM414	105.61 62.55 : 133.12
Total Aromatics Raw	TM414	104.4 57.00 : 150.27

GRO by GC-FID (S)

Component	Method Code	QC 2216
QC	TM089	94.46 70.75 : 114.19

Hexavalent Chromium (s)

Component	Method Code	QC 2263
Hexavalent Chromium	TM151	98.0 95.60 : 107.60



CERTIFICATE OF ANALYSIS

Validated

SDG: 200922-100

Client Reference: A114312-1

Report Number: 569258

Location: Leconfield Industrial Estate

Order Number: A114312-1

Superseded Report:

Metals in solid samples by OES

Component	Method Code	QC 2299
Aluminium	TM181	94.69 73.56 : 108.85
Antimony	TM181	92.68 76.89 : 111.24
Arsenic	TM181	100.29 88.53 : 111.01
Barium	TM181	91.74 77.67 : 105.35
Beryllium	TM181	95.15 85.44 : 109.61
Boron	TM181	83.09 73.51 : 104.66
Cadmium	TM181	86.83 77.67 : 104.12
Chromium	TM181	88.03 86.11 : 106.21
Cobalt	TM181	89.31 84.60 : 104.13
Copper	TM181	89.79 82.40 : 105.45
Iron	TM181	93.65 82.95 : 110.58
Lead	TM181	91.22 78.24 : 104.05
Manganese	TM181	106.94 94.29 : 119.51
Mercury	TM181	90.1 83.16 : 107.81
Molybdenum	TM181	95.06 87.11 : 106.87
Nickel	TM181	88.75 80.26 : 102.28
Phosphorus	TM181	107.47 94.56 : 124.28
Selenium	TM181	96.08 82.28 : 110.48
Strontium	TM181	83.52 79.13 : 102.79
Thallium	TM181	96.02 82.94 : 111.86
Tin	TM181	94.68 86.72 : 110.03
Titanium	TM181	77.1 66.23 : 102.06
Vanadium	TM181	89.01 86.19 : 109.45
Zinc	TM181	94.66 84.68 : 113.99

PAH by GCMS



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SDG: 200922-100

Client Reference: A114312-1

Report Number: 569258

Location: Leconfield Industrial Estate

Order Number: A114312-1

Superseded Report:

PAH by GCMS

Component	Method Code	QC 2265
Acenaphthene	TM218	86.5 76.79 : 103.90
Acenaphthylene	TM218	85.5 78.40 : 108.66
Anthracene	TM218	86.5 70.90 : 109.22
Benz(a)anthracene	TM218	93.5 73.77 : 119.26
Benzo(a)pyrene	TM218	87.0 73.20 : 114.18
Benzo(b)fluoranthene	TM218	86.5 75.36 : 117.58
Benzo(ghi)perylene	TM218	82.5 70.73 : 116.12
Benzo(k)fluoranthene	TM218	88.5 75.98 : 116.59
Chrysene	TM218	88.5 74.82 : 114.18
Dibenzo(ah)anthracene	TM218	82.0 69.17 : 115.30
Fluoranthene	TM218	103.5 75.88 : 112.84
Fluorene	TM218	88.0 76.66 : 107.56
Indeno(123cd)pyrene	TM218	93.0 70.26 : 117.95
Naphthalene	TM218	77.0 74.70 : 101.83
Phenanthrene	TM218	90.0 73.62 : 109.34
Pyrene	TM218	97.5 71.46 : 117.00

pH

Component	Method Code	QC 2270
pH	TM133	100.79 98.47 : 102.33

Phenols by HPLC (S)

Component	Method Code	QC 2237
2,3,5 Trimethyl-Phenol by HPLC (S)	TM062 (S)	111.69 65.50 : 89.50
2-Isopropyl Phenol by HPLC (S)	TM062 (S)	87.72 84.00 : 124.00
Catechol by HPLC (S)	TM062 (S)	7.62 19.39 : 135.70
Cresols by HPLC (S)	TM062 (S)	94.36 81.00 : 112.20
Napthol by HPLC (S)	TM062 (S)	99.29 57.50 : 102.50



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SDG: 200922-100
Location: Leconfield Industrial Estate

Client Reference: A114312-1
Order Number: A114312-1

Report Number: 569258
Superseded Report:

Phenols by HPLC (S)

		QC 2237
Phenol by HPLC (S)	TM062 (S)	103.31 88.67 : 124.67
Resorcinol HPLC (S)	TM062 (S)	93.71 69.99 : 127.22
Xylenols by HPLC (S)	TM062 (S)	98.96 95.22 : 115.89

Semi Volatile Organic Compounds

Component	Method Code	QC 2263
4-Bromophenylphenylether (Soil)	TM157	99.5 66.75 : 125.25
Benzo(a)anthracene (Soil)	TM157	102.0 67.40 : 120.50
Hexachlorobutadiene (Soil)	TM157	105.5 68.25 : 126.75
Naphthalene (Soil)	TM157	102.0 67.55 : 125.45
Nitrobenzene (Soil)	TM157	100.0 66.50 : 123.50
Phenol (Soil)	TM157	102.0 69.92 : 114.02

Total Organic Carbon

Component	Method Code	QC 2228
Total Organic Carbon	TM132	94.92 87.02 : 113.45

VOC MS (S)

Component	Method Code	QC 2219
1,1,1,2-tetrachloroethane	TM116	110.2 79.10 : 119.66
1,1,1-Trichloroethane	TM116	105.4 87.51 : 115.37
1,1,2-Trichloroethane	TM116	105.6 75.16 : 112.70
1,1-Dichloroethane	TM116	112.4 86.77 : 122.11
1,2-Dichloroethane	TM116	114.0 90.04 : 132.28
1,4-Dichlorobenzene	TM116	110.2 80.81 : 125.07
2-Chlorotoluene	TM116	104.8 73.76 : 115.43
4-Chlorotoluene	TM116	100.8 72.48 : 112.82
Benzene	TM116	104.4 84.29 : 112.22
Carbon Disulphide	TM116	114.0 75.11 : 124.81



CERTIFICATE OF ANALYSIS

Validated

SDG: 200922-100 Client Reference: A114312-1 Report Number: 569258
Location: Leconfield Industrial Estate Order Number: A114312-1 Superseded Report:

VOC MS (S)

		QC 2219
Carbontetrachloride	TM116	114.6 82.35 : 126.46
Chlorobenzene	TM116	105.0 82.88 : 122.42
Chloroform	TM116	112.4 90.35 : 120.38
Chloromethane	TM116	134.0 65.80 : 138.88
Cis-1,2-Dichloroethene	TM116	105.2 78.27 : 128.90
Dibromomethane	TM116	108.0 76.00 : 120.73
Dichloromethane	TM116	124.2 91.49 : 127.63
Ethylbenzene	TM116	98.8 70.95 : 113.07
Hexachlorobutadiene	TM116	102.6 14.55 : 147.92
Isopropylbenzene	TM116	90.4 52.00 : 108.19
Naphthalene	TM116	111.6 80.29 : 135.77
o-Xylene	TM116	91.0 64.92 : 98.85
p/m-Xylene	TM116	96.1 72.04 : 104.04
Sec-Butylbenzene	TM116	105.8 27.03 : 135.73
Tetrachloroethene	TM116	106.6 81.43 : 126.65
Toluene	TM116	96.0 82.44 : 103.50
Trichloroethene	TM116	101.6 79.80 : 112.33
Trichlorofluoromethane	TM116	122.4 86.68 : 126.82
Vinyl Chloride	TM116	130.4 69.66 : 136.55

The above information details the reference name of the analytical quality control sample (AQC) that has been run with the samples contained in this report for the different methods of analysis.

The figure detailed is the percentage recovery result for the AQC.

The subscript numbers below are the percentage recovery lower control limit (LCL) and the upper control limit (UCL). The percentage recovery result for the AQC should be between these limits to be statistically in control.



CERTIFICATE OF ANALYSIS

SDG:	200922-100	Client Reference:	A114312-1	Report Number:	569258
Location:	Leconfield Industrial Estate	Order Number:	A114312-1	Superseded Report:	

Appendix

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

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

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

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

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

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

7. Results relate only to the items tested.

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

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

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

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

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

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

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

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

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

General

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

18. Sample Deviations

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

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
§	Sampled on date not provided
◆	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples

19. Asbestos

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

Identification of Asbestos in Bulk Materials & Soils

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

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

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

Visual Estimation Of Fibre Content

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

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Standing Committee of Analysts, *The Quantification of Asbestos in Soil* (2017).

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

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



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WYG Geo-Environment
Quay West at Media City UK
Trafford Warf Palk
Manchester
Lancashire
M17 1HH

Attention: Claire Harrison

CERTIFICATE OF ANALYSIS

Date of report Generation:	29 October 2020
Customer:	WYG Geo-Environment
Sample Delivery Group (SDG):	201015-48
Your Reference:	A114312-1
Location:	Leconfield Industrial Estate
Report No:	573208

We received 5 samples on Wednesday October 14, 2020 and 5 of these samples were scheduled for analysis which was completed on Thursday October 29, 2020. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

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

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

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Sonia McWhan

Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 201015-48

Client Reference: A114312-1

Report Number: 573208

Location: Leconfield Industrial Estate

Order Number:

Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
23035771	CP105	G1	0.00 - 0.00	12/10/2020
23035762	CP106	G1	0.00 - 0.00	12/10/2020
23035759	RBH109	G1	0.00 - 0.00	12/10/2020
23035766	WS105	G1	0.00 - 0.00	12/10/2020
23035769	WS108	G1	0.00 - 0.00	12/10/2020

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



CERTIFICATE OF ANALYSIS

Validated

SDG: 201015-48 Client Reference: A114312-1 Report Number: 573208
Location: Leconfield Industrial Estate Order Number: 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)			23035771	23035762	23035759	23035766	23035769
Customer Sample Reference			CP105	CP106	RBH109	WS105	WS108
AGS Reference			G1	G1	G1	G1	G1
Depth (m)			0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Container			Gas Canister	Gas Canister	Gas Canister	Gas Canister	Gas Canister
Sample Type			G	G	G	G	G
Bulk Gas	All	NDPs: 0 Tests: 5	X	X	X	X	X
Odourant Gas Analysis (G)	All	NDPs: 0 Tests: 5	X	X	X	X	X
VOC's	All	NDPs: 0 Tests: 5	X	X	X	X	X



CERTIFICATE OF ANALYSIS

Validated

SDG: 201015-48 Client Reference: A114312-1 Report Number: 573208
Location: Leconfield Industrial Estate Order Number: Superseded Report:

Sample Number 23035759

Sample ID RBH109 G 1 Depth 0.00 - 0.00 Sampled Date 12/10/2020 00:00:00

Method TM330 Determination of VOC's in atmospheric, sub-slab and soil gas samples Canister No. 10201
Sample Volume (ml) 30 Dispatch pressure (psia) -0.10 Initial pressure (psia) 13.48 Final pressure (psia) 19.40 Dilution 1.4391691395

CAS Number	Compound	LOD	Result	Units	LOD	Result	Units
71-55-6	1,1,1-Trichloroethane	<7.20	<7.20	ppbv	<39.2	<39.1	ug/m ³
79-34-5	1,1,2,2-Tetrachloroethane	<7.20	<7.20	ppbv	<49.5	<49.4	ug/m ³
79-00-5	1,1,2-Trichloroethane	<7.20	<7.20	ppbv	<39.2	<39.1	ug/m ³
75-34-3	1,1-Dichloroethane	<7.20	<7.20	ppbv	<29.2	<29.1	ug/m ³
75-35-4	1,1-Dichloroethene	<7.20	<7.20	ppbv	<28.6	<28.5	ug/m ³
526-73-8	1,2,3-Trimethylbenzene	<7.20	9.38	ppbv	<35.3	46.0	ug/m ³
120-82-1	1,2,4-Trichlorobenzene	<7.20	<7.20	ppbv	<53.3	<53.3	ug/m ³
95-63-6	1,2,4-Trimethylbenzene	<7.20	<7.20	ppbv	<35.3	<35.3	ug/m ³
106-93-4	1,2-Dibromoethane	<7.20	<7.20	ppbv	<55.4	<55.3	ug/m ³
95-50-1	1,2-Dichlorobenzene	<7.20	<7.20	ppbv	<43.3	<43.3	ug/m ³
107-06-2	1,2-Dichloroethane	<7.20	<7.20	ppbv	<29.2	<29.1	ug/m ³
78-87-5	1,2-Dichloropropane	<7.20	<7.20	ppbv	<33.3	<33.3	ug/m ³
76-14-2	1,2-Dichlorotetrafluoroethane	<7.20	<7.20	ppbv	<50.4	<50.3	ug/m ³
108-67-8	1,3,5-Trimethylbenzene	<7.20	<7.20	ppbv	<35.3	<35.3	ug/m ³
106-99-0	1,3-Butadiene	<7.20	<7.20	ppbv	<15.9	<15.9	ug/m ³
106-46-7	1,4-Dichlorobenzene	<7.20	<7.20	ppbv	<43.3	<43.3	ug/m ³
123-91-1	1,4-Dioxane	<7.20	<7.20	ppbv	<25.9	<25.9	ug/m ³
71-23-8	1-Propanol	<7.20	<7.20	ppbv	<17.7	<17.7	ug/m ³
78-93-3	2-Butanone (MEK)	<7.20	<7.20	ppbv	<21.2	<21.2	ug/m ³
591-78-6	2-Hexanone	<7.20	<7.20	ppbv	<29.4	<29.4	ug/m ³
107-87-9	2-Pentanone	<7.20	<7.20	ppbv	<25.3	<25.3	ug/m ³
589-38-8	3-Hexanone	<7.20	<7.20	ppbv	<29.4	<29.4	ug/m ³
96-22-0	3-Pentanone	<7.20	<7.20	ppbv	<25.3	<25.3	ug/m ³
108-10-1	4-Methyl-2-pentanone	<7.20	<7.20	ppbv	<29.4	<29.4	ug/m ³
67-64-1 & 123-38-6	Acetone + Propanal	<14.4	20.9	ppbv	<34.2	49.5	ug/m ³
75-05-8	Acetonitrile	<7.20	<7.20	ppbv	<12.1	<12.1	ug/m ³
107-02-8	Acrolein	<7.20	<7.20	ppbv	<16.5	<16.5	ug/m ³
71-43-2	Benzene	<6.24	<6.24	ppbv	<19.9	<19.9	ug/m ³
100-44-7	Benzyl Chloride	<7.20	<7.20	ppbv	<37.4	<37.4	ug/m ³
75-27-4	Bromodichloromethane	<7.20	<7.20	ppbv	<48.3	<48.3	ug/m ³
75-25-2	Bromoform	<7.20	<7.20	ppbv	<74.5	<74.5	ug/m ³
74-83-9	Bromomethane	<7.20	<7.20	ppbv	<28.0	<28.0	ug/m ³
123-72-8	Butanal	<7.20	<7.20	ppbv	<21.2	<21.2	ug/m ³
75-15-0	Carbon Disulfide	<7.20	255	ppbv	<22.4	793	ug/m ³
56-23-5	Carbon Tetrachloride	<7.20	<7.20	ppbv	<45.3	<45.3	ug/m ³
108-90-7	Chlorobenzene	<7.20	<7.20	ppbv	<33.3	<33.3	ug/m ³
75-00-3	Chloroethane	<7.20	<7.20	ppbv	<19.1	<19.1	ug/m ³
67-66-3	Chloroform	<7.20	<7.20	ppbv	<35.0	<35.0	ug/m ³
74-87-3	Chloromethane	<7.20	<7.20	ppbv	<14.7	<14.7	ug/m ³
156-59-2	cis-1,2-Dichloroethene	<7.20	<7.20	ppbv	<28.6	<28.5	ug/m ³
10061-01-5	cis-1,3-Dichloropropene	<7.20	<7.20	ppbv	<32.7	<32.7	ug/m ³
110-82-7	Cyclohexane	<7.20	<7.20	ppbv	<24.7	<24.7	ug/m ³
75-71-8	Dichlorodifluoromethane	<7.20	<7.20	ppbv	<35.6	<35.6	ug/m ³
75-45-6	Difluorochloromethane	<7.20	<7.20	ppbv	<25.3	<25.3	ug/m ³
100-41-4	Ethylbenzene	<7.20	<7.20	ppbv	<31.2	<31.2	ug/m ³
87-68-3	Hexachlorobutadiene	<7.20	<7.20	ppbv	<76.6	<76.5	ug/m ³
66-25-1	Hexanal	<7.20	<7.20	ppbv	<29.4	<29.4	ug/m ³



CERTIFICATE OF ANALYSIS

Validated

SDG: 201015-48 Client Reference: A114312-1 Report Number: 573208
Location: Leconfield Industrial Estate Order Number: Superseded Report:

Sample Number 23035759

Sample ID RBH109 G 1 Depth 0.00 - 0.00 Sampled Date 12/10/2020 00:00:00

Method TM330 Determination of VOC's in atmospheric, sub-slab and soil gas samples Canister No. 10201
Sample Volume (ml) 30 Dispatch pressure (psia) -0.10 Initial pressure (psia) 13.48 Final pressure (psia) 19.40 Dilution 1.4391691395

CAS Number	Compound	LOD	Result	Units	LOD	Result	Units
110-54-3	Hexane	<7.20	<7.20	ppbv	<25.3	<25.3	ug/m ³
74-88-4	Iodomethane	<7.20	<7.20	ppbv	<41.8	<41.8	ug/m ³
115-11-7	Isobutene	<7.20	401	ppbv	<16.5	918	ug/m ³
78-79-5	Isoprene	<7.20	<7.20	ppbv	<20.0	<20.0	ug/m ³
108-38-3 & 106-42-3	m/p-Xylene	<14.4	<14.4	ppbv	<62.4	<62.4	ug/m ³
78-85-3	Methylacrolein	<7.20	<7.20	ppbv	<20.6	<20.6	ug/m ³
75-09-2	Methylene Chloride	<7.20	9.81	ppbv	<25.0	34.1	ug/m ³
1634-04-4	MTBE	<7.20	<7.20	ppbv	<25.9	<25.9	ug/m ³
91-20-3	Naphthalene	<7.20	70.0	ppbv	<37.7	367	ug/m ³
95-47-6	o-Xylene	<7.20	11.5	ppbv	<31.2	49.8	ug/m ³
110-62-3	Pentanal	<7.20	<7.20	ppbv	<25.3	<25.3	ug/m ³
109-66-0	Pentane	<7.20	<7.20	ppbv	<21.2	<21.2	ug/m ³
100-42-5	Styrene	<7.20	<7.20	ppbv	<30.6	<30.6	ug/m ³
127-18-4	Tetrachloroethene	<7.20	<7.20	ppbv	<48.9	<48.9	ug/m ³
108-88-3	Toluene	<7.20	<7.20	ppbv	<27.1	<27.1	ug/m ³
156-60-5	trans-1,2-Dichloroethene	<7.20	<7.20	ppbv	<28.6	<28.5	ug/m ³
1006-02-6	trans-1,3-Dichloropropene	<7.20	<7.20	ppbv	<32.7	<32.7	ug/m ³
79-01-6	Trichloroethene	<7.20	<7.20	ppbv	<38.6	<38.6	ug/m ³
75-69-4	Trichlorofluoromethane	<7.20	<7.20	ppbv	<40.3	<40.3	ug/m ³
26523-64-8	Trichlorotrifluoroethane	<7.20	<7.20	ppbv	<55.1	<55.0	ug/m ³
108-05-4	Vinyl Acetate	<7.20	<7.20	ppbv	<25.3	<25.3	ug/m ³
75-01-4	Vinyl Chloride	<7.20	<7.20	ppbv	<18.3	<18.2	ug/m ³



CERTIFICATE OF ANALYSIS

Validated

SDG: 201015-48
Location: Leconfield Industrial EstateClient Reference: A114312-1
Order Number:Report Number: 573208
Superseded Report:

Sample Number 23035762

Sample ID CP106 G 1

Depth 0.00 - 0.00

Sampled Date 12/10/2020 00:00:00

Method TM330 Determination of VOC's in atmospheric, sub-slab and soil gas samples

Canister No. 10187

Sample Volume (ml) 120 Dispatch pressure (psia) -0.07 Initial pressure (psia) 13.10 Final pressure (psia) 18.90 Dilution 1.4427480916

CAS Number	Compound	LOD	Result	Units	LOD	Result	Units
71-55-6	1,1,1-Trichloroethane	<1.80	<1.80	ppbv	<9.79	<9.81	ug/m ³
79-34-5	1,1,2,2-Tetrachloroethane	<1.80	<1.80	ppbv	<12.4	<12.4	ug/m ³
79-00-5	1,1,2-Trichloroethane	<1.80	<1.80	ppbv	<9.79	<9.81	ug/m ³
75-34-3	1,1-Dichloroethane	<1.80	<1.80	ppbv	<7.29	<7.30	ug/m ³
75-35-4	1,1-Dichloroethene	<1.80	<1.80	ppbv	<7.14	<7.15	ug/m ³
526-73-8	1,2,3-Trimethylbenzene	<1.80	<1.80	ppbv	<8.83	<8.85	ug/m ³
120-82-1	1,2,4-Trichlorobenzene	<1.80	<1.80	ppbv	<13.3	<13.4	ug/m ³
95-63-6	1,2,4-Trimethylbenzene	<1.80	<1.80	ppbv	<8.83	<8.85	ug/m ³
106-93-4	1,2-Dibromoethane	<1.80	<1.80	ppbv	<13.8	<13.9	ug/m ³
95-50-1	1,2-Dichlorobenzene	<1.80	<1.80	ppbv	<10.8	<10.8	ug/m ³
107-06-2	1,2-Dichloroethane	<1.80	<1.80	ppbv	<7.29	<7.30	ug/m ³
78-87-5	1,2-Dichloropropane	<1.80	<1.80	ppbv	<8.32	<8.33	ug/m ³
76-14-2	1,2-Dichlorotetrafluoroethane	<1.80	<1.80	ppbv	<12.6	<12.6	ug/m ³
108-67-8	1,3,5-Trimethylbenzene	<1.80	<1.80	ppbv	<8.83	<8.85	ug/m ³
106-99-0	1,3-Butadiene	<1.80	<1.80	ppbv	<3.98	<3.98	ug/m ³
106-46-7	1,4-Dichlorobenzene	<1.80	<1.80	ppbv	<10.8	<10.8	ug/m ³
123-91-1	1,4-Dioxane	<1.80	<1.80	ppbv	<6.48	<6.49	ug/m ³
71-23-8	1-Propanol	<1.80	<1.80	ppbv	<4.42	<4.43	ug/m ³
78-93-3	2-Butanone (MEK)	<1.80	<1.80	ppbv	<5.30	<5.31	ug/m ³
591-78-6	2-Hexanone	<1.80	<1.80	ppbv	<7.36	<7.38	ug/m ³
107-87-9	2-Pentanone	<1.80	<1.80	ppbv	<6.33	<6.34	ug/m ³
589-38-8	3-Hexanone	<1.80	<1.80	ppbv	<7.36	<7.38	ug/m ³
96-22-0	3-Pentanone	<1.80	<1.80	ppbv	<6.33	<6.34	ug/m ³
108-10-1	4-Methyl-2-pentanone	<1.80	<1.80	ppbv	<7.36	<7.38	ug/m ³
67-64-1 & 123-38-6	Acetone + Propanal	<3.61	5.60	ppbv	<8.56	13.3	ug/m ³
75-05-8	Acetonitrile	<1.80	<1.80	ppbv	<3.02	<3.02	ug/m ³
107-02-8	Acrolein	<1.80	<1.80	ppbv	<4.12	<4.13	ug/m ³
71-43-2	Benzene	<1.56	<1.56	ppbv	<4.98	<4.99	ug/m ³
100-44-7	Benzyl Chloride	<1.80	<1.80	ppbv	<9.35	<9.37	ug/m ³
75-27-4	Bromodichloromethane	<1.80	<1.80	ppbv	<12.1	<12.1	ug/m ³
75-25-2	Bromoform	<1.80	<1.80	ppbv	<18.6	<18.7	ug/m ³
74-83-9	Bromomethane	<1.80	<1.80	ppbv	<6.99	<7.01	ug/m ³
123-72-8	Butanal	<1.80	<1.80	ppbv	<5.30	<5.31	ug/m ³
75-15-0	Carbon Disulfide	<1.80	8.89	ppbv	<5.60	27.6	ug/m ³
56-23-5	Carbon Tetrachloride	<1.80	<1.80	ppbv	<11.3	<11.4	ug/m ³
108-90-7	Chlorobenzene	<1.80	<1.80	ppbv	<8.32	<8.33	ug/m ³
75-00-3	Chloroethane	<1.80	<1.80	ppbv	<4.79	<4.79	ug/m ³
67-66-3	Chloroform	<1.80	<1.80	ppbv	<8.76	<8.78	ug/m ³
74-87-3	Chloromethane	<1.80	<1.80	ppbv	<3.68	<3.69	ug/m ³
156-59-2	cis-1,2-Dichloroethene	<1.80	<1.80	ppbv	<7.14	<7.15	ug/m ³
10061-01-5	cis-1,3-Dichloropropene	<1.80	<1.80	ppbv	<8.17	<8.19	ug/m ³
110-82-7	Cyclohexane	<1.80	<1.80	ppbv	<6.18	<6.20	ug/m ³
75-71-8	Dichlorodifluoromethane	<1.80	<1.80	ppbv	<8.91	<8.92	ug/m ³
75-45-6	Difluorochloromethane	<1.80	<1.80	ppbv	<6.33	<6.34	ug/m ³
100-41-4	Ethylbenzene	<1.80	<1.80	ppbv	<7.80	<7.82	ug/m ³
87-68-3	Hexachlorobutadiene	<1.80	<1.80	ppbv	<19.1	<19.2	ug/m ³
66-25-1	Hexanal	<1.80	<1.80	ppbv	<7.36	<7.38	ug/m ³
110-54-3	Hexane	<1.80	<1.80	ppbv	<6.33	<6.34	ug/m ³



CERTIFICATE OF ANALYSIS

Validated

SDG: 201015-48 Client Reference: A114312-1 Report Number: 573208
Location: Leconfield Industrial Estate Order Number: Superseded Report:

Sample Number 23035762

Sample ID CP106 G 1 Depth 0.00 - 0.00 Sampled Date 12/10/2020 00:00:00

Method TM330 Determination of VOC's in atmospheric, sub-slab and soil gas samples Canister No. 10187
Sample Volume (ml) 120 Dispatch pressure (psia) -0.07 Initial pressure (psia) 13.10 Final pressure (psia) 18.90 Dilution 1.4427480916

CAS Number	Compound	LOD	Result	Units	LOD	Result	Units
74-88-4	Iodomethane	<1.80	<1.80	ppbv	<10.5	<10.5	ug/m ³
115-11-7	Isobutene	<1.80	40.7	ppbv	<4.12	93.3	ug/m ³
78-79-5	Isoprene	<1.80	<1.80	ppbv	<5.01	<5.02	ug/m ³
108-38-3 & 106-42-3	m/p-Xylene	<3.61	<3.61	ppbv	<15.7	<15.6	ug/m ³
78-85-3	Methylacrolein	<1.80	<1.80	ppbv	<5.15	<5.16	ug/m ³
75-09-2	Methylene Chloride	<1.80	6.92	ppbv	<6.26	24.1	ug/m ³
1634-04-4	MTBE	<1.80	<1.80	ppbv	<6.48	<6.49	ug/m ³
91-20-3	Naphthalene	<1.80	1.98	ppbv	<9.42	10.3	ug/m ³
95-47-6	o-Xylene	<1.80	<1.80	ppbv	<7.80	<7.82	ug/m ³
110-62-3	Pentanal	<1.80	<1.80	ppbv	<6.33	<6.34	ug/m ³
109-66-0	Pentane	<1.80	<1.80	ppbv	<5.30	<5.31	ug/m ³
100-42-5	Styrene	<1.80	<1.80	ppbv	<7.66	<7.67	ug/m ³
127-18-4	Tetrachloroethene	<1.80	<1.80	ppbv	<12.2	<12.2	ug/m ³
108-88-3	Toluene	<1.80	<1.80	ppbv	<6.77	<6.79	ug/m ³
156-60-5	trans-1,2-Dichloroethene	<1.80	<1.80	ppbv	<7.14	<7.15	ug/m ³
1006-02-6	trans-1,3-Dichloropropene	<1.80	<1.80	ppbv	<8.17	<8.19	ug/m ³
79-01-6	Trichloroethene	<1.80	<1.80	ppbv	<9.64	<9.66	ug/m ³
75-69-4	Trichlorofluoromethane	<1.80	<1.80	ppbv	<10.1	<10.1	ug/m ³
26523-64-8	Trichlorotrifluoroethane	<1.80	<1.80	ppbv	<13.8	<13.8	ug/m ³
108-05-4	Vinyl Acetate	<1.80	<1.80	ppbv	<6.33	<6.34	ug/m ³
75-01-4	Vinyl Chloride	<1.80	<1.80	ppbv	<4.56	<4.57	ug/m ³



CERTIFICATE OF ANALYSIS

Validated

SDG: 201015-48
Location: Leconfield Industrial EstateClient Reference: A114312-1
Order Number:Report Number: 573208
Superseded Report:

Sample Number 23035766

Sample ID WS105 G 1

Depth 0.00 - 0.00

Sampled Date 12/10/2020 00:00:00

Method TM330 Determination of VOC's in atmospheric, sub-slab and soil gas samples

Canister No. 10185

Sample Volume (ml) 120 Dispatch pressure (psia) -0.01 Initial pressure (psia) 12.98 Final pressure (psia) 19.38 Dilution 1.4930662558

CAS Number	Compound	LOD	Result	Units	LOD	Result	Units
71-55-6	1,1,1-Trichloroethane	<1.87	26.4	ppbv	<10.2	143	ug/m ³
79-34-5	1,1,2,2-Tetrachloroethane	<1.87	<1.87	ppbv	<12.8	<12.8	ug/m ³
79-00-5	1,1,2-Trichloroethane	<1.87	<1.87	ppbv	<10.2	<10.2	ug/m ³
75-34-3	1,1-Dichloroethane	<1.87	<1.87	ppbv	<7.57	<7.56	ug/m ³
75-35-4	1,1-Dichloroethene	<1.87	<1.87	ppbv	<7.42	<7.40	ug/m ³
526-73-8	1,2,3-Trimethylbenzene	<1.87	<1.87	ppbv	<9.18	<9.16	ug/m ³
120-82-1	1,2,4-Trichlorobenzene	<1.87	<1.87	ppbv	<13.8	<13.8	ug/m ³
95-63-6	1,2,4-Trimethylbenzene	<1.87	<1.87	ppbv	<9.18	<9.16	ug/m ³
106-93-4	1,2-Dibromoethane	<1.87	<1.87	ppbv	<14.4	<14.4	ug/m ³
95-50-1	1,2-Dichlorobenzene	<1.87	<1.87	ppbv	<11.2	<11.2	ug/m ³
107-06-2	1,2-Dichloroethane	<1.87	<1.87	ppbv	<7.57	<7.56	ug/m ³
78-87-5	1,2-Dichloropropane	<1.87	<1.87	ppbv	<8.64	<8.63	ug/m ³
76-14-2	1,2-Dichlorotetrafluoroethane	<1.87	<1.87	ppbv	<13.1	<13.1	ug/m ³
108-67-8	1,3,5-Trimethylbenzene	<1.87	<1.87	ppbv	<9.18	<9.16	ug/m ³
106-99-0	1,3-Butadiene	<1.87	<1.87	ppbv	<4.13	<4.12	ug/m ³
106-46-7	1,4-Dichlorobenzene	<1.87	<1.87	ppbv	<11.2	<11.2	ug/m ³
123-91-1	1,4-Dioxane	<1.87	<1.87	ppbv	<6.73	<6.72	ug/m ³
71-23-8	1-Propanol	<1.87	<1.87	ppbv	<4.59	<4.58	ug/m ³
78-93-3	2-Butanone (MEK)	<1.87	<1.87	ppbv	<5.51	<5.50	ug/m ³
591-78-6	2-Hexanone	<1.87	<1.87	ppbv	<7.65	<7.63	ug/m ³
107-87-9	2-Pentanone	<1.87	<1.87	ppbv	<6.58	<6.56	ug/m ³
589-38-8	3-Hexanone	<1.87	<1.87	ppbv	<7.65	<7.63	ug/m ³
96-22-0	3-Pentanone	<1.87	<1.87	ppbv	<6.58	<6.56	ug/m ³
108-10-1	4-Methyl-2-pentanone	<1.87	<1.87	ppbv	<7.65	<7.63	ug/m ³
67-64-1 & 123-38-6	Acetone + Propanal	<3.73	6.80	ppbv	<8.85	16.1	ug/m ³
75-05-8	Acetonitrile	<1.87	<1.87	ppbv	<3.14	<3.13	ug/m ³
107-02-8	Acrolein	<1.87	<1.87	ppbv	<4.28	<4.27	ug/m ³
71-43-2	Benzene	<1.62	<1.62	ppbv	<5.17	<5.16	ug/m ³
100-44-7	Benzyl Chloride	<1.87	<1.87	ppbv	<9.71	<9.69	ug/m ³
75-27-4	Bromodichloromethane	<1.87	<1.87	ppbv	<12.5	<12.5	ug/m ³
75-25-2	Bromoform	<1.87	<1.87	ppbv	<19.4	<19.3	ug/m ³
74-83-9	Bromomethane	<1.87	<1.87	ppbv	<7.27	<7.25	ug/m ³
123-72-8	Butanal	<1.87	<1.87	ppbv	<5.51	<5.50	ug/m ³
75-15-0	Carbon Disulfide	<1.87	4.56	ppbv	<5.81	14.2	ug/m ³
56-23-5	Carbon Tetrachloride	<1.87	<1.87	ppbv	<11.8	<11.8	ug/m ³
108-90-7	Chlorobenzene	<1.87	<1.87	ppbv	<8.64	<8.63	ug/m ³
75-00-3	Chloroethane	<1.87	<1.87	ppbv	<4.97	<4.96	ug/m ³
67-66-3	Chloroform	<1.87	<1.87	ppbv	<9.10	<9.08	ug/m ³
74-87-3	Chloromethane	<1.87	<1.87	ppbv	<3.82	<3.82	ug/m ³
156-59-2	cis-1,2-Dichloroethene	<1.87	<1.87	ppbv	<7.42	<7.40	ug/m ³
10061-01-5	cis-1,3-Dichloropropene	<1.87	<1.87	ppbv	<8.49	<8.47	ug/m ³
110-82-7	Cyclohexane	<1.87	<1.87	ppbv	<6.42	<6.41	ug/m ³
75-71-8	Dichlorodifluoromethane	<1.87	<1.87	ppbv	<9.25	<9.24	ug/m ³
75-45-6	Difluorochloromethane	<1.87	<1.87	ppbv	<6.58	<6.56	ug/m ³
100-41-4	Ethylbenzene	<1.87	<1.87	ppbv	<8.11	<8.09	ug/m ³
87-68-3	Hexachlorobutadiene	<1.87	<1.87	ppbv	<19.9	<19.8	ug/m ³
66-25-1	Hexanal	<1.87	<1.87	ppbv	<7.65	<7.63	ug/m ³
110-54-3	Hexane	<1.87	<1.87	ppbv	<6.58	<6.56	ug/m ³



CERTIFICATE OF ANALYSIS

Validated

SDG: 201015-48 Client Reference: A114312-1 Report Number: 573208
Location: Leconfield Industrial Estate Order Number: Superseded Report:

Sample Number 23035766

Sample ID WS105 G 1 Depth 0.00 - 0.00 Sampled Date 12/10/2020 00:00:00

Method TM330 Determination of VOC's in atmospheric, sub-slab and soil gas samples Canister No. 10185
Sample Volume (ml) 120 Dispatch pressure (psia) -0.01 Initial pressure (psia) 12.98 Final pressure (psia) 19.38 Dilution 1.4930662558

CAS Number	Compound	LOD	Result	Units	LOD	Result	Units
74-88-4	Iodomethane	<1.87	<1.87	ppbv	<10.9	<10.8	ug/m ³
115-11-7	Isobutene	<1.87	4.58	ppbv	<4.28	10.5	ug/m ³
78-79-5	Isoprene	<1.87	<1.87	ppbv	<5.20	<5.19	ug/m ³
108-38-3 & 106-42-3	m/p-Xylene	<3.73	<3.73	ppbv	<16.2	<16.2	ug/m ³
78-85-3	Methylacrolein	<1.87	<1.87	ppbv	<5.35	<5.34	ug/m ³
75-09-2	Methylene Chloride	<1.87	12.1	ppbv	<6.50	41.9	ug/m ³
1634-04-4	MTBE	<1.87	<1.87	ppbv	<6.73	<6.72	ug/m ³
91-20-3	Naphthalene	<1.87	3.08	ppbv	<9.79	16.1	ug/m ³
95-47-6	o-Xylene	<1.87	<1.87	ppbv	<8.11	<8.09	ug/m ³
110-62-3	Pentanal	<1.87	<1.87	ppbv	<6.58	<6.56	ug/m ³
109-66-0	Pentane	<1.87	<1.87	ppbv	<5.51	<5.50	ug/m ³
100-42-5	Styrene	<1.87	5.32	ppbv	<7.95	22.6	ug/m ³
127-18-4	Tetrachloroethene	<1.87	<1.87	ppbv	<12.7	<12.7	ug/m ³
108-88-3	Toluene	<1.87	3.03	ppbv	<7.04	11.4	ug/m ³
156-60-5	trans-1,2-Dichloroethene	<1.87	<1.87	ppbv	<7.42	<7.40	ug/m ³
1006-02-6	trans-1,3-Dichloropropene	<1.87	<1.87	ppbv	<8.49	<8.47	ug/m ³
79-01-6	Trichloroethene	<1.87	<1.87	ppbv	<10.0	<10.0	ug/m ³
75-69-4	Trichlorofluoromethane	<1.87	<1.87	ppbv	<10.5	<10.5	ug/m ³
26523-64-8	Trichlorotrifluoroethane	<1.87	<1.87	ppbv	<14.3	<14.3	ug/m ³
108-05-4	Vinyl Acetate	<1.87	<1.87	ppbv	<6.58	<6.56	ug/m ³
75-01-4	Vinyl Chloride	<1.87	<1.87	ppbv	<4.74	<4.73	ug/m ³



CERTIFICATE OF ANALYSIS

Validated

SDG: 201015-48 Client Reference: A114312-1 Report Number: 573208
Location: Leconfield Industrial Estate Order Number: Superseded Report:

Sample Number 23035769

Sample ID WS108 G 1 Depth 0.00 - 0.00 Sampled Date 12/10/2020 00:00:00

Method TM330 Determination of VOC's in atmospheric, sub-slab and soil gas samples Canister No. 10196
Sample Volume (ml) 80 Dispatch pressure (psia) -0.02 Initial pressure (psia) 12.51 Final pressure (psia) 18.90 Dilution 1.5107913669

CAS Number	Compound	LOD	Result	Units	LOD	Result	Units
71-55-6	1,1,1-Trichloroethane	<2.83	<2.83	ppbv	<15.4	<15.4	ug/m ³
79-34-5	1,1,2,2-Tetrachloroethane	<2.83	<2.83	ppbv	<19.4	<19.5	ug/m ³
79-00-5	1,1,2-Trichloroethane	<2.83	<2.83	ppbv	<15.4	<15.4	ug/m ³
75-34-3	1,1-Dichloroethane	<2.83	<2.83	ppbv	<11.5	<11.5	ug/m ³
75-35-4	1,1-Dichloroethene	<2.83	<2.83	ppbv	<11.2	<11.2	ug/m ³
526-73-8	1,2,3-Trimethylbenzene	<2.83	<2.83	ppbv	<13.9	<13.9	ug/m ³
120-82-1	1,2,4-Trichlorobenzene	<2.83	<2.83	ppbv	<21.0	<21.0	ug/m ³
95-63-6	1,2,4-Trimethylbenzene	<2.83	<2.83	ppbv	<13.9	<13.9	ug/m ³
106-93-4	1,2-Dibromoethane	<2.83	<2.83	ppbv	<21.8	<21.8	ug/m ³
95-50-1	1,2-Dichlorobenzene	<2.83	<2.83	ppbv	<17.0	<17.0	ug/m ³
107-06-2	1,2-Dichloroethane	<2.83	<2.83	ppbv	<11.5	<11.5	ug/m ³
78-87-5	1,2-Dichloropropane	<2.83	<2.83	ppbv	<13.1	<13.1	ug/m ³
76-14-2	1,2-Dichlorotetrafluoroethane	<2.83	<2.83	ppbv	<19.8	<19.8	ug/m ³
108-67-8	1,3,5-Trimethylbenzene	<2.83	<2.83	ppbv	<13.9	<13.9	ug/m ³
106-99-0	1,3-Butadiene	<2.83	<2.83	ppbv	<6.25	<6.26	ug/m ³
106-46-7	1,4-Dichlorobenzene	<2.83	<2.83	ppbv	<17.0	<17.0	ug/m ³
123-91-1	1,4-Dioxane	<2.83	<2.83	ppbv	<10.2	<10.2	ug/m ³
71-23-8	1-Propanol	<2.83	<2.83	ppbv	<6.94	<6.95	ug/m ³
78-93-3	2-Butanone (MEK)	<2.83	<2.83	ppbv	<8.33	<8.34	ug/m ³
591-78-6	2-Hexanone	<2.83	<2.83	ppbv	<11.6	<11.6	ug/m ³
107-87-9	2-Pentanone	<2.83	<2.83	ppbv	<9.95	<9.96	ug/m ³
589-38-8	3-Hexanone	<2.83	<2.83	ppbv	<11.6	<11.6	ug/m ³
96-22-0	3-Pentanone	<2.83	<2.83	ppbv	<9.95	<9.96	ug/m ³
108-10-1	4-Methyl-2-pentanone	<2.83	<2.83	ppbv	<11.6	<11.6	ug/m ³
67-64-1 & 123-38-6	Acetone + Propanal	<5.67	15.6	ppbv	<13.5	37.1	ug/m ³
75-05-8	Acetonitrile	<2.83	<2.83	ppbv	<4.75	<4.75	ug/m ³
107-02-8	Acrolein	<2.83	<2.83	ppbv	<6.48	<6.49	ug/m ³
71-43-2	Benzene	<2.46	<2.46	ppbv	<7.85	<7.83	ug/m ³
100-44-7	Benzyl Chloride	<2.83	<2.83	ppbv	<14.7	<14.7	ug/m ³
75-27-4	Bromodichloromethane	<2.83	<2.83	ppbv	<19.0	<19.0	ug/m ³
75-25-2	Bromoform	<2.83	<2.83	ppbv	<29.3	<29.3	ug/m ³
74-83-9	Bromomethane	<2.83	<2.83	ppbv	<11.0	<11.0	ug/m ³
123-72-8	Butanal	<2.83	<2.83	ppbv	<8.33	<8.34	ug/m ³
75-15-0	Carbon Disulfide	<2.83	195	ppbv	<8.80	605	ug/m ³
56-23-5	Carbon Tetrachloride	<2.83	<2.83	ppbv	<17.8	<17.8	ug/m ³
108-90-7	Chlorobenzene	<2.83	<2.83	ppbv	<13.1	<13.1	ug/m ³
75-00-3	Chloroethane	<2.83	<2.83	ppbv	<7.52	<7.53	ug/m ³
67-66-3	Chloroform	<2.83	<2.83	ppbv	<13.8	<13.8	ug/m ³
74-87-3	Chloromethane	<2.83	<2.83	ppbv	<5.79	<5.79	ug/m ³
156-59-2	cis-1,2-Dichloroethene	<2.83	<2.83	ppbv	<11.2	<11.2	ug/m ³
10061-01-5	cis-1,3-Dichloropropene	<2.83	<2.83	ppbv	<12.8	<12.9	ug/m ³
110-82-7	Cyclohexane	<2.83	41.5	ppbv	<9.72	143	ug/m ³
75-71-8	Dichlorodifluoromethane	<2.83	<2.83	ppbv	<14.0	<14.0	ug/m ³
75-45-6	Difluorochloromethane	<2.83	<2.83	ppbv	<9.95	<9.96	ug/m ³
100-41-4	Ethylbenzene	<2.83	<2.83	ppbv	<12.3	<12.3	ug/m ³
87-68-3	Hexachlorobutadiene	<2.83	<2.83	ppbv	<30.1	<30.1	ug/m ³
66-25-1	Hexanal	<2.83	<2.83	ppbv	<11.6	<11.6	ug/m ³
110-54-3	Hexane	<2.83	7.65	ppbv	<9.95	26.9	ug/m ³



CERTIFICATE OF ANALYSIS

Validated

SDG:	201015-48	Client Reference:	A114312-1	Report Number:	573208
Location:	Leconfield Industrial Estate	Order Number:		Superseded Report:	

Sample Number	23035769	Depth	0.00 - 0.00	Sampled Date	12/10/2020 00:00:00
Sample ID	WS108 G 1				

Method	TM330	Determination of VOC's in atmospheric, sub-slab and soil gas samples						Canister No.	10196
Sample Volume (ml)	80	Dispatch pressure (psia)	-0.02	Initial pressure (psia)	12.51	Final pressure (psia)	18.90	Dilution	1.5107913669

CAS Number	Compound	LOD	Result	Units	LOD	Result	Units
74-88-4	Iodomethane	<2.83	<2.83	ppbv	<16.4	<16.5	ug/m ³
115-11-7	Isobutene	<2.83	19.0	ppbv	<6.48	43.6	ug/m ³
78-79-5	Isoprene	<2.83	<2.83	ppbv	<7.87	<7.88	ug/m ³
108-38-3 & 106-42-3	m/p-Xylene	<5.67	<5.67	ppbv	<24.6	<24.6	ug/m ³
78-85-3	Methylacrolein	<2.83	<2.83	ppbv	<8.10	<8.11	ug/m ³
75-09-2	Methylene Chloride	<2.83	12.1	ppbv	<9.84	42.1	ug/m ³
1634-04-4	MTBE	<2.83	<2.83	ppbv	<10.2	<10.2	ug/m ³
91-20-3	Naphthalene	<2.83	<2.83	ppbv	<14.8	<14.8	ug/m ³
95-47-6	o-Xylene	<2.83	<2.83	ppbv	<12.3	<12.3	ug/m ³
110-62-3	Pentanal	<2.83	<2.83	ppbv	<9.95	<9.96	ug/m ³
109-66-0	Pentane	<2.83	<2.83	ppbv	<8.33	<8.34	ug/m ³
100-42-5	Styrene	<2.83	4.28	ppbv	<12.0	18.2	ug/m ³
127-18-4	Tetrachloroethene	<2.83	<2.83	ppbv	<19.2	<19.2	ug/m ³
108-88-3	Toluene	<2.83	<2.83	ppbv	<10.6	<10.7	ug/m ³
156-60-5	trans-1,2-Dichloroethene	<2.83	<2.83	ppbv	<11.2	<11.2	ug/m ³
1006-02-6	trans-1,3-Dichloropropene	<2.83	<2.83	ppbv	<12.8	<12.9	ug/m ³
79-01-6	Trichloroethene	<2.83	<2.83	ppbv	<15.2	<15.2	ug/m ³
75-69-4	Trichlorofluoromethane	<2.83	<2.83	ppbv	<15.9	<15.9	ug/m ³
26523-64-8	Trichlorotrifluoroethane	<2.83	<2.83	ppbv	<21.6	<21.7	ug/m ³
108-05-4	Vinyl Acetate	<2.83	<2.83	ppbv	<9.95	<9.96	ug/m ³
75-01-4	Vinyl Chloride	<2.83	<2.83	ppbv	<7.18	<7.18	ug/m ³



CERTIFICATE OF ANALYSIS

Validated

SDG: 201015-48
Location: Leconfield Industrial EstateClient Reference: A114312-1
Order Number:Report Number: 573208
Superseded Report:

Sample Number 23035771

Sample ID CP105 G 1 Depth 0.00 - 0.00 Sampled Date 12/10/2020 00:00:00

Method TM330 Determination of VOC's in atmospheric, sub-slab and soil gas samples Canister No. 10184
Sample Volume (ml) 120 Dispatch pressure (psia) -0.08 Initial pressure (psia) 13.00 Final pressure (psia) 18.90 Dilution 1.4538461538

CAS Number	Compound	LOD	Result	Units	LOD	Result	Units
71-55-6	1,1,1-Trichloroethane	<1.82	<1.82	ppbv	<9.90	<9.89	ug/m ³
79-34-5	1,1,2,2-Tetrachloroethane	<1.82	<1.82	ppbv	<12.5	<12.5	ug/m ³
79-00-5	1,1,2-Trichloroethane	<1.82	<1.82	ppbv	<9.90	<9.89	ug/m ³
75-34-3	1,1-Dichloroethane	<1.82	<1.82	ppbv	<7.37	<7.36	ug/m ³
75-35-4	1,1-Dichloroethene	<1.82	<1.82	ppbv	<7.22	<7.21	ug/m ³
526-73-8	1,2,3-Trimethylbenzene	<1.82	<1.82	ppbv	<8.93	<8.92	ug/m ³
120-82-1	1,2,4-Trichlorobenzene	<1.82	<1.82	ppbv	<13.5	<13.5	ug/m ³
95-63-6	1,2,4-Trimethylbenzene	<1.82	<1.82	ppbv	<8.93	<8.92	ug/m ³
106-93-4	1,2-Dibromoethane	<1.82	<1.82	ppbv	<14.0	<14.0	ug/m ³
95-50-1	1,2-Dichlorobenzene	<1.82	<1.82	ppbv	<10.9	<10.9	ug/m ³
107-06-2	1,2-Dichloroethane	<1.82	<1.82	ppbv	<7.37	<7.36	ug/m ³
78-87-5	1,2-Dichloropropane	<1.82	<1.82	ppbv	<8.41	<8.40	ug/m ³
76-14-2	1,2-Dichlorotetrafluoroethane	<1.82	<1.82	ppbv	<12.7	<12.7	ug/m ³
108-67-8	1,3,5-Trimethylbenzene	<1.82	<1.82	ppbv	<8.93	<8.92	ug/m ³
106-99-0	1,3-Butadiene	<1.82	<1.82	ppbv	<4.02	<4.01	ug/m ³
106-46-7	1,4-Dichlorobenzene	<1.82	<1.82	ppbv	<10.9	<10.9	ug/m ³
123-91-1	1,4-Dioxane	<1.82	<1.82	ppbv	<6.55	<6.54	ug/m ³
71-23-8	1-Propanol	<1.82	<1.82	ppbv	<4.47	<4.46	ug/m ³
78-93-3	2-Butanone (MEK)	<1.82	<1.82	ppbv	<5.36	<5.35	ug/m ³
591-78-6	2-Hexanone	<1.82	<1.82	ppbv	<7.44	<7.43	ug/m ³
107-87-9	2-Pentanone	<1.82	<1.82	ppbv	<6.40	<6.39	ug/m ³
589-38-8	3-Hexanone	<1.82	<1.82	ppbv	<7.44	<7.43	ug/m ³
96-22-0	3-Pentanone	<1.82	<1.82	ppbv	<6.40	<6.39	ug/m ³
108-10-1	4-Methyl-2-pentanone	<1.82	<1.82	ppbv	<7.44	<7.43	ug/m ³
67-64-1 & 123-38-6	Acetone + Propanal	<3.63	17.4	ppbv	<8.61	41.4	ug/m ³
75-05-8	Acetonitrile	<1.82	7.27	ppbv	<3.05	12.2	ug/m ³
107-02-8	Acrolein	<1.82	<1.82	ppbv	<4.17	<4.16	ug/m ³
71-43-2	Benzene	<1.58	<1.58	ppbv	<5.04	<5.02	ug/m ³
100-44-7	Benzyl Chloride	<1.82	<1.82	ppbv	<9.45	<9.44	ug/m ³
75-27-4	Bromodichloromethane	<1.82	<1.82	ppbv	<12.2	<12.2	ug/m ³
75-25-2	Bromoform	<1.82	<1.82	ppbv	<18.8	<18.8	ug/m ³
74-83-9	Bromomethane	<1.82	<1.82	ppbv	<7.07	<7.06	ug/m ³
123-72-8	Butanal	<1.82	<1.82	ppbv	<5.36	<5.35	ug/m ³
75-15-0	Carbon Disulfide	<1.82	28.0	ppbv	<5.66	86.9	ug/m ³
56-23-5	Carbon Tetrachloride	<1.82	<1.82	ppbv	<11.5	<11.4	ug/m ³
108-90-7	Chlorobenzene	<1.82	<1.82	ppbv	<8.41	<8.40	ug/m ³
75-00-3	Chloroethane	<1.82	<1.82	ppbv	<4.84	<4.83	ug/m ³
67-66-3	Chloroform	<1.82	8.42	ppbv	<8.86	41.0	ug/m ³
74-87-3	Chloromethane	<1.82	<1.82	ppbv	<3.72	<3.72	ug/m ³
156-59-2	cis-1,2-Dichloroethene	<1.82	<1.82	ppbv	<7.22	<7.21	ug/m ³
10061-01-5	cis-1,3-Dichloropropene	<1.82	<1.82	ppbv	<8.26	<8.25	ug/m ³
110-82-7	Cyclohexane	<1.82	<1.82	ppbv	<6.25	<6.24	ug/m ³
75-71-8	Dichlorodifluoromethane	<1.82	<1.82	ppbv	<9.01	<8.99	ug/m ³
75-45-6	Difluorochloromethane	<1.82	<1.82	ppbv	<6.40	<6.39	ug/m ³
100-41-4	Ethylbenzene	<1.82	<1.82	ppbv	<7.89	<7.88	ug/m ³
87-68-3	Hexachlorobutadiene	<1.82	<1.82	ppbv	<19.4	<19.3	ug/m ³
66-25-1	Hexanal	<1.82	<1.82	ppbv	<7.44	<7.43	ug/m ³
110-54-3	Hexane	<1.82	8.78	ppbv	<6.40	30.9	ug/m ³



CERTIFICATE OF ANALYSIS

Validated

SDG: 201015-48 Client Reference: A114312-1 Report Number: 573208
Location: Leconfield Industrial Estate Order Number: Superseded Report:

Sample Number 23035771

Sample ID CP105 G 1 Depth 0.00 - 0.00 Sampled Date 12/10/2020 00:00:00

Method TM330 Determination of VOC's in atmospheric, sub-slab and soil gas samples Canister No. 10184
Sample Volume (ml) 120 Dispatch pressure (psia) -0.08 Initial pressure (psia) 13.00 Final pressure (psia) 18.90 Dilution 1.4538461538

CAS Number	Compound	LOD	Result	Units	LOD	Result	Units
74-88-4	Iodomethane	<1.82	<1.82	ppbv	<10.6	<10.6	ug/m ³
115-11-7	Isobutene	<1.82	2.50	ppbv	<4.17	5.73	ug/m ³
78-79-5	Isoprene	<1.82	<1.82	ppbv	<5.06	<5.05	ug/m ³
108-38-3 & 106-42-3	m/p-Xylene	<3.63	<3.63	ppbv	<15.7	<15.8	ug/m ³
78-85-3	Methylacrolein	<1.82	<1.82	ppbv	<5.21	<5.20	ug/m ³
75-09-2	Methylene Chloride	<1.82	29.9	ppbv	<6.33	104	ug/m ³
1634-04-4	MTBE	<1.82	<1.82	ppbv	<6.55	<6.54	ug/m ³
91-20-3	Naphthalene	<1.82	<1.82	ppbv	<9.53	<9.51	ug/m ³
95-47-6	o-Xylene	<1.82	<1.82	ppbv	<7.89	<7.88	ug/m ³
110-62-3	Pentanal	<1.82	<1.82	ppbv	<6.40	<6.39	ug/m ³
109-66-0	Pentane	<1.82	<1.82	ppbv	<5.36	<5.35	ug/m ³
100-42-5	Styrene	<1.82	<1.82	ppbv	<7.74	<7.73	ug/m ³
127-18-4	Tetrachloroethene	<1.82	<1.82	ppbv	<12.4	<12.3	ug/m ³
108-88-3	Toluene	<1.82	<1.82	ppbv	<6.85	<6.84	ug/m ³
156-60-5	trans-1,2-Dichloroethene	<1.82	<1.82	ppbv	<7.22	<7.21	ug/m ³
1006-02-6	trans-1,3-Dichloropropene	<1.82	<1.82	ppbv	<8.26	<8.25	ug/m ³
79-01-6	Trichloroethene	<1.82	<1.82	ppbv	<9.75	<9.74	ug/m ³
75-69-4	Trichlorofluoromethane	<1.82	<1.82	ppbv	<10.2	<10.2	ug/m ³
26523-64-8	Trichlorotrifluoroethane	<1.82	<1.82	ppbv	<13.9	<13.9	ug/m ³
108-05-4	Vinyl Acetate	<1.82	<1.82	ppbv	<6.40	<6.39	ug/m ³
75-01-4	Vinyl Chloride	<1.82	<1.82	ppbv	<4.62	<4.61	ug/m ³



CERTIFICATE OF ANALYSIS

Validated

SDG: 201015-48 **Client Reference:** A114312-1 **Report Number:** 573208
Location: Leconfield Industrial Estate **Order Number:** **Superseded Report:**

Table of Results - Appendix

Method No	Reference	Description
TM053	MEWAM Methane & Hydrocarbon gases HMSO 1988	Determination of Bulk Gas Composition
TM216	The Determination of Sulphur Gases in Natural Gas with Pulsed Flame Photometric Detector", Varian application note number 60, Norman Kirshen	The Determination of Odourant Compounds in Gases by Gas Chromatography with PFPD Detection
TM330	EPA/625/R-96/010b (based on)	Determination Of Volatile Organic Compounds (VOCs) In Air Collected In Specially-Prepared Canisters And Analyzed By Gas Chromatography/Mass Spectrometry (GC/MS)

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

Validated

SDG: 201015-48

Client Reference: A114312-1

Report Number: 573208

Location: Leconfield Industrial Estate

Order Number:

Superseded Report:

Test Completion Dates

Lab Sample No(s)

Customer Sample Ref.

AGS Ref.

Depth

Type

	23035771	23035762	23035759	23035766	23035769
	CP105	CP106	RBH109	WS105	WS108
	G1	G1	G1	G1	G1
	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
	Gas (G)	Gas (G)	Gas (G)	Gas (G)	Gas (G)
Bulk Gas	29-Oct-2020	29-Oct-2020	29-Oct-2020	29-Oct-2020	29-Oct-2020
Odourant Gas Analysis (G)	27-Oct-2020	27-Oct-2020	27-Oct-2020	27-Oct-2020	27-Oct-2020
VOC's	29-Oct-2020	29-Oct-2020	29-Oct-2020	29-Oct-2020	29-Oct-2020



CERTIFICATE OF ANALYSIS

Validated

SDG: 201015-48

Client Reference: A114312-1

Report Number: 573208

Location: Leconfield Industrial Estate

Order Number:

Superseded Report:

ASSOCIATED AQC DATA

Bulk Gas

Component	Method Code	QC 2369
Carbon Dioxide (%) RAW	TM053	100.19 93.80 : 109.40
Carbon Monoxide (%) RAW	TM053	97.08 95.80 : 104.20
Hydrogen (%) RAW	TM053	102.47 96.54 : 114.32
Methane (%) RAW	TM053	91.89 85.25 : 106.25
Nitrogen (%) RAW	TM053	99.8 95.22 : 107.17
Oxygen (%) RAW	TM053	100.0 96.50 : 105.50

VOC's

Component	Method Code	QC 2358
1,2,3-Trimethylbenzene	TM330	13.6 78.86 : 173.03
1,3,5-Trimethylbenzene	TM330	13.5 82.92 : 176.25
1,3-Butadiene	TM330	13.33 85.20 : 170.88
Benzene	TM330	14.51 78.33 : 165.09
Cyclohexane	TM330	13.12 79.74 : 166.39
Ethylbenzene	TM330	13.36 84.14 : 162.81
Hexane	TM330	14.31 82.42 : 166.45
m/p-Xylene	TM330	13.29 88.47 : 171.23
MTBE	TM330	11.51 80.15 : 156.28
Naphthalene	TM330	8.73 51.21 : 135.00
o-Xylene	TM330	12.62 83.52 : 164.48
Toluene	TM330	12.76 81.49 : 165.76

The above information details the reference name of the analytical quality control sample (AQC) that has been run with the samples contained in this report for the different methods of analysis .

The figure detailed is the percentage recovery result for the AQC .

The subscript numbers below are the percentage recovery lower control limit (LCL) and the upper control limit (UCL). The percentage recovery result for the AQC should be between these limits to be statistically in control .



CERTIFICATE OF ANALYSIS

SDG:	201015-48	Client Reference:	A114312-1	Report Number:	573208
Location:	Leconfield Industrial Estate	Order Number:		Superseded Report:	

Appendix

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

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

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

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

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

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

7. Results relate only to the items tested.

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

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

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

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

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

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

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

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

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

General

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

18. Sample Deviations

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

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
◆	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

19. Asbestos

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

Identification of Asbestos in Bulk Materials & Soils

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

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

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

Visual Estimation Of Fibre Content

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

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung. Standing Committee of Analysts, *The Quantification of Asbestos in Soil* (2017).

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

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

Appendix D – Geotechnical Laboratory Test Results

TRS REPORT

Report Ref: KJ0G/WYG/LCM/TRS/08/20/RP1

Date Issued: 24 August 2020

TRS Sample Refs: KJ0G01-06

Order No: E-mail

**PETROLOGICAL EXAMINATION OF SIX SAMPLES
FROM
LECONFIELD, CLEATOR MOOR
FOR WYG ENVIRONMENTAL**



Thomas Research Services Ltd.

Tel: +44 (0) 1469 532 929

www.slagtest.co.uk

Unit 7, Tattershall Castle Court, Morgan Way, New Holland,
North Lincolnshire, DN19 7PZ, United Kingdom

A Limited Company registered in England. Company Registration No: 2518421

PETROLOGICAL EXAMINATION OF SIX SAMPLES FROM LECONFIELD, CLEATOR MOOR FOR WYG ENVIRONMENTAL

1. BACKGROUND

Six bulk samples were received from the above site on 22nd July 2020. Each sample was weighed and allocated a unique TRS reference number, the details of which are recorded below:-

<u>TRS Ref</u>	<u>Test Pit</u>	<u>Depth/m</u>	<u>Mass/kg</u>
KJ0G01	TP101	0.7-1.7	15.4
KJ0G02	TP102	0.2-1.8	15.5
KJ0G03	TP103	0.2-1.6	9.8
KJ0G04	TP105	-	9.7
KJ0G05	TP106	-	12.4
KJ0G07	TP107	-	10.5

The purpose of the exercise was to identify the range and relative concentrations of any iron and steelmaking slags present in the samples, and whether there was any potential for volumetric instability from the materials.

2. SAMPLE PREPARATION & PROGRAMME OF ANALYSIS

All the request of the client, sample KJ0G02 was not tested. The five samples were primary crushed to reduce particle size down to <50mm, portions then being selected and dried at low temperature to constant weight. The dried material was subjected to a regime of stage crushing and quartering to further reduce particle size down to <5mm. Portions of this <5mm material were made up into resin bound blocks, one face of which was ground flat and polished using

diamond pastes. Further portions of the <5mm material were milled to a fine powder. Fractions of material were extracted throughout the preparation procedure to provide the materials necessary for further tests and analyses that may subsequently be required.

A petrological examination was made of the polished blocks using reflected light microscopy, the complete findings of which are recorded in appendix A.

3. DISCUSSION OF RESULTS

3.1 Petrology

A petrological examination was made of the five samples using reflected light microscopy. The complete findings of this examination are recorded in appendix A.

All five samples consisted almost entirely of significantly altered blast furnace slag. Other constituents seen in relatively minor amounts in the samples included quartz, rust and coke.

No basic steel slag or basic refractory material was seen in any of the five samples. This is good news as when present these products can have significant potential for expansion.

The blast furnace slag was predominantly crystalline. Much of the slag was significantly altered due to weathering. The unaltered slag consists mostly of melilite, along with some larnite, possibly bredigite and merwinite and calcium sulphide. The slag alteration was evident as rinds, replacement of the original phases, and pore infill. Some of the secondary phases were difficult to identify specifically under the microscope but calcite and gypsum were clearly seen.

Old weathered blast furnace slag can, on occasions, contain pockets of potentially expansive material (see appendix B). Potential for expansion can only be assessed with direct expansion testing.

4. CONCLUSIONS & RECOMMENDATIONS

The following conclusions can be drawn:-

- Blast furnace slag was the predominant constituent of all five samples. The slag showed significant alteration due to weathering. Old weathered blast furnace slag may contain pockets of potentially expansive material. Potential for expansion can only be assessed with direct expansion testing.
- Other constituents seen in more minor amounts in the samples included quartz, rust and coke.
- No basic steel slag or basic refractory material was seen in any of the five samples. This is good news, as when present, these products can be a significant source of expansion.

The following recommendations are made:-

The five samples should be subjected to the following tests & analyses to assess the potential for expansion of the slag.

- Water soluble sulphate
- Acid soluble sulphate
- Total sulphur
- Thermal analysis (DTA & TGA)
- TRS accelerated expansion test (14 day duration)

Note

These conclusions apply only to the samples tested and may not represent the bulk of the material on the site from which they were taken.

Ian D. Thomas

Ian D Thomas BSc(Hons)

24 August 2018

APPENDIX A

PETROLOGICAL REPORT ON SAMPLES KJ0G 01 & 03-06

A petrological examination has been carried out of five samples KJ 01, 03-06.

Polished blocks were prepared using particulate material crushed to a nominal size of –5mm. Representative material was made up into resin-bonded blocks. One face of each of these was ground flat and polished using diamond pastes. In addition, the surfaces were selectively etched with water and 0.1%N HCl in order to help with the phase identification.

The detailed results are given in the accompanying Table.

The samples consist almost entirely of blast furnace slag and its alteration products.

No basic steel slag or basic refractory material was seen.

The blast furnace slag is mainly pale grey in colour. It is extensively altered with secondary phases forming rinds, infilling pores and replacing the original primary constituents.

The unaltered slag is mainly crystalline or finely crystalline with a ceramic appearance. There are minor amounts of glassy slag. Melilite (Ca,Mg,Al silicate) is the main silicate phase. It is associated with more calcium-rich silicates (larnite (β -Ca₂SiO₄) and possibly bredigite (Ca₂SiO₄ with some Mg in solid solution) and probably merwinite (Ca,Mg silicate). Mostly these silicates occur as small needle-shaped crystals as part of the matrix to the melilite. Other silicate phases form a matrix, mostly between the melilite crystals, that consists of the above phases and other phases such as wollastonite (CaSiO₃) and devitrified glass slag.

A little calcium sulphide is present. It occurs as finely disseminated, dendritic grains. There are also small amounts of metallic iron forming minute spherules and small prills. This is mostly carbon-rich with included flakes of graphite.

The primary slag is much altered. It has probably been subject to 'falling' involving the conversion of the dicalcium silicate to the gamma (low temperature) form on cooling but this does not seem to have been accompanied by much expansion and disintegration. Subsequently, this and the other primary phases have been hydrated as part of continued secondary alteration and recemented mainly with calcite. Much calcite (CaCO₃) is well crystallized but other alteration products are finely granular and are difficult to identify specifically under the microscope. Small needle-shaped crystals are probably

sulpho-aluminate hydrates such as ettringite. Some well-crystallised gypsum ($\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$) is present, mostly infilling original gas pores.

Other constituents are quartz, rust and coke.

TRS SAMPLES KJ0G 01, 03-06

	1	3	4	5	6
BLAST FURNACE SLAG					
Amount	L	L	I	L	L
Phases present:-			I		
Melilite	m	m	s	m	m
Merwinite	-	-	-	-	s
Larnite & bredigite	m	m	s	m	s
Matrix & other silicates	m	s	s	m	s
Ca sulphide	vs	vs	vs	vs	vs
Metallic iron	vs	vs	vs	s	s
Spinel	-	vs	-	-	-
Quartz inclusions	-	-	-	-	-
Glassy slag	-	-	-	-	-
Siliceous clinker	-	-	-	-	-
Alteration products	m	m	I	I	I
Calcite	m	m	m	m	m
Gypsum	-	vs	s	-	-
BASIC STEEL SLAG					
Amount	-	-	-	-	-
BASIC REFRACTORIES					
Amount	-	-	-	-	-
OTHER CONSTITUENTS					
Quartz, etc.	s	vs	m	s	s
Metal, rust, scale, etc.	s	vs	s	s	s
Cementitious alteration products	s	s	m	m	m

L = very large, I = large, m = medium, s = small and vs = very small amounts

APPENDIX B

MECHANISMS OF VOLUMETRIC INSTABILITY IN IRON AND STEEL INDUSTRY SLAGS

Volumetric change with time can occur in some types of iron and steel industry slags. These mechanisms are briefly described in this section.

Blast Furnace Slags

Fresh-make air-cooled, i.e. crystalline, blast furnace slags are almost always volumetrically stable after cooling. The two mechanisms for volumetric instability listed in BS1047:1983 – “Air Cooled Blast furnace Slag for use in Construction” are:-

- a) Beta to gamma inversion of dicalcium silicate.**
- b) Iron unsoundness.**

a) Research by G H Thomas on this phase transformation has shown the transformation to be athermal rather than isothermal. In practical terms this means that inversion, and the expansion associated with it, can only occur during the cooling cycle. In fully cooled material there would appear to be no further risk of instability from this mechanism.

b) Iron unsoundness is a very rare form of instability frequently associated with operating problems in the blast furnace. TRS know of only one instance in over 40 years. The mechanism, which is a hydrolysis reaction, is immediately triggered off by the presence of water. Once water has initiated the reaction, the mechanism proceeds to completion. It is impossible to arrest the process once started; at least by methods operating in normal ambient conditions.

It follows that the risk of late expansion from either of these mechanisms in blast furnace slag is remote.

Sulphoaluminate Type Activity

Some years ago, G. H. Thomas discovered a third mechanism that may give rise to volumetric instability. The process is possible only in some old blast furnace slag altered by weathering. When the sulphide sulphur in the blast furnace slags is oxidised during

weathering to sulphate, under some circumstances reactions can take place within the slag to produce an 'ettringite' type product. The process is somewhat analogous to sulphatic attack on concrete and has a similar result - expansion of the mass and associated disruption.

For the mechanism to have any significance, the slag needs to have residual potential for this reaction. Evidence of past activity does not necessarily indicate further reaction is possible.

The TRS accelerated expansion test is, we believe, uniquely capable of identifying such slags, as well as instability attributable to free CaO and free MgO in steel slag & etc.

Basic Steel Slags

Basic steel slags commonly contain significant quantities of free CaO and free MgO. These free oxides are well known for the massive expansion associated with their hydration. In practical terms, it is impossible to forecast when hydration will take place, but it can be up to decades after the material was cooled – or placed. The reasons are complex, but include the varying density of the oxides, due to the variation in temperatures at which the products have been held in the furnace. Other factors influencing rate of hydration include:-

- the protection of slags by a reaction product at the oxide interface with the slag.
- the presence of the oxides as lime or magnesia rich solid solutions instead of the pure oxide.

The result is potential future volumetric instability but at an unforeseeable date. Periclase, i.e. free MgO, is relatively much slower than free CaO to hydrate.

Scrap High Magnesia Refractories

These are particularly undesirable components in fill as they commonly result in high concentrations of free MgO. The problems associated with these concentrations are similar to those where periclase is found in basic steel slag.

TRS REPORT

Report Ref: KJ0G-KJ0H/WYG/LCM/TRS/09/20/RP2

Date Issued: 30 September 2020

TRS Sample Refs: KJ0G01-06/KJ0H01

Order No: E-mail

**EXAMINATION OF SIX SAMPLES
FROM
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FOR WYG ENVIRONMENTAL**



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A Limited Company registered in England. Company Registration No: 2518421

EXAMINATION OF SIX SAMPLES FROM LECONFIELD, CLEATOR MOOR FOR WYG ENVIRONMENTAL

1. BACKGROUND

Six bulk samples were received from the above site on 22nd July 2020. A further single sample was received on 18th August 2020. Each sample was weighed and allocated a unique TRS reference number, the details of which are recorded below:-

<u>TRS Ref</u>	<u>Test Pit</u>	<u>Depth/m</u>	<u>Mass/kg</u>
KJ0G01	TP101	0.7-1.7	15.4
KJ0G02	TP102	0.2-1.8	15.5
KJ0G03	TP103	0.2-1.6	9.8
KJ0G04	TP105	-	9.7
KJ0G05	TP106	-	12.4
KJ0G06	TP107	-	10.5
KJ0H01	-	-	12.1

The purpose of the exercise was to identify the range and relative concentrations of any iron and steelmaking slags present in the samples, and whether there was any potential for volumetric instability from the materials.

2. SAMPLE PREPARATION & PROGRAMME OF ANALYSIS

All the request of the client, sample KJ0G02 was not tested. The remaining six samples were primary crushed to reduce particle size down to <50mm, portions then being selected and dried at low temperature to constant weight. The dried material was subjected to a regime of stage crushing and quartering to further reduce particle size down to <5mm. Portions of this <5mm material were made

up into resin bound blocks, one face of which was ground flat and polished using diamond pastes. Further portions of the <5mm material were milled to a fine powder. Fractions of material were extracted throughout the preparation procedure to provide the materials necessary for the tests and analyses in the programme.

A petrological examination was made of the polished blocks using reflected light microscopy, the complete findings of which are recorded in appendices A & B. These results were reported and discussed in our reports of 24 August & 15 September 2020. On the basis of those results, and after discussions with the client, the following tests and analyses were carried out on samples KJ0G01, 03-06 & KJ0H01:-

- Water soluble sulphate (table 1)
- Acid soluble sulphate (table 1)
- Total sulphur (table 1)
- Thermal analysis (DTA & TGA) (table 2)
- TRS accelerated expansion test (table 3)

3. DISCUSSION OF RESULTS

3.1 Petrology

A petrological examination was made of the six samples using reflected light microscopy. The complete findings of this examination are recorded in appendices A & B.

All six samples consisted almost entirely of significantly altered blast furnace slag. Other constituents seen in relatively minor amounts in the samples included quartz, rust and coke.

No basic steel slag or basic refractory material was seen in any of the six samples. This is good news as when present these products can have significant potential for expansion.

The blast furnace slag was predominantly crystalline. Much of the slag was significantly altered due to weathering. The unaltered slag consists mostly of melilite, along with some larnite, possibly bredigite and merwinite, wollastonite, and calcium sulphide. The slag alteration was evident as rinds, replacement of the original phases, and pore infill. Some of the secondary phases were difficult to identify specifically under the microscope but calcite and gypsum were clearly seen.

Old weathered blast furnace slag can, on occasions, contain pockets of potentially expansive material (see appendix C). Potential for expansion can only be assessed with direct expansion testing (see sections 3.2 to 3.4).

3.2 Sulphur Species

The following range of analyses were performed on samples KJ0G01, 03-06 & KJ0H01. The results are recorded in table 1:-

- Water soluble sulphate
- Acid soluble sulphate
- Total sulphur

Total sulphur values were recorded between 0.96 and 2.44 percent. These values would be regarded as high for this type of material. Acid soluble sulphates recorded were between 0.61 and 2.53 percent, with corresponding water soluble sulphates of 0.22 to 1.13 g/l. These sulphate values are high and should be taken into account when specifying concrete that may come into contact with the slag. Calculations show that between 18 and 41 percent of the available sulphur is present as sulphate.

3.3 Thermal Analysis

Simultaneous differential thermal analysis (DTA) and thermo-gravimetric analysis (TGA) was performed on samples KJ0G01, 03-06 & KJ0H01. The results are recorded in table two.

Ettringite was recorded in four of the samples at between trace and 3.3 percent. The presence of ettringite indicates some past expansion of the blast furnace slag. Significant gypsum was measured in the samples, with levels of between 2.0 and 8.7 percent. On comparing the gypsum and acid soluble sulphate values, all of the gypsum values appear to be overstated, some significantly. This is common in old weathered blast furnace slag, and is usually an indicator of the presence of thaumasite. Thaumasite is another product of past expansion in the blast furnace slag.

No calcium or magnesium hydroxides were seen in the samples. These products are associated with the presence of basic steel slag and/or basic refractory material, neither of which were identified in these samples.

Calcite was identified in all samples at between 1.4 and 6.3 percent. This material is an indicator as to the weathered state of the slag.

3.4 TRS Accelerated Expansion Test

The TRS accelerated expansion test was performed on samples KJ0G01, 03-06 & KJ0H01. The results are recorded in table three. The samples were subjected to the test for a period of 14 days. Note that the test measures potential for future expansion, and is not a measure of expansion that may have taken place in the past.

Final expansions (14 day results) were recorded at between 0.02 and 0.18 percent. These results then show some modest potential for future expansion.

4. CONCLUSIONS

The following conclusions can be drawn:-

- Blast furnace slag was the predominant constituent of all six samples. The slag showed significant alteration due to weathering. Old weathered blast furnace slag may contain pockets of potentially expansive material.
- Expansion testing was carried out on the six samples. The TRS accelerated expansion test recorded some modest potential for expansion (up to 0.18%). Thermal analysis indicated evidence of past expansion (presence of ettringite and thaumasite). High sulphate levels were recorded in the samples. These should be taken into account when specifying concrete that may come into contact with the slag.
- Other constituents seen in more minor amounts in the samples included quartz, rust and coke.
- No basic steel slag or basic refractory material was seen in any of the five samples. This is good news, as when present, these products can be a significant source of expansion.

Note

These conclusions apply only to the samples tested and may not represent the bulk of the material on the site from which they were taken.

Ian D. Thomas

Ian D Thomas BSc(Hons)

30 September 2020

TABLE 1 **SULPHUR SPECIES ANALYSES**

TRS Ref	Site Ref	Water Sol. SO ₃ (g/l)	Acid Sol. SO ₃ (%)	Total S (%)
KJ0G01	TP101	0.34	0.62	1.39
KJ0G03	TP103	0.39	0.61	0.96
KJ0G04	TP105	0.22	2.53	2.44
KJ0G05	TP106	0.29	0.93	1.17
KJ0G06	TP107	0.52	0.78	1.28
KJ0H01	-	1.13	1.34	1.79

TABLE 2 **RESULTS FROM THERMAL ANALYSIS**

TRS Ref	Site Ref	Mass % by Thermal Analysis						
		L.O.I.	Ettringite	Gypsum	Calcite	Ca(OH) ₂	Mg(OH) ₂	Others
KJ0G01	TP101	5.50	1.2	2.0	1.4	0.0	0.0	-
KJ0G03	TP103	7.08	0.0	4.3	6.3	0.0	0.0	-
KJ0G04	TP105	17.58	3.3	6.3	2.7	0.0	0.0	-
KJ0G05	TP106	9.96	1.7	3.4	6.0	0.0	0.0	-
KJ0G06	TP107	7.24	trace	5.1	5.2	0.0	0.0	-
KJ0H01	-	2.76	0.0	8.7	3.6	0.0	0.0	-

TABLE 3 **TRS ACCELERATED EXPANSION TEST**

TRS Ref	Site Ref	7 day (%)	14 day (%)
KJ0G01	TP101	0.03	0.05
KJ0G03	TP103	0.02	0.02
KJ0G04	TP105	0.11	0.11
KJ0G05	TP106	0.05	0.06
KJ0G06	TP107	0.07	0.09
KJ0H01	-	0.15	0.18

APPENDIX A

PETROLOGICAL REPORT ON SAMPLES KJ0G 01 & 03-06

A petrological examination has been carried out of five samples KJ 01, 03-06.

Polished blocks were prepared using particulate material crushed to a nominal size of – 5mm. Representative material was made up into resin-bonded blocks. One face of each of these was ground flat and polished using diamond pastes. In addition, the surfaces were selectively etched with water and 0.1%N HCl in order to help with the phase identification.

The detailed results are given in the accompanying Table.

The samples consist almost entirely of blast furnace slag and its alteration products.

No basic steel slag or basic refractory material was seen.

The blast furnace slag is mainly pale grey in colour. It is extensively altered with secondary phases forming rinds, infilling pores and replacing the original primary constituents.

The unaltered slag is mainly crystalline or finely crystalline with a ceramic appearance. There are minor amounts of glassy slag. Melilite (Ca,Mg,Al silicate) is the main silicate phase. It is associated with more calcium-rich silicates (larnite (β -Ca₂SiO₄) and possibly bredigite (Ca₂SiO₄ with some Mg in solid solution) and probably merwinite (Ca,Mg silicate). Mostly these silicates occur as small needle-shaped crystals as part of the matrix to the melilite. Other silicate phases form a matrix, mostly between the melilite crystals, that consists of the above phases and other phases such as wollastonite (CaSiO₃) and devitrified glass slag.

A little calcium sulphide is present. It occurs as finely disseminated, dendritic grains. There are also small amounts of metallic iron forming minute spherules and small prills. This is mostly carbon-rich with included flakes of graphite.

The primary slag is much altered. It has probably been subject to 'falling' involving the conversion of the dicalcium silicate to the gamma (low temperature) form on cooling but this does not seem to have been accompanied by much expansion and disintegration. Subsequently, this and the other primary phases have been hydrated as part of continued secondary alteration and recemented mainly with calcite. Much calcite (CaCO₃) is well crystallized but other alteration products are finely granular and are difficult to identify specifically under the microscope. Small needle-shaped crystals are probably sulpho-aluminate hydrates such as ettringite. Some well-crystallised gypsum (CaSO₄.2H₂O) is present, mostly infilling original gas pores.

Other constituents are quartz, rust and coke.

TRS SAMPLES KJ0G 01, 03-06

	1	3	4	5	6
BLAST FURNACE SLAG					
Amount	L	L	I	L	L
Phases present:-			I		
Melilite	m	m	s	m	m
Merwinite	-	-	-	-	s
Larnite & bredigite	m	m	s	m	s
Matrix & other silicates	m	s	s	m	s
Ca sulphide	vs	vs	vs	vs	vs
Metallic iron	vs	vs	vs	s	s
Spinel	-	vs	-	-	-
Quartz inclusions	-	-	-	-	-
Glassy slag	-	-	-	-	-
Siliceous clinker	-	-	-	-	-
Alteration products	m	m	l	l	l
Calcite	m	m	m	m	m
Gypsum	-	vs	s	-	-
BASIC STEEL SLAG					
Amount	-	-	-	-	-
BASIC REFRACTORIES					
Amount	-	-	-	-	-
OTHER CONSTITUENTS					
Quartz, etc.	s	vs	m	s	s
Metal, rust, scale, etc.	s	vs	s	s	s
Cementitious alteration products	s	s	m	m	m

L = very large, I = large, m = medium, s = small and vs = very small amounts

APPENDIX B

PETROLOGICAL REPORT ON SAMPLE KJ0H 01

A petrological examination has been carried out of sample KJ0H 01.

A polished block was prepared using particulate material crushed to a nominal size of – 5mm. Representative material was made up into the resin-bonded block. One face of this was ground flat and polished using diamond pastes. In addition, the surface was selectively etched with water and 0.1%N HCl in order to help with the phase identification.

The detailed results are given in the accompanying Table.

The samples consist almost entirely of blast furnace slag and its alteration products.

No basic steel slag or basic refractory material was seen.

The blast furnace slag is mainly pale grey in colour. It is extensively altered with secondary phases forming rinds, infilling pores and replacing the original primary constituents.

The unaltered slag is mainly finely crystalline with a ceramic appearance. Melilite (Ca,Mg,Al silicate) is the main silicate phase. It is associated with more calcium-rich silicates (larnite (β -Ca₂SiO₄) and possibly bredigite (Ca₂SiO₄ with some Mg in solid solution). Together with other silicate phases they form a matrix, mostly between the melilite crystals, that consists of the above phases and other phases such as wollastonite (CaSiO₃) and devitrified glass slag.

A little calcium sulphide is present. It occurs as finely disseminated, dendritic grains. There are also small amounts of metallic iron forming minute spherules and small prills. This is mostly carbon-rich with included flakes of graphite.

The primary slag is much altered. It has probably been subject to 'falling' involving the conversion of the dicalcium silicate to the gamma (low temperature) form on cooling but this does not seem to have been accompanied by much expansion and disintegration. Subsequently, this and the other primary phases have been hydrated as part of continued secondary alteration and re-cemented. Much calcite (CaCO₃) is well crystallized but other alteration products are finely granular and are difficult to identify specifically under the microscope. Small needle-shaped crystals are probably sulpho-aluminate hydrates such as ettringite. Some well-crystallised gypsum (CaSO₄.2H₂O) is present, mostly infilling original gas pores.

Other constituents are quartz, rust and coke.

TRS SAMPLE KJ0H 01

	1
BLAST FURNACE SLAG	
Amount	L
Phases present:-	
Melilite	m
Merwinite	-
Larnite & bredigite	s
Matrix & other silicates	m
Ca sulphide	s
Metallic iron	vs
Alteration products	l
Calcite	m
Gypsum	s
BASIC STEEL SLAG	
Amount	-
BASIC REFRACTORIES	
Amount	-
OTHER CONSTITUENTS	
Quartz, etc.	m
Metal, rust, scale, etc.	s
Fume	vs
Coke	s
Cementitious alteration products	m

L = very large, l = large, m = medium, s = small and vs = very small amounts

APPENDIX C

MECHANISMS OF VOLUMETRIC INSTABILITY IN IRON AND STEEL INDUSTRY SLAGS

Volumetric change with time can occur in some types of iron and steel industry slags. These mechanisms are briefly described in this section.

Blast Furnace Slags

Fresh-make air-cooled, i.e. crystalline, blast furnace slags are almost always volumetrically stable after cooling. The two mechanisms for volumetric instability listed in BS1047:1983 – “Air Cooled Blast furnace Slag for use in Construction” are:-

- a) Beta to gamma inversion of dicalcium silicate.**
- b) Iron unsoundness.**

a) Research by G H Thomas on this phase transformation has shown the transformation to be athermal rather than isothermal. In practical terms this means that inversion, and the expansion associated with it, can only occur during the cooling cycle. In fully cooled material there would appear to be no further risk of instability from this mechanism.

b) Iron unsoundness is a very rare form of instability frequently associated with operating problems in the blast furnace. TRS know of only one instance in over 40 years. The mechanism, which is a hydrolysis reaction, is immediately triggered off by the presence of water. Once water has initiated the reaction, the mechanism proceeds to completion. It is impossible to arrest the process once started; at least by methods operating in normal ambient conditions.

It follows that the risk of late expansion from either of these mechanisms in blast furnace slag is remote.

Sulphoaluminate Type Activity

Some years ago, G. H. Thomas discovered a third mechanism that may give rise to volumetric instability. The process is possible only in some old blast furnace slag altered by weathering. When the sulphide sulphur in the blast furnace slags is oxidised during

weathering to sulphate, under some circumstances reactions can take place within the slag to produce an 'ettringite' type product. The process is somewhat analogous to sulphatic attack on concrete and has a similar result - expansion of the mass and associated disruption.

For the mechanism to have any significance, the slag needs to have residual potential for this reaction. Evidence of past activity does not necessarily indicate further reaction is possible.

The TRS accelerated expansion test is, we believe, uniquely capable of identifying such slags, as well as instability attributable to free CaO and free MgO in steel slag & etc.

Basic Steel Slags

Basic steel slags commonly contain significant quantities of free CaO and free MgO. These free oxides are well known for the massive expansion associated with their hydration. In practical terms, it is impossible to forecast when hydration will take place, but it can be up to decades after the material was cooled – or placed. The reasons are complex, but include the varying density of the oxides, due to the variation in temperatures at which the products have been held in the furnace. Other factors influencing rate of hydration include:-

- the protection of slags by a reaction product at the oxide interface with the slag.
- the presence of the oxides as lime or magnesia rich solid solutions instead of the pure oxide.

The result is potential future volumetric instability but at an unforeseeable date. Periclase, i.e. free MgO, is relatively much slower than free CaO to hydrate.

Scrap High Magnesia Refractories

These are particularly undesirable components in fill as they commonly result in high concentrations of free MgO. The problems associated with these concentrations are similar to those where periclase is found in basic steel slag.



2531



ANALYTICAL TEST REPORT

Contract no: 89716(1)
Contract name: Leconfield Industrial Estate, Cleator Moor, Cumbria
Client reference: PSL20/4841
Clients name: Professional Soils Laboratory
Clients address: 5/7 Hexthorpe Road
Doncaster
DN4 0AR

Samples received: 28 September 2020

Analysis started: 28 September 2020

Analysis completed: 05 October 2020

Report issued: 06 October 2020

This is a supplementary report to report number 89716 issued 05 October 2020.

Notes: Opinions and interpretations expressed herein are outside the UKAS accreditation scope.
Unless otherwise stated, Chemtech Environmental Ltd was not responsible for sampling.
All testing carried out at Unit 6 Parkhead, Stanley, DH9 7YB, except for subcontracted testing.
Methods, procedures and performance data are available on request.
Results reported herein relate only to the material supplied to the laboratory.
This report shall not be reproduced except in full, without prior written approval.
Samples will be disposed of 6 weeks from initial receipt unless otherwise instructed.

Key: U UKAS accredited test
M MCERTS & UKAS accredited test
\$ Test carried out by an approved subcontractor
I/S Insufficient sample to carry out test
N/S Sample not suitable for testing

Approved by:

Karan Campbell
Director

Chemtech Environmental Limited

SOILS

Lab number			89716-1	89716-2	89716-3	89716-4	89716-5	89716-6
Sample id			CP101-1	CP101-8	CP101-17	CP101-20	CP102-5	CP102-12
Depth (m)			0.50	7.50-7.95	12.00-12.45	13.50-13.95	6.00-6.45	10.50-10.95
Date sampled			05/08/2020	05/08/2020	05/08/2020	05/08/2020	05/08/2020	05/08/2020
Test	Method	Units						
pH	CE004 ^U	units	7.9	9.5	8.9	8.6	9.0	8.4
Magnesium (2:1 water soluble)	CE061	mg/l Mg	1.6	<1	-	-	<1	-
Chloride (2:1 water soluble)	CE049 ^U	mg/l Cl	8.2	8.8	-	-	17	-
Nitrate (2:1 water soluble)	CE049 ^U	mg/l NO ₃	7.5	2.7	-	-	1.4	-
Sulphate (2:1 water soluble)	CE061 ^U	mg/l SO ₄	512	802	99	48	1608	242

Chemtech Environmental Limited

SOILS

Lab number			89716-7	89716-8	89716-9	89716-10	89716-11	89716-12
Sample id			CP102-17	CP103-2	CP103-6	CP104-4	CP104-9	CP105-4
Depth (m)			13.50-13.95	7.50-7.95	10.50-10.95	9.90	12.00-12.45	2.00-2.45
Date sampled			05/08/2020	05/08/2020	05/08/2020	05/08/2020	05/08/2020	05/08/2020
Test	Method	Units						
pH	CE004 ^U	units	8.0	9.9	9.1	8.9	9.0	8.1
Magnesium (2:1 water soluble)	CE061	mg/l Mg	-	<1	-	<1	-	<1
Chloride (2:1 water soluble)	CE049 ^U	mg/l Cl	-	5.2	-	1.9	-	2.9
Nitrate (2:1 water soluble)	CE049 ^U	mg/l NO ₃	-	<1	-	<1	-	4.5
Sulphate (2:1 water soluble)	CE061 ^U	mg/l SO ₄	44	970	46	29	64	47

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SOILS

Lab number			89716-13	89716-14	89716-15	89716-16	89716-17	89716-18
Sample id			CP105-8	CP105-15	CP106-4	CP106-14	CP106-19	RBH101-2
Depth (m)			4.00-4.45	7.50-7.95	3.00-3.45	8.50-9.00	10.50-10.95	33.85-33.89
Date sampled			05/08/2020	05/08/2020	05/08/2020	05/08/2020	05/08/2020	03/09/2020
Test	Method	Units						
pH	CE004 ^U	units	7.8	8.2	8.6	8.5	7.8	8.4
Magnesium (2:1 water soluble)	CE061	mg/l Mg	4.3	1.3	<1	1.6	-	-
Chloride (2:1 water soluble)	CE049 ^U	mg/l Cl	3.2	5.5	6.2	4.3	-	-
Nitrate (2:1 water soluble)	CE049 ^U	mg/l NO ₃	<1	<1	<1	<1	-	-
Sulphate (2:1 water soluble)	CE061 ^U	mg/l SO ₄	66	29	265	50	490	20

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SOILS

Lab number			89716-19	89716-20	89716-21	89716-22	89716-23	89716-24
Sample id			RBH107-1	RBH107-3	RBH107-6	RBH112-7	RBH112-3	TP107-1
Depth (m)			14.80-14.95	25.85-25.98	36.32-36.50	16.20-16.25	25.00-25.25	0.10-1.00
Date sampled			08/09/2020	08/09/2020	08/09/2020	05/09/2020	05/09/2020	15/07/2020
Test	Method	Units						
pH	CE004 ^U	units	8.2	8.8	9.3	8.5	8.3	8.3
Magnesium (2:1 water soluble)	CE061	mg/l Mg	-	-	-	-	-	<1
Chloride (2:1 water soluble)	CE049 ^U	mg/l Cl	-	-	-	-	-	26
Nitrate (2:1 water soluble)	CE049 ^U	mg/l NO ₃	-	-	-	-	-	<1
Sulphate (2:1 water soluble)	CE061 ^U	mg/l SO ₄	33	34	24	18	<10	75

Chemtech Environmental Limited

SOILS

Lab number			89716-25	89716-26	89716-27	89716-28	89716-29
Sample id			WS102-2	WS104-2	WS106-2	WS107-1	WS109-1
Depth (m)			0.20-1.20	0.20-1.20	0.10-0.70	0.10-0.70	0.30-1.00
Date sampled			13/07/2020	13/07/2020	14/07/2020	14/07/2020	14/07/2020
Test	Method	Units					
pH	CE004 ^U	units	9.5	7.9	8.4	8.4	8.4
Magnesium (2:1 water soluble)	CE061	mg/l Mg	<1	<1	<1	<1	<1
Chloride (2:1 water soluble)	CE049 ^U	mg/l Cl	8.5	6.8	<1	1.1	2.7
Nitrate (2:1 water soluble)	CE049 ^U	mg/l NO ₃	<1	2.4	1.8	3.0	<1
Sulphate (2:1 water soluble)	CE061 ^U	mg/l SO ₄	1081	341	662	512	219

Chemtech Environmental Limited

METHOD DETAILS

METHOD	SOILS	METHOD SUMMARY	SAMPLE	STATUS	LOD	UNITS
CE004	pH	Based on BS 1377, pH Meter	As received	U	-	units
CE061	Magnesium (2:1 water soluble)	Aqueous extraction, ICP-OES	Dry		1	mg/l Mg
CE049	Chloride (2:1 water soluble)	Aqueous extraction, IC-COND	Dry	U	1	mg/l Cl
CE049	Nitrate (2:1 water soluble)	Aqueous extraction, IC-COND	Dry	U	1	mg/l NO ₃
CE061	Sulphate (2:1 water soluble)	Aqueous extraction, ICP-OES	Dry	U	10	mg/l SO ₄

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DEVIATING SAMPLE INFORMATION

Comments

Sample deviation is determined in accordance with the UKAS note "Guidance on Deviating Samples" and based on reference standards and laboratory trials.

For samples identified as deviating, test result(s) may be compromised and may not be representative of the sample at the time of sampling.

Chemtech Environmental Ltd cannot be held responsible for the integrity of sample(s) received if Chemtech Environmental Ltd did not undertake the sampling. Such samples may be deviating.

Key

N	No (not deviating sample)
Y	Yes (deviating sample)
NSD	Sampling date not provided
NST	Sampling time not provided (waters only)
EHT	Sample exceeded holding time(s)
IC	Sample not received in appropriate containers
HP	Headspace present in sample container
NCF	Sample not chemically fixed (where appropriate)
OR	Other (specify)

Lab ref	Sample id	Depth (m)	Deviating	Tests (Reason for deviation)
89716-1	CP101-17	0.50	N	
89716-2	CP101-8	7.50-7.95	N	
89716-3	CP101-17	12.00-12.45	N	
89716-4	CP101-20	13.50-13.95	N	
89716-5	CP102-5	6.00-6.45	N	
89716-6	CP102-12	10.50-10.95	N	
89716-7	CP102-17	13.50-13.95	N	
89716-8	CP103-2	7.50-7.95	N	
89716-9	CP103-6	10.50-10.95	N	
89716-10	CP104-4	9.90	N	
89716-11	CP104-9	12.00-12.45	N	
89716-12	CP105-4	2.00-2.45	N	
89716-13	CP105-8	4.00-4.45	N	
89716-14	CP105-15	7.50-7.95	N	
89716-15	CP106-4	3.00-3.45	N	
89716-16	CP106-14	8.50-9.00	N	
89716-17	CP106-19	10.50-10.95	N	
89716-18	RBH101-2	33.85-33.89	N	
89716-19	RBH107-1	14.80-14.95	N	
89716-20	RBH107-3	25.85-25.98	N	
89716-21	RBH107-6	36.32-36.50	N	
89716-22	RBH112-7	16.20-16.25	N	
89716-23	RBH112-3	25.00-25.25	N	
89716-24	TP107-1	0.10-1.00	N	
89716-25	WS102-2	0.20-1.20	N	
89716-26	WS104-2	0.20-1.20	N	
89716-27	WS106-2	0.10-0.70	N	
89716-28	WS107-1	0.10-0.70	N	
89716-29	WS109-1	0.30-1.00	N	

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TEST REPORT REVISIONS

The table below identifies ammendments that have been made to this test report for each revision.

Test Report Reference	Details of amendments to test report	Issue Date
89716	Original report issued	05 October 2020
89716(1)	Sampling dates added to 89716-18-23	06 October 2020

Appendix E – Gas & Groundwater Monitoring Results



Client **Copeland Borough Council & Energy Coast West Cumbria (Properties) Ltd**
 Project **LECONFIELD INDUSTRIAL ESTATE**
 Job Number **A114312-1**

Date 20/08/20 Start 11:00 End 15:00 By DF/AL AP Trend Falling Weather Dry, windy

Instruments used - GA5000 with internal flow pod, Oil/Water Interface Meter.

Background (start) CH₄ 0.2 CO₂ 0.1 O₂ 20.7% AP 988
 Background (end) CH₄ 0.2 CO₂ <0.1 O₂ 20.3% AP 981

Installation	Borehole Level (mAOD)	BH Pressure	CH ₄ (% vol)			CO ₂ (% vol)			O ₂ (% vol)			CO (ppm)	H ₂ S (ppm)	PID		Flow Rate (l/hr)		Atmospheric Pressure (mbar)	Depth to Water (mbgl)	Depth to Water (mAOD)	Depth to Base (mbgl)	Remarks
		mb	Peak	Min	Steady	Peak	Min	Steady	Peak	Min	Steady			Peak	Steady	Peak	Steady					
WS105	83.12	2.39	0.2	0.2	0.2	1.9	1.9	1.9	7.8	3.0	3.0	<1	<1	<0.1	<0.1	0.2	0.2	989	Dry	Dry	1.90	
WS104	82.17	0.03	0.2	0.2	0.2	0.5	0.5	0.5	19.4	18.5	19.3	<1	<1	0.1	0.1	0.4	0.3	989	WAB	<82.17	1.00	
CP103	81.94	0.02	0.2	0.2	0.2	<0.1	<0.1	<0.1	18.7	17.5	17.5	6	<1	<0.1	<0.1	0.7	0.2	989	5.70	76.24	6.10	
WS102	80.95	0.22	0.2	0.2	0.2	<0.1	<0.1	<0.1	19.2	19.1	19.1	2	<1	0.5	0.4	<0.1	<0.1	989	WAB	<80.95	1.74	
WS103	81.63	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Ant nest
CP101	80.76	14.00	0.2	0.1	0.2	<0.1	<0.1	<0.1	18.4	17.8	17.9	9	<1	0.5	0.1	0.3	0.2	989	Dry	Dry	7.66	
CP102	81.71	-1.15	0.4	0.3	0.4	0.1	0.1	0.1	20.4	18.1	18.1	10	<1	<0.1	<0.1	-7.6	-3.3	981	7.80	73.91	14.48	
CP105	82.99	19.39	0.5	0.4	0.5	0.9	0.9	0.9	7.3	0.2	0.2	1	<1	0.6	0.5	9.0	9.0	981	Dry	Dry	8.10	
WS108	83.01	0.02	0.2	0.2	0.2	<0.1	<0.1	<0.1	11.9	11.7	11.8	1	<1	1.4	1.4	0.4	0.4	981	1.80	81.21	2.02	
CP106	82.94	0.03	0.2	0.2	0.2	0.1	<0.1	<0.1	20.3	12.0	20.3	5	<1	<0.1	<0.1	0.3	0.3	981	8.02	74.92	10.10	
WS109	83.29	1.31	0.2	0.1	0.2	0.7	0.7	0.7	19.4	18.7	19.4	4	<1	<0.1	<0.1	<0.1	<0.1	981	0.61	82.68	2.00	
RBH101	81.36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Not installed
RBH107	83.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Not installed
RBH109	83.13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Not installed
CP104	82.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Still Drilling

WAB = Wet at base



Client **Copeland Borough Council & Energy Coast West Cumbria (Properties) Ltd**
 Project **LECONFIELD INDUSTRIAL ESTATE**
 Job Number **A114312-1**

Date 11/09/20 Start 09:00 End 14:00 By GR AP Trend Steady Weather Heavy rain, strong wind

Instruments used - GA5000 with internal flow pod, Oil/Water Interface Meter.

Background (start) CH₄ <0.1 CO₂ <0.1 O₂ 20.5% AP 999
 Background (end) CH₄ <0.1 CO₂ <0.1 O₂ 20.4% AP 1000

Installation	Borehole Level (mAOD)	BH Pressure	CH ₄ (% vol)			CO ₂ (% vol)			O ₂ (% vol)			CO (ppm)	H ₂ S (ppm)	PID		Flow Rate (l/hr)		Atmospheric Pressure (mbar)	Depth to Water (mbgl)	Depth to Water (mAOD)	Depth to Base (mbgl)	Remarks
		mb	Peak	Min	Steady	Peak	Min	Steady	Peak	Min	Steady	Peak	Peak	Peak	Steady	Peak	Steady					
WS105	83.12	0.00	<0.1	<0.1	<0.1	1.6	0.9	1.6	6.8	2.4	2.3	<1	<1	<0.1	<0.1	<0.1	<0.1	999	Dry	Dry	2.00	
WS104	82.17	1.00	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	20.7	19.2	20.7	<1	<1	0.1	<0.1	-0.5	-0.3	999	WAB	<82.17	0.98	
CP103	81.94	0.40	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	20.6	20.2	20.5	<1	<1	<0.1	<0.1	-1.0	<0.1	999	5.71	76.23	6.12	
WS102	80.95	0.00	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	20.8	19.9	19.9	<1	<1	0.3	0.1	<0.1	<0.1	999	WAB	<80.95	1.77	
WS103	81.63	-	-	-	-	-	-	-	-	-	-	<1	-	-	-	-	-	-	-	-	-	Ant nest
CP101	80.76	1.90	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	20.8	20.2	20.7	<1	<1	0.3	0.1	-0.3	-0.1	1000	Dry	Dry	7.66	
CP102	81.71	3.00	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	19.8	17.9	18.1	<1	<1	<0.1	<0.1	-3.5	-0.9	999	7.95	73.76	14.70	
CP105	82.99	-	-	-	-	-	-	-	-	-	-	<1	-	-	-	-	-	-	-	-	-	Covered by tanks for RBH108A
WS108	83.01	1.00	<0.1	<0.1	<0.1	1.4	0.1	0.1	16.4	7.1	10.1	<1	<1	1.0	0.8	-0.3	-0.1	999	1.70	81.31	2.09	
CP106	82.94	0.00	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	12.8	7.9	12.4	<1	<1	<0.1	<0.1	-0.1	0.0	999	9.01	73.93	10.10	
WS109	83.29	-	-	-	-	-	-	-	-	-	-	<1	-	-	-	-	-	-	-	-	-	No access
RBH101	81.36	10.00	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	20.4	20.1	20.3	<1	<1	1.0	0.9	-9.5	-2.5	999.0	8.05	73.31	34.61	
RBH107	83.03	1.00	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	20.8	19.1	19.1	<1	<1	1.0	1.0	-0.1	0.0	999.0	0.35	82.68	32.20	
RBH109	83.13	1.00	<0.1	<0.1	<0.1	1.8	0.3	1.8	8.5	5.0	5.0	<1	<1	1.0	1.0	-0.3	-0.1	999.0	6.05	77.08	23.55	
CP104	82.99	1.40	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	20.6	20.0	20.5	<1	<1	0.9	0.7	-0.1	0.0	1000.0	6.80	76.19	15.10	

WAB = Wet at base



Client **Copeland Borough Council & Energy Coast West Cumbria (Properties) Ltd**
 Project **LECONFIELD INDUSTRIAL ESTATE**
 Job Number **A114312-1**

Date 23/09/20 Start 10:30 End 14:00 By AL AP Trend Steady Weather Overcast and dry

Instruments used - GA5000 with internal flow pod, Oil/Water Interface Meter.

Background (start) CH₄ 0.3 CO₂ 0.1 O₂ 20.6% AP 992
 Background (end) CH₄ 0.3 CO₂ 0.1 O₂ 20.5% AP 992

Installation	Borehole Level (mAOD)	BH Pressure	CH ₄ (% vol)			CO ₂ (% vol)			O ₂ (% vol)			CO (ppm)	H ₂ S (ppm)	PID		Flow Rate (l/hr)		Atmospheric Pressure (mbar)	Depth to Water (mbgl)	Depth to Water (mAOD)	Depth to Base (mbgl)	Remarks
		mb	Peak	Min	Steady	Peak	Min	Steady	Peak	Min	Steady	Peak	Peak	Peak	Steady	Peak	Steady					
WS105	83.12	0.02	0.3	0.3	0.3	1.7	0.7	1.7	2.1	2.0	2.1	1	<1	<0.1	<0.1	0.3	0.3	992	Dry	Dry	1.95	96.2% Bal
WS104	82.17	0.74	0.3	0.3	0.3	0.5	0.5	0.5	19.2	19.2	19.2	<1	<1	0.2	0.2	0.2	0.2	992	WAB	<82.17	1.00	79.8% Bal
CP103	81.94	0.14	0.3	0.3	0.3	0.3	0.3	0.3	18.5	18.5	18.5	1	<1	<0.1	<0.1	0.1	0.1	992	5.61	76.33	6.10	81% Bal
WS102	80.95	0.07	0.3	0.3	0.3	-0.1	<0.1	<0.1	19.3	19.3	19.3	1	<1	0.2	0.1	<0.1	<0.1	992	WAB	<80.95	1.75	80.4% Bal
WS103	81.63	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Ant nest
CP101	80.76	0.10	0.3	0.3	0.3	0.1	<0.1	<0.1	20.0	20.0	20.0	1	<1	0.3	0.3	0.3	0.3	992	Dry	Dry	7.67	Bal 79.7%
CP102	81.71	0.03	0.4	0.4	0.4	0.1	<0.1	0.1	15.1	15.0	15.0	5	<1	<0.1	<0.1	-2.1	-1.0	992	8.04	73.67	14.51	83.8% Bal
CP105	82.99	0.02	0.4	0.4	0.4	1.5	1.1	1.1	0.2	0.1	0.1	1	<1	0.4	0.4	0.1	0.1	992	Dry	Dry	8.1	98.4% Bal
WS108	83.01	1.00	0.3	0.3	0.3	0.1	0.1	0.1	12.1	12.1	12.1	<1	<1	0.9	0.7	0.2	0.2	992	1.79	81.22	2.04	80.1% Bal
CP106	82.94	0.72	0.3	0.3	0.3	<0.1	<0.1	<0.1	18.1	10.4	10.4	1	<1	<0.1	<0.1	0.2	0.1	992	8.5	74.44	10.08	94.1% Bal
WS109	83.29	1.31	0.3	0.3	0.3	0.2	0.2	0.2	19.4	19.4	19.4	1	<1	<0.1	<0.1	0.1	0.1	992.0	0.9	82.43	2.0	80.2% Bal
RBH101	81.36	1.41	0.3	0.3	0.3	<0.1	<0.1	<0.1	20.1	20.1	20.1	<1	<1	0.8	0.7	0.2	0.2	992.0	8.60	72.76	34.86	79.5% Bal
RBH107	83.03	11.80	0.3	0.3	0.3	0.1	<0.1	<0.1	19.7	19.7	19.7	2	<1	1.0	1.0	2.0	2.0	992.0	3.20	79.83	32.41	96.2% Bal
RBH109	83.13	7.94	0.5	0.3	0.3	1.1	0.1	0.1	18.6	12.1	12.1	<1	<1	1.0	1.0	0.1	0.1	992.0	6.50	76.63	23.40	80.02% Bal
CP104	82.99	0.02	0.3	0.3	0.3	0.1	<0.1	<0.1	19.8	19.8	19.8	2.0	<1	0.4	0.0	0.2	0.2	992.0	6.80	76.19	15.10	79.8

WAB = Wet at base



Client **Copeland Borough Council & Energy Coast West Cumbria (Properties) Ltd**
 Project **LECONFIELD INDUSTRIAL ESTATE**
 Job Number **A114312-1**

Date 13/10/20 Start 11:40 End 14:40 By AL AP Trend Steady Weather Raining and windy

Instruments used - GA5000 with internal flow pod, Oil/Water Interface Meter.

Background (start) CH₄ 0.3 CO₂ 0.1 O₂ 20.1% AP 1005
 Background (end) CH₄ 0.3 CO₂ 0.1 O₂ 20.1% AP 1005

Installation	Borehole Level (mAOD)	BH Pressure	CH ₄ (% vol)			CO ₂ (% vol)			O ₂ (% vol)			CO (ppm)	H ₂ S (ppm)	PID		Flow Rate (l/hr)		Atmospheric Pressure (mbar)	Depth to Water (mbgl)	Depth to Water (mAOD)	Depth to Base (mbgl)	Remarks
		mb	Peak	Min	Steady	Peak	Min	Steady	Peak	Min	Steady			Peak	Steady	Peak	Steady					
WS105	83.12	0.53	0.3	0.3	0.3	1.5	1.5	1.5	6.0	6.0	6.0	<1	<1	<0.1	<0.1	0.1	0.1	1005	Dry	Dry	1.95	92.2% Bal
WS104	82.17	1.96	0.3	0.3	0.3	0.3	0.3	0.3	19.4	19.4	19.4	<1	<1	0.2	0.2	0.1	0.1	1005	Dry	<82.17	1.00	80.0% Bal
CP103	81.94	2.01	0.2	0.2	0.2	0.1	0.1	0.1	20.0	20.0	20.0	1	<1	<0.1	<0.1	0.1	0.1	1005	5.67	76.27	6.08	79.6% Bal
WS102	80.95	2.19	0.3	0.3	0.3	<0.1	<0.1	<0.1	19.5	19.5	19.5	-	<1	0.2	0.2	<0.1	<0.1	1005	WAB	<80.95	1.75	80.1% Bal
WS103	81.63	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Flooded - Bailed Out
CP101	80.76	0.05	0.3	0.3	0.3	0.1	0.1	0.1	19.8	19.8	19.8	1	<1	0.2	0.2	<0.1	<0.1	1005	Dry	Dry	7.67	79.7% Bal
CP102	81.71	0.14	0.3	0.3	0.3	<0.1	<0.1	0.1	18.1	18.1	18.1	2	<1	<0.1	<0.1	<0.1	<0.1	1005	7.95	73.76	14.50	82.1% Bal
CP105	82.99	4.51	0.3	0.3	0.3	1.4	0.2	0.2	17.9	7.2	17.9	<1	<1	0.4	0.3	<0.1	<0.1	1005	Dry	Dry	8.0	81.7% Bal
WS108	83.01	6.6.0	0.3	0.3	0.3	<0.1	<0.1	<0.1	5.4	5.4	5.4	<1	<1	0.6	0.6	<0.1	<0.1	1005	1.74	81.27	2.01	94.3% Bal
CP106	82.94	0.41	0.3	0.3	0.3	0.1	0.1	0.1	17.9	17.9	17.9	<1	<1	0.1	0.1	0.1	0.1	1005	8.41	74.53	10.02	81.8% Bal
WS109	83.29	1.31	0.3	0.3	0.3	0.1	0.1	0.1	19.6	19.6	19.6	<1	<1	0.2	0.2	0.1	0.1	1005	0.8	82.53	2.0	81.4% Bal
RBH101	81.36	0.02	0.4	0.4	0.4	0.2	0.2	0.2	19.4	19.4	19.1	3	<1	0.4	0.4	0.3	0.3	1005	8.14	73.22	34.02	80.0% Bal
RBH107	83.03	11.80	0.3	0.3	0.3	<0.1	<0.1	<0.1	19.9	19.9	19.9	1	<1	0.8	0.8	1.2	1.2	1005	3.09	79.94	32.39	96.2% Bal
RBH109	83.13	0.22	0.3	0.3	0.3	1.1	1.1	1.1	19.3	19.3	19.3	2	<1	0.9	0.8	0.1	0.1	1005	6.31	76.82	23.10	80.4% Bal
CP104	82.99	2.53	0.3	0.3	0.3	0.1	0.1	0.1	20.7	20.7	20.7	1	<1	0.2	0.1	0.2	0.2	1005	6.95	76.04	15.08	78.9% Bal

WAB = Wet at base



Client **Copeland Borough Council & Energy Coast West Cumbria (Properties) Ltd**
 Project **LECONFIELD INDUSTRIAL ESTATE**
 Job Number **A114312-1**

Date 29/10/20 Start 09:00 End 15:00 By DF AP Trend Steady Weather Heavy rain and wind

Instruments used - GA5000 with internal flow pod, Oil/Water Interface Meter.

Background (start) CH₄ 0.3 CO₂ 0.1 O₂ 21.2% AP 993
 Background (end) CH₄ 0.3 CO₂ 0.1 O₂ 21.3% AP 991

Installation	Borehole Level (mAOD)	BH Pressure	CH ₄ (% vol)			CO ₂ (% vol)			O ₂ (% vol)			CO (ppm)	H ₂ S (ppm)	PID		Flow Rate (l/hr)		Atmospheric Pressure (mbar)	Depth to Water (mbgl)	Depth to Water (mAOD)	Depth to Base (mbgl)	Remarks
		mb	Peak	Min	Steady	Peak	Min	Steady	Peak	Min	Steady	Peak	Peak	Peak	Steady	Peak	Steady					
WS105	83.12	0.22	0.3	0.3	0.3	1.7	1.7	1.7	6.3	4.0	4.0	1	<1	<0.1	<0.1	0.1	0.1	993	dry	dry	1.95	Bal 93.7
WS104	82.17	0.05	0.3	0.3	0.3	0.2	0.2	0.2	20.7	19.3	20.7	<1	<1	0.1	<0.1	0.4	0.4	993	dry	dry	1.00	
CP103	81.94	0.00	0.3	0.3	0.3	0.2	0.1	0.1	21.3	20.5	21.3	1	<1	<0.1	<0.1	0.3	0.3	993	5.62	76.32	6.08	
WS102	80.95	0.00	0.3	0.3	0.3	0.1	0.1	0.1	20.7	19.2	20.7	<1	<1	0.3	0.3	0.5	0.5	993	dry	dry	1.75	
WS103	81.63	-0.19	0.3	0.3	0.3	2.6	2.6	2.6	14.8	14.5	14.5	<1	<1	<0.1	<0.1	0.4	0.4	993	2.0	79.6	2.1	
CP101	80.76	0.02	0.3	0.3	0.3	0.1	0.1	0.1	21.4	20.9	21.4	<1	<1	0.3	0.2	0.4	0.4	993	dry	dry	7.67	
CP102	81.71	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				Borehole flooded
CP105	82.99	-3.50	0.3	0.3	0.3	0.1	0.1	0.1	20.9	16.2	20.9	<1	<1	0.5	0.3	-2.6	-2.6	993	dry	dry	8.0	
WS108	83.01	0.10	0.3	0.3	0.3	0.1	0.1	0.1	12.0	6.2	6.2	<1	<1	0.4	0.4	0.2	0.2	991	1.72	81.29	2.01	
CP106	82.94	0.60	0.3	0.3	0.3	0.1	0.1	0.1	17.9	17.9	17.9	<1	<1	0.1	<0.1	0.3	0.3	991	dry	dry	10.02	
WS109	83.29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				Borehole flooded
RBH101	81.36	3.62	0.4	0.4	0.4	0.2	0.2	0.2	20.5	20.5	20.5	3	<1	0.2	0.2	-11.2	-11.2	993	8.10	73.26	34.02	
RBH107	83.03	3.36	0.3	0.3	0.3	0.2	0.1	0.1	19.8	19.1	19.4	1	<1	1.0	1.0	0.8	0.7	993	5.32	77.71	32.39	
RBH109	83.13	0.10	0.3	0.3	0.3	1.1	1.1	1.1	19.3	19.3	19.3	1	<1	0.9	0.8	0.7	0.7	991	6.19	76.94	23.10	
CP104	82.99	3.30	0.3	0.3	0.3	0.1	0.1	0.1	20.7	20.7	20.7	1	<1	0.2	0.1	0.2	0.1	991	6.91	76.08	15.08	

WAB = Wet at base



Client **Copeland Borough Council & Energy Coast West Cumbria (Properties) Ltd**
 Project **LECONFIELD INDUSTRIAL ESTATE**
 Job Number **A114312-1**

Date 11/11/2020 Start 10:45 End 14:00 By AL AP Trend Steady Weather Overcast and windy

Instruments used - GA5000 with internal flow pod, Oil/Water Interface Meter.

Background (start) CH₄ 0.1 CO₂ 0.1 O₂ 20.9% AP 1010
 Background (end) CH₄ 0.1 CO₂ 0.1 O₂ 20.9% AP 1010

Installation	Borehole Level (mAOD)	BH Pressure	CH ₄ (% vol)			CO ₂ (% vol)			O ₂ (% vol)			CO (ppm)	H ₂ S (ppm)	PID		Flow Rate (l/hr)		Atmospheric Pressure (mbar)	Depth to Water (mbgl)	Depth to Water (mAOD)	Depth to Base (mbgl)	Remarks
		mb	Peak	Min	Steady	Peak	Min	Steady	Peak	Min	Steady	Peak	Peak	Peak	Steady	Peak	Steady					
WS105	83.12	0.20	0.1	0.1	0.1	1.4	1.4	1.4	8.1	6.0	6.0	<1	<1	<0.1	<0.1	0.1	0.1	1010	dry	dry	1.95	Bal 94.1
WS104	82.17	0.10	0.1	0.1	0.1	0.1	0.1	0.1	20.6	20.6	20.6	<1	<1	0.1	0.1	0.3	0.3	1010	dry	dry	1.00	
CP103	81.94	0.07	0.1	0.1	0.1	0.1	0.1	0.1	20.2	20.2	20.2	1	<1	0.2	0.1	0.1	0.1	1010	5.77	76.17	5.96	
WS102	80.95	0.07	0.2	0.1	0.1	0.1	0.1	0.1	20.0	20.0	20.0	1	<1	0.2	0.2	0.3	0.3	1010	dry	dry	1.75	
WS103	81.63	0.15	0.1	0.1	0.1	2.5	2.5	2.5	10.8	10.8	10.8	1.0	<1	0.4	0.2	0.2	0.2	1010	dry	dry	2.0	
CP101	80.76	0.10	0.1	0.1	0.1	0.1	0.1	0.1	20.6	20.6	20.6	<1	<1	0.2	0.1	0.1	0.1	1010	dry	dry	7.65	
CP102	81.71	0.15	0.20	0.20	0.20	0.10	0.10	0.10	15.70	15.70	15.70	2.00	<1	0.2	0.2	0.20	0.20	1010	7.83	73.88	14.53	
CP105	82.99	0.10	0.1	0.1	0.1	1.8	1.8	1.8	0.9	5.6	5.6	<1	<1	0.2	0.2	0.4	0.4	1010	dry	dry	8.1	Bal 97.2
WS108	83.01	0.17	0.1	0.1	0.1	<0.1	<0.1	<0.1	7.8	7.8	7.8	<1	<1	0.5	0.5	0.1	0.1	1010	1.70	81.31	2.00	
CP106	82.94	3.61	0.1	0.1	0.1	0.1	0.1	0.1	11.8	11.8	11.8	<1	<1	0.2	<0.1	0.1	0.1	1010	9.02	73.92	10.31	
WS109	83.29	0.34	0.1	0.1	0.1	3.00	2.80	2.80	11.50	11.50	11.50	<1	<1	0.1	0.1	0.2	0.2	1010	1.3	81.95	2.0	
RBH101	81.36	0.21	0.3	0.3	0.3	0.2	0.2	0.2	19.9	19.9	19.9	3	<1	0.2	0.2	0.1	0.1	1010	8.10	73.26	33.50	
RBH107	83.03	0.19	0.3	0.3	0.3	<0.1	<0.1	<0.1	16.3	16.3	16.3	2	<1	0.3	0.3	0.2	0.2	1010	5.04	77.99	31.40	
RBH109	83.13	0.10	0.1	0.1	0.1	0.1	0.1	0.1	21.4	21.4	21.4	<1	<1	<0.1	<0.1	0.1	0.1	1010	6.08	77.05	22.90	
CP104	82.99	2.09	0.1	0.1	0.1	0.1	0.1	0.1	20.8	20.8	20.8	<1	<1	0.2	0.2	0.1	0.1	1010	8.67	74.32	14.90	

WAB = Wet at base



Certificate of Calibration

Customer: WYG

Instrument: MiniRAE LITE +

Job: Pre-sale Test & Calibration

Serial number: 595-004573

Fleet Number: -

Certificate no: 004573/180320

Next calibration due date: 18.03.2021

Tested on: 18.03.2020

Calibrated for: Isobutylene

<u>Applied Gas Concentration:</u>	<u>Cylinder Reference:</u>	<u>Initial Sensor Reading</u>	<u>Final Sensor Reading</u>	<u>Accuracy Limits</u>
Isobutylene 100ppm	WO239139-6	99.8ppm	100.1ppm	+/-10%

The instrument has been calibrated after re-zeroing and introducing span calibration gas, using gas that is traceable to national standards and has been prepared in accordance with BS EN ISO 6145-6:2017

Calibration Engineer: Daniel Jacques

Sign: _____

CERTIFICATION OF CALIBRATION



Date Of Calibration: 20-Nov-2019

Certificate Number: G502069_2/24501

Issued by: QED Environmental Systems Ltd.

Customer: WYG Environment Planning Transport Ltd
Purchase Ledger Department PO Box 364 Leeds
West Yorkshire LS6 2WQ UNITED KINGDOM

Description: Gas Analyser

Model: GA5000

Serial Number: G502069

UKAS Accredited results:

Results after adjustment :

Methane (CH ₄)		
Certified Gas (%)	Instrument Reading (%)	Uncertainty (%)
5.0	5.0	0.41
15.0	15.0	0.64
50.0	49.4	0.94

Carbon Dioxide (CO ₂)		
Certified Gas (%)	Instrument Reading (%)	Uncertainty (%)
5.0	4.8	0.43
15.0	14.7	0.70
50.0	50.1	1.1

Oxygen (O ₂)		
Certified Gas (%)	Instrument Reading (%)	Uncertainty (%)
21.3	21.4	0.31

The inwards assessment was carried out 08-Nov-2019.

The maximum adjustment is larger than the inwards assessment uncertainty.

Inwards assessment data is available if requested.

All concentrations are molar.

CH₄, CO₂ readings recorded at : 32.1 °C ± 2.5 °C

O₂ readings recorded at : 22.3 °C ± 2.5 °C

Barometric Pressure : 1001 mbar ± 4 mbar

Method of Test : The analyser is calibrated in a temperature controlled chamber using a series of reference gases, in compliance with procedure LP004.

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. It provides traceability of measurement to the SI system of units and/or to units of measurement realised at the National Physical Laboratory or other recognised national metrology institutes. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

Calibration Instance:105 IGC Instance:105

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QED Environmental Systems Ltd. Cyan Park - Unit 3, Jimmy Hill Way, Coventry, CV2 4QP, UNITED KINGDOM

Registered in England and Wales 1898734

CERTIFICATION OF CALIBRATION



Date Of Calibration: 20-Nov-2019

Certificate Number: G502069_2/24501

Issued by: QED Environmental Systems Ltd.

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

Calibrations marked 'Non-UKAS Accredited results' on this certificate have been included for completeness.

Non-UKAS accredited results after adjustment:

Barometer (mbar)	
Reference	Instrument Reading
1001	1001

Additional Gas Cells		
Gas	Certified Gas (ppm)	Instrument Reading (ppm)
CO	519	527
H ₂ S	262	262

Internal Flow	
Applied (l/hr)	Instrument Reading (l/hr)
5.00	4.90
10.00	9.70

Date of Issue : 25-Nov-2019

Approved by Signatory

Nick Sidgwick

Laboratory Inspection

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. It provides traceability of measurement to the SI system of units and/or to units of measurement realised at the National Physical Laboratory or other recognised national metrology institutes. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

Calibration Instance:105 IGC Instance:105

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QED Environmental Systems Ltd. Cyan Park - Unit 3, Jimmy Hill Way, Coventry, CV2 4QP, UNITED KINGDOM

Registered in England and Wales 1898734



Client
Project
Job Number

Copeland Borough Council & Energy Coast West Cumbria (Properties) Ltd
LECONFIELD INDUSTRIAL ESTATE
A114312-1

Date 17/09/20 & 18/09/20 **Start** 08:00 **End** 14:00 **By** AL **Weather** Sunny and Dry

Installation	Borehole Level (mAOD)	Total Estimated Water Volume Purged (ml)	Total Estimated Water Volume Purged (l)	Water Colour	Olfactory Evidence	Depth to Water (mbgl)	Depth to Water (mAOD)	Depth to Base (mbgl)	Estimate Sample Depth
CP102	81.71	20540	21	Clear, no sheen	None	7.9	73.8	14.5	8.6m
WS108	83.01	1540	2	Slightly brown, no sheen	None	1.4	81.6	2.0	1.5m
WS109	83.29	2570	3	Slightly brown, no sheen	None	0.7	82.6	2.0	1.4m
CP104	82.99	20540	21	Clear, no sheen	None	6.8	76.2	15.1	7.9m

Appendix F – Tier 1 Geochemical Screening

Sample Identity	England and Wales (mg/kg)	CP101	WS101	RBH102	RBH102	WS102	WS102	CP103	CP103	RBH103	WS103	WS103	WS103	WS104	WS104	CP105	CP105	RBH105	WS105	WS105	RBH106	WS106	RBH107	WS107	RBH108	WS108	WS108		
Depth (m bgl)	Soil Organic Matter <1%	0.5	0.2	0.2	0.7	0.1	0.5	0.2	0.5	0.5	0.1	0.6	3.8	0.1	0.5	0.1	0.7	0.2	0.1	0.5	0.05	0.05	0.4	0.5	0.5	1.7			
Reference	Screen Value	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	T/S	MG	MG	T/S	MG	MG	MG	MG	MG	MG			
Sample Date	Units	Commercial	05/08/2020	14/07/2020	06/08/2020	06/08/2020	13/07/2020	13/07/2020	05/08/2020	05/08/2020	06/08/2020	13/07/2020	13/07/2020	13/07/2020	13/07/2020	05/08/2020	05/08/2020	06/08/2020	13/07/2020	13/07/2020	06/08/2020	14/07/2020	14/07/2020	06/08/2020	14/07/2020	06/08/2020	14/07/2020	14/07/2020	
pH		<5, >9	11.3	9.32	8.16	8.66	8.05	11.2	7.49	8.96	8.91	8.08	8.59	11.4	7.43	8.87	7.43	7.88	7.53	7.67	9.31	9.01	7.2	9.21	10	8.9	9.62	9.3	
Asbestos	%	Presence	Not Present	Not Present	Not Present	Not Present	Not Present	Not Present	Not Present	Not Present	Not Present	Not Present	Presence	Not Present	Not Present	Not Present	Not Present	Not Present	Not Present	Not Present	Not Present	Not Present	Not Present	Not Present	Not Present	Not Present	Not Present	Not Present	
HEAVY METALS/METALLOIDS																													
Arsenic	mg/kg	640	8.37	3.2	10.3	14.3	7.91	4.55	14.3	8.63	11.7	15.1	14.8	12.9	24.5	12.8	12.1	13.3	9.83	16.7	19.3	16.4	28.2	9.57	4.34	17.5	17.5	52.3	
Cadmium	mg/kg	410	0.0414	0.0596	<0.02	<0.02	2.53	0.0314	0.0522	0.0352	0.152	0.624	0.172	0.0977	0.523	0.286	0.107	<0.02	0.0827	0.875	0.16	0.105	1.36	<0.02	<0.02	0.134	<0.02	0.213	0.247
Chromium (III)	mg/kg	8,600	16.3	12	16.8	16.6	8.38	7.99	22.9	13.2	11.5	11	13.4	16.5	15.6	7.89	18.6	16.4	13.3	24.3	5.51	12.2	11.6	23.7	16	15	20.4	14.2	5.89
Chromium (VI)	mg/kg	49	<0.6	<0.6	<0.6	<0.6	<6	<0.6	<0.6	<0.6	<0.6	<6	<0.6	<0.6	<6	<6	<0.6	<0.6	<0.6	<6	<0.6	<0.6	<12	<0.6	<0.6	<0.6	<0.6	<0.6	
Lead	mg/kg	2,300	39.2	9.47	10.4	11	32.1	8.98	55.3	51.3	172	112	26.6	42.7	155	19.1	30.6	12	45.1	185	26.2	36.8	284	4.66	7.01	15	17.2	23.6	51.5
Mercury (Inorganic)	mg/kg	1,100	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	1.38	1.23	<0.14	<0.14	<0.14	<0.14	0.55	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	
Nickel	mg/kg	980	14	2.72	14.9	18.3	13.1	4.62	16	15.1	13.5	17.9	19.3	4.19	34.1	15.2	16.7	15.7	12.7	24.9	27.6	10.1	28.1	0.77	16.7	8.51	23.2	21.8	41.9
Selenium	mg/kg	12,000	<1	6.3	<1	<1	1.24	5.67	<1	<1	<1	1.22	<1	9.34	1.41	1.25	<1	<1	1.32	2.18	1.43	2.95	2.02	6.08	<1	4.51	<1	1.87	2.63
Beryllium	mg/kg	12	1.15	10.1	2.27	1.36	1.05	11.3	1.32	2.66	4.02	0.837	1.52	16	1.2	1.73	1.37	0.797	1.48	2.11	2.19	9.53	2.25	12.5	2.45	9.53	1.39	3.58	5.02
Boron	mg/kg	240,000	<1	1.69	<1	<1	<1	1.3	<1	<1	<1	<1	<1	4.37	<1	<1	<1	<1	<1	1.52	1.53	<1	<1	1.1	<1	<1	<1	1.56	1.75
Vanadium	mg/kg	9,000	19.5	24.5	20.6	21.3	8.99	15.5	36.6	19.8	18.8	24.7	24.9	7.51	30.2	16.8	25.4	24.9	23	24.7	22.7	17.7	39.5	34.2	18.2	23.4	26	27.2	28.8
Copper	mg/kg	68,000	8.97	4.62	11.1	32.5	70.9	4.46	19.5	19.1	13.9	20.2	18.3	9.76	41.4	11.8	15.8	22.3	14.5	52.3	17.7	13.8	56.4	2.89	11	5.56	22	12.1	40.8
Zinc	mg/kg	730,000	25.8	11.3	28.8	25.3	974	24.1	59	46.2	105	189	38.8	64.6	146	25.7	81.1	17.5	71.4	329	40.8	95.8	466	7.27	24.3	32.7	39.5	32.9	26.4
GENERAL INORGANICS																													
Easily Liberatable Cyanide (free)	mg/kg	40	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
US EPA PRIORITY PAHS																													
Acenaphthene	mg/kg	84,000 (57.0)sol	0.462	<0.008	<0.008	<0.008	3.95	0.0131	0.0178	<0.008	<0.008	0.0182	<0.008	<0.008	0.013	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
Acenaphthylene	mg/kg	83,000 (86.1)sol	0.0159	<0.012	<0.012	<0.012	<0.3	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	0.0449	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012
Anthracene	mg/kg	520,000	0.544	<0.016	<0.016	<0.016	13.9	0.0544	0.0575	<0.016	<0.016	0.109	<0.016	<0.016	0.197	<0.016	<0.016	<0.016	<0.016	0.0293	<0.016	<0.016	0.0333	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016
Benzo(a)anthracene	mg/kg	170	1.78	0.0332	0.067	0.0462	60.7	0.427	0.156	0.0824	0.0323	1.51	<0.014	<0.014	1.34	0.0205	0.0335	<0.014	0.0622	0.166	<0.014	0.0207	0.232	<0.014	0.0351	0.0498	<0.014	0.0293	<0.014
Benzo(b)fluoranthene	mg/kg	44	1.98	0.044	0.0938	0.0742	47.8	0.441	0.174	0.104	0.0443	1.58	<0.015	<0.015	1.41	<0.015	0.05	<0.015	0.1	0.235	<0.015	0.0285	0.36	<0.015	0.0447	0.069	<0.015	0.0417	<0.015
Benzo(k)fluoranthene	mg/kg	1,200	0.861	0.0155	0.0319	0.0241	20.2	0.148	0.0768	0.0404	0.0178	0.731	<0.014	<0.014	0.479	<0.014	<0.014	<0.014	0.0328	0.0704	<0.014	0.127	<0.014	<0.014	0.0258	<0.014	0.0104	<0.014	<0.014
Benzo(g,h,i)perylene	mg/kg	3,900	0.544	<0.024	0.0337	<0.024	12.3	0.153	0.0654	0.0403	<0.024	0.645	<0.024	<0.024	0.607	<0.024	<0.024	<0.024	0.0375	0.102	<0.024	0.024	0.144	<0.024	<0.024	0.0404	<0.024	<0.024	<0.024
Benzo(a)pyrene	mg/kg	77	1.24	0.0328	0.0552	0.0423	32.3	0.306	0.118	0.0716	0.0266	1.23	<0.015	<0.015	1.14	<0.015	0.0332	<0.015	0.0533	0.153	<0.015	0.0177	0.208	<0.015	0.0261	0.0527	<0.015	0.0262	<0.015
Chrysene	mg/kg	350	1.51	0.0412	0.0553	0.044	48.7	0.355	0.143	0.0707	0.0346	1.41</																	

Sample Identity	England and Wales (mg/kg)		CP101	WS101	RBH102	RBH102	WS102	WS102	CP103	CP103	RBH103	WS103	WS103	WS103	WS104	WS104	CP105	CP105	RBH105	WS105	WS105	RBH106	WS106	WS106	RBH107	WS107	RBH108	WS108	WS108	
Depth (m bgl)	Soil Organic Matter <1%		0.5	0.2	0.2	0.7	0.1	0.5	0.2	0.5	0.5	0.1	0.6	3.8	0.1	0.5	0.1	0.7	0.2	0.1	0.5	0.05	0.05	0.4	0.5	0.2	0.5	0.5	1.7	
Reference	Screen Value		MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	T/S	MG	MG	T/S	MG	MG	MG	MG	MG	MG	MG	
Sample Date	Units	Commercial	05/08/2020	14/07/2020	06/08/2020	06/08/2020	13/07/2020	13/07/2020	05/08/2020	05/08/2020	06/08/2020	13/07/2020	13/07/2020	13/07/2020	13/07/2020	13/07/2020	05/08/2020	05/08/2020	06/08/2020	13/07/2020	13/07/2020	06/08/2020	14/07/2020	14/07/2020	06/08/2020	14/07/2020	06/08/2020	14/07/2020	14/07/2020	
1,4-Dichlorobenzene	mg/kg		<0.2	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	---	<0.1	---	---	<0.1	<0.1	---	
2,4,5-Trichlorophenol	mg/kg		<0.2	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	---	<0.1	---	---	<0.1	<0.1	---	
2,4,6-Trichlorophenol	mg/kg		<0.2	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	---	<0.1	---	---	<0.1	<0.1	---	
2,4-Dichlorophenol	mg/kg		<0.2	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	---	<0.1	---	---	<0.1	<0.1	---	
2,4-Dimethylphenol	mg/kg		<0.2	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	---	<0.1	---	---	<0.1	<0.1	---	
2,4-Dinitrotoluene	mg/kg		<0.2	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	---	<0.1	---	---	<0.1	<0.1	---	
2,6-Dinitrotoluene	mg/kg		<0.2	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	---	<0.1	---	---	<0.1	<0.1	---	
2-Chloronaphthalene	mg/kg		<0.2	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	---	<0.1	---	---	<0.1	<0.1	---	
2-Methylnaphthalene	mg/kg		<0.2	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	---	<0.1	---	---	<0.1	<0.1	---	
2-Methylphenol	mg/kg		<0.2	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	---	<0.1	---	---	<0.1	<0.1	---	
2-Nitroaniline	mg/kg		<0.2	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	---	<0.1	---	---	<0.1	<0.1	---	
2-Nitrophenol	mg/kg		<0.2	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	---	<0.1	---	---	<0.1	<0.1	---	
4-Chloroaniline	mg/kg		<0.2	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	---	<0.1	---	---	<0.1	<0.1	---	
4-Chlorophenylphenylether	mg/kg		<0.2	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	---	<0.1	---	---	<0.1	<0.1	---	
Azobenzene	mg/kg		<0.2	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	---	<0.1	---	---	<0.1	<0.1	---	
bis(2-Chloroethoxy)methane	mg/kg		<0.2	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	---	<0.1	---	---	<0.1	<0.1	---	
bis(2-Chloroethyl)ether	mg/kg		<0.2	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	---	<0.1	---	---	<0.1	<0.1	---	
Bis(2-chloroisopropyl) ether	mg/kg		<0.2	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	---	<0.1	---	---	<0.1	<0.1	---	
Carbazole	mg/kg		<0.2	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	---	<0.1	---	---	<0.1	<0.1	---	
Chrysene	mg/kg		2.68	<0.1	---	---	---	0.558	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	---	<0.1	---	---	<0.1	<0.1	---	
Dibenzofuran	mg/kg		0.248	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	---	<0.1	---	---	<0.1	<0.1	---	
Diethyl phthalate	mg/kg		<0.2	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	---	<0.1	---	---	<0.1	<0.1	---	
Dimethyl phthalate	mg/kg		<0.2	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	---	<0.1	---	---	<0.1	<0.1	---	
Fraction Organic Carbon (FOC)	No units		0.00847	0.00357	0.00797	0.00676	0.0467	0.00463	0.0257	0.00688	0.0197	0.0369	0.0083	0.00844	0.045	0.0182	0.0443	0.0147	0.0362	0.102	0.0233	0.0104	0.0863	<0.002	0.00588	0.00535	0.016	0.0175	0.0317	
Hexachlorobenzene	mg/kg		<0.2	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	---	<0.1	---	---	<0.1	<0.1	---	
Hexachlorobutadiene	mg/kg		<0.2	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	---	<0.1	---	---	<0.1	<0.1	---	
Hexachlorocyclopentadiene	mg/kg		<0.4	<0.2	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.2	---	---	---	---	---	<0.1	---	---	<0.2	<0.1	---	
Hexachloroethane	mg/kg		<0.2	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	---	<0.1	---	---	<0.1	<0.1	---	
Naphthalene	mg/kg		<0.2	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	---	<0.1	---	---	<0.1	<0.1	---	
n-Dibutyl phthalate	mg/kg		<0.2	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	---	<0.1	---	---	<0.1	<0.1	---	
n-Dioctyl phthalate	mg/kg		<0.2	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	---	<0.1	---	---	<0.1	<0.1	---	
Nitrobenzene	mg/kg		<0.2	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	---	<0.1	---	---	<0.1	<0.1	---	
n-Nitroso-n-dipropylamine	mg/kg		<0.2	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	---	<0.1	---	---	<0.1	<0.1	---	
Organic Carbon, Total	%		0.847	---	---	---	---	---	---	0.688	1.97	---	0.83	---	---	---	---	---	---	10.2	---	---	---	<0.2	---	---	---	---	---	
TIC report	No units		Not Detected	---	---	---	---	---	---	---	---	---	---	---	---	---	---	Not Detected	---	---	---	---	---	---	---	---	Not Detected	---	---	
Total SVOC TIC	mg/kg		<2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<1	---	---	---	---	---	---	---	---	<1	---	---	
PAH																														
Coronene	mg/kg		<0.2	---	---	---	---	---	---	---	<0.2	<0.2	---	<0.2	---	---	---	---	---	---	<0.2	---	---	---	<0.2	---	---	---	---	---
PAH Total 17 (Inc Coronene) Moisture Corrected	mg/kg		18.9	---	---	---	---	---	---	---	<10	<10	---	<10	---	---	---	---	---	<10	---	---	---	<10	---	---	---	---	---	
PAH, Total Detected USEPA 16	mg/kg		18.9	0.341	0.664	0.462	524	3.64	1.65	0.772	0.312	13.7	<0.118	<0.118	11.9	0.164	0.334	<0.118	0.697	1.76	<0.118	0.175	2.52	<0.118	0.354	0.534	<0.118	0.272	<0.118	
WAC	mg/kg		20	---	---	---	---	---	---	---	10	10	---	10	---	---	---	---	---	10	---	---	---	10	---	---	---	---	---	
PCB																														
PCB congener 101	mg/kg		<0.003	---	---	---	---	---	---	---	<0.003	<0.003	---	<0.003	---	---	---	---	---	---	<0.003	---	---	<0.003	---	---	---	---	---	
PCB congener 105	mg/kg		<0.003	<0.003	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.003	---	
PCB congener 114	mg/kg		<0.003	<0.003	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.003	---	
PCB congener 118	mg/kg		<0.003	---	---	---	---	---	---	---	<0.003	<0.003	---	<0.003	---	---	---	---	---	---	<0.003	---	---	<0.003	---	---	---	<0.003	---	
PCB congener 123	mg/kg		<0.003	<0.003	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.003	---	
PCB congener 126	mg/kg		<0.003	<0.003	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.003	---	
PCB congener 138	mg/kg		<0.003	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
PCB congener 153	mg/kg		<0.003	---	---	---	---	---	---	---	<0.003	<0.003	---	<0.003	---	---	---	---	---	---	<0.003	---	---	<0.003	---	---	---	---	---	
PCB congener 156	mg/kg		<0.003	<0.003	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.003	---	
PCB congener 157	mg/kg		<0.003	<0.003	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.003	---	
PCB congener 167	mg/kg		<0.003	<0.003	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.003	---	
PCB congener 169	mg/kg		<0.003	<0.003	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.003	---	
PCB congener 180	mg/kg		<0.003	<0.003	---	---	---	---	---	---	<0.003	<0.003	---	<0.003	---	---	---	---	---	---	<0.003	---	---	<0.003	---	---	---	<0.003	---	
PCB congener 189	mg/kg		<0.003	<0.003	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.003	---	---	---	<0.003	---	
PCB congener 28																														

Sample Identity	England and Wales (mg/kg)		CP101	WS101	RBH102	RBH102	WS102	WS102	CP103	CP103	RBH103	WS103	WS103	WS103	WS104	WS104	CP105	CP105	RBH105	WS105	WS105	RBH106	WS106	WS106	RBH107	WS107	RBH108	WS108	WS108
Depth (m bgl)	Soil Organic Matter <1%		0.5	0.2	0.2	0.7	0.1	0.5	0.2	0.5	0.5	0.1	0.6	3.8	0.1	0.5	0.1	0.7	0.2	0.1	0.5	0.05	0.05	0.4	0.5	0.2	0.5	0.5	1.7
Reference	Screen Value		MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	T/S	MG	MG	T/S	MG	MG	MG	MG	MG	MG	MG
Sample Date	Units	Commercial	05/08/2020	14/07/2020	06/08/2020	06/08/2020	13/07/2020	13/07/2020	05/08/2020	05/08/2020	06/08/2020	13/07/2020	13/07/2020	13/07/2020	13/07/2020	13/07/2020	05/08/2020	05/08/2020	06/08/2020	13/07/2020	13/07/2020	06/08/2020	14/07/2020	14/07/2020	06/08/2020	14/07/2020	06/08/2020	14/07/2020	14/07/2020
Tert-amyl methyl ether	mg/kg		<0.01	<0.2	---	---	---	<0.01	---	---	---	---	<0.01	---	---	---	---	<0.01	---	---	---	---	---	<0.01	---	---	<0.2	<0.2	---
tert-Butylbenzene	mg/kg		<0.014	<0.28	---	---	---	<0.014	---	---	---	---	<0.014	---	---	---	---	<0.014	---	---	---	---	---	<0.014	---	---	<0.28	<0.28	---
Total VOC TIC	mg/kg		<0.05	<1	---	---	---	<0.05	---	---	---	---	<0.05	---	---	---	---	<0.05	---	---	---	---	---	<0.05	---	---	<1	<1	---
trans-1,2-Dichloroethene	mg/kg		<0.01	<0.2	---	---	---	<0.01	---	---	---	---	<0.01	---	---	---	---	<0.01	---	---	---	---	---	<0.01	---	---	<0.2	<0.2	---
trans-1,3-Dichloropropene	mg/kg		<0.01	<0.2	---	---	---	<0.01	---	---	---	---	<0.01	---	---	---	---	<0.01	---	---	---	---	---	<0.01	---	---	<0.2	<0.2	---
Trichlorofluoromethane	mg/kg		<0.006	<0.12	---	---	---	<0.006	---	---	---	---	<0.006	---	---	---	---	<0.006	---	---	---	---	---	<0.006	---	---	<0.12	<0.12	---
Vinyl Chloride	mg/kg		<0.006	<0.12	---	---	---	<0.006	---	---	---	---	<0.006	---	---	---	---	<0.006	---	---	---	---	---	<0.006	---	---	<0.12	<0.12	---
VOC TIC	No units		Not Detected	Not Detected	---	---	---	Not Detected	---	---	---	---	Not Detected	---	---	---	---	Not Detected	---	---	---	---	---	Not Detected	---	---	Not Detected	Not Detected	---

Notes:

sol

vap

#

Analyte not tested for
Suitable 4 Use Level exceeds soil saturation limit which is given in brackets (note that if soil data exceeds the solubility limit, free product may be present). For screening consider applicability of both solubility limit and soil screening value.
Suitable 4 Use Level exceeds vapour saturation limit which is given in brackets.
Screening criteria denoted with hash (#) have been capped at 100000mg/kg, the maximum

Sample Identity	England and Wales (mg/kg)		CP101	WS101	RBH102	RBH102	WS102	WS102	CP103	CP103	RBH103	WS103	WS103	WS103	WS104	WS104	CP105	CP105	RBH109	RBH109	WS109	WS110	RBH112	RBH104		
Depth (m bgl)	Soil Organic Matter <1%		0.5	0.2	0.2	0.7	0.1	0.5	0.2	0.5	0.5	0.1	0.6	3.8	0.1	0.5	0.1	0.7	0.1	0.4	0.4	0.4	1.3	0.3		
Reference	Screen Value		MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	T/S	MG	NG	MG	MG	MG		
Sample Date	Units	Commercial	05/08/2020	14/07/2020	06/08/2020	06/08/2020	13/07/2020	13/07/2020	05/08/2020	05/08/2020	06/08/2020	13/07/2020	13/07/2020	13/07/2020	13/07/2020	05/08/2020	05/08/2020	06/08/2020	06/08/2020	14/07/2020	14/07/2020	06/08/2020	17/09/2020		Min	Max
pH		<5, >9	11.3	9.32	8.16	8.66	8.05	11.2	7.49	8.96	8.91	8.08	8.59	11.4	7.43	8.87	7.43	7.88	8.17	8.6	9.46	8.66	8.92	8.97	7.2	11.4
Asbestos	%	Presence	Not Present	Not Present	Not Present	Not Present	Not Present	Not Present	Not Present	Not Present	Not Present	Not Present	Presence	Not Present	Not Present	Not Present	Not Present	Not Present	Not Present	Not Present	Not Present	Not Present	Not Present	Not Present		
HEAVY METALS/METALLOIDS																										
Arsenic	mg/kg	640	8.37	3.2	10.3	14.3	7.91	4.55	14.3	8.63	11.7	15.1	14.8	12.9	24.5	12.8	12.1	13.3	13.3	9.53	15.4	9.13	13.2	1.56	0.87	52.3
Cadmium	mg/kg	410	0.0414	0.0596	<0.02	<0.02	2.53	0.0314	0.0522	0.0352	0.152	0.624	0.172	0.0977	0.523	0.286	0.107	<0.02	0.141	<0.02	0.256	0.284	<0.02	0.203	0.0314	2.53
Chromium (III)	mg/kg	8,600	16.3	12	16.8	16.6	8.38	7.99	22.9	13.2	11.5	11	13.4	1.65	15.6	7.89	18.6	16.4	14.4	18.5	12.7	11.7	18.9	2.16	1.65	24.3
Chromium (VI)	mg/kg	49	<0.6	<0.6	<0.6	<0.6	<6	<0.6	<0.6	<0.6	<0.6	<6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	
Lead	mg/kg	2,300	39.2	9.47	10.4	11	32.1	8.98	55.3	51.3	17.2	112	26.6	42.7	155	19.1	30.6	12	66.9	9.51	16.9	12.1	14.7	1.99	1.99	284
Mercury (Inorganic)	mg/kg	1,100	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	1.38	1.23	<0.14	<0.14	<0.14	<0.14	0.55	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	0.55	1.38
Nickel	mg/kg	980	14	2.72	14.9	18.3	13.1	4.62	16	15.1	13.5	17.9	19.3	4.19	34.1	15.2	16.7	15.7	16.1	16.2	26.6	19.2	24.2	2.91	0.77	41.9
Selenium	mg/kg	12,000	<1	6.3	<1	<1	1.24	5.67	<1	<1	<1	1.22	<1	9.34	1.41	1.25	<1	<1	<1	<1	<1	<1	<1	<1	1.22	9.34
Beryllium	mg/kg	12	1.15	10.1	2.27	1.36	1.05	11.3	1.32	2.66	4.02	0.837	1.52	16	1.2	1.73	1.07	0.797	2.92	1.82	1.88	0.952	1.02	0.422	16	
Boron	mg/kg	240,000	<1	1.69	<1	<1	<1	1.3	<1	<1	<1	<1	<1	4.37	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1.1	4.37
Vanadium	mg/kg	9,000	19.5	24.5	20.6	21.3	8.99	15.5	36.6	19.8	18.8	24.9	24.9	7.51	30.2	16.8	25.4	24.9	23.4	21.8	21.9	18.2	23	4.98	4.98	39.5
Copper	mg/kg	68,000	8.97	4.62	11.1	32.5	70.9	44.6	19.5	19.1	13.9	20.2	18.3	9.76	41.4	11.8	15.8	22.3	15.5	9.92	17.7	11.3	17.1	7.55	2.89	70.9
Zinc	mg/kg	730,000	25.8	11.3	28.8	25.3	974	24.1	59	46.2	105	189	38.8	64.6	146	25.7	81.1	17.5	133	27.2	52.4	24.9	32.8	3.57	3.57	974
GENERAL INORGANICS																										
Easily Liberatable Cyanide (free)	mg/kg	40	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
US EPA PRIORITY PAHs																										
Acenaphthene	mg/kg	84,000 (57.0)sol	0.462	<0.008	<0.008	<0.008	3.95	0.0131	0.0178	<0.008	<0.008	0.0182	<0.008	<0.008	0.013	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	0.31	0.013	3.95
Acenaphthylene	mg/kg	83,000 (86.1)sol	0.0159	<0.012	<0.012	<0.012	<0.3	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	0.0449	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.12	0.0159	0.0449
Anthracene	mg/kg	520,000	0.544	<0.016	<0.016	<0.016	13.9	0.0544	0.0575	<0.016	<0.016	0.109	<0.016	<0.016	0.197	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	0.473	0.0293	13.9
Benzo(a)anthracene	mg/kg	170	1.78	0.0332	0.067	0.0462	60.7	0.427	0.156	0.0824	0.0323	1.51	<0.014	<0.014	1.34	0.0205	<0.014	0.0698	<0.014	<0.014	<0.014	<0.014	<0.014	1.68	0.0205	60.7
Benzo(b)fluoranthene	mg/kg	44	1.98	0.044	0.0938	0.0742	47.8	0.441	0.174	0.104	0.0443	1.58	<0.015	<0.015	1.41	<0.015	0.05	<0.015	0.122	<0.015	<0.015	<0.015	<0.015	1.63	0.0285	47.8
Benzo(k)fluoranthene	mg/kg	1,200	0.861	0.0155	0.0319	0.0241	20.2	0.148	0.0768	0.0404	0.0178	0.731	<0.014	<0.014	0.479	<0.014	<0.014	0.038	<0.014	<0.014	<0.014	<0.014	<0.014	0.588	0.0155	20.2
Benzo(g,h,i)perylene	mg/kg	3,900	0.544	<0.024	0.0337	<0.024	12.3	0.153	0.0654	0.0403	<0.024	0.645	<0.024	<0.024	0.607	<0.024	<0.024	0.0469	<0.024	<0.024	<0.024	<0.024	<0.024	0.501	0.0337	12.3
Benzo(a)pyrene	mg/kg	77	1.24	0.0328	0.0552	0.0423	32.3	0.306	0.118	0.0716	0.0266	1.23	<0.015	<0.015	1.14	<0.015	0.0262	<0.015	0.0648	<0.015	<0.015	<0.015	<0.015	1.05	0.0177	32.3
Chrysene	mg/kg	350	1.51	0.0412	0.0553	0.044	48.7	0.355	0.143	0.0707	0.0346	1.41	<0.01	<0.01	1.22	0.0234	0.0522	<0.01	0.0702	<0.01	0.014	0.0156	<0.01	1.52	0.014	48.7
Di-benzo(a,h)anthracene	mg/kg	3.5	0.14	<0.023	<0.023	<0.023	2.46	0.0381	<0.023	<0.023	<0.023	0.172	<0.023	<0.023	0.17	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.23	0.0381	2.46
Fluoranthene	mg/kg	23,000	3.45	0.068	0.135	0.0858	114	0.703	0.295	0.141	0.054	2.66	<0.017	<0.017	2.18	0.0414	0.0681	<0.017	0.146	<0.017	0.02	<0.017	<0.017	4.32	0.02	114
Fluorene	mg/kg	63000 (30.9)sol	0.373	<0.01	<0.01	<0.01	3.67	0.0121	0.0237	<0.01	<0.01	0.0259	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.123	0.0121	3.67
Indeno(1,2,3-cd)pyrene	mg/kg	500	0.662	0.0258	0.0384	0.0308	16.3	0.175	0.0665	0.0442	<0.018	0.738	<0.018	<0.018	0.674	<0.018	<0.018	0.0522	<0.018	<0.018	<0.018	<0.018	<0.018	0.579	0.0258	16.3
Naphthalene	mg/kg	190 (76.4)sol	0.186	<0.009	<0.009	<0.009	0.351	<0.009	0.0149	<0.009	0.0116	<0.009	<0.009	<0.009	0.0163	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.09	0.0116	0.351
Phenanthrene	mg/kg	22,000	2.28	0.0253	0.0496	0.0459	57.5	0.244	0.203	0.054	0.0455	0.668	0.02	<0.015	0.666	0.0446	0.0406	0.0328	0.0733	<0.015	0.0431	0.0509	0.0287	3.38	0.0185	57.5
Pyrene	mg/kg	54,000	2.84	0.0551	0.104	0.0683	90.1	0.573	0.243	0.123	0.0456	2.18	<0.015	<0.015	1.68	0.0343	0.0568	<0.015	0.116	<0.015	0.0178	0.0155	<0.015	3.13	0.0155	90.1
Chloroalkanes and alkenes																										
1,1,1-Trichloroethane (1,1,1 TCA)	mg/kg	660	<0.007	<0.14	---	---	---	<0.007	---	---	---	---	<0.007	---	---	---	---	<0.007	---	---	---	---	<0.007	<0.007	0	0
1,1,1,2-Tetrachloroethane (1,1,1,2 PCA)	mg/kg	110	<0.01	<0.2	---	---	---	<0.01	---	---	---	---	<0.01	---	---	---	---	<0.01	---	---	---	---	<0.01	<0.01	0.00000	0.00000
Tetrachloroethene (PCE)	mg/kg	19	<0.005	<0.1	---	---	---	<0.005	---	---	---	---	<0.005	---	---	---	---	<0.005	---	---	---	---	<0.005	<0.005	0.00000	0.00000
Trichloroethene (TCE)	mg/kg	1.2	<0.009	<0.18	---	---	---	<0.009	---	---	---	---	<0.009	---	---	---	---	<0.009	---	---	---	---	<0.009	<0.009	0.00000	0.00000
Trichloromethane (Chloroform)	mg/kg	99	<0.008	<0.16	---	---	---	<0.008	---	---	---	---	<0.008	---	---	---	---	<0.008	---	---	---	---	<0.008	<0.008	0.00000	0.00000
Phenolics																										
Phenol	mg/kg	440	<0.2	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	<0.2	0.00000	0.00000
Chlorophenols	mg/kg	3,500	<0.2	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	<0.2	0.00000	0.00000
Pentachlorophenols	mg/kg	400	<0.2	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	<0.2	0.00000	0.00000
TPH																										
TPH Aliphatic >C5-6	mg/kg	3,200 (304)sol	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.0115
TPH Aliphatic >C6-8	mg/kg	7,800 (144)sol	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.0161
TPH Aliphatic >C8-10	mg/kg	2,000 (78)sol	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.0725
TPH Aliphatic >C10-12	mg/kg	9,700 (48)sol	<1	<1	<1	<1	<1	<1	<1	1.39	<1	<1	<1	<1	&											

Sample Identity Depth (m bgl) Reference	England and Wales (mg/kg) Soil Organic Matter <1% Screen Value	CP101	WS101	RBH102	RBH102	WS102	WS102	CP103	CP103	RBH103	WS103	WS103	WS103	WS103	WS104	WS104	CP105	CP105	RBH109	RBH109	WS109	WS110	RBH112	RBH104	Min	Max	
		0.5	0.2	0.2	0.7	0.1	0.5	0.2	0.5	0.5	0.1	0.6	3.8	0.1	0.5	0.1	0.7	0.1	0.4	0.4	0.4	1.3	0.3				
Sample Date	Units	Commercial	05/08/2020	14/07/2020	06/08/2020	06/08/2020	13/07/2020	13/07/2020	05/08/2020	05/08/2020	06/08/2020	13/07/2020	13/07/2020	13/07/2020	13/07/2020	13/07/2020	05/08/2020	05/08/2020	06/08/2020	06/08/2020	14/07/2020	14/07/2020	06/08/2020	17/09/2020			
1,4-Dichlorobenzene	mg/kg		<0.2	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	<0.2	0	<0.1	
2,4,5-Trichlorophenol	mg/kg		<0.2	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	<0.2	0	<0.1	
2,4,6-Trichlorophenol	mg/kg		<0.2	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	<0.2	0	<0.1	
2,4-Dichlorophenol	mg/kg		<0.2	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	<0.2	0	<0.1	
2,4-Dimethylphenol	mg/kg		<0.2	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	<0.2	0	<0.1	
2,4-Dinitrotoluene	mg/kg		<0.2	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	<0.2	0	<0.1	
2,6-Dinitrotoluene	mg/kg		<0.2	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	<0.2	0	<0.1	
2-Chloronaphthalene	mg/kg		<0.2	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	<0.2	0	<0.1	
2-Methylnaphthalene	mg/kg		<0.2	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	<0.2	0	<0.1	
2-Methylphenol	mg/kg		<0.2	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	<0.2	0	<0.1	
2-Nitroaniline	mg/kg		<0.2	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	<0.2	0	<0.1	
2-Nitrophenol	mg/kg		<0.2	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	<0.2	0	<0.1	
4-Chloroaniline	mg/kg		<0.2	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	<0.2	0	<0.1	
4-Chlorophenylphenylether	mg/kg		<0.2	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	<0.2	0	<0.1	
Azobenzene	mg/kg		<0.2	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	<0.2	0	<0.1	
bis(2-Chloroethoxy)methane	mg/kg		<0.2	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	<0.2	0	<0.1	
bis(2-Chloroethyl)ether	mg/kg		<0.2	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	<0.2	0	<0.1	
Bis(2-chloroisopropyl) ether	mg/kg		<0.2	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	<0.2	0	<0.1	
Carbazole	mg/kg		<0.2	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	0.237	0	<0.1	
Chrysene	mg/kg		2.68	<0.1	---	---	---	0.558	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	2.68	0	<0.1	
Dibenzofuran	mg/kg		0.248	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	0.216	0.248	<0.1	
Diethyl phthalate	mg/kg		<0.2	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	<0.2	0	<0.1	
Dimethyl phthalate	mg/kg		<0.2	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	<0.2	0	<0.1	
Fraction Organic Carbon (FOC)	No units		0.00847	0.00357	0.00797	0.00676	0.0467	0.00463	0.0257	0.00688	0.0197	0.0369	0.0083	0.00844	0.045	0.0182	0.0443	0.0147	0.0353	0.00527	0.0046	0.0174	0.0128	0.002	0.002	0.0128	
Hexachlorobenzene	mg/kg		<0.2	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	<0.2	0	<0.1	
Hexachlorobutadiene	mg/kg		<0.2	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	<0.2	0	<0.1	
Hexachlorocyclopentadiene	mg/kg		<0.4	<0.2	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.2	---	---	---	---	<0.2	<0.4	0	<0.2	
Hexachloroethane	mg/kg		<0.2	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	<0.2	0	<0.1	
Naphthalene	mg/kg		<0.2	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	<0.2	0	<0.1	
n-Dibutyl phthalate	mg/kg		<0.2	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	<0.2	0	<0.1	
n-Dioctyl phthalate	mg/kg		<0.2	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	<0.2	0	<0.1	
Nitrobenzene	mg/kg		<0.2	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	<0.2	0	<0.1	
n-Nitroso-n-dipropylamine	mg/kg		<0.2	<0.1	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	---	---	---	---	<0.1	<0.2	0	<0.1	
Organic Carbon, Total	%		0.847	---	---	---	---	---	---	0.688	1.97	---	0.83	---	---	---	---	---	---	---	---	---	---	---	0	---	
TIC report	No units		Not Detected	---	---	---	---	---	---	---	---	---	---	---	---	---	---	Not Detected	---	---	---	---	Not Detected	Not Detected	0	Not Detected	
Total SVOC TIC	mg/kg		<2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<1	---	---	---	---	<1	<2	0	<1	
PAH																									0	---	
Coronene	mg/kg		<0.2	---	---	---	---	---	---	<0.2	<0.2	---	<0.2	---	---	---	---	---	---	---	---	---	---	---	---	0	---
PAH Total 17 (inc Coronene) Moisture Corrected	mg/kg		18.9	---	---	---	---	<10	---	<10	<10	---	<10	---	---	---	---	---	---	---	---	---	---	---	0	---	
PAH, Total Detected USEPA 16	mg/kg		18.9	0.341	0.664	0.462	524	3.64	1.65	0.772	0.312	13.7	<0.118	<0.118	11.9	0.164	0.334	<0.118	0.8	<0.118	<0.118	<0.118	<0.118	19.3	0	<0.118	
WAC	mg/kg		20	---	---	---	---	---	---	10	10	---	10	---	---	---	---	---	---	---	---	---	---	---	0	---	
PCB																									0	---	
PCB congener 101	mg/kg		<0.003	---	---	---	---	---	---	<0.003	<0.003	---	<0.003	---	---	---	---	---	---	---	---	---	---	---	0	---	
PCB congener 105	mg/kg		<0.003	<0.003	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.003	<0.003	0	<0.003	
PCB congener 114	mg/kg		<0.003	<0.003	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.003	<0.003	0	<0.003	
PCB congener 118	mg/kg		<0.003	<0.003	---	---	---	---	---	<0.003	<0.003	---	<0.003	---	---	---	---	---	---	---	---	---	<0.003	<0.003	0	<0.003	
PCB congener 123	mg/kg		<0.003	<0.003	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.003	<0.003	0	<0.003	
PCB congener 126	mg/kg		<0.003	<0.003	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.003	<0.003	0	<0.003	
PCB congener 138	mg/kg		<0.003	---	---	---	---	---	---	<0.003	<0.003	---	<0.003	---	---	---	---	---	---	---	---	---	<0.003	<0.003	0	---	
PCB congener 153	mg/kg		<0.003	---	---	---	---	---	---	<0.003	<0.003	---	<0.003	---	---	---	---	---	---	---	---	---	<0.003	<0.003	0	---	
PCB congener 156	mg/kg		<0.003	<0.003	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.003	<0.003	0	<0.003	
PCB congener 157	mg/kg		<0.003	<0.003	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.003	<0.003	0	<0.003	
PCB congener 167	mg/kg		<0.003	<0.003	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.003	<0.003	0	<0.003	
PCB congener 169	mg/kg		<0.003	<0.003	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.003	<0.003	0	<0.003	
PCB congener 180	mg/kg		<0.003	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.003	<0.003	0	---	
PCB congener 189	mg/kg		<0.003	<0.003	---	---	---	---	---	<0.003	<0.003	---	<0.003	---	---	---	---	---	---	---	---	---	<0.003	<0.003	0	<0.003	
PCB congener 28	mg/kg		<0.003	---	---	---	---	---	---	<0.003	<0.003	---	<0.003	---	---	---	---	---	---	---	---	---	<0.003	<0.003	0	---	
PCB congener 52	mg/kg		<0.003	---	---	---	---	---	---	<0.003	<0.003	---	<0.003	---	---	---	---	---	---	---	---	---	<0.003	<0.003	0	---	
PCB congener 77	mg/kg		<0.003	<0.003	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.003	<0.003	0	<0.003	
PCB congener 81	mg/kg		<0.003	<0.003	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.003	<0.003	0	<0.003	
Sum of detected PCB 7 Congeners	mg/kg		<0.021	---	---	---	---	---	---	<0.021	<0.021	---	<0.021	---	---	---	---	---	---	---	---	---	<0.021	<0.021	0	---	
Sum of detected WHO 12 PCBs	mg/kg		<0.036	<0.036																							

Sample Identity	England and Wales (mg/kg)		CP101	WS101	RBH102	RBH102	WS102	WS102	CP103	CP103	RBH103	WS103	WS103	WS103	WS104	WS104	CP105	CP105	RBH109	RBH109	WS109	WS110	RBH112	RBH104		
Depth (m bgl)	Soil Organic Matter <1%		0.5	0.2	0.2	0.7	0.1	0.5	0.2	0.5	0.5	0.1	0.6	3.8	0.1	0.5	0.1	0.7	0.1	0.4	0.4	0.4	1.3	0.3		
Reference	Screen Value		MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	T/S	MG	NG	MG	MG	MG	Min	Max
Sample Date	Units	Commercial	05/08/2020	14/07/2020	06/08/2020	06/08/2020	13/07/2020	13/07/2020	05/08/2020	05/08/2020	06/08/2020	13/07/2020	13/07/2020	13/07/2020	13/07/2020	13/07/2020	05/08/2020	05/08/2020	06/08/2020	06/08/2020	14/07/2020	14/07/2020	06/08/2020	17/09/2020		
Tert-amyl methyl ether	mg/kg		<0.01	<0.2	---	---	---	<0.01	---	---	---	---	<0.01	---	---	---	---	<0.01	---	---	---	---	<0.01	<0.01	<0.01	<0.2
tert-Butylbenzene	mg/kg		<0.014	<0.28	---	---	---	<0.014	---	---	---	---	<0.014	---	---	---	---	<0.014	---	---	---	---	<0.014	<0.014	<0.014	<0.28
Total VOC TIC	mg/kg		<0.05	<1	---	---	---	<0.05	---	---	---	---	<0.05	---	---	---	---	<0.05	---	---	---	---	<0.05	<0.05	<0.05	<1
trans-1,2-Dichloroethene	mg/kg		<0.01	<0.2	---	---	---	<0.01	---	---	---	---	<0.01	---	---	---	---	<0.01	---	---	---	---	<0.01	<0.01	<0.01	Not Detected
trans-1,3-Dichloropropene	mg/kg		<0.01	<0.2	---	---	---	<0.01	---	---	---	---	<0.01	---	---	---	---	<0.01	---	---	---	---	<0.01	<0.01	<0.01	<2
Trichlorofluoromethane	mg/kg		<0.006	<0.12	---	---	---	<0.006	---	---	---	---	<0.006	---	---	---	---	<0.006	---	---	---	---	<0.006	<0.006	<0.006	
Vinyl Chloride	mg/kg		<0.006	<0.12	---	---	---	<0.006	---	---	---	---	<0.006	---	---	---	---	<0.006	---	---	---	---	<0.006	<0.006	<0.006	<0.006
VOC TIC	No units		Not Detected	Not Detected	---	---	---	Not Detected	---	---	---	---	Not Detected	---	---	---	---	Not Detected	---	---	---	---	Not Detected	Not Detected	Not Detected	19.3

Notes:

sol

vap

#

Analyte not tested for

Suitable 4 Use Level exceeds soil saturation limit which is given in brackets (note that if soil data exceeds the solubility limit, free product may be present). For screening consider applicability of both solubility limit and soil screening value.

Suitable 4 Use Level exceeds vapour saturation limit which is given in brackets.

Screening criteria denoted with hash (#) have been capped at 1000000mg/kg, the maximum



Sample Identity	CP101	WS101	RBH102	RBH102	WS102	WS102	CP103	CP103	RBH103	WS103	WS103	WS103	WS104	WS104	CP105
Depth (m bql)	0.50-0.50	0.20-	0.20-0.20	0.70-0.70	0.10-0.10	0.50-0.50	0.20-0.20	0.50-0.50	0.50-0.50	0.10-0.10	0.60-0.60	3.80-3.80	0.10-0.10	0.50-0.50	0.10-0.10
Benzo(a)anthracene	1.78	0.0332	0.067	0.0462	60.7	0.427	0.156	0.0824	0.0323	1.51	0.014	0.014	1.34	0.0205	0.0335
Chrysene	1.51	0.0412	0.0553	0.044	48.7	0.355	0.143	0.0707	0.0346	1.41	0.01	0.01	1.22	0.0234	0.0522
Benzo(b)fluoranthene	1.98	0.044	0.0938	0.0742	47.8	0.441	0.174	0.104	0.0443	1.58	0.015	0.015	1.41	0.015	0.05
Benzo(k)fluoranthene	0.861	0.0155	0.0319	0.0241	20.2	0.148	0.0768	0.0404	0.0178	0.731	0.014	0.014	0.479	0.014	0.014
Di-benzo(a,h)anthracene	0.14	0.023	0.023	0.023	2.46	0.0381	0.023	0.023	0.023	0.172	0.023	0.023	0.17	0.023	0.023
Indeno(1,2,3-cd)pyrene	0.662	0.0258	0.0384	0.0308	16.3	0.175	0.0665	0.0442	0.018	0.738	0.018	0.018	0.674	0.018	0.018
Benzo(g,h,i)perylene	0.544	0.024	0.0337	0.024	12.3	0.153	0.0654	0.0403	0.024	0.645	0.024	0.024	0.607	0.024	0.024
Benzo(a)pyrene	1.24	0.0328	0.0552	0.0423	32.3	0.306	0.118	0.0716	0.0266	1.23	0.015	0.015	1.14	0.015	0.0332

Ratio to BaP															
Benzo(a)anthracene	1.44	1.01	1.21	1.09	1.88	1.40	1.32	1.15	1.21	1.23	0.93	0.93	1.18	1.37	1.01
Chrysene	1.22	1.26	1.00	1.04	1.51	1.16	1.21	0.99	1.30	1.15	0.67	0.67	1.07	1.56	1.57
Benzo(b)fluoranthene	1.60	1.34	1.70	1.75	1.48	1.44	1.47	1.45	1.67	1.28	1.00	1.00	1.24	1.00	1.51
Benzo(k)fluoranthene	0.69	0.47	0.58	0.57	0.63	0.48	0.65	0.56	0.67	0.59	0.93	0.93	0.42	0.93	0.42
Dibenzo(ah)anthracene	0.11	0.70	0.42	0.54	0.08	0.12	0.19	0.32	0.86	0.14	1.53	1.53	0.15	1.53	0.69
Indeno(123cd)pyrene	0.53	0.79	0.70	0.73	0.50	0.57	0.56	0.62	0.68	0.60	1.20	1.20	0.59	1.20	0.54
Benzo(ghi)perylene	0.44	0.73	0.61	0.57	0.38	0.50	0.55	0.56	0.90	0.52	1.60	1.60	0.53	1.60	0.72



Sample Identity	CP105	RBH105	WS105	WS105	RBH106	WS106	WS106	RBH107	WS107	RBH108	WS108	WS108	RBH109	RBH109	WS109
Depth (m bgl)	0.70-0.70	0.20-0.20	0.10-0.10	0.50-0.50	0.05-0.05	0.05-0.05	0.40-0.40	0.50-0.50	0.20-0.20	0.50-0.50	0.50-0.50	1.70-1.70	0.10-0.10	0.40-0.40	0.40-0.40
Benzo(a)anthracene	0.014	0.0622	0.166	0.014	0.0207	0.232	0.014	0.0351	0.0498	0.014	0.0293	0.014	0.0698	0.014	0.014
Chrysene	0.01	0.0682	0.189	0.01	0.02	0.261	0.01	0.045	0.0524	0.01	0.0349	0.01	0.0702	0.01	0.014
Benzo(b)fluoranthene	0.015	0.1	0.235	0.015	0.0285	0.36	0.015	0.0447	0.069	0.015	0.0417	0.015	0.122	0.015	0.015
Benzo(k)fluoranthene	0.014	0.0328	0.0704	0.014	0.014	0.127	0.014	0.014	0.0258	0.014	0.014	0.014	0.038	0.014	0.014
Di-benzo(a,h)anthracene	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023
Indeno(1,2,3-cd)pyrene	0.018	0.0289	0.0937	0.018	0.018	0.16	0.018	0.018	0.0378	0.018	0.018	0.018	0.0522	0.018	0.018
Benzo(g,h,i)perylene	0.024	0.0375	0.102	0.024	0.024	0.144	0.024	0.024	0.0404	0.024	0.024	0.024	0.0469	0.024	0.024
Benzo(a)pyrene	0.015	0.0533	0.153	0.015	0.0177	0.208	0.015	0.0261	0.0527	0.015	0.0262	0.015	0.0648	0.015	0.015

Ratio to BaP															
Benzo(a)anthracene	0.93	1.17	1.08	0.93	1.17	1.12	0.93	1.34	0.94	0.93	1.12	0.93	1.08	0.93	0.93
Chrysene	0.67	1.28	1.24	0.67	1.13	1.25	0.67	1.72	0.99	0.67	1.33	0.67	1.08	0.67	0.93
Benzo(b)fluoranthene	1.00	1.88	1.54	1.00	1.61	1.73	1.00	1.71	1.31	1.00	1.59	1.00	1.88	1.00	1.00
Benzo(k)fluoranthene	0.93	0.62	0.46	0.93	0.79	0.61	0.93	0.54	0.49	0.93	0.53	0.93	0.59	0.93	0.93
Dibenzo(ah)anthracene	1.53	0.43	0.15	1.53	1.30	0.11	1.53	0.88	0.44	1.53	0.88	1.53	0.35	1.53	1.53
Indeno(123cd)pyrene	1.20	0.54	0.61	1.20	1.02	0.77	1.20	0.69	0.72	1.20	0.69	1.20	0.81	1.20	1.20
Benzo(ghi)perylene	1.60	0.70	0.67	1.60	1.36	0.69	1.60	0.92	0.77	1.60	0.92	1.60	0.72	1.60	1.60



Sample Identity	WS110	RBH112	RBH104
Depth (m bgl)	0.40-0.40	1.30-1.30	0.30-0.30
Benzo(a)anthracene	0.014	0.014	1.68
Chrysene	0.0156	0.01	1.52
Benzo(b)fluoranthene	0.015	0.015	1.63
Benzo(k)fluoranthene	0.014	0.014	0.588
Di-benzo(a,h)anthracene	0.023	0.023	0.23
Indeno(1,2,3-cd)pyrene	0.018	0.018	0.579
Benzo(g,h,i)perylene	0.024	0.024	0.501
Benzo(a)pyrene	0.015	0.015	1.05

Ratio to BaP			
Benzo(a)anthracene	0.93	0.93	1.60
Chrysene	1.04	0.67	1.45
Benzo(b)fluoranthene	1.00	1.00	1.55
Benzo(k)fluoranthene	0.93	0.93	0.56
Dibenzo(ah)anthracene	1.53	1.53	0.22
Indeno(123cd)pyrene	1.20	1.20	0.55
Benzo(ghi)perylene	1.60	1.60	0.48



Hazard Indexing		Sample ID	CP101		WS10		RBH10		RBH10		WS102		WS10		CP103		CP103		RBH10		WS10		WS103		WS10	
		Depth (mbgl)	0.5	HI	0.2	HI	0.2	HI	0.7	HI	0.1	HI	0.5	HI	0.2	HI	0.5	HI	0.5	HI	0.1	HI	0.6	HI	3.8	HI
Aliphatics	Units	TSV																								
TPH Aliphatic >C5-6	mg/kg	3,200	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00
TPH Aliphatic >C6-8	mg/kg	7,800	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00
TPH Aliphatic >C8-10	mg/kg	2,000	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00
TPH Aliphatic >C10-12	mg/kg	9,700	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1.39	0.00	1	0.00	1	0.00	1	0.00	1	0.00
TPH Aliphatic >C12-16	mg/kg	59,000	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	5.74	0.00	1	0.00	1	0.00	1	0.00
Aliphatics >C16-C21	mg/kg	1,000,000	1	0.00	1	0.00	1	0.00	1	0.00	2.73	0.00	1	0.00	1	0.00	1	0.00	13	0.00	1	0.00	1	0.00	3.9	0.00
Aliphatics >C21-C35	mg/kg	1,000,000	2.78	0.00	1.74	0.00	6.27	0.00	1	0.00	15.3	0.00	2.24	0.00	6.56	0.00	1	0.00	7.84	0.00	16.5	0.00	1	0.00	206	0.00
Aliphatics >C35-C44	mg/kg	1,000,000	1.78	0.00	1	0.00	1	0.00	1	0.00	1.87	0.00	1	0.00	1	0.00	1	0.00	1	0.00	2.45	0.00	1	0.00	65	0.00
Aliphatic Hazard Index				0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00
Aromatics																										
TPH Aromatic >EC5-7 (Benzene)	mg/kg	27	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00
TPH Aromatic >EC7-8	mg/kg	56,000	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00
TPH Aromatic >EC8-10	mg/kg	3,500	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00
Aromatics > EC10-EC12	mg/kg	16,000	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00
Aromatics > EC12-EC16	mg/kg	36,000	2.62	0.00	1	0.00	1	0.00	1	0.00	24.4	0.00	1	0.00	2.88	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00
Aromatics > EC16-EC21	mg/kg	28,000	22.5	0.00	1	0.00	1	0.00	1	0.00	369	0.01	1	0.00	2.09	0.00	1.57	0.00	1	0.00	22.4	0.00	1	0.00	5.21	0.00
Aromatics > EC21-EC35	mg/kg	28,000	61.8	0.00	2.79	0.00	4.22	0.00	1	0.00	776	0.03	1.4	0.00	4.85	0.00	2.14	0.00	1.62	0.00	72.1	0.00	1	0.00	93.7	0.00
Aromatics >EC35-EC44	-	28,000	7.26	0.00	1	0.00	1	0.00	1	0.00	76.1	0.00	1	0.00	1.03	0.00	1	0.00	1	0.00	3.48	0.00	1	0.00	1	0.00
Aromatic Hazard Index				0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00
Hazard Index				0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00

		Sample ID	WS104	HI	WS10	HI	CP105	HI	CP105	HI	RBH10	HI	WS10	HI	WS10	HI	RBH10	HI	WS106	HI	WS10	HI	RBH10	HI	WS10	HI
		Depth (mbgl)	0.1		0.5		0.1		0.7		0.2		0.1		0.5		0.05		0.05		0.4		0.5		0.2	
Aliphatics	Units	TSV																								
TPH Aliphatic >C5-6	mg/kg	3,200	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00
TPH Aliphatic >C6-8	mg/kg	7,800	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.0133	0.00	0.01	0.00
TPH Aliphatic >C8-10	mg/kg	2,000	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.0131	0.00	0.01	0.00	0.0189	0.00	0.01	0.00
TPH Aliphatic >C10-12	mg/kg	9,700	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	3.11	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00
TPH Aliphatic >C12-16	mg/kg	59,000	1	0.00	1	0.00	1	0.00	1	0.00	6.99	0.00	8.69	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00
Aliphatics >C16-C21	mg/kg	1,000,000	5.37	0.00	1	0.00	6.69	0.00	1	0.00	1	0.00	128	0.00	1	0.00	1	0.00	6.28	0.00	1	0.00	1.42	0.00	1	0.00
Aliphatics >C21-C35	mg/kg	1,000,000	40.2	0.00	1	0.00	16.3	0.00	7.31	0.00	8.92	0.00	806	0.00	6.98	0.00	3.42	0.00	52.4	0.00	1.38	0.00	16.7	0.00	4.82	0.00
Aliphatics >C35-C44	mg/kg	1,000,000	2.78	0.00	1	0.00	3.76	0.00	1	0.00	1	0.00	73.3	0.00	1	0.00	1	0.00	2.55	0.00	1	0.00	1	0.00	1	0.00
Aliphatic Hazard Index				0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00
Aromatics																										
TPH Aromatic >EC5-7 (Benzene)	mg/kg	27	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00
TPH Aromatic >EC7-8	mg/kg	56,000	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00
TPH Aromatic >EC8-10	mg/kg	3,500	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.0122	0.00	0.01	0.00
Aromatics > EC10-EC12	mg/kg	16,000	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00
Aromatics > EC12-EC16	mg/kg	36,000	1	0.00	1	0.00	1.59	0.00	1	0.00	20.3	0.00	2.73	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00
Aromatics > EC16-EC21	mg/kg	28,000	6.87	0.00	1	0.00	1.58	0.00	1	0.00	12.7	0.00	17.3	0.00	1	0.00	1	0.00	15.4	0.00	1	0.00	1	0.00	1	0.00
Aromatics > EC21-EC35	mg/kg	28,000	26.4	0.00	1.83	0.00	16.5	0.00	1	0.00	28.8	0.00	4120	0.15	22.8	0.00	4.99	0.00	24.2	0.00	1	0.00	10.3	0.00	2.85	0.00
Aromatics >EC35-EC44		28,000	8.04	0.00	1	0.00	3.39	0.00	1	0.00	1.9	0.00	472	0.02	1	0.00	1	0.00	10.7	0.00	1	0.00	1	0.00	1	0.00
Aromatic Hazard Index	-			0.00		0.00		0.00		0.00		0.00		0.17		0.00		0.00		0.00		0.00		0.00		0.00
Hazard Index				0.00		0.00		0.00		0.00		0.00		0.17		0.00		0.00		0.00		0.00		0.00		0.00

		Sample ID	RBH108	HI	WS10	HI	WS108	HI	RBH10	HI	RBH10	HI	WS10	HI	WS11	HI	RBH11	HI	RBH10	HI
		Depth (mbgl)	0.5		0.5		1.7		0.1		0.4		0.4		1.3		0.3			
Aliphatics	Units	TSV																		
TPH Aliphatic >C5-6	mg/kg	3,200	0.0115	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00
TPH Aliphatic >C6-8	mg/kg	7,800	0.0161	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00
TPH Aliphatic >C8-10	mg/kg	2,000	0.0725	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00
TPH Aliphatic >C10-12	mg/kg	9,700	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00
TPH Aliphatic >C12-16	mg/kg	59,000	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1.23	0.00	1	0.00	1	0.00	1	0.00
Aliphatics >C16-C21	mg/kg	1,000,000	1	0.00	1.03	0.00	1	0.00	1.16	0.00	1	0.00	1.26	0.00	1	0.00	1	0.00	4.68	0.00
Aliphatics >C21-C35	mg/kg	1,000,000	1	0.00	3.82	0.00	6.71	0.00	5.18	0.00	1	0.00	1.74	0.00	1	0.00	1	0.00	42.9	0.00
Aliphatics >C35-C44	mg/kg	1,000,000	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	28.2	0.00
Aliphatic Hazard Index				0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00
Aromatics																				
TPH Aromatic >EC5-7 (Benzene)	mg/kg	27	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00
TPH Aromatic >EC7-8	mg/kg	56,000	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00
TPH Aromatic >EC8-10	mg/kg	3,500	0.0483	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00
Aromatics > EC10-EC12	mg/kg	16,000	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	<1	0.00
Aromatics > EC12-EC16	mg/kg	36,000	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	<1	0.00
Aromatics > EC16-EC21	mg/kg	28,000	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	11.6	0.00
Aromatics > EC21-EC35	mg/kg	28,000	1	0.00	1	0.00	1.99	0.00	13.8	0.00	1	0.00	1	0.00	1	0.00	1	0.00	137	0.00
Aromatics >EC35-EC44		28,000	1	0.00	1	0.00	1	0.00	1.6	0.00	1	0.00	1	0.00	1	0.00	1	0.00	6.11	0.00
Aromatic Hazard Index	-			0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00
Hazard Index				0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00

Leconfield Industrial Estate
Soils Statistical Analysis (Outliers Included) for the Top 1m



All Sites and Sample:

Parameter	TSV	No. of Samples	UCL	Arithmetic Mean	Geometric Mean	No. of LN Samples	Standard Deviation	LN Standard Deviation	Coeff. Variability	Distribution	LN Arithmetic Mean	Applicable 95% UCL	95% UCL LogNormal	95% UCL Normal	Max	Min	Max Ln	Tcalc	Tcrit (10%)	Critical Value Test	(Max value test) Outlier?	Mean Value Test
Beryllium	12	29.00	0.95	3.30	2.19	29.00	3.51	0.87	1.06	LOGNORMAL	0.79	2.89	2.89	4.41	12.50	0.42	2.53	2.00	2.549	NO	NO	Pass
Benzo(b)fluoranthene	44	29.00	0.95	1.95	0.10	29.00	8.84	1.97	4.53	LOGNORMAL	-2.28	0.19	0.19	4.74	47.80	0.02	3.87	3.13	2.549	YES	YES	Pass

Analysis Carbon	Test	Customer Sample ID			CP102	CP104	WS108	WS109	Min	Max
		TSV	Units	LCD						
Inorganics	Carbon, Organic (diss.filt)		mg/l	<3	5.61	6.88	6.25	6.36	5.61	6.88
	Nitrite as NO2	0.5	mg/l	<0.05	<0.05	1.46	0.067	<0.05	0.067	1.46
	pH	6.0-9.0	pH Units	<1.00	9.6	10.2	9.62	7.52	7.52	10.2
	Sulphate	250	mg/l	<2	176	80.5	112	273	80.5	273
	Chloride		mg/l	<2	15.6	45.2	14.6	25.3	14.6	45.2
	Ammoniacal Nitrogen as NH3	0.3	mg/l	<0.2	<0.2	1.47	<0.2	<0.2	1.47	1.47
	Cyanide, Total	0.001	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05	0	0
	Ammoniacal Nitrogen as NH4	0.3	mg/l	<0.3	1.58		<0.3	1.56	1.56	1.58
	Nitrate as NO3	50	mg/l	<0.3	0.48	0.57	1.84	<0.3	0.48	1.84
	Alkalinity, Total as CaCO3		mg/l	<2	50	80	1800	500	50	1800
Filtered (Dissolved) Metals										
	Mercury (diss.filt)	0.07	µg/l	<0.01	<0.01	<0.01	<0.01	<0.01	0	0
	Antimony (diss.filt)	5	µg/l	<1	1.8	2.36	2.3	1.26	1.26	2.36
	Arsenic (diss.filt)	25	µg/l	<0.5	4.47	4.29	5.59	2.47	2.47	5.59
	Barium (diss.filt)	700	µg/l	<0.2	74.3	138	68.1	75.7	68.1	138
	Beryllium (diss.filt)		µg/l	<0.1	<0.1	<0.1	<0.1	<0.1	0	0
	Boron (diss.filt)	1000	µg/l	<10	33.6	87.8	42.2	43.5	33.6	87.8
	Cadmium (diss.filt)		µg/l	<0.08	<0.08	<0.08	<0.08	<0.08	0	0
	Chromium (diss.filt)	50	µg/l	<1	1.12	1.94	<1	<1	1.12	1.94
	Copper (diss.filt)	1	µg/l	<0.3	2.47	8.83	1.62	1.78	1.62	9.13
	Lead (diss.filt)	1.2	µg/l	<0.2	<0.2	0.413	<0.2	<0.2	0.413	0.413
	Molybdenum (diss.filt)	70	µg/l	<3	7.44	<11.7	<3	10.8	7.44	11.7
	Nickel (diss.filt)	4	µg/l	<0.4	0.89	1.41	0.813	6.2	0.813	6.2
	Selenium (diss.filt)	10	µg/l	<1.0	9.1	5.23	1.61	15.5	1.61	15.5
	Zinc (diss.filt)	10.9	µg/l	<1.0	1.88	3.07	1.16	3.08	1.16	3.08
Phenols										
	Phenol		mg/l	<0.002	<0.002	<0.002	<0.002	<0.002	0	0
TPH Criteria Working Group (TPH CWG)										
	GRO >C5-C12		µg/l	<50	<50	<50	<50	<50	0	0
	Methyl tertiary butyl ether (MTBE)		µg/l	<3	<3	<3	<3	<3	0	0
	Benzene		µg/l	<7	<7	<7	<7	<7	0	0
	Toluene		µg/l	<4	<4	<4	<4	<4	0	0
	Ethylbenzene		µg/l	<5	<5	<5	<5	<5	0	0
	m,p-Xylene		µg/l	<8	<8	<8	<8	<8	0	0
	o-Xylene		µg/l	<3	<3	<3	<3	<3	0	0
	Sum of detected Xylenes		µg/l	<11	<11	<11	<11	<11	0	0
	Sum of detected BTEX		µg/l	<28	<28	<28	<28	<28	0	0
	Aliphatics >C5-C6		µg/l	<10	<10	<10	<10	<10	0	0
	Aliphatics >C6-C8		µg/l	<10	<10	<10	<10	<10	0	0
	Aliphatics >C8-C10		µg/l	<10	<10	<10	<10	<10	0	0
	Aliphatics >C10-C12		µg/l	<10	<10	<10	<10	<10	0	0
	Aliphatics >C12-C16 (aq)		µg/l	<10	<10	<10	103	51	51	103
	Aliphatics >C16-C21 (aq)		µg/l	<10	<10	<10	526	73	73	526
	Aliphatics >C21-C35 (aq)	10	µg/l	<10	<10	<10	1100	675	14	1100
	Total Aliphatics >C12-C35 (aq)		µg/l	<10	14	120	11700	799	14	11700
	Aromatics >EC5-EC7		µg/l	<10	<10	<10	<10	<10	0	0
	Aromatics >EC7-EC8		µg/l	<10	<10	<10	<10	<10	0	0
	Aromatics >EC8-EC10		µg/l	<10	<10	<10	<10	<10	0	0
	Aromatics >EC10-EC12		µg/l	<10	<10	<10	<10	<10	0	0
	Aromatics >EC12-EC16 (aq)	10	µg/l	<10	<10	<10	112	38	38	112
	Aromatics >EC16-EC21 (aq)	0.00017	µg/l	<10	<10	<10	234	37	37	234
	Aromatics >EC21-EC35 (aq)	0.0082	µg/l	<10	17	<10	2750	206	17	2750
	Total Aromatics >EC12-EC35 (aq)		µg/l	<10	17	<10	3100	281	17	3100
	Total Aliphatics & Aromatics >C5-35 (aq)		µg/l	<10	31	120	14800	1080	31	14800
Polyaromatic Hydrocarbons (PAHs)										
	Naphthalene (aq)	2	µg/l	<0.01	0.0966	0.0633	0.421	<0.1	<0.1	0.421
	Acenaphthene (aq)		µg/l	<0.005	0.0257	<0.005	0.082	<0.05	<0.005	0.082
	Acenaphthylene (aq)		µg/l	<0.005	0.0297	<0.005	0.0594	<0.05	<0.005	0.0594
	Fluoranthene (aq)	0.0063	µg/l	<0.005	0.62	0.069	1.34	0.0936	0.069	1.34
	Anthracene (aq)	0.1	µg/l	<0.005	0.0532	<0.005	0.144	<0.05	<0.005	0.144
	Phenanthrene (aq)		µg/l	<0.005	0.224	0.0366	1.69	0.141	0.0366	1.69
	Fluorene (aq)		µg/l	<0.005	0.025	<0.005	0.24	<0.05	<0.05	0.24
	Chrysene (aq)		µg/l	<0.005	0.491	0.0358	0.869	<0.05	<0.05	0.869
	Pyrene (aq)		µg/l	<0.005	0.55	0.0544	1.29	0.104	0.0544	1.29
	Benzo(a)anthracene (aq)		µg/l	<0.005	0.315	0.0364	0.701	<0.05	<0.05	0.701
	Benzo(b)fluoranthene (aq)	0.017	µg/l	<0.005	0.951	0.0574	1.16	<0.05	0.0574	1.16
	Benzo(k)fluoranthene (aq)	0.017	µg/l	<0.005	0.358	0.0217	0.465	<0.05	0.0217	0.465
	Benzo(a)pyrene (aq)	0.00017	µg/l	<0.002	0.391	0.0382	0.693	<0.02	0.0382	0.693
	Dibenz(a,h)anthracene (aq)		µg/l	<0.005	0.0837	<0.005	0.105	<0.05	<0.005	0.105
	Benzo(g,h,i)perylene (aq)	0.0082	µg/l	<0.005	0.35	0.0315	0.527	<0.05	<0.05	0.527
	Indeno(1,2,3-cd)pyrene (aq)		µg/l	<0.005	0.332	<0.005	0.532	<0.05	<0.005	0.532
	PAH, Total Detected USEPA 16 (aq)		µg/l	<0.082	4.9	0.444	10.3	<0.82	<0.82	10.3
Semi-Volatile Organic Compounds (SVOCs)										
	1,2,4-Trichlorobenzene (aq)		µg/l	<1	<1	<1	<50	<50	<1	<50
	1,2-Dichlorobenzene (aq)		µg/l	<1	<1	<1	<50	<50	<1	<50
	1,3-Dichlorobenzene (aq)		µg/l	<1	<1	<1	<50	<50	<1	<50
	1,4-Dichlorobenzene (aq)		µg/l	<1	<1	<1	<50	<50	<1	<50
	2,4,5-Trichlorophenol (aq)		µg/l	<1	<1	<1	<50	<50	<1	<50
	2,4,6-Trichlorophenol (aq)		µg/l	<1	<1	<1	<50	<50	<1	<50
	2,4-Dichlorophenol (aq)		µg/l	<1	<1	<1	<50	<50	<1	<50
	2,4-Dimethylphenol (aq)		µg/l	<1	<1	<1	<50	<50	<1	<50
	2,4-Dinitrotoluene (aq)		µg/l	<1	<1	<1	<50	<50	<1	<50
	2,6-Dinitrotoluene (aq)		µg/l	<1	<1	<1	<50	<50	<1	<50
	2-Chloronaphthalene (aq)		µg/l	<1	<1	<1	<50	<50	<1	<50
	2-Chlorophenol (aq)		µg/l	<1	<1	<1	<50	<50	<1	<50
	2-Methylnaphthalene (aq)		µg/l	<1	<1	<1	<50	<50	<1	<50
	2-Methylphenol (aq)		µg/l	<1	<1	<1	<50	<50	<1	<50
	2-Nitroaniline (aq)		µg/l	<1	<1	<1	<50	<50	<1	<50
	2-Nitrophenol (aq)		µg/l	<1	<1	<1	<50	<50	<1	<50
	3-Nitroaniline (aq)		µg/l	<1	<1	<1	<50	<50	<1	<50
	4-Bromophenylphenylether (aq)		µg/l	<1	<1	<1	<50	<50	<1	<50
	4-Chloro-3-methylphenol (aq)		µg/l	<1	<1	<1	<50	<50	<1	<50
	4-Chloroaniline (aq)		µg/l	<1	<1	<1	<50	<50	<1	<50
	4-Chlorophenylphenylether (aq)		µg/l	<1	<1	<1	<50	<50	<1	<50
	4-Methylphenol (aq)		µg/l	<1	<1	<1	<50	<50	<1	<50
	4-Nitroaniline (aq)		µg/l	<1	<1	<1	<50	<50	<1	<50
	4-Nitrophenol (aq)		µg/l	<1	<1	<1	<50	<50	<1	<50
	Azobenzene (aq)		µg/l	<1	<1	<1	<50	<50	<1	<50
	bis(2-Chloroethoxy)ether (aq)		µg/l	<1	<1	<1	<50	<50	<1	<50
	bis(2-Chloroethoxy)methane (aq)		µg/l	<1	<1	<1	<50	<50	<1	<50
	bis(2-Ethoxyethoxy) phthalate (aq)		µg/l	<2	5.84	2.85	<100	<100	<2	<100
	Butylbenzyl phthalate (aq)		µg/l	<1	<1	<1	<50	<50	<1	<50
	Benzo(b)fluoranthene (aq)		µg/l	<1	<1	<1	<50	<50	<1	<50
	Carbazole (aq)		µg/l	<1	<1	<1	<50	<50	<1	<50
	Dibenzofuran (aq)		µg/l	<1	<1	<1	<50	<50	<1	<50
	n-Dibutyl phthalate (aq)		µg/l	<1	<1	<1	<50	<50	<1	<50
	Diethyl phthalate (aq)		µg/l	<1	<1	<1	<50	<50	<1	<50
	Dimethyl phthalate (aq)		µg/l	<1	<1	<1	<50	<50	<1	<50
	n-Dioctyl phthalate (aq)		µg/l	<5	<5	<5	<250	<250	<5	<250
	Hexachlorobenzene (aq)		µg/l	<1	<1	<1	<50	<50	<1	<50
	Hexachlorobutadiene (aq)		µg/l	<1	<1	<1	<50	<50	<1	<50
	Pentachlorophenol (aq)		µg/l	<1	<1	<1	<50	<50	<1	<50
	Phenol (aq)		µg/l	<1	<1	<1	<50	<50	<1	<50
	n-Nitroso-n-dipropylamine (aq)		µg/l	<1	<1	<1	<50	<50	<1	<50
	Hexachloroethane (aq)		µg/l	<1	<1	<1	<50	<50	<1	<50
	Nitrobenzene (aq)		µg/l	<1	<1	<1	<50	<50	<1	<50
	Isophorone (aq)		µg/l	<1	<1	<1	<50	<50	<1	<50
	Hexachlorocyclopentadiene (aq)		µg/l	<1	<1	<1	<50	<50	<1	<50
	Indeno(1,2,3-cd)pyrene (aq)		µg/l	<1	<1	<1	<50	<50	<1	<50
	SVOC TIC (aq)		No units	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected		
	Total SVOC TIC		µg/l	<10		<10	<500	<500	<10	<500
Volatile Organic Compounds (VOCs)										
	Dichlorodifluoromethane		µg/l	<1	<1	<1	<1	<1	<1	<1
	Chloromethane		µg/l	<1	<1	<1	<1	<1	<1	<1
	Vinyl chloride		µg/l	<1	<1	<1	<1	<1	<1	<1
	Bromomethane		µg/l	<1	<1	<1	<1	<1	<1	<1
	Chloroethane		µg/l	<1	<1	<1	<1	<1	<1	<1
	Trichlorofluoromethane		µg/l	<1	<1	<1	<1	<1	<1	<1
	1,1-Dichloroethene		µg/l	<1	<1	<1	<1	<1	<1	<1

Analysis	Test	Customer Sample ID			CP102	CP104	WS108	WS109	Min	Max
		TSV	Units	LOD						
	Carbon disulphide		µg/l	<1	<1	<1	<1	<1	<1	<1
	Dichloromethane		µg/l	<3	<3	<3	<3	<3	<3	<3
	Methyl tertiary butyl ether (MTBE)		µg/l	<1	<1	<1	<1	<1	<1	<1
	trans-1,2-Dichloroethene		µg/l	<1	<1	<1	<1	<1	<1	<1
	1,1-Dichloroethane		µg/l	<1	<1	<1	<1	<1	<1	<1
	cis-1,2-Dichloroethene		µg/l	<1	<1	<1	<1	<1	<1	<1
	2,2-Dichloropropane		µg/l	<1	<1	<1	<1	<1	<1	<1
	Bromochloromethane		µg/l	<1	<1	<1	<1	<1	<1	<1
	Chloroform		µg/l	<1	<1	<1	<1	<1	<1	<1
	1,1,1-Trichloroethane		µg/l	<1	<1	<1	<1	<1	<1	<1
	1,1-Dichloropropene		µg/l	<1	<1	<1	<1	<1	<1	<1
	Carbontetrachloride		µg/l	<1	<1	<1	<1	<1	<1	<1
	1,2-Dichloroethane		µg/l	<1	<1	<1	<1	<1	<1	<1
	Benzene		µg/l	<1	<1	<1	<1	<1	<1	<1
	Trichloroethene		µg/l	<1	<1	<1	<1	<1	<1	<1
	1,2-Dichloropropane		µg/l	<1	<1	<1	<1	<1	<1	<1
	Dibromomethane		µg/l	<1	<1	<1	<1	<1	<1	<1
	Bromodichloromethane		µg/l	<1	<1	<1	<1	<1	<1	<1
	cis-1,3-Dichloropropene		µg/l	<1	<1	<1	<1	<1	<1	<1
	Toluene		µg/l	<1	<1	<1	<1	<1	<1	<1
	trans-1,3-Dichloropropene		µg/l	<1	<1	<1	<1	<1	<1	<1
	1,1,2-Trichloroethane		µg/l	<1	<1	<1	<1	<1	<1	<1
	1,3-Dichloropropane		µg/l	<1	<1	<1	<1	<1	<1	<1
	Tetrachloroethene		µg/l	<1	<1	<1	<1	<1	<1	<1
	Dibromochloromethane		µg/l	<1	<1	<1	<1	<1	<1	<1
	1,2-Dibromoethane		µg/l	<1	<1	<1	<1	<1	<1	<1
	Chlorobenzene		µg/l	<1	<1	<1	<1	<1	<1	<1
	1,1,1,2-Tetrachloroethane		µg/l	<1	<1	<1	<1	<1	<1	<1
	Ethylbenzene		µg/l	<1	<1	<1	<1	<1	<1	<1
	m,p-Xylene		µg/l	<1	<1	<1	<1	<1	<1	<1
	p-Xylene		µg/l	<1	<1	<1	<1	<1	<1	<1
	Styrene		µg/l	<1	<1	<1	<1	<1	<1	<1
	Bromoform		µg/l	<1	<1	<1	<1	<1	<1	<1
	Isopropylbenzene		µg/l	<1	<1	<1	<1	<1	<1	<1
	1,1,2,2-Tetrachloroethane		µg/l	<1	<1	<1	<1	<1	<1	<1
	1,2,3-Trichloropropane		µg/l	<1	<1	<1	<1	<1	<1	<1
	Bromobenzene		µg/l	<1	<1	<1	<1	<1	<1	<1
	Propylbenzene		µg/l	<1	<1	<1	<1	<1	<1	<1
	2-Chlorotoluene		µg/l	<1	<1	<1	<1	<1	<1	<1
	1,3,5-Trimethylbenzene		µg/l	<1	<1	<1	<1	<1	<1	<1
	4-Chlorotoluene		µg/l	<1	<1	<1	<1	<1	<1	<1
	tert-Butylbenzene		µg/l	<1	<1	<1	<1	<1	<1	<1
	1,2,4-Trimethylbenzene		µg/l	<1	<1	<1	<1	<1	<1	<1
	sec-Butylbenzene		µg/l	<1	<1	<1	<1	<1	<1	<1
	4-iso-Propyltoluene		µg/l	<1	<1	<1	<1	<1	<1	<1
	1,3-Dichlorobenzene		µg/l	<1	<1	<1	<1	<1	<1	<1
	1,4-Dichlorobenzene		µg/l	<1	<1	<1	<1	<1	<1	<1
	n-Butylbenzene		µg/l	<1	<1	<1	<1	<1	<1	<1
	1,2-Dichlorobenzene		µg/l	<1	<1	<1	<1	<1	<1	<1
	1,2-Dibromo-3-chloropropane		µg/l	<1	<1	<1	<1	<1	<1	<1
	1,2,4-Trichlorobenzene		µg/l	<1	<1	<1	<1	<1	<1	<1
	Hexachlorobutadiene		µg/l	<1	<1	<1	<1	<1	<1	<1
	tert-Amyl methyl ether (TAME)		µg/l	<1	<1	<1	<1	<1	<1	<1
	Naphthalene		µg/l	<1	<1	<1	<1	<1	<1	<1
	1,2,3-Trichlorobenzene		µg/l	<1	<1	<1	<1	<1	<1	<1
	1,3,5-Trichlorobenzene		µg/l	<1	<1	<1	<1	<1	<1	<1
	VOC TIC		No units		Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
	Sum of detected Xylenes		µg/l	<2	<2	<2	<2	<2	<2	<2
	Total VOC TIC		µg/l	<10	<10	<10	<10	<10	<10	<10

Drinking Water Standard 2006, 2008
 River Water EQS 2015
 Concentration > TSV
 Concentration > LOD but no screening values

Sample Identity			TP12 (c1)	TP13 (c1)	TP14 (c1)	TP15 (c1)	TP15 (c2)	TP1 D1	TP1 D2	TP2 D1	TP2 D2	TP3 D1	TP 4 - D1	TP 4 - D2	TP 5 - D1	TP 5 - D3	TP 6 - D1	TP 7 - D1
Depth			0.40	0.40	0.50	0.25	1.00	0.50	1.55	0.40	1.70	0.70	0.50	1.35	0.15	1.10	0.25	0.50
	Screening Value	Units																
Mercury Low	58	mg/kg	<0.4	1.1	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Boron Water Soluble	240000	mg/kg	4.0	<3.5	<3.5	<3.5	<3.5	3.7	<3.5	<3.5	<3.5	<3.5	<3.5	<3.5	<3.5	<3.5	<3.5	<3.5
Arsenic	640	mg/kg	9	5	14	<3	7	10	10	6	9	6	12	29	10	<3	10	11
Cadmium	410	mg/kg	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	0.4	<0.3
Chromium	8600	mg/kg	<4.5	<4.5	<4.5	<4.5	<4.5	33	18	26	28	25	16	18	<4.5	<4.5	7.4	22
Copper	68000	mg/kg	14	11	35	<6	<6	34	<6	7	9	6	<6	25	<6	<6	<6	7
Lead	2300	mg/kg	<2	<2	65	16	24	<2	16	9	11	8	14	37	<2	<2	6	10
Nickel	980	mg/kg	<0.9	14	12	<0.9	<0.9	26	6.8	18	20	17	13	45	2.8	<0.9	6.6	16
Selenium	12000	mg/kg	<3	5	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	6	3	<3
Zinc	730000	mg/kg	10	19	46	28	31	26	20	36	38	29	29	35	14	<2.5	32	33
Water Soluble Sulphate as SO4 2:1 Extract		g/l	0.14	0.14	0.27	0.14	0.21	0.45	0.033	0.064	0.021	0.27	0.15	0.15	0.21	0.085	0.19	0.036
Acid Soluble Sulphide		mg/kg	770	<50	200	650	1100	340	<50	<50	<50	<50	<50	180	270	1400	880	87
Hexavalent Chromium	49	mg/kg	<0.3	<0.3	<3.0	<3.0	<0.3	<0.3	<3.0	<0.3	<0.3	<0.3	<0.3	<3.0	<3.0	<0.3	<0.3	<0.3
Phenols Monohydric	440	mg/kg	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
Total Cyanide		mg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	<1
Free Cyanide	36	mg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Complex Cyanide		mg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	<1
pH Value	<5, >9	pH Units	11.16	8.26	9.03	9.95	10.73	9.87	7.98	7.65	8.20	9.92	7.97	9.05	9.00	11.13	10.06	8.15
EPH (DRO) (C10-C40)		mg/kg	<35	59	100	1200	51	740	130	87	99	100	83	46	64	130	140	120
EPH C10-20	9,700 (48)sol	mg/kg	<35	<35	<35	<35	<35	76	39	47	57	55	<35	<35	<35	62	<35	38
EPH >C20-30	28,000	mg/kg	<35	<35	45	810	35	390	43	<35	<35	<35	<35	<35	<35	59	58	44
EPH >C30-40	28,000	mg/kg	<35	<35	<35	350	<35	270	49	<35	<35	<35	<35	<35	<35	<35	47	<35
PAH by GC-FID																		
Naphthalene	190 (76.4)sol	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthylene	83,000 (86.1)sol	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthene	84,000 (57.0)sol	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluorene	63000 (30.9)sol	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Phenanthrene	22,000	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Anthracene	520,000	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluoranthene	23,000	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Pyrene	54,000	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benz(a)anthracene	170	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chrysene	350	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	44	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	1,200	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	77	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(123cd)pyrene	500	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibenzo(ah)anthracene	3.5	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(ghi)perylene	3,900	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
PAH 16 Total		mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Volatile Organic Compounds																		
Dichlorodifluoromethane		ug/kg											-	<4	-	-	-	-
Chloromethane		ug/kg											-	<7	-	-	-	-
Vinyl Chloride		ug/kg											-	<10	-	-	-	-
Bromomethane		ug/kg											-	<13	-	-	-	-
Chloroethane		ug/kg											-	<14	-	-	-	-
Trichlorofluoromethane		ug/kg											-	<6	-	-	-	-
trans-1-2-Dichloroethene		ug/kg											-	<11	-	-	-	-
Dichloromethane		ug/kg											-	<10	-	-	-	-
Carbon Disulphide		ug/kg											-	<7	-	-	-	-
1,1-Dichloroethene		ug/kg											-	<10	-	-	-	-
1,1-Dichloroethane		ug/kg											-	<8	-	-	-	-
Methyl Tertiary Butyl Ether		ug/kg											-	<11	-	-	-	-
cis-1-2-Dichloroethene		ug/kg											-	<5	-	-	-	-

Sample Identity			TP12 (c1)	TP13 (c1)	TP14 (c1)	TP15 (c1)	TP15 (c2)	TP1 D1	TP1 D2	TP2 D1	TP2 D2	TP3 D1	TP 4 - D1	TP 4 - D2	TP 5 - D1	TP 5 - D3	TP 6 - D1	TP 7 - D1
Depth			0.40	0.40	0.50	0.25	1.00	0.50	1.55	0.40	1.70	0.70	0.50	1.35	0.15	1.10	0.25	0.50
	Screening Value	Units																
Bromochloromethane		ug/kg											-	<14	-	-	-	-
Chloroform		ug/kg											-	<8	-	-	-	-
2,2-Dichloropropane		ug/kg											-	<12	-	-	-	-
1,2-Dichloroethane		ug/kg											-	<5	-	-	-	-
1,1,1-Trichloroethane		ug/kg											-	<7	-	-	-	-
1,1-Dichloropropene		ug/kg											-	<11	-	-	-	-
Benzene		ug/kg											-	<9	-	-	-	-
Carbontetrachloride		ug/kg											-	<14	-	-	-	-
Dibromomethane		ug/kg											-	<9	-	-	-	-
1,2-Dichloropropane		ug/kg											-	<12	-	-	-	-
Bromodichloromethane		ug/kg											-	<7	-	-	-	-
Trichloroethene		ug/kg											-	<9	-	-	-	-
cis-1-3-Dichloropropene		ug/kg											-	<14	-	-	-	-
trans-1-3-Dichloropropene		ug/kg											-	<14	-	-	-	-
1,1,2-Trichloroethane		ug/kg											-	<10	-	-	-	-
Toluene		ug/kg											-	<5	-	-	-	-
1,3-Dichloropropane		ug/kg											-	<7	-	-	-	-
Dibromochloromethane		ug/kg											-	<13	-	-	-	-
1,2-Dibromoethane		ug/kg											-	<12	-	-	-	-
Tetrachloroethene		ug/kg											-	<5	-	-	-	-
1,1,1,2-Tetrachloroethane		ug/kg											-	<10	-	-	-	-
Chlorobenzene		ug/kg											-	<5	-	-	-	-
Ethylbenzene		ug/kg											-	<4	-	-	-	-
p/m-Xylene		ug/kg											-	<14	-	-	-	-
Bromoform		ug/kg											-	<10	-	-	-	-
Styrene		ug/kg											-	<10	-	-	-	-
1,1,2,2-Tetrachloroethane		ug/kg											-	<10	-	-	-	-
o-Xylene		ug/kg											-	<10	-	-	-	-
1,2,3-Trichloropropane		ug/kg											-	<17	-	-	-	-
Isopropylbenzene		ug/kg											-	<5	-	-	-	-
Bromobenzene		ug/kg											-	<10	-	-	-	-
2-Chlorotoluene		ug/kg											-	<9	-	-	-	-
Propylbenzene		ug/kg											-	<11	-	-	-	-
4-Chlorotoluene		ug/kg											-	<12	-	-	-	-
1,2,4-Trimethylbenzene		ug/kg											-	<9	-	-	-	-
4-Isopropyltoluene		ug/kg											-	<11	-	-	-	-
1,3,5-Trimethylbenzene		ug/kg											-	<8	-	-	-	-
1,2-Dichlorobenzene		ug/kg											-	<12	-	-	-	-
1,4-Dichlorobenzene		ug/kg											-	<5	-	-	-	-
sec-Butylbenzene		ug/kg											-	<10	-	-	-	-
tert-Butylbenzene		ug/kg											-	<12	-	-	-	-
1,3-Dichlorobenzene		ug/kg											-	<6	-	-	-	-
n-Butylbenzene		ug/kg											-	<10	-	-	-	-
1,2-Dibromo-3-chloropropane		ug/kg											-	<14	-	-	-	-
1,2,4-Trichlorobenzene		ug/kg											-	<6	-	-	-	-
Naphthalene		ug/kg											-	<13	-	-	-	-
1,2,3-Trichlorobenzene		ug/kg											-	<11	-	-	-	-
Hexachlorobutadiene		ug/kg											-	<12	-	-	-	-

Sample Identity			TP8 D1	TP8 D2	TP9 D1	TP10 D1	TP10 D3	TP11 D1		
Depth			0.40	1.00	0.70	0.20	1.60	0.50	Min	Max
	Screening Value	Units								
Mercury Low	58	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	1.1
Boron Water Soluble	240000	mg/kg	<3.5	<3.5	<3.5	<3.5	<3.5	<3.5	<3.5	4
Arsenic	640	mg/kg	12	<3	15	5	<3	<3	<3	29
Cadmium	410	mg/kg	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	0.4
Chromium	8600	mg/kg	27	7.5	26	25	17	8.3	<4.5	33
Copper	68000	mg/kg	<6	<6	<6	<6	<6	<6	<6	35
Lead	2300	mg/kg	8	<2	12	7	8	<2	<2	65
Nickel	980	mg/kg	17	1.7	23	12	9.2	4.9	<0.9	45
Selenium	12000	mg/kg	<3	<3	<3	<3	<3	<3	<3	6
Zinc	730000	mg/kg	29	4.5	38	23	28	26	<2.5	46
Water Soluble Sulphate as SO4 2:1 Extract		g/l	0.21	0.054	0.049	0.061	0.19	0.22	0.021	0.45
Acid Soluble Sulphide		mg/kg	<50	520	<50	<50	<50	560	<50	1400
Hexavalent Chromium	49	mg/kg	<0.3	<0.3	<0.3	<6.0	<0.3	<0.3	<0.3	<0.3
Phenols Monohydric	440	mg/kg	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
Total Cyanide		mg/kg	<1	<1	<1	<1	<1	<1	1	1
Free Cyanide	36	mg/kg	<1	<1	<1	<1	<1	<1	<1	<1
Complex Cyanide		mg/kg	<1	<1	<1	<1	<1	<1	1	1
pH Value	<5, >9	pH Units	8.41	11.58	8.45	7.95	7.48	10.00	7.48	11.58
EPH (DRO) (C10-C40)		mg/kg	73	<35	180	56	48	60	46	1200
EPH C10-20	9,700 (48)sol	mg/kg	39	<35	130	<35	<35	<35	38	130
EPH >C20-30	28,000	mg/kg	<35	<35	<35	<35	<35	36	35	810
EPH >C30-40	28,000	mg/kg	<35	<35	<35	<35	<35	<35	47	350
PAH by GC-FID										
Naphthalene	190 (76.4)sol	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthylene	83,000 (86.1)sol	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthene	84,000 (57.0)sol	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluorene	63000 (30.9)sol	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Phenanthrene	22,000	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Anthracene	520,000	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluoranthene	23,000	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Pyrene	54,000	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benz(a)anthracene	170	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chrysene	350	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	44	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	1,200	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	77	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(123cd)pyrene	500	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibenzo(ah)anthracene	3.5	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(ghi)perylene	3,900	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
PAH 16 Total		mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Volatile Organic Compounds										
Dichlorodifluoromethane		ug/kg							<4	<4
Chloromethane		ug/kg							<7	<7
Vinyl Chloride		ug/kg							<10	<10
Bromomethane		ug/kg							<13	<13
Chloroethane		ug/kg							<14	<14
Trichlorofluoromethane		ug/kg							<6	<6
trans-1-2-Dichloroethene		ug/kg							<11	<11
Dichloromethane		ug/kg							<10	<10
Carbon Disulphide		ug/kg							<7	<7
1.1-Dichloroethene		ug/kg							<10	<10
1.1-Dichloroethane		ug/kg							<8	<8
Methyl Tertiary Butyl Ether		ug/kg							<11	<11
cis-1-2-Dichloroethene		ug/kg							<5	<5

Appendix G – HazWaste Online Assessment



Waste Classification Report



YJN5G-9J4T5-Q6KGE

Job name

A114312-1

Description/Comments

Project

Leconfield Industrial Estate

Site

Cleator Moor

Related Documents

#	Name	Description
None		

Waste Stream Template

Example waste stream template for contaminated soils

Classified by

Name: Alex Lamb Date: 21 Sep 2020 10:28 GMT Telephone: 0161 874 8719	Company: WYG Environment Planning Transport Limited Trafford Wharf Road Trafford Park Manchester M17 1HH	HazWasteOnline™ Training Record: <table><tr><th>Course</th><th>Date</th></tr><tr><td>Hazardous Waste Classification</td><td>-</td></tr><tr><td>Advanced Hazardous Waste Classification</td><td>-</td></tr></table>	Course	Date	Hazardous Waste Classification	-	Advanced Hazardous Waste Classification	-
Course	Date							
Hazardous Waste Classification	-							
Advanced Hazardous Waste Classification	-							

Report

Created by: Alex Lamb
Created date: 21 Sep 2020 10:28 GMT

Job summary

#	Sample Name	Depth [m]	Classification Result	Hazard properties	Page
1	CP101	0.50-0.50	Non Hazardous		2
2	CP103	0.50-0.50	Non Hazardous		5
3	RBH103	0.50-0.50	Non Hazardous		7
4	WS103	0.60-0.60	Non Hazardous		10
5	WS105	0.10-0.10	Hazardous	HP 3(i), HP 7, HP 11	13
6	WS106	0.40-0.40	Non Hazardous		16

Appendices

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Appendix B: Rationale for selection of metal species	20
Appendix C: Version	21



Classification of sample: CP101

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:	LoW Code:
CP101	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.50-0.50 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
15%	
(no correction)	

Hazard properties

None identified

Determinands

Moisture content: **15%** No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				8.37 mg/kg	1.32	11.051 mg/kg	0.00111 %			
	033-003-00-0	215-481-4	1327-53-3								
2	beryllium { beryllium oxide }				1.15 mg/kg	2.775	3.192 mg/kg	0.000319 %			
	004-003-00-8	215-133-1	1304-56-9								
3	boron { diboron trioxide; boric oxide }				<1 mg/kg	3.22	<3.22 mg/kg	<0.000322 %			<LOD
	005-008-00-8	215-125-8	1303-86-2								
4	cadmium { cadmium oxide }				0.0414 mg/kg	1.142	0.0473 mg/kg	0.00000473 %			
	048-002-00-0	215-146-2	1306-19-0								
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				16.3 mg/kg	1.462	23.823 mg/kg	0.00238 %			
		215-160-9	1308-38-9								
6	chromium in chromium(VI) compounds { chromium(VI) oxide }				<0.6 mg/kg	1.923	<1.154 mg/kg	<0.000115 %			<LOD
	024-001-00-0	215-607-8	1333-82-0								
7	copper { dicopper oxide; copper (I) oxide }				8.97 mg/kg	1.126	10.099 mg/kg	0.00101 %			
	029-002-00-X	215-270-7	1317-39-1								
8	lead { lead chromate }			1	39.2 mg/kg	1.56	61.145 mg/kg	0.00392 %			
	082-004-00-2	231-846-0	7758-97-6								
9	mercury { mercury dichloride }				<0.14 mg/kg	1.353	<0.189 mg/kg	<0.0000189 %			<LOD
	080-010-00-X	231-299-8	7487-94-7								
10	nickel { nickel chromate }				14 mg/kg	2.976	41.668 mg/kg	0.00417 %			
	028-035-00-7	238-766-5	14721-18-7								
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %			<LOD
	034-002-00-8										
12	zinc { zinc chromate }				25.8 mg/kg	2.774	71.573 mg/kg	0.00716 %			
	024-007-00-3	236-878-9	13530-65-9								
13	TPH (C6 to C40) petroleum group				94.5 mg/kg		94.5 mg/kg	0.00945 %			
			TPH								



#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
14	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	603-181-00-X	216-653-1	1634-04-4							
15	benzene				<0.009 mg/kg		<0.009 mg/kg	<0.0000009 %		<LOD
	601-020-00-8	200-753-7	71-43-2							
16	toluene				<0.007 mg/kg		<0.007 mg/kg	<0.0000007 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
17	ethylbenzene				<0.004 mg/kg		<0.004 mg/kg	<0.0000004 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
18	xylene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]							
19	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<LOD
	006-007-00-5									
20	pH				11.3 pH		11.3 pH	11.3 pH		
			PH							
21	naphthalene				0.186 mg/kg		0.186 mg/kg	0.0000186 %		
	601-052-00-2	202-049-5	91-20-3							
22	acenaphthylene				0.0159 mg/kg		0.0159 mg/kg	0.00000159 %		
		205-917-1	208-96-8							
23	acenaphthene				0.462 mg/kg		0.462 mg/kg	0.0000462 %		
		201-469-6	83-32-9							
24	fluorene				0.373 mg/kg		0.373 mg/kg	0.0000373 %		
		201-695-5	86-73-7							
25	phenanthrene				2.28 mg/kg		2.28 mg/kg	0.000228 %		
		201-581-5	85-01-8							
26	anthracene				0.544 mg/kg		0.544 mg/kg	0.0000544 %		
		204-371-1	120-12-7							
27	fluoranthene				3.45 mg/kg		3.45 mg/kg	0.000345 %		
		205-912-4	206-44-0							
28	pyrene				2.84 mg/kg		2.84 mg/kg	0.000284 %		
		204-927-3	129-00-0							
29	benzo[a]anthracene				1.78 mg/kg		1.78 mg/kg	0.000178 %		
	601-033-00-9	200-280-6	56-55-3							
30	chrysene				1.51 mg/kg		1.51 mg/kg	0.000151 %		
	601-048-00-0	205-923-4	218-01-9							
31	benzo[b]fluoranthene				1.98 mg/kg		1.98 mg/kg	0.000198 %		
	601-034-00-4	205-911-9	205-99-2							
32	benzo[k]fluoranthene				0.861 mg/kg		0.861 mg/kg	0.0000861 %		
	601-036-00-5	205-916-6	207-08-9							
33	benzo[a]pyrene; benzo[def]chrysene				1.24 mg/kg		1.24 mg/kg	0.000124 %		
	601-032-00-3	200-028-5	50-32-8							
34	indeno[123-cd]pyrene				0.662 mg/kg		0.662 mg/kg	0.0000662 %		
		205-893-2	193-39-5							
35	dibenz[a,h]anthracene				0.14 mg/kg		0.14 mg/kg	0.000014 %		
	601-041-00-2	200-181-8	53-70-3							
36	benzo[ghi]perylene				0.544 mg/kg		0.544 mg/kg	0.0000544 %		
		205-883-8	191-24-2							
37	phenol				0.0236 mg/kg		0.0236 mg/kg	0.00000236 %		
	604-001-00-2	203-632-7	108-95-2							
38	1,1-dichloroethane and 1,2-dichloroethane (combined)				<0.008 mg/kg		<0.008 mg/kg	<0.0000008 %		<LOD
		203-458-1, 200-863-5	107-06-2, 75-34-3							
39	vinyl chloride; chloroethylene				<0.006 mg/kg		<0.006 mg/kg	<0.0000006 %		<LOD
	602-023-00-7	200-831-0	75-01-4							
Total:								0.0322 %		



Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and ≤ 75°C"

Force this Hazardous property to non hazardous because Not considered flammable in soil

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00945%)



Classification of sample: CP103

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:	LoW Code:	
CP103	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.50-0.50 m		
Moisture content:		
14%		
(no correction)		

Hazard properties

None identified

Determinands

Moisture content: 14% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	arsenic { arsenic trioxide }				8.63 mg/kg	1.32	11.394 mg/kg	0.00114 %		
	033-003-00-0	215-481-4	1327-53-3							
2	beryllium { beryllium oxide }				2.66 mg/kg	2.775	7.382 mg/kg	0.000738 %		
	004-003-00-8	215-133-1	1304-56-9							
3	boron { diboron trioxide; boric oxide }				<1 mg/kg	3.22	<3.22 mg/kg	<0.000322 %		<LOD
	005-008-00-8	215-125-8	1303-86-2							
4	cadmium { cadmium oxide }				0.0352 mg/kg	1.142	0.0402 mg/kg	0.00000402 %		
	048-002-00-0	215-146-2	1306-19-0							
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				13.2 mg/kg	1.462	19.293 mg/kg	0.00193 %		
		215-160-9	1308-38-9							
6	chromium in chromium(VI) compounds { chromium(VI) oxide }				<0.6 mg/kg	1.923	<1.154 mg/kg	<0.000115 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							
7	copper { dicopper oxide; copper (I) oxide }				19.1 mg/kg	1.126	21.504 mg/kg	0.00215 %		
	029-002-00-X	215-270-7	1317-39-1							
8	lead { lead chromate }			1	51.3 mg/kg	1.56	80.019 mg/kg	0.00513 %		
	082-004-00-2	231-846-0	7758-97-6							
9	mercury { mercury dichloride }				1.23 mg/kg	1.353	1.665 mg/kg	0.000166 %		
	080-010-00-X	231-299-8	7487-94-7							
10	nickel { nickel chromate }				15.1 mg/kg	2.976	44.942 mg/kg	0.00449 %		
	028-035-00-7	238-766-5	14721-18-7							
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD
	034-002-00-8									
12	zinc { zinc chromate }				46.2 mg/kg	2.774	128.166 mg/kg	0.0128 %		
	024-007-00-3	236-878-9	13530-65-9							
13	TPH (C6 to C40) petroleum group		TPH		<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
14	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides,				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<LOD



#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
	ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }									
	006-007-00-5									
15	● pH		PH		8.96 pH		8.96 pH	8.96 pH		
16	naphthalene				<0.009 mg/kg		<0.009 mg/kg	<0.000009 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
17	● acenaphthylene				<0.012 mg/kg		<0.012 mg/kg	<0.0000012 %		<LOD
		205-917-1	208-96-8							
18	● acenaphthene				<0.008 mg/kg		<0.008 mg/kg	<0.0000008 %		<LOD
		201-469-6	83-32-9							
19	● fluorene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
		201-695-5	86-73-7							
20	● phenanthrene				0.054 mg/kg		0.054 mg/kg	0.0000054 %		
		201-581-5	85-01-8							
21	● anthracene				<0.016 mg/kg		<0.016 mg/kg	<0.0000016 %		<LOD
		204-371-1	120-12-7							
22	● fluoranthene				0.141 mg/kg		0.141 mg/kg	0.0000141 %		
		205-912-4	206-44-0							
23	● pyrene				0.123 mg/kg		0.123 mg/kg	0.0000123 %		
		204-927-3	129-00-0							
24	benzo[a]anthracene				0.0824 mg/kg		0.0824 mg/kg	0.00000824 %		
	601-033-00-9	200-280-6	56-55-3							
25	chrysene				0.0707 mg/kg		0.0707 mg/kg	0.00000707 %		
	601-048-00-0	205-923-4	218-01-9							
26	benzo[b]fluoranthene				0.104 mg/kg		0.104 mg/kg	0.0000104 %		
	601-034-00-4	205-911-9	205-99-2							
27	benzo[k]fluoranthene				0.0404 mg/kg		0.0404 mg/kg	0.00000404 %		
	601-036-00-5	205-916-6	207-08-9							
28	benzo[a]pyrene; benzo[def]chrysene				0.0716 mg/kg		0.0716 mg/kg	0.00000716 %		
	601-032-00-3	200-028-5	50-32-8							
29	● indeno[123-cd]pyrene				0.0442 mg/kg		0.0442 mg/kg	0.00000442 %		
		205-893-2	193-39-5							
30	dibenz[a,h]anthracene				<0.023 mg/kg		<0.023 mg/kg	<0.0000023 %		<LOD
	601-041-00-2	200-181-8	53-70-3							
31	● benzo[ghi]perylene				0.0403 mg/kg		0.0403 mg/kg	0.00000403 %		
		205-883-8	191-24-2							
32	phenol				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	604-001-00-2	203-632-7	108-95-2							
Total:								0.0304 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
●	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification



Classification of sample: RBH103

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:	LoW Code:	
RBH103	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.50-0.50 m		
Moisture content:		
17%		
(no correction)		

Hazard properties

None identified

Determinands

Moisture content: 17% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				11.7 mg/kg	1.32	15.448 mg/kg	0.00154 %			
	033-003-00-0	215-481-4	1327-53-3								
2	beryllium { beryllium oxide }				4.02 mg/kg	2.775	11.157 mg/kg	0.00112 %			
	004-003-00-8	215-133-1	1304-56-9								
3	boron { diboron trioxide; boric oxide }				<1 mg/kg	3.22	<3.22 mg/kg	<0.000322 %			<LOD
	005-008-00-8	215-125-8	1303-86-2								
4	cadmium { cadmium oxide }				0.152 mg/kg	1.142	0.174 mg/kg	0.0000174 %			
	048-002-00-0	215-146-2	1306-19-0								
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				11.5 mg/kg	1.462	16.808 mg/kg	0.00168 %			
		215-160-9	1308-38-9								
6	chromium in chromium(VI) compounds { chromium(VI) oxide }				<0.6 mg/kg	1.923	<1.154 mg/kg	<0.000115 %			<LOD
	024-001-00-0	215-607-8	1333-82-0								
7	copper { dicopper oxide; copper (I) oxide }				13.9 mg/kg	1.126	15.65 mg/kg	0.00156 %			
	029-002-00-X	215-270-7	1317-39-1								
8	lead { lead chromate }			1	172 mg/kg	1.56	268.288 mg/kg	0.0172 %			
	082-004-00-2	231-846-0	7758-97-6								
9	mercury { mercury dichloride }				<0.14 mg/kg	1.353	<0.189 mg/kg	<0.0000189 %			<LOD
	080-010-00-X	231-299-8	7487-94-7								
10	nickel { nickel chromate }				13.5 mg/kg	2.976	40.18 mg/kg	0.00402 %			
	028-035-00-7	238-766-5	14721-18-7								
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %			<LOD
	034-002-00-8										
12	zinc { zinc chromate }				105 mg/kg	2.774	291.285 mg/kg	0.0291 %			
	024-007-00-3	236-878-9	13530-65-9								
13	TPH (C6 to C40) petroleum group				26.7 mg/kg		26.7 mg/kg	0.00267 %			
			TPH								



#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value		MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number										
14		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.2 mg/kg			<0.2 mg/kg		<0.00002 %			<LOD
	603-181-00-X	216-653-1	1634-04-4											
15		benzene				<0.18 mg/kg			<0.18 mg/kg		<0.000018 %			<LOD
	601-020-00-8	200-753-7	71-43-2											
16		toluene				<0.14 mg/kg			<0.14 mg/kg		<0.000014 %			<LOD
	601-021-00-3	203-625-9	108-88-3											
17	●	ethylbenzene				<0.08 mg/kg			<0.08 mg/kg		<0.000008 %			<LOD
		601-023-00-4	202-849-4	100-41-4										
18		xylene				<0.2 mg/kg			<0.2 mg/kg		<0.00002 %			<LOD
	601-022-00-9	202-422-2 [1]	95-47-6 [1]											
		203-396-5 [2]	106-42-3 [2]											
		203-576-3 [3]	108-38-3 [3]											
		215-535-7 [4]	1330-20-7 [4]											
19		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5 mg/kg		1.884	<0.942 mg/kg		<0.0000942 %			<LOD
		006-007-00-5												
20	●	pH				8.91 pH			8.91 pH		8.91 pH			
				pH										
21		naphthalene				0.0116 mg/kg			0.0116 mg/kg		0.00000116 %			
	601-052-00-2	202-049-5	91-20-3											
22	●	acenaphthylene				<0.012 mg/kg			<0.012 mg/kg		<0.0000012 %			<LOD
			205-917-1	208-96-8										
23	●	acenaphthene				<0.008 mg/kg			<0.008 mg/kg		<0.0000008 %			<LOD
			201-469-6	83-32-9										
24	●	fluorene				<0.01 mg/kg			<0.01 mg/kg		<0.000001 %			<LOD
			201-695-5	86-73-7										
25	●	phenanthrene				0.0455 mg/kg			0.0455 mg/kg		0.00000455 %			
			201-581-5	85-01-8										
26	●	anthracene				<0.016 mg/kg			<0.016 mg/kg		<0.0000016 %			<LOD
			204-371-1	120-12-7										
27	●	fluoranthene				0.054 mg/kg			0.054 mg/kg		0.0000054 %			
			205-912-4	206-44-0										
28	●	pyrene				0.0456 mg/kg			0.0456 mg/kg		0.00000456 %			
			204-927-3	129-00-0										
29		benzo[a]anthracene				0.0323 mg/kg			0.0323 mg/kg		0.00000323 %			
	601-033-00-9	200-280-6	56-55-3											
30		chrysene				0.0346 mg/kg			0.0346 mg/kg		0.00000346 %			
	601-048-00-0	205-923-4	218-01-9											
31		benzo[b]fluoranthene				0.0443 mg/kg			0.0443 mg/kg		0.00000443 %			
	601-034-00-4	205-911-9	205-99-2											
32		benzo[k]fluoranthene				0.0178 mg/kg			0.0178 mg/kg		0.00000178 %			
	601-036-00-5	205-916-6	207-08-9											
33		benzo[a]pyrene; benzo[def]chrysene				0.0266 mg/kg			0.0266 mg/kg		0.00000266 %			
	601-032-00-3	200-028-5	50-32-8											
34	●	indeno[123-cd]pyrene				<0.018 mg/kg			<0.018 mg/kg		<0.0000018 %			<LOD
			205-893-2	193-39-5										
35		dibenz[a,h]anthracene				<0.023 mg/kg			<0.023 mg/kg		<0.0000023 %			<LOD
	601-041-00-2	200-181-8	53-70-3											
36	●	benzo[ghi]perylene				<0.024 mg/kg			<0.024 mg/kg		<0.0000024 %			<LOD
			205-883-8	191-24-2										
37		phenol				<0.01 mg/kg			<0.01 mg/kg		<0.000001 %			<LOD
	604-001-00-2	203-632-7	108-95-2											
Total:												0.0599 %		



Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and ≤ 75°C"

Force this Hazardous property to non hazardous because Not considered flammable in soil

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00267%)



Classification of sample: WS103

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:	LoW Code:
WS103	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.60-0.60 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
14%	
(no correction)	

Hazard properties

None identified

Determinands

Moisture content: **14%** No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	arsenic { arsenic trioxide }				14.8	mg/kg	1.32	19.541	mg/kg	0.00195 %		
	033-003-00-0	215-481-4	1327-53-3									
2	beryllium { beryllium oxide }				1.52	mg/kg	2.775	4.219	mg/kg	0.000422 %		
	004-003-00-8	215-133-1	1304-56-9									
3	boron { diboron trioxide; boric oxide }				<1	mg/kg	3.22	<3.22	mg/kg	<0.000322 %		<LOD
	005-008-00-8	215-125-8	1303-86-2									
4	cadmium { cadmium oxide }				0.172	mg/kg	1.142	0.196	mg/kg	0.0000196 %		
	048-002-00-0	215-146-2	1306-19-0									
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				13.4	mg/kg	1.462	19.585	mg/kg	0.00196 %		
		215-160-9	1308-38-9									
6	chromium in chromium(VI) compounds { chromium(VI) oxide }				<0.6	mg/kg	1.923	<1.154	mg/kg	<0.000115 %		<LOD
	024-001-00-0	215-607-8	1333-82-0									
7	copper { dicopper oxide; copper (I) oxide }				18.3	mg/kg	1.126	20.604	mg/kg	0.00206 %		
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead chromate }			1	26.6	mg/kg	1.56	41.491	mg/kg	0.00266 %		
	082-004-00-2	231-846-0	7758-97-6									
9	mercury { mercury dichloride }				<0.14	mg/kg	1.353	<0.189	mg/kg	<0.0000189 %		<LOD
	080-010-00-X	231-299-8	7487-94-7									
10	nickel { nickel chromate }				19.3	mg/kg	2.976	57.442	mg/kg	0.00574 %		
	028-035-00-7	238-766-5	14721-18-7									
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<LOD
	034-002-00-8											
12	zinc { zinc chromate }				38.8	mg/kg	2.774	107.637	mg/kg	0.0108 %		
	024-007-00-3	236-878-9	13530-65-9									
13	TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
			TPH									



#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
14	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	603-181-00-X	216-653-1	1634-04-4							
15	benzene				<0.009 mg/kg		<0.009 mg/kg	<0.0000009 %		<LOD
	601-020-00-8	200-753-7	71-43-2							
16	toluene				<0.007 mg/kg		<0.007 mg/kg	<0.0000007 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
17	ethylbenzene				<0.004 mg/kg		<0.004 mg/kg	<0.0000004 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
18	xylene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]							
19	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<LOD
	006-007-00-5									
20	pH				8.59 pH		8.59 pH	8.59 pH		
			PH							
21	naphthalene				<0.009 mg/kg		<0.009 mg/kg	<0.0000009 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
22	acenaphthylene				<0.012 mg/kg		<0.012 mg/kg	<0.0000012 %		<LOD
		205-917-1	208-96-8							
23	acenaphthene				<0.008 mg/kg		<0.008 mg/kg	<0.0000008 %		<LOD
		201-469-6	83-32-9							
24	fluorene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
		201-695-5	86-73-7							
25	phenanthrene				0.02 mg/kg		0.02 mg/kg	0.000002 %		
		201-581-5	85-01-8							
26	anthracene				<0.016 mg/kg		<0.016 mg/kg	<0.0000016 %		<LOD
		204-371-1	120-12-7							
27	fluoranthene				<0.017 mg/kg		<0.017 mg/kg	<0.0000017 %		<LOD
		205-912-4	206-44-0							
28	pyrene				<0.015 mg/kg		<0.015 mg/kg	<0.0000015 %		<LOD
		204-927-3	129-00-0							
29	benzo[a]anthracene				<0.014 mg/kg		<0.014 mg/kg	<0.0000014 %		<LOD
	601-033-00-9	200-280-6	56-55-3							
30	chrysene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-048-00-0	205-923-4	218-01-9							
31	benzo[b]fluoranthene				<0.015 mg/kg		<0.015 mg/kg	<0.0000015 %		<LOD
	601-034-00-4	205-911-9	205-99-2							
32	benzo[k]fluoranthene				<0.014 mg/kg		<0.014 mg/kg	<0.0000014 %		<LOD
	601-036-00-5	205-916-6	207-08-9							
33	benzo[a]pyrene; benzo[def]chrysene				<0.015 mg/kg		<0.015 mg/kg	<0.0000015 %		<LOD
	601-032-00-3	200-028-5	50-32-8							
34	indeno[123-cd]pyrene				<0.018 mg/kg		<0.018 mg/kg	<0.0000018 %		<LOD
		205-893-2	193-39-5							
35	dibenz[a,h]anthracene				<0.023 mg/kg		<0.023 mg/kg	<0.0000023 %		<LOD
	601-041-00-2	200-181-8	53-70-3							
36	benzo[ghi]perylene				<0.024 mg/kg		<0.024 mg/kg	<0.0000024 %		<LOD
		205-883-8	191-24-2							
37	phenol				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	604-001-00-2	203-632-7	108-95-2							
38	1,1-dichloroethane and 1,2-dichloroethane (combined)				<0.008 mg/kg		<0.008 mg/kg	<0.0000008 %		<LOD
		203-458-1, 200-863-5	107-06-2, 75-34-3							
39	vinyl chloride; chloroethylene				<0.006 mg/kg		<0.006 mg/kg	<0.0000006 %		<LOD
	602-023-00-7	200-831-0	75-01-4							
Total:								0.0274 %		



Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification



Classification of sample: WS105

 **Hazardous Waste**
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample Name:	LoW Code:	
WS105	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 03 * (Soil and stones containing hazardous substances)
0.10-0.10 m		
Moisture content:		
43%		
(no correction)		

Hazard properties

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to hazardous because Not considered flammable in soil

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.563%)

HP 7: Carcinogenic "waste which induces cancer or increases its incidence"

Hazard Statements hit:

Carc. 1B; H350 "May cause cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.563%)

HP 11: Mutagenic "waste which may cause a mutation, that is a permanent change in the amount or structure of the genetic material in a cell"

Hazard Statements hit:

Muta. 1B; H340 "May cause genetic defects [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.563%)

Determinands

Moisture content: 43% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	arsenic { arsenic trioxide }				16.7 mg/kg	1.32	22.049 mg/kg	0.0022 %		
	033-003-00-0	215-481-4	1327-53-3							
2	beryllium { beryllium oxide }				2.11 mg/kg	2.775	5.856 mg/kg	0.000586 %		
	004-003-00-8	215-133-1	1304-56-9							
3	boron { diboron trioxide; boric oxide }				1.52 mg/kg	3.22	4.894 mg/kg	0.000489 %		
	005-008-00-8	215-125-8	1303-86-2							



#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
4	cadmium { cadmium oxide }				0.875	mg/kg	1.142	1.0	mg/kg	0.0001 %		
	048-002-00-0	215-146-2	1306-19-0									
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				24.3	mg/kg	1.462	35.516	mg/kg	0.00355 %		
		215-160-9	1308-38-9									
6	chromium in chromium(VI) compounds { chromium(VI) oxide }				<6	mg/kg	1.923	<11.539	mg/kg	<0.00115 %		<LOD
	024-001-00-0	215-607-8	1333-82-0									
7	copper { dicopper oxide; copper (I) oxide }				52.3	mg/kg	1.126	58.884	mg/kg	0.00589 %		
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead chromate }			1	185	mg/kg	1.56	288.566	mg/kg	0.0185 %		
	082-004-00-2	231-846-0	7758-97-6									
9	mercury { mercury dichloride }				<0.14	mg/kg	1.353	<0.189	mg/kg	<0.0000189 %		<LOD
	080-010-00-X	231-299-8	7487-94-7									
10	nickel { nickel chromate }				24.9	mg/kg	2.976	74.109	mg/kg	0.00741 %		
	028-035-00-7	238-766-5	14721-18-7									
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				2.18	mg/kg	2.554	5.567	mg/kg	0.000557 %		
	034-002-00-8											
12	zinc { zinc chromate }				329	mg/kg	2.774	912.694	mg/kg	0.0913 %		
	024-007-00-3	236-878-9	13530-65-9									
13	TPH (C6 to C40) petroleum group		TPH		5630	mg/kg		5630	mg/kg	0.563 %		
14	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
	603-181-00-X	216-653-1	1634-04-4									
15	benzene				<0.18	mg/kg		<0.18	mg/kg	<0.000018 %		<LOD
	601-020-00-8	200-753-7	71-43-2									
16	toluene				<0.14	mg/kg		<0.14	mg/kg	<0.000014 %		<LOD
	601-021-00-3	203-625-9	108-88-3									
17	ethylbenzene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<LOD
	601-023-00-4	202-849-4	100-41-4									
18	xylene				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
19	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		<LOD
	006-007-00-5											
20	pH		PH		7.67	pH		7.67	pH	7.67 pH		
21	naphthalene				<0.009	mg/kg		<0.009	mg/kg	<0.0000009 %		<LOD
	601-052-00-2	202-049-5	91-20-3									
22	acenaphthylene				<0.012	mg/kg		<0.012	mg/kg	<0.0000012 %		<LOD
		205-917-1	208-96-8									
23	acenaphthene				<0.008	mg/kg		<0.008	mg/kg	<0.0000008 %		<LOD
		201-469-6	83-32-9									
24	fluorene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		201-695-5	86-73-7									
25	phenanthrene				0.16	mg/kg		0.16	mg/kg	0.000016 %		
		201-581-5	85-01-8									
26	anthracene				0.0293	mg/kg		0.0293	mg/kg	0.00000293 %		
		204-371-1	120-12-7									
27	fluoranthene				0.314	mg/kg		0.314	mg/kg	0.0000314 %		
		205-912-4	206-44-0									
28	pyrene				0.248	mg/kg		0.248	mg/kg	0.0000248 %		
		204-927-3	129-00-0									



#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
29	benzo[a]anthracene				0.166 mg/kg		0.166 mg/kg	0.0000166 %		
	601-033-00-9	200-280-6	56-55-3							
30	chrysene				0.189 mg/kg		0.189 mg/kg	0.0000189 %		
	601-048-00-0	205-923-4	218-01-9							
31	benzo[b]fluoranthene				0.235 mg/kg		0.235 mg/kg	0.0000235 %		
	601-034-00-4	205-911-9	205-99-2							
32	benzo[k]fluoranthene				0.0704 mg/kg		0.0704 mg/kg	0.00000704 %		
	601-036-00-5	205-916-6	207-08-9							
33	benzo[a]pyrene; benzo[def]chrysene				0.153 mg/kg		0.153 mg/kg	0.0000153 %		
	601-032-00-3	200-028-5	50-32-8							
34	indeno[123-cd]pyrene				0.0937 mg/kg		0.0937 mg/kg	0.00000937 %		
		205-893-2	193-39-5							
35	dibenz[a,h]anthracene				<0.023 mg/kg		<0.023 mg/kg	<0.0000023 %		<LOD
	601-041-00-2	200-181-8	53-70-3							
36	benzo[ghi]perylene				0.102 mg/kg		0.102 mg/kg	0.0000102 %		
		205-883-8	191-24-2							
37	phenol				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	604-001-00-2	203-632-7	108-95-2							
Total:								0.695 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification



Classification of sample: WS106



Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:	LoW Code:
WS106	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.40-0.40 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
5.7%	
(no correction)	

Hazard properties

None identified

Determinands

Moisture content: 5.7% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				0.87 mg/kg	1.32	1.149 mg/kg	0.000115 %			
	033-003-00-0	215-481-4	1327-53-3								
2	beryllium { beryllium oxide }				12.5 mg/kg	2.775	34.692 mg/kg	0.00347 %			
	004-003-00-8	215-133-1	1304-56-9								
3	boron { diboron trioxide; boric oxide }				1.1 mg/kg	3.22	3.542 mg/kg	0.000354 %			
	005-008-00-8	215-125-8	1303-86-2								
4	cadmium { cadmium oxide }				<0.02 mg/kg	1.142	<0.0228 mg/kg	<0.0000228 %			<LOD
	048-002-00-0	215-146-2	1306-19-0								
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				23.7 mg/kg	1.462	34.639 mg/kg	0.00346 %			
		215-160-9	1308-38-9								
6	chromium in chromium(VI) compounds { chromium(VI) oxide }				<0.6 mg/kg	1.923	<1.154 mg/kg	<0.000115 %			<LOD
	024-001-00-0	215-607-8	1333-82-0								
7	copper { dicopper oxide; copper (I) oxide }				2.89 mg/kg	1.126	3.254 mg/kg	0.000325 %			
	029-002-00-X	215-270-7	1317-39-1								
8	lead { lead chromate }			1	4.66 mg/kg	1.56	7.269 mg/kg	0.000466 %			
	082-004-00-2	231-846-0	7758-97-6								
9	mercury { mercury dichloride }				<0.14 mg/kg	1.353	<0.189 mg/kg	<0.0000189 %			<LOD
	080-010-00-X	231-299-8	7487-94-7								
10	nickel { nickel chromate }				0.77 mg/kg	2.976	2.292 mg/kg	0.000229 %			
	028-035-00-7	238-766-5	14721-18-7								
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				6.08 mg/kg	2.554	15.526 mg/kg	0.00155 %			
	034-002-00-8										
12	zinc { zinc chromate }				7.27 mg/kg	2.774	20.168 mg/kg	0.00202 %			
	024-007-00-3	236-878-9	13530-65-9								
13	TPH (C6 to C40) petroleum group				<10 mg/kg		<10 mg/kg	<0.001 %			<LOD
			TPH								



#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
14	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	603-181-00-X	216-653-1	1634-04-4								
15	benzene				<0.009 mg/kg		<0.009 mg/kg	<0.0000009 %			<LOD
	601-020-00-8	200-753-7	71-43-2								
16	toluene				<0.007 mg/kg		<0.007 mg/kg	<0.0000007 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
17	ethylbenzene				<0.004 mg/kg		<0.004 mg/kg	<0.0000004 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
18	xylene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]								
19	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %			<LOD
	006-007-00-5										
20	pH				9.21 pH		9.21 pH	9.21 pH			
			PH								
21	naphthalene				<0.009 mg/kg		<0.009 mg/kg	<0.0000009 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
22	acenaphthylene				<0.012 mg/kg		<0.012 mg/kg	<0.0000012 %			<LOD
		205-917-1	208-96-8								
23	acenaphthene				<0.008 mg/kg		<0.008 mg/kg	<0.0000008 %			<LOD
		201-469-6	83-32-9								
24	fluorene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
		201-695-5	86-73-7								
25	phenanthrene				<0.015 mg/kg		<0.015 mg/kg	<0.0000015 %			<LOD
		201-581-5	85-01-8								
26	anthracene				<0.016 mg/kg		<0.016 mg/kg	<0.0000016 %			<LOD
		204-371-1	120-12-7								
27	fluoranthene				<0.017 mg/kg		<0.017 mg/kg	<0.0000017 %			<LOD
		205-912-4	206-44-0								
28	pyrene				<0.015 mg/kg		<0.015 mg/kg	<0.0000015 %			<LOD
		204-927-3	129-00-0								
29	benzo[a]anthracene				<0.014 mg/kg		<0.014 mg/kg	<0.0000014 %			<LOD
	601-033-00-9	200-280-6	56-55-3								
30	chrysene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-048-00-0	205-923-4	218-01-9								
31	benzo[b]fluoranthene				<0.015 mg/kg		<0.015 mg/kg	<0.0000015 %			<LOD
	601-034-00-4	205-911-9	205-99-2								
32	benzo[k]fluoranthene				<0.014 mg/kg		<0.014 mg/kg	<0.0000014 %			<LOD
	601-036-00-5	205-916-6	207-08-9								
33	benzo[a]pyrene; benzo[def]chrysene				<0.015 mg/kg		<0.015 mg/kg	<0.0000015 %			<LOD
	601-032-00-3	200-028-5	50-32-8								
34	indeno[123-cd]pyrene				<0.018 mg/kg		<0.018 mg/kg	<0.0000018 %			<LOD
		205-893-2	193-39-5								
35	dibenz[a,h]anthracene				<0.023 mg/kg		<0.023 mg/kg	<0.0000023 %			<LOD
	601-041-00-2	200-181-8	53-70-3								
36	benzo[ghi]perylene				<0.024 mg/kg		<0.024 mg/kg	<0.0000024 %			<LOD
		205-883-8	191-24-2								
37	phenol				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	604-001-00-2	203-632-7	108-95-2								
38	1,1-dichloroethane and 1,2-dichloroethane (combined)				<0.008 mg/kg		<0.008 mg/kg	<0.0000008 %			<LOD
		203-458-1, 200-863-5	107-06-2, 75-34-3								
39	vinyl chloride; chloroethylene				<0.006 mg/kg		<0.006 mg/kg	<0.0000006 %			<LOD
	602-023-00-7	200-831-0	75-01-4								
Total:									0.0133 %		



Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification



Appendix A: Classifier defined and non CLP determinands

■ **chromium(III) oxide (worst case)** (EC Number: 215-160-9, CAS Number: 1308-38-9)

Conversion factor: 1.462

Description/Comments: Data from C&L Inventory Database

Data source: <https://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/33806>

Data source date: 17 Jul 2015

Hazard Statements: Acute Tox. 4 H332 , Acute Tox. 4 H302 , Eye Irrit. 2 H319 , STOT SE 3 H335 , Skin Irrit. 2 H315 , Resp. Sens. 1 H334 , Skin Sens. 1 H317 , Repr. 1B H360FD , Aquatic Acute 1 H400 , Aquatic Chronic 1 H410

■ **TPH (C6 to C40) petroleum group** (CAS Number: TPH)

Description/Comments: Hazard statements taken from WM3 1st Edition 2015; Risk phrases: WM2 3rd Edition 2013

Data source: WM3 1st Edition 2015

Data source date: 25 May 2015

Hazard Statements: Flam. Liq. 3 H226 , Asp. Tox. 1 H304 , STOT RE 2 H373 , Muta. 1B H340 , Carc. 1B H350 , Repr. 2 H361d , Aquatic Chronic 2 H411

■ **ethylbenzene** (EC Number: 202-849-4, CAS Number: 100-41-4)

CLP index number: 601-023-00-4

Description/Comments:

Data source: Commission Regulation (EU) No 605/2014 – 6th Adaptation to Technical Progress for Regulation (EC) No 1272/2008. (ATP6)

Additional Hazard Statement(s): Carc. 2 H351

Reason for additional Hazards Statement(s):

03 Jun 2015 - Carc. 2 H351 hazard statement sourced from: IARC Group 2B (77) 2000

■ **salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex**

CLP index number: 006-007-00-5

Description/Comments: Conversion factor based on a worst case compound: sodium cyanide

Data source: Commission Regulation (EC) No 790/2009 - 1st Adaptation to Technical Progress for Regulation (EC) No 1272/2008. (ATP1)

Additional Hazard Statement(s): EUH032 >= 0.2 %

Reason for additional Hazards Statement(s):

14 Dec 2015 - EUH032 >= 0.2 % hazard statement sourced from: WM3, Table C12.2

■ **pH** (CAS Number: PH)

Description/Comments: Appendix C4

Data source: WM3 1st Edition 2015

Data source date: 25 May 2015

Hazard Statements: None.

■ **acenaphthylene** (EC Number: 205-917-1, CAS Number: 208-96-8)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 17 Jul 2015

Hazard Statements: Acute Tox. 4 H302 , Acute Tox. 1 H330 , Acute Tox. 1 H310 , Eye Irrit. 2 H319 , STOT SE 3 H335 , Skin Irrit. 2 H315

■ **acenaphthene** (EC Number: 201-469-6, CAS Number: 83-32-9)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 17 Jul 2015

Hazard Statements: Eye Irrit. 2 H319 , STOT SE 3 H335 , Skin Irrit. 2 H315 , Aquatic Acute 1 H400 , Aquatic Chronic 1 H410 , Aquatic Chronic 2 H411

■ **fluorene** (EC Number: 201-695-5, CAS Number: 86-73-7)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 06 Aug 2015

Hazard Statements: Aquatic Acute 1 H400 , Aquatic Chronic 1 H410



■ **phenanthrene** (EC Number: 201-581-5, CAS Number: 85-01-8)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 06 Aug 2015

Hazard Statements: Acute Tox. 4 H302 , Eye Irrit. 2 H319 , STOT SE 3 H335 , Carc. 2 H351 , Skin Sens. 1 H317 , Aquatic Acute 1 H400 , Aquatic Chronic 1 H410 , Skin Irrit. 2 H315

■ **anthracene** (EC Number: 204-371-1, CAS Number: 120-12-7)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 17 Jul 2015

Hazard Statements: Eye Irrit. 2 H319 , STOT SE 3 H335 , Skin Irrit. 2 H315 , Skin Sens. 1 H317 , Aquatic Acute 1 H400 , Aquatic Chronic 1 H410

■ **fluoranthene** (EC Number: 205-912-4, CAS Number: 206-44-0)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 21 Aug 2015

Hazard Statements: Acute Tox. 4 H302 , Aquatic Acute 1 H400 , Aquatic Chronic 1 H410

■ **pyrene** (EC Number: 204-927-3, CAS Number: 129-00-0)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 2014

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 21 Aug 2015

Hazard Statements: Skin Irrit. 2 H315 , Eye Irrit. 2 H319 , STOT SE 3 H335 , Aquatic Acute 1 H400 , Aquatic Chronic 1 H410

■ **indeno[123-cd]pyrene** (EC Number: 205-893-2, CAS Number: 193-39-5)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 06 Aug 2015

Hazard Statements: Carc. 2 H351

■ **benzo[ghi]perylene** (EC Number: 205-883-8, CAS Number: 191-24-2)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 28/02/2015

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 23 Jul 2015

Hazard Statements: Aquatic Acute 1 H400 , Aquatic Chronic 1 H410

■ **1,1-dichloroethane and 1,2-dichloroethane (combined)** (EC Number: 203-458-1, 200-863-5, CAS Number: 107-06-2, 75-34-3)

Description/Comments: Combines the hazard statements and risk phrases for 1,1-dichloroethane and 1,2-dichloroethane

Data source: N/A

Data source date: 14 Oct 2016

Hazard Statements: Flam. Liq. 2 H225 , Acute Tox. 4 H302 , Skin Irrit. 2 H315 , Eye Irrit. 2 H319 , STOT SE 3 H335 , Carc. 1B H350 , Aquatic Chronic 3 H412

Appendix B: Rationale for selection of metal species

arsenic {arsenic trioxide}

Reasonable case CLP species based on hazard statements/molecular weight and most common (stable) oxide of arsenic. Industrial sources include: smelting; main precursor to other arsenic compounds (edit as required)

beryllium {beryllium oxide}

Reasonable case CLP species based on hazard statements/molecular weight. Industrial sources include: most common (non alloy) form, used in ceramics (edit as required)

boron {diboron trioxide; boric oxide}

Reasonable case CLP species based on hazard statements/ molecular weight, physical form and low solubility. Industrial sources include: fluxing agent for glass/enamels; additive for fibre optics, borosilicate glass (edit as required)

cadmium {cadmium oxide}

Reasonable case CLP species based on hazard statements/molecular weight, very low solubility in water. Industrial sources include: electroplating baths, electrodes for storage batteries, catalysts, ceramic glazes, phosphors, pigments and nematocides. (edit as required) Worst case compounds in CLP: cadmium sulphate, chloride, fluoride & iodide not expected as either very soluble and/or compound's industrial usage not related to site history (edit as required)



chromium in chromium(III) compounds {chromium(III) oxide (worst case)}

Reasonable case species based on hazard statements/molecular weight. Industrial sources include: tanning, pigment in paint, inks and glass (edit as required)

chromium in chromium(VI) compounds {chromium(VI) oxide}

Worst case CLP species based on hazard statements/molecular weight. Industrial sources include: production stainless steel, electroplating, wood preservation, anti-corrosion agents or coatings, pigments (edit as required)

copper {dicopper oxide; copper (I) oxide}

Reasonable case CLP species based on hazard statements/molecular weight and insolubility in water. Industrial sources include: oxidised copper metal, brake pads, pigments, antifouling paints, fungicide. (edit as required) Worse case copper sulphate is very soluble and likely to have been leached away if ever present and/or not enough soluble sulphate detected. (edit as required)

lead {lead chromate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

mercury {mercury dichloride}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

nickel {nickel chromate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

selenium {selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex}

Harmonised group entry used as most reasonable case. Pigment cadmium sulphoselenide not likely to be present in this soil. No evidence for the other CLP entries: sodium selenite, nickel II selenite and nickel selenide, to be present in this soil. (edit as required)

zinc {zinc chromate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

cyanides {salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex}

Harmonised group entry used as most reasonable case as complex cyanides and those specified elsewhere in the annex are not likely to be present in this soil: [Note conversion factor based on a worst case compound: sodium cyanide] (edit as required)

Appendix C: Version

HazWasteOnline Classification Engine: **WM3 1st Edition v1.1, May 2018**

HazWasteOnline Classification Engine Version: 2020.241.4455.8692 (28 Aug 2020)

HazWasteOnline Database: 2020.241.4455.8692 (28 Aug 2020)

This classification utilises the following guidance and legislation:

WM3 v1.1 - Waste Classification - 1st Edition v1.1 - May 2018

CLP Regulation - Regulation 1272/2008/EC of 16 December 2008

1st ATP - Regulation 790/2009/EC of 10 August 2009

2nd ATP - Regulation 286/2011/EC of 10 March 2011

3rd ATP - Regulation 618/2012/EU of 10 July 2012

4th ATP - Regulation 487/2013/EU of 8 May 2013

Correction to 1st ATP - Regulation 758/2013/EU of 7 August 2013

5th ATP - Regulation 944/2013/EU of 2 October 2013

6th ATP - Regulation 605/2014/EU of 5 June 2014

WFD Annex III replacement - Regulation 1357/2014/EU of 18 December 2014

Revised List of Wastes 2014 - Decision 2014/955/EU of 18 December 2014

7th ATP - Regulation 2015/1221/EU of 24 July 2015

8th ATP - Regulation (EU) 2016/918 of 19 May 2016

9th ATP - Regulation (EU) 2016/1179 of 19 July 2016

10th ATP - Regulation (EU) 2017/776 of 4 May 2017

HP14 amendment - Regulation (EU) 2017/997 of 8 June 2017

13th ATP - Regulation (EU) 2018/1480 of 4 October 2018

14th ATP - Regulation (EU) 2020/217 of 4 October 2019

POPs Regulation 2004 - Regulation 850/2004/EC of 29 April 2004

1st ATP to POPs Regulation - Regulation 756/2010/EU of 24 August 2010

2nd ATP to POPs Regulation - Regulation 757/2010/EU of 24 August 2010

Appendix H - Refined Mining Risk Assessment

Copeland Borough Council & Energy Coast West Cumbria (Properties) Ltd

**Leconfield Industrial Estate,
Cleator Moor**

Refined Mining Risk Assessment Report (Draft)

September 2020

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WYG Group Limited. Registered in England & Wales Number: 06595608
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Document Control

Project: Leconfield Industrial Estate
Client: Copeland Borough Council & Energy Coast West Cumbria (Properties) Ltd
Job Number: A114312-1
File Origin: A114312-1/Reports/Draft

Document Checking:

Prepared by:	Richard Jarrett Associate Director	Signed:	
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Checked by:	Caroline Martin Associate Director	Signed:	
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Verified by:	Caroline Martin Associate Director	Signed:	
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Issue	Date	Status
1	September 2020	First Issue
2	October 2020	Final Issue – Updated Plans and Terradat Report

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Drawings

- Drawing No. A114312-MAN-N-01 - Site Location Plan
- Drawing No. A114312-1-MAN-N-RCMRA-001

Appendices

- Appendix A – Report Conditions
- Appendix B – Additional Coal Mine Plans
- Appendix C – Geophysics Report

1.0 EXECUTIVE SUMMARY

Current Site Status and Future Development	The site is currently occupied by Leconfield Industrial Estate in Cleator Moor, Cumbria. No proposed development plans are currently available, but it is understood that the site is to remain in industrial/commercial usage.
Geology	The site is underlain by Made Ground, glacial till and solid strata from four geological formations (Whitehaven Sandstone, Pennine Middle Coal Measures, Hensingham Formation and Eskett Limestone Formation), separated by faults.
Coal Mining	Part of the site has been undermined, reportedly in three seams of coal, including at shallow depth. There are several mine shafts on the site, whose condition is not known.
Iron Ore Mining	Iron ore has been mined on at least two levels to the SE and SW of the site. Mining is recorded as reaching the site boundary on the SE site and may have crossed the boundary into the site in a very small local area. There are no recorded iron ore shafts on or within influencing distance of the site.
Preliminary Risk Assessment	The risk from the coal mining legacy is rated as high . The risk from the iron ore mining legacy is rated as low .
Ground Investigations	Geophysical surveys were carried out in four areas of the site coincident with the positions of four coal mine shafts recorded by the Coal Authority as being within the site boundary. The positions of a further three coal mine shafts recorded as being within the site boundary were inaccessible at the time of the survey. Twelve boreholes were drilled by rotary methods (open holing and coring) to depths of 40m. One coal seam was encountered in rotary cored borehole RBH105 and three seams were encountered in rotary cored borehole RBH107. The coal was recovered intact in the core samples. No significant coal seams were identified in any of the other boreholes. No evidence for open or backfilled workings was found during the drilling operations in any borehole. Occasional very thin but not significant coal partings were identified in some boreholes. Due to the low risk rating assigned at the preliminary risk assessment stage, no investigations were undertaken for potential ironstone workings.
Refined Risk Assessment	As a result of the ground investigations recently undertaken, the risk rating assigned in the preliminary risk assessment with respect to the coal mining legacy is refined as follows: Risk from shallow underground coal mine workings within the defined Development High Risk Area: low to moderate. Risk from shallow underground coal mine workings in other areas of the site: very low. Risk from potentially untreated mine entries (including mine gas emissions from deep workings): high. The risk from shallow iron ore workings remains low and is discounted from further consideration.
Recommendations	Further investigations are recommended to refine the risks posed by the coal mining legacy. Depending on the outcome of these, further mitigations may be required to safeguard ground stability.

2.0 INTRODUCTION

2.1 Introduction

WYG Environment Planning Transport Ltd (WYG) was commissioned by Energy Coast West Cumbria (Properties) Ltd (BEC) on behalf of Copeland Borough Council to undertake a Refined Mining Risk Assessment for a site known as Leconfield Industrial Estate in Cleator Moor, Cumbria. The site's location is shown on Drawing No. A114312-MAN-N-01. The refined risk assessment addresses the site's coal mining legacy and principally uses the results of a ground investigation carried out by WYG in August and September 2020 to update the preliminary risk assessment produced by WYG in July 2020. The risks posed by historical iron ore mining were rated as low at the preliminary assessment stage and, as a result, no ground investigations were conducted into this aspect of the site's history. Iron ore mining has been discounted from further consideration.

2.2 Objectives

The principal objectives of the commission are to provide an updated assessment of potential coal mining hazards and the risks they may pose for future development of the site.

2.3 Scope of Services

In order to achieve the above objectives, the following scope of works has been determined:

- A review and discussion of additional coal mine plans supplied by the Coal Authority after production of the preliminary risk assessment;
- A discussion of the ground investigations carried out to address coal mining legacy issues;
- Production of a refined qualitative assessment of the risks posed for future development of the site;
- Identification of outline proposals for carrying out further investigations aimed at refining the current assessment of risk;
- An initial discussion of the measures which may need to be taken to safeguard ground stability with respect to historical mining activities, so that the site can be safely developed and occupied.
- Production of a report capturing the above information.

This report draws on the information sources quoted herein. In particular, the 2020 WYG ground investigation report (Leconfield Industrial Estate, Cleator Moor, Ground Investigation Report No. A114312, WYG, October 2020) contains full details of some of the information used in this report and should be referred to where necessary.

2.4 Proposed Development

Proposed development plans are yet to be confirmed. It is anticipated that future development will be of an industrial and/or commercial nature.

2.5 Report Conditions

Attention is drawn to the report conditions included in Appendix A.

3.0 SITE SETTING

3.1 Location & Size

Key details for the site are provided in Table 3.1 below.

Table 3.1 Site Address and Size

Address	Leconfield Industrial Estate, Cleator Moor, CA25 5QQ
Grid Reference	301380, 515510
Site Area	15.46 hectares (ha)

4.0 REFINED COAL MINING RISK ASSESSMENT

4.1 Introduction

The north-western part of the site has been designated a Development High Risk Area by the Coal Authority. In line with the requirements of the Coal Authority (a statutory consultee under the planning regime) a Coal Mining Risk Assessment is required to address the potential hazards created by the coal mining legacy.

The High Risk Area is underlain by Pennine Middle Coal Measures rocks and is delineated by parts of the NW and SW site boundaries, and by two intersecting faults that cross the site, as shown on Drawing A114312-1-MAN-N-RCMRA-001. The positions of the faults are taken from published geological mapping and the actual positions at the local level may be different.

The purpose of this refined risk assessment is to:

- Use the information recently acquired from the Coal Authority and through new ground investigations to re-assess the potential hazards arising from coal mining legacy issues, thereby refining the preliminary assessment of risk based on earlier desk top studies;
- Set out appropriate mitigation measures to address any revealed hazards, including the need for further physical investigations and remedial works and;
- Demonstrate to the Local Planning Authority that the site is, or can be made, safe for the intended development.

4.2 Sources of Information Consulted

The following sources of information have been used to inform this risk assessment:

- Coal Authority Mine Plans: Catalogue Nos. NW1298, Sheet No. 99 9999 (3 of 4) and NW1348, Sheet No. 99 9999;
- Report on a ground investigation conducted by WYG in August and September 2020.

4.3 Identification and Assessment of Specific Coal Mining Risks

The table below summarises the refined risk assessment for the principal coal mining issues identified in the preliminary risk assessment. Information to support the refined risk assessment, as provided by the sources consulted, is discussed below.

Coal Mining Issue	Yes	No	Refined Risk Assessment
Underground coal mining (recorded at shallow depths)		N	The 2020 ground investigation found no evidence for shallow mine workings. Coal Authority mine plans show workings beneath part of the site, in the Six Quarters seam only. Available information indicates that this seam is >30m below surface (but see report section 4.6 below).
Underground coal mining (probable at shallow depths)		N	The 2020 ground investigation found no evidence for shallow mine workings. Coal Authority mine plans show workings beneath part of the site, in the Six Quarters seam only. Available information indicates that this seam is >30m below surface (but see report section 4.6 below).
Mine entries (shafts and adits)	Y		There are 7 no. Coal Authority recorded mine entries (shafts) on the site. There is one additional shaft near the site but more than 20m from its boundary. There is no record of what if any measures have been taken to treat any of these entries and, in the main, there is no information on shaft depths and diameters or the collieries they were associated with. The 2020 geophysical survey was constrained by access difficulties and Made Ground characteristics. Four potential shaft positions were investigated and geophysical anomalies found at three of these. Three shaft locations could not be investigated.
Coal mining geology (fissures)		N	Three faults are recorded as passing through the site. The Coal Authority is not aware of any damage due to geological faults or other lines of weakness that have been affected by coal mining.

4.4 Mine Plans

Since the preliminary mining risk assessment report was produced, the Coal Authority has supplied two further mine plans. These are presented in Appendix B to this report.

Plan No. NW1298 shows workings below the north-western part of the site in the Six Quarters (SXQ) seam and, just beyond the eastern site boundary, shallower workings in the Main Band seam. Within the site, Wyndham Pit (Coal Authority shaft no. 301515-010) is shown as the access point to the SXQ workings. The plan does not show any workings beneath the site in the Ten Quarters, Bannock or Slaty seams. Apart from shaft no. 301515-010, none of the other mine shafts recorded by the Coal Authority as being on the northern part of the site are shown on this plan.

Plan No. NW1348 shows the following:

- Apart from Wyndham Pit, there are seven other shafts near the NW site boundary approaching Bowthorn Rd. The layout of these shafts tallies with other Coal Authority records.
- "Shaft VI" is Coal Authority shaft 301515-003 and is outside the site boundary. The other six shafts are within the site boundary; three are within the area of the SXQ workings and three lie to the SE of the workings. One of the shafts is identified as "Barkers Pit" (also labelled shaft VII). A hand written note on the plan confirms that this shaft is the same as the one labelled "Wyndham Pit".
- A geological section showing the SXQ seam to be at approx. 33m depth in shaft VI/003. This is at odds with the Coal Authority mining report which states that the SXQ is at 117m depth below the site, with the Upper Ten Quarters seam at 33m depth. This apparent conflict has not been resolved. The geological section shows that the Main Band is at about 27m depth in Shaft VII/Barkers Pit/shaft 010.
- The SXQ was worked from Barkers Pit/Wyndham Pit beneath the site but the workings also passed southwards from the site under Leconfield Rd.

4.5 Current (2020) Ground Investigations

4.5.1 Scope

The investigations into coal mining issues comprised:

- A surface geophysical survey of four target areas encompassing Coal Authority shaft nos. 301515-006, -007, -009 and 010. The recorded positions of shaft nos. 004, 005 and 008 were not accessible.
- Rotary drilling of twelve boreholes by open hole only or open hole with coring methods, to a nominal depth of 40m. Core samples were logged by a WYG consultant.
- The installation of a ground gas monitoring well to check for ground gas emissions.

A report on the geophysical survey is presented in Appendix C of the WYG 2020 ground investigation report. A plan showing the recorded positions of the shafts is contained within the July 2020 WYG desk top study report and these positions are also given on Drawing A114312-1-MAN-RCMRA-001, together with the as-drilled positions of the rotary boreholes. Engineer's logs for the rotary boreholes and other information concerning the ground conditions encountered in these boreholes are presented in the 2020 ground investigation report.

4.5.2 Geophysical Survey

The survey was carried out using magnetic, electro-magnetic (EM) and microgravity techniques, for those shafts in accessible areas. A summary of the results of the geophysical survey is given in the table below.

Table 4.1 Summary of Geophysical Survey

Target Shaft No.	Anomaly Easting	Anomaly Northing	Anomaly Type
301515-010	301360.2	515482.4	Significant broad gravity low near recorded position of shaft.
	301354.9	515486.3	Significant small gravity low near recorded position of shaft.
301515-006	301376.9	515624.8	Significant broad gravity low near recorded position of shaft.
301515-007	301486.0	515663.2	Small isolated magnetic anomaly near recorded position of shaft.
	301488.8	515662.9	Broad area of increased conductivity near recorded position of shaft.
301515-009			Magnetic & EM surveys constrained by RC floor slab. Microgravity survey possibly constrained by thick Made Ground.

Some site characteristics, both at surface and sub-surface (reinforced concrete floor slabs, widespread metallic slag within the Made Ground, and suspected thick Made Ground deposits) constrained the effectiveness of the techniques employed and the interpretation of the acquired data. For example, the survey area around shaft 301515-009 is occupied by a reinforced concrete slab at surface, which constrained the magnetic and EM surveys.

The above anomalies may be associated with mine shafts, but intrusive investigations would be required to further explore this possibility.

4.5.3 Rotary Drilled Boreholes

Twelve boreholes were drilled by rotary methods to a nominal depth of 40m. Five of the holes were advanced by rotary open holing into rock, then continued by coring. The other boreholes were advanced by open holing throughout. The existing site facilities imposed constraints on where the boreholes could be drilled. Importantly, boreholes could not be drilled near shaft 010 or the shafts near the northern site boundary as a check on the depths to the Main Band and SXQ seams noted on mine plan NW1348.

Boreholes RBH101, 104, 107, 108 and 112 were drilled in the Development High Risk Area, as designated by the Coal Authority based on the positions of the faults given on published mapping.

Boreholes RBH103, 105 and 106 were positioned in areas of the site mapped as being underlain by the Whitehaven Sandstone Formation. These are younger rocks than the Coal Measures.

Boreholes RBH102, 109, 110 and 111 were sites in areas underlain by Hensingham Group and Chief Limestone Group/Eskett Limestone rocks. These are both older than the Coal Measures.

Some very thin but not significant coal partings were encountered at various depths in some boreholes. More significant coal seams were encountered in two cored boreholes; details are given in the table below.

Table 4.2 Coal Seams Encountered

Borehole No.	Top of Coal		Base of Coal	
	Depth (m)	Elevation (m AOD)	Depth (m)	Elevation (m AOD)
RBH 105	21.45	61.63	21.77	61.31
RBH 107	14.80	68.23	15.20	67.83
	20.85	62.18	21.65	61.38
	30.90	52.13	31.40	51.63

Borehole RBH107 was positioned in the High Risk area underlain by Coal Measures rocks. No coal seams were identified in any of the other boreholes drilled in this area.

Borehole RBH105 was drilled to the north of one of the published boundary fault positions that delineate the High Risk Area. One coal seam was encountered at shallow depth in this borehole but, in the main, the borehole passed through the red-brown sandy mudstones and sandstones that are characteristic of the Whitehaven Sandstone Formation. According to the published geological map, this formation also contains some thin coal beds.

The coal encountered in both boreholes appeared to be intact. Full or partial loss of flushing fluid and some core losses were recorded in some boreholes at various depths in some strata, but no evidence for voids or soft ground that could indicate the presence of open or backfilled workings was recorded during the drilling operations. Monitoring carried out during drilling did not detect any mine gases.

4.5.4 Conclusions

Geophysical anomalies that warrant further investigation by intrusive investigation methods have been identified in the vicinity of three potential mine shafts (301515-006, -007 and -010). Three other potential shaft positions (nos. 004, 005 and 008) could not be surveyed because of access constraints. The survey for shaft 009 was inconclusive.

Two rotary drilled boreholes encountered relatively thin coal seams but the coal appeared to be intact. In borehole RBH105 the coal is attributed to one of the thin seams that occur in the Whitehaven Sandstone Formation; this is not likely to have been mined. Of the five boreholes drilled in the High Risk Area, coal was noted in borehole RBH107 only.

No evidence for voids or soft ground that could indicate the presence of open or backfilled workings was recorded during the drilling operations. Monitoring carried out during drilling did not detect any mine gases.

4.6 Summary of Risk Assessment

Based on the information provided by the current ground investigation and a review of the additional mine plans provided by the Coal Authority, the risks to the development site from the coal mining legacy

are currently assessed as follows:

Shallow Mine Workings

Based on the nature of the strata encountered in the boreholes, it is likely that the positions of the faults that cross through the site are as shown on published mapping and that these faults delineate the size and position of the Development High Risk Area within which any shallow mine workings present a potential hazard for future development. Mine plans show workings in the SXQ seam below parts of the site and the depth to the worked seam has variously been reported as 33m (at shaft 301515-003) and 117m. If the SXQ seam lies at about 33m depth at shaft 003 (as noted on the Coal Authority mine plan), it is possible that any workings in this seam would become shallower in an easterly direction across the site and this could present a hazard. However, physical site constraints prevented boreholes being drilled in this and other areas of interest and, therefore, a potential threat remains in such areas. The risks posed are tempered by the fact that coal has been identified at shallow depth in only one borehole drilled in the Development High Risk Area and none of the boreholes in this area or elsewhere on the site identified open or backfilled workings.

The following risk levels are assigned in respect of shallow mine workings:

- Development High Risk Area – **low to moderate**.
- Other areas of site – **very low**.

Untreated Mine Shafts

The risk level is considered to be **high** on the basis that:

- Affected areas of the site may be at risk from the collapse of untreated historical mine entries;
- Untreated mine entries may provide a pathway for mine gases.

4.7 Hazard Mitigation Strategy

In view of the above, the potential hazards presented by the coal mining legacy should be further investigated as part of a hazard mitigation strategy. The strategy should consist of the following elements:

1. Further ground investigation by intrusive and non-intrusive methods;
2. Refinement of the risks posed to the development;
3. If necessary, remediation works to reduce the post-development risks to an acceptable level.

These elements are discussed in more detail below.

Ground investigation

Further ground investigations should be undertaken, as follows:

- a) Geophysical surveys encompassing the recorded positions of shafts 301515-004, -005 and -008, following work to enable access to these locations;
- b) Repeat surveys at shaft 009, if the existing reinforced concrete floor slab can be grubbed out;
- c) Intrusive investigations at locations where the recent geophysical survey has produced anomalies that are potentially indicative of mine shafts (shafts 006, 007 and 010);
- d) Intrusive investigations at the positions of any further geophysical anomalies produced by the recommended new surveys in the areas of shafts 004, 005, 008 and 009.
- e) Further intrusive investigations in the general vicinity of recorded mine shafts and on the east side of the High Risk Area, to check for shallow workings.

Intrusive investigations may include trial trenching and/or rotary drilling to locate and determine the condition (internal and at surface) of any mine shafts identified, together with rotary drilled boreholes as noted in e) above.

The above recommendations are based on removal of current access constraints. If this is not possible, the current potential land stability hazards present a constraint to future development and will need to be taken into account in future development plans.

Refinement of the risks

The outcome of the above investigations will be used to refine the current assessment of risk. Should the risks remain unacceptably high, remedial works will need to be implemented to reduce the risk to an acceptable level that will enable the site to be safely developed and used as intended.

Remediation

Remediation is likely to involve ground stabilisation by the infilling and capping of any open or poorly

backfilled mine entries that are proven to exist or are unexpectedly encountered during development works. If found, shallow workings will need to be infilled.

All future intrusive investigations and mine entry/workings treatment works that will disturb Coal Authority mining interests must only be implemented after permission has been obtained from the Coal Authority. The works must be conducted in accordance with the terms of the permission granted.

4.8 Conclusions

Based on the information consulted, it is considered that, currently, there is:

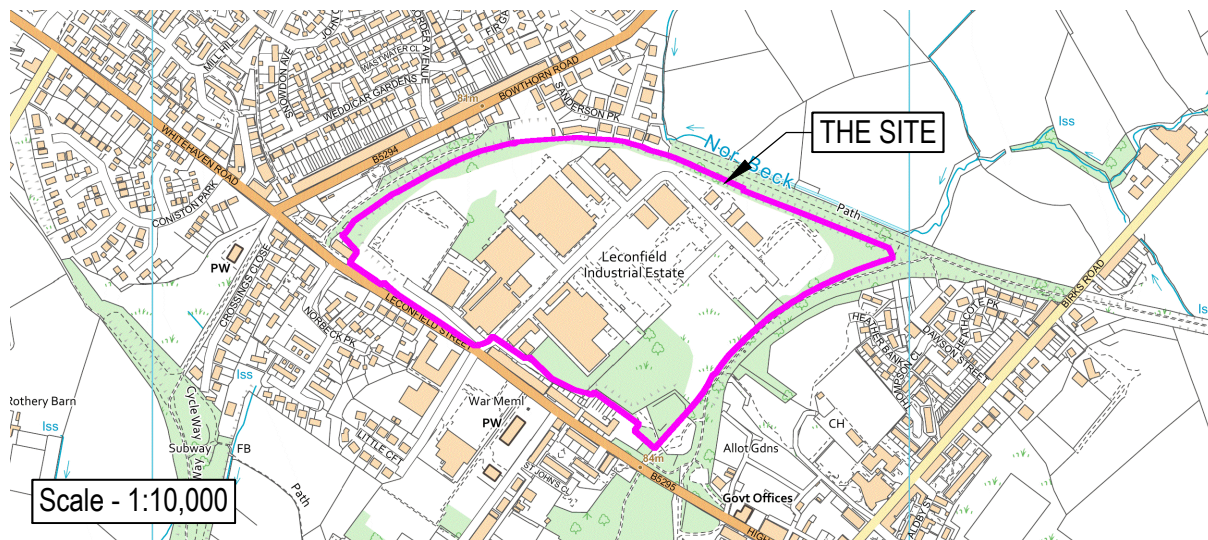
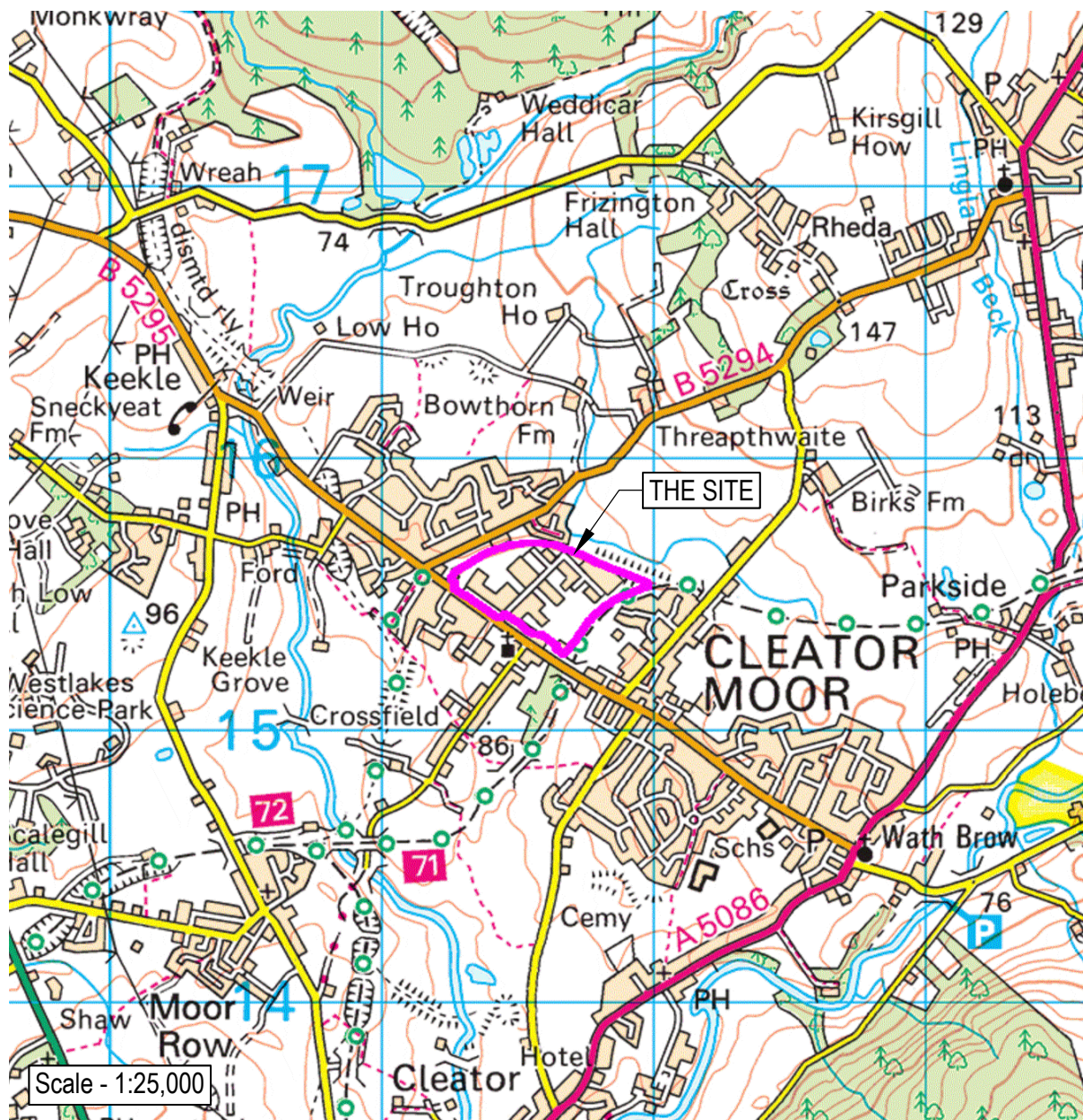
- a **low to moderate** risk that historical coal mining activities in the form of shallow underground workings present a land stability hazard for the defined Development High Risk Area.
- A **very low** risk that historical coal mining activities in the form of shallow underground workings present a land stability hazard for other areas of the site.
- a **high** risk that historical coal mining activities in the form of potentially untreated coal mine entries (shafts) present a land stability hazard for affected areas of the development site. Such shafts may also provide pathways for mine gases generated in deeper workings to reach the surface.

If possible, further investigations should be undertaken to refine the current assessment of risk. Depending on the outcome of those investigations, measures may need to be implemented to safeguard the stability of the land and the proposed development. If such measures are needed, once they are implemented and validated, the land will be suitable for the intended development, in respect of coal mining legacy issues.

If further investigations are not possible, future development plans should take the current levels of threat to land stability into account through appropriate development layouts.

Drawings

Appendices



REV	DESCRIPTION	BY	CHK	APP	DATE
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QUAY WEST at MediaCityUK
TRAFFORD WHARF ROAD
TRAFFORD PARK
MANCHESTER
M17 1HH
TEL: +44 (0)161 872 3223
e-mail: manchester@wyg.com

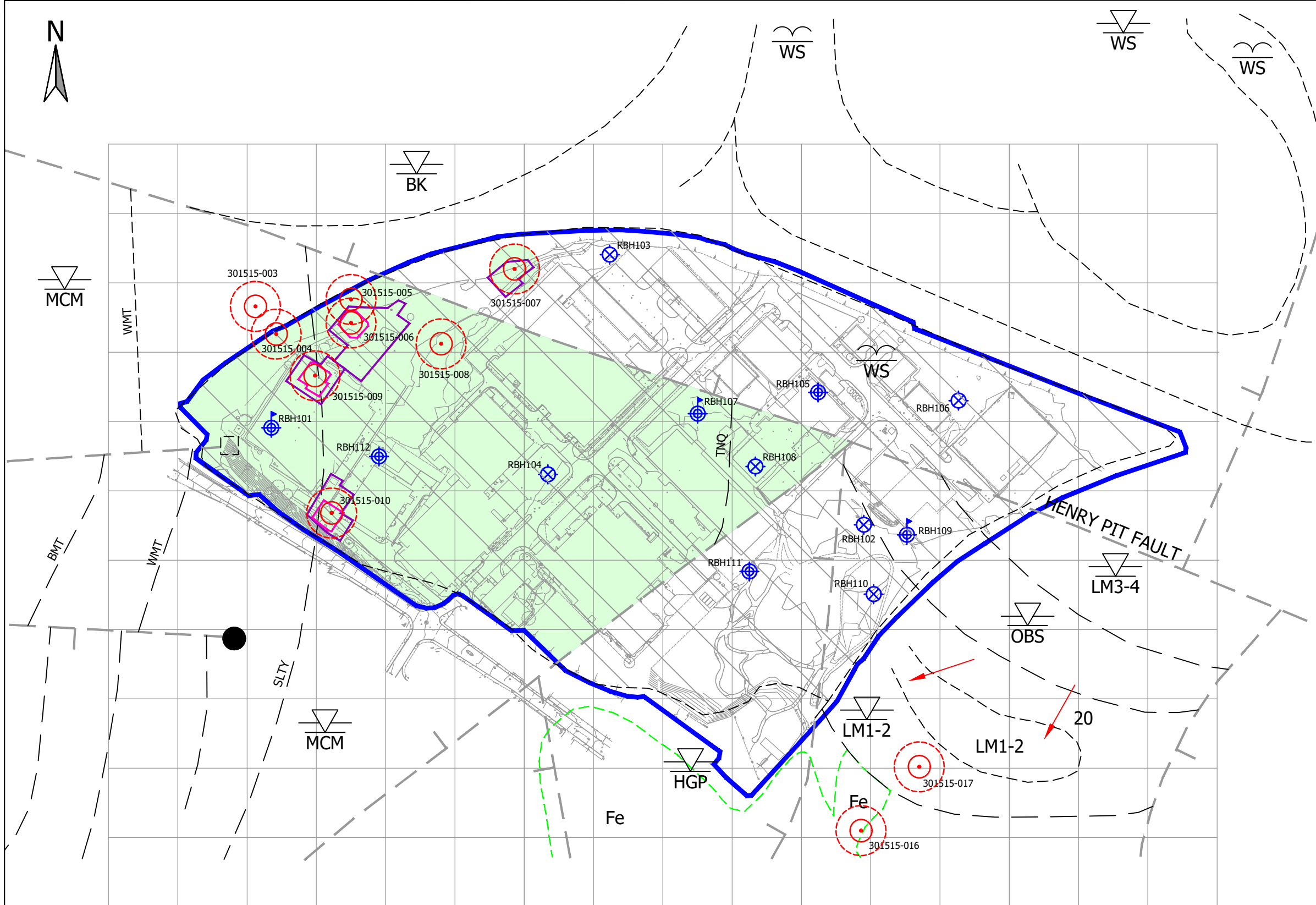


Client:
COPELAND BOROUGH COUNCIL

Project: A114312
LECONFIELD INDUSTRIAL
ESTATE

Drawing Title:
SITE LOCATION PLAN

Scale @	A4	AS SHOWN	Drawn	Date	Checked	Date	Approved	Date
Project No.	A114312	Office	MAN	N	Drawing No.	01	Revision	



- KEY**
- SITE BOUNDARY
 - AREA OF COAL LEGACY MINING RISK
 - GEOPHYSICS: MAGNETIC AND GROUND CONDUCTIVITY SURVEY AREA
 - GEOPHYSICS: GRAVITY SURVEY
- WYG GROUND INVESTIGATION AUGUST 2020**
- ROTARY OPEN HOLES (40m bgl)
 - ROTARY CORED HOLES (40m bgl)
 - GAS & GROUNDWATER MONITORING INSTALLATIONS
- GENERAL**
- SOLID GEOLOGICAL BOUNDARY
 - AREA OF SUBSURFACE HAEMATITE MINING
 - 2m SHAFT DIAMETER
8m RADIUS MARGIN OF ERROR
10m RADIUS ADDITIONAL RISK OF SHAFT COLLAPSE
- STRUCTURAL GEOLOGY**
- FAULT WITH DOWN THROW DIRECTION
- DRIFT GEOLOGY**
- ALLUVIUM
 - GLACIAL TILL
- SOLID GEOLOGY (YOUNGEST TO OLDEST)**
- WHITEHAVEN SANDSTONE (WS)
 - MIDDLE COAL MEASURES (MCM)
 - BLACK METAL SEAM (BMT)
 - WHITE METAL SEAM(WMT)
 - SLATY (CLEATOR MOOR 4 FOOT) (SLTY)
 - TEN QUARTERS (CLEATOR MOOR 5 FOOT) (TNQ)
 - HENSINGHAM GROUP (HGP)
 - CHIEF LIMESTONE GROUP
 - 1st & 2nd LIMESTONE (LM1-LM2)
 - OREBANK SANDSTONE (OBS)
 - 3rd & 4th LIMESTONE (LM3-4)

FINAL ISSUE

Appendix A – Report Conditions

WYG ENVIRONMENT

C1 - REPORT CONDITIONS
(Environmental Assessment)

This report is produced solely for the benefit of the **COPELAND BOROUGH COUNCIL & ENERGY COAST WEST CUMBRIA (PROPERTIES) LIMITED** and no liability is accepted for any reliance placed on it by any other party unless specifically agreed in writing otherwise.

This report is prepared for the proposed uses stated in the report and should not be used in a different context without reference to WYG. In time improved practices, fresh information or amended legislation may necessitate a re-assessment. Opinions and information provided in this report are on the basis of WYG using due skill and care in the preparation of the report.

This report refers, within the limitations stated, to the environment of the site in the context of the surrounding area at the time of the inspections. Environmental conditions can vary and no warranty is given as to the possibility of changes in the environment of the site and surrounding area at differing times.

This report is limited to those aspects reported on, within the scope and limits agreed with the client under our appointment. It is necessarily restricted and no liability is accepted for any other aspect. It is based on the information sources indicated in the report. Some of the opinions are based on unconfirmed data and information and are presented as the best obtained within the scope for this report.

Reliance has been placed on the documents and information supplied to WYG by others but no independent verification of these has been made and no warranty is given on them. No liability is accepted or warranty given in relation to the performance, reliability, standing etc of any products, services, organisations or companies referred to in this report.

Whilst skill and care have been used, no investigative method can eliminate the possibility of obtaining partially imprecise, incomplete or not fully representative information. Any monitoring or survey work undertaken as part of the commission will have been subject to limitations, including for example timescale, seasonal and weather related conditions.

Although care is taken to select monitoring and survey periods that are typical of the environmental conditions being measured, within the overall reporting programme constraints, measured conditions may not be fully representative of the actual conditions. Any predictive or modelling work, undertaken as part of the commission will be subject to limitations including the representativeness of data used by the model and the assumptions inherent within the approach used. Actual environmental conditions are typically more complex and variable than the investigative, predictive and modelling approaches indicate in practice, and the output of such approaches cannot be relied upon as a comprehensive or accurate indicator of future conditions.

The potential influence of our assessment and report on other aspects of any development or future planning requires evaluation by other involved parties.

The performance of environmental protection measures and of buildings and other structures in relation to acoustics, vibration, noise mitigation and other environmental issues is influenced to a large extent by the degree to which the relevant environmental considerations are incorporated into the final design and specifications and the quality of workmanship and compliance with the specifications on site during construction. WYG accept no liability for issues with performance arising from such factors

November 2008
WYG Environment Planning Transport Ltd

Appendix B – Additional Coal Mine Plans