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**Attention:** Darren Banner-Perry

## CERTIFICATE OF ANALYSIS

**Date:** 13 May 2017  
**Customer:** H\_RHASKON\_PTB  
**Sample Delivery Group (SDG):** 170427-108  
**Your Reference:** 9Y0074  
**Location:** Cole Green Inert Landfill  
**Report No:** 408428

We received 10 samples on Thursday April 27, 2017 and 4 of these samples were scheduled for analysis which was completed on Friday May 12, 2017. 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 Environmental Hawarden (Method codes TM) or ALS Environmental Aberdeen (Method codes S).

Approved By:

**Sonia McWhan**

Operations Manager





# CERTIFICATE OF ANALYSIS

Validated

SDG: 170427-108 Client Reference: 9Y0074 Report Number: 408428  
Location: Cole Green Inert Landfill Order Number: Superseded Report:

## Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
15410311	TBH01		1.00	25/04/2017
15410315	TBH01		2.00	25/04/2017
15410307	TTP01		0.50	25/04/2017
15410310	TTP01		1.00	25/04/2017
15410316	TTP02		0.50	25/04/2017
15410318	TTP02		1.00	25/04/2017
15410320	TTP03		0.50	25/04/2017
15410322	TTP03		1.00	25/04/2017
15410324	TTP04		0.50	25/04/2017
15410326	TTP04		1.00	25/04/2017

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



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**SDG:** 170427-108      **Client Reference:** 9Y0074      **Report Number:** 408428  
**Location:** Cole Green Inert Landfill      **Order Number:**      **Superseded Report:**

<b>Results Legend</b>  <div style="display: flex; gap: 10px;"> <div style="border: 1px solid black; background-color: yellow; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;">X</div> Test                 <div style="border: 1px solid black; background-color: red; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center; margin-left: 20px;">N</div> No Determination Possible             </div>  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	
		15410315	TBH01		2.00	60g VOC (ALE215) 250g Amber Jar (ALE210) 1kg TUB	S
		15410310	TFP01		1.00	60g VOC (ALE215) 250g Amber Jar (ALE210) 1kg TUB	S
		15410318	TFP02		1.00	60g VOC (ALE215) 250g Amber Jar (ALE210) 1kg TUB	S
		15410324	TFP04		0.50	60g VOC (ALE215) 250g Amber Jar (ALE210) 1kg TUB	S
	Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 4				
	Boron Water Soluble	All	NDPs: 0 Tests: 4				
CEN Readings	All	NDPs: 0 Tests: 3					
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 3					
EPH CWG (Aliphatic) Filtered GC (W)	All	NDPs: 0 Tests: 3					
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 4					
EPH CWG (Aromatic) Filtered GC (W)	All	NDPs: 0 Tests: 3					
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 4					
GRO by GC-FID (S)	All	NDPs: 0 Tests: 4					
GRO by GC-FID (W)	All	NDPs: 0 Tests: 3					
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 4					
Hexavalent Chromium (w)	All	NDPs: 0 Tests: 3					
Mercury Dissolved	All	NDPs: 0 Tests: 3					
Metals in solid samples by OES	All	NDPs: 0 Tests: 4					
PAH in waters by GC-MS (diss.filt)	All	NDPs: 0 Tests: 3					



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<b>Results Legend</b>  <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;"><span style="background-color: yellow; border: 1px solid black; padding: 2px;">X</span> Test</div> <div style="display: flex; align-items: center;"><span style="background-color: red; color: white; border: 1px solid black; padding: 2px;">N</span> No Determination Possible</div> </div> 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	
		15410315	TBH01		2.00	60g VOC (ALE215) 250g Amber Jar (ALE210) 1kg TUB	S
		15410310	TFP01		1.00	60g VOC (ALE215) 250g Amber Jar (ALE210) 1kg TUB	S
		15410318	TFP02		1.00	60g VOC (ALE215) 250g Amber Jar (ALE210) 1kg TUB	S
		15410324	TFP04		0.50	60g VOC (ALE215) 250g Amber Jar (ALE210) 1kg TUB	S
	PCBs by GCMS	All	NDPs: 0 Tests: 4				
							X X X X
pH	All	NDPs: 0 Tests: 4					
						X X X X	
pH Value of Filtered Water	All	NDPs: 0 Tests: 3					
						X X X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 4					
						X X X X	
Phenols by HPLC (W)	All	NDPs: 0 Tests: 3					
						X X X	
Sample description	All	NDPs: 0 Tests: 4					
						X X X X	
Semi Volatile Organic Compounds	All	NDPs: 0 Tests: 4					
						X X X X	
SVOC MS (W) - Aqueous	All	NDPs: 0 Tests: 3					
						X X X	
Total Organic Carbon	All	NDPs: 0 Tests: 4					
						X X X X	
TPH CWG Filtered (W)	All	NDPs: 0 Tests: 3					
						X X X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 4					
						X X X X	
VOC MS (S)	All	NDPs: 0 Tests: 4					
						X X X X	



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## 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
15410315	TBH01	2.00	Dark Brown	Silt Loam	Brick	Stones
15410310	TTP01	1.00	Light Brown	Sandy Silt Loam	Stones	None
15410318	TTP02	1.00	Light Brown	Sandy Silt Loam	Stones	None
15410324	TTP04	0.50	Dark Brown	Clay	Stones	N/A

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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Results Legend		Customer Sample Ref.	TBH01	TTP01	TTP02	TTP04		
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. - Subcontracted test. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery (F) Trigger breach confirmed 1-5&*\$@ Sample deviation (see appendix)		Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	2.00 Soil/Solid (S) 25/04/2017 27/04/2017 170427-108 15410315	1.00 Soil/Solid (S) 25/04/2017 27/04/2017 170427-108 15410310	1.00 Soil/Solid (S) 25/04/2017 27/04/2017 170427-108 15410318	0.50 Soil/Solid (S) 25/04/2017 27/04/2017 170427-108 15410324		
Component	LOD/Units	Method						
Moisture Content Ratio (% of as received sample)	%	PM024	23	12	14	15		
Phenol	<0.01 mg/kg	TM062 (S)	<0.01 M	<0.01 & M	<0.01 M	<0.01 & M		
Cresols	<0.01 mg/kg	TM062 (S)	<0.01 M	<0.01 & M	<0.01 M	<0.01 & M		
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015 M	<0.015 & M	<0.015 M	<0.015 & M		
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035 M	<0.035 & M	<0.035 M	<0.035 & M		
Soil Organic Matter (SOM)	<0.35 %	TM132	3.26 #	0.407 #	0.917 #	0.898 #		
pH	1 pH Units	TM133	7.72 M	8.26 M	7.18 M	8.18 M		
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6 #	<0.6 #	<0.6 #	<0.6 #		
PCB congener 118	<3 µg/kg	TM168	3.42 M	<3 M	<3 M	<3 M		
PCB congener 81	<3 µg/kg	TM168	<3 M	<3 M	<3 M	<3 M		
PCB congener 77	<3 µg/kg	TM168	<3 M	<3 M	<3 M	<3 M		
PCB congener 123	<3 µg/kg	TM168	<3 M	<3 M	<3 M	<3 M		
PCB congener 114	<3 µg/kg	TM168	<3 M	<3 M	<3 M	<3 M		
PCB congener 105	<3 µg/kg	TM168	<3 M	<3 M	<3 M	<3 M		
PCB congener 126	<3 µg/kg	TM168	<3 M	<3 M	<3 M	<3 M		
PCB congener 167	<3 µg/kg	TM168	<3 M	<3 M	<3 M	<3 M		
PCB congener 156	<3 µg/kg	TM168	<3 M	<3 M	<3 M	<3 M		
PCB congener 157	<3 µg/kg	TM168	<3 M	<3 M	<3 M	<3 M		
PCB congener 169	<3 µg/kg	TM168	<3 M	<3 M	<3 M	<3 M		
PCB congener 189	<3 µg/kg	TM168	<3 M	<3 M	<3 M	<3 M		
Sum of detected WHO 12 PCBs	<36 µg/kg	TM168	<36 M	<36 M	<36 M	<36 M		
Arsenic	<0.6 mg/kg	TM181	16.2 M	36.5 M	16.9 M	14.1 M		
Barium	<0.6 mg/kg	TM181	213 #	76.2 #	101 #	81.8 #		
Beryllium	<0.01 mg/kg	TM181	1.49 M	1.71 M	1.23 M	1.39 M		
Cadmium	<0.02 mg/kg	TM181	0.499 M	0.648 M	0.104 M	0.375 M		
Chromium	<0.9 mg/kg	TM181	18 M	13.2 M	12.7 M	20.5 M		
Copper	<1.4 mg/kg	TM181	145 M	35.7 M	14.6 M	26 M		
Lead	<0.7 mg/kg	TM181	204 M	36.1 M	26 M	26.3 M		
Mercury	<0.14 mg/kg	TM181	0.931 M	0.788 M	<0.14 M	0.578 M		
Nickel	<0.2 mg/kg	TM181	41.4 M	27.3 M	20 M	28.3 M		
Selenium	<1 mg/kg	TM181	<1 #	<1 #	<1 #	<1 #		
Vanadium	<0.2 mg/kg	TM181	43.9 #	66.1 #	42.7 #	50.2 #		





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**Order Number:**

**Report Number:** 408428  
**Superseded Report:**

## Semi Volatile Organic Compounds

Results Legend		Customer Sample Ref.	TBH01	TTP01	TTP02	TTP04		
#	ISO17025 accredited.							
M	mCERTS accredited.							
aq	Aqueous / settled sample.							
diss.filt	Dissolved / filtered sample.							
tot.unfilt	Total / unfiltered sample.							
*	Subcontracted test.							
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery							
(F)	Trigger breach confirmed							
1-5&*\$@	Sample deviation (see appendix)							
Component	LOD/Units	Method	Depth (m)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	
Phenol	<100 µg/kg	TM157	2.00	25/04/2017	1.00	25/04/2017	1.00	25/04/2017
Pentachlorophenol	<100 µg/kg	TM157						
n-Nitroso-n-dipropylamine	<100 µg/kg	TM157						
Nitrobenzene	<100 µg/kg	TM157						
Isophorone	<100 µg/kg	TM157						
Hexachloroethane	<100 µg/kg	TM157						
Hexachlorocyclopentadiene	<100 µg/kg	TM157						
Hexachlorobutadiene	<100 µg/kg	TM157						
Hexachlorobenzene	<100 µg/kg	TM157						
n-Dioctyl phthalate	<100 µg/kg	TM157						
Dimethyl phthalate	<100 µg/kg	TM157						
Diethyl phthalate	<100 µg/kg	TM157						
n-Dibutyl phthalate	<100 µg/kg	TM157						
Dibenzofuran	<100 µg/kg	TM157						
Carbazole	<100 µg/kg	TM157						
Butylbenzyl phthalate	<100 µg/kg	TM157						
bis(2-Ethylhexyl) phthalate	<100 µg/kg	TM157	210					
bis(2-Chloroethoxy)methane	<100 µg/kg	TM157						
bis(2-Chloroethyl)ether	<100 µg/kg	TM157						
Azobenzene	<100 µg/kg	TM157						
4-Nitrophenol	<100 µg/kg	TM157						
4-Nitroaniline	<100 µg/kg	TM157						
4-Methylphenol	<100 µg/kg	TM157						
4-Chlorophenylphenylether	<100 µg/kg	TM157						
4-Chloroaniline	<100 µg/kg	TM157						
4-Chloro-3-methylphenol	<100 µg/kg	TM157						
4-Bromophenylphenylether	<100 µg/kg	TM157						
3-Nitroaniline	<100 µg/kg	TM157						
2-Nitrophenol	<100 µg/kg	TM157						
2-Nitroaniline	<100 µg/kg	TM157						
2-Methylphenol	<100 µg/kg	TM157						
1,2,4-Trichlorobenzene	<100 µg/kg	TM157						





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**Superseded Report:**

## Semi Volatile Organic Compounds

Results Legend		Customer Sample Ref.	TBH01	TTP01	TTP02	TTP04		
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference						
M	mCERTS accredited.		2.00	1.00	1.00	0.50		
aq	Aqueous / settled sample.		Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
diss.filt	Dissolved / filtered sample.		25/04/2017	25/04/2017	25/04/2017	25/04/2017		
tot.unfilt	Total / unfiltered sample.							
*	Subcontracted test.							
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery							
(F)	Trigger breach confirmed		27/04/2017	27/04/2017	27/04/2017	27/04/2017		
1-5&*\$@	Sample deviation (see appendix)		170427-108	170427-108	170427-108	170427-108		
			15410315	15410310	15410318	15410324		
Component	LOD/Units	Method						
2-Chlorophenol	<100 µg/kg	TM157	<100	<100	<100	<100		
2,6-Dinitrotoluene	<100 µg/kg	TM157	<100	<100	<100	<100		
2,4-Dinitrotoluene	<100 µg/kg	TM157	<100	<100	<100	<100		
2,4-Dimethylphenol	<100 µg/kg	TM157	<100	<100	<100	<100		
2,4-Dichlorophenol	<100 µg/kg	TM157	<100	<100	<100	<100		
2,4,6-Trichlorophenol	<100 µg/kg	TM157	<100	<100	<100	<100		
2,4,5-Trichlorophenol	<100 µg/kg	TM157	<100	<100	<100	<100		
1,4-Dichlorobenzene	<100 µg/kg	TM157	<100	<100	<100	<100		
1,3-Dichlorobenzene	<100 µg/kg	TM157	<100	<100	<100	<100		
1,2-Dichlorobenzene	<100 µg/kg	TM157	<100	<100	<100	<100		
2-Chloronaphthalene	<100 µg/kg	TM157	<100	<100	<100	<100		
2-Methylnaphthalene	<100 µg/kg	TM157	<100	<100	<100	<100		
Acenaphthylene	<100 µg/kg	TM157	<100	<100	<100	<100		
Acenaphthene	<100 µg/kg	TM157	<100	<100	<100	<100		
Anthracene	<100 µg/kg	TM157	<100	<100	<100	<100		
Benzo(a)anthracene	<100 µg/kg	TM157	353	<100	<100	<100		
Benzo(b)fluoranthene	<100 µg/kg	TM157	282	<100	<100	<100		
Benzo(k)fluoranthene	<100 µg/kg	TM157	322	<100	<100	<100		
Benzo(a)pyrene	<100 µg/kg	TM157	345	<100	<100	<100		
Benzo(g,h,i)perylene	<100 µg/kg	TM157	209	<100	<100	<100		
Chrysene	<100 µg/kg	TM157	387	<100	<100	<100		
Fluoranthene	<100 µg/kg	TM157	891	<100	<100	251		
Fluorene	<100 µg/kg	TM157	<100	<100	<100	<100		
Indeno(1,2,3-cd)pyrene	<100 µg/kg	TM157	216	<100	<100	<100		
Phenanthrene	<100 µg/kg	TM157	307	<100	<100	227		
Pyrene	<100 µg/kg	TM157	705	<100	<100	225		
Naphthalene	<100 µg/kg	TM157	<100	<100	<100	<100		
Dibenzo(a,h)anthracene	<100 µg/kg	TM157	<100	<100	<100	<100		
Bis(2-chloroisopropyl) ether	<100 µg/kg	TM157	<100	<100	<100	<100		



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## TPH CWG (S)

Results Legend		Customer Sample Ref.	TBH01	TTP01	TTP02	TTP04		
#	ISO17025 accredited. M mCERTS accredited.		Depth (m)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	
aq	Aqueous / settled sample.	Sample Type	2.00	1.00	1.00	0.50		
diss.filt	Dissolved / filtered sample.	Date Sampled	25/04/2017	25/04/2017	25/04/2017	25/04/2017		
tot.unfilt	Total / unfiltered sample.	Sampled Time	-	-	-	-		
*	Subcontracted test.	Date Received	27/04/2017	27/04/2017	27/04/2017	27/04/2017		
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	SDG Ref	170427-108	170427-108	170427-108	170427-108		
(F)	Trigger breach confirmed	Lab Sample No.(s)	15410315	15410310	15410318	15410324		
1-5&*\$@	Sample deviation (see appendix)	AGS Reference						
Component	LOD/Units	Method						
GRO Surrogate % recovery**	%	TM089	47	94	92	103	&	
GRO TOT (Moisture Corrected)	<44 µg/kg	TM089	1610	<44	128	<44	& M	
Methyl tertiary butyl ether (MTBE)	<5 µg/kg	TM089	<5	<5	<5	<5	& #	
Benzene	<10 µg/kg	TM089	<10	<10	<10	<10	& M	
Toluene	<2 µg/kg	TM089	7.74	4.56	5.85	<2	& M	
Ethylbenzene	<3 µg/kg	TM089	34.8	<3	<3	<3	& M	
m,p-Xylene	<6 µg/kg	TM089	43.9	<6	<6	<6	& M	
o-Xylene	<3 µg/kg	TM089	16.8	<3	<3	<3	& M	
sum of detected mpo xylene by GC	<9 µg/kg	TM089	60.7	<9	<9	<9	&	
sum of detected BTEX by GC	<24 µg/kg	TM089	103	<24	<24	<24	&	
Aliphatics >C5-C6	<10 µg/kg	TM089	14.2	<10	<10	<10	&	
Aliphatics >C6-C8	<10 µg/kg	TM089	60.6	<10	<10	<10	&	
Aliphatics >C8-C10	<10 µg/kg	TM089	534	<10	12.9	<10	&	
Aliphatics >C10-C12	<10 µg/kg	TM089	321	<10	55	<10	&	
Aliphatics >C12-C16	<100 µg/kg	TM173	1520	1820	<100	<100		
Aliphatics >C16-C21	<100 µg/kg	TM173	14400	4860	236	<100		
Aliphatics >C21-C35	<100 µg/kg	TM173	76600	34500	1070	<100		
Aliphatics >C35-C44	<100 µg/kg	TM173	16500	73900	<100	<100		
Total Aliphatics >C12-C44	<100 µg/kg	TM173	109000	115000	1300	<100		
Aromatics >EC5-EC7	<10 µg/kg	TM089	<10	<10	<10	<10	&	
Aromatics >EC7-EC8	<10 µg/kg	TM089	<10	<10	<10	<10	&	
Aromatics >EC8-EC10	<10 µg/kg	TM089	452	<10	<10	<10	&	
Aromatics >EC10-EC12	<10 µg/kg	TM089	214	<10	36.3	<10	&	
Aromatics >EC12-EC16	<100 µg/kg	TM173	<100	543	<100	681		
Aromatics >EC16-EC21	<100 µg/kg	TM173	8020	3920	<100	2710		
Aromatics >EC21-EC35	<100 µg/kg	TM173	49700	39900	1400	7760		
Aromatics >EC35-EC44	<100 µg/kg	TM173	20700	157000	2380	1220		
Aromatics >EC40-EC44	<100 µg/kg	TM173	8340	83400	1480	<100		
Total Aromatics >EC12-EC44	<100 µg/kg	TM173	78400	201000	3780	12400		
Total Aliphatics & Aromatics >C5-C44	<100 µg/kg	TM173	189000	316000	5210	12400		



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VOC MS (S)

Table with columns: Results Legend, Customer Sample Ref., Depth (m), Sample Type, Date Sampled, Sampled Time, Date Received, SDG Ref, Lab Sample No.(s), AGS Reference, Component, LOD/Units, Method, and concentration data for various VOCs across samples TBH01, TTP01, TTP02, and TTP04.



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<b>SDG:</b>	170427-108	<b>Client Reference:</b>	9Y0074	<b>Report Number:</b>	408428
<b>Location:</b>	Cole Green Inert Landfill	<b>Order Number:</b>		<b>Superseded Report:</b>	

## VOC MS (S)

Results Legend		Customer Sample Ref.	TBH01	TTP01	TTP02	TTP04		
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference						
M	mCERTS accredited.		2.00	1.00	1.00	0.50		
aq	Aqueous / settled sample.		Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
diss.filt	Dissolved / filtered sample.		25/04/2017	25/04/2017	25/04/2017	25/04/2017		
tot.unfilt	Total / unfiltered sample.							
*	Subcontracted test.							
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery							
(F)	Trigger breach confirmed		27/04/2017	27/04/2017	27/04/2017	27/04/2017		
1-5&*\$@	Sample deviation (see appendix)		170427-108	170427-108	170427-108	170427-108		
			15410315	15410310	15410318	15410324		
Component	LOD/Units	Method						
1,3-Dichloropropane	<7 µg/kg	TM116	<7 & M	<7 & M	<7 & M	<7 M		
Tetrachloroethene	<5 µg/kg	TM116	<5 & M	<5 & M	<5 & M	<5 M		
Dibromochloromethane	<10 µg/kg	TM116	<10 & M	<10 & M	<10 & M	<10 M		
1,2-Dibromoethane	<10 µg/kg	TM116	<10 & M	<10 & M	<10 & M	<10 M		
Chlorobenzene	<5 µg/kg	TM116	<5 & M	<5 & M	<5 & M	<5 M		
1,1,1,2-Tetrachloroethane	<10 µg/kg	TM116	<10 & M	<10 & M	<10 & M	<10 M		
Ethylbenzene	<4 µg/kg	TM116	13.6 & M	<4 & M	<4 & M	<4 M		
p/m-Xylene	<10 µg/kg	TM116	19.8 & #	<10 & #	<10 & #	<10 #		
o-Xylene	<10 µg/kg	TM116	<10 & M	<10 & M	<10 & M	<10 M		
Styrene	<10 µg/kg	TM116	<10 & #	<10 & #	<10 & #	<10 #		
Bromoform	<10 µg/kg	TM116	<10 & M	<10 & M	<10 & M	<10 M		
Isopropylbenzene	<5 µg/kg	TM116	<5 & #	<5 & #	<5 & #	<5 #		
1,1,2,2-Tetrachloroethane	<10 µg/kg	TM116	<10 & M	<10 & M	<10 & M	<10 M		
1,2,3-Trichloropropane	<16 µg/kg	TM116	<16 & M	<16 & M	<16 & M	<16 M		
Bromobenzene	<10 µg/kg	TM116	<10 & M	<10 & M	<10 & M	<10 M		
Propylbenzene	<10 µg/kg	TM116	<10 & M	<10 & M	<10 & M	<10 M		
2-Chlorotoluene	<9 µg/kg	TM116	<9 & M	<9 & M	<9 & M	<9 M		
1,3,5-Trimethylbenzene	<8 µg/kg	TM116	<8 & M	<8 & M	<8 & M	<8 M		
4-Chlorotoluene	<10 µg/kg	TM116	<10 & M	<10 & M	<10 & M	<10 M		
tert-Butylbenzene	<14 µg/kg	TM116	<14 & M	<14 & M	<14 & M	<14 M		
1,2,4-Trimethylbenzene	<9 µg/kg	TM116	17.5 & #	<9 & #	<9 & #	<9 #		
sec-Butylbenzene	<10 µg/kg	TM116	<10 &	<10 &	<10 &	<10 M		
4-Isopropyltoluene	<10 µg/kg	TM116	<10 & M	<10 & M	<10 & M	<10 M		
1,3-Dichlorobenzene	<8 µg/kg	TM116	<8 & M	<8 & M	<8 & M	<8 M		
1,4-Dichlorobenzene	<5 µg/kg	TM116	<5 & M	<5 & M	<5 & M	<5 M		
n-Butylbenzene	<11 µg/kg	TM116	<11 &	<11 &	<11 &	<11 M		
1,2-Dichlorobenzene	<10 µg/kg	TM116	<10 & M	<10 & M	<10 & M	<10 M		
1,2-Dibromo-3-chloropropane	<14 µg/kg	TM116	<14 & M	<14 & M	<14 & M	<14 M		
Tert-amyl methyl ether	<10 µg/kg	TM116	<10 & #	<10 & #	<10 & #	<10 #		
1,2,4-Trichlorobenzene	<20 µg/kg	TM116	<20 &	<20 &	<20 &	<20 M		
Hexachlorobutadiene	<20 µg/kg	TM116	<20 &	<20 &	<20 &	<20 M		
Naphthalene	<13 µg/kg	TM116	104 & M	<13 & M	<13 & M	<13 M		





# CERTIFICATE OF ANALYSIS

Validated

<b>SDG:</b>	170427-108	<b>Client Reference:</b>	9Y0074	<b>Report Number:</b>	408428
<b>Location:</b>	Cole Green Inert Landfill	<b>Order Number:</b>		<b>Superseded Report:</b>	

## Asbestos Identification - Soil

		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	TBH01 2.00 SOLID 25/04/2017 00:00:00 08/05/2017 10:50:02 170427-108 15410315 TM048	10/05/17	Christian Hallam	Loose fibres in soil	Not Detected (#)	<b>Detected (#)</b>	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	TTP01 1.00 SOLID 25/04/2017 00:00:00 09/05/2017 10:02:37 170427-108 15410310 TM048	10/05/17	Lauren Sargeant	-	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	TTP02 1.00 SOLID 25/04/2017 00:00:00 08/05/2017 10:54:30 170427-108 15410318 TM048	10/05/17	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TTP04 0.50 SOLID 25/04/2017 00:00:00 09/05/2017 14:42:05 170427-108 15410324 TM048	11/05/17	Martin Cotterell	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



**CERTIFICATE OF ANALYSIS**

Validated

SDG: 170427-108  
Location: Cole Green Inert Landfill

Client Reference: 9Y0074  
Order Number:

Report Number: 408428  
Superseded Report:

**CEN 2:1 SINGLE STAGE LEACHATE TEST**

**CEN ANALYTICAL RESULTS**

**REF : BS EN 12457/1**

<b>Client Reference</b>		<b>Site Location</b>	Cole Green Inert Landfill
<b>Mass Sample taken (kg)</b>	0.199	<b>Natural Moisture Content (%)</b>	13.6
<b>Mass of dry sample (kg)</b>	0.175	<b>Dry Matter Content (%)</b>	88
<b>Particle Size &lt;4mm</b>	>95%		

<b>Case</b>	
<b>SDG</b>	170427-108
<b>Lab Sample Number(s)</b>	15410310
<b>Sampled Date</b>	25-Apr-2017
<b>Customer Sample Ref.</b>	TTP01
<b>Depth (m)</b>	1.00

**Solid Waste Analysis**

Total Organic Carbon (%)	0.236
Loss on Ignition (%)	-
Sum of BTEX (mg/kg)	<0.024
Sum of 7 PCBs (mg/kg)	<0.021
Mineral Oil (mg/kg)	-
PAH Sum of 17 (mg/kg)	-
pH (pH Units)	8.26
ANC to pH 6 (mol/kg)	-
ANC to pH 4 (mol/kg)	-


Eluate Analysis	Conc <sup>n</sup> in 2:1 eluate (mg/l)		2:1 conc <sup>n</sup> 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	<0.00051	<0.00051	<0.00102	<0.00102	0.5	2	25
Barium	0.0128	<0.0002	0.0256	<0.0004	20	100	300
Cadmium	<0.00008	<0.00008	<0.00016	<0.00016	0.04	1	5
Chromium	0.00171	<0.0012	0.00342	<0.0024	0.5	10	70
Copper	0.00144	<0.00085	0.00288	<0.0017	2	50	100
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.00002	<0.00002	0.01	0.2	2
Molybdenum	-	-	-	-	0.5	10	30
Nickel	<0.00044	<0.00044	<0.00088	<0.00088	0.4	10	40
Lead	<0.0001	<0.0001	<0.0002	<0.0002	0.5	10	50
Antimony	-	-	-	-	0.06	0.7	5
Selenium	<0.00081	<0.00081	<0.00162	<0.00162	0.1	0.5	7
Zinc	<0.0013	<0.0013	<0.0026	<0.0026	4	50	200
Chloride	-	-	-	-	800	15000	25000
Fluoride	-	-	-	-	10	150	500
Sulphate (soluble)	-	-	-	-	1000	20000	50000
Total Dissolved Solids	-	-	-	-	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.032	<0.032	1	-	-
Dissolved Organic Carbon	-	-	-	-	500	800	1000

**Leach Test Information**

Date Prepared	10-May-2017
pH (pH Units)	8.01
Conductivity (µS/cm)	224.00
Temperature (°C)	14.90
Volume Leachant (Litres)	0.326
Volume of Eluate VE1 (Litres)	

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  
 13/05/2017 05:01:42



# CERTIFICATE OF ANALYSIS

Validated

SDG: 170427-108  
Location: Cole Green Inert Landfill

Client Reference: 9Y0074  
Order Number:

Report Number: 408428  
Superseded Report:

## CEN 2:1 SINGLE STAGE LEACHATE TEST

### CEN ANALYTICAL RESULTS

REF : BS EN 12457/1

<b>Client Reference</b>		<b>Site Location</b>	Cole Green Inert Landfill
<b>Mass Sample taken (kg)</b>	0.199	<b>Natural Moisture Content (%)</b>	13.6
<b>Mass of dry sample (kg)</b>	0.175	<b>Dry Matter Content (%)</b>	88
<b>Particle Size &lt;4mm</b>	>95%		

<b>Case</b>	
<b>SDG</b>	170427-108
<b>Lab Sample Number(s)</b>	15410310
<b>Sampled Date</b>	25-Apr-2017
<b>Customer Sample Ref.</b>	TTP01
<b>Depth (m)</b>	1.00

### Solid Waste Analysis

Total Organic Carbon (%)	0.236
Loss on Ignition (%)	-
Sum of BTEX (mg/kg)	<0.024
Sum of 7 PCBs (mg/kg)	<0.021
Mineral Oil (mg/kg)	-
PAH Sum of 17 (mg/kg)	-
pH (pH Units)	8.26
ANC to pH 6 (mol/kg)	-
ANC to pH 4 (mol/kg)	-

Eluate Analysis	Conc <sup>n</sup> in 2:1 eluate (mg/l)		2:1 conc <sup>n</sup> 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	
Aliphatics >C12-C16	<0.01	<0.01	<0.02	<0.02	-
Aliphatics >C16-C21	<0.01	<0.01	<0.02	<0.02	-
Aliphatics >C21-C35	<0.01	<0.01	<0.02	<0.02	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.02	<0.02	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.02	<0.02	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.02	<0.02	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.02	<0.02	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.02	<0.02	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.02	<0.02	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.02	<0.02	-
Hexavalent Chromium	<0.03	<0.03	<0.06	<0.06	-
pH Value of Filtered Water	8.2	<0.001	16	<0.002	-
Naphthalene (diss.filt)	<0.0001	<0.0001	<0.0002	<0.0002	-
Acenaphthene (diss.filt)	<0.000015	<0.000015	<0.00003	<0.00003	-
Phenol by HPLC (W)	<0.002	<0.002	<0.004	<0.004	-
Acenaphthylene (diss.filt)	<0.000011	<0.000011	<0.000022	<0.000022	-
Beryllium	<0.0001	<0.0001	<0.0002	<0.0002	-
Cresols by HPLC (W)	<0.006	<0.006	<0.012	<0.012	-
Fluoranthene (diss.filt)	<0.000017	<0.000017	<0.000034	<0.000034	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.016	<0.016	-
Anthracene (diss.filt)	<0.000015	<0.000015	<0.00003	<0.00003	-
Boron	0.0655	<0.005	0.131	<0.01	-

### Leach Test Information

Date Prepared	10-May-2017
pH (pH Units)	8.01
Conductivity (µS/cm)	224.00
Temperature (°C)	14.90
Volume Leachant (Litres)	0.326
Volume of Eluate VE1 (Litres)	

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05:01:17 13/05/2017





# CERTIFICATE OF ANALYSIS

Validated

SDG: 170427-108 Client Reference: 9Y0074 Report Number: 408428  
 Location: Cole Green Inert Landfill Order Number: Superseded Report:

## CEN 2:1 SINGLE STAGE LEACHATE TEST

### CEN ANALYTICAL RESULTS

REF : BS EN 12457/1

<b>Client Reference</b>		<b>Site Location</b>	Cole Green Inert Landfill
<b>Mass Sample taken (kg)</b>	0.199	<b>Natural Moisture Content (%)</b>	13.6
<b>Mass of dry sample (kg)</b>	0.175	<b>Dry Matter Content (%)</b>	88
<b>Particle Size &lt;4mm</b>	>95%		

<b>Case</b>	
<b>SDG</b>	170427-108
<b>Lab Sample Number(s)</b>	15410310
<b>Sampled Date</b>	25-Apr-2017
<b>Customer Sample Ref.</b>	TTP01
<b>Depth (m)</b>	1.00

### Solid Waste Analysis

Total Organic Carbon (%)	0.236
Loss on Ignition (%)	-
Sum of BTEX (mg/kg)	<0.024
Sum of 7 PCBs (mg/kg)	<0.021
Mineral Oil (mg/kg)	-
PAH Sum of 17 (mg/kg)	-
pH (pH Units)	8.26
ANC to pH 6 (mol/kg)	-
ANC to pH 4 (mol/kg)	-


Eluate Analysis	Conc <sup>n</sup> in 2:1 eluate (mg/l)		2:1 conc <sup>n</sup> 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	
Phenanthrene (diss.filt)	0.0000371	<0.000022	0.0000742	<0.000044	-
Fluorene (diss.filt)	<0.000014	<0.000014	<0.000028	<0.000028	-
Chrysene (diss.filt)	<0.000013	<0.000013	<0.000026	<0.000026	-
Pyrene (diss.filt)	<0.000015	<0.000015	<0.00003	<0.00003	-
Benzo(a)anthracene (diss.filt)	<0.000017	<0.000017	<0.000034	<0.000034	-
Benzo(b)fluoranthene (diss.filt)	<0.000023	<0.000023	<0.000046	<0.000046	-
Benzo(k)fluoranthene (diss.filt)	<0.000027	<0.000027	<0.000054	<0.000054	-
Benzo(a)pyrene (diss.filt)	<0.000009	<0.000009	<0.000018	<0.000018	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000016	<0.000016	<0.000032	<0.000032	-
Benzo(g,h,i)perylene (diss.filt)	<0.000016	<0.000016	<0.000032	<0.000032	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000014	<0.000014	<0.000028	<0.000028	-
PAH 16 EPA Total by GCMS (diss.filt)	<0.000344	<0.000344	<0.000688	<0.000688	-
Vanadium	<0.0013	<0.0013	<0.0026	<0.0026	-
<b>SVOC MS (W) - Aqueous</b>					
1,2,4-Trichlorobenzene	<0.001	<0.001	<0.002	<0.002	-
1,2-Dichlorobenzene	<0.001	<0.001	<0.002	<0.002	-
1,3-Dichlorobenzene	<0.001	<0.001	<0.002	<0.002	-
1,4-Dichlorobenzene	<0.001	<0.001	<0.002	<0.002	-
2,4,5-Trichlorophenol	<0.001	<0.001	<0.002	<0.002	-
2,4,6-Trichlorophenol	<0.001	<0.001	<0.002	<0.002	-
2,4-Dichlorophenol	<0.001	<0.001	<0.002	<0.002	-
2,4-Dimethylphenol	<0.001	<0.001	<0.002	<0.002	-
2,4-Dinitrotoluene	<0.001	<0.001	<0.002	<0.002	-

### Leach Test Information

Date Prepared	10-May-2017
pH (pH Units)	8.01
Conductivity (µS/cm)	224.00
Temperature (°C)	14.90
Volume Leachant (Litres)	0.326
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable  
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 13/05/2017 05:01:42



**CERTIFICATE OF ANALYSIS**

Validated

SDG: 170427-108 Client Reference: 9Y0074 Report Number: 408428  
 Location: Cole Green Inert Landfill Order Number: Superseded Report:

**CEN 2:1 SINGLE STAGE LEACHATE TEST**

**CEN ANALYTICAL RESULTS**

REF : BS EN 12457/1

<b>Client Reference</b>		<b>Site Location</b>	Cole Green Inert Landfill
<b>Mass Sample taken (kg)</b>	0.199	<b>Natural Moisture Content (%)</b>	13.6
<b>Mass of dry sample (kg)</b>	0.175	<b>Dry Matter Content (%)</b>	88
<b>Particle Size &lt;4mm</b>	>95%		

<b>Case</b>	
<b>SDG</b>	170427-108
<b>Lab Sample Number(s)</b>	15410310
<b>Sampled Date</b>	25-Apr-2017
<b>Customer Sample Ref.</b>	TTP01
<b>Depth (m)</b>	1.00

**Solid Waste Analysis**

Total Organic Carbon (%)	0.236	-	-	-
Loss on Ignition (%)	-	-	-	-
Sum of BTEX (mg/kg)	<0.024	-	-	-
Sum of 7 PCBs (mg/kg)	<0.021	-	-	-
Mineral Oil (mg/kg)	-	-	-	-
PAH Sum of 17 (mg/kg)	-	-	-	-
pH (pH Units)	8.26	-	-	-
ANC to pH 6 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	Conc <sup>n</sup> in 2:1 eluate (mg/l)		2:1 conc <sup>n</sup> 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	
<b>SVOC MS (W) - Aqueous</b>					
2,6-Dinitrotoluene	<0.001	<0.001	<0.002	<0.002	-
2-Chloronaphthalene	<0.001	<0.001	<0.002	<0.002	-
2-Chlorophenol	<0.001	<0.001	<0.002	<0.002	-
2-Methylnaphthalene	<0.001	<0.001	<0.002	<0.002	-
2-Methylphenol	<0.001	<0.001	<0.002	<0.002	-
2-Nitroaniline	<0.001	<0.001	<0.002	<0.002	-
2-Nitrophenol	<0.001	<0.001	<0.002	<0.002	-
3-Nitroaniline	<0.001	<0.001	<0.002	<0.002	-
4-Bromophenylphenylether	<0.001	<0.001	<0.002	<0.002	-
4-Chloro-3-methylphenol	<0.001	<0.001	<0.002	<0.002	-
4-Chloroaniline	<0.001	<0.001	<0.002	<0.002	-
4-Chlorophenylphenylether	<0.001	<0.001	<0.002	<0.002	-
4-Methylphenol	<0.001	<0.001	<0.002	<0.002	-
4-Nitroaniline	<0.001	<0.001	<0.002	<0.002	-
4-Nitrophenol	<0.001	<0.001	<0.002	<0.002	-
Azobenzene	<0.001	<0.001	<0.002	<0.002	-
Bis(2-chloroethyl)ether	<0.001	<0.001	<0.002	<0.002	-
Bis(2-chloroethoxy)methane	<0.001	<0.001	<0.002	<0.002	-
Bis(2-ethylhexyl) phthalate	<0.002	<0.002	<0.004	<0.004	-
Butylbenzyl phthalate	<0.001	<0.001	<0.002	<0.002	-
Carbazole	<0.001	<0.001	<0.002	<0.002	-
Dibenzofuran	<0.001	<0.001	<0.002	<0.002	-

**Leach Test Information**

Date Prepared	10-May-2017
pH (pH Units)	8.01
Conductivity (µS/cm)	224.00
Temperature (°C)	14.90
Volume Leachant (Litres)	0.326
Volume of Eluate VE1 (Litres)	

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 13/05/2017 05:01:42



# CERTIFICATE OF ANALYSIS

Validated

SDG: 170427-108  
Location: Cole Green Inert Landfill

Client Reference: 9Y0074  
Order Number:

Report Number: 408428  
Superseded Report:

## CEN 2:1 SINGLE STAGE LEACHATE TEST

### CEN ANALYTICAL RESULTS

REF : BS EN 12457/1

<b>Client Reference</b>		<b>Site Location</b>	Cole Green Inert Landfill
<b>Mass Sample taken (kg)</b>	0.199	<b>Natural Moisture Content (%)</b>	13.6
<b>Mass of dry sample (kg)</b>	0.175	<b>Dry Matter Content (%)</b>	88
<b>Particle Size &lt;4mm</b>	>95%		

<b>Case</b>	
<b>SDG</b>	170427-108
<b>Lab Sample Number(s)</b>	15410310
<b>Sampled Date</b>	25-Apr-2017
<b>Customer Sample Ref.</b>	TTP01
<b>Depth (m)</b>	1.00

### Solid Waste Analysis

Total Organic Carbon (%)	0.236
Loss on Ignition (%)	-
Sum of BTEX (mg/kg)	<0.024
Sum of 7 PCBs (mg/kg)	<0.021
Mineral Oil (mg/kg)	-
PAH Sum of 17 (mg/kg)	-
pH (pH Units)	8.26
ANC to pH 6 (mol/kg)	-
ANC to pH 4 (mol/kg)	-


Eluate Analysis	Conc <sup>n</sup> in 2:1 eluate (mg/l)		2:1 conc <sup>n</sup> 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	
<b>SVOC MS (W) - Aqueous</b>					
Di-n-butyl phthalate	0.00286	<0.001	0.00572	<0.002	-
Diethyl phthalate	<0.001	<0.001	<0.002	<0.002	-
Dimethyl phthalate	<0.001	<0.001	<0.002	<0.002	-
Di-n-Octyl phthalate	<0.005	<0.005	<0.01	<0.01	-
Hexachlorobenzene	<0.001	<0.001	<0.002	<0.002	-
Hexachlorobutadiene	<0.001	<0.001	<0.002	<0.002	-
Pentachlorophenol	<0.001	<0.001	<0.002	<0.002	-
Phenol	<0.001	<0.001	<0.002	<0.002	-
N-nitrosodi-n-propylamine	<0.001	<0.001	<0.002	<0.002	-
Hexachloroethane	<0.001	<0.001	<0.002	<0.002	-
Nitrobenzene	<0.001	<0.001	<0.002	<0.002	-
Isophorone	<0.001	<0.001	<0.002	<0.002	-
Hexachlorocyclopentadiene	<0.001	<0.001	<0.002	<0.002	-
<b>TPH CWG (W)</b>					
Surrogate Recovery	-	-	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.1	<0.1	-
Aliphatics C5-C6	<0.01	<0.01	<0.02	<0.02	-
Aliphatics >C6-C8	<0.01	<0.01	<0.02	<0.02	-
Aliphatics >C8-C10	<0.01	<0.01	<0.02	<0.02	-
Aliphatics >C10-C12	<0.01	<0.01	<0.02	<0.02	-
Aromatics C6-C7	<0.01	<0.01	<0.02	<0.02	-
Aromatics >C7-C8	<0.01	<0.01	<0.02	<0.02	-
MTBE GC-FID	<0.003	<0.003	<0.006	<0.006	-

### Leach Test Information

Date Prepared	10-May-2017
pH (pH Units)	8.01
Conductivity (µS/cm)	224.00
Temperature (°C)	14.90
Volume Leachant (Litres)	0.326
Volume of Eluate VE1 (Litres)	

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

<b>SDG:</b>	170427-108	<b>Client Reference:</b>	9Y0074	<b>Report Number:</b>	408428
<b>Location:</b>	Cole Green Inert Landfill	<b>Order Number:</b>		<b>Superseded Report:</b>	

## CEN 2:1 SINGLE STAGE LEACHATE TEST

### CEN ANALYTICAL RESULTS

**REF : BS EN 12457/1**

<b>Client Reference</b>		<b>Site Location</b>	Cole Green Inert Landfill
<b>Mass Sample taken (kg)</b>	0.199	<b>Natural Moisture Content (%)</b>	13.6
<b>Mass of dry sample (kg)</b>	0.175	<b>Dry Matter Content (%)</b>	88
<b>Particle Size &lt;4mm</b>	>95%		

<b>Case</b>	
<b>SDG</b>	170427-108
<b>Lab Sample Number(s)</b>	15410310
<b>Sampled Date</b>	25-Apr-2017
<b>Customer Sample Ref.</b>	TTP01
<b>Depth (m)</b>	1.00

#### Solid Waste Analysis

Total Organic Carbon (%)	0.236			
Loss on Ignition (%)	-	-	-	-
Sum of BTEX (mg/kg)	<0.024	-	-	-
Sum of 7 PCBs (mg/kg)	<0.021	-	-	-
Mineral Oil (mg/kg)	-	-	-	-
PAH Sum of 17 (mg/kg)	-	-	-	-
pH (pH Units)	8.26	-	-	-
ANC to pH 6 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	Conc <sup>n</sup> in 2:1 eluate (mg/l)		2:1 conc <sup>n</sup> 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	
<b>TPH CWG (W)</b>					
Aromatics >EC8 -EC10	<0.01	<0.01	<0.02	<0.02	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.02	<0.02	-
Benzene by GC	<0.007	<0.007	<0.014	<0.014	-
Toluene by GC	<0.004	<0.004	<0.008	<0.008	-
Ethylbenzene by GC	<0.005	<0.005	<0.01	<0.01	-
m & p Xylene by GC	<0.008	<0.008	<0.016	<0.016	-
o Xylene by GC	<0.003	<0.003	<0.006	<0.006	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.022	<0.022	-
Sum of BTEX by GC	<0.028	<0.028	<0.056	<0.056	-

#### Leach Test Information

Date Prepared	10-May-2017
pH (pH Units)	8.01
Conductivity (µS/cm)	224.00
Temperature (°C)	14.90
Volume Leachant (Litres)	0.326
Volume of Eluate VE1 (Litres)	

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

<b>SDG:</b> 170427-108	<b>Client Reference:</b> 9Y0074	<b>Report Number:</b> 408428
<b>Location:</b> Cole Green Inert Landfill	<b>Order Number:</b>	<b>Superseded Report:</b>

## CEN 2:1 SINGLE STAGE LEACHATE TEST

### CEN ANALYTICAL RESULTS

**REF : BS EN 12457/1**

<b>Client Reference</b>		<b>Site Location</b>	Cole Green Inert Landfill
<b>Mass Sample taken (kg)</b>	0.227	<b>Natural Moisture Content (%)</b>	29.9
<b>Mass of dry sample (kg)</b>	0.175	<b>Dry Matter Content (%)</b>	77
<b>Particle Size &lt;4mm</b>	>95%		

<b>Case</b>	
<b>SDG</b>	170427-108
<b>Lab Sample Number(s)</b>	15410315
<b>Sampled Date</b>	25-Apr-2017
<b>Customer Sample Ref.</b>	TBH01
<b>Depth (m)</b>	2.00

### Solid Waste Analysis

Total Organic Carbon (%)	1.89
Loss on Ignition (%)	-
Sum of BTEX (mg/kg)	0.103
Sum of 7 PCBs (mg/kg)	0.0357
Mineral Oil (mg/kg)	-
PAH Sum of 17 (mg/kg)	-
pH (pH Units)	7.72
ANC to pH 6 (mol/kg)	-
ANC to pH 4 (mol/kg)	-

-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-

Eluate Analysis	Conc <sup>n</sup> in 2:1 eluate (mg/l)		2:1 conc <sup>n</sup> 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	0.00404	<0.00051	0.00808	<0.00102	0.5	2	25
Barium	0.168	<0.0002	0.336	<0.0004	20	100	300
Cadmium	<0.00008	<0.00008	<0.00016	<0.00016	0.04	1	5
Chromium	<0.0012	<0.0012	<0.0024	<0.0024	0.5	10	70
Copper	<0.00085	<0.00085	<0.0017	<0.0017	2	50	100
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.00002	<0.00002	0.01	0.2	2
Molybdenum	-	-	-	-	0.5	10	30
Nickel	0.0226	<0.00044	0.0452	<0.00088	0.4	10	40
Lead	0.00071	<0.0001	0.00142	<0.0002	0.5	10	50
Antimony	-	-	-	-	0.06	0.7	5
Selenium	0.000963	<0.00081	0.00193	<0.00162	0.1	0.5	7
Zinc	0.168	<0.0013	0.336	<0.0026	4	50	200
Chloride	-	-	-	-	800	15000	25000
Fluoride	-	-	-	-	10	150	500
Sulphate (soluble)	-	-	-	-	1000	20000	50000
Total Dissolved Solids	-	-	-	-	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.032	<0.032	1	-	-
Dissolved Organic Carbon	-	-	-	-	500	800	1000

### Leach Test Information

Date Prepared	10-May-2017
pH (pH Units)	7.66
Conductivity (µS/cm)	2,120.00
Temperature (°C)	14.20
Volume Leachant (Litres)	0.298
Volume of Eluate VE1 (Litres)	

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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# CERTIFICATE OF ANALYSIS

Validated

<b>SDG:</b> 170427-108	<b>Client Reference:</b> 9Y0074	<b>Report Number:</b> 408428
<b>Location:</b> Cole Green Inert Landfill	<b>Order Number:</b>	<b>Superseded Report:</b>

## CEN 2:1 SINGLE STAGE LEACHATE TEST

### CEN ANALYTICAL RESULTS

REF : BS EN 12457/1

<b>Client Reference</b>		<b>Site Location</b>	Cole Green Inert Landfill
<b>Mass Sample taken (kg)</b>	0.227	<b>Natural Moisture Content (%)</b>	29.9
<b>Mass of dry sample (kg)</b>	0.175	<b>Dry Matter Content (%)</b>	77
<b>Particle Size &lt;4mm</b>	>95%		

<b>Case</b>	
<b>SDG</b>	170427-108
<b>Lab Sample Number(s)</b>	15410315
<b>Sampled Date</b>	25-Apr-2017
<b>Customer Sample Ref.</b>	TBH01
<b>Depth (m)</b>	2.00

### Solid Waste Analysis

Total Organic Carbon (%)	1.89
Loss on Ignition (%)	-
Sum of BTEX (mg/kg)	0.103
Sum of 7 PCBs (mg/kg)	0.0357
Mineral Oil (mg/kg)	-
PAH Sum of 17 (mg/kg)	-
pH (pH Units)	7.72
ANC to pH 6 (mol/kg)	-
ANC to pH 4 (mol/kg)	-

Eluate Analysis	Conc <sup>n</sup> in 2:1 eluate (mg/l)		2:1 conc <sup>n</sup> 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	
Aliphatics >C12-C16	<0.01	<0.01	<0.02	<0.02	-
Aliphatics >C16-C21	<0.01	<0.01	<0.02	<0.02	-
Aliphatics >C21-C35	<0.01	<0.01	<0.02	<0.02	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.02	<0.02	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.02	<0.02	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.02	<0.02	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.02	<0.02	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.02	<0.02	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.02	<0.02	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.092	<0.01	0.184	<0.02	-
Hexavalent Chromium	<0.03	<0.03	<0.06	<0.06	-
pH Value of Filtered Water	8	<0.001	16	<0.002	-
Naphthalene (diss.filt)	0.000124	<0.0001	0.000248	<0.0002	-
Acenaphthene (diss.filt)	0.000473	<0.000015	0.000946	<0.00003	-
Phenol by HPLC (W)	<0.002	<0.002	<0.004	<0.004	-
Acenaphthylene (diss.filt)	0.0000395	<0.000011	0.000079	<0.000022	-
Beryllium	<0.0001	<0.0001	<0.0002	<0.0002	-
Cresols by HPLC (W)	<0.006	<0.006	<0.012	<0.012	-
Fluoranthene (diss.filt)	0.000167	<0.000017	0.000334	<0.000034	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.016	<0.016	-
Anthracene (diss.filt)	0.000124	<0.000015	0.000248	<0.00003	-
Boron	0.73	<0.005	1.46	<0.01	-

### Leach Test Information

Date Prepared	10-May-2017
pH (pH Units)	7.66
Conductivity (µS/cm)	2,120.00
Temperature (°C)	14.20
Volume Leachant (Litres)	0.298
Volume of Eluate VE1 (Litres)	

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:	170427-108	Client Reference:	9Y0074	Report Number:	408428
Location:	Cole Green Inert Landfill	Order Number:		Superseded Report:	

## CEN 2:1 SINGLE STAGE LEACHATE TEST

### CEN ANALYTICAL RESULTS

REF : BS EN 12457/1

<b>Client Reference</b>		<b>Site Location</b>	Cole Green Inert Landfill
<b>Mass Sample taken (kg)</b>	0.227	<b>Natural Moisture Content (%)</b>	29.9
<b>Mass of dry sample (kg)</b>	0.175	<b>Dry Matter Content (%)</b>	77
<b>Particle Size &lt;4mm</b>	>95%		

<b>Case</b>	
<b>SDG</b>	170427-108
<b>Lab Sample Number(s)</b>	15410315
<b>Sampled Date</b>	25-Apr-2017
<b>Customer Sample Ref.</b>	TBH01
<b>Depth (m)</b>	2.00

### Solid Waste Analysis

Total Organic Carbon (%)	1.89
Loss on Ignition (%)	-
Sum of BTEX (mg/kg)	0.103
Sum of 7 PCBs (mg/kg)	0.0357
Mineral Oil (mg/kg)	-
PAH Sum of 17 (mg/kg)	-
pH (pH Units)	7.72
ANC to pH 6 (mol/kg)	-
ANC to pH 4 (mol/kg)	-

Eluate Analysis	Conc <sup>n</sup> in 2:1 eluate (mg/l)		2:1 conc <sup>n</sup> 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	
Phenanthrene (diss.filt)	0.000588	<0.000022	0.00118	<0.000044	-
Fluorene (diss.filt)	0.000482	<0.000014	0.000964	<0.000028	-
Chrysene (diss.filt)	<0.000013	<0.000013	<0.000026	<0.000026	-
Pyrene (diss.filt)	0.000096	<0.000015	0.000192	<0.00003	-
Benzo(a)anthracene (diss.filt)	<0.000017	<0.000017	<0.000034	<0.000034	-
Benzo(b)fluoranthene (diss.filt)	<0.000023	<0.000023	<0.000046	<0.000046	-
Benzo(k)fluoranthene (diss.filt)	<0.000027	<0.000027	<0.000054	<0.000054	-
Benzo(a)pyrene (diss.filt)	<0.000009	<0.000009	<0.000018	<0.000018	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000016	<0.000016	<0.000032	<0.000032	-
Benzo(g,h,i)perylene (diss.filt)	<0.000016	<0.000016	<0.000032	<0.000032	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000014	<0.000014	<0.000028	<0.000028	-
PAH 16 EPA Total by GCMS (diss.filt)	0.0021	<0.000344	0.0042	<0.000688	-
Vanadium	<0.0013	<0.0013	<0.0026	<0.0026	-
<b>SVOC MS (W) - Aqueous</b>					
1,2,4-Trichlorobenzene	<0.001	<0.001	<0.002	<0.002	-
1,2-Dichlorobenzene	<0.001	<0.001	<0.002	<0.002	-
1,3-Dichlorobenzene	<0.001	<0.001	<0.002	<0.002	-
1,4-Dichlorobenzene	<0.001	<0.001	<0.002	<0.002	-
2,4,5-Trichlorophenol	<0.001	<0.001	<0.002	<0.002	-
2,4,6-Trichlorophenol	<0.001	<0.001	<0.002	<0.002	-
2,4-Dichlorophenol	<0.001	<0.001	<0.002	<0.002	-
2,4-Dimethylphenol	<0.001	<0.001	<0.002	<0.002	-
2,4-Dinitrotoluene	<0.001	<0.001	<0.002	<0.002	-

### Leach Test Information

Date Prepared	10-May-2017
pH (pH Units)	7.66
Conductivity (µS/cm)	2,120.00
Temperature (°C)	14.20
Volume Leachant (Litres)	0.298
Volume of Eluate VE1 (Litres)	

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:	170427-108	Client Reference:	9Y0074	Report Number:	408428
Location:	Cole Green Inert Landfill	Order Number:		Superseded Report:	

**CEN 2:1 SINGLE STAGE LEACHATE TEST**

**CEN ANALYTICAL RESULTS**

**REF : BS EN 12457/1**

<b>Client Reference</b>		<b>Site Location</b>		Cole Green Inert Landfill
<b>Mass Sample taken (kg)</b>	0.227	<b>Natural Moisture Content (%)</b>		29.9
<b>Mass of dry sample (kg)</b>	0.175	<b>Dry Matter Content (%)</b>		77
<b>Particle Size &lt;4mm</b>	>95%			

<b>Case</b>	
<b>SDG</b>	170427-108
<b>Lab Sample Number(s)</b>	15410315
<b>Sampled Date</b>	25-Apr-2017
<b>Customer Sample Ref.</b>	TBH01
<b>Depth (m)</b>	2.00

**Solid Waste Analysis**

Total Organic Carbon (%)	1.89	-	-	-
Loss on Ignition (%)	-	-	-	-
Sum of BTEX (mg/kg)	0.103	-	-	-
Sum of 7 PCBs (mg/kg)	0.0357	-	-	-
Mineral Oil (mg/kg)	-	-	-	-
PAH Sum of 17 (mg/kg)	-	-	-	-
pH (pH Units)	7.72	-	-	-
ANC to pH 6 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	Conc <sup>n</sup> in 2:1 eluate (mg/l)		2:1 conc <sup>n</sup> 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	
<b>SVOC MS (W) - Aqueous</b>					
2,6-Dinitrotoluene	<0.001	<0.001	<0.002	<0.002	-
2-Chloronaphthalene	<0.001	<0.001	<0.002	<0.002	-
2-Chlorophenol	<0.001	<0.001	<0.002	<0.002	-
2-Methylnaphthalene	<0.001	<0.001	<0.002	<0.002	-
2-Methylphenol	<0.001	<0.001	<0.002	<0.002	-
2-Nitroaniline	<0.001	<0.001	<0.002	<0.002	-
2-Nitrophenol	<0.001	<0.001	<0.002	<0.002	-
3-Nitroaniline	<0.001	<0.001	<0.002	<0.002	-
4-Bromophenylphenylether	<0.001	<0.001	<0.002	<0.002	-
4-Chloro-3-methylphenol	<0.001	<0.001	<0.002	<0.002	-
4-Chloroaniline	<0.001	<0.001	<0.002	<0.002	-
4-Chlorophenylphenylether	<0.001	<0.001	<0.002	<0.002	-
4-Methylphenol	<0.001	<0.001	<0.002	<0.002	-
4-Nitroaniline	<0.001	<0.001	<0.002	<0.002	-
4-Nitrophenol	<0.001	<0.001	<0.002	<0.002	-
Azobenzene	<0.001	<0.001	<0.002	<0.002	-
Bis(2-chloroethyl)ether	<0.001	<0.001	<0.002	<0.002	-
Bis(2-chloroethoxy)methane	<0.001	<0.001	<0.002	<0.002	-
Bis(2-ethylhexyl) phthalate	<0.002	<0.002	<0.004	<0.004	-
Butylbenzyl phthalate	<0.001	<0.001	<0.002	<0.002	-
Carbazole	<0.001	<0.001	<0.002	<0.002	-
Dibenzofuran	<0.001	<0.001	<0.002	<0.002	-

**Leach Test Information**

Date Prepared	10-May-2017
pH (pH Units)	7.66
Conductivity (µS/cm)	2,120.00
Temperature (°C)	14.20
Volume Leachant (Litres)	0.298
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable  
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 13/05/2017 05:01:42





# CERTIFICATE OF ANALYSIS

Validated

SDG:	170427-108	Client Reference:	9Y0074	Report Number:	408428
Location:	Cole Green Inert Landfill	Order Number:		Superseded Report:	

## CEN 2:1 SINGLE STAGE LEACHATE TEST

### CEN ANALYTICAL RESULTS

REF : BS EN 12457/1

<b>Client Reference</b>		<b>Site Location</b>	Cole Green Inert Landfill
<b>Mass Sample taken (kg)</b>	0.227	<b>Natural Moisture Content (%)</b>	29.9
<b>Mass of dry sample (kg)</b>	0.175	<b>Dry Matter Content (%)</b>	77
<b>Particle Size &lt;4mm</b>	>95%		

<b>Case</b>	
<b>SDG</b>	170427-108
<b>Lab Sample Number(s)</b>	15410315
<b>Sampled Date</b>	25-Apr-2017
<b>Customer Sample Ref.</b>	TBH01
<b>Depth (m)</b>	2.00

### Solid Waste Analysis

Total Organic Carbon (%)	1.89
Loss on Ignition (%)	-
Sum of BTEX (mg/kg)	0.103
Sum of 7 PCBs (mg/kg)	0.0357
Mineral Oil (mg/kg)	-
PAH Sum of 17 (mg/kg)	-
pH (pH Units)	7.72
ANC to pH 6 (mol/kg)	-
ANC to pH 4 (mol/kg)	-


Eluate Analysis	Conc <sup>n</sup> in 2:1 eluate (mg/l)		2:1 conc <sup>n</sup> 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	
<b>SVOC MS (W) - Aqueous</b>					
Di-n-butyl phthalate	<0.001	<0.001	<0.002	<0.002	-
Diethyl phthalate	<0.001	<0.001	<0.002	<0.002	-
Dimethyl phthalate	<0.001	<0.001	<0.002	<0.002	-
Di-n-Octyl phthalate	<0.005	<0.005	<0.01	<0.01	-
Hexachlorobenzene	<0.001	<0.001	<0.002	<0.002	-
Hexachlorobutadiene	<0.001	<0.001	<0.002	<0.002	-
Pentachlorophenol	<0.001	<0.001	<0.002	<0.002	-
Phenol	<0.001	<0.001	<0.002	<0.002	-
N-nitrosodi-n-propylamine	<0.001	<0.001	<0.002	<0.002	-
Hexachloroethane	<0.001	<0.001	<0.002	<0.002	-
Nitrobenzene	<0.001	<0.001	<0.002	<0.002	-
Isophorone	<0.001	<0.001	<0.002	<0.002	-
Hexachlorocyclopentadiene	<0.001	<0.001	<0.002	<0.002	-
<b>TPH CWG (W)</b>					
Surrogate Recovery	-	-	-	-	-
GRO TOT (C5-C12)	0.092	<0.05	0.184	<0.1	-
Aliphatics C5-C6	<0.01	<0.01	<0.02	<0.02	-
Aliphatics >C6-C8	<0.01	<0.01	<0.02	<0.02	-
Aliphatics >C8-C10	0.021	<0.01	0.042	<0.02	-
Aliphatics >C10-C12	0.023	<0.01	0.046	<0.02	-
Aromatics C6-C7	<0.01	<0.01	<0.02	<0.02	-
Aromatics >C7-C8	<0.01	<0.01	<0.02	<0.02	-
MTBE GC-FID	<0.003	<0.003	<0.006	<0.006	-

### Leach Test Information

Date Prepared	10-May-2017
pH (pH Units)	7.66
Conductivity (µS/cm)	2,120.00
Temperature (°C)	14.20
Volume Leachant (Litres)	0.298
Volume of Eluate VE1 (Litres)	

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  
 13/05/2017 05:01:42



# CERTIFICATE OF ANALYSIS

Validated

SDG:	170427-108	Client Reference:	9Y0074	Report Number:	408428
Location:	Cole Green Inert Landfill	Order Number:		Superseded Report:	

## CEN 2:1 SINGLE STAGE LEACHATE TEST

### CEN ANALYTICAL RESULTS

REF : BS EN 12457/1

<b>Client Reference</b>		<b>Site Location</b>	Cole Green Inert Landfill
<b>Mass Sample taken (kg)</b>	0.227	<b>Natural Moisture Content (%)</b>	29.9
<b>Mass of dry sample (kg)</b>	0.175	<b>Dry Matter Content (%)</b>	77
<b>Particle Size &lt;4mm</b>	>95%		

<b>Case</b>	
<b>SDG</b>	170427-108
<b>Lab Sample Number(s)</b>	15410315
<b>Sampled Date</b>	25-Apr-2017
<b>Customer Sample Ref.</b>	TBH01
<b>Depth (m)</b>	2.00

### Solid Waste Analysis

Total Organic Carbon (%)	1.89
Loss on Ignition (%)	-
Sum of BTEX (mg/kg)	0.103
Sum of 7 PCBs (mg/kg)	0.0357
Mineral Oil (mg/kg)	-
PAH Sum of 17 (mg/kg)	-
pH (pH Units)	7.72
ANC to pH 6 (mol/kg)	-
ANC to pH 4 (mol/kg)	-


Eluate Analysis	Conc <sup>n</sup> in 2:1 eluate (mg/l)		2:1 conc <sup>n</sup> 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	
<b>TPH CWG (W)</b>					
Aromatics >EC8 -EC10	0.022	<0.01	0.044	<0.02	-
Aromatics >EC10-EC12	0.015	<0.01	0.03	<0.02	-
Benzene by GC	<0.007	<0.007	<0.014	<0.014	-
Toluene by GC	<0.004	<0.004	<0.008	<0.008	-
Ethylbenzene by GC	<0.005	<0.005	<0.01	<0.01	-
m & p Xylene by GC	<0.008	<0.008	<0.016	<0.016	-
o Xylene by GC	<0.003	<0.003	<0.006	<0.006	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.022	<0.022	-
Sum of BTEX by GC	<0.028	<0.028	<0.056	<0.056	-

### Leach Test Information

Date Prepared	10-May-2017
pH (pH Units)	7.66
Conductivity (µS/cm)	2,120.00
Temperature (°C)	14.20
Volume Leachant (Litres)	0.298
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable  
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 Mcerts Certification does not apply to leachates

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# CERTIFICATE OF ANALYSIS

Validated

SDG: 170427-108 Client Reference: 9Y0074 Report Number: 408428  
 Location: Cole Green Inert Landfill Order Number: Superseded Report:

## CEN 2:1 SINGLE STAGE LEACHATE TEST

### CEN ANALYTICAL RESULTS

REF : BS EN 12457/1

<b>Client Reference</b>		<b>Site Location</b>	Cole Green Inert Landfill
<b>Mass Sample taken (kg)</b>	0.206	<b>Natural Moisture Content (%)</b>	17.6
<b>Mass of dry sample (kg)</b>	0.175	<b>Dry Matter Content (%)</b>	85
<b>Particle Size &lt;4mm</b>	>95%		

<b>Case</b>	
<b>SDG</b>	170427-108
<b>Lab Sample Number(s)</b>	15410324
<b>Sampled Date</b>	25-Apr-2017
<b>Customer Sample Ref.</b>	TTP04
<b>Depth (m)</b>	0.50

### Solid Waste Analysis

Total Organic Carbon (%)	0.521
Loss on Ignition (%)	-
Sum of BTEX (mg/kg)	<0.024
Sum of 7 PCBs (mg/kg)	<0.021
Mineral Oil (mg/kg)	-
PAH Sum of 17 (mg/kg)	-
pH (pH Units)	8.18
ANC to pH 6 (mol/kg)	-
ANC to pH 4 (mol/kg)	-

-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-

Eluate Analysis	Conc <sup>n</sup> in 2:1 eluate (mg/l)		2:1 conc <sup>n</sup> 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	<0.00051	<0.00051	<0.00102	<0.00102	0.5	2	25
Barium	0.0327	<0.0002	0.0654	<0.0004	20	100	300
Cadmium	<0.00008	<0.00008	<0.00016	<0.00016	0.04	1	5
Chromium	<0.0012	<0.0012	<0.0024	<0.0024	0.5	10	70
Copper	0.00201	<0.00085	0.00402	<0.0017	2	50	100
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.00002	<0.00002	0.01	0.2	2
Molybdenum	-	-	-	-	0.5	10	30
Nickel	0.000675	<0.00044	0.00135	<0.00088	0.4	10	40
Lead	0.000437	<0.0001	0.000874	<0.0002	0.5	10	50
Antimony	-	-	-	-	0.06	0.7	5
Selenium	<0.00081	<0.00081	<0.00162	<0.00162	0.1	0.5	7
Zinc	0.00343	<0.0013	0.00686	<0.0026	4	50	200
Chloride	-	-	-	-	800	15000	25000
Fluoride	-	-	-	-	10	150	500
Sulphate (soluble)	-	-	-	-	1000	20000	50000
Total Dissolved Solids	-	-	-	-	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.032	<0.032	1	-	-
Dissolved Organic Carbon	-	-	-	-	500	800	1000

### Leach Test Information

Date Prepared	10-May-2017
pH (pH Units)	8.17
Conductivity (µS/cm)	201.00
Temperature (°C)	17.60
Volume Leachant (Litres)	0.319
Volume of Eluate VE1 (Litres)	

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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# CERTIFICATE OF ANALYSIS

Validated

<b>SDG:</b>	170427-108	<b>Client Reference:</b>	9Y0074	<b>Report Number:</b>	408428
<b>Location:</b>	Cole Green Inert Landfill	<b>Order Number:</b>		<b>Superseded Report:</b>	

## CEN 2:1 SINGLE STAGE LEACHATE TEST

### CEN ANALYTICAL RESULTS

**REF : BS EN 12457/1**

<b>Client Reference</b>		<b>Site Location</b>	Cole Green Inert Landfill
<b>Mass Sample taken (kg)</b>	0.206	<b>Natural Moisture Content (%)</b>	17.6
<b>Mass of dry sample (kg)</b>	0.175	<b>Dry Matter Content (%)</b>	85
<b>Particle Size &lt;4mm</b>	>95%		

<b>Case</b>	
<b>SDG</b>	170427-108
<b>Lab Sample Number(s)</b>	15410324
<b>Sampled Date</b>	25-Apr-2017
<b>Customer Sample Ref.</b>	TTP04
<b>Depth (m)</b>	0.50

### Solid Waste Analysis

Total Organic Carbon (%)	0.521			
Loss on Ignition (%)	-	-	-	-
Sum of BTEX (mg/kg)	<0.024	-	-	-
Sum of 7 PCBs (mg/kg)	<0.021	-	-	-
Mineral Oil (mg/kg)	-	-	-	-
PAH Sum of 17 (mg/kg)	-	-	-	-
pH (pH Units)	8.18	-	-	-
ANC to pH 6 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	Conc <sup>n</sup> in 2:1 eluate (mg/l)		2:1 conc <sup>n</sup> 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	
Aliphatics >C12-C16	<0.01	<0.01	<0.02	<0.02	-
Aliphatics >C16-C21	<0.01	<0.01	<0.02	<0.02	-
Aliphatics >C21-C35	<0.01	<0.01	<0.02	<0.02	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.02	<0.02	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.02	<0.02	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.02	<0.02	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.02	<0.02	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.02	<0.02	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.02	<0.02	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.02	<0.02	-
Hexavalent Chromium	<0.03	<0.03	<0.06	<0.06	-
pH Value of Filtered Water	8.4	<0.001	17	<0.002	-
Naphthalene (diss.filt)	<0.0001	<0.0001	<0.0002	<0.0002	-
Acenaphthene (diss.filt)	0.0000166	<0.000015	0.0000332	<0.00003	-
Phenol by HPLC (W)	<0.002	<0.002	<0.004	<0.004	-
Acenaphthylene (diss.filt)	<0.000011	<0.000011	<0.000022	<0.000022	-
Beryllium	<0.0001	<0.0001	<0.0002	<0.0002	-
Cresols by HPLC (W)	<0.006	<0.006	<0.012	<0.012	-
Fluoranthene (diss.filt)	0.000116	<0.000017	0.000232	<0.000034	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.016	<0.016	-
Anthracene (diss.filt)	0.0000243	<0.000015	0.0000486	<0.00003	-
Boron	0.0403	<0.005	0.0806	<0.01	-

### Leach Test Information

Date Prepared	10-May-2017
pH (pH Units)	8.17
Conductivity (µS/cm)	201.00
Temperature (°C)	17.60
Volume Leachant (Litres)	0.319
Volume of Eluate VE1 (Litres)	

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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# CERTIFICATE OF ANALYSIS

Validated

SDG:	170427-108	Client Reference:	9Y0074	Report Number:	408428
Location:	Cole Green Inert Landfill	Order Number:		Superseded Report:	

## CEN 2:1 SINGLE STAGE LEACHATE TEST

### CEN ANALYTICAL RESULTS

REF : BS EN 12457/1

<b>Client Reference</b>		<b>Site Location</b>	Cole Green Inert Landfill
<b>Mass Sample taken (kg)</b>	0.206	<b>Natural Moisture Content (%)</b>	17.6
<b>Mass of dry sample (kg)</b>	0.175	<b>Dry Matter Content (%)</b>	85
<b>Particle Size &lt;4mm</b>	>95%		

<b>Case</b>	
<b>SDG</b>	170427-108
<b>Lab Sample Number(s)</b>	15410324
<b>Sampled Date</b>	25-Apr-2017
<b>Customer Sample Ref.</b>	TTP04
<b>Depth (m)</b>	0.50

### Solid Waste Analysis

Total Organic Carbon (%)	0.521
Loss on Ignition (%)	-
Sum of BTEX (mg/kg)	<0.024
Sum of 7 PCBs (mg/kg)	<0.021
Mineral Oil (mg/kg)	-
PAH Sum of 17 (mg/kg)	-
pH (pH Units)	8.18
ANC to pH 6 (mol/kg)	-
ANC to pH 4 (mol/kg)	-

Eluate Analysis	Conc <sup>n</sup> in 2:1 eluate (mg/l)		2:1 conc <sup>n</sup> 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	
Phenanthrene (diss.filt)	0.000149	<0.000022	0.000298	<0.000044	-
Fluorene (diss.filt)	<0.000014	<0.000014	<0.000028	<0.000028	-
Chrysene (diss.filt)	0.0000262	<0.000013	0.0000524	<0.000026	-
Pyrene (diss.filt)	0.0000732	<0.000015	0.000146	<0.00003	-
Benzo(a)anthracene (diss.filt)	0.0000392	<0.000017	0.0000784	<0.000034	-
Benzo(b)fluoranthene (diss.filt)	0.0000387	<0.000023	0.0000774	<0.000046	-
Benzo(k)fluoranthene (diss.filt)	<0.000027	<0.000027	<0.000054	<0.000054	-
Benzo(a)pyrene (diss.filt)	0.0000188	<0.000009	0.0000376	<0.000018	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000016	<0.000016	<0.000032	<0.000032	-
Benzo(g,h,i)perylene (diss.filt)	0.0000255	<0.000016	0.000051	<0.000032	-
Indeno(1,2,3-cd)pyrene (diss.filt)	0.0000186	<0.000014	0.0000372	<0.000028	-
PAH 16 EPA Total by GCMS (diss.filt)	0.000547	<0.000344	0.00109	<0.000688	-
Vanadium	<0.0013	<0.0013	<0.0026	<0.0026	-
<b>SVOC MS (W) - Aqueous</b>					
1,2,4-Trichlorobenzene	<0.001	<0.001	<0.002	<0.002	-
1,2-Dichlorobenzene	<0.001	<0.001	<0.002	<0.002	-
1,3-Dichlorobenzene	<0.001	<0.001	<0.002	<0.002	-
1,4-Dichlorobenzene	<0.001	<0.001	<0.002	<0.002	-
2,4,5-Trichlorophenol	<0.001	<0.001	<0.002	<0.002	-
2,4,6-Trichlorophenol	<0.001	<0.001	<0.002	<0.002	-
2,4-Dichlorophenol	<0.001	<0.001	<0.002	<0.002	-
2,4-Dimethylphenol	<0.001	<0.001	<0.002	<0.002	-
2,4-Dinitrotoluene	<0.001	<0.001	<0.002	<0.002	-

### Leach Test Information

Date Prepared	10-May-2017
pH (pH Units)	8.17
Conductivity (µS/cm)	201.00
Temperature (°C)	17.60
Volume Leachant (Litres)	0.319
Volume of Eluate VE1 (Litres)	

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: 170427-108  
Location: Cole Green Inert Landfill

Client Reference: 9Y0074  
Order Number:

Report Number: 408428  
Superseded Report:

**CEN 2:1 SINGLE STAGE LEACHATE TEST**

**CEN ANALYTICAL RESULTS**

**REF : BS EN 12457/1**

<b>Client Reference</b>		<b>Site Location</b>	Cole Green Inert Landfill
<b>Mass Sample taken (kg)</b>	0.206	<b>Natural Moisture Content (%)</b>	17.6
<b>Mass of dry sample (kg)</b>	0.175	<b>Dry Matter Content (%)</b>	85
<b>Particle Size &lt;4mm</b>	>95%		

<b>Case</b>	
<b>SDG</b>	170427-108
<b>Lab Sample Number(s)</b>	15410324
<b>Sampled Date</b>	25-Apr-2017
<b>Customer Sample Ref.</b>	TTP04
<b>Depth (m)</b>	0.50

**Solid Waste Analysis**

Total Organic Carbon (%)	0.521
Loss on Ignition (%)	-
Sum of BTEX (mg/kg)	<0.024
Sum of 7 PCBs (mg/kg)	<0.021
Mineral Oil (mg/kg)	-
PAH Sum of 17 (mg/kg)	-
pH (pH Units)	8.18
ANC to pH 6 (mol/kg)	-
ANC to pH 4 (mol/kg)	-


Eluate Analysis	Conc <sup>n</sup> in 2:1 eluate (mg/l)		2:1 conc <sup>n</sup> 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	
<b>SVOC MS (W) - Aqueous</b>					
2,6-Dinitrotoluene	<0.001	<0.001	<0.002	<0.002	-
2-Chloronaphthalene	<0.001	<0.001	<0.002	<0.002	-
2-Chlorophenol	<0.001	<0.001	<0.002	<0.002	-
2-Methylnaphthalene	<0.001	<0.001	<0.002	<0.002	-
2-Methylphenol	<0.001	<0.001	<0.002	<0.002	-
2-Nitroaniline	<0.001	<0.001	<0.002	<0.002	-
2-Nitrophenol	<0.001	<0.001	<0.002	<0.002	-
3-Nitroaniline	<0.001	<0.001	<0.002	<0.002	-
4-Bromophenylphenylether	<0.001	<0.001	<0.002	<0.002	-
4-Chloro-3-methylphenol	<0.001	<0.001	<0.002	<0.002	-
4-Chloroaniline	<0.001	<0.001	<0.002	<0.002	-
4-Chlorophenylphenylether	<0.001	<0.001	<0.002	<0.002	-
4-Methylphenol	<0.001	<0.001	<0.002	<0.002	-
4-Nitroaniline	<0.001	<0.001	<0.002	<0.002	-
4-Nitrophenol	<0.001	<0.001	<0.002	<0.002	-
Azobenzene	<0.001	<0.001	<0.002	<0.002	-
Bis(2-chloroethyl)ether	<0.001	<0.001	<0.002	<0.002	-
Bis(2-chloroethoxy)methane	<0.001	<0.001	<0.002	<0.002	-
Bis(2-ethylhexyl) phthalate	<0.002	<0.002	<0.004	<0.004	-
Butylbenzyl phthalate	<0.001	<0.001	<0.002	<0.002	-
Carbazole	<0.001	<0.001	<0.002	<0.002	-
Dibenzofuran	<0.001	<0.001	<0.002	<0.002	-

**Leach Test Information**

Date Prepared	10-May-2017
pH (pH Units)	8.17
Conductivity (µS/cm)	201.00
Temperature (°C)	17.60
Volume Leachant (Litres)	0.319
Volume of Eluate VE1 (Litres)	

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

<b>SDG:</b> 170427-108	<b>Client Reference:</b> 9Y0074	<b>Report Number:</b> 408428
<b>Location:</b> Cole Green Inert Landfill	<b>Order Number:</b>	<b>Superseded Report:</b>

## CEN 2:1 SINGLE STAGE LEACHATE TEST

### CEN ANALYTICAL RESULTS

REF : BS EN 12457/1

<b>Client Reference</b>		<b>Site Location</b>	Cole Green Inert Landfill
<b>Mass Sample taken (kg)</b>	0.206	<b>Natural Moisture Content (%)</b>	17.6
<b>Mass of dry sample (kg)</b>	0.175	<b>Dry Matter Content (%)</b>	85
<b>Particle Size &lt;4mm</b>	>95%		

<b>Case</b>			
<b>SDG</b>	170427-108		
<b>Lab Sample Number(s)</b>	15410324		
<b>Sampled Date</b>	25-Apr-2017		
<b>Customer Sample Ref.</b>	TTP04		
<b>Depth (m)</b>	0.50		

### Solid Waste Analysis

Total Organic Carbon (%)	0.521	-	-	-
Loss on Ignition (%)	-	-	-	-
Sum of BTEX (mg/kg)	<0.024	-	-	-
Sum of 7 PCBs (mg/kg)	<0.021	-	-	-
Mineral Oil (mg/kg)	-	-	-	-
PAH Sum of 17 (mg/kg)	-	-	-	-
pH (pH Units)	8.18	-	-	-
ANC to pH 6 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	Conc <sup>n</sup> in 2:1 eluate (mg/l)		2:1 conc <sup>n</sup> 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	
<b>SVOC MS (W) - Aqueous</b>					
Di-n-butyl phthalate	0.0013	<0.001	0.0026	<0.002	-
Diethyl phthalate	<0.001	<0.001	<0.002	<0.002	-
Dimethyl phthalate	<0.001	<0.001	<0.002	<0.002	-
Di-n-Octyl phthalate	<0.005	<0.005	<0.01	<0.01	-
Hexachlorobenzene	<0.001	<0.001	<0.002	<0.002	-
Hexachlorobutadiene	<0.001	<0.001	<0.002	<0.002	-
Pentachlorophenol	<0.001	<0.001	<0.002	<0.002	-
Phenol	<0.001	<0.001	<0.002	<0.002	-
N-nitrosodi-n-propylamine	<0.001	<0.001	<0.002	<0.002	-
Hexachloroethane	<0.001	<0.001	<0.002	<0.002	-
Nitrobenzene	<0.001	<0.001	<0.002	<0.002	-
Isophorone	<0.001	<0.001	<0.002	<0.002	-
Hexachlorocyclopentadiene	<0.001	<0.001	<0.002	<0.002	-
<b>TPH CWG (W)</b>					
Surrogate Recovery	-	-	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.1	<0.1	-
Aliphatics C5-C6	<0.01	<0.01	<0.02	<0.02	-
Aliphatics >C6-C8	<0.01	<0.01	<0.02	<0.02	-
Aliphatics >C8-C10	<0.01	<0.01	<0.02	<0.02	-
Aliphatics >C10-C12	<0.01	<0.01	<0.02	<0.02	-
Aromatics C6-C7	<0.01	<0.01	<0.02	<0.02	-
Aromatics >C7-C8	<0.01	<0.01	<0.02	<0.02	-
MTBE GC-FID	<0.003	<0.003	<0.006	<0.006	-

### Leach Test Information

Date Prepared	10-May-2017
pH (pH Units)	8.17
Conductivity (µS/cm)	201.00
Temperature (°C)	17.60
Volume Leachant (Litres)	0.319
Volume of Eluate VE1 (Litres)	

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

13/05/2017 05:01:42

05:01:17 13/05/2017



# CERTIFICATE OF ANALYSIS

Validated

<b>SDG:</b>	170427-108	<b>Client Reference:</b>	9Y0074	<b>Report Number:</b>	408428
<b>Location:</b>	Cole Green Inert Landfill	<b>Order Number:</b>		<b>Superseded Report:</b>	

## CEN 2:1 SINGLE STAGE LEACHATE TEST

### CEN ANALYTICAL RESULTS

**REF : BS EN 12457/1**

<b>Client Reference</b>		<b>Site Location</b>	Cole Green Inert Landfill
<b>Mass Sample taken (kg)</b>	0.206	<b>Natural Moisture Content (%)</b>	17.6
<b>Mass of dry sample (kg)</b>	0.175	<b>Dry Matter Content (%)</b>	85
<b>Particle Size &lt;4mm</b>	>95%		

<b>Case</b>	
<b>SDG</b>	170427-108
<b>Lab Sample Number(s)</b>	15410324
<b>Sampled Date</b>	25-Apr-2017
<b>Customer Sample Ref.</b>	TTP04
<b>Depth (m)</b>	0.50

### Solid Waste Analysis

Total Organic Carbon (%)	0.521				
Loss on Ignition (%)	-	-	-	-	-
Sum of BTEX (mg/kg)	<0.024	-	-	-	-
Sum of 7 PCBs (mg/kg)	<0.021	-	-	-	-
Mineral Oil (mg/kg)	-	-	-	-	-
PAH Sum of 17 (mg/kg)	-	-	-	-	-
pH (pH Units)	8.18	-	-	-	-
ANC to pH 6 (mol/kg)	-	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-	-

Eluate Analysis	Conc <sup>n</sup> in 2:1 eluate (mg/l)		2:1 conc <sup>n</sup> 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	
<b>TPH CWG (W)</b>					
Aromatics >EC8 -EC10	<0.01	<0.01	<0.02	<0.02	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.02	<0.02	-
Benzene by GC	<0.007	<0.007	<0.014	<0.014	-
Toluene by GC	<0.004	<0.004	<0.008	<0.008	-
Ethylbenzene by GC	<0.005	<0.005	<0.01	<0.01	-
m & p Xylene by GC	<0.008	<0.008	<0.016	<0.016	-
o Xylene by GC	<0.003	<0.003	<0.006	<0.006	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.022	<0.022	-
Sum of BTEX by GC	<0.028	<0.028	<0.056	<0.056	-

### Leach Test Information

Date Prepared	10-May-2017
pH (pH Units)	8.17
Conductivity (µS/cm)	201.00
Temperature (°C)	17.60
Volume Leachant (Litres)	0.319
Volume of Eluate VE1 (Litres)	

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

13/05/2017 05:01:42

05:01:17 13/05/2017





# CERTIFICATE OF ANALYSIS

Validated

SDG: 170427-108 Client Reference: 9Y0074 Report Number: 408428  
 Location: Cole Green Inert Landfill Order Number: Superseded Report:

## Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample <sup>1</sup>	Surrogate Corrected
ASB_PREP				
PM001		Preparation of Samples for Metals Analysis		
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material		
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step		
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material		
TM061	Method for the Determination of EPH, Massachusetts Dept. of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)		
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC		
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)		
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		
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS		
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		
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID		
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID		
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		
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES		
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry		
TM222	In-House Method	Determination of Hot Water Soluble Boron in Soils (10:1 Water:soil) by IRIS Emission Spectrometer		
TM241	Methods for the Examination of Waters and Associated Materials; Chromium in Raw and Potable Waters and Sewage Effluents 1980.	The Determination of Hexavalent Chromium in Waters and Leachates using the Kone Analyser		
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		

<sup>1</sup> Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.  
 Chemical testing (unless subcontracted) performed at ALS Environmental Hawarden (Method codes TM) or ALS Environmental Aberdeen (Method codes S).



**CERTIFICATE OF ANALYSIS**

Validated

SDG: 170427-108      Client Reference: 9Y0074      Report Number: 408428  
 Location: Cole Green Inert Landfill      Order Number:      Superseded Report:

**Test Completion Dates**

Lab Sample No(s) Customer Sample Ref.	15410315	15410310	15410318	15410324
	TBH01	TTP01	TTP02	TTP04
AGS Ref.				
Depth	2.00	1.00	1.00	0.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Asbestos ID in Solid Samples	10-May-2017	10-May-2017	10-May-2017	11-May-2017
Boron Water Soluble	10-May-2017	11-May-2017	10-May-2017	11-May-2017
CEN 2:1 Leachate (1 Stage)	10-May-2017	10-May-2017		10-May-2017
CEN Readings	11-May-2017	11-May-2017		11-May-2017
Dissolved Metals by ICP-MS	12-May-2017	12-May-2017		12-May-2017
EPH CWG (Aliphatic) Filtered GC (W)	12-May-2017	12-May-2017		12-May-2017
EPH CWG (Aliphatic) GC (S)	11-May-2017	11-May-2017	11-May-2017	11-May-2017
EPH CWG (Aromatic) Filtered GC (W)	12-May-2017	12-May-2017		12-May-2017
EPH CWG (Aromatic) GC (S)	11-May-2017	11-May-2017	11-May-2017	11-May-2017
GRO by GC-FID (S)	11-May-2017	11-May-2017	11-May-2017	
GRO by GC-FID (W)	12-May-2017	12-May-2017		12-May-2017
Hexavalent Chromium (s)	09-May-2017	10-May-2017	09-May-2017	10-May-2017
Hexavalent Chromium (w)	12-May-2017	12-May-2017		12-May-2017
Mercury Dissolved	12-May-2017	12-May-2017		12-May-2017
Metals in solid samples by OES	11-May-2017	11-May-2017	11-May-2017	11-May-2017
PAH in waters by GC-MS (diss.filt)	12-May-2017	12-May-2017		12-May-2017
PCBs by GCMS	11-May-2017	12-May-2017	11-May-2017	12-May-2017
pH	12-May-2017	11-May-2017	11-May-2017	11-May-2017
pH Value of Filtered Water	12-May-2017	12-May-2017		12-May-2017
Phenols by HPLC (S)	10-May-2017	11-May-2017	10-May-2017	11-May-2017
Phenols by HPLC (W)	12-May-2017	12-May-2017		12-May-2017
Sample description	08-May-2017	09-May-2017	08-May-2017	09-May-2017
Semi Volatile Organic Compounds	10-May-2017	12-May-2017	10-May-2017	12-May-2017
SVOC MS (W) - Aqueous	12-May-2017	12-May-2017		12-May-2017
Total Organic Carbon	12-May-2017	12-May-2017	12-May-2017	12-May-2017
TPH CWG Filtered (W)	12-May-2017	12-May-2017		12-May-2017
TPH CWG GC (S)	11-May-2017	11-May-2017	11-May-2017	12-May-2017
VOC MS (S)	11-May-2017	11-May-2017	11-May-2017	12-May-2017



# CERTIFICATE OF ANALYSIS

Validated

SDG: 170427-108  
Location: Cole Green Inert Landfill

Client Reference: 9Y0074  
Order Number:

Report Number: 408428  
Superseded Report:

## Chromatogram

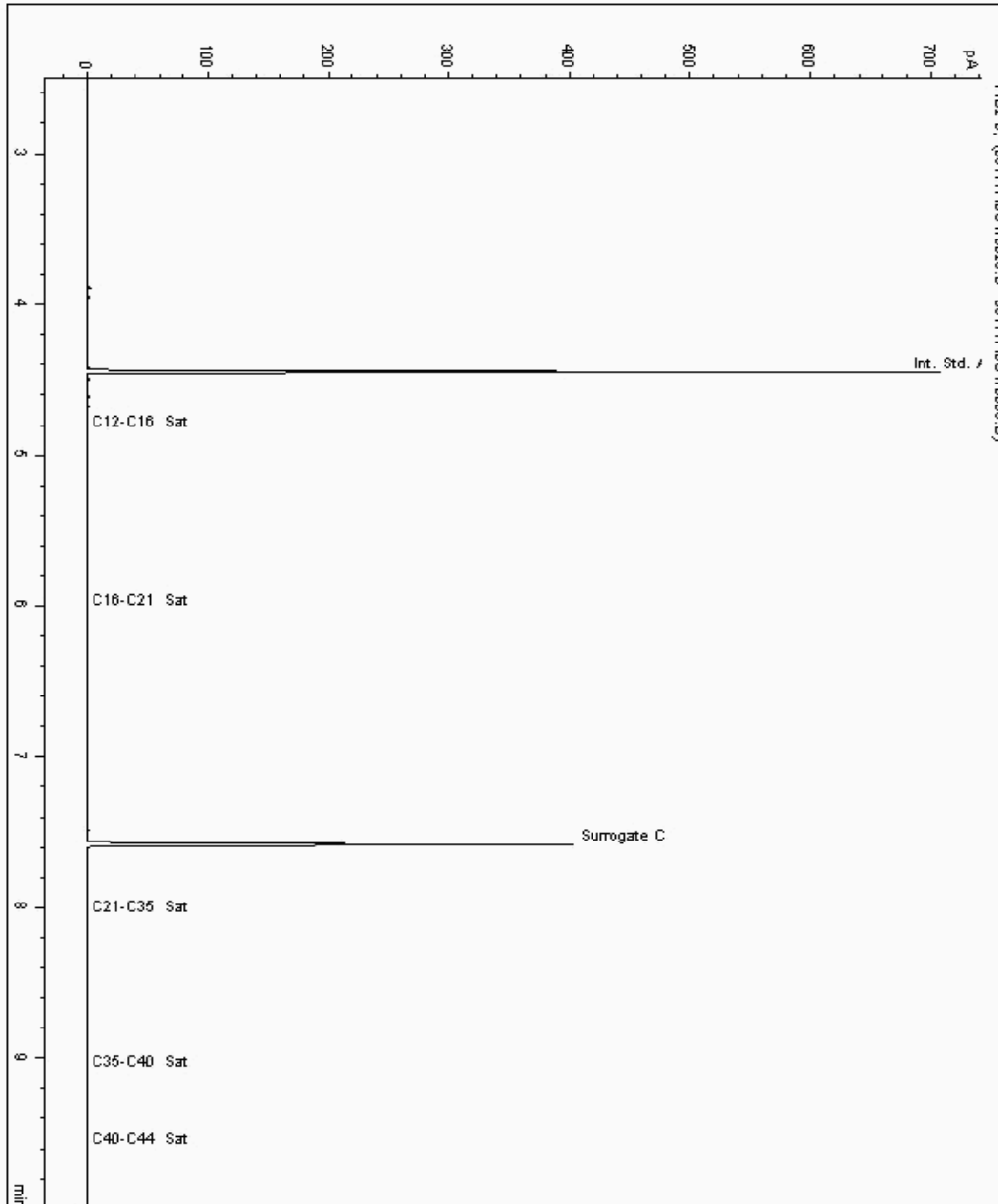
Analysis: EPH CWG (Aliphatic) Filtered GC (W)

Sample No : 15487087  
Sample ID : TBH01

Depth : 2.00

Speciated TPH - SATS ( C12 - C40 )

Sample Identity: 14462941-  
Date Acquired : 12/05/17 11:09:23 PM  
Units : ppb  
Dilution :  
CF : 1  
Multiplier : 0.011





# CERTIFICATE OF ANALYSIS

Validated

SDG: 170427-108  
Location: Cole Green Inert Landfill

Client Reference: 9Y0074  
Order Number:

Report Number: 408428  
Superseded Report:

## Chromatogram

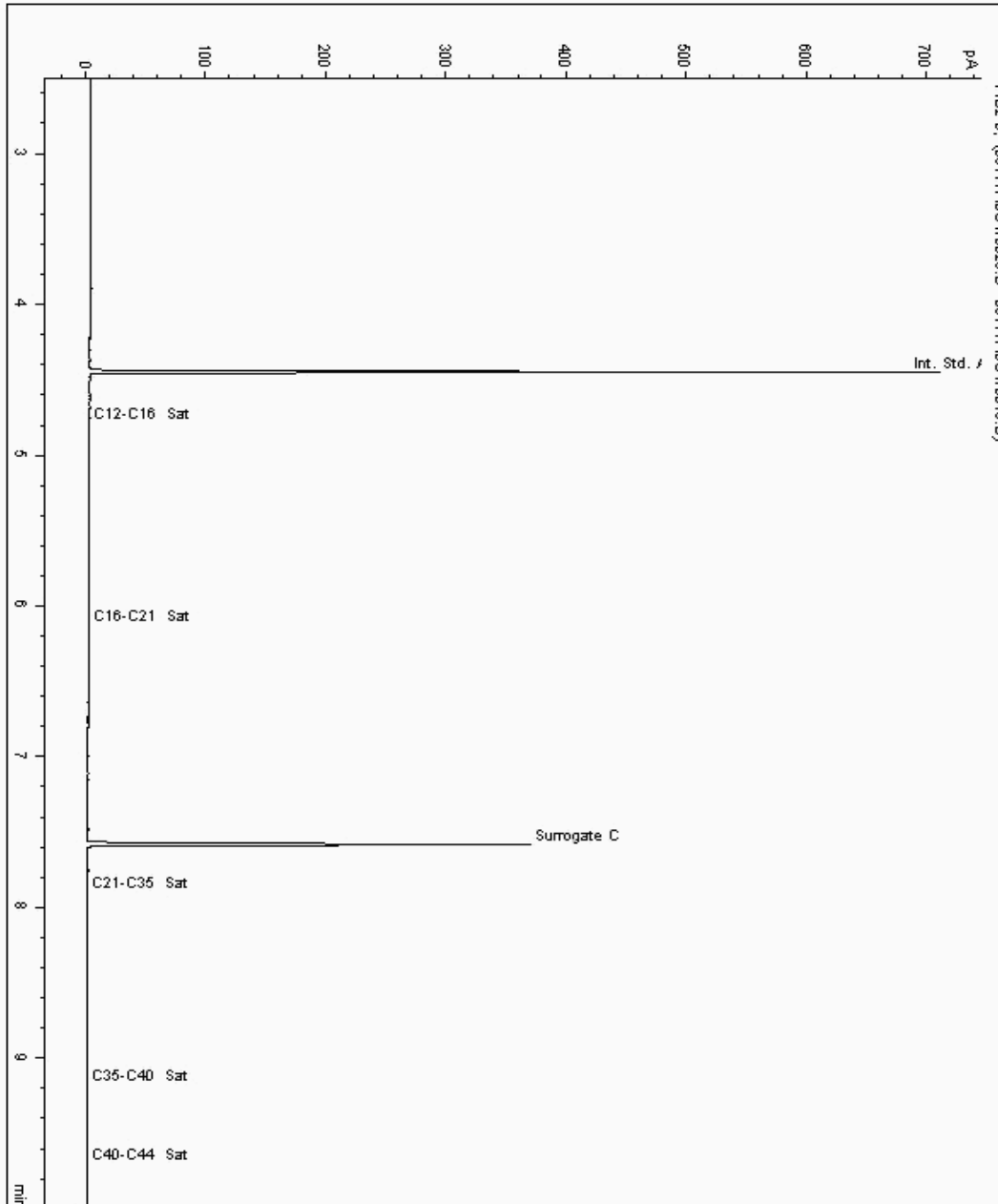
Analysis: EPH CWG (Aliphatic) Filtered GC (W)

Sample No : 15487101  
Sample ID : TTP04

Depth : 0.50

Speciated TPH - SATS ( C12 - C40 )

Sample Identity: 14462972-  
Date Acquired : 12/05/17 11:45:10 PM  
Units : ppb  
Dilution :  
CF : 1  
Multiplier : 0.013





# CERTIFICATE OF ANALYSIS

Validated

SDG: 170427-108  
Location: Cole Green Inert Landfill

Client Reference: 9Y0074  
Order Number:

Report Number: 408428  
Superseded Report:

## Chromatogram

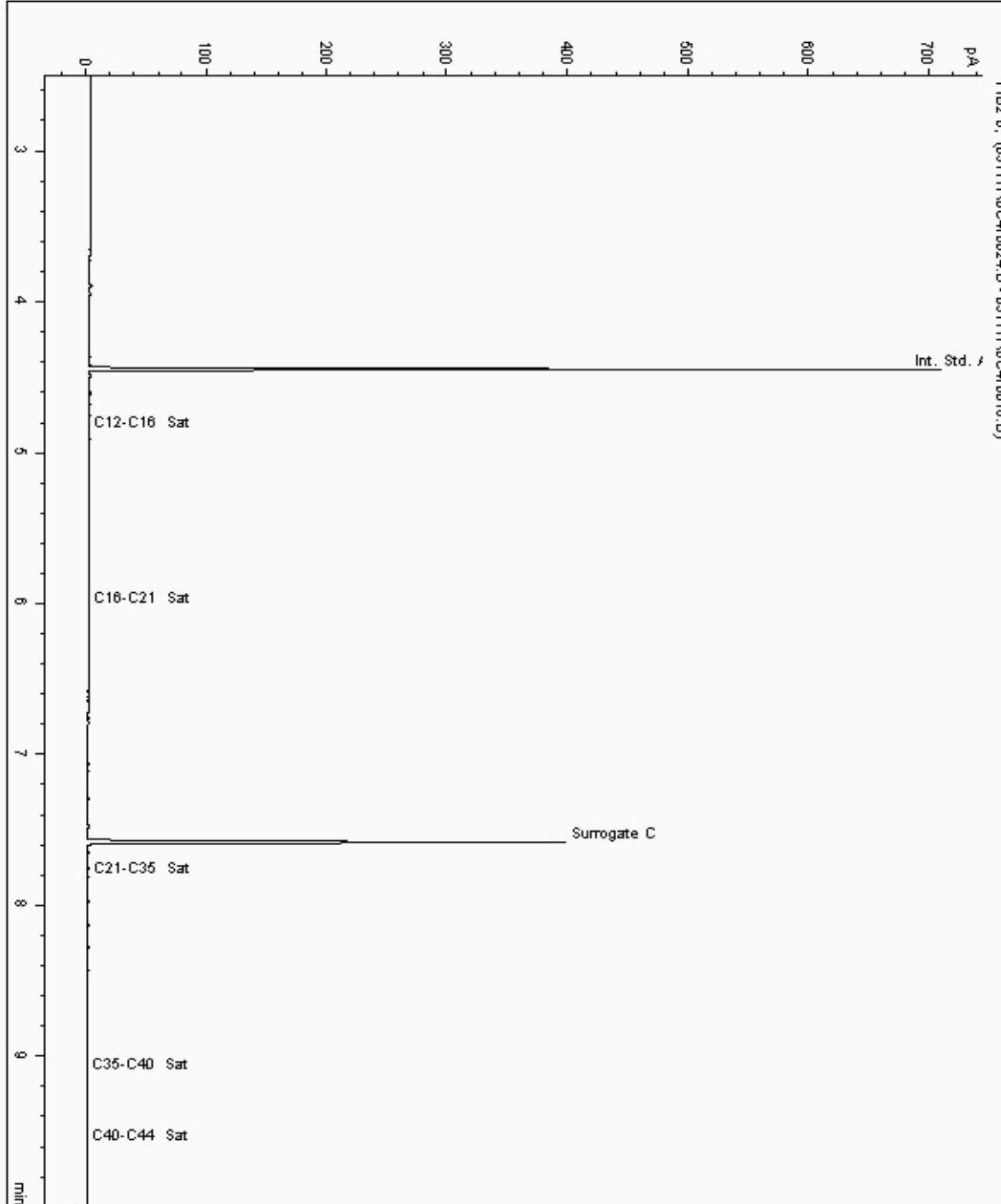
Analysis: EPH CWG (Aliphatic) Filtered GC (W)

Sample No : 15487159  
Sample ID : TTP01

Depth : 1.00

Speciated TPH - SATS ( C12 - C40 )

Sample Identity: 14462955-  
Date Acquired : 12/05/17 11:28:15 PM  
Units : ppb  
Dilution :  
CF : 1  
Multiplier : 0.010





# CERTIFICATE OF ANALYSIS

Validated

SDG: 170427-108  
Location: Cole Green Inert Landfill

Client Reference: 9Y0074  
Order Number:

Report Number: 408428  
Superseded Report:

## Chromatogram

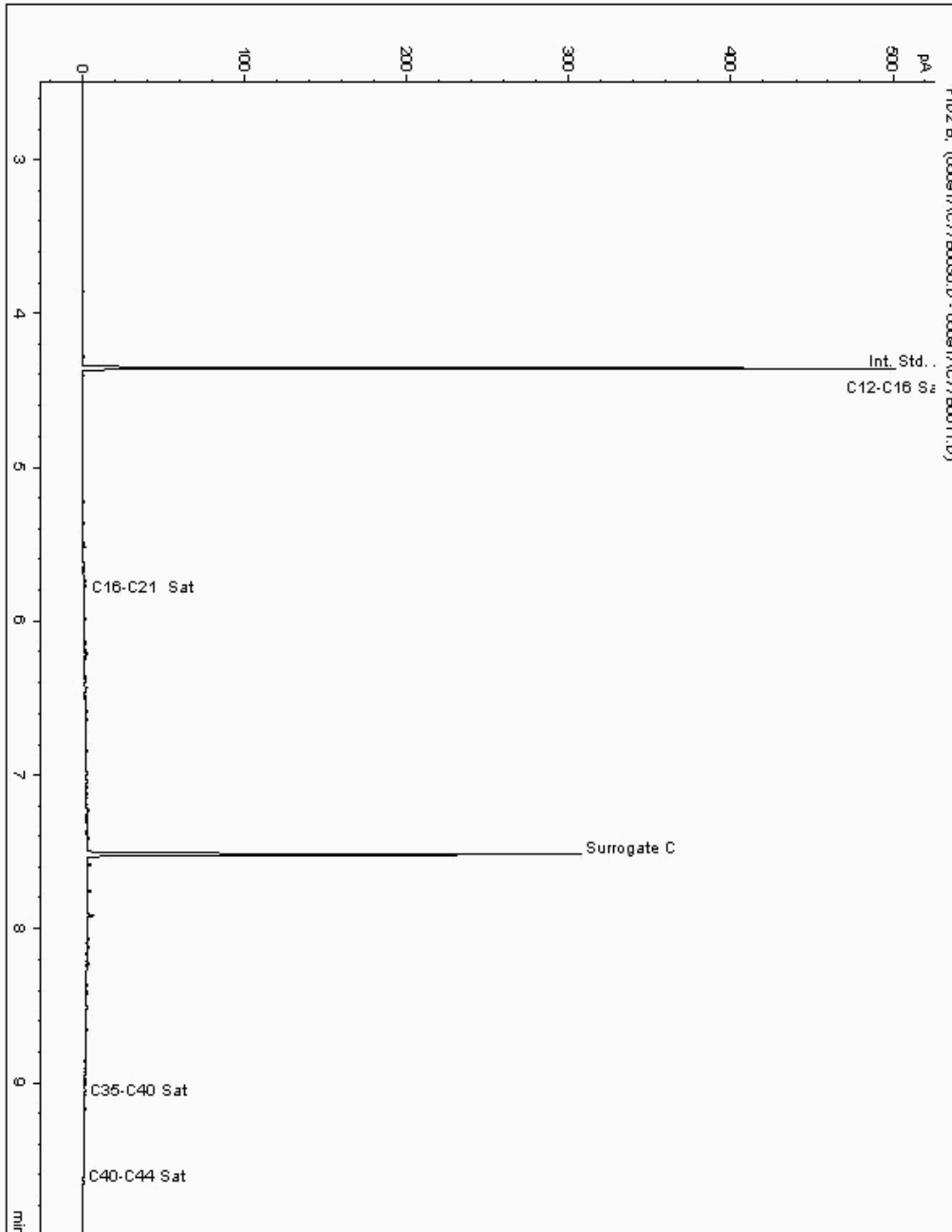
Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 15464994  
Sample ID : TBH01

Depth : 2.00

Alcontrol/Geochem Analytical Services  
Speciated TPH - SATS ( C12 - C40 )

Sample Identity: 14462871-  
Date Acquired : 5/9/2017 8:55:47 PM  
Units : ppb  
Dilution :  
CF : 1  
Multiplier : 1.010





# CERTIFICATE OF ANALYSIS

Validated

SDG: 170427-108  
Location: Cole Green Inert Landfill

Client Reference: 9Y0074  
Order Number:

Report Number: 408428  
Superseded Report:

## Chromatogram

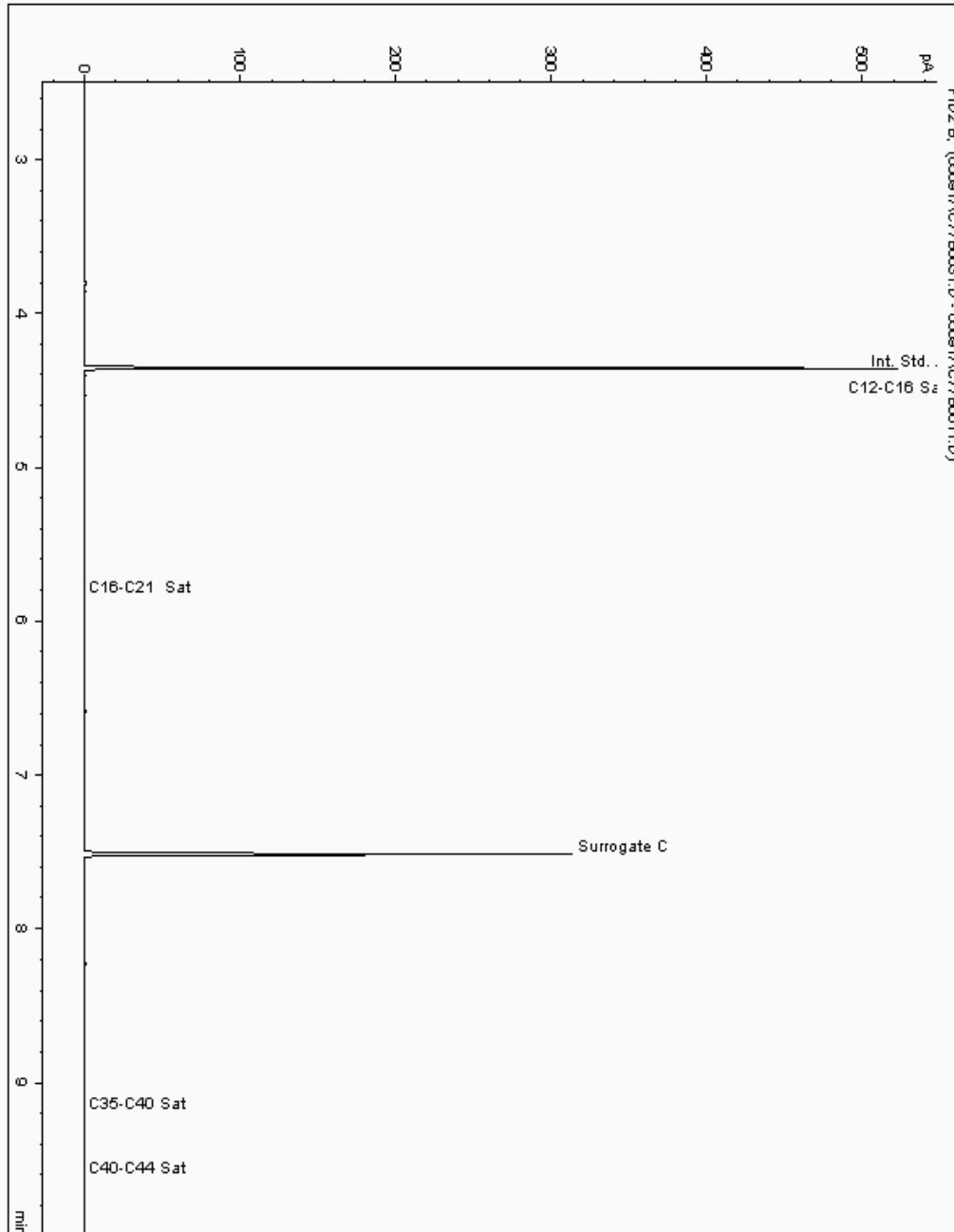
Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 15465117  
Sample ID : TTP02

Depth : 1.00

Alcontrol/Geochem Analytical Services  
Speciated TPH - SATS ( C12 - C40 )

Sample Identity: 14462727-  
Date Acquired : 5/9/2017 9:16:01 PM  
Units : ppb  
Dilution :  
CF : 1  
Multiplier : 0.980





# CERTIFICATE OF ANALYSIS

Validated

SDG: 170427-108  
Location: Cole Green Inert Landfill

Client Reference: 9Y0074  
Order Number:

Report Number: 408428  
Superseded Report:

## Chromatogram

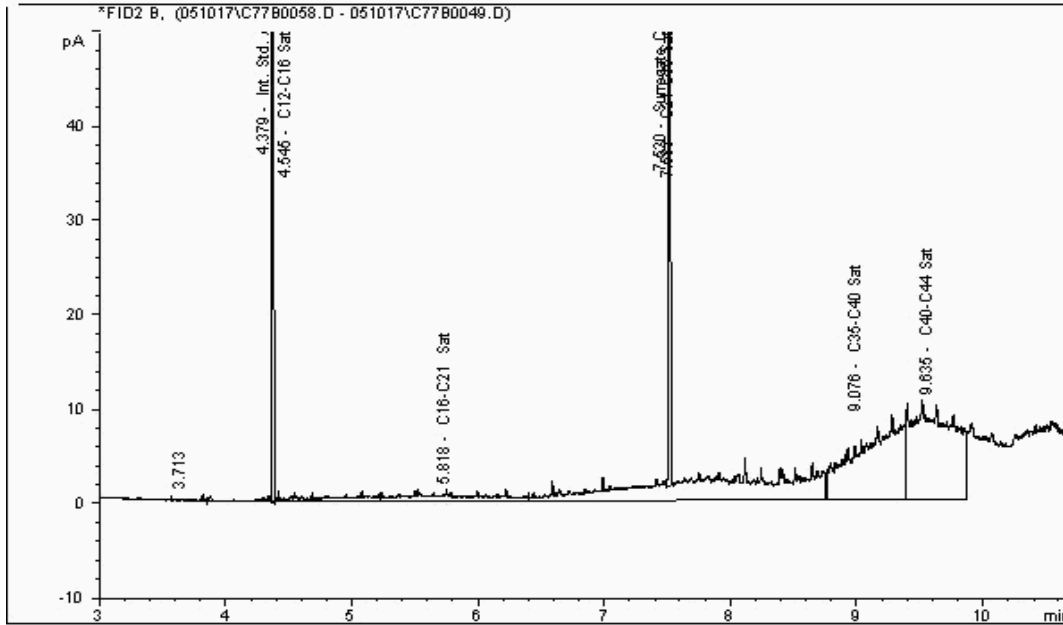
Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 15469456  
Sample ID : TTP01

Depth : 1.00

Speciated TPH - SATS ( C12 - C40 )

Sample Identity: 14462794-  
Date Acquired : 11/05/2017 01:32:01 PM  
Units : ppb  
Dilution:







# CERTIFICATE OF ANALYSIS

Validated

SDG: 170427-108  
Location: Cole Green Inert Landfill

Client Reference: 9Y0074  
Order Number:

Report Number: 408428  
Superseded Report:

## Chromatogram

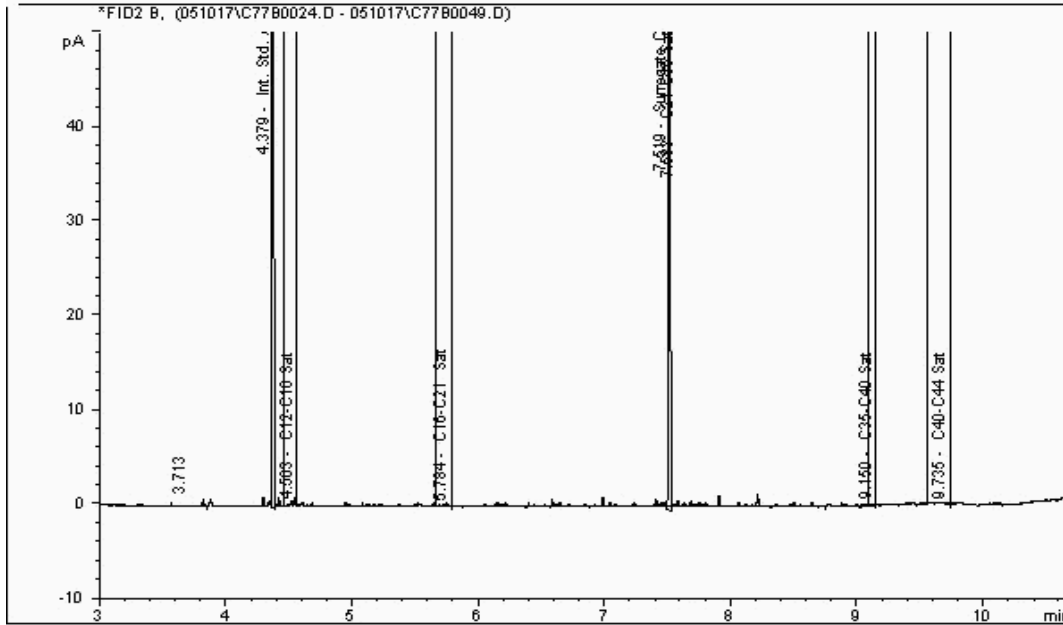
Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 15471597  
Sample ID : TTP04

Depth : 0.50

Speciated TPH - SATS ( C12 - C40 )

Sample Identity: 14462897-  
Date Acquired : 10/05/2017 15:40:06 PM  
Units : ppb  
Dilution:





# CERTIFICATE OF ANALYSIS

Validated

SDG: 170427-108  
Location: Cole Green Inert Landfill

Client Reference: 9Y0074  
Order Number:

Report Number: 408428  
Superseded Report:

## Chromatogram

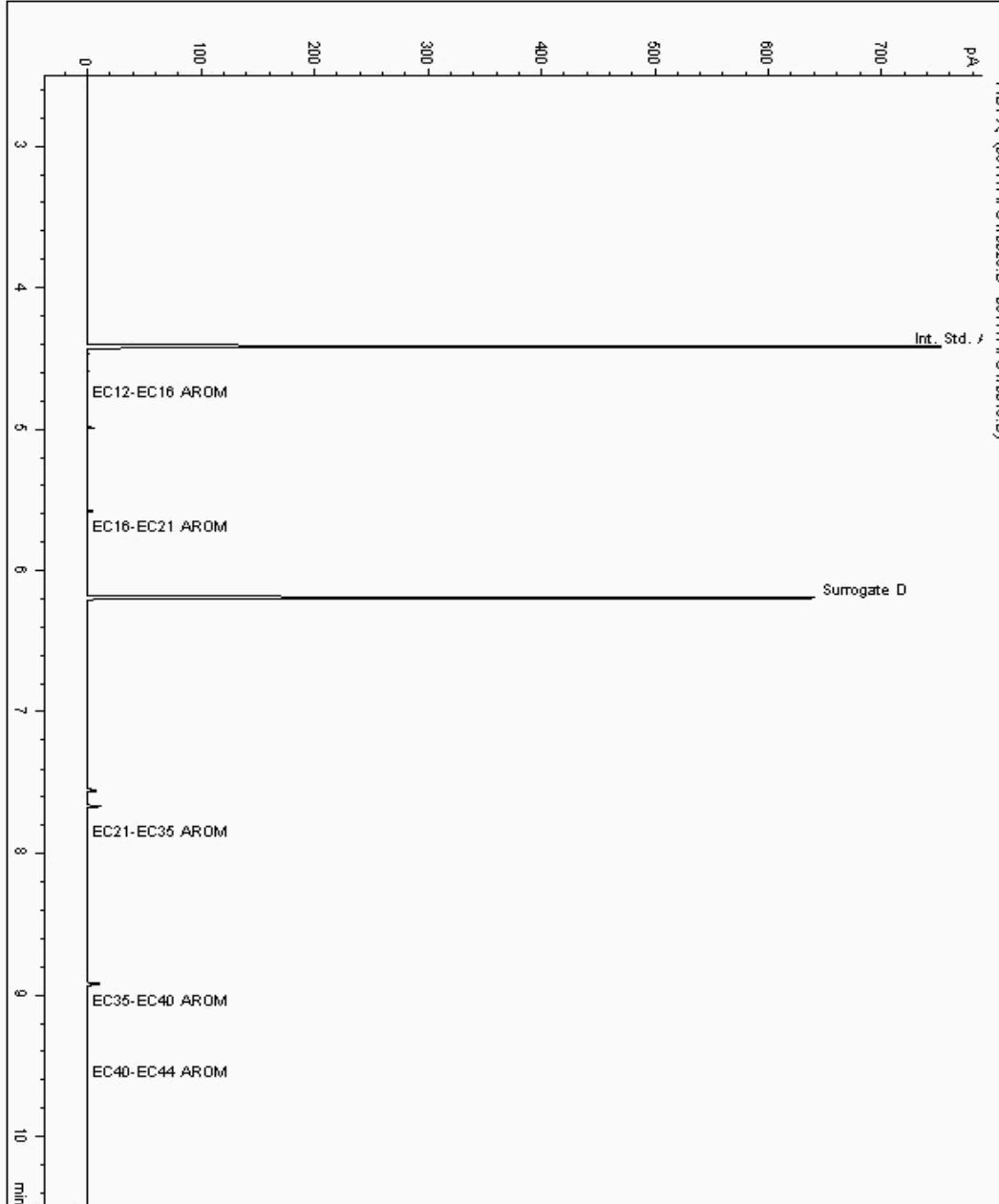
Analysis: EPH CWG (Aromatic) Filtered GC (W)

Sample No : 15487087  
Sample ID : TBH01

Depth : 2.00

Speciated TPH - AROM ( C12 - C40 )

Sample Identity: 14462942-  
Date Acquired : 12/05/17 11:09:23 PM  
Units : ppb  
Dilution :  
CF : 1  
Multiplier : 0.011





# CERTIFICATE OF ANALYSIS

Validated

SDG: 170427-108  
Location: Cole Green Inert Landfill

Client Reference: 9Y0074  
Order Number:

Report Number: 408428  
Superseded Report:

## Chromatogram

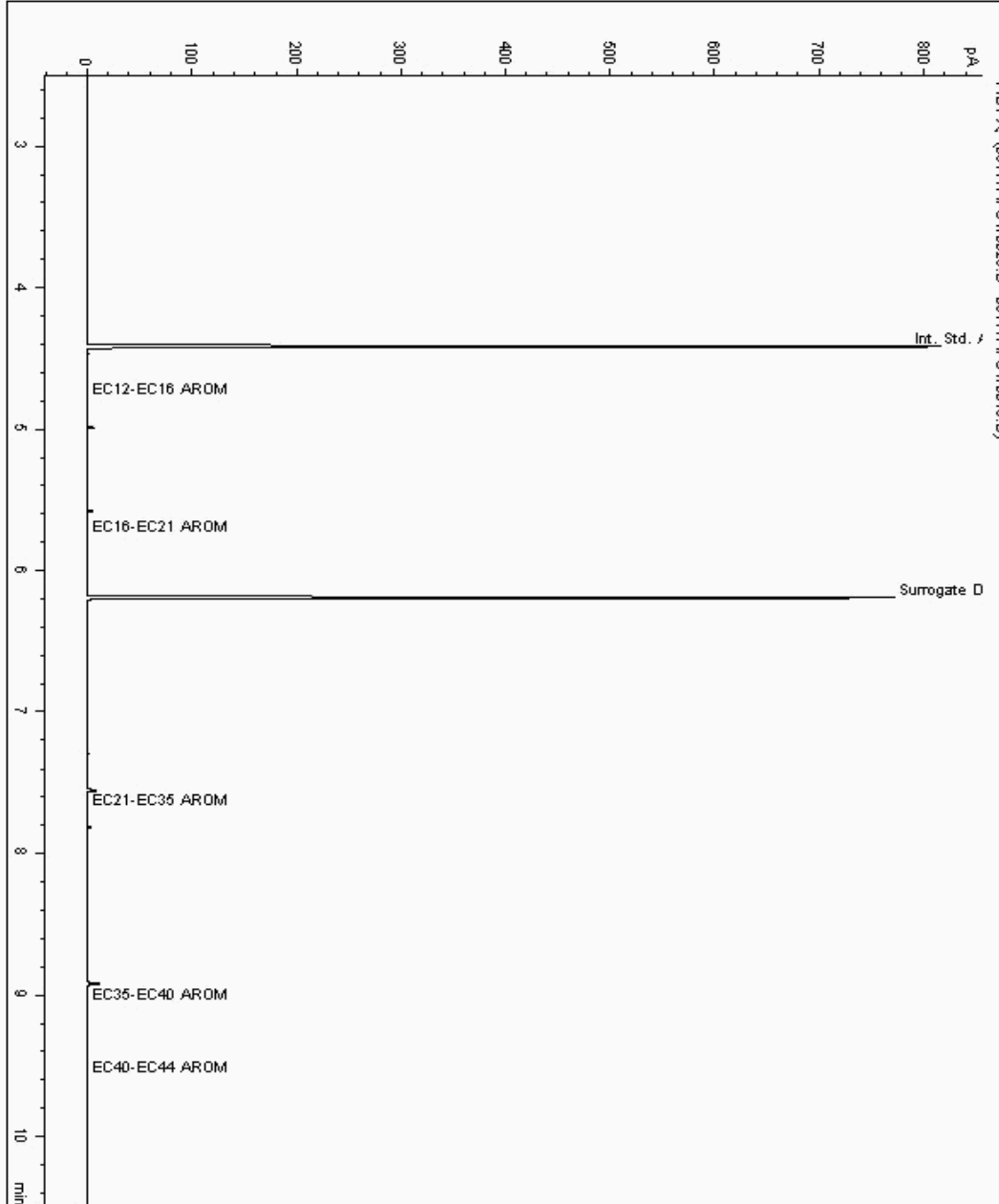
Analysis: EPH CWG (Aromatic) Filtered GC (W)

Sample No : 15487101  
Sample ID : TTP04

Depth : 0.50

Speciated TPH - AROM ( C12 - C40 )

Sample Identity: 14462973-  
Date Acquired : 12/05/17 11:45:10 PM  
Units : ppb  
Dilution :  
CF : 1  
Multiplier : 0.013





# CERTIFICATE OF ANALYSIS

Validated

SDG: 170427-108  
Location: Cole Green Inert Landfill

Client Reference: 9Y0074  
Order Number:

Report Number: 408428  
Superseded Report:

## Chromatogram

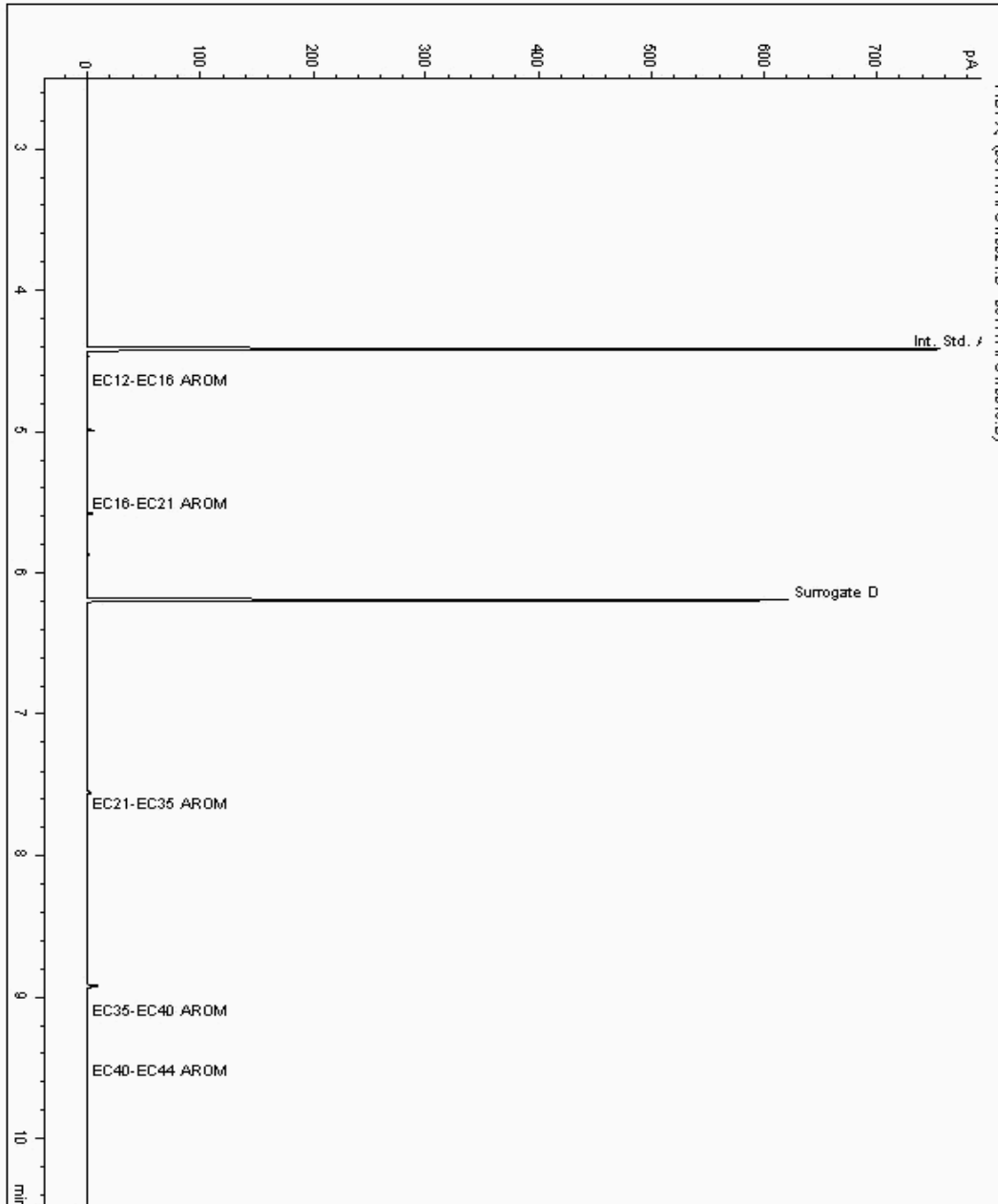
Analysis: EPH CWG (Aromatic) Filtered GC (W)

Sample No : 15487159  
Sample ID : TTP01

Depth : 1.00

Speciated TPH - AROM ( C12 - C40 )

Sample Identity: 14462956-  
Date Acquired : 12/05/17 11:28:15 PM  
Units : ppb  
Dilution :  
CF : 1  
Multiplier : 0.010





# CERTIFICATE OF ANALYSIS

Validated

SDG: 170427-108  
Location: Cole Green Inert Landfill

Client Reference: 9Y0074  
Order Number:

Report Number: 408428  
Superseded Report:

## Chromatogram

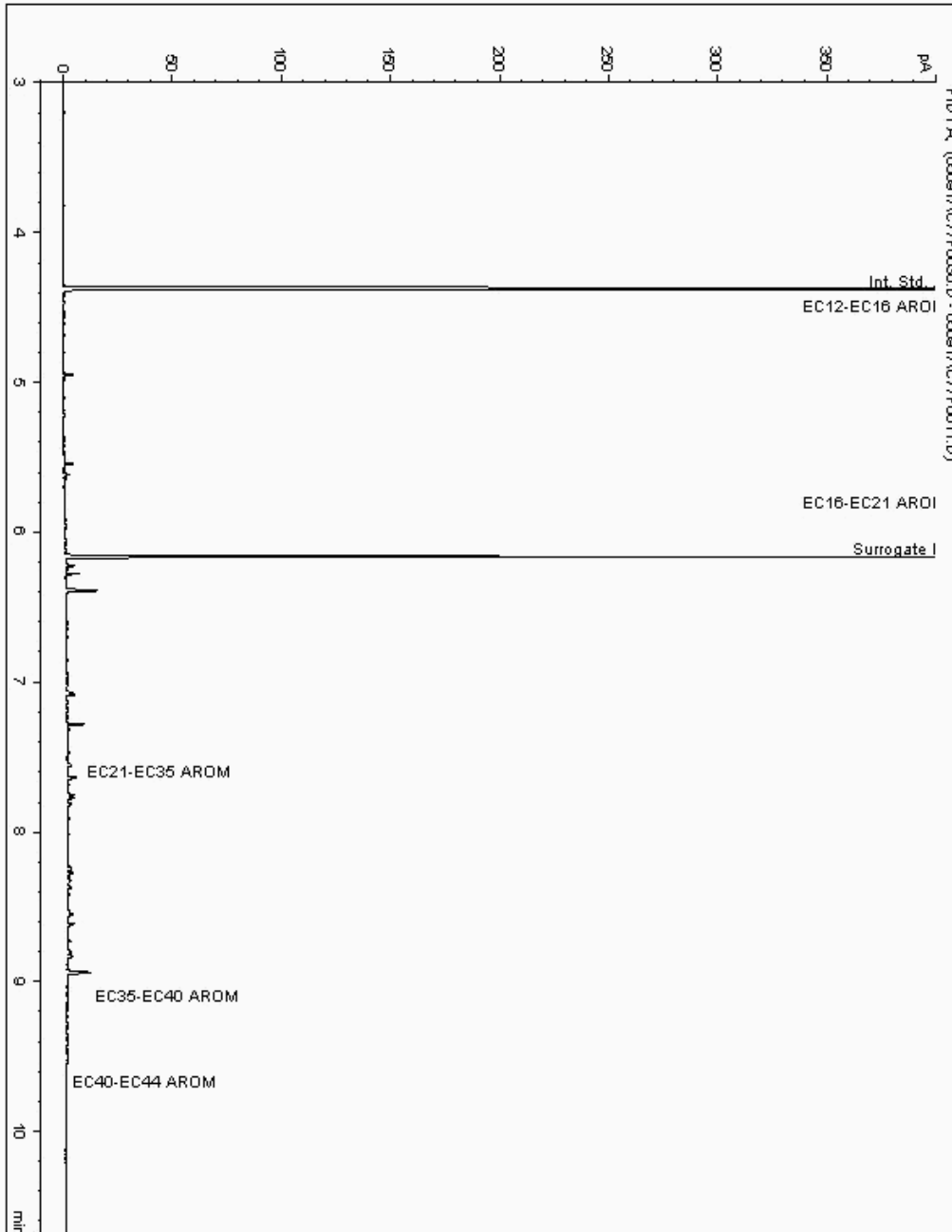
Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 15464994  
Sample ID : TBH01

Depth : 2.00

Speciated TPH - AROM ( C12 - C40 )

Sample Identity: 14462872-  
Date Acquired : 5/9/2017 8:55:47 PM  
Units : ppb  
Dilution:





# CERTIFICATE OF ANALYSIS

Validated

SDG: 170427-108  
Location: Cole Green Inert Landfill

Client Reference: 9Y0074  
Order Number:

Report Number: 408428  
Superseded Report:

## Chromatogram

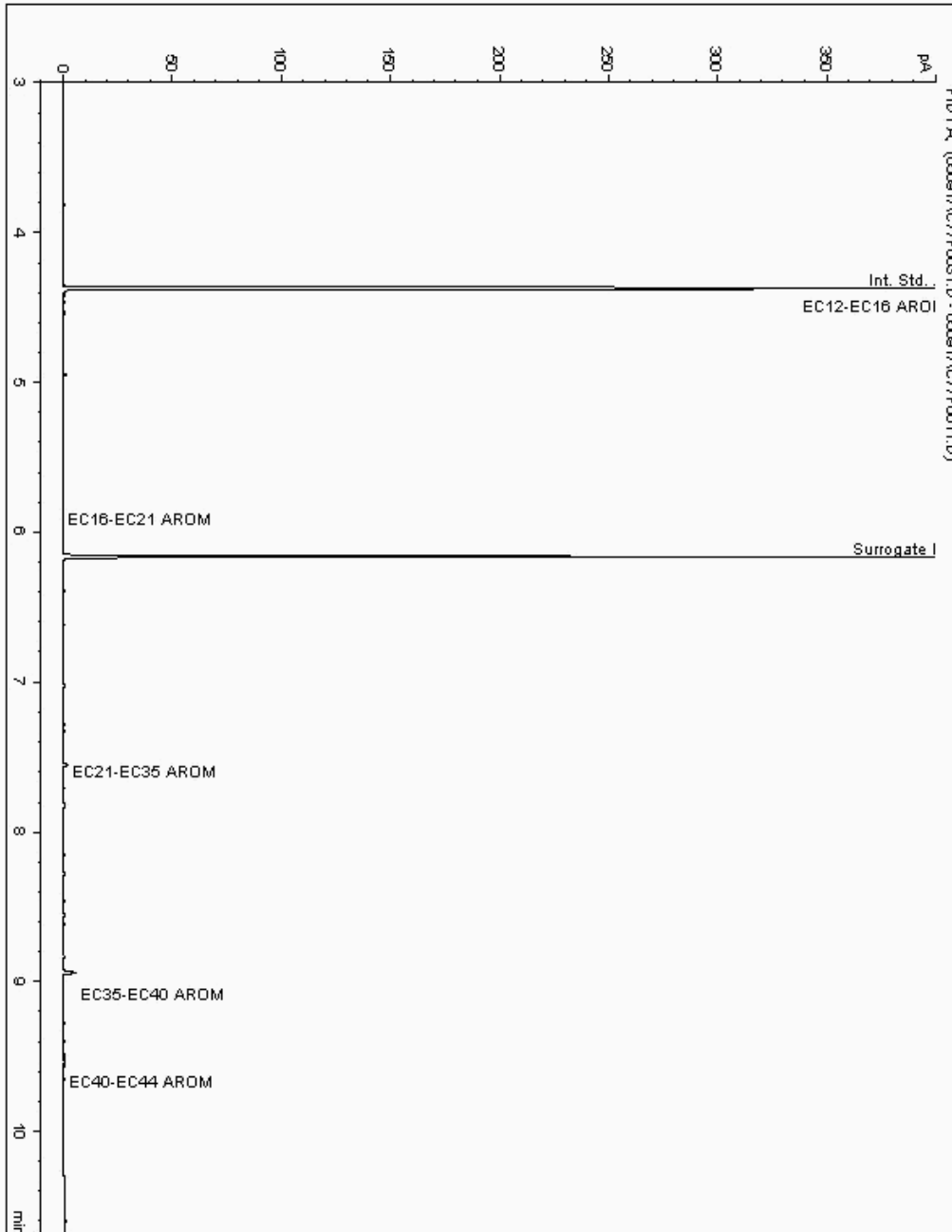
Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 15465117  
Sample ID : TTP02

Depth : 1.00

Speciated TPH - AROM ( C12 - C40 )

Sample Identity: 14462728-  
Date Acquired : 5/9/2017 9:16:01 PM  
Units : ppb  
Dilution:





# CERTIFICATE OF ANALYSIS

Validated

SDG: 170427-108  
Location: Cole Green Inert Landfill

Client Reference: 9Y0074  
Order Number:

Report Number: 408428  
Superseded Report:

## Chromatogram

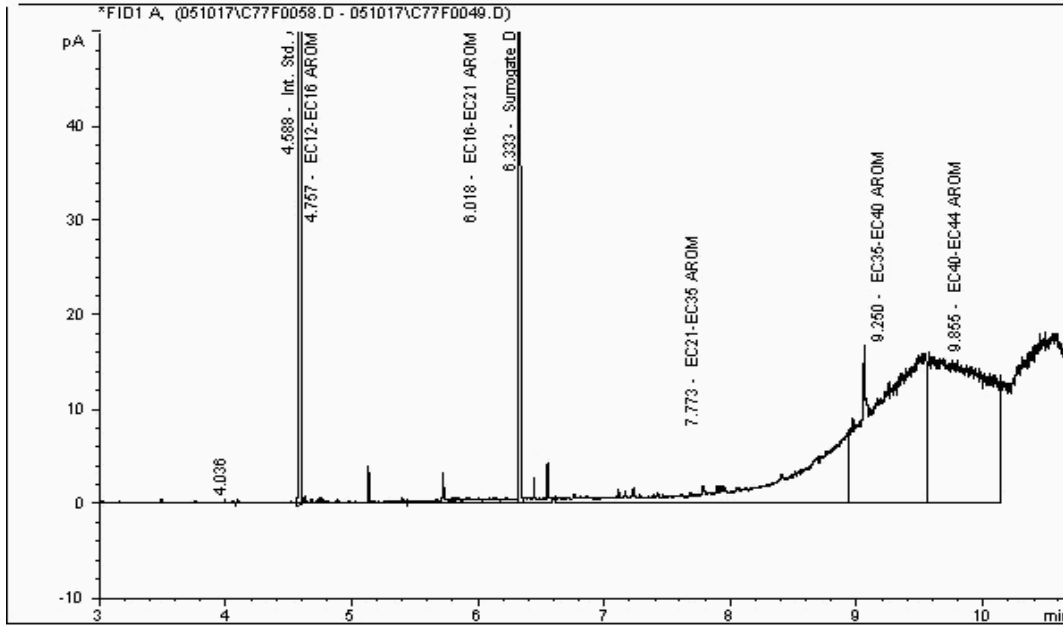
Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 15469456  
Sample ID : TTP01

Depth : 1.00

Speciated TPH - SATS ( C12 - C40 )

Sample Identity: 14462795-  
Date Acquired : 11/05/2017 01:32:01 PM  
Units : ppb  
Dilution:





# CERTIFICATE OF ANALYSIS

Validated

SDG: 170427-108  
Location: Cole Green Inert Landfill

Client Reference: 9Y0074  
Order Number:

Report Number: 408428  
Superseded Report:

## Chromatogram

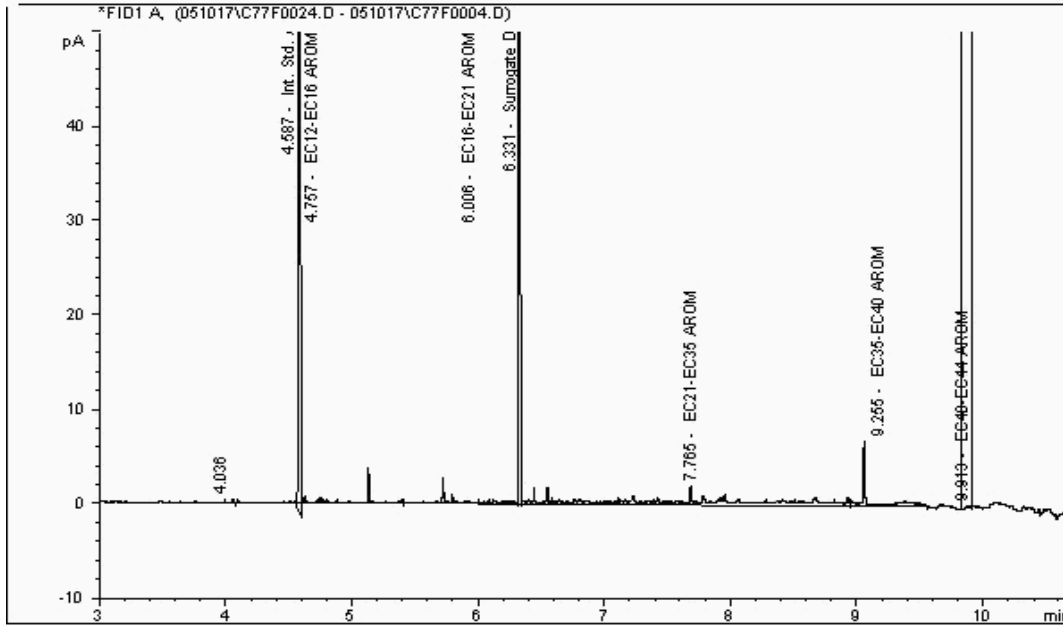
Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 15471597  
Sample ID : TTP04

Depth : 0.50

Speciated TPH - SATS ( C12 - C40 )

Sample Identity: 14462898-  
Date Acquired : 10/05/2017 15:40:05 PM  
Units : ppb  
Dilution:







# CERTIFICATE OF ANALYSIS

Validated

SDG: 170427-108  
Location: Cole Green Inert Landfill

Client Reference: 9Y0074  
Order Number:

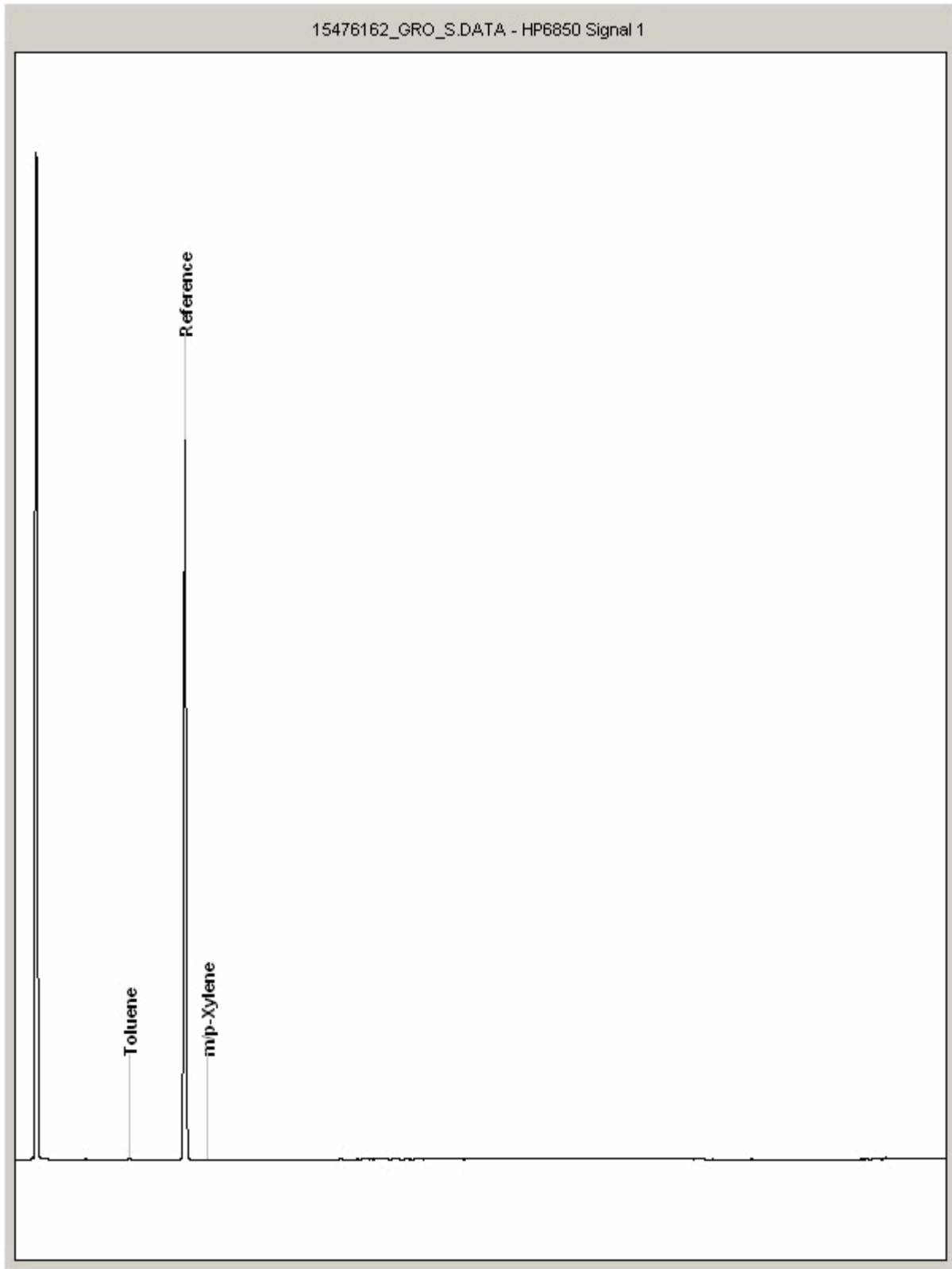
Report Number: 408428  
Superseded Report:

## Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 15476162  
Sample ID : TTP02

Depth : 1.00





# CERTIFICATE OF ANALYSIS

Validated

SDG: 170427-108  
Location: Cole Green Inert Landfill

Client Reference: 9Y0074  
Order Number:

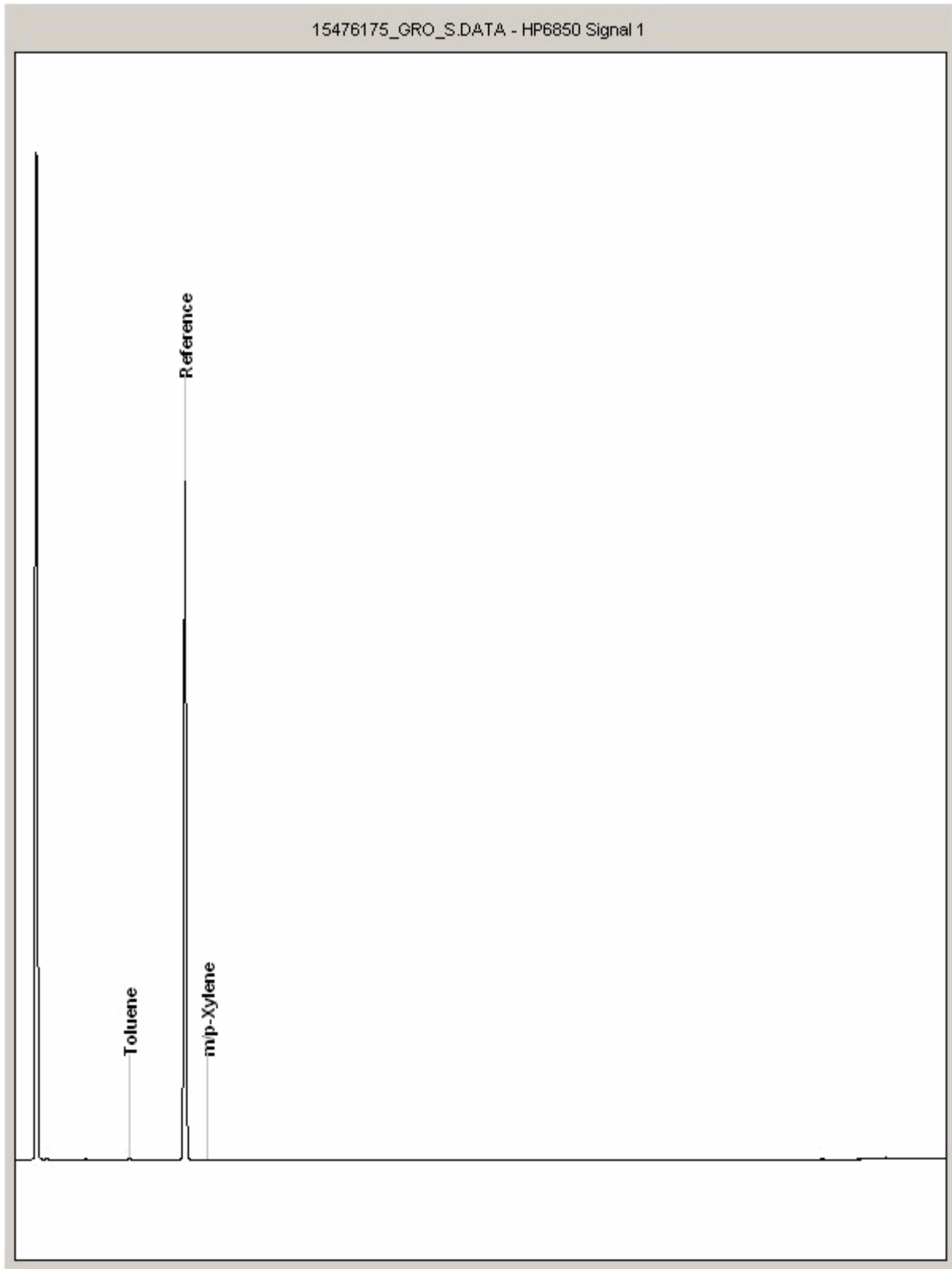
Report Number: 408428  
Superseded Report:

## Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 15476175  
Sample ID : TTP01

Depth : 1.00





# CERTIFICATE OF ANALYSIS

Validated

SDG: 170427-108  
Location: Cole Green Inert Landfill

Client Reference: 9Y0074  
Order Number:

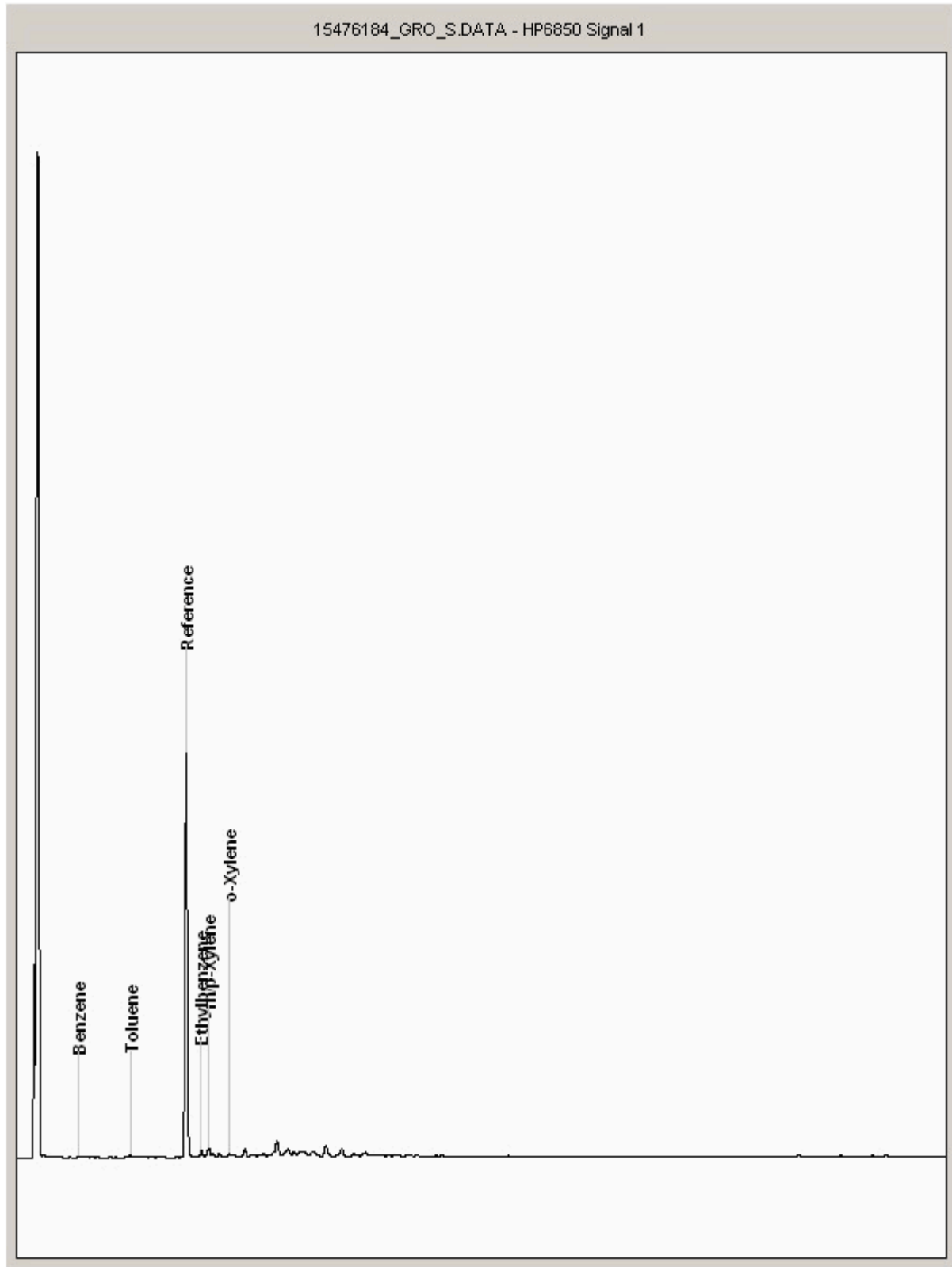
Report Number: 408428  
Superseded Report:

## Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 15476184  
Sample ID : TBH01

Depth : 2.00





# CERTIFICATE OF ANALYSIS

Validated

SDG: 170427-108  
Location: Cole Green Inert Landfill

Client Reference: 9Y0074  
Order Number:

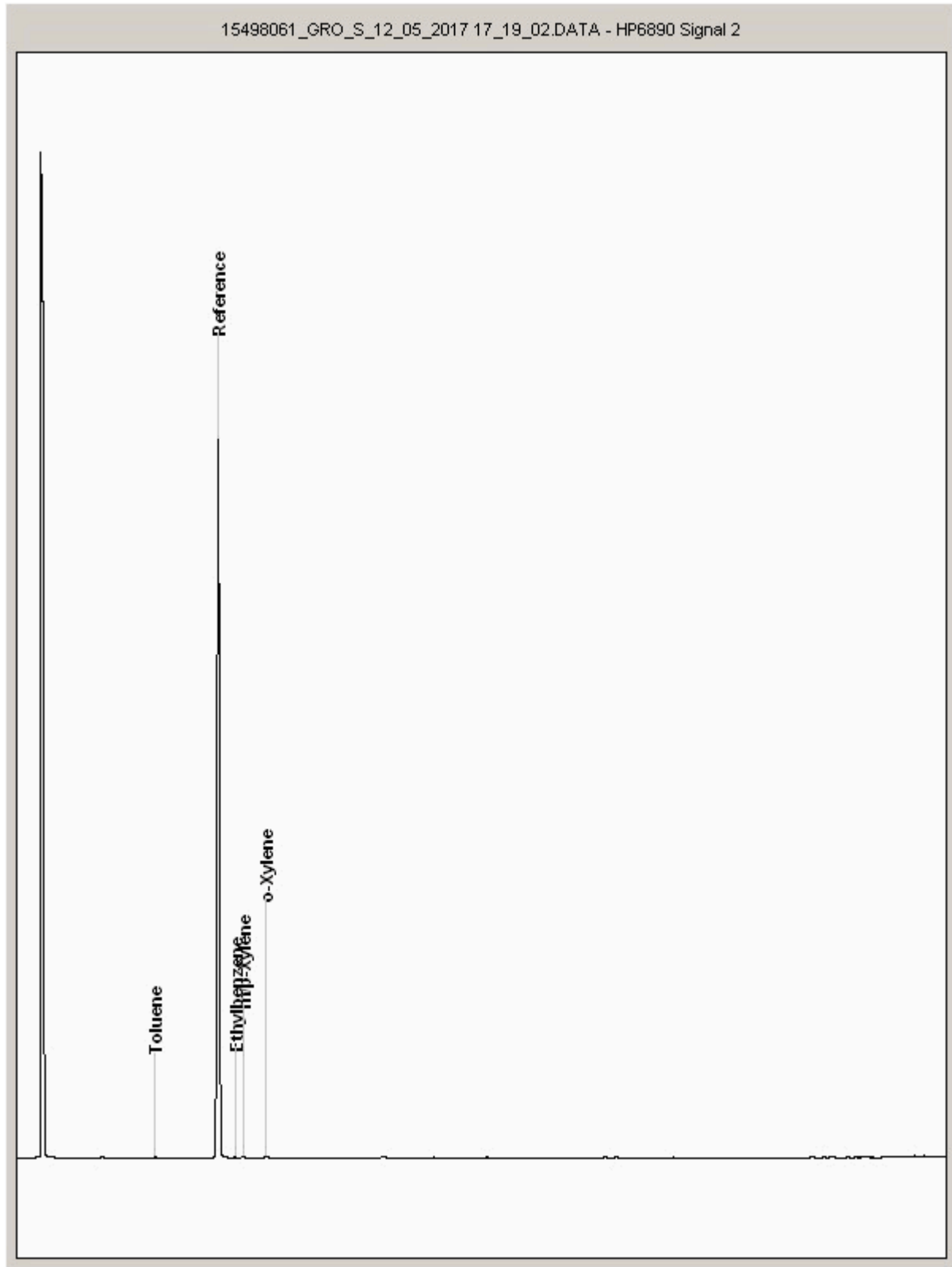
Report Number: 408428  
Superseded Report:

## Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 15498061  
Sample ID : TTP04

Depth : 0.50





# CERTIFICATE OF ANALYSIS

Validated

SDG: 170427-108  
Location: Cole Green Inert Landfill

Client Reference: 9Y0074  
Order Number:

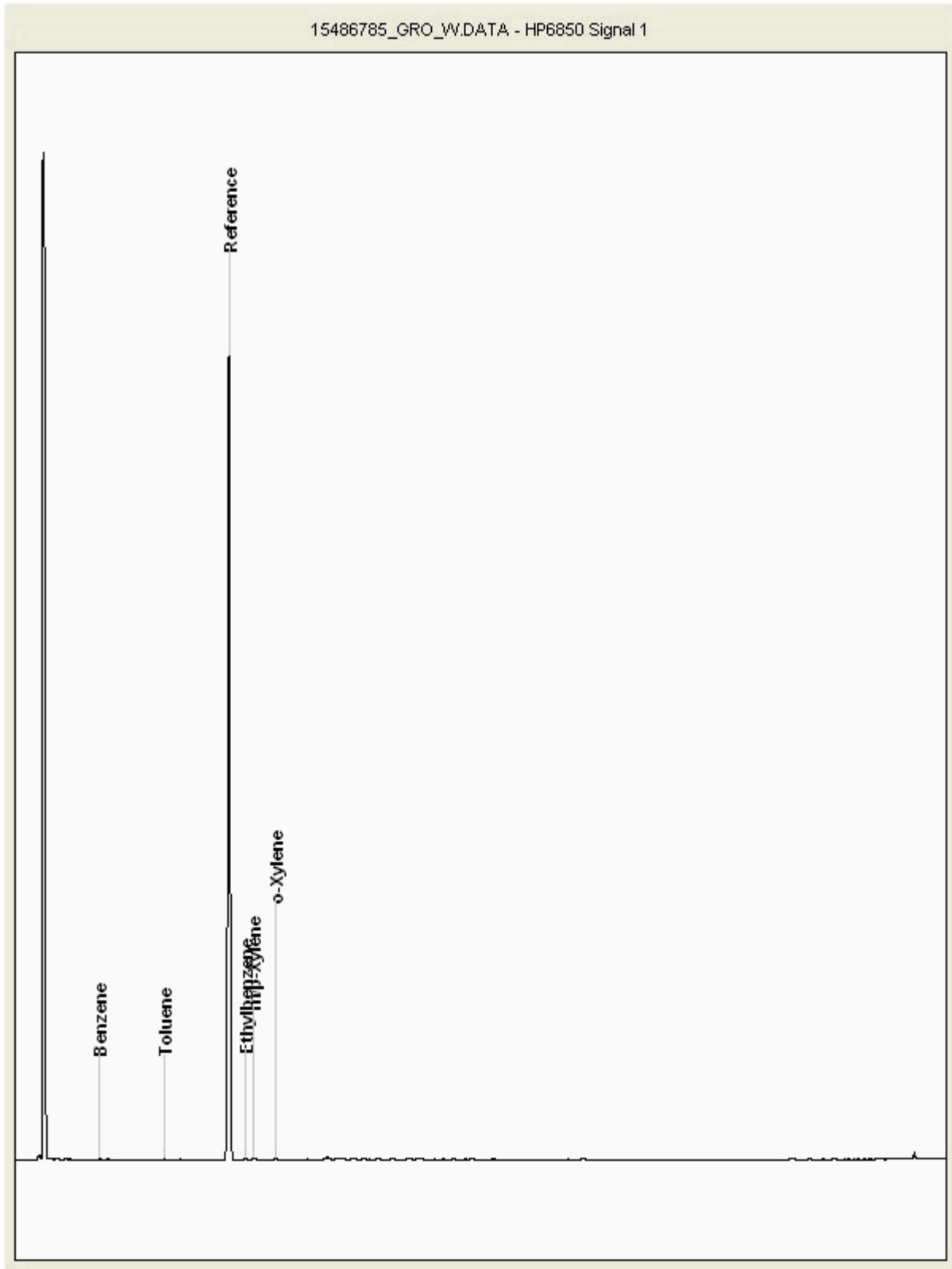
Report Number: 408428  
Superseded Report:

## Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 15486785  
Sample ID : TBH01

Depth : 2.00





# CERTIFICATE OF ANALYSIS

Validated

SDG: 170427-108  
Location: Cole Green Inert Landfill

Client Reference: 9Y0074  
Order Number:

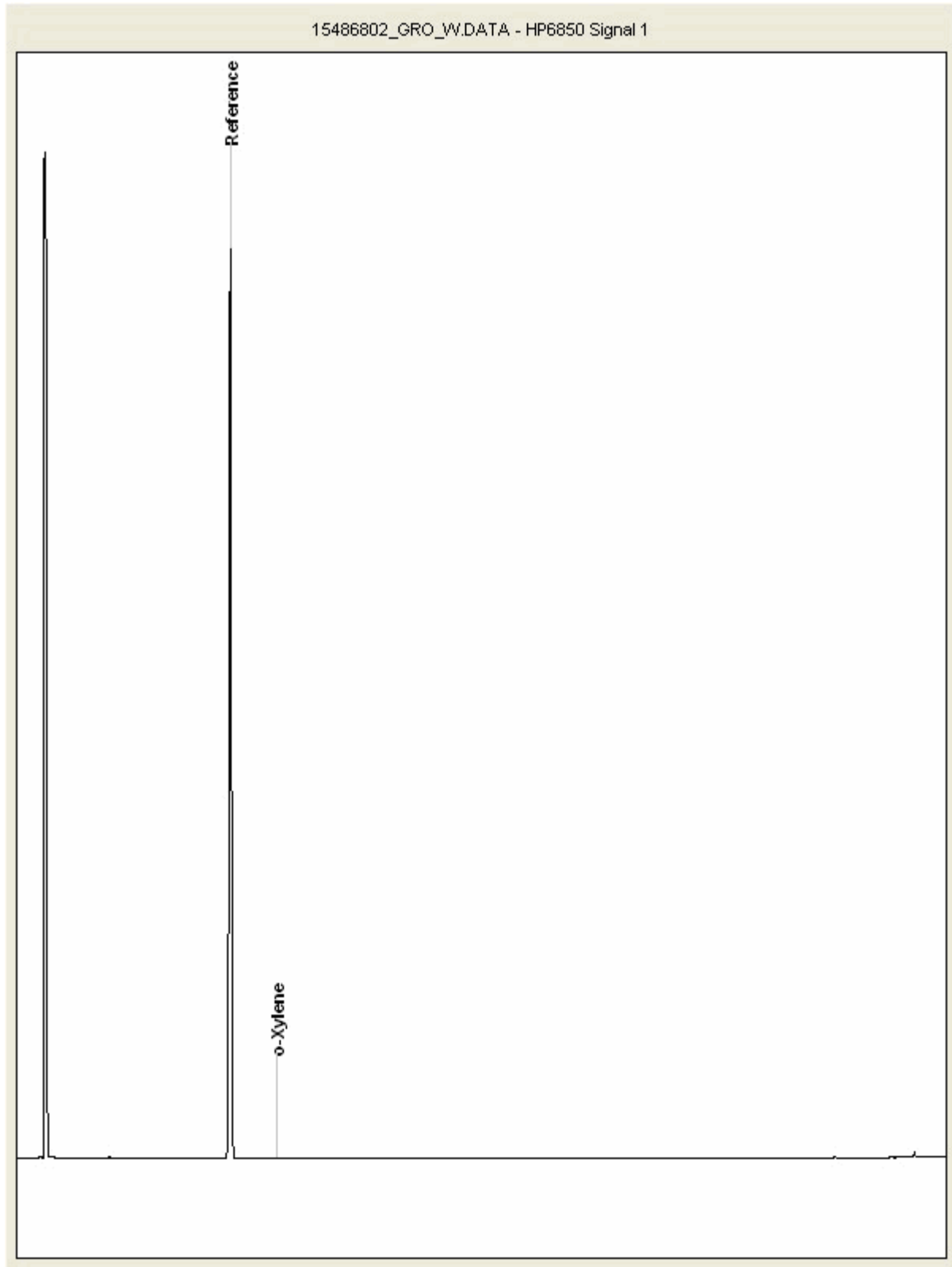
Report Number: 408428  
Superseded Report:

## Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 15486802  
Sample ID : TTP04

Depth : 0.50





# CERTIFICATE OF ANALYSIS

Validated

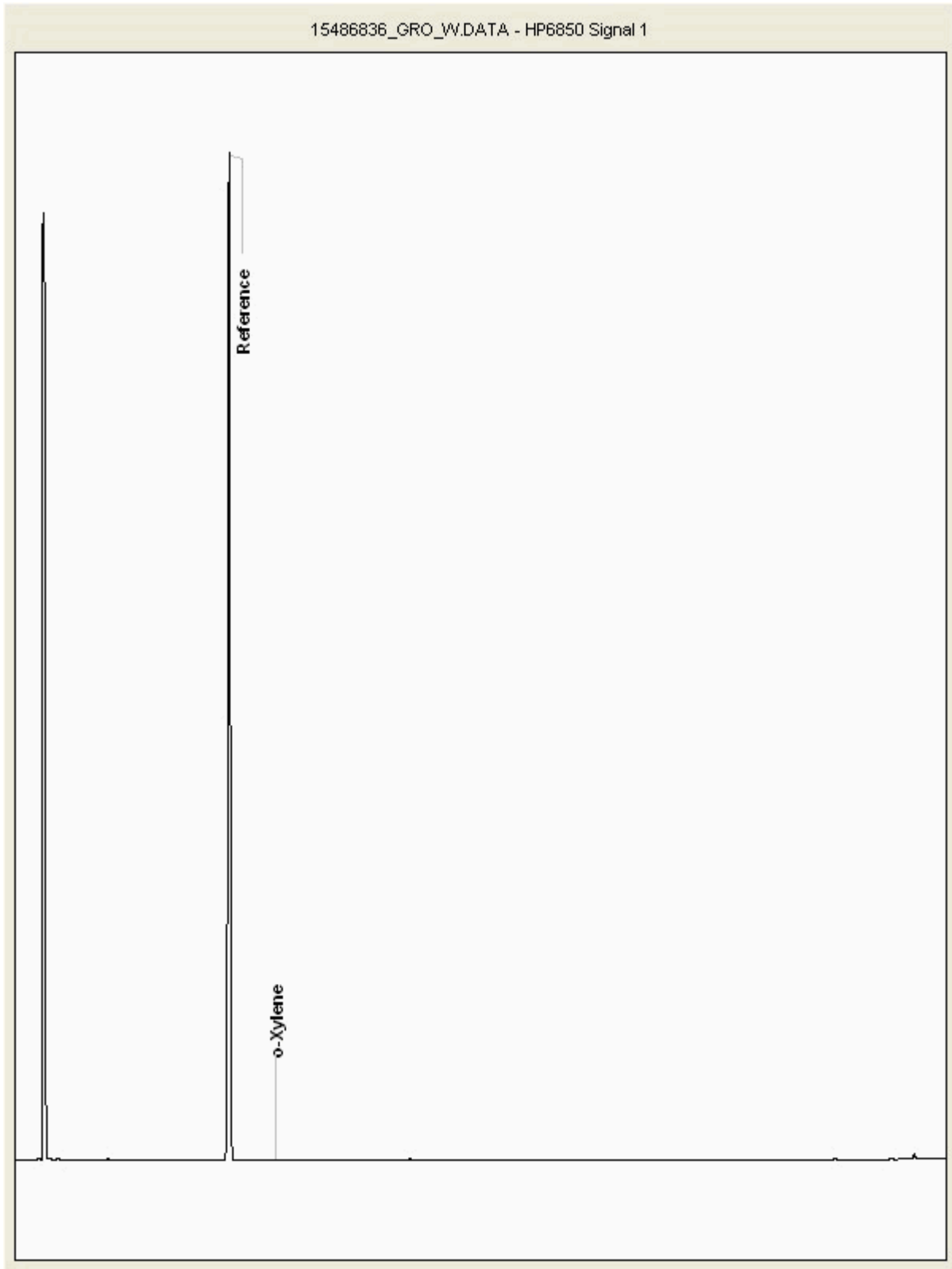
SDG: 170427-108 Client Reference: 9Y0074 Report Number: 408428  
Location: Cole Green Inert Landfill Order Number: Superseded Report:

## Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 15486836  
Sample ID : TTP01

Depth : 1.00





# CERTIFICATE OF ANALYSIS

SDG: 170427-108 Client Reference: 9Y0074 Report Number: 408428  
 Location: Cole Green Inert Landfill Order Number: Superseded Report:

## Appendix

## General

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

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

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

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

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

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

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

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

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

11. Results relate only to the items tested.

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

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

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

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

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

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

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

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

20. For 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.

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

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

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

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

## Sample Deviations

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

## Asbestos

### Identification of Asbestos in Bulk Materials & Soils

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

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

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

### Visual Estimation Of Fibre Content

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

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

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