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Newport City Council
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Attention: Meirion Humphreys

CERTIFICATE OF ANALYSIS

Date: 03 August 2018
Customer: H_NCC_NPT
Sample Delivery Group (SDG): 180629-24
Your Reference:
Location: Docksway Landfill Site
Report No: 467242

This report has been revised and directly supersedes 467116 in its entirety.

We received 17 samples on Friday June 29, 2018 and 17 of these samples were scheduled for analysis which was completed on Friday August 03, 2018. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

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

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

Approved By:

Sonia McWhan

Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 180629-24	Client Reference:	Report Number: 467242
Location: Docksway Landfill Site	Order Number: 700124102	Superseded Report: 467116

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
17839759	C3_Asb		0.00 - 0.00	28/06/2018
17839732	C2B		0.00 - 0.00	28/06/2018
17839851	GW03_09		0.00 - 0.00	28/06/2018
17839682	GW06_13		0.00 - 0.00	28/06/2018
17839880	GW06_34		0.00 - 0.00	28/06/2018
17839639	GW06_36		0.00 - 0.00	28/06/2018
17839653	GW06_37		0.00 - 0.00	28/06/2018
17839707	GW07_40		0.00 - 0.00	28/06/2018
17839805	GW09_31		0.00 - 0.00	28/06/2018
17839831	GW09_32		0.00 - 0.00	28/06/2018
17839898	GW09_35		0.00 - 0.00	28/06/2018
17839865	GW12_33		0.00 - 0.00	28/06/2018
17839669	GW12_38		0.00 - 0.00	28/06/2018
17839765	LF_C3B		0.00 - 0.00	28/06/2018
17839633	SW_23		0.00 - 0.00	28/06/2018
17839787	SW_24		0.00 - 0.00	28/06/2018
17839793	SW_1A		0.00 - 0.00	28/06/2018

Maximum Sample/Coolbox Temperature (°C) : 7168992

ISO5667-3 Water quality - Sampling - Part3 -

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

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

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



CERTIFICATE OF ANALYSIS

Validated

SDG:	180629-24	Client Reference:	467242
Location:	Docksway Landfill Site	Order Number:	700124102
		Report Number:	467116
		Superseded Report:	

Results Legend	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type	VOC MS (W)
X Test N No Determination Possible Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	17839639	GW06_36		0.00 - 0.00	NaOH (ALE245) Vial (ALE297) ZnAc (ALE246)	GW	All NDPs: 0 Tests: 13
	17839653	GW06_37		0.00 - 0.00	0.5l glass bottle (ALE227) ZnAc (ALE246) Vial (ALE297) NaOH (ALE245) HNO3 Filtered (ALE204) HNO3 Filtered (ALE204) H2SO4 (ALE244) H2SO4 (ALE244) 500ml Plastic (ALE208) 250ml BOD (ALE212) 0.5l glass bottle (ALE227)	GW	X
	17839707	GW07_40		0.00 - 0.00	0.5l glass bottle (ALE227) ZnAc (ALE246) Vial (ALE297) NaOH (ALE245) HNO3 Filtered (ALE204) HNO3 Filtered (ALE204) H2SO4 (ALE244) H2SO4 (ALE244) 500ml Plastic (ALE208) 250ml BOD (ALE212)	GW	X

17839831	GW09_32	0.00 - 0.00	HNO3 Filtered (ALE204)	GW	
			H2SO4 (ALE244)	GW	
			500ml Plastic (ALE208)	GW	
			250ml BOD (ALE212)	GW	
			0.5l glass bottle (ALE227)	GW	
			ZnAc (ALE246)	GW	
			Vial (ALE297)	GW	X
			NaOH (ALE245)	GW	
			HNO3 Filtered (ALE204)	GW	
			H2SO4 (ALE244)	GW	
17839805	GW09_31	0.00 - 0.00	500ml Plastic (ALE208)	GW	
			250ml BOD (ALE212)	GW	
			0.5l glass bottle (ALE227)	GW	
			ZnAc (ALE246)	GW	
			Vial (ALE297)	GW	X
			NaOH (ALE245)	GW	
			HNO3 Filtered (ALE204)	GW	
			H2SO4 (ALE244)	GW	
			500ml Plastic (ALE208)	GW	
			250ml BOD (ALE212)	GW	



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Validated

SDG:	180629-24	Client Reference:	467242
Location:	Docksway Landfill Site	Order Number:	700124102
		Report Number:	467116
		Superseded Report:	

Results Legend <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: yellow; border: 1px solid black; margin-right: 5px;"></div> Test </div> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: red; color: white; border: 1px solid black; margin-right: 5px;"></div> 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	
		17839898	GW09_35		0.00 - 0.00	NaOH (ALE245) Vial (ALE297) ZnAc (ALE246)	GW
		17839865	GW12_33		0.00 - 0.00	0.5l glass bottle (ALE227) ZnAc (ALE246) Vial (ALE297) NaOH (ALE245) HNO3 Filtered (ALE204) HNO3 Filtered (ALE204) H2SO4 (ALE244) 500ml Plastic (ALE208) 250ml BOD (ALE212) 0.5l glass bottle (ALE227)	GW
		17839765	LF_C3B		0.00 - 0.00	0.5l glass bottle (ALE227)	LE
		17839669	GW12_38		0.00 - 0.00	ZnAc (ALE246) Vial (ALE297)	GW
	Sulphide	All	NDPs: 0 Tests: 13				
	Total Organic and Inorganic Carbon	All	NDPs: 0 Tests: 2				
VOC MS (W)	All	NDPs: 0 Tests: 13					

17839793	SW_1A		0.00 - 0.00	H2SO4 (ALE244)	SW					
				500ml Plastic (ALE208)	SW					
17839787	SW_24		0.00 - 0.00	250ml BOD (ALE212)	SW					
				H2SO4 (ALE244)	SW					
17839633	SW_23		0.00 - 0.00	500ml Plastic (ALE208)	SW					
				250ml BOD (ALE212)	SW					
17839765	LF_C3B		0.00 - 0.00	H2SO4 (ALE244)	SW					
				500ml Plastic (ALE208)	SW					
				250ml BOD (ALE212)	SW					
				ZnAc (ALE246)	LE	X				
				Vial (ALE297)	LE					X
				NaOH (ALE245)	LE					
				HNO3 Filtered (ALE204)	LE					
				H2SO4 (ALE244)	LE					X
				500ml Plastic (ALE208)	LE					
				250ml BOD (ALE212)	LE					



CERTIFICATE OF ANALYSIS

Validated

SDG:	180629-24	Client Reference:	467242
Location:	Docksway Landfill Site	Order Number:	700124102
		Report Number:	467116
		Superseded Report:	

Results Legend		Customer Sample Ref.	GW06_37	GW07_40	GW09_31	GW09_32	GW09_35	GW12_33
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
M	mCERTS accredited.		Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)
aq	Aqueous / settled sample.		28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
diss.filt	Dissolved / filtered sample.							
tot.unfilt	Total / unfiltered sample.							
-	Subcontracted test.							
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018
(F)	Trigger breach confirmed		180629-24	180629-24	180629-24	180629-24	180629-24	180629-24
1-5&*\$@	Sample deviation (see appendix)		17839653	17839707	17839805	17839831	17839898	17839865
Component	LOD/Units	Method						
Ionic balance	% Diff	Calulation	-3.79	-9.24	1.42	15.4	-22.1	-3.25
Alkalinity, Total as CaCO3	<2 mg/l	TM043	1040	565	585	350	905	990
BOD, unfiltered	<1 mg/l	TM045	8.06	2.23	<1	7.38	<1	11
Carbon, Organic (diss.filt)	<3 mg/l	TM090	27.7	15.2	11.1	17.2	12.6	23.7
Ammoniacal Nitrogen as N	<0.2 mg/l	TM099	27.5	11.1	2.21	7.13	8.67	17.8
Sulphide	<0.01 mg/l	TM101	5.75	0.141	0.659	0.0161	0.253	0.147
COD, unfiltered	<7 mg/l	TM107	187	44.3	31.1	100	135	82.4
Conductivity @ 20 deg.C	<0.005 mS/cm	TM120	12.3	1.63	1.88	1.87	11.5	3.26
Arsenic (diss.filt)	<0.5 µg/l	TM152	22.2	13.3	3.39	4.87	3.81	186
Boron (diss.filt)	<10 µg/l	TM152	1740	1300	475	662	1210	1380
Cadmium (diss.filt)	<0.08 µg/l	TM152	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
Chromium (diss.filt)	<1 µg/l	TM152	<1	<1	<1	<1	<1	<1
Copper (diss.filt)	<0.3 µg/l	TM152	<0.3	<0.3	<0.3	0.75	1.91	<0.3
Lead (diss.filt)	<0.2 µg/l	TM152	<0.2	<0.2	<0.2	0.277	<0.2	<0.2
Manganese (diss.filt)	<3 µg/l	TM152	425	77.6	1580	584	1240	616
Nickel (diss.filt)	<0.4 µg/l	TM152	2.45	5.13	4.81	4.58	2.77	3.85
Selenium (diss.filt)	<1 µg/l	TM152	<1	<1	<1	<1	<1	<1
Zinc (diss.filt)	<1 µg/l	TM152	<1	<1	<1	10.1	5.53	5.43
Potassium (Dis.Filt)	<0.2 mg/l	TM152	79.5	27.7	23.2	30	47.2	44.9
Iron (Dis.Filt)	<0.019 mg/l	TM152	1.64	0.907	2.14	2.64	2.27	8.45
Hardness, Total as CaCO3	<0.65 mg/l	TM152	1540	278	848	535	1300	722
EPH Range >C10 - C40 (aq)	<100 µg/l	TM172	<100	<100	<100	292	<100	129
Nitrite as NO2	<0.05 mg/l	TM184	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Phosphate (Ortho as PO4)	<0.05 mg/l	TM184	6.83	9.11	0.396	<0.05	9.95	0.708
Sulphate	<2 mg/l	TM184	<2	162	256	355	143	<2
Chloride	<2 mg/l	TM184	4580	228	227	267	4270	700
Nitrate as NO3	<0.3 mg/l	TM184	<0.3	1.5	<0.3	0.623	<0.3	<0.3
Total Oxidised Nitrogen as N	<0.1 mg/l	TM184	<0.1	0.348	<0.1	0.152	<0.1	<0.1
Cyanide, Total	<0.05 mg/l	TM227	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
pH	<1 pH Units	TM256	7.85	8.19	7.59	7.39	7.87	7.76



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SDG:	180629-24	Client Reference:	467242
Location:	Docksway Landfill Site	Order Number:	700124102
		Report Number:	467242
		Superseded Report:	467116

Results Legend		Customer Sample Ref.	GW12_38	LF_C3B	SW_23	SW_24	SW_1A
# 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	0.00 - 0.00 Ground Water (GW) 28/06/2018 29/06/2018 180629-24 17839669	0.00 - 0.00 Land Leachate (LE) 28/06/2018 29/06/2018 180629-24 17839765	0.00 - 0.00 Surface Water (SW) 28/06/2018 29/06/2018 180629-24 17839633	0.00 - 0.00 Surface Water (SW) 28/06/2018 29/06/2018 180629-24 17839787	0.00 - 0.00 Surface Water (SW) 28/06/2018 29/06/2018 180629-24 17839793
Component	LOD/Units	Method					
Ionic balance	% Diff	Calulation	3.09	0.643			
Alkalinity, Total as CaCO3	<2 mg/l	TM043	600	#			
Alkalinity, Total as CaCO3 (diss.filt)	<2 mg/l	TM043		3680			
BOD, unfiltered	<1 mg/l	TM045	4.49 #	103 #	7.01 #	4.9 #	3.76 #
Carbon, Organic (diss.filt)	<3 mg/l	TM090	9.56				
Organic Carbon, Total	<3 mg/l	TM090		378			
Ammoniacal Nitrogen as N	<0.2 mg/l	TM099	2.14 #	450	26.9 #	<0.2 #	0.352 #
Sulphide	<0.01 mg/l	TM101	0.103 #	0.225			
COD, unfiltered	<7 mg/l	TM107	150 #	1110 #	52.2 #	29.2 #	8.21 #
Conductivity @ 20 deg.C	<0.005 mS/cm	TM120	5.84 #	7.14 #	1.54 #	0.345 #	0.569 #
Arsenic (diss.filt)	<0.5 µg/l	TM152	2.87 #	26.8 #			
Boron (diss.filt)	<10 µg/l	TM152	1180 #	4410 #			
Cadmium (diss.filt)	<0.08 µg/l	TM152	<0.08 #	<0.08 #			
Chromium (diss.filt)	<1 µg/l	TM152	<1 #	176 #			
Copper (diss.filt)	<0.3 µg/l	TM152	1.27 #	0.658 #			
Lead (diss.filt)	<0.2 µg/l	TM152	0.281 #	0.725 #			
Manganese (diss.filt)	<3 µg/l	TM152	424 #	1220 #			
Nickel (diss.filt)	<0.4 µg/l	TM152	2.81 #	35.6 #			
Selenium (diss.filt)	<1 µg/l	TM152	<1 #	<1 #			
Zinc (diss.filt)	<1 µg/l	TM152	13.8 #	38 #			
Potassium (Dis.Filt)	<0.2 mg/l	TM152	45.7 #	200 #			
Iron (Dis.Filt)	<0.019 mg/l	TM152	0.259 #	1.72 #			
Hardness, Total as CaCO3	<0.65 mg/l	TM152	1120	1510			
EPH Range >C10 - C40 (aq)	<100 µg/l	TM172	553	1440			
Nitrite as NO2	<0.05 mg/l	TM184	1.59 #	<0.05			
Phosphate (Ortho as PO4)	<0.05 mg/l	TM184	0.716 #	10			
Sulphate	<2 mg/l	TM184	660 #	<2			
Chloride	<2 mg/l	TM184	1550 #	754	182 #	30 #	21.3 #
Nitrate as NO3	<0.3 mg/l	TM184	0.71 #	0.304			
Total Oxidised Nitrogen as N	<0.1 mg/l	TM184	0.644 #	<0.1			
Cyanide, Total	<0.05 mg/l	TM227	<0.05 #	<0.05			
pH	<1 pH Units	TM256	7.63 #	7.66 #	7.77 #	8.58 #	8.28 #



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SDG:	180629-24	Client Reference:	467242
Location:	Docksway Landfill Site	Order Number:	700124102
		Report Number:	467242
		Superseded Report:	467116

Table of Results - Appendix

Method No	Reference	Description
Calculation		
TM043	Method 2320B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part109 1984	Determination of alkalinity in aqueous samples
TM045	MEWAM BOD5 2nd Ed.HMSO 1988 / Method 5210B, AWWA/APHA, 20th Ed., 1999; SCA Blue Book 130	Determination of BOD5 (ATU) Filtered by Oxygen Meter on liquids
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)
TM090	Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM101	Method 4500B & C, AWWA/APHA, 20th Ed., 1999	Determination of Sulphide in soil and water samples using the Kone Analyser
TM107	ISO 6060-1989	Determination of Chemical Oxygen Demand using COD Dr Lange Kit
TM120	Method 2510B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part 9:1970	Determination of Electrical Conductivity using a Conductivity Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM172	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	EPH in Waters
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM208	Modified: US EPA Method 8260b & 624	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter

NA = not applicable.

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



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SDG:	180629-24	Client Reference:	700124102	Report Number:	467242
Location:	Docksway Landfill Site	Order Number:		Superseded Report:	467116

Test Completion Dates

	17839759	17839732	17839851	17839682	17839880	17839639	17839653	17839707	17839805	17839831
Lab Sample No(s)										
Customer Sample Ref.	C3_Asb	C2B	GW03_09	GW06_13	GW06_34	GW06_36	GW06_37	GW07_40	GW09_31	GW09_32
AGS Ref.										
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Surface Water	Land Leachate	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water
Alkalinity as CaCO3			04-Jul-2018	04-Jul-2018	04-Jul-2018	04-Jul-2018	04-Jul-2018	04-Jul-2018	04-Jul-2018	04-Jul-2018
Alkalinity Filtered as CaCO3		09-Jul-2018	24-Jul-2018	06-Jul-2018	03-Jul-2018	24-Jul-2018	04-Jul-2018	06-Jul-2018	09-Jul-2018	06-Jul-2018
Ammoniacal Nitrogen	10-Jul-2018	06-Jul-2018	24-Jul-2018	09-Jul-2018	10-Jul-2018	24-Jul-2018	10-Jul-2018	10-Jul-2018	10-Jul-2018	10-Jul-2018
Anions by Kone (w)	04-Jul-2018	09-Jul-2018	24-Jul-2018	09-Jul-2018	09-Jul-2018	24-Jul-2018	09-Jul-2018	09-Jul-2018	09-Jul-2018	09-Jul-2018
BOD True Total	05-Jul-2018	05-Jul-2018	05-Jul-2018	05-Jul-2018	05-Jul-2018	05-Jul-2018	05-Jul-2018	05-Jul-2018	05-Jul-2018	05-Jul-2018
COD Unfiltered	10-Jul-2018	10-Jul-2018	10-Jul-2018	10-Jul-2018	10-Jul-2018	10-Jul-2018	10-Jul-2018	10-Jul-2018	10-Jul-2018	10-Jul-2018
Conductivity (at 20 deg.C)	09-Jul-2018	10-Jul-2018	10-Jul-2018	09-Jul-2018	09-Jul-2018	09-Jul-2018	09-Jul-2018	09-Jul-2018	10-Jul-2018	09-Jul-2018
Cyanide Comp/Free/Total/Thiocyanate		03-Jul-2018	03-Jul-2018	04-Jul-2018	03-Jul-2018	03-Jul-2018	04-Jul-2018	03-Jul-2018	03-Jul-2018	03-Jul-2018
Dissolved Metals by ICP-MS		11-Jul-2018	25-Jul-2018	13-Jul-2018	10-Jul-2018	02-Aug-2018	11-Jul-2018	11-Jul-2018	10-Jul-2018	10-Jul-2018
Dissolved Organic/Inorganic Carbon			09-Jul-2018	04-Jul-2018	03-Jul-2018	03-Jul-2018	04-Jul-2018	04-Jul-2018	09-Jul-2018	04-Jul-2018
EPH (DRO) (C10-C40) Aqueous (W)		03-Jul-2018	02-Jul-2018	02-Jul-2018	02-Jul-2018	02-Jul-2018	02-Jul-2018	02-Jul-2018	02-Jul-2018	02-Jul-2018
Ionic Balance		11-Jul-2018	30-Jul-2018	13-Jul-2018	11-Jul-2018	03-Aug-2018	12-Jul-2018	12-Jul-2018	11-Jul-2018	12-Jul-2018
Nitrite by Kone (w)		02-Jul-2018	02-Jul-2018	02-Jul-2018	02-Jul-2018	02-Jul-2018	02-Jul-2018	02-Jul-2018	02-Jul-2018	02-Jul-2018
pH Value	05-Jul-2018	05-Jul-2018	05-Jul-2018	05-Jul-2018	05-Jul-2018	05-Jul-2018	05-Jul-2018	05-Jul-2018	05-Jul-2018	05-Jul-2018
Phosphate by Kone (w)		03-Jul-2018	03-Jul-2018	03-Jul-2018	03-Jul-2018	03-Jul-2018	03-Jul-2018	03-Jul-2018	03-Jul-2018	03-Jul-2018
Sulphide		06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018
Total Organic and Inorganic Carbon		10-Jul-2018								
VOC MS (W)		04-Jul-2018	04-Jul-2018	04-Jul-2018	04-Jul-2018	04-Jul-2018	04-Jul-2018	04-Jul-2018	04-Jul-2018	04-Jul-2018

	17839898	17839865	17839669	17839765	17839633	17839787	17839793
Lab Sample No(s)							
Customer Sample Ref.	GW09_35	GW12_33	GW12_38	LF_C3B	SW_23	SW_24	SW_1A
AGS Ref.							
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Ground Water	Ground Water	Ground Water	Land Leachate	Surface Water	Surface Water	Surface Water
Alkalinity as CaCO3	04-Jul-2018	04-Jul-2018	04-Jul-2018				
Alkalinity Filtered as CaCO3	24-Jul-2018	03-Jul-2018	04-Jul-2018	25-Jul-2018			
Ammoniacal Nitrogen	24-Jul-2018	10-Jul-2018	10-Jul-2018	09-Jul-2018	10-Jul-2018	10-Jul-2018	10-Jul-2018
Anions by Kone (w)	24-Jul-2018	09-Jul-2018	09-Jul-2018	24-Jul-2018	04-Jul-2018	04-Jul-2018	04-Jul-2018
BOD True Total	05-Jul-2018	05-Jul-2018	05-Jul-2018	05-Jul-2018	05-Jul-2018	05-Jul-2018	05-Jul-2018
COD Unfiltered	10-Jul-2018	10-Jul-2018	10-Jul-2018	10-Jul-2018	10-Jul-2018	10-Jul-2018	10-Jul-2018
Conductivity (at 20 deg.C)	09-Jul-2018	10-Jul-2018	09-Jul-2018	09-Jul-2018	09-Jul-2018	10-Jul-2018	09-Jul-2018
Cyanide Comp/Free/Total/Thiocyanate	03-Jul-2018	03-Jul-2018	04-Jul-2018	03-Jul-2018			
Dissolved Metals by ICP-MS	02-Aug-2018	10-Jul-2018	13-Jul-2018	11-Jul-2018			
Dissolved Organic/Inorganic Carbon	03-Jul-2018	03-Jul-2018	04-Jul-2018				
EPH (DRO) (C10-C40) Aqueous (W)	02-Jul-2018	02-Jul-2018	02-Jul-2018	02-Jul-2018			
Ionic Balance	03-Aug-2018	11-Jul-2018	13-Jul-2018	25-Jul-2018			
Nitrite by Kone (w)	02-Jul-2018	02-Jul-2018	02-Jul-2018	02-Jul-2018			
pH Value	05-Jul-2018	05-Jul-2018	05-Jul-2018	05-Jul-2018	05-Jul-2018	05-Jul-2018	05-Jul-2018
Phosphate by Kone (w)	03-Jul-2018	03-Jul-2018	03-Jul-2018	03-Jul-2018			
Sulphide	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018			
Total Organic and Inorganic Carbon				10-Jul-2018			
VOC MS (W)	04-Jul-2018	04-Jul-2018	04-Jul-2018	04-Jul-2018			



CERTIFICATE OF ANALYSIS

Validated

SDG:	180629-24	Client Reference:	Report Number:	467242
Location:	Docksway Landfill Site	Order Number:	Superseded Report:	467116

Chromatogram

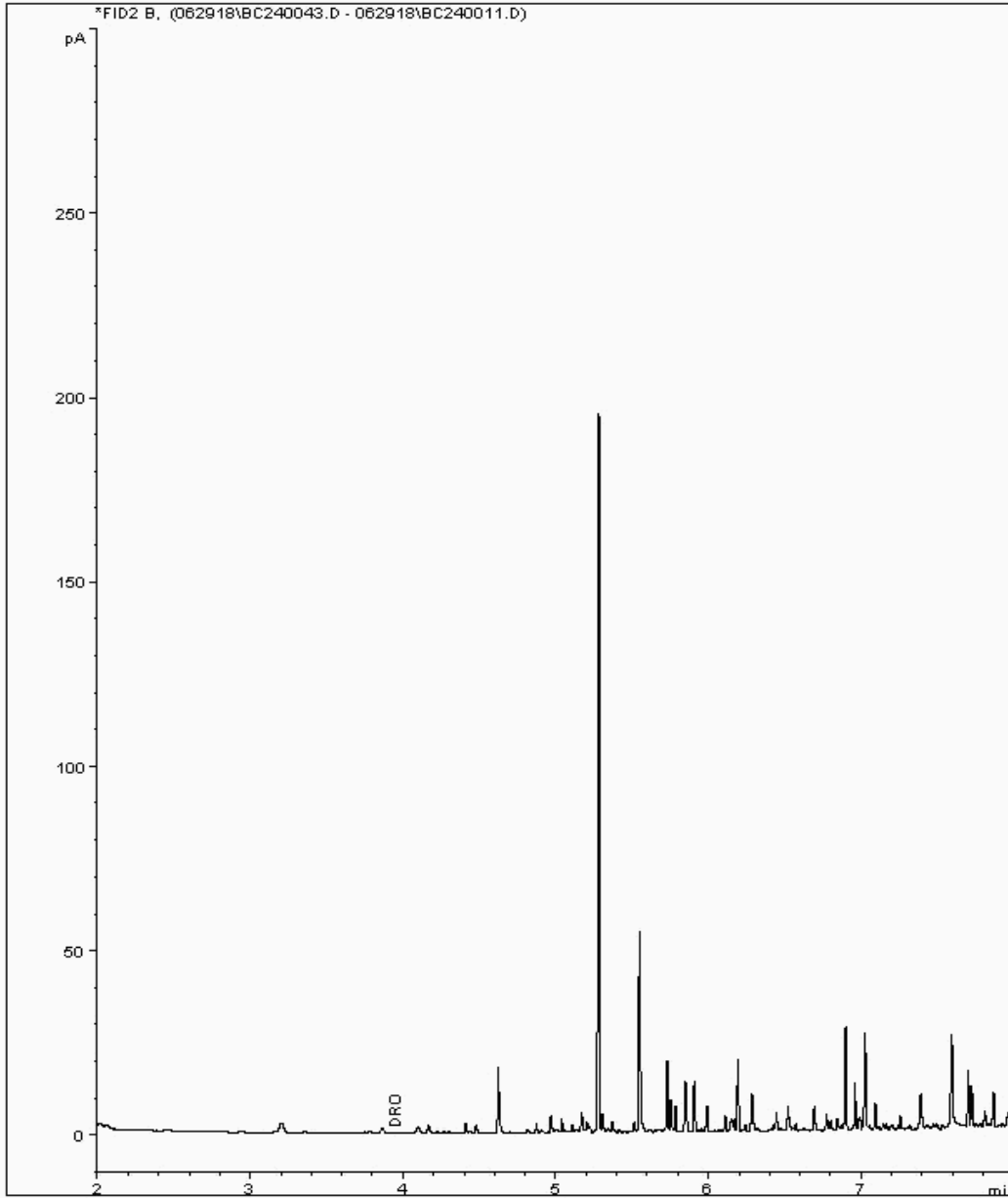
Analysis: EPH (DRO) (C10-C40) Aqueous (W)

Sample No : 17842946
Sample ID : LF_C3B

Depth : 0.00 - 0.00

EPH Range Organics (C10 - C40)

Sample Identity: 16763564-
Date Acquired : 01/07/2018 01:35:56 PM
Units : mg/l





CERTIFICATE OF ANALYSIS

Validated

SDG:	180629-24	Client Reference:	Report Number:	467242
Location:	Docksway Landfill Site	Order Number:	Superseded Report:	467116

Chromatogram

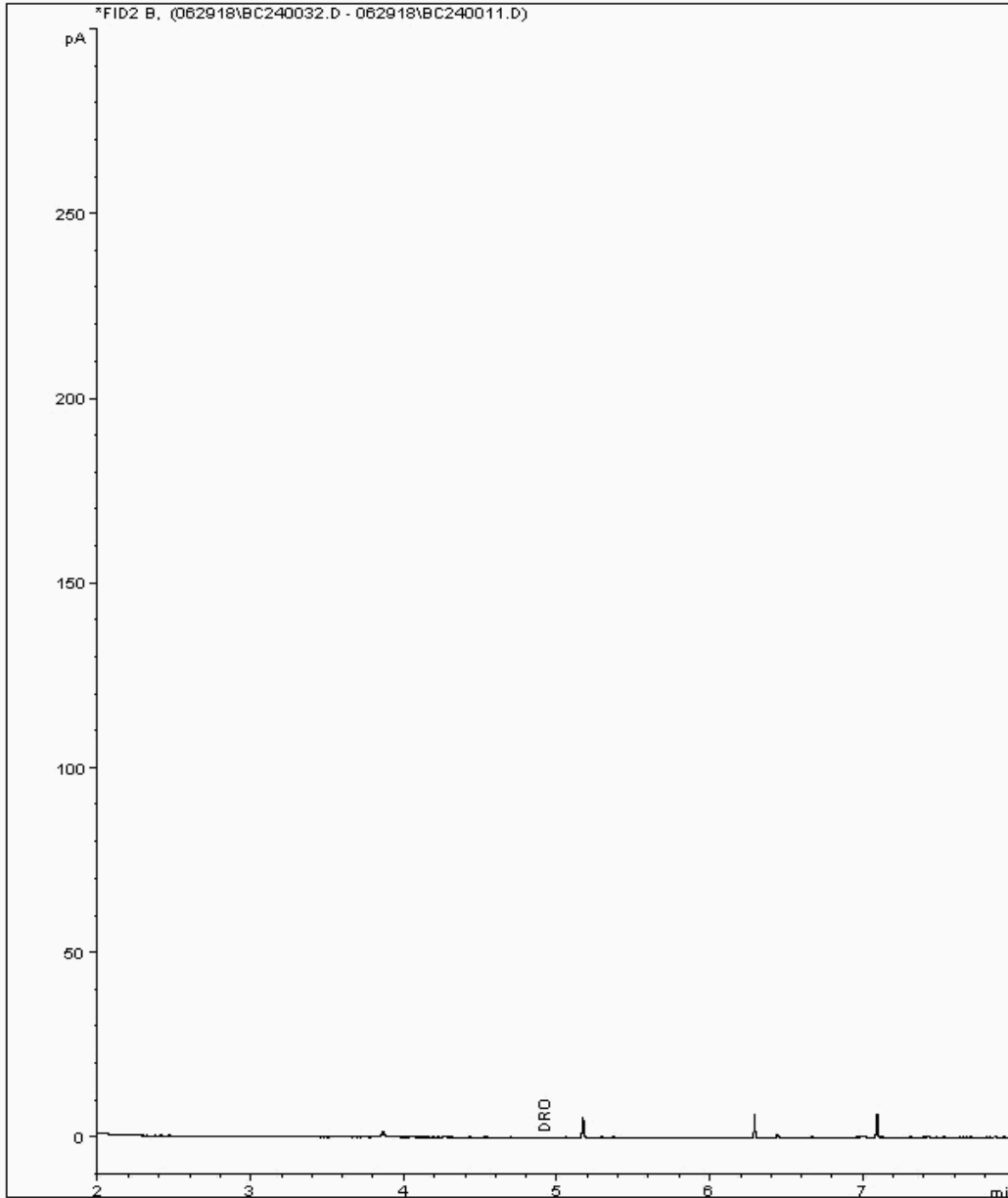
Analysis: EPH (DRO) (C10-C40) Aqueous (W)

Sample No : 17843018
Sample ID : GW06_34

Depth : 0.00 - 0.00

EPH Range Organics (C10 - C40)

Sample Identity: 16763664-
Date Acquired : 30/06/2018 20:49:03 PM
Units : mg/l





CERTIFICATE OF ANALYSIS

Validated

SDG:	180629-24	Client Reference:	467242
Location:	Docksway Landfill Site	Order Number:	700124102
		Report Number:	467116
		Superseded Report:	

Chromatogram

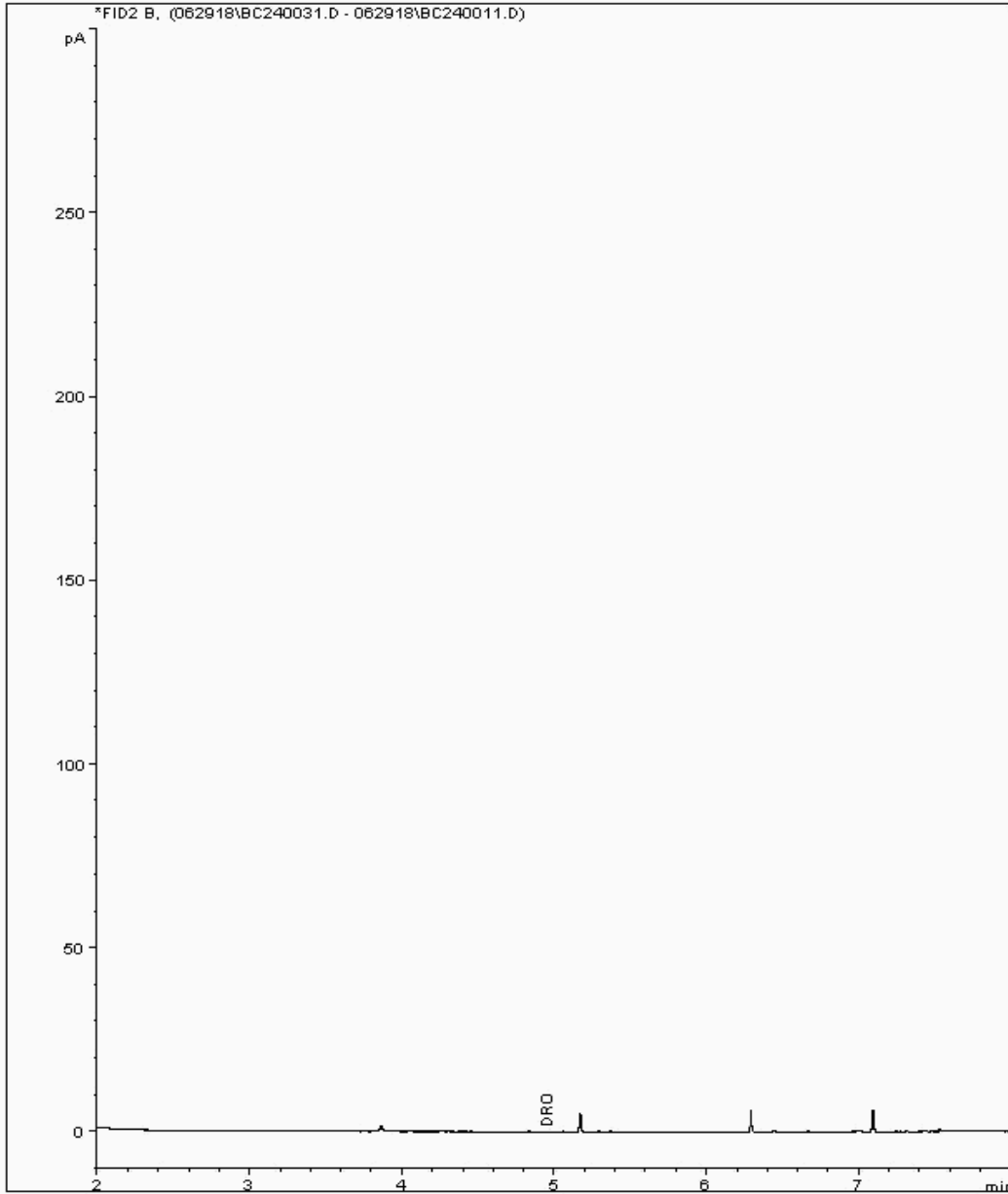
Analysis: EPH (DRO) (C10-C40) Aqueous (W)

Sample No : 17843052
Sample ID : GW06_36

Depth : 0.00 - 0.00

EPH Range Organics (C10 - C40)

Sample Identity: 16763376-
Date Acquired : 30/06/2018 20:22:51 PM
Units : mg/l





CERTIFICATE OF ANALYSIS

Validated

SDG: 180629-24 Client Reference: Report Number: 467242
Location: Docksway Landfill Site Order Number: 700124102 Superseded Report: 467116

Chromatogram

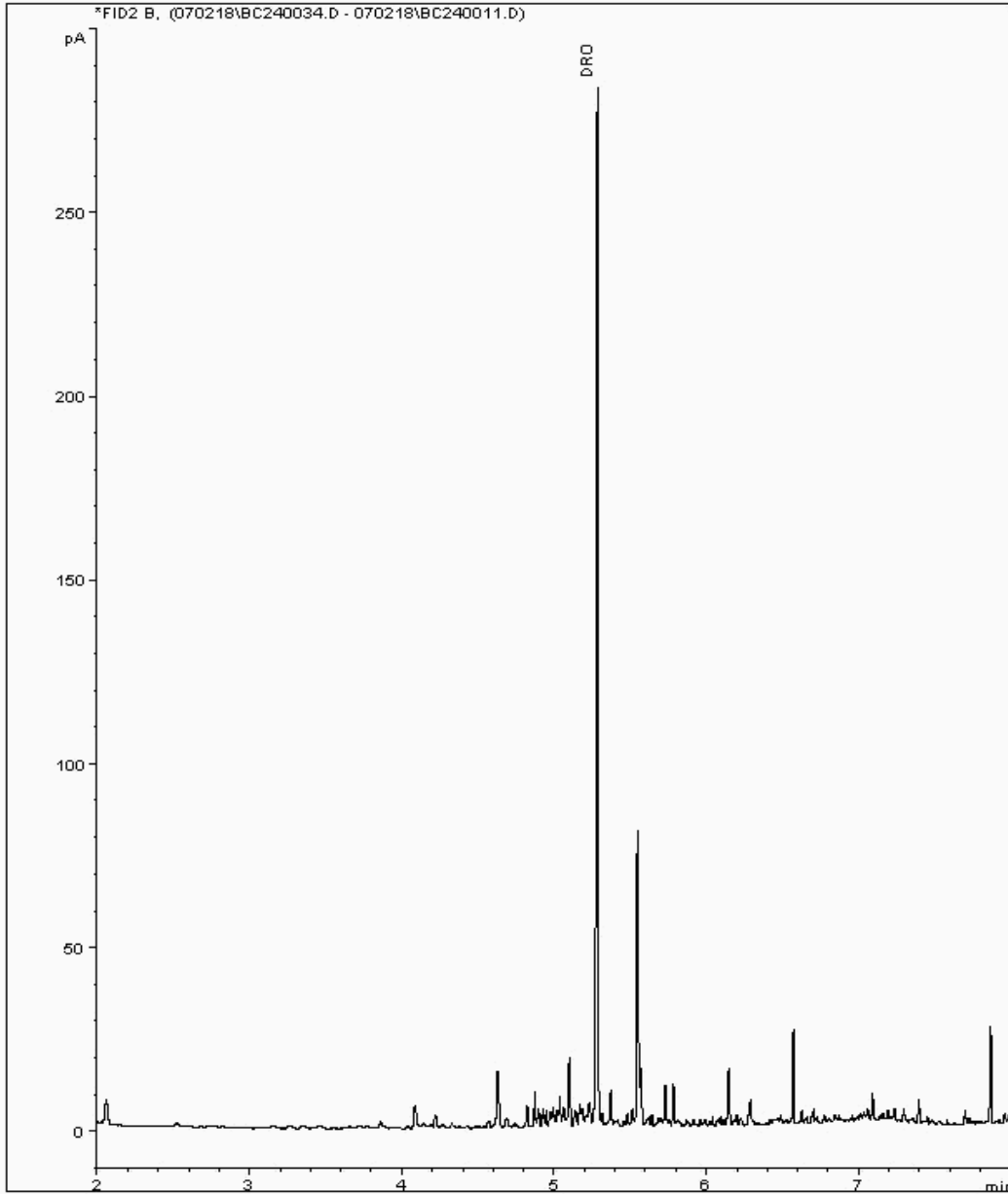
Analysis: EPH (DRO) (C10-C40) Aqueous (W)

Sample No : 17843078
Sample ID : C2B

Depth : 0.00 - 0.00

EPH Range Organics (C10 - C40)

Sample Identity: 16763529-
Date Acquired : 03/07/2018 06:04:42 PM
Units : mg/l





CERTIFICATE OF ANALYSIS

Validated

SDG:	180629-24	Client Reference:	Report Number:
Location:	Docksway Landfill Site	Order Number:	Superseded Report:

Chromatogram

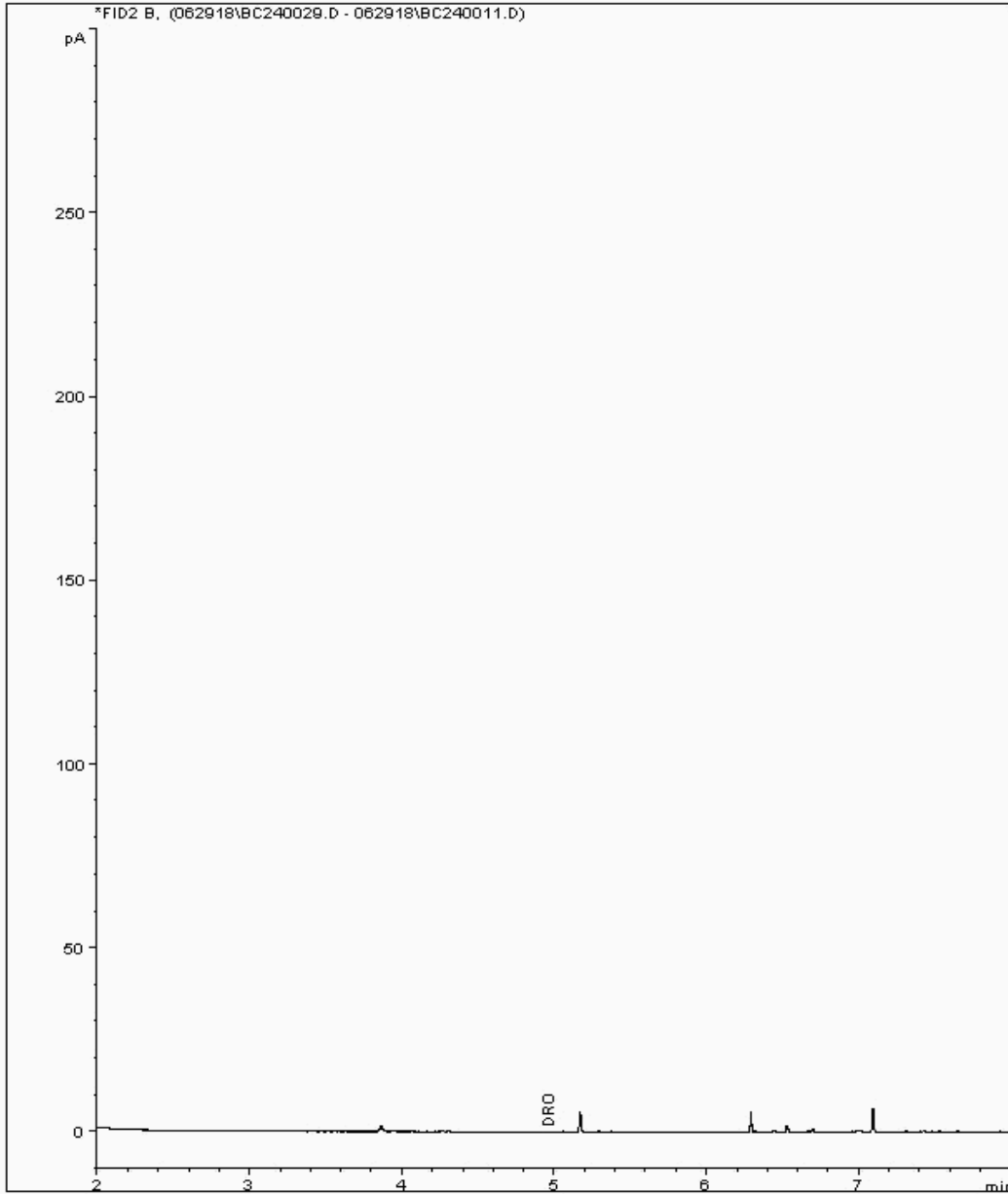
Analysis: EPH (DRO) (C10-C40) Aqueous (W)

Sample No : 17843092
Sample ID : GW09_35

Depth : 0.00 - 0.00

EPH Range Organics (C10 - C40)

Sample Identity: 16763684-
Date Acquired : 30/06/2018 19:30:13 PM
Units : mg/l





CERTIFICATE OF ANALYSIS

Validated

SDG:	180629-24	Client Reference:	467242
Location:	Docksway Landfill Site	Order Number:	700124102
		Report Number:	467116
		Superseded Report:	467116

Chromatogram

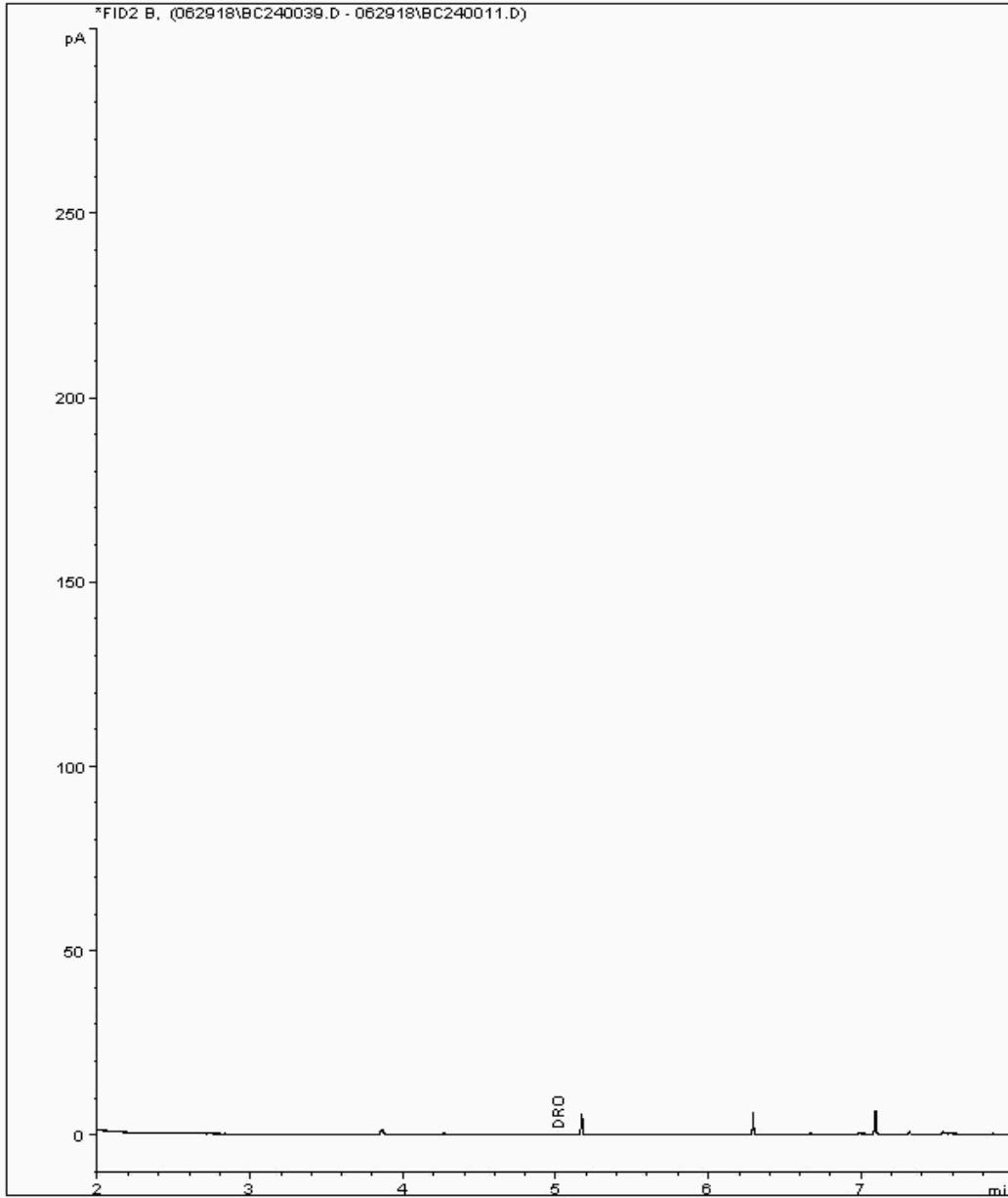
Analysis: EPH (DRO) (C10-C40) Aqueous (W)

Sample No : 17844104
Sample ID : GW07_40

Depth : 0.00 - 0.00

EPH Range Organics (C10 - C40)

Sample Identity: 16763495-
Date Acquired : 30/06/2018 23:52:15 PM
Units : mg/l





CERTIFICATE OF ANALYSIS

Validated

SDG:	180629-24	Client Reference:	467242
Location:	Docksway Landfill Site	Order Number:	700124102
		Report Number:	467116
		Superseded Report:	

Chromatogram

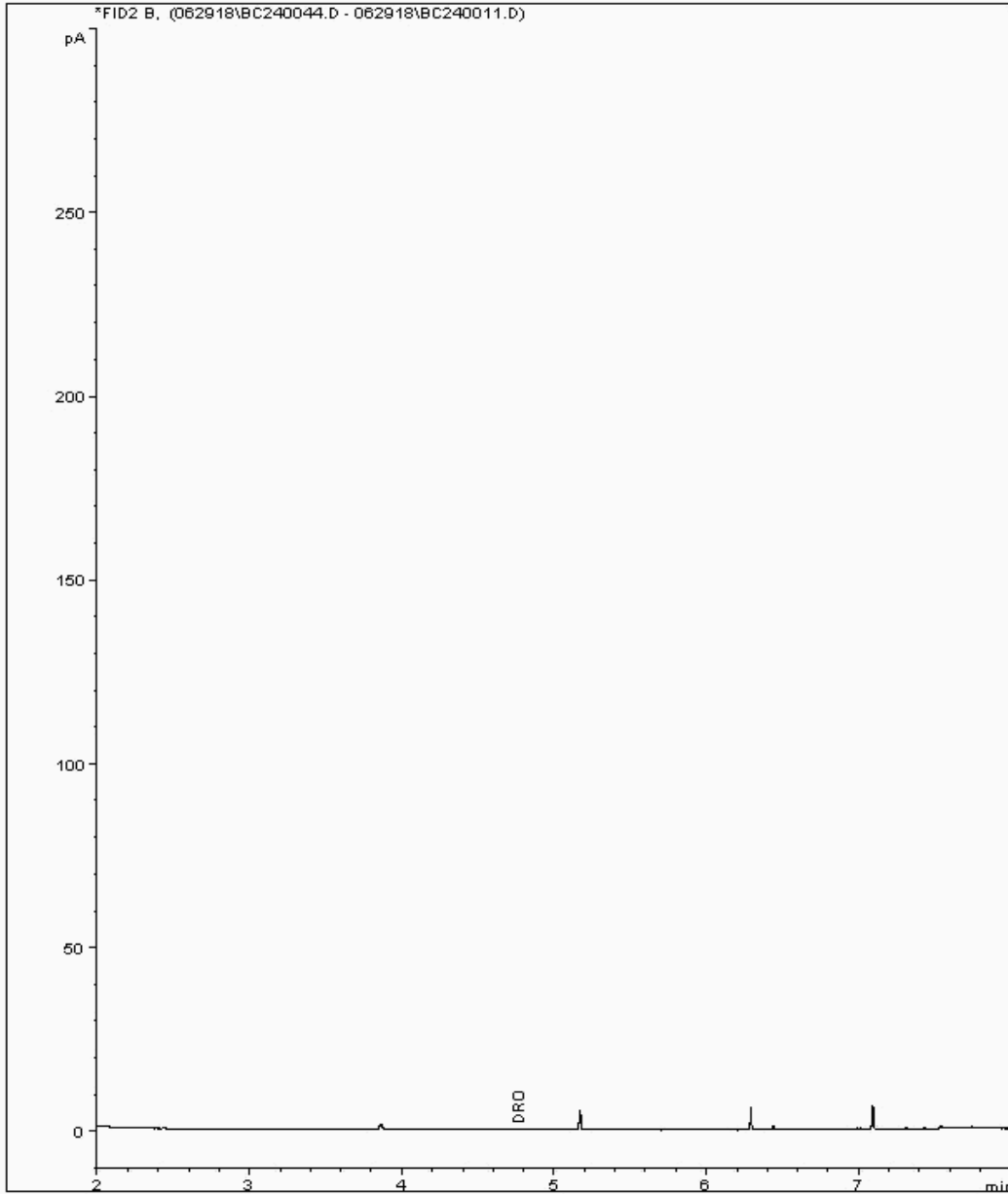
Analysis: EPH (DRO) (C10-C40) Aqueous (W)

Sample No : 17844134
Sample ID : GW12_33

Depth : 0.00 - 0.00

EPH Range Organics (C10 - C40)

Sample Identity: 16763647-
Date Acquired : 01/07/2018 02:01:37 PM
Units : mg/l





CERTIFICATE OF ANALYSIS

Validated

SDG:	180629-24	Client Reference:	Report Number:	467242
Location:	Docksway Landfill Site	Order Number:	Superseded Report:	467116

Chromatogram

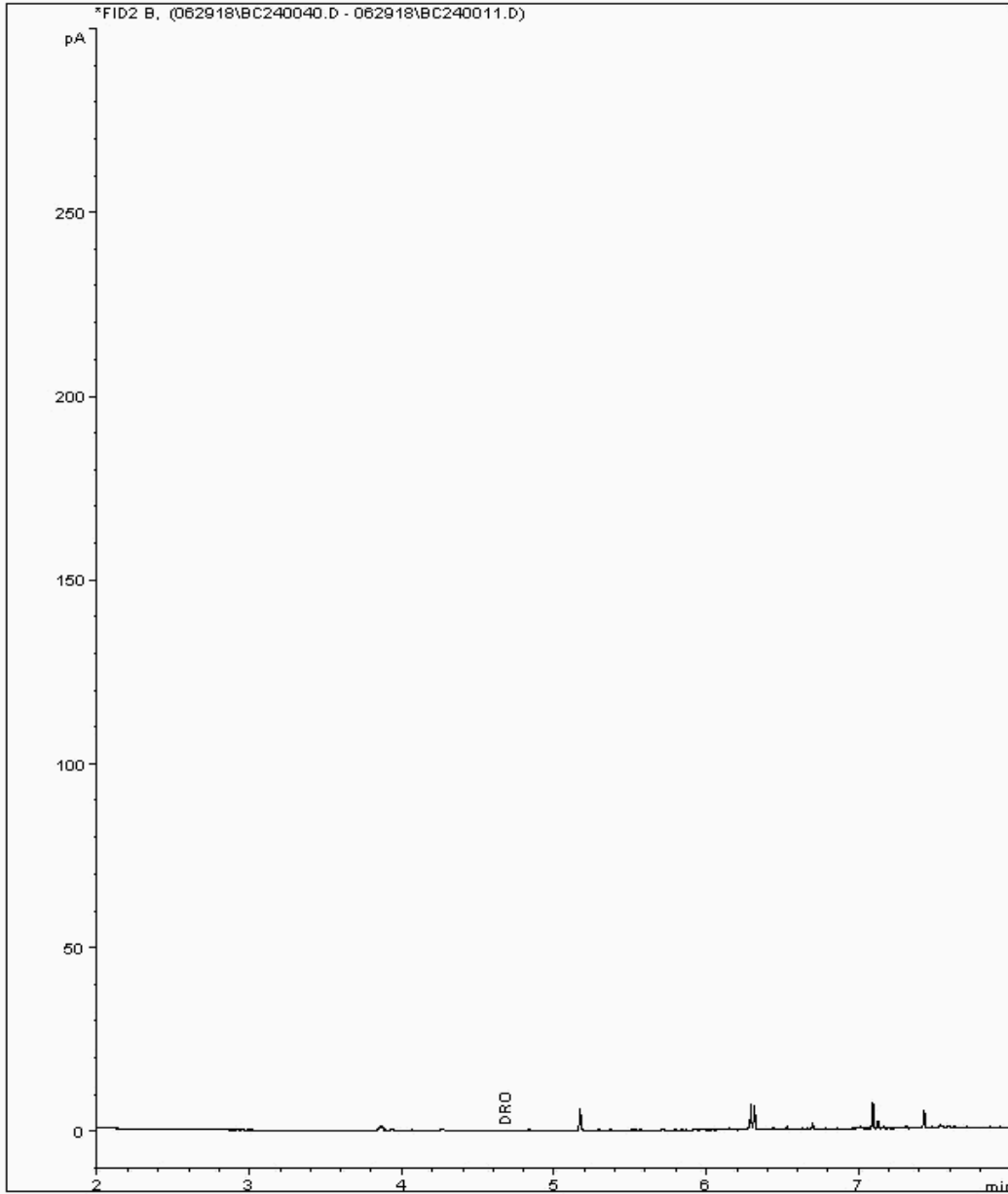
Analysis: EPH (DRO) (C10-C40) Aqueous (W)

Sample No : 17844155
Sample ID : GW09_32

Depth : 0.00 - 0.00

EPH Range Organics (C10 - C40)

Sample Identity: 16763613-
Date Acquired : 01/07/2018 00:18:17 PM
Units : mg/l





CERTIFICATE OF ANALYSIS

Validated

SDG: 180629-24
Location: Docksway Landfill Site

Client Reference:
Order Number: 700124102

Report Number: 467242
Superseded Report: 467116

Chromatogram

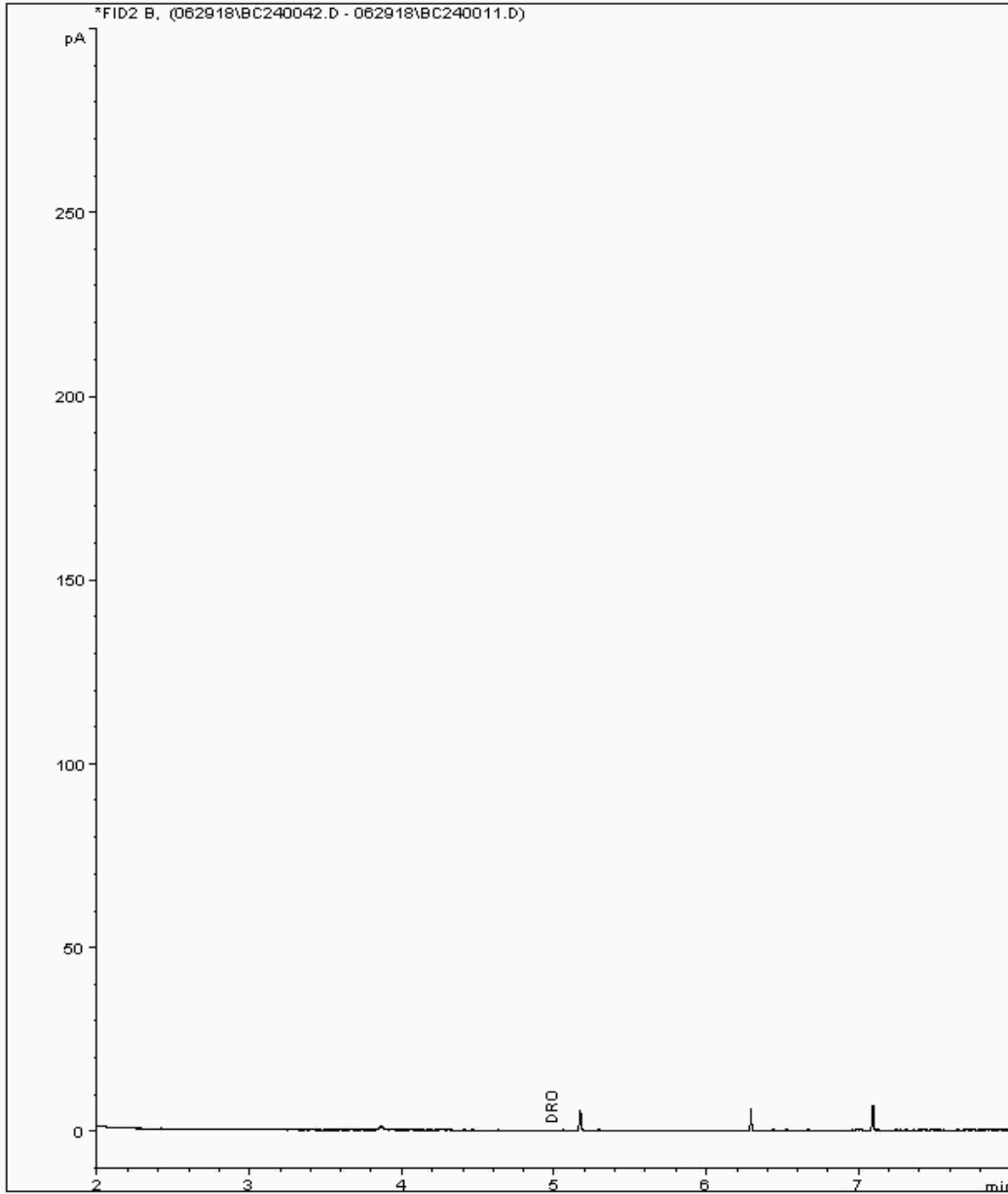
Analysis: EPH (DRO) (C10-C40) Aqueous (W)

Sample No : 17844174
Sample ID : GW03_09

Depth : 0.00 - 0.00

EPH Range Organics (C10 - C40)

Sample Identity: 16763630-
Date Acquired : 01/07/2018 01:10:06 PM
Units : mg/l





CERTIFICATE OF ANALYSIS

Validated

SDG:	180629-24	Client Reference:	Report Number:	467242
Location:	Docksway Landfill Site	Order Number:	Superseded Report:	467116

Chromatogram

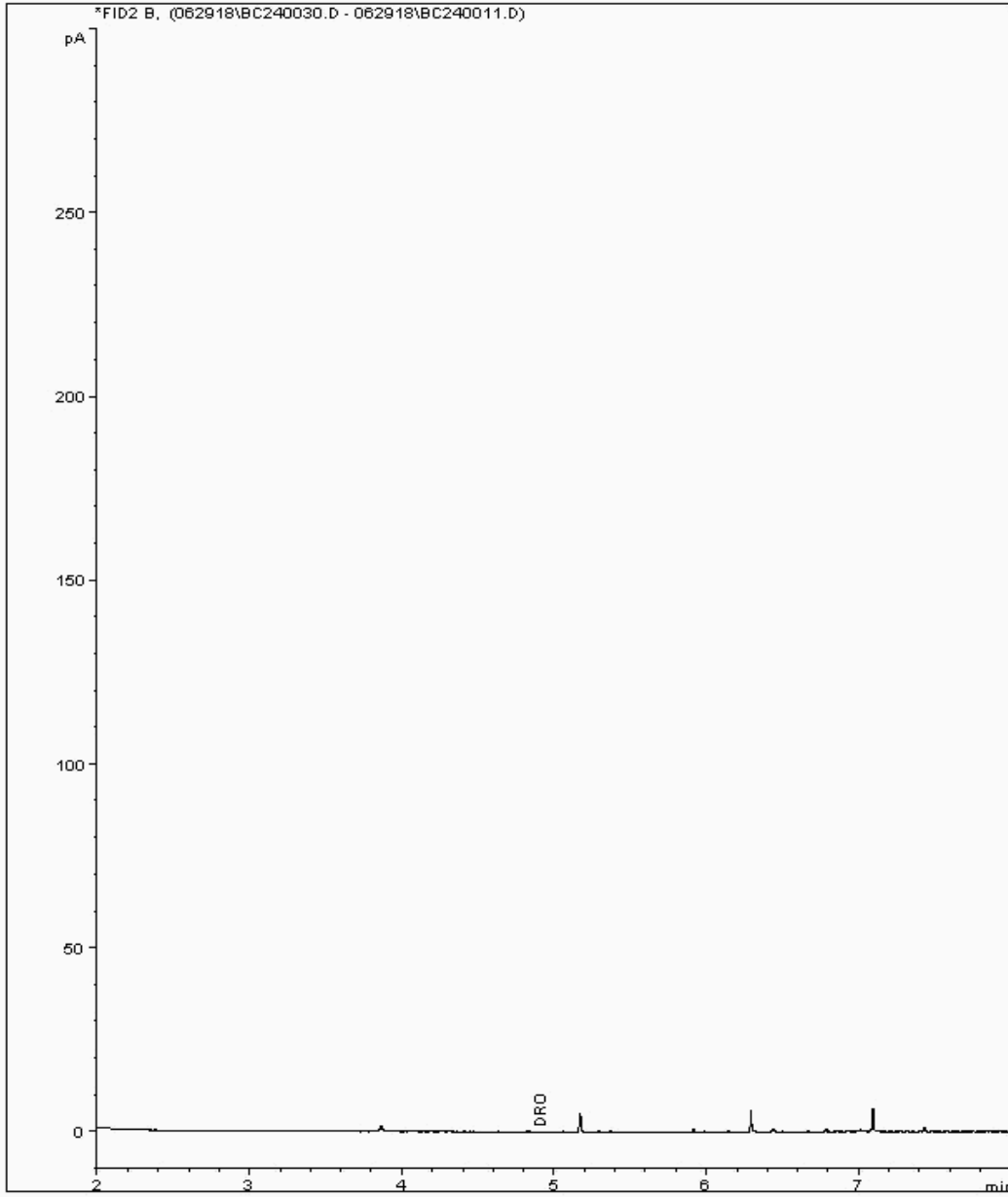
Analysis: EPH (DRO) (C10-C40) Aqueous (W)

Sample No : 17844245
Sample ID : GW09_31

Depth : 0.00 - 0.00

EPH Range Organics (C10 - C40)

Sample Identity: 16763596-
Date Acquired : 30/06/2018 19:56:35 PM
Units : mg/l





CERTIFICATE OF ANALYSIS

Validated

SDG:	180629-24	Client Reference:	467242
Location:	Docksway Landfill Site	Order Number:	700124102
		Report Number:	467116
		Superseded Report:	

Chromatogram

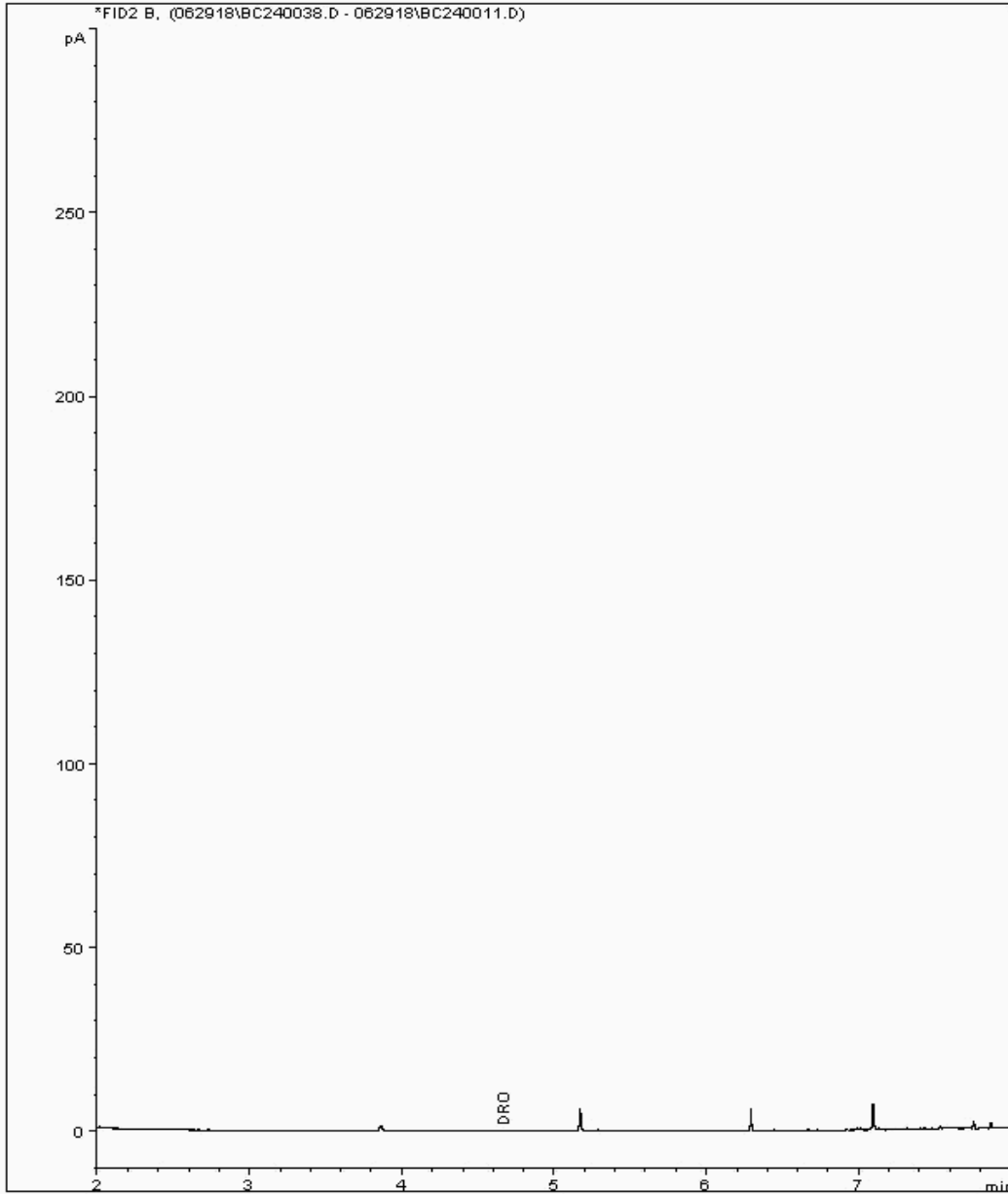
Analysis: EPH (DRO) (C10-C40) Aqueous (W)

Sample No : 17845526
Sample ID : GW12_38

Depth : 0.00 - 0.00

EPH Range Organics (C10 - C40)

Sample Identity: 16763436-
Date Acquired : 30/06/2018 23:26:08 PM
Units : mg/l





CERTIFICATE OF ANALYSIS

Validated

SDG:	180629-24	Client Reference:	Report Number:	467242
Location:	Docksway Landfill Site	Order Number:	Superseded Report:	467116

Chromatogram

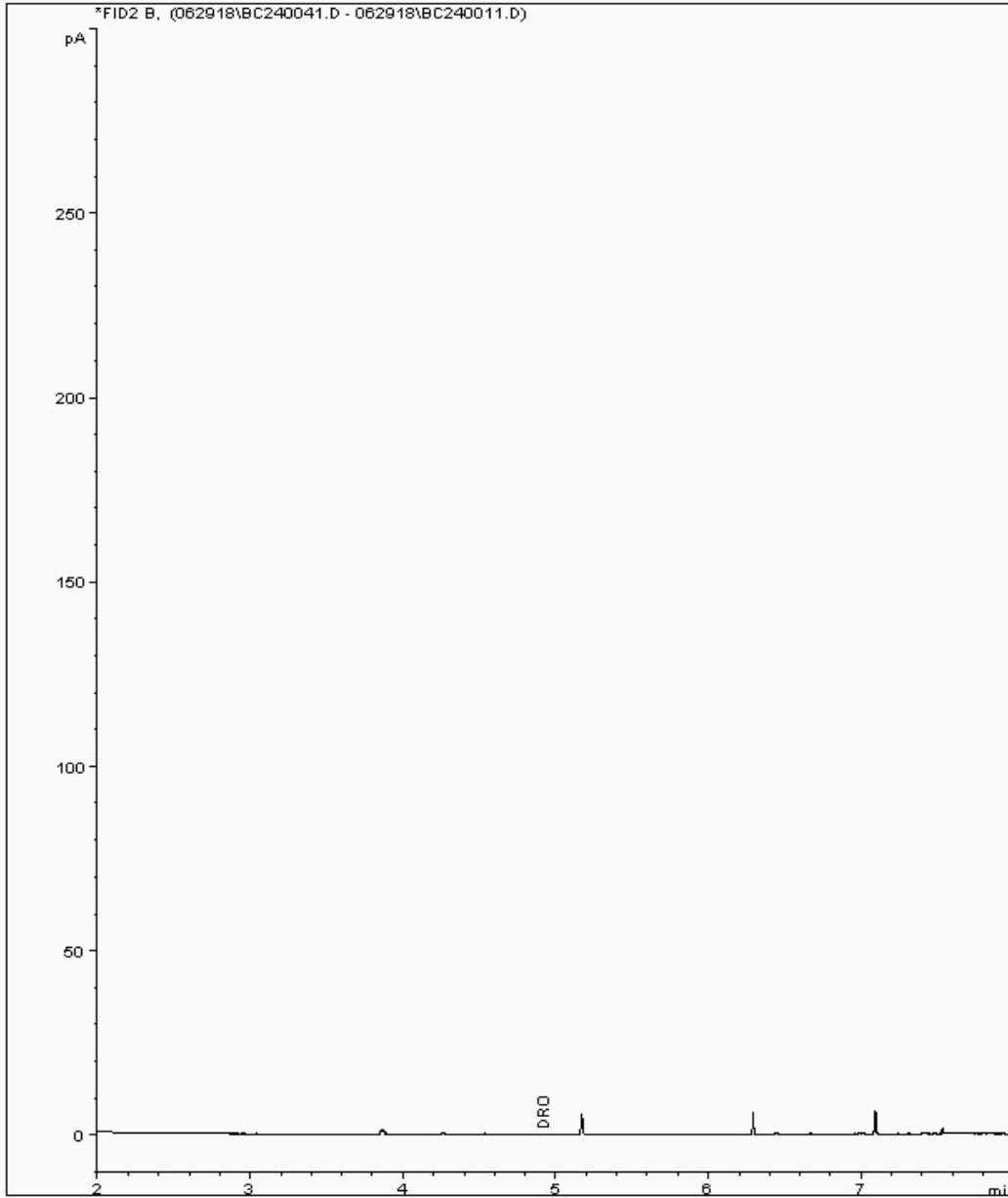
Analysis: EPH (DRO) (C10-C40) Aqueous (W)

Sample No : 17845543
Sample ID : GW06_37

Depth : 0.00 - 0.00

EPH Range Organics (C10 - C40)

Sample Identity: 16763403-
Date Acquired : 01/07/2018 00:44:08 PM
Units : mg/l





CERTIFICATE OF ANALYSIS

Validated

SDG:	180629-24	Client Reference:	Report Number:	467242
Location:	Docksway Landfill Site	Order Number:	Superseded Report:	467116

Chromatogram

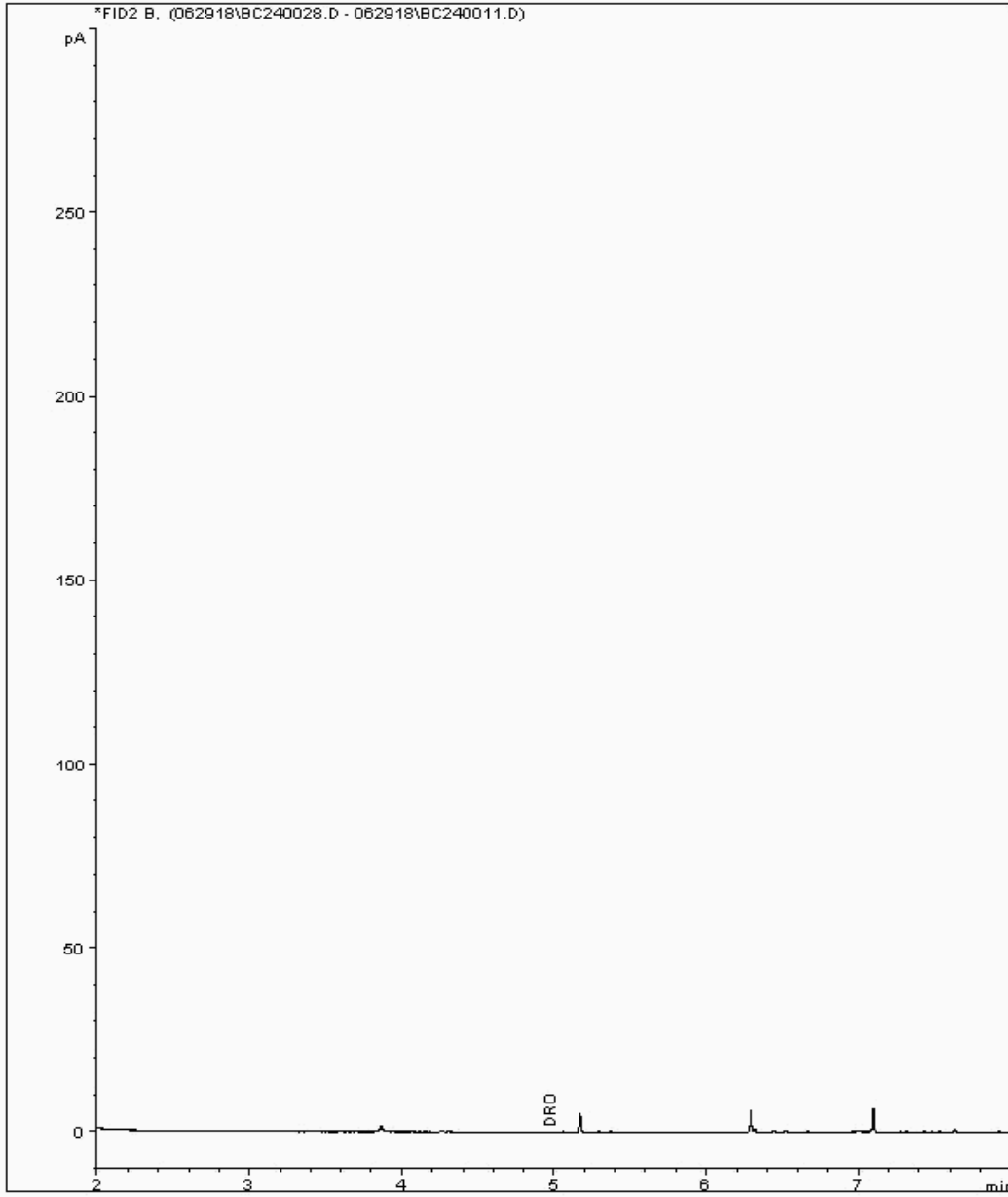
Analysis: EPH (DRO) (C10-C40) Aqueous (W)

Sample No : 17845560
Sample ID : GW06_13

Depth : 0.00 - 0.00

EPH Range Organics (C10 - C40)

Sample Identity: 16763468-
Date Acquired : 30/06/2018 19:04:04 PM
Units : mg/l





CERTIFICATE OF ANALYSIS

SDG: 180629-24	Client Reference:	Report Number: 467242
Location: Docksway Landfill Site	Order Number: 700124102	Superseded Report: 467116

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

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

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

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

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

Sample Deviations

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

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Holding time exceeded before sample received
5	Samples exceeded holding time before 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).

Astestostype	CommonName
Chrysotile	WhiteAsbestos
Amosite	BrownAsbestos
Crocidolite	BlueAsbestos
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.