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Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US
Tel: (01244) 528700
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Newport City Council
Civic Centre
Newport
NP20 4UR

Attention: Luke Embrey

CERTIFICATE OF ANALYSIS

Date of report Generation:	14 January 2022
Customer:	Newport City Council
Sample Delivery Group (SDG):	211216-140
Your Reference:	Dec GW 2021 Part 1
Location:	Newport landfill
Report No:	629525
Order Number:	700172854

This report has been revised and directly supersedes 629158 in its entirety.

We received 7 samples on Thursday December 16, 2021 and 7 of these samples were scheduled for analysis which was completed on Friday January 14, 2022. 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.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.
The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Sonia McWhan

Operations Manager

CERTIFICATE OF ANALYSIS

SDG: 211216-140 **Report Number:** 629525 **Superseded Report:** 629158
Client Ref.: Dec GW 2021 Part 1 **Location:** Newport landfill

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
25544230	GW 03_09		0.00 - 0.00	14/12/2021
25544115	GW 06_39		0.00 - 0.00	14/12/2021
25544139	GW 07_40		0.00 - 0.00	14/12/2021
25544191	GW 09_31		0.00 - 0.00	14/12/2021
25544260	GW 09_32		0.00 - 0.00	14/12/2021
25544162	GW 12_30		0.00 - 0.00	14/12/2021
25544276	GW 12_33		0.00 - 0.00	14/12/2021

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

Results Legend

X Test

N No Determination Possible

Sample Types -

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

Lab Sample No(s)			25544230								25544115								25544139				
Customer Sample Reference			GW 03_09								GW 06_39								GW 07_40				
AGS Reference																							
Depth (m)			0.00 - 0.00								0.00 - 0.00								0.00 - 0.00				
Container			0.5l glass bottle (ALE227)	250ml BOD (ALE212)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	ZnAc (ALE246)	0.5l glass bottle (ALE227)	250ml BOD (ALE212)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	ZnAc (ALE246)	0.5l glass bottle (ALE227)	250ml BOD (ALE212)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)
Sample Type			GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW
Alkalinity as CaCO3	All	NDPs: 0 Tests: 7			X								X								X		
Alkalinity Filtered as CaCO3	All	NDPs: 0 Tests: 7			X								X								X		
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 7				X								X								X	
Anions by Kone (w)	All	NDPs: 0 Tests: 7			X								X								X		
BOD True Total	All	NDPs: 0 Tests: 7		X								X								X			
COD Unfiltered	All	NDPs: 0 Tests: 7		X								X								X			
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 7			X								X								X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 7						X								X							
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 7					X								X								X
Dissolved Organic/Inorganic Carbon	All	NDPs: 0 Tests: 7	X								X								X				
EPH (DRO) (C10-C40) Aqueous (W)	All	NDPs: 0 Tests: 7	X								X								X				
GRO by GC-FID (W)	All	NDPs: 0 Tests: 7							X								X						
Ionic Balance	All	NDPs: 0 Tests: 7			X								X								X		
Nitrite by Kone (w)	All	NDPs: 0 Tests: 7						X								X							
pH Value	All	NDPs: 0 Tests: 7			X								X								X		

25544260	GW 09_32		0.00 - 0.00	ZnAc (ALE246)	GW																	
				Vial (ALE297)	GW														X			
				NaOH (ALE245)	GW								X								X	
				HNO3 Filtered (ALE204)	GW									X								
				H2SO4 (ALE244)	GW			X														
				500ml Plastic (ALE208)	GW	X	X		X			X								X		X
				250ml BOD (ALE212)	GW					X	X											
				0.5l glass bottle (ALE227)	GW											X	X					
25544191	GW 09_31		0.00 - 0.00	ZnAc (ALE246)	GW																	
				Vial (ALE297)	GW														X			
				NaOH (ALE245)	GW								X								X	
				HNO3 Filtered (ALE204)	GW									X								
				H2SO4 (ALE244)	GW			X														
				500ml Plastic (ALE208)	GW	X	X		X			X								X		X
				250ml BOD (ALE212)	GW					X	X											
				0.5l glass bottle (ALE227)	GW											X	X					
25544139	GW 07_40		0.00 - 0.00	ZnAc (ALE246)	GW																	
				Vial (ALE297)	GW														X			
				NaOH (ALE245)	GW								X								X	

CERTIFICATE OF ANALYSIS

SDG: 211216-140 **Report Number:** 629525 **Superseded Report:** 629158
Client Ref.: Dec GW 2021 Part 1 **Location:** Newport landfill

Results Legend

X Test

N No Determination Possible

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

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
Phosphate by Kone (w)	All	NDPs: 0 Tests: 7	25544230	GW 03_09		0.00 - 0.00	0.5l glass bottle (ALE227)	GW
							250ml BOD (ALE212)	GW
							500ml Plastic (ALE208)	GW
							H2SO4 (ALE244)	GW
							HNO3 Filtered (ALE204)	GW
							NaOH (ALE245)	GW
							Vial (ALE297)	GW
							ZnAc (ALE246)	GW
			25544115	GW 06_39		0.00 - 0.00	0.5l glass bottle (ALE227)	GW
							250ml BOD (ALE212)	GW
							500ml Plastic (ALE208)	GW
							H2SO4 (ALE244)	GW
							HNO3 Filtered (ALE204)	GW
							NaOH (ALE245)	GW
							Vial (ALE297)	GW
							ZnAc (ALE246)	GW
			25544139	GW 07_40		0.00 - 0.00	0.5l glass bottle (ALE227)	GW
							250ml BOD (ALE212)	GW
							500ml Plastic (ALE208)	GW
							H2SO4 (ALE244)	GW
							HNO3 Filtered (ALE204)	GW
Phosphate by Kone (w)	All	NDPs: 0 Tests: 7						
				X				
				X				
				X				
Sulphide	All	NDPs: 0 Tests: 7						
				X				
				X				
Total EPH (aq)	All	NDPs: 0 Tests: 7						
				X				
				X				
VOC MS (W)	All	NDPs: 0 Tests: 7						
				X				
				X				

25544260	GW 09_32		0.00 - 0.00	ZnAc (ALE246)	GW				X				
				Vial (ALE297)	GW								X
				NaOH (ALE245)	GW								
				HNO3 Filtered (ALE204)	GW								
				H2SO4 (ALE244)	GW								
				500ml Plastic (ALE208)	GW		X						
				250ml BOD (ALE212)	GW								
				0.5l glass bottle (ALE227)	GW						X		
25544191	GW 09_31		0.00 - 0.00	ZnAc (ALE246)	GW				X				
				Vial (ALE297)	GW								X
				NaOH (ALE245)	GW								
				HNO3 Filtered (ALE204)	GW								
				H2SO4 (ALE244)	GW								
				500ml Plastic (ALE208)	GW		X						
				250ml BOD (ALE212)	GW								
				0.5l glass bottle (ALE227)	GW						X		
25544139	GW 07_40		0.00 - 0.00	ZnAc (ALE246)	GW				X				
				Vial (ALE297)	GW								X
				NaOH (ALE245)	GW								

CERTIFICATE OF ANALYSIS

SDG: 211216-140 **Report Number:** 629525 **Superseded Report:** 629158
Client Ref.: Dec GW 2021 Part 1 **Location:** Newport landfill

Results Legend

- X Test
- N No Determination Possible

Sample Types -

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

Lab Sample No(s)			25544162								25544276							
Customer Sample Reference			GW 12_30								GW 12_33							
AGS Reference																		
Depth (m)			0.00 - 0.00								0.00 - 0.00							
Container			0.5l glass bottle (ALE227)	250ml BOD (ALE212)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	ZnAc (ALE246)	0.5l glass bottle (ALE227)	250ml BOD (ALE212)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	ZnAc (ALE246)
Sample Type			GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW
Alkalinity as CaCO3	All	NDPs: 0 Tests: 7			X								X					
Alkalinity Filtered as CaCO3	All	NDPs: 0 Tests: 7			X								X					
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 7				X								X				
Anions by Kone (w)	All	NDPs: 0 Tests: 7			X								X					
BOD True Total	All	NDPs: 0 Tests: 7		X								X						
COD Unfiltered	All	NDPs: 0 Tests: 7		X								X						
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 7			X								X					
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 7						X								X		
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 7					X								X			
Dissolved Organic/Inorganic Carbon	All	NDPs: 0 Tests: 7	X								X							
EPH (DRO) (C10-C40) Aqueous (W)	All	NDPs: 0 Tests: 7	X								X							
GRO by GC-FID (W)	All	NDPs: 0 Tests: 7							X								X	
Ionic Balance	All	NDPs: 0 Tests: 7			X								X					
Nitrite by Kone (w)	All	NDPs: 0 Tests: 7						X								X		
pH Value	All	NDPs: 0 Tests: 7			X								X					

CERTIFICATE OF ANALYSIS

SDG: 211216-140 **Report Number:** 629525 **Superseded Report:** 629158
Client Ref.: Dec GW 2021 Part 1 **Location:** Newport landfill

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
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SA - Saline Water
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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)										25544162										25544276
Customer Sample Reference										GW 12_30										GW 12_33
AGS Reference																				
Depth (m)										0.00 - 0.00										0.00 - 0.00
Container										0.5l glass bottle (ALE227)	250ml BOD (ALE212)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	ZnAc (ALE246)	0.5l glass bottle (ALE227)	250ml BOD (ALE212)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	ZnAc (ALE246)
Sample Type										GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW
Phosphate by Kone (w)	All	NDPs: 0 Tests: 7										X								X					
Sulphide	All	NDPs: 0 Tests: 7															X								X
Total EPH (aq)	All	NDPs: 0 Tests: 7								X									X						
VOC MS (W)	All	NDPs: 0 Tests: 7														X								X	

CERTIFICATE OF ANALYSIS

SDG: 211216-140 **Report Number:** 629525 **Superseded Report:** 629158
Client Ref.: Dec GW 2021 Part 1 **Location:** Newport landfill

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+5@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	GW 03_09	GW 06_39	GW 07_40	GW 09_31	GW 09_32	GW 12_30
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)
			Date Sampled	14/12/2021	14/12/2021	14/12/2021	14/12/2021	14/12/2021	14/12/2021
			Sampled Time	.	.	.	.	.	.
			Date Received	16/12/2021	16/12/2021	16/12/2021	16/12/2021	16/12/2021	16/12/2021
			SDG Ref	211216-140	211216-140	211216-140	211216-140	211216-140	211216-140
			Lab Sample No.(s)	25544230	25544115	25544139	25544191	25544260	25544162
			AGS Reference						
Ionic balance	% Diff	Calulation		-1.99	-3.56	-2.47	-2.26	-2.91	-2.64
Alkalinity, Total as CaCO3	<2 mg/l	TM043		965 #	986 #	693 #	557 #	535 #	766 #
Alkalinity,Total as CaCO3 (diss.filt)	<2 mg/l	TM043		970	1000	700	570	560	735
Alkalinity, Bicarbonate as CaCO3 (diss.filt)	<2 mg/l	TM043		970	1000	700	570	560	735
BOD, unfiltered	<1 mg/l	TM045		<1 #	1.98 #	12.7 #	4.68 ♦ #	28.8 #	2.29 ♦ #
Carbon, Organic (diss.filt)	<3 mg/l	TM090		11.7	15.6	16.6	15.8	16.3	23.5
Ammoniacal Nitrogen as N	<0.2 mg/l	TM099		5.99 #	3.17 #	11.2 #	2.21 #	1.65 #	1.04 #
Sulphide	<0.01 mg/l	TM101		<0.01 #	0.0565 #	0.0676 #	<0.01 #	0.0579 #	<0.01 #
COD, unfiltered	<7 mg/l	TM107		80.5 ♦ #	70.8 ♦ #	91.9 ♦ #	58.3 ♦ #	187 ♦ #	144 ♦ #
Conductivity @ 20 deg.C	<0.02 mS/cm	TM120		6.82 #	5.3 #	1.85 #	1.65 #	2.96 #	1.77 #
Arsenic (diss.filt)	<0.5 µg/l	TM152		3.69 #	11.1 #	17.9 #	2.36 #	3.06 #	15.9 #
Boron (diss.filt)	<10 µg/l	TM152		1110 #	1100 #	1340 #	708 #	741 #	496 #
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 #	1.39 #	<1 #	<1 #
Copper (diss.filt)	<0.3 µg/l	TM152		1.64 #	0.438 #	<0.3 #	4.48 #	0.313 #	<0.3 #
Lead (diss.filt)	<0.2 µg/l	TM152		<0.2 #	<0.2 #	<0.2 #	<0.2 #	<0.2 #	<0.2 #
Manganese (diss.filt)	<3 µg/l	TM152		500 #	1150 #	162 #	1120 #	1270 #	3840 #
Nickel (diss.filt)	<0.4 µg/l	TM152		2.5 #	4.26 #	1.83 #	6.03 #	5.59 #	4.82 #
Selenium (diss.filt)	<1 µg/l	TM152		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Zinc (diss.filt)	<1 µg/l	TM152		8.41 #	4.85 #	3.01 #	53.4 #	15.7 #	3.97 #
Sodium (Dis.Filt)	<0.076 mg/l	TM152		1270 #	854 #	292 #	137 #	432 #	241 #
Magnesium (Dis.Filt)	<0.036 mg/l	TM152		125 #	127 #	50.2 #	46.8 #	69.3 #	55.4 #
Potassium (Dis.Filt)	<0.2 mg/l	TM152		39.7 #	42.9 #	26.4 #	23.5 #	25.3 #	9.21 #
Calcium (Dis.Filt)	<0.2 mg/l	TM152		123 #	161 #	40.3 #	177 #	129 #	119 #
Iron (Dis.Filt)	<0.019 mg/l	TM152		1.42 #	5.09 #	1.49 #	1.09 #	0.138 #	9.13 #
Hardness, Total as CaCO3	<0.65 mg/l	TM152		824	926	307	635	607	526
EPH Range >C10 - C40 (aq)	<100 µg/l	TM172		127 #	132 #	238 #	194 #	292 #	115 #
Total EPH (C6-C40) (aq)	<100 µg/l	TM172		127	132	238	194	292	115
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		3.47 #	0.203 #	7.89 #	<0.05 #	<0.05 #	<0.05 #
Sulphate	<2 mg/l	TM184		225 #	91.2 #	<2 #	192 #	236 #	92.5 #
Chloride	<2 mg/l	TM184		1840 #	1390 #	261 #	173 #	620 #	207 #

CERTIFICATE OF ANALYSIS

SDG: 211216-140 **Report Number:** 629525 **Superseded Report:** 629158
Client Ref.: Dec GW 2021 Part 1 **Location:** Newport landfill

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	GW 03_09	GW 06_39	GW 07_40	GW 09_31	GW 09_32	GW 12_30
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)
			Date Sampled	14/12/2021	14/12/2021	14/12/2021	14/12/2021	14/12/2021	14/12/2021
			Sampled Time	.	.	.	.	.	.
			Date Received	16/12/2021	16/12/2021	16/12/2021	16/12/2021	16/12/2021	16/12/2021
			SDG Ref	211216-140	211216-140	211216-140	211216-140	211216-140	211216-140
			Lab Sample No.(s)	25544230	25544115	25544139	25544191	25544260	25544162
			AGS Reference						
Nitrate as NO3	<0.3 mg/l	TM184		2.15	0.439	<0.3	1.06	<0.3	0.532
Total Oxidised Nitrogen as N	<0.1 mg/l	TM184		0.458 #	0.102 #	<0.1 #	0.246 #	<0.1 #	0.129 #
Cyanide, Total	<0.05 mg/l	TM227		<0.05 #	<0.05 #	<0.05 #	<0.05 #	<0.05 #	<0.05 #
pH	<1 pH Units	TM256		8.16 #	8.13 #	8.32 #	7.75 #	7.85 #	7.65 #

CERTIFICATE OF ANALYSIS

SDG: 211216-140 **Report Number:** 629525 **Superseded Report:** 629158
Client Ref.: Dec GW 2021 Part 1 **Location:** Newport landfill

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+5@	Sample deviation (see appendix)

Customer Sample Ref.	GW 12_33
Depth (m)	0.00 - 0.00
Sample Type	Ground Water (GW)
Date Sampled	14/12/2021
Sampled Time	.
Date Received	16/12/2021
SDG Ref	211216-140
Lab Sample No.(s)	25544276
AGS Reference	

Component	LOD/Units	Method	
Ionic balance	% Diff	Calulation	-1.54
Alkalinity, Total as CaCO3	<2 mg/l	TM043	755 #
Alkalinity,Total as CaCO3 (diss.filt)	<2 mg/l	TM043	755
Alkalinity, Bicarbonate as CaCO3 (diss.filt)	<2 mg/l	TM043	755
BOD, unfiltered	<1 mg/l	TM045	5.65 ♦ #
Carbon, Organic (diss.filt)	<3 mg/l	TM090	16.1
Ammoniacal Nitrogen as N	<0.2 mg/l	TM099	14.6 #
Sulphide	<0.01 mg/l	TM101	4.23 #
COD, unfiltered	<7 mg/l	TM107	89.8 ♦ #
Conductivity @ 20 deg.C	<0.02 mS/cm	TM120	3.51 #
Arsenic (diss.filt)	<0.5 µg/l	TM152	53 #
Boron (diss.filt)	<10 µg/l	TM152	1050 #
Cadmium (diss.filt)	<0.08 µg/l	TM152	<0.08 #
Chromium (diss.filt)	<1 µg/l	TM152	<1 #
Copper (diss.filt)	<0.3 µg/l	TM152	<0.3 #
Lead (diss.filt)	<0.2 µg/l	TM152	<0.2 #
Manganese (diss.filt)	<3 µg/l	TM152	547 #
Nickel (diss.filt)	<0.4 µg/l	TM152	0.933 #
Selenium (diss.filt)	<1 µg/l	TM152	<1 #
Zinc (diss.filt)	<1 µg/l	TM152	1.22 #
Sodium (Dis.Filt)	<0.076 mg/l	TM152	478 #
Magnesium (Dis.Filt)	<0.036 mg/l	TM152	98.9 #
Potassium (Dis.Filt)	<0.2 mg/l	TM152	35.5 #
Calcium (Dis.Filt)	<0.2 mg/l	TM152	143 #
Iron (Dis.Filt)	<0.019 mg/l	TM152	0.164 #
Hardness, Total as CaCO3	<0.65 mg/l	TM152	765
EPH Range >C10 - C40 (aq)	<100 µg/l	TM172	257 #
Total EPH (C6-C40) (aq)	<100 µg/l	TM172	257
Nitrite as NO2	<0.05 mg/l	TM184	<0.05 #
Phosphate (Ortho as PO4)	<0.05 mg/l	TM184	4.8 #
Sulphate	<2 mg/l	TM184	69.5 #
Chloride	<2 mg/l	TM184	804 #

CERTIFICATE OF ANALYSIS

SDG: 211216-140 **Report Number:** 629525 **Superseded Report:** 629158
Client Ref.: Dec GW 2021 Part 1 **Location:** Newport landfill

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+5@	Sample deviation (see appendix)

		Customer Sample Ref.	GW 12_33
		Depth (m)	0.00 - 0.00
		Sample Type	Ground Water (GW)
		Date Sampled	14/12/2021
		Sampled Time	.
		Date Received	16/12/2021
		SDG Ref	211216-140
		Lab Sample No.(s)	25544276
		AGS Reference	
Component	**LOD/Units**	**Method**	
Nitrate as NO3	<0.3 mg/l	TM184	<0.3
Total Oxidised Nitrogen as N	<0.1 mg/l	TM184	<0.1 #
Cyanide, Total	<0.05 mg/l	TM227	<0.05 #
pH	<1 pH Units	TM256	7.61 #

CERTIFICATE OF ANALYSIS

SDG: 211216-140 **Report Number:** 629525 **Superseded Report:** 629158
Client Ref.: Dec GW 2021 Part 1 **Location:** Newport landfill

GRO by GC-FID (W)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+5@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	GW 03_09	GW 06_39	GW 07_40	GW 09_31	GW 09_32	GW 12_30
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)
			Date Sampled	14/12/2021	14/12/2021	14/12/2021	14/12/2021	14/12/2021	14/12/2021
			Sampled Time	.	.	.	.	.	.
			Date Received	16/12/2021	16/12/2021	16/12/2021	16/12/2021	16/12/2021	16/12/2021
			SDG Ref	211216-140	211216-140	211216-140	211216-140	211216-140	211216-140
			Lab Sample No.(s)	25544230	25544115	25544139	25544191	25544260	25544162
			AGS Reference						
Methyl tertiary butyl ether (MTBE)	<3 µg/l	TM245		<3 ♦ #	<3 ♦ #	<3 ♦ #	<3 ♦ #	<3 ♦ #	<3 ♦ #
Benzene	<7 µg/l	TM245		<7 ♦ #	<7 ♦ #	<7 ♦ #	<7 ♦ #	<7 ♦ #	<7 ♦ #
Toluene	<4 µg/l	TM245		<4 ♦ #	<4 ♦ #	<4 ♦ #	<4 ♦ #	<4 ♦ #	<4 ♦ #
Ethylbenzene	<5 µg/l	TM245		<5 ♦ #	<5 ♦ #	<5 ♦ #	<5 ♦ #	<5 ♦ #	<5 ♦ #
m,p-Xylene	<8 µg/l	TM245		<8 ♦ #	<8 ♦ #	<8 ♦ #	<8 ♦ #	<8 ♦ #	<8 ♦ #
o-Xylene	<3 µg/l	TM245		<3 ♦ #	<3 ♦ #	<3 ♦ #	<3 ♦ #	<3 ♦ #	<3 ♦ #
Sum of detected BTEX	<28 µg/l	TM245		<28 ♦	<28 ♦	<28 ♦	<28 ♦	<28 ♦	<28 ♦
GRO >C5-C10	<10 µg/l	TM245		<10 ♦	<10 ♦	<10 ♦	<10 ♦	<10 ♦	<10 ♦
EPH (C6-C10)	<100 µg/l	TM245		<100 ♦	<100 ♦	<100 ♦	<100 ♦	<100 ♦	<100 ♦

CERTIFICATE OF ANALYSIS

SDG: 211216-140 **Report Number:** 629525 **Superseded Report:** 629158
Client Ref.: Dec GW 2021 Part 1 **Location:** Newport landfill

GRO by GC-FID (W)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+5@	Sample deviation (see appendix)

Customer Sample Ref.	GW 12_33
Depth (m)	0.00 - 0.00
Sample Type	Ground Water (GW)
Date Sampled	14/12/2021
Sampled Time	.
Date Received	16/12/2021
SDG Ref	211216-140
Lab Sample No.(s)	25544276
AGS Reference	

Component	LOD/Units	Method	
Methyl tertiary butyl ether (MTBE)	<3 µg/l	TM245	<3 ♦ #
Benzene	<7 µg/l	TM245	<7 ♦ #
Toluene	<4 µg/l	TM245	<4 ♦ #
Ethylbenzene	<5 µg/l	TM245	<5 ♦ #
m,p-Xylene	<8 µg/l	TM245	<8 ♦ #
o-Xylene	<3 µg/l	TM245	<3 ♦ #
Sum of detected BTEX	<28 µg/l	TM245	<28 ♦
GRO >C5-C10	<10 µg/l	TM245	<10 ♦
EPH (C6-C10)	<100 µg/l	TM245	<100 ♦

CERTIFICATE OF ANALYSIS

SDG: 211216-140 **Report Number:** 629525 **Superseded Report:** 629158
Client Ref.: Dec GW 2021 Part 1 **Location:** Newport landfill

VOC MS (W)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+5@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	GW 03_09	GW 06_39	GW 07_40	GW 09_31	GW 09_32	GW 12_30
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)
			Date Sampled	14/12/2021	14/12/2021	14/12/2021	14/12/2021	14/12/2021	14/12/2021
			Sampled Time	.	.	.	.	.	.
			Date Received	16/12/2021	16/12/2021	16/12/2021	16/12/2021	16/12/2021	16/12/2021
			SDG Ref	211216-140	211216-140	211216-140	211216-140	211216-140	211216-140
			Lab Sample No.(s)	25544230	25544115	25544139	25544191	25544260	25544162
			AGS Reference						
Dibromofluoromethane**	%	TM208		112	113	108	112	111	109
Toluene-d8**	%	TM208		102	102	99.9	99.9	99.7	101
4-Bromofluorobenzene**	%	TM208		97.4	95.8	99	98	98	98.5
Dichlorodifluoromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Chloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Vinyl chloride	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Bromomethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Chloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Trichlorofluoromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Carbon disulphide	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Dichloromethane	<3 µg/l	TM208		<3 #	<3 #	<3 #	<3 #	<3 #	<3 #
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
trans-1,2-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1-Dichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
cis-1,2-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
2,2-Dichloropropane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Bromochloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Chloroform	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1,1-Trichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Carbontetrachloride	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2-Dichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Benzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Trichloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2-Dichloropropane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Dibromomethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Bromodichloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
cis-1,3-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Toluene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
trans-1,3-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1,2-Trichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #

CERTIFICATE OF ANALYSIS

SDG: 211216-140 **Report Number:** 629525 **Superseded Report:** 629158
Client Ref.: Dec GW 2021 Part 1 **Location:** Newport landfill

VOC MS (W)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	GW 03_09	GW 06_39	GW 07_40	GW 09_31	GW 09_32	GW 12_30
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)
			Date Sampled	14/12/2021	14/12/2021	14/12/2021	14/12/2021	14/12/2021	14/12/2021
			Sampled Time	.	.	.	.	.	.
			Date Received	16/12/2021	16/12/2021	16/12/2021	16/12/2021	16/12/2021	16/12/2021
			SDG Ref	211216-140	211216-140	211216-140	211216-140	211216-140	211216-140
			Lab Sample No.(s)	25544230	25544115	25544139	25544191	25544260	25544162
			AGS Reference						
1,3-Dichloropropane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Tetrachloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Dibromochloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2-Dibromoethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Chlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Ethylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
m,p-Xylene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
o-Xylene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Styrene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Bromoform	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Isopropylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2,3-Trichloropropane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Bromobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Propylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
2-Chlorotoluene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,3,5-Trimethylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
4-Chlorotoluene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
tert-Butylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2,4-Trimethylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
sec-Butylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
4-iso-Propyltoluene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,3-Dichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,4-Dichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
n-Butylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2-Dichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Hexachlorobutadiene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Naphthalene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #

CERTIFICATE OF ANALYSIS

SDG: 211216-140 **Report Number:** 629525 **Superseded Report:** 629158
Client Ref.: Dec GW 2021 Part 1 **Location:** Newport landfill

VOC MS (W)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	GW 03_09	GW 06_39	GW 07_40	GW 09_31	GW 09_32	GW 12_30
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)
			Date Sampled	14/12/2021	14/12/2021	14/12/2021	14/12/2021	14/12/2021	14/12/2021
			Sampled Time	.	.	.	.	.	.
			Date Received	16/12/2021	16/12/2021	16/12/2021	16/12/2021	16/12/2021	16/12/2021
			SDG Ref	211216-140	211216-140	211216-140	211216-140	211216-140	211216-140
			Lab Sample No.(s)	25544230	25544115	25544139	25544191	25544260	25544162
			AGS Reference						
1,2,3-Trichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,3,5-Trichlorobenzene	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1

VOC MS (W)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+5@	Sample deviation (see appendix)

	Customer Sample Ref.		GW 12_33
	Depth (m)		0.00 - 0.00
	Sample Type		Ground Water (GW)
	Date Sampled		14/12/2021
	Sampled Time		.
	Date Received		16/12/2021
	SDG Ref		211216-140
	Lab Sample No.(s)		25544276
	AGS Reference		
Component	**LOD/Units**	**Method**	
Dibromofluoromethane**	%	TM208	111
Toluene-d8**	%	TM208	99.9
4-Bromofluorobenzene**	%	TM208	97.7
Dichlorodifluoromethane	<1 µg/l	TM208	<1 #
Chloromethane	<1 µg/l	TM208	<1 #
Vinyl chloride	<1 µg/l	TM208	<1 #
Bromomethane	<1 µg/l	TM208	<1 #
Chloroethane	<1 µg/l	TM208	<1 #
Trichlorofluoromethane	<1 µg/l	TM208	<1 #
1,1-Dichloroethene	<1 µg/l	TM208	<1 #
Carbon disulphide	<1 µg/l	TM208	<1 #
Dichloromethane	<3 µg/l	TM208	<3 #
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208	<1 #
trans-1,2-Dichloroethene	<1 µg/l	TM208	<1 #
1,1-Dichloroethane	<1 µg/l	TM208	<1 #
cis-1,2-Dichloroethene	<1 µg/l	TM208	<1 #
2,2-Dichloropropane	<1 µg/l	TM208	<1
Bromochloromethane	<1 µg/l	TM208	<1 #
Chloroform	<1 µg/l	TM208	<1 #
1,1,1-Trichloroethane	<1 µg/l	TM208	<1 #
1,1-Dichloropropene	<1 µg/l	TM208	<1 #
Carbontetrachloride	<1 µg/l	TM208	<1 #
1,2-Dichloroethane	<1 µg/l	TM208	<1 #
Benzene	<1 µg/l	TM208	<1 #
Trichloroethene	<1 µg/l	TM208	<1 #
1,2-Dichloropropane	<1 µg/l	TM208	<1 #
Dibromomethane	<1 µg/l	TM208	<1 #
Bromodichloromethane	<1 µg/l	TM208	<1 #
cis-1,3-Dichloropropene	<1 µg/l	TM208	<1 #
Toluene	<1 µg/l	TM208	<1 #
trans-1,3-Dichloropropene	<1 µg/l	TM208	<1 #
1,1,2-Trichloroethane	<1 µg/l	TM208	<1 #

CERTIFICATE OF ANALYSIS

SDG: 211216-140 **Report Number:** 629525 **Superseded Report:** 629158
Client Ref.: Dec GW 2021 Part 1 **Location:** Newport landfill

VOC MS (W)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+5@	Sample deviation (see appendix)

Customer Sample Ref.	GW 12_33
Depth (m)	0.00 - 0.00
Sample Type	Ground Water (GW)
Date Sampled	14/12/2021
Sampled Time	.
Date Received	16/12/2021
SDG Ref	211216-140
Lab Sample No.(s)	25544276
AGS Reference	

Component	LOD/Units	Method					
1,3-Dichloropropane	<1 µg/l	TM208	<1	#			
Tetrachloroethene	<1 µg/l	TM208	<1	#			
Dibromochloromethane	<1 µg/l	TM208	<1	#			
1,2-Dibromoethane	<1 µg/l	TM208	<1	#			
Chlorobenzene	<1 µg/l	TM208	<1	#			
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208	<1	#			
Ethylbenzene	<1 µg/l	TM208	<1	#			
m,p-Xylene	<1 µg/l	TM208	<1	#			
o-Xylene	<1 µg/l	TM208	<1	#			
Styrene	<1 µg/l	TM208	<1	#			
Bromoform	<1 µg/l	TM208	<1	#			
Isopropylbenzene	<1 µg/l	TM208	<1	#			
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208	<1	#			
1,2,3-Trichloropropane	<1 µg/l	TM208	<1	#			
Bromobenzene	<1 µg/l	TM208	<1	#			
Propylbenzene	<1 µg/l	TM208	<1	#			
2-Chlorotoluene	<1 µg/l	TM208	<1	#			
1,3,5-Trimethylbenzene	<1 µg/l	TM208	<1	#			
4-Chlorotoluene	<1 µg/l	TM208	<1	#			
tert-Butylbenzene	<1 µg/l	TM208	<1	#			
1,2,4-Trimethylbenzene	<1 µg/l	TM208	<1	#			
sec-Butylbenzene	<1 µg/l	TM208	<1	#			
4-iso-Propyltoluene	<1 µg/l	TM208	<1	#			
1,3-Dichlorobenzene	<1 µg/l	TM208	<1	#			
1,4-Dichlorobenzene	<1 µg/l	TM208	<1	#			
n-Butylbenzene	<1 µg/l	TM208	<1	#			
1,2-Dichlorobenzene	<1 µg/l	TM208	<1	#			
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208	<1				
1,2,4-Trichlorobenzene	<1 µg/l	TM208	<1	#			
Hexachlorobutadiene	<1 µg/l	TM208	<1	#			
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208	<1	#			
Naphthalene	<1 µg/l	TM208	<1	#			

CERTIFICATE OF ANALYSIS

SDG: 211216-140 **Report Number:** 629525 **Superseded Report:** 629158
Client Ref.: Dec GW 2021 Part 1 **Location:** Newport landfill

VOC MS (W)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Customer Sample Ref.	GW 12_33
Depth (m)	0.00 - 0.00
Sample Type	Ground Water (GW)
Date Sampled	14/12/2021
Sampled Time	.
Date Received	16/12/2021
SDG Ref	211216-140
Lab Sample No.(s)	25544276
AGS Reference	

Component	LOD/Units	Method	
1,2,3-Trichlorobenzene	<1 µg/l	TM208	<1 #
1,3,5-Trichlorobenzene	<1 µg/l	TM208	<1

Table of Results - Appendix

Method No	Reference	Description
Calulation		
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
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	ISO 17294-2:2016 Water quality - Application of inductively coupled plasma mass spectrometry (ICP-MS)	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
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, Standard Methods for the examination of waters and wastewaters 20th Edition, PHA, Washington DC, USA. ISBN 0-87553-235-7 and The Determination of Alkalinity and Acidity in water HMSO, 1981, ISBN 0 11 751601 5.	Determination of pH, EC, TDS and Alkalinity in Aqueous samples

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

SDG: 211216-140 **Report Number:** 629525 **Superseded Report:** 629158
Client Ref.: Dec GW 2021 Part 1 **Location:** Newport landfill

Test Completion Dates

Lab Sample No(s)	25544230	25544115	25544139	25544191	25544260	25544162	25544276
Customer Sample Ref.	GW 03_09	GW 06_39	GW 07_40	GW 09_31	GW 09_32	GW 12_30	GW 12_33
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	Ground Water	Ground Water	Ground Water	Ground Water
Alkalinity as CaCO3	21-Dec-2021	22-Dec-2021	22-Dec-2021	22-Dec-2021	22-Dec-2021	22-Dec-2021	21-Dec-2021
Alkalinity Filtered as CaCO3	21-Dec-2021	21-Dec-2021	21-Dec-2021	21-Dec-2021	21-Dec-2021	21-Dec-2021	21-Dec-2021
Ammoniacal Nitrogen	22-Dec-2021	22-Dec-2021	22-Dec-2021	22-Dec-2021	22-Dec-2021	21-Dec-2021	22-Dec-2021
Anions by Kone (w)	21-Dec-2021	21-Dec-2021	21-Dec-2021	21-Dec-2021	21-Dec-2021	21-Dec-2021	21-Dec-2021
BOD True Total	22-Dec-2021	22-Dec-2021	22-Dec-2021	24-Dec-2021	22-Dec-2021	24-Dec-2021	24-Dec-2021
COD Unfiltered	30-Dec-2021	29-Dec-2021	29-Dec-2021	29-Dec-2021	30-Dec-2021	29-Dec-2021	30-Dec-2021
Conductivity (at 20 deg.C)	21-Dec-2021	21-Dec-2021	21-Dec-2021	21-Dec-2021	21-Dec-2021	21-Dec-2021	21-Dec-2021
Cyanide Comp/Free/Total/Thiocyanate	22-Dec-2021	22-Dec-2021	22-Dec-2021	22-Dec-2021	22-Dec-2021	21-Dec-2021	21-Dec-2021
Dissolved Metals by ICP-MS	23-Dec-2021	23-Dec-2021	23-Dec-2021	23-Dec-2021	23-Dec-2021	23-Dec-2021	23-Dec-2021
Dissolved Organic/Inorganic Carbon	14-Jan-2022	14-Jan-2022	14-Jan-2022	14-Jan-2022	14-Jan-2022	14-Jan-2022	14-Jan-2022
EPH (DRO) (C10-C40) Aqueous (W)	22-Dec-2021	22-Dec-2021	22-Dec-2021	22-Dec-2021	22-Dec-2021	21-Dec-2021	22-Dec-2021
GRO by GC-FID (W)	31-Dec-2021	31-Dec-2021	31-Dec-2021	31-Dec-2021	31-Dec-2021	31-Dec-2021	31-Dec-2021
Ionic Balance	23-Dec-2021	23-Dec-2021	23-Dec-2021	23-Dec-2021	23-Dec-2021	23-Dec-2021	23-Dec-2021
Nitrite by Kone (w)	20-Dec-2021	20-Dec-2021	20-Dec-2021	20-Dec-2021	20-Dec-2021	20-Dec-2021	20-Dec-2021
pH Value	21-Dec-2021	21-Dec-2021	21-Dec-2021	21-Dec-2021	21-Dec-2021	21-Dec-2021	21-Dec-2021
Phosphate by Kone (w)	20-Dec-2021	20-Dec-2021	20-Dec-2021	20-Dec-2021	20-Dec-2021	20-Dec-2021	20-Dec-2021
Sulphide	22-Dec-2021	23-Dec-2021	23-Dec-2021	22-Dec-2021	23-Dec-2021	22-Dec-2021	24-Dec-2021
Total EPH (aq)	31-Dec-2021	31-Dec-2021	31-Dec-2021	31-Dec-2021	31-Dec-2021	31-Dec-2021	31-Dec-2021
VOC MS (W)	29-Dec-2021	29-Dec-2021	29-Dec-2021	29-Dec-2021	29-Dec-2021	29-Dec-2021	29-Dec-2021

CERTIFICATE OF ANALYSIS

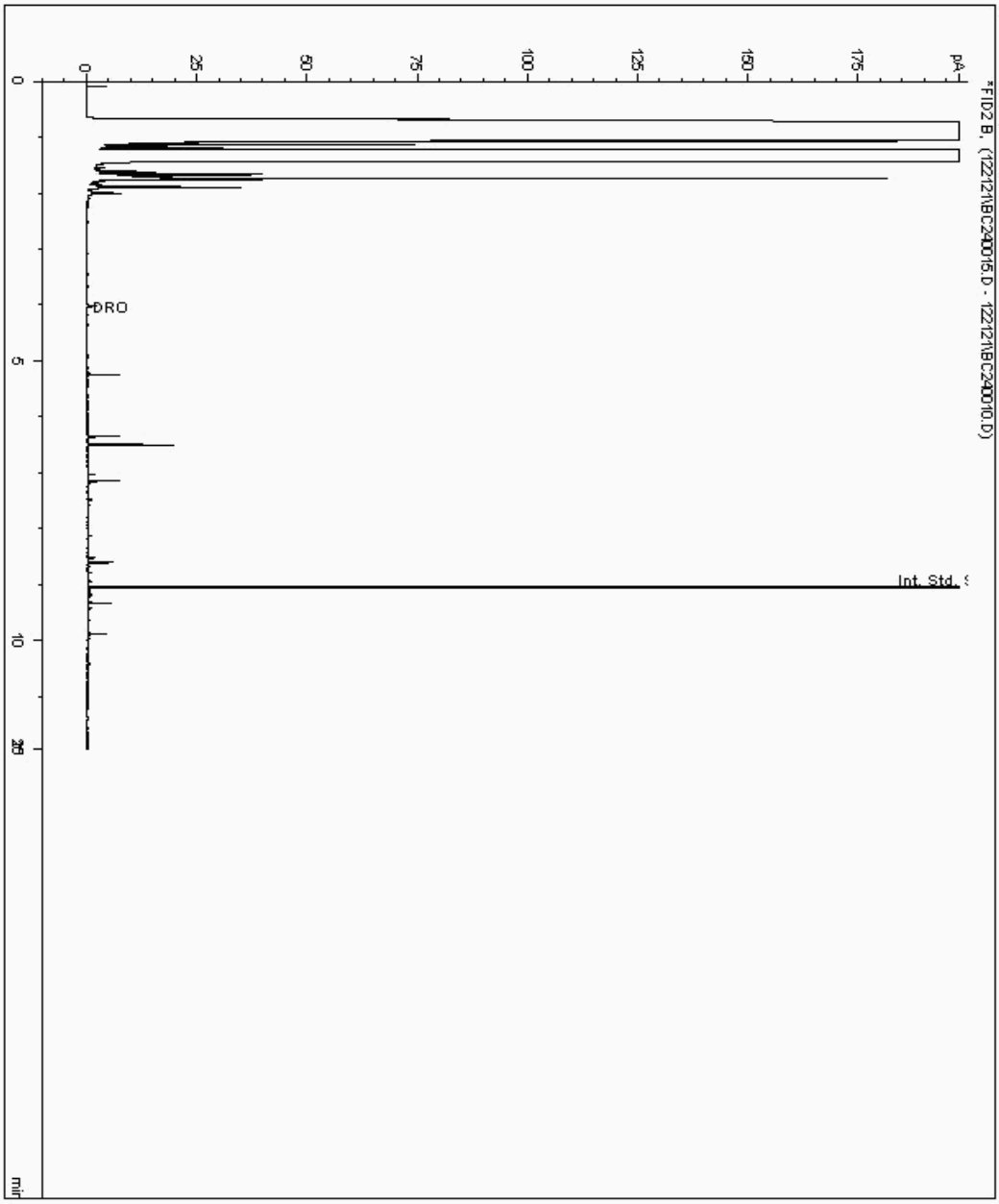
SDG: 211216-140 **Report Number:** 629525 **Superseded Report:** 629158
Client Ref.: Dec GW 2021 Part 1 **Location:** Newport landfill

Chromatogram

Analysis: EPH (DRO) (C10-C40) Aqueous (W) **Sample No :** 25566467 **Depth :** 0.00 - 0.00
Sample ID : GW 06_39

EPH Range Organics (C10 - C40)

Sample Identity: 23864512-
Date Acquired : 22/12/2021 00:10:56 PM
Units : mg/l



CERTIFICATE OF ANALYSIS

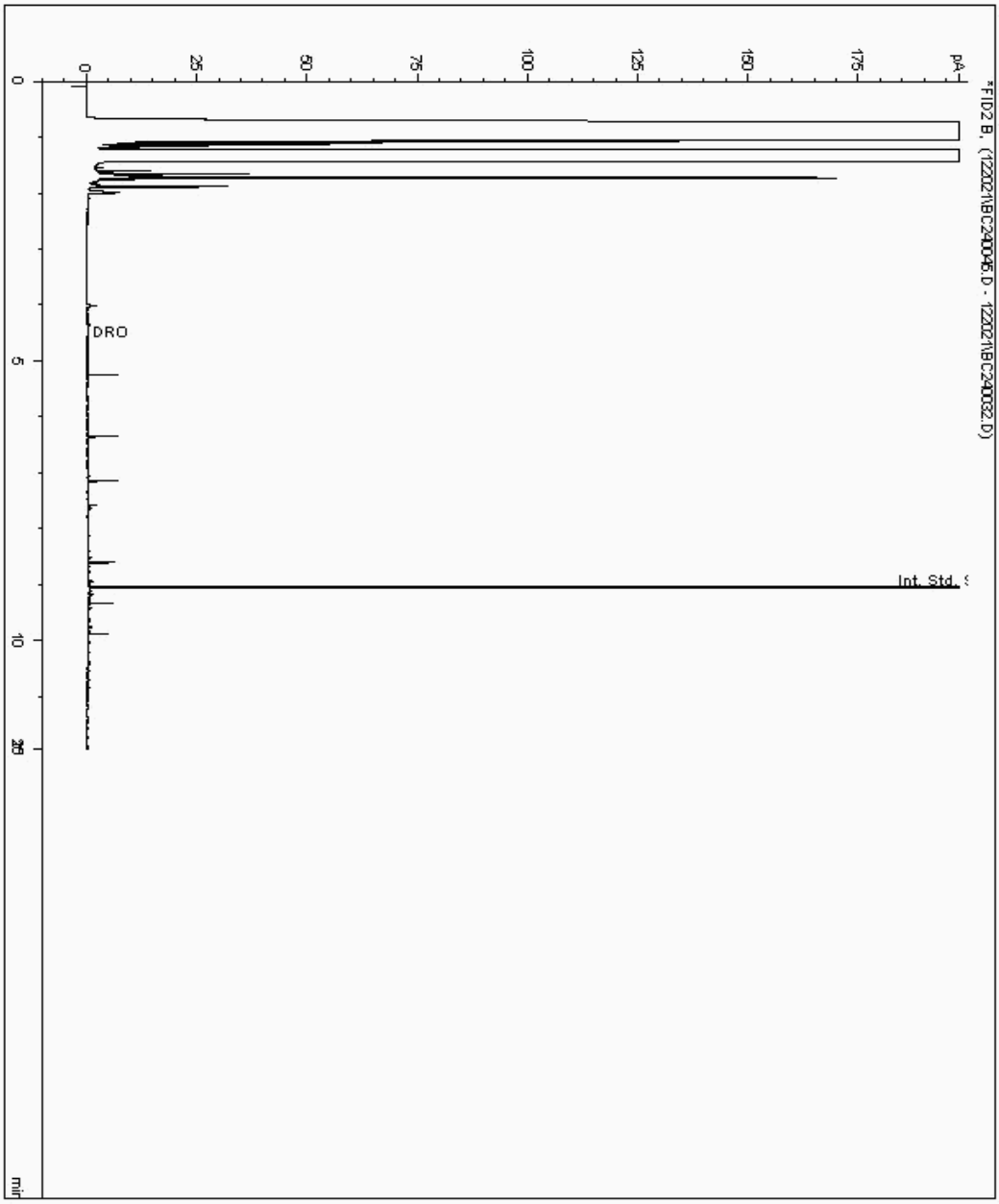
SDG: 211216-140 **Report Number:** 629525 **Superseded Report:** 629158
Client Ref.: Dec GW 2021 Part 1 **Location:** Newport landfill

Chromatogram

Analysis: EPH (DRO) (C10-C40) Aqueous (W) **Sample No :** 25566498 **Depth :** 0.00 - 0.00
Sample ID : GW 12_30

EPH Range Organics (C10 - C40)

Sample Identity: 23864559-
Date Acquired : 21/12/2021 18:18:17 PM
Units : mg/l

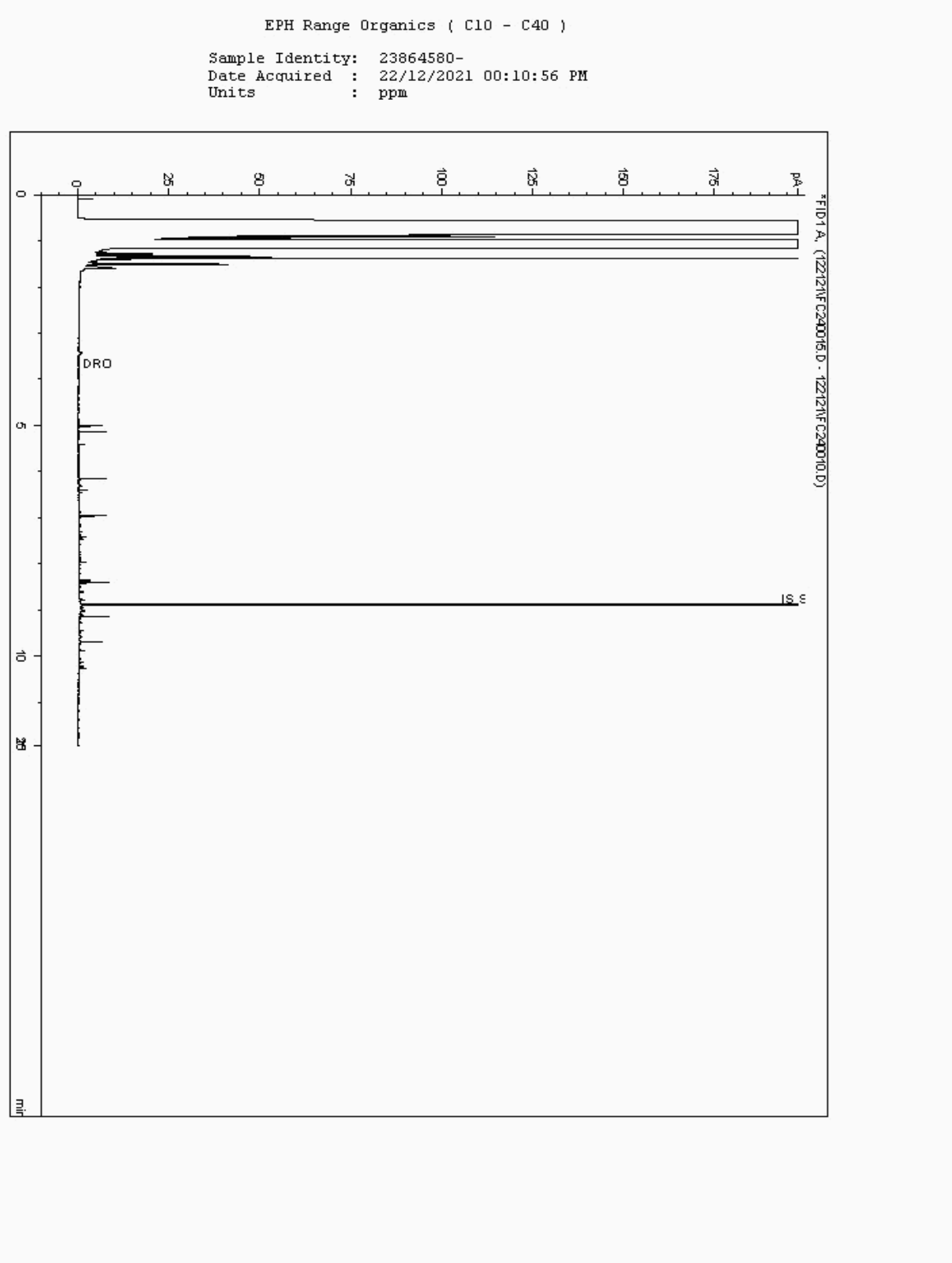


CERTIFICATE OF ANALYSIS

SDG: 211216-140 **Report Number:** 629525 **Superseded Report:** 629158
Client Ref.: Dec GW 2021 Part 1 **Location:** Newport landfill

Chromatogram

Analysis: EPH (DRO) (C10-C40) Aqueous (W) **Sample No :** 25566544 **Depth :** 0.00 - 0.00
Sample ID : GW 09_31



CERTIFICATE OF ANALYSIS

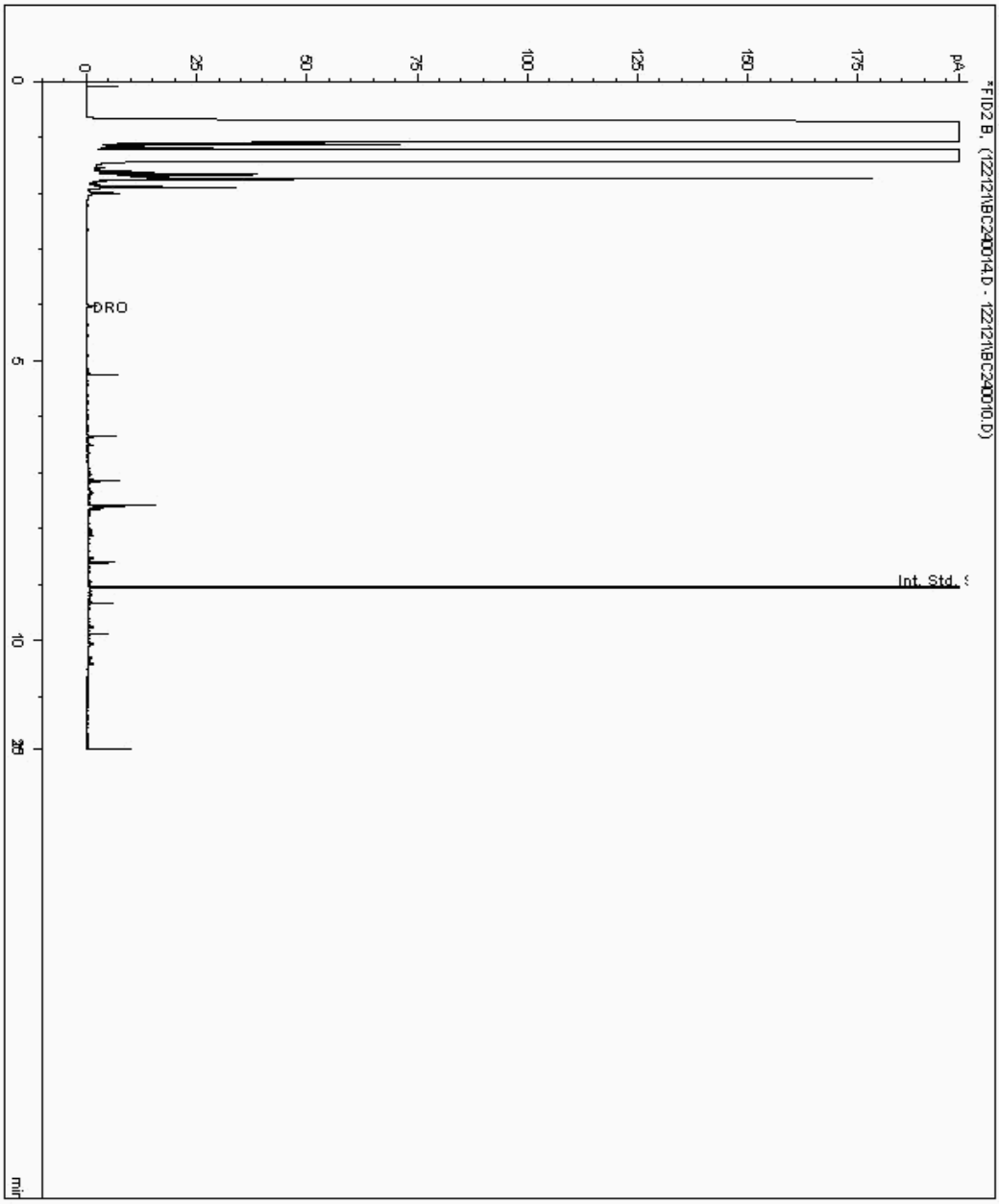
SDG: 211216-140 **Report Number:** 629525 **Superseded Report:** 629158
Client Ref.: Dec GW 2021 Part 1 **Location:** Newport landfill

Chromatogram

Analysis: EPH (DRO) (C10-C40) Aqueous (W) **Sample No :** 25566546 **Depth :** 0.00 - 0.00
Sample ID : GW 07_40

EPH Range Organics (C10 - C40)

Sample Identity: 23864533-
Date Acquired : 21/12/2021 23:46:59 PM
Units : mg/l

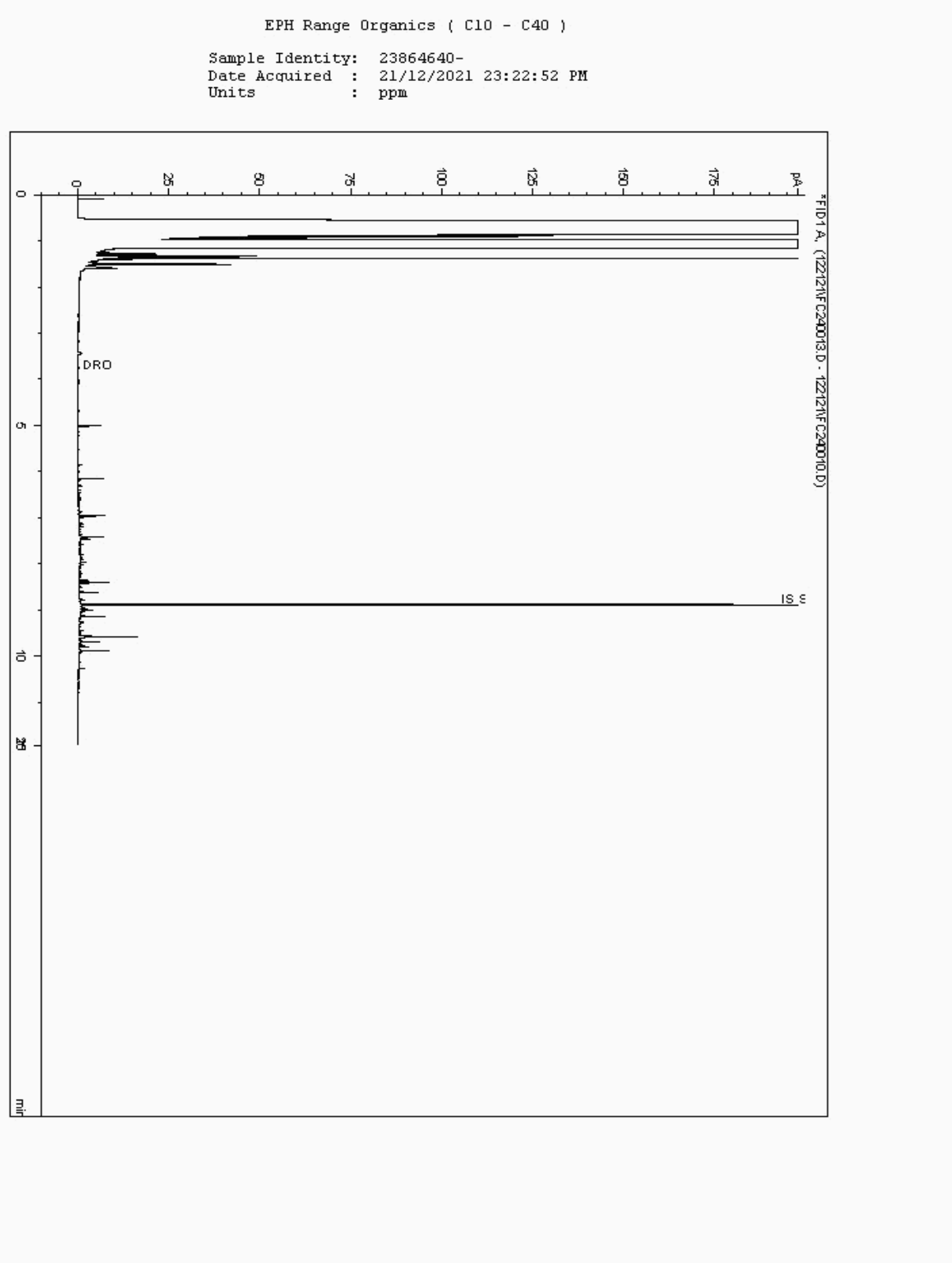


CERTIFICATE OF ANALYSIS

SDG: 211216-140 **Report Number:** 629525 **Superseded Report:** 629158
Client Ref.: Dec GW 2021 Part 1 **Location:** Newport landfill

Chromatogram

Analysis: EPH (DRO) (C10-C40) Aqueous (W) **Sample No :** 25566660 **Depth :** 0.00 - 0.00
Sample ID : GW 12_33

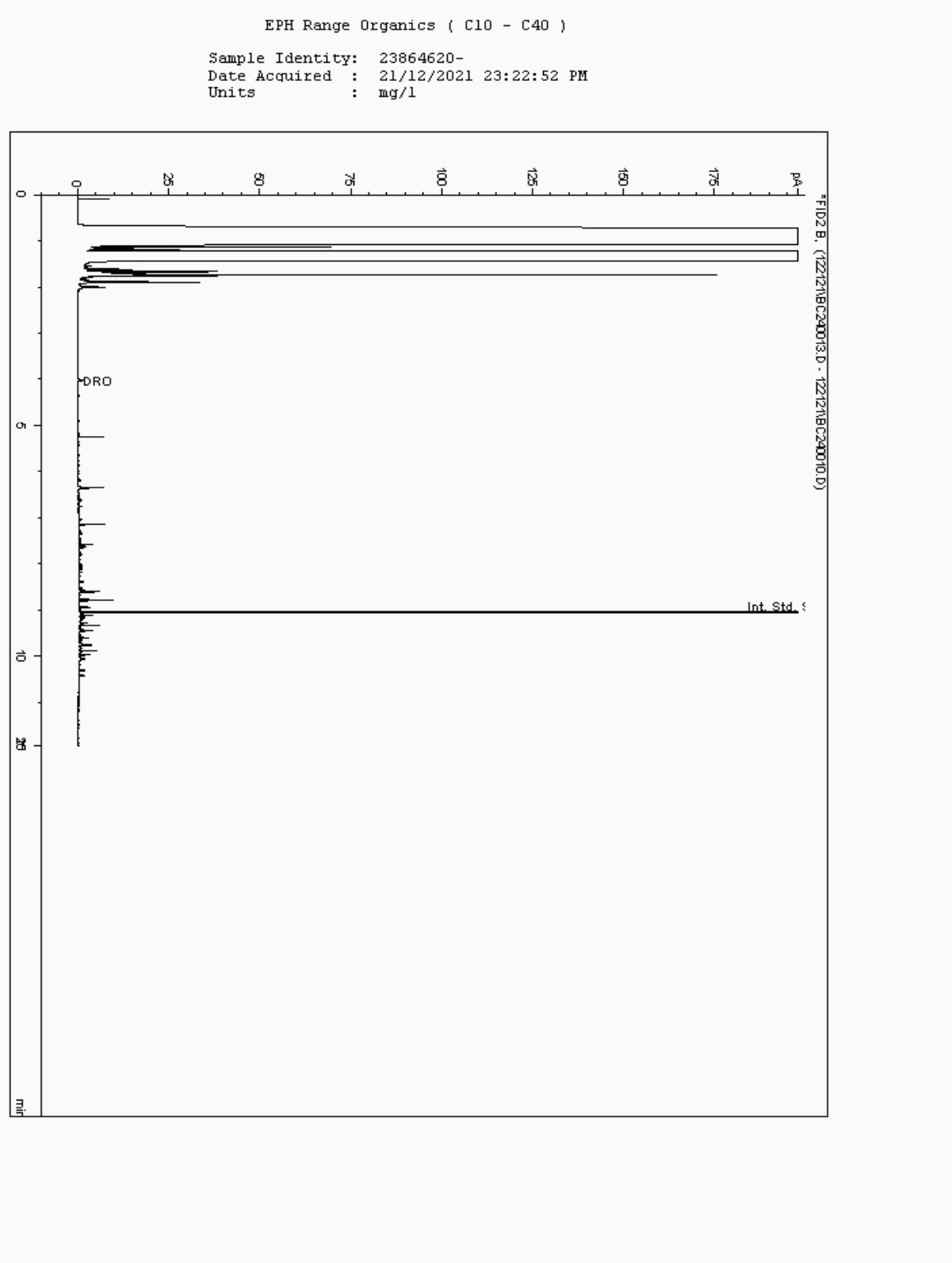


CERTIFICATE OF ANALYSIS

SDG: 211216-140 **Report Number:** 629525 **Superseded Report:** 629158
Client Ref.: Dec GW 2021 Part 1 **Location:** Newport landfill

Chromatogram

Analysis: EPH (DRO) (C10-C40) Aqueous (W) **Sample No :** 25566679 **Depth :** 0.00 - 0.00
Sample ID : GW 09_32

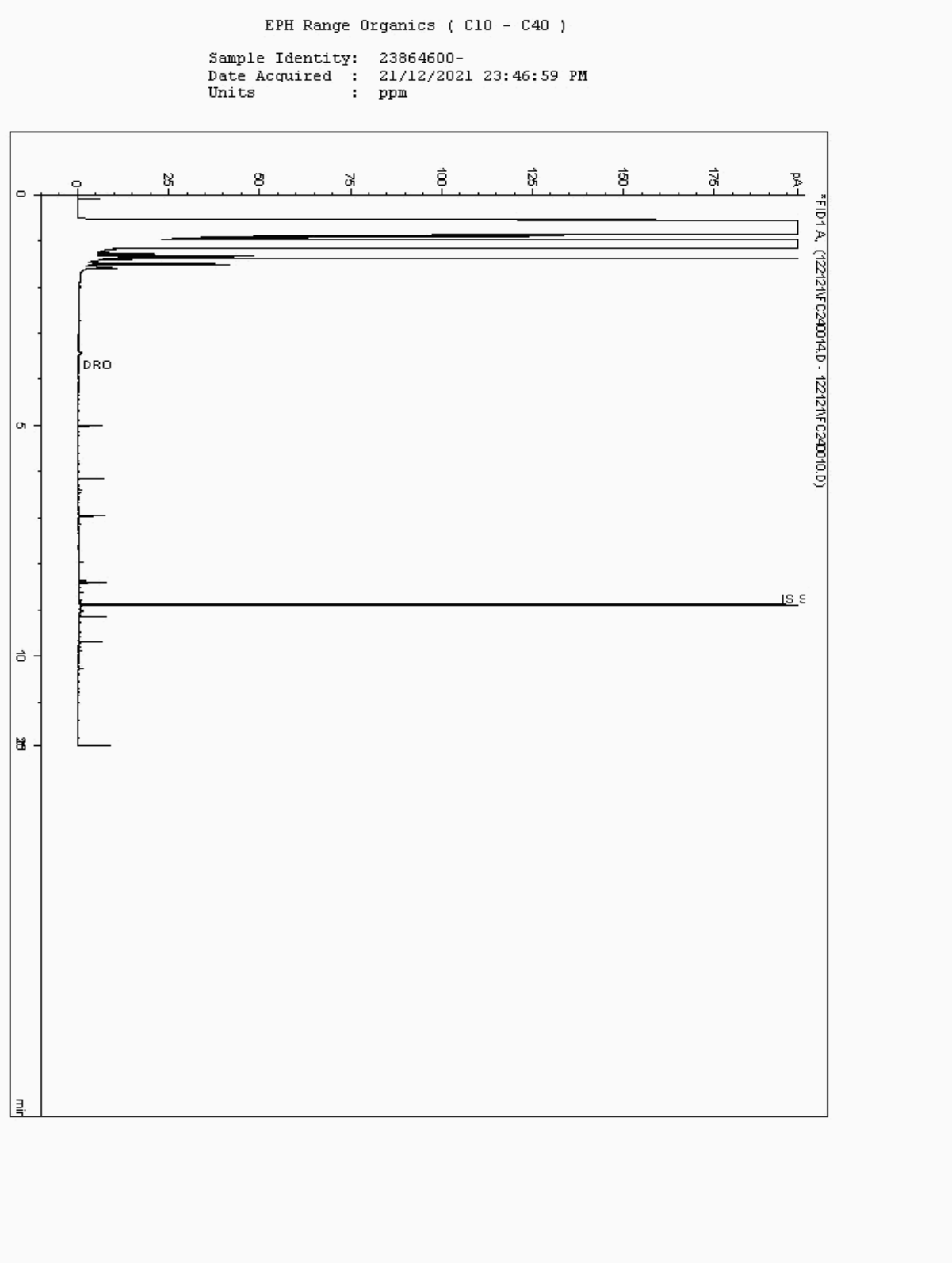


CERTIFICATE OF ANALYSIS

SDG: 211216-140 **Report Number:** 629525 **Superseded Report:** 629158
Client Ref.: Dec GW 2021 Part 1 **Location:** Newport landfill

Chromatogram

Analysis: EPH (DRO) (C10-C40) Aqueous (W) **Sample No :** 25566689 **Depth :** 0.00 - 0.00
Sample ID : GW 03_09

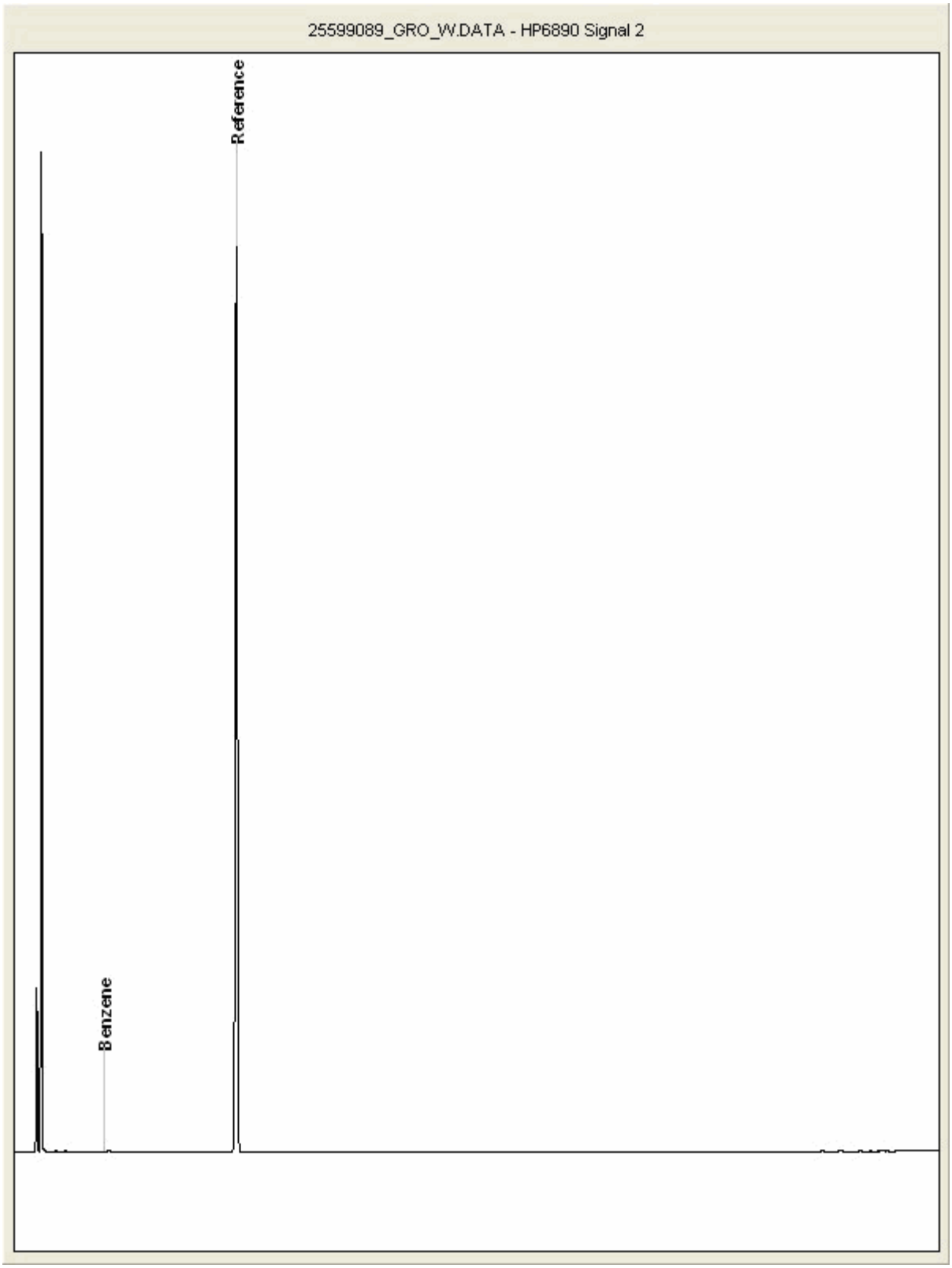


CERTIFICATE OF ANALYSIS

SDG: 211216-140 **Report Number:** 629525 **Superseded Report:** 629158
Client Ref.: Dec GW 2021 Part 1 **Location:** Newport landfill

Chromatogram

Analysis: GRO by GC-FID (W) **Sample No :** 25599089 **Depth :** 0.00 - 0.00
Sample ID : GW 09_31

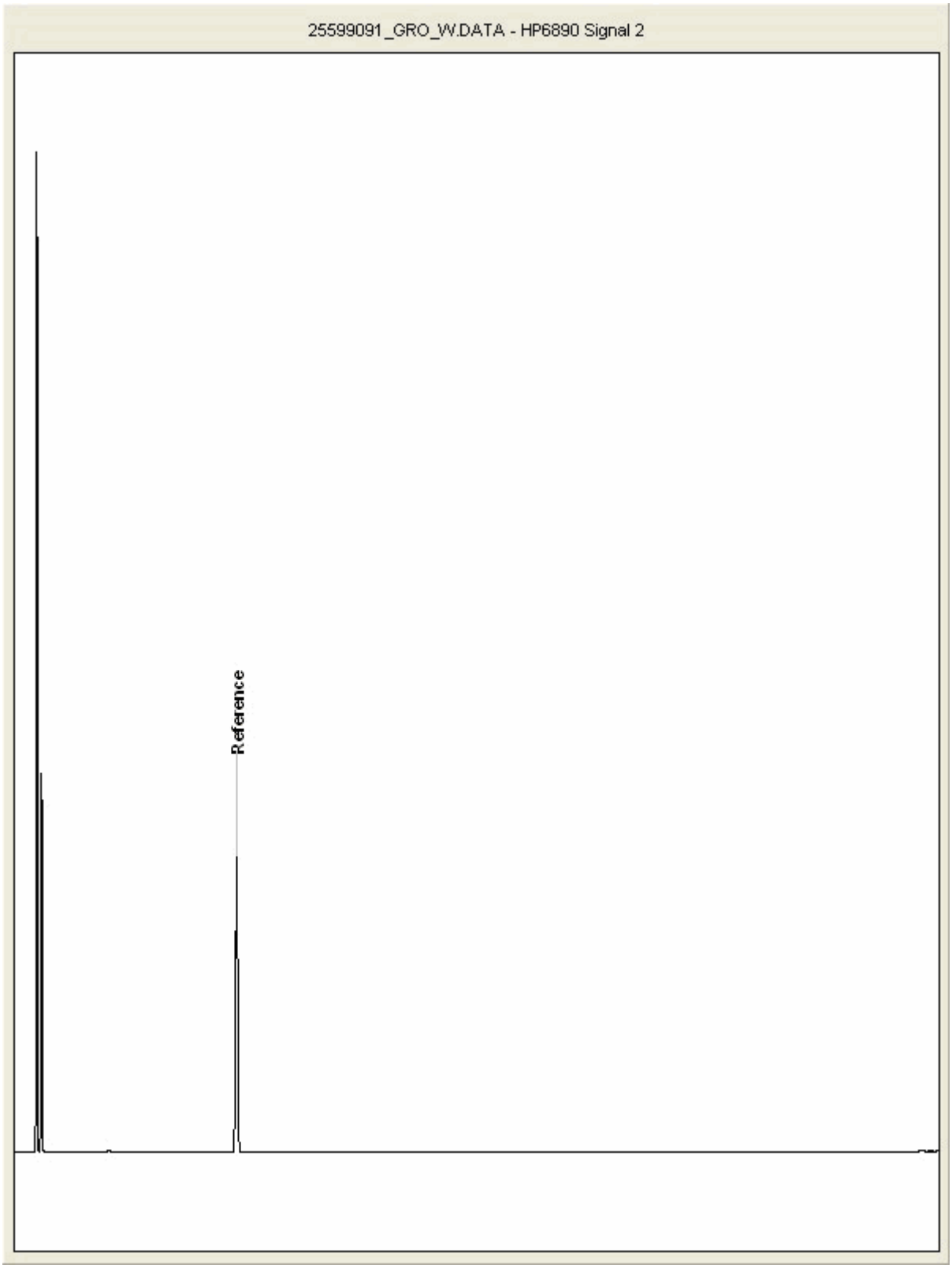


CERTIFICATE OF ANALYSIS

SDG: 211216-140 **Report Number:** 629525 **Superseded Report:** 629158
Client Ref.: Dec GW 2021 Part 1 **Location:** Newport landfill

Chromatogram

Analysis: GRO by GC-FID (W) **Sample No :** 25599091 **Depth :** 0.00 - 0.00
Sample ID : GW 12_33

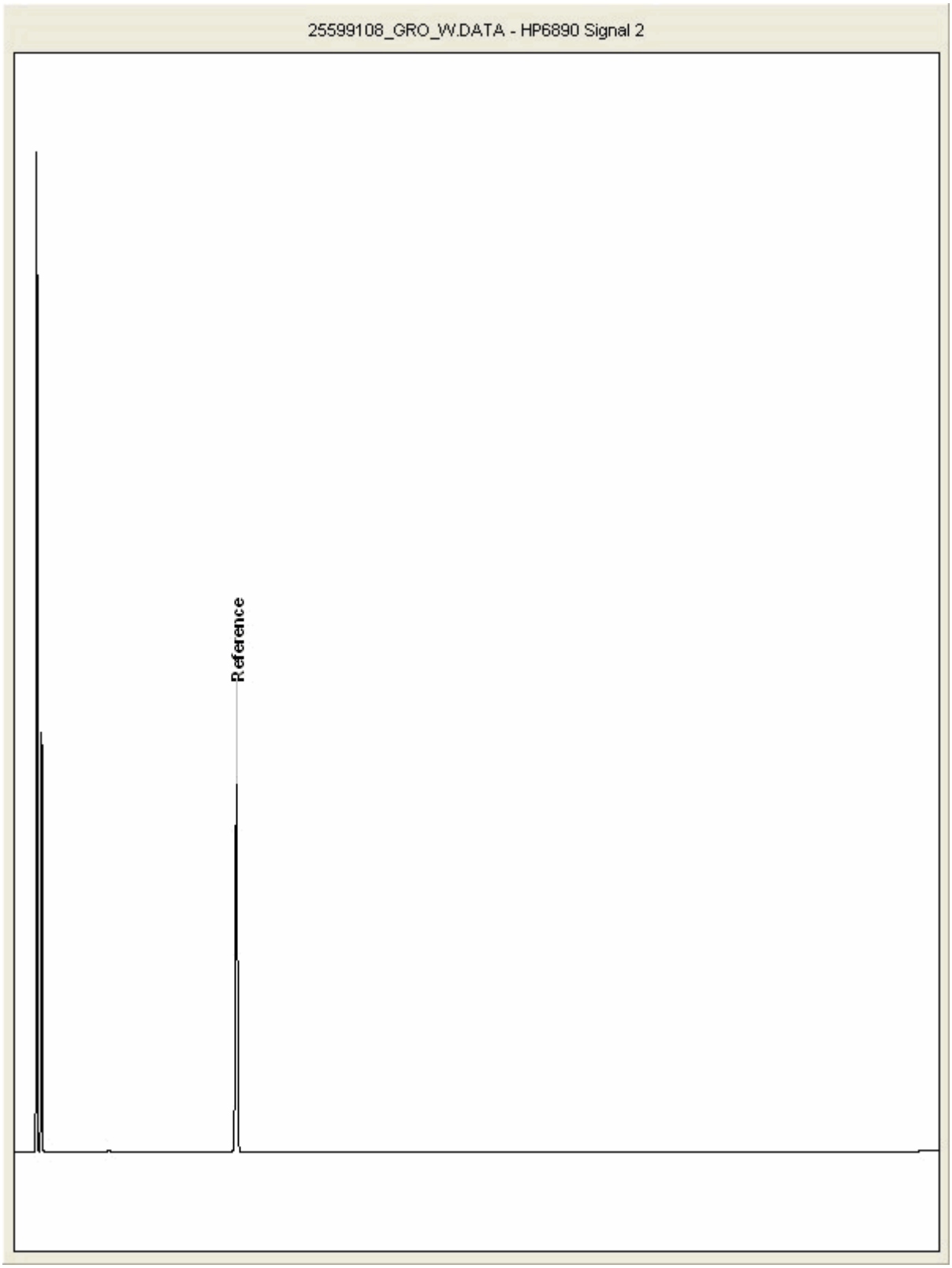


CERTIFICATE OF ANALYSIS

SDG: 211216-140 **Report Number:** 629525 **Superseded Report:** 629158
Client Ref.: Dec GW 2021 Part 1 **Location:** Newport landfill

Chromatogram

Analysis: GRO by GC-FID (W) **Sample No :** 25599108 **Depth :** 0.00 - 0.00
Sample ID : GW 09_32

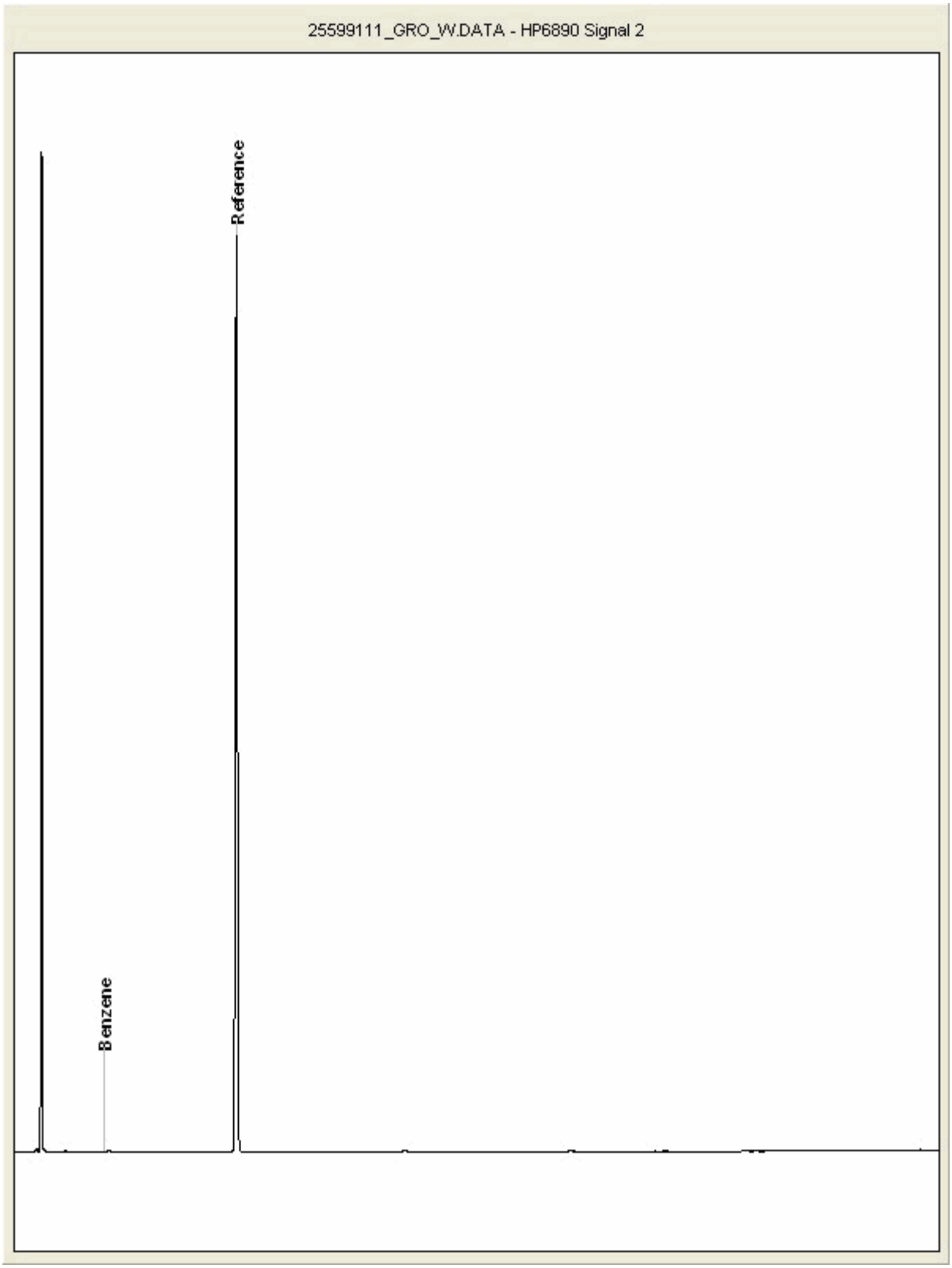


CERTIFICATE OF ANALYSIS

SDG: 211216-140 **Report Number:** 629525 **Superseded Report:** 629158
Client Ref.: Dec GW 2021 Part 1 **Location:** Newport landfill

Chromatogram

Analysis: GRO by GC-FID (W) **Sample No :** 25599111 **Depth :** 0.00 - 0.00
Sample ID : GW 06_39

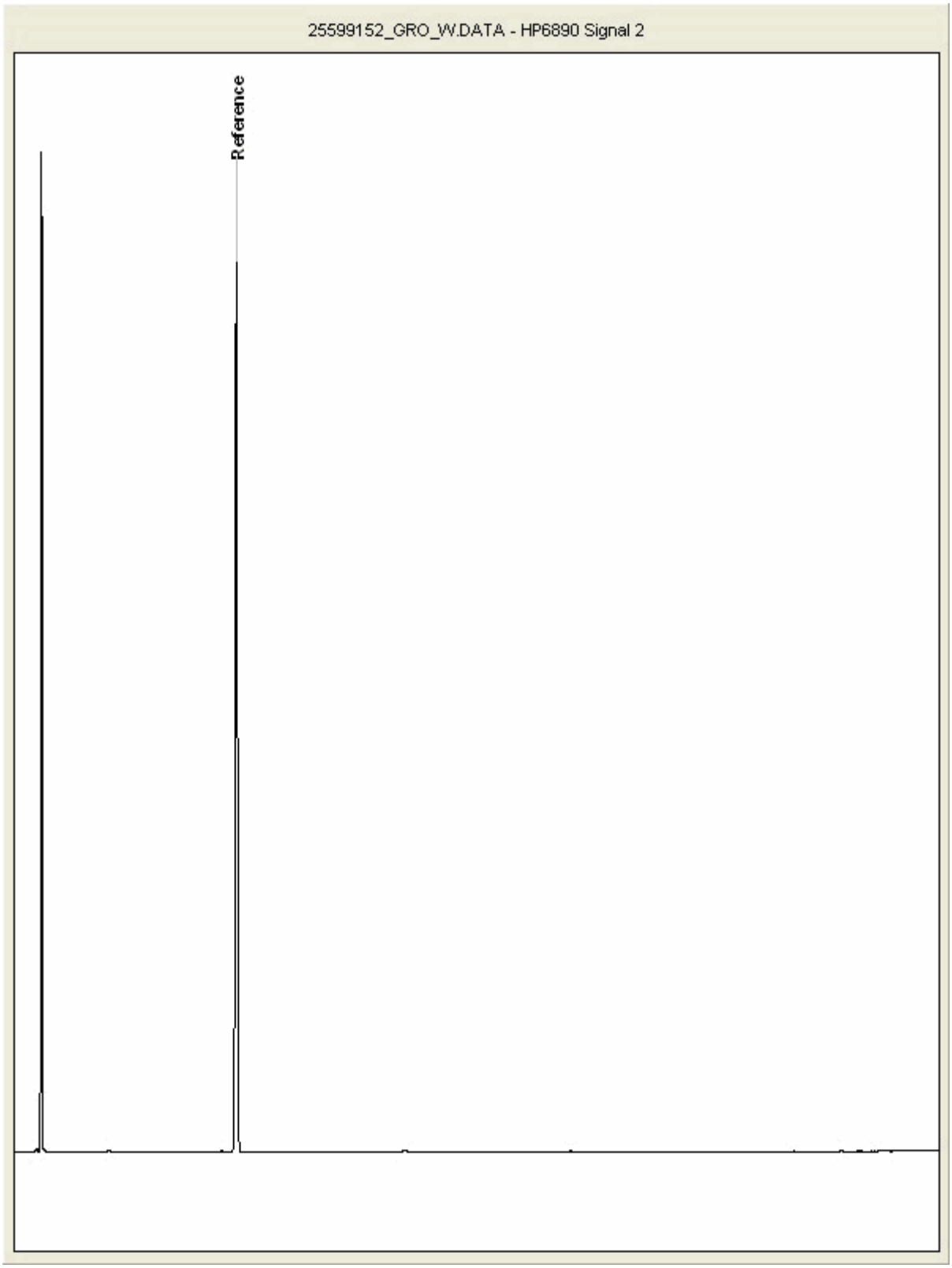


CERTIFICATE OF ANALYSIS

SDG: 211216-140 **Report Number:** 629525 **Superseded Report:** 629158
Client Ref.: Dec GW 2021 Part 1 **Location:** Newport landfill

Chromatogram

Analysis: GRO by GC-FID (W) **Sample No :** 25599152 **Depth :** 0.00 - 0.00
Sample ID : GW 03_09

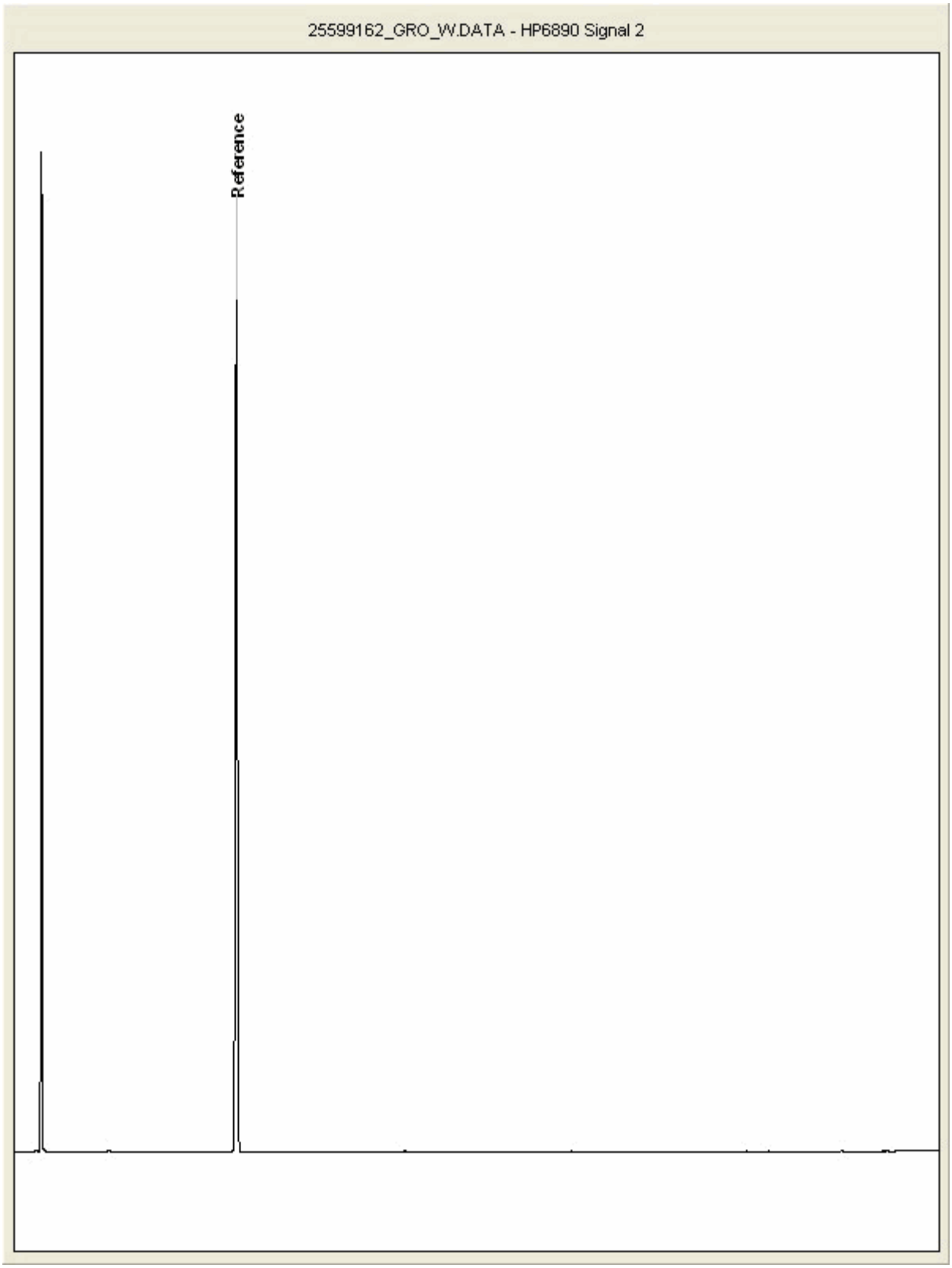


CERTIFICATE OF ANALYSIS

SDG: 211216-140 **Report Number:** 629525 **Superseded Report:** 629158
Client Ref.: Dec GW 2021 Part 1 **Location:** Newport landfill

Chromatogram

Analysis: GRO by GC-FID (W) **Sample No :** 25599162 **Depth :** 0.00 - 0.00
Sample ID : GW 12_30

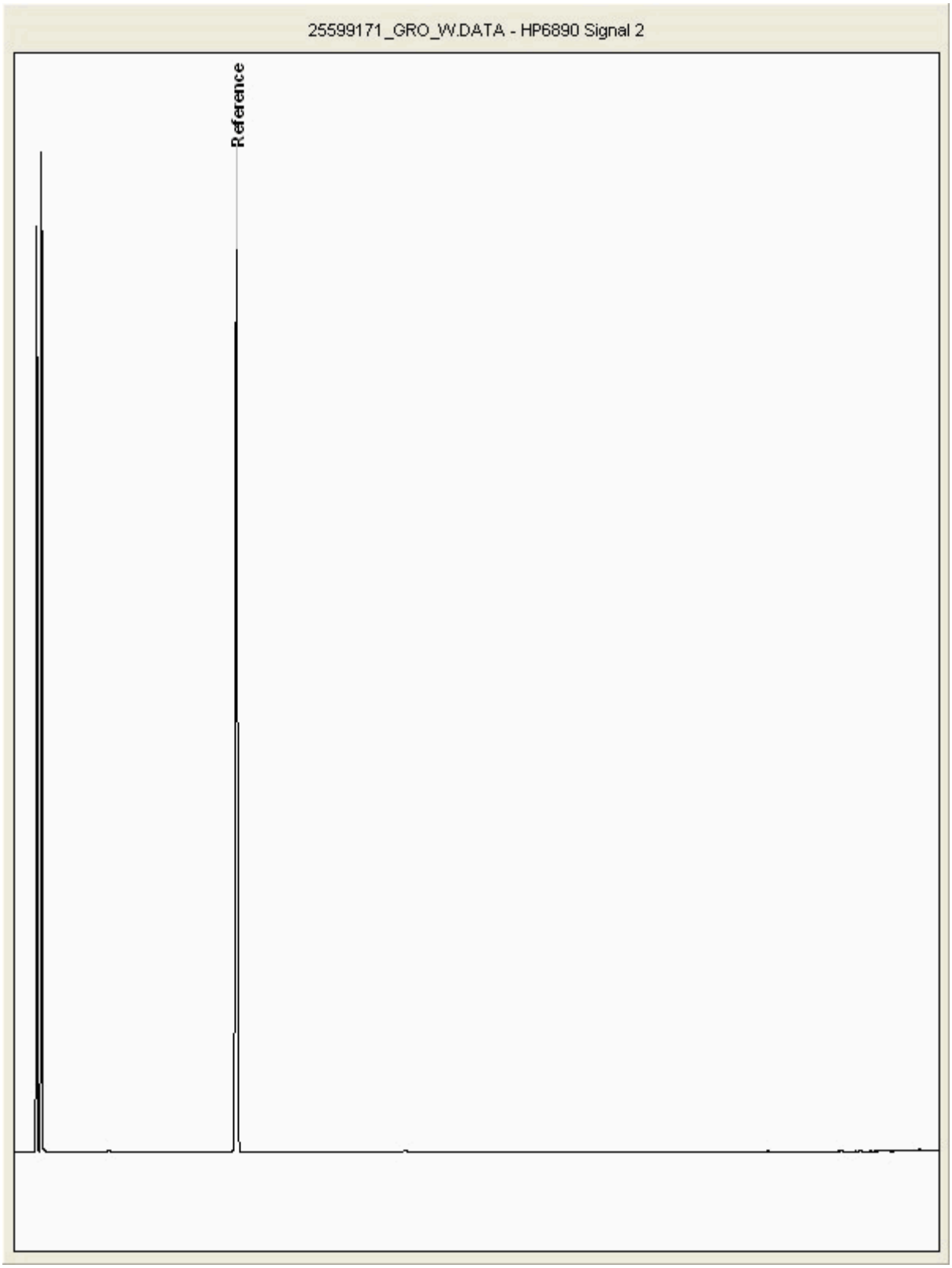


CERTIFICATE OF ANALYSIS

SDG: 211216-140 **Report Number:** 629525 **Superseded Report:** 629158
Client Ref.: Dec GW 2021 Part 1 **Location:** Newport landfill

Chromatogram

Analysis: GRO by GC-FID (W) **Sample No :** 25599171 **Depth :** 0.00 - 0.00
Sample ID : GW 07_40



Appendix General

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

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

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

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

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

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

7. Results relate only to the items tested.

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

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

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

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

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

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

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

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

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

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

18. **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.

19. **Sample Deviations**

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

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

20. **Asbestos**

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

Identification of Asbestos in Bulk Materials & Soils

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

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

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

Visual Estimation Of Fibre Content

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

Respirable Fibres

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

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.