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

Newport City Council
Civic Centre
Newport
NP20 4UR

Attention: Luke Embrey

CERTIFICATE OF ANALYSIS

Date of report Generation:	11 August 2021
Customer:	Newport City Council
Sample Delivery Group (SDG):	210804-97
Your Reference:	August SW 2021
Location:	Newport landfill
Report No:	609009

We received 5 samples on Wednesday August 04, 2021 and 5 of these samples were scheduled for analysis which was completed on Wednesday August 11, 2021. 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).

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:	210804-97	**Client Reference:**	August SW 2021	**Report Number:**	609009
Location:	Newport landfill	**Order Number:**	700167556	**Superseded Report:**	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
24746935	C3_ASB		0.00 - 0.00	03/08/2021
24746940	GW12_33		0.00 - 0.00	03/08/2021
24746916	SW_23		0.00 - 0.00	03/08/2021
24746924	SW_24		0.00 - 0.00	03/08/2021
24746931	SW_1A		0.00 - 0.00	03/08/2021

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

CERTIFICATE OF ANALYSIS

SDG:	210804-97	**Client Reference:**	August SW 2021	**Report Number:**	609009
Location:	Newport landfill	**Order Number:**	700167556	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

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

Lab Sample No(s)	24746935	24746940	24746916	24746924	24746931
Customer Sample Reference	C3_ASB	GW12_33	SW_23	SW_24	SW_1A
AGS Reference					
Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00

Container	250ml BOD (ALE212)	500ml Plastic (ALE208)	H2SO4 (ALE244)	0.5l glass bottle (ALE227)	250ml BOD (ALE212)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	ZnAc (ALE246)	250ml BOD (ALE212)	500ml Plastic (ALE208)	H2SO4 (ALE244)	250ml BOD (ALE212)	500ml Plastic (ALE208)	H2SO4 (ALE244)	250ml BOD (ALE212)	500ml Plastic (ALE208)	H2SO4 (ALE244)
Sample Type	SW	SW	SW	GW	GW	GW	GW	GW	GW	GW	GW	SW	SW	SW	SW	SW	SW	SW	SW	SW
Alkalinity as CaCO3 (All) NDPs: 0 Tests: 1						X														
Alkalinity Filtered as CaCO3 (All) NDPs: 0 Tests: 1						X														
Ammoniacal Nitrogen (All) NDPs: 0 Tests: 5			X				X							X			X			X
Anions by Kone (w) (All) NDPs: 0 Tests: 5		X				X							X			X			X	
BOD True Total (All) NDPs: 0 Tests: 5	X				X							X			X			X		
COD Unfiltered (All) NDPs: 0 Tests: 5	X				X							X			X			X		
Conductivity (at 20 deg.C) (All) NDPs: 0 Tests: 5		X				X							X			X			X	
Cyanide Comp/Free/Total/Thiocyanate (All) NDPs: 0 Tests: 1									X											
Dissolved Metals by ICP-MS (All) NDPs: 0 Tests: 1								X												
EPH (DRO) (C10-C40) Aqueous (W) (All) NDPs: 0 Tests: 1				X																
GRO by GC-FID (W) (All) NDPs: 0 Tests: 1										X										
Ionic Balance (All) NDPs: 0 Tests: 1						X														
Nitrite by Kone (w) (All) NDPs: 0 Tests: 1									X											
pH Value (All) NDPs: 0 Tests: 5		X				X							X			X			X	
Phosphate by Kone (w) (All) NDPs: 0 Tests: 1						X														

Validated

CERTIFICATE OF ANALYSIS

SDG:	210804-97	**Client Reference:**	August SW 2021	**Report Number:**	609009
Location:	Newport landfill	**Order Number:**	700167556	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -
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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)			24746935				24746940							24746916			24746924				24746931		
Customer Sample Reference			C3_ASB				GW12_33							SW_23			SW_24				SW_1A		
AGS Reference																							
Depth (m)			0.00 - 0.00				0.00 - 0.00							0.00 - 0.00			0.00 - 0.00				0.00 - 0.00		
Container			250ml BOD (ALE212)	500ml Plastic (ALE208)	H2SO4 (ALE244)	0.5l glass bottle (ALE227)	250ml BOD (ALE212)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	ZnAc (ALE246)	250ml BOD (ALE212)	500ml Plastic (ALE208)	H2SO4 (ALE244)	250ml BOD (ALE212)	500ml Plastic (ALE208)	H2SO4 (ALE244)	250ml BOD (ALE212)	500ml Plastic (ALE208)	H2SO4 (ALE244)
Sample Type			SW	SW	SW	GW	GW	GW	GW	GW	GW	GW	GW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW
Sulphide	All	NDPs: 0 Tests: 1											X										
Suspended Solids	All	NDPs: 0 Tests: 1		X																			
TOC (Filtered)*	All	NDPs: 0 Tests: 1				X																	
Total EPH (aq)	All	NDPs: 0 Tests: 1				X																	
VOC MS (W)	All	NDPs: 0 Tests: 1										X											

CERTIFICATE OF ANALYSIS

SDG:	210804-97	**Client Reference:**	August SW 2021	**Report Number:**	609009
Location:	Newport landfill	**Order Number:**	700167556	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - 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.	C3_ASB	GW12_33	SW_23	SW_24	SW_1A
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Surface Water (SW)	Ground Water (GW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)
			Date Sampled	03/08/2021	03/08/2021	03/08/2021	03/08/2021	03/08/2021
			Sampled Time	.	.	.	.	.
			Date Received	04/08/2021	04/08/2021	04/08/2021	04/08/2021	04/08/2021
			SDG Ref	210804-97	210804-97	210804-97	210804-97	210804-97
			Lab Sample No.(s)	24746935	24746940	24746916	24746924	24746931
			AGS Reference					
Ionic balance	% Diff	Calulation			-7.3			
Dissolved Organic Carbon, as C*	<0.7 mg/l	SUB			20.7			
Suspended solids, Total	<2 mg/l	TM022		3.8 #				
Alkalinity, Total as CaCO3	<2 mg/l	TM043			1180 #			
Alkalinity,Total as CaCO3 (diss.filt)	<2 mg/l	TM043			1150			
Alkalinity, Bicarbonate as CaCO3 (diss.filt)	<2 mg/l	TM043			1150			
BOD, unfiltered	<1 mg/l	TM045		<1 #	<1 #	1.87 #	2.96 #	<1 #
Ammoniacal Nitrogen as N	<0.2 mg/l	TM099		<0.2 #	53.7 #	18.4 #	<0.2 #	<0.2 #
Sulphide	<0.01 mg/l	TM101			0.218 #			
COD, unfiltered	<7 mg/l	TM107		89.1 #	229 #	30 #	40.2 #	11.3 #
Conductivity @ 20 deg.C	<0.02 mS/cm	TM120		1.72 #	16.3 #	1.31 #	0.494 #	0.492 #
Arsenic (diss.filt)	<0.5 µg/l	TM152			18.9 #			
Boron (diss.filt)	<10 µg/l	TM152			2870 #			
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			1.46 #			
Lead (diss.filt)	<0.2 µg/l	TM152			<0.2 #			
Manganese (diss.filt)	<3 µg/l	TM152			216 #			
Nickel (diss.filt)	<0.4 µg/l	TM152			<0.4 #			
Selenium (diss.filt)	<1 µg/l	TM152			<1 #			
Zinc (diss.filt)	<1 µg/l	TM152			2.78 #			
Sodium (Dis.Filt)	<0.076 mg/l	TM152			2920 #			
Magnesium (Dis.Filt)	<0.036 mg/l	TM152			434 #			
Potassium (Dis.Filt)	<0.2 mg/l	TM152			107 #			
Calcium (Dis.Filt)	<0.2 mg/l	TM152			124 #			
Iron (Dis.Filt)	<0.019 mg/l	TM152			4.82 #			
Hardness, Total as CaCO3	<0.65 mg/l	TM152			2110			
EPH Range >C10 - C40 (aq)	<100 µg/l	TM172			373 #			
Total EPH (C6-C40) (aq)	<100 µg/l	TM172			373			
Nitrite as NO2	<0.05 mg/l	TM184			<0.05 #			
Phosphate (Ortho as PO4)	<0.05 mg/l	TM184			8.37 #			
Sulphate	<2 mg/l	TM184			55.2 #			

CERTIFICATE OF ANALYSIS

SDG:	210804-97	**Client Reference:**	August SW 2021	**Report Number:**	609009
Location:	Newport landfill	**Order Number:**	700167556	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - 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.	C3_ASB	GW12_33	SW_23	SW_24	SW_1A
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Surface Water (SW)	Ground Water (GW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)
			Date Sampled	03/08/2021	03/08/2021	03/08/2021	03/08/2021	03/08/2021
			Sampled Time	.	.	.	.	.
			Date Received	04/08/2021	04/08/2021	04/08/2021	04/08/2021	04/08/2021
			SDG Ref	210804-97	210804-97	210804-97	210804-97	210804-97
			Lab Sample No.(s)	24746935	24746940	24746916	24746924	24746931
			AGS Reference					
Chloride	<2 mg/l	TM184		224 #	6340 #	171 #	30.6 #	16.8 #
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		8.37 #	7.7 #	7.87 #	8.18 #	8.47 #

CERTIFICATE OF ANALYSIS

SDG:	210804-97	**Client Reference:**	August SW 2021	**Report Number:**	609009
Location:	Newport landfill	**Order Number:**	700167556	**Superseded Report:**	

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.	GW12_33
Depth (m)	0.00 - 0.00
Sample Type	Ground Water (GW)
Date Sampled	03/08/2021
Sampled Time	.
Date Received	04/08/2021
SDG Ref	210804-97
Lab Sample No.(s)	24746940
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:	210804-97	**Client Reference:**	August SW 2021	**Report Number:**	609009
Location:	Newport landfill	**Order Number:**	700167556	**Superseded Report:**	

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.	GW12_33
Depth (m)	0.00 - 0.00
Sample Type	Ground Water (GW)
Date Sampled	03/08/2021
Sampled Time	.
Date Received	04/08/2021
SDG Ref	210804-97
Lab Sample No.(s)	24746940
AGS Reference	

Component	LOD/Units	Method	
Dibromofluoromethane**	%	TM208	116
Toluene-d8**	%	TM208	99.3
4-Bromofluorobenzene**	%	TM208	98.3
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:	210804-97	**Client Reference:**	August SW 2021	**Report Number:**	609009
Location:	Newport landfill	**Order Number:**	700167556	**Superseded Report:**	

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.	GW12_33
Depth (m)	0.00 - 0.00
Sample Type	Ground Water (GW)
Date Sampled	03/08/2021
Sampled Time	.
Date Received	04/08/2021
SDG Ref	210804-97
Lab Sample No.(s)	24746940
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	#				

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SDG:	210804-97	**Client Reference:**	August SW 2021	**Report Number:**	609009
Location:	Newport landfill	**Order Number:**	700167556	**Superseded Report:**	

VOC MS (W)

Results Legend

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tot.unfilt	Total / unfiltered sample.
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(F)	Trigger breach confirmed
1-4+5@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	
			Depth (m)	0.00 - 0.00
			Sample Type	Ground Water (GW)
			Date Sampled	03/08/2021
			Sampled Time	.
			Date Received	04/08/2021
			SDG Ref	210804-97
			Lab Sample No.(s)	24746940
			AGS Reference	
1,2,3-Trichlorobenzene	<1 µg/l	TM208	GW12_33	<1 #
1,3,5-Trichlorobenzene	<1 µg/l	TM208		<1

Table of Results - Appendix

Method No	Reference	Description
Calulation		
SUB		Subcontracted Test
TM022	Method 2540D, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part120 1981;BS EN 872	Determination of total suspended solids in waters
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
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
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter

NA = not applicable.

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

CERTIFICATE OF ANALYSIS

SDG:	210804-97	**Client Reference:**	August SW 2021	**Report Number:**	609009
Location:	Newport landfill	**Order Number:**	700167556	**Superseded Report:**	

Test Completion Dates

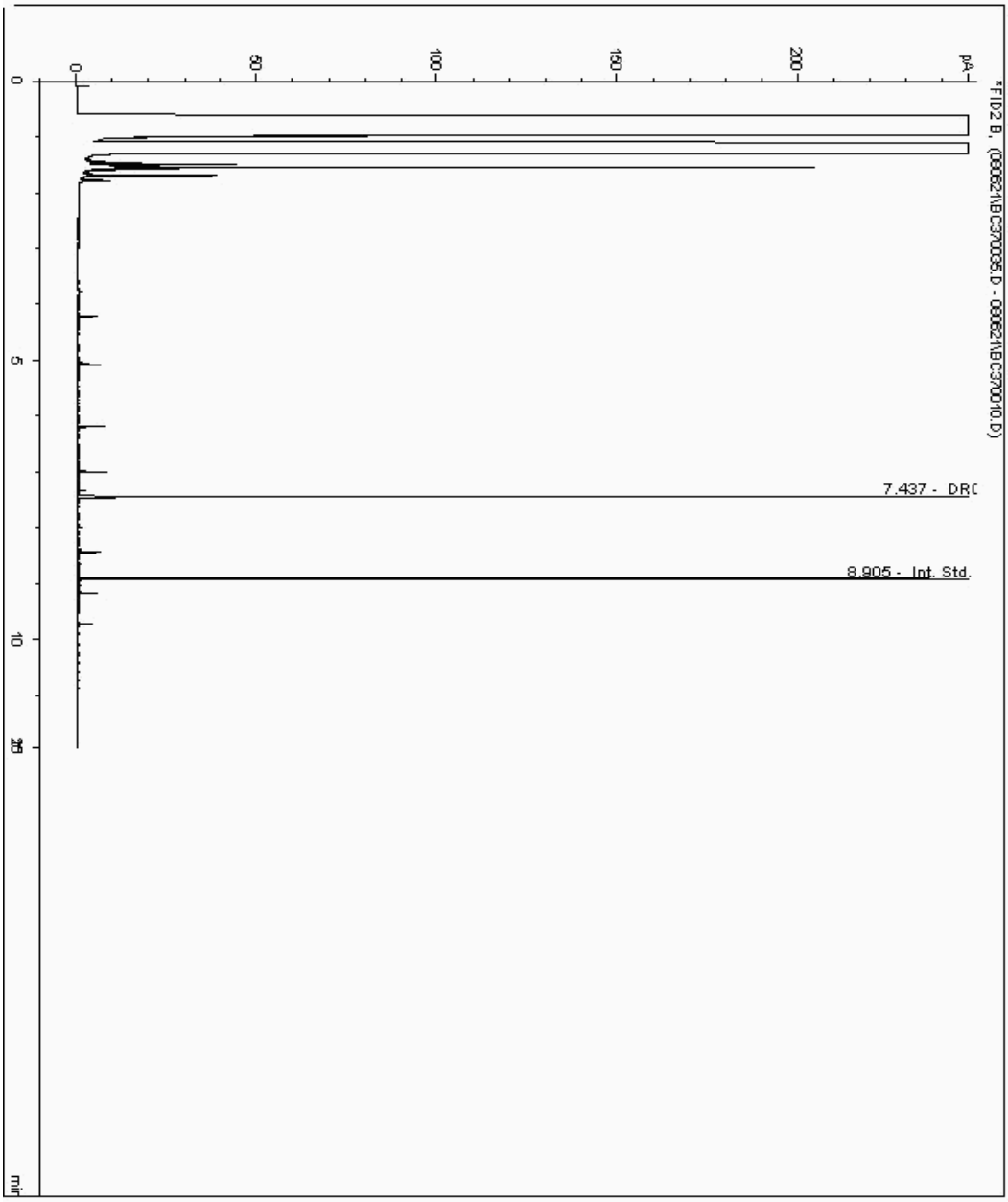
Lab Sample No(s)	24746935	24746940	24746916	24746924	24746931
Customer Sample Ref.	C3_ASB	GW12_33	SW_23	SW_24	SW_1A
AGS Ref.					
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Surface Water	Ground Water	Surface Water	Surface Water	Surface Water
Alkalinity as CaCO3		04-Aug-2021			
Alkalinity Filtered as CaCO3		06-Aug-2021			
Ammoniacal Nitrogen	05-Aug-2021	05-Aug-2021	05-Aug-2021	05-Aug-2021	05-Aug-2021
Anions by Kone (w)	10-Aug-2021	09-Aug-2021	10-Aug-2021	10-Aug-2021	10-Aug-2021
BOD True Total	10-Aug-2021	10-Aug-2021	10-Aug-2021	10-Aug-2021	10-Aug-2021
COD Unfiltered	11-Aug-2021	11-Aug-2021	11-Aug-2021	11-Aug-2021	11-Aug-2021
Conductivity (at 20 deg.C)	05-Aug-2021	05-Aug-2021	05-Aug-2021	05-Aug-2021	05-Aug-2021
Cyanide Comp/Free/Total/Thiocyanate		06-Aug-2021			
Dissolved Metals by ICP-MS		10-Aug-2021			
EPH (DRO) (C10-C40) Aqueous (W)		09-Aug-2021			
GRO by GC-FID (W)		05-Aug-2021			
Ionic Balance		10-Aug-2021			
Nitrite by Kone (w)		05-Aug-2021			
pH Value	06-Aug-2021	06-Aug-2021	06-Aug-2021	06-Aug-2021	06-Aug-2021
Phosphate by Kone (w)		05-Aug-2021			
Sulphide		09-Aug-2021			
Suspended Solids	07-Aug-2021				
TOC (Filtered)*		10-Aug-2021			
Total EPH (aq)		09-Aug-2021			
VOC MS (W)		05-Aug-2021			

CERTIFICATE OF ANALYSIS

SDG:	210804-97	**Client Reference:**	August SW 2021	**Report Number:**	609009
Location:	Newport landfill	**Order Number:**	700167556	**Superseded Report:**	

Chromatogram

Analysis: EPH (DRO) (C10-C40) Aqueous (W) **Sample No :** 24748012 **Sample ID :** GW12_33 **Depth :** 0.00 - 0.00



CERTIFICATE OF ANALYSIS

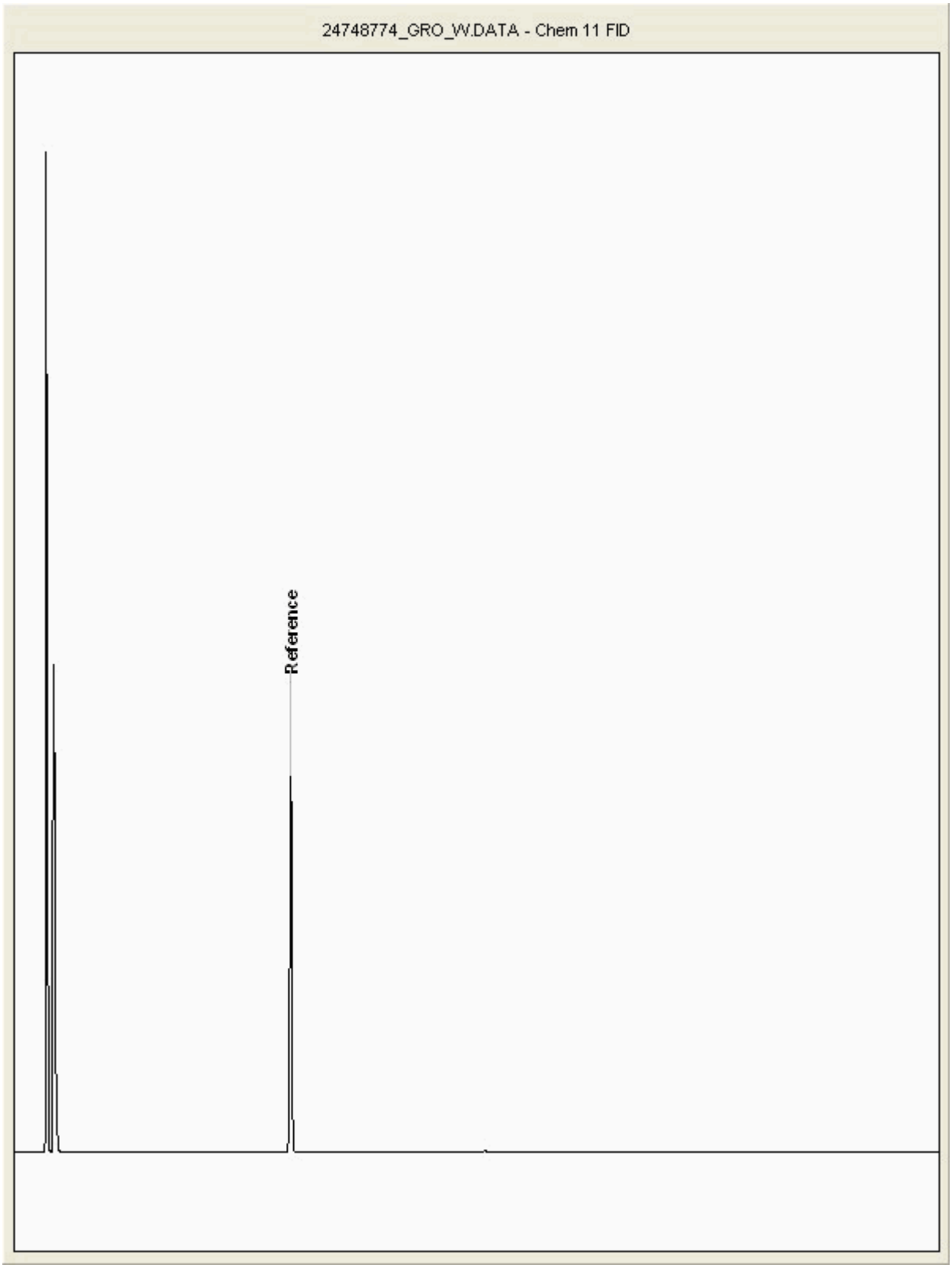
SDG:	210804-97	**Client Reference:**	August SW 2021	**Report Number:**	609009
Location:	Newport landfill	**Order Number:**	700167556	**Superseded Report:**	

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 24748774
Sample ID : GW12_33

Depth : 0.00 - 0.00



ALS Environmental Ltd
Torrington Avenue
Coventry
CV4 9GU

T: +44 (0)24 7642 1213
F: +44 (0)24 7685 6575
www.alsenvironmental.co.uk

Subcon Results
ALS Life Sciences Limited
Torrington Avenue
Tile Hill CV4 9GU

10 August 2021

Test Report: COV/2177570/2021

Dear Subcon Results

Analysis of your sample(s) received on 05 August 2021 is now complete and we have pleasure in enclosing the appropriate test report(s).

An invoice for the analysis carried out will be sent under separate cover.

Should you have any queries regarding this report(s) or any part of our service, please contact Customer Services on +44 (0)24 7642 1213 who will be happy to discuss your requirements.

If you would like to arrange any further analysis, please contact Customer Services. To arrange container delivery or sample collection, please call the Couriers Department directly on 024 7685 6562.

Thank you for using ALS Environmental Ltd and we look forward to receiving your next samples.

Yours Sincerely,

Signed:

Name: P. Patel

Title: Inorganics Chemistry Manager

UKAS TESTING 1314

bsi ISO 14001 Environmental Management CERTIFIED ISO 45001 Occupational Health and Safety Management CERTIFIED
EMS 675527 OHS 542058

mCERTS THE ENVIRONMENT AGENCY'S MONITORING CERTIFICATION SCHEME

Report Summary

ANALYSED BY

UKAS TESTING 1314

ALS

Hawarden Subcon Results
ALS Life Sciences Limited
Torrington Avenue
Tile Hill
CV4 9GU

Date of Issue: **10 August 2021**

Report Number: **COV/2177570/2021** Issue **1**

This issue replaces all previous issues

Job Description: 2021 Analysis

Job Location: 210804-97

Number of Samples included in this report **1**

Job Received: **05 August 2021**

Number of Test Results included in this report **1**

Analysis Commenced: **09 August 2021**

Signed:

Name: **P. Patel** Date: **10 August 2021**

Title: **Inorganics Chemistry Manager**

ALS Environmental Ltd was not responsible for sampling unless otherwise stated.

Information on the methods of analysis and performance characteristics are available on request.
Opinions and interpretations expressed herein are outside the scope of UKAS accreditation. The results relate only to the items tested and where relevant sampled.
Tests marked 'Not UKAS Accredited' in this Report/Certificate are not included in the UKAS Accreditation Schedule for our laboratory.
This test report is not a statement of conformity to any specification or standard.

Certificate of Analysis

ANALYSED BY

UKAS TESTING 1314

ALS

Report Number:	**COV/2177570/2021**	Issue	**1**
Laboratory Number:	**20717897**	Sample	**1** of **1**

Sample Source:	**ALS Life Sciences Limited**
Sample Point Description:	
Sample Description:	**24751828**
Sample Matrix:	**Ground Water**
Sample Date/Time:	**03 August 2021**
Sample Received:	**05 August 2021**
Analysis Complete:	**10 August 2021**

Test Description	Result	Units	Analysis Date	Accreditation	Method
TOC (Filtered)	20.7	mg/l	09/08/2021	Y Cov	WAS005

Analyst Comments for 20717897: No Analyst Comment

This issue replaces all previous issues
Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.
Analysed at: CHE = Chester(CH5 3US), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2RU), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG), F = Data supplied by customer.
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered.
I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Signed: P. Patel

Name: **P. Patel** Date: **10 August 2021**

Title: **Inorganics Chemistry Manager**

ANALYST COMMENTS FOR REPORT COV/2177570/2021 Issue 1

This issue replaces all previous issues

Date of Issue: **10 August 2021**

Sample No	Analysis Comments
20717897	

Signed:

Name: **P. Patel** Date: **10 August 2021**

Title: **Inorganics Chemistry Manager**

DETERMINAND COMMENTS FOR REPORT COV/2177570/2021

ISSUE 1

This issue replaces all previous issues

Date of Issue: 10 August 2021

Sample No	Description	Determinand	Comments

Signed: 

Name: **P. Patel** Date: **10 August 2021**

Title: **Inorganics Chemistry Manager**

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

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

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

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

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

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

18. **Sample Deviations**

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

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

19. **Asbestos**

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

Identification of Asbestos in Bulk Materials & Soils

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

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

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

Visual Estimation Of Fibre Content

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

Respirable Fibres

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

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

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