



Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US

Tel: (01244) 528777
email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

ALS Environmental Limited
Torrington Avenue
Tilehill
Coventry
West Midlands
CV4 9GU

Attention: Subcon Coventry

CERTIFICATE OF ANALYSIS

Date of report Generation: 12 January 2026
Customer: ALS Environmental Limited
Sample Delivery Group (SDG): 251213-23
Your Reference: 2926972
Location: 2926972
Report No: 788141
Order Number: 924631

This report has been revised and directly supersedes 787930 in its entirety.

We received 3 samples on Saturday December 13, 2025 and 3 of these samples were scheduled for analysis which was completed on Monday January 12, 2026. 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 Laboratories (UK) Limited 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:

Justin Keeton
Business Unit Leader - Land





CERTIFICATE OF ANALYSIS

Validated

SDG: 251213-23
Client Ref.: 2926972

Report Number: 788141
Location: 2926972

Superseded Report: 787930

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
32620221	25854309			07/12/2025
32620225	25854310			07/12/2025
32620229	25854311			07/12/2025

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



CERTIFICATE OF ANALYSIS

Validated

SDG: 251213-23
Client Ref.: 2926972

Report Number: 788141
Location: 2926972

Superseded Report: 787930

Results Legend



Test



No Determination
Possible

Sample Types -

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

Lab Sample No(s)

32620221

32620225

32620229

Customer
Sample Reference

25854309

25854310

25854311

AGS Reference

Depth (m)

Container

1 plastic
(ALE221)

50ml digitube
(ALE001)

50ml digitube
(ALE001)

Sample Type

SW

SW

SW

PFAS Liquids (Full Suite)

All

NDPs: 0
Tests: 3

X

X

X



CERTIFICATE OF ANALYSIS

Validated

SDG: 251213-23
Client Ref.: 2926972

Report Number: 788141
Location: 2926972

Superseded Report: 787930

Results Legend			Customer Sample Ref.					
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery *** 6:2 FTAB (see appendix) 1-4*§@ Sample deviation (see appendix)			Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference					
			25854309			25854310		
			Surface Water (SW) 07/12/2025			Surface Water (SW) 07/12/2025		
			13/12/2025 251213-23 32620221			13/12/2025 251213-23 32620225		
			25854311					
			Surface Water (SW) 07/12/2025					
			13/12/2025 251213-23 32620229					
Component	LOD/Units	Method						
PFBA (375-22-4)	<2 ng/l	TM434	116	47.6	<2			
			#	#	#			
PFMOPra (377-73-1)	<1 ng/l	TM434	<25	<1	<1			
			#	#	#			
3:3 FTCA (356-02-5)	<5 ng/l	TM434	<125	<5	<5			
			#	#	#			
PFPA (2706-90-3)	<1 ng/l	TM434	571	142	4.43			
			#	#	#			
PFMOBA (863090-89-5)	<1 ng/l	TM434	<25	<1	<1			
			#	#	#			
4:2 FTS (757124-72-4)	<1 ng/l	TM434	<25	<1	<1			
			#	#	#			
NFDHA (151772-58-6)	<3 ng/l	TM434	<75	<3	<3			
			#	#	#			
PFBS (375-73-5)	<1 ng/l	TM434	<25	2.94	<1			
			#	#	#			
PFHxA (307-24-4)	<1 ng/l	TM434	487	140	3.05			
			#	#	#			
HFPO-DA (13252-13-6)	<2 ng/l	TM434	<50	<2	<2			
			#	#	#			
PFEESA (113507-82-7)	<1 ng/l	TM434	<25	<1	<1			
			#	#	#			
PFHpA (375-85-9)	<1 ng/l	TM434	142	34	1.49			
			#	#	#			
PFPeS (2706-91-4)	<1 ng/l	TM434	27.6	2.72	<1			
			#	#	#			
5:3 FTCA (914637-49-3)	<5 ng/l	TM434	<125	7.75	<5			
			#	#	#			
ADONA (919005-14-4)	<1 ng/l	TM434	<25	<1	<1			
			#	#	#			
6:2 FTS (27619-97-2)	<1 ng/l	TM434	3920	868	13.3			
			#	#	#			
FBSA (30334-69-1)	<1 ng/l	TM434	<25	3.09	<1			
			#	#	#			
PFOA (335-67-1)	<0.65 ng/l	TM434	43.7	11.2	<0.65			
			#	#	#			
PFHxS (355-46-4)	<1 ng/l	TM434	313	41.6	<1			
			#	#	#			
PFNA (375-95-1)	<1 ng/l	TM434	<25	<1	<1			
			#	#	#			
PFHpS (375-92-8)	<1 ng/l	TM434	<25	2.38	<1			
			#	#	#			
8:2 FTS (39108-34-4)	<2 ng/l	TM434	<50	13.8	<2			
			#	#	#			
HFPO-TA (13252-14-7)	<5 ng/l	TM434	<125	5.02	<5			
			#	#	#			
PFDA (335-76-2)	<2 ng/l	TM434	<50	<2	<2			
			#	#	#			
MeFOSAA (2355-31-9)	<2 ng/l	TM434	<50	<2	<2			
			#	#	#			
7:3 FTCA (812-70-4)	<5 ng/l	TM434	<125	<5	<5			
			#	#	#			
Linear PFOS (1763-23-1)	<0.65 ng/l	TM434	794	120	1.33			
			#	#	#			
Branched PFOS	<0.65 ng/l	TM434	289	73.8	1.57			
			#	#	#			
EtFOSAA (2991-50-6)	<2 ng/l	TM434	<50	<2	<2			
			#	#	#			
PFUnA (2058-94-8)	<2 ng/l	TM434	<50	<2	<2			
			#	#	#			
9CI-PF3ONS (756426-58-1)	<1 ng/l	TM434	<25	<1	<1			
			#	#	#			
PFNS (68259-12-1)	<1 ng/l	TM434	<25	<1	<1			
			#	#	#			
FHxSA (41997-13-1)	<1 ng/l	TM434	164	26	<1			
			#	#	#			



CERTIFICATE OF ANALYSIS

Validated

SDG: 251213-23
Client Ref.: 2926972

Report Number: 788141
Location: 2926972

Superseded Report: 787930

Table of Results - Appendix

Method No	Description
TM434	Analysis of PFAS in Liquid matrices

NA = not applicable.
Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 251213-23
Client Ref.: 2926972

Report Number: 788141
Location: 2926972

Superseded Report: 787930

Test Completion Dates

Lab Sample No(s)	32620221	32620225	32620229
Customer Sample Ref.	25854309	25854310	25854311
AGS Ref.			
Depth			
Type	Surface Water	Surface Water	Surface Water
PFAS Liquids (Full Suite)	12-Jan-2026	02-Jan-2026	02-Jan-2026



CERTIFICATE OF ANALYSIS

SDG: 251213-23
Client Ref: 2926972

Report Number: 788141
Location: 2926972

Superseded Report: 787930

Appendix

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

2. If sufficient sample is received a sub sample will be retained free of charge for 15 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 15 days 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.

General

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 (2021), 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.

If during the search of the two 'pinch' samples by PLM only 1 or 2 fibres or fibre bundles are seen and identified as asbestos, the term 'trace asbestos identified' is reported.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils 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 (2021).

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.

Potentially respirable fibres are identified by using a Phase Contrast Microscope.

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.

21. 6:2 FTAB

Recovery of 6:2 FTAB in the quality control samples has been observed to be <50% of the target value. Please note the 6:2 FTAB result is supplied as indicative only.