Afan Water Treatment Works

Ground Investigation

Factual and Interpretative Report

G25063

July 2025

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JACKSON GEO SERVICES

Report Control Sheet

Report Number

G25063

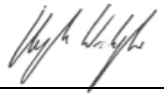
Date of Issue

July 2025

Site Address

Afan Water Treatment Works, Port Talbot, SA13 1RB

Report Preparation

Revision	Writer	Approver
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	Signature 	Signature 
Rev 1		
	Signature	Signature

Jackson Geo Services Limited (registered company number 14991448) is a subsidiary of Jackson Drilling Holdings Limited (registered company number 06919550).

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1 Introduction

1.1 General

Alun Griffiths (Contractors) Limited entered into a contract with Jackson Geo Services (JGS) to complete a ground investigation at Afan Water Treatment Works (hereafter referred to as The Site). The contract was agreed during May 2025. As per the Construction Design and Management (CDM) Regulations (2015), parties were attributed the following responsibilities:

Table 1: Responsibility Under CDM

Client	Alun Griffiths (Contractors) Limited
Designer	Pebble Engineering and TACP
Principal Contractor	Alun Griffiths (Contractors) Limited
Sub-Contractor	JGS

1.2 Proposed Development

The Site is proposed to be developed with two newly constructed Zapp shelters measuring 12 m x 30 m. The Zapp shelters are to be located to the north of the existing settlement tanks and the bearing pressure of the proposed structure is anticipated to be no greater than 50 kPa.

1.3 Scope of Works

The scope of investigation was defined by Pebble Engineering in conjunction with TACP and JGS and is detailed within Pebble Engineering document 01/200/1 rev A (hereafter referred to as The Specification). In summary, the scope of investigation comprised:

- Dynamic Windowless Sampling
- Machine Excavated Trial Pitting
- In-situ Testing
- Geotechnical Testing
- Geoenvironmental Testing
- Factual Reporting
- Interpretative reporting presenting a proposed foundation solution, concrete classification and indicative waste assessment.

The assessment and interpretation of geoenvironmental data is to be completed by TACP.

1.4 Limitations

The project has been undertaken in accordance with The Specification and current standards and guidance as applicable (see References).

This report presents the observations made during desk based studies and the fieldwork period on a factual basis. Any observations within the report are limited to those which can be made based upon the information available at the time.

JGS consider the contents of the report have been produced accurately and the data presented is representative of the site conditions at the time. JGS assumes any third party

data included in the report is accurate and correct. No responsibility is accepted by JGS for inaccuracies within third party data.

This report has been written to The Specification and is for use only in this context by the named Client and their advisers and is confidential to the named Client.

This report presents information on ground conditions, including groundwater, gas and contamination concentrations and soil properties, which are based upon the available dataset for the investigation. This dataset is considered representative of the site as whole, however is limited by the locations of investigation. Ground conditions, in particular Made Ground, can vary substantially and JGS do not accept responsibility for local unforeseen changes. Furthermore, groundwater, gas concentrations and chemical concentrations can vary with time, atmospheric conditions and spatially dependent upon a variety of confining factors.

Consideration should be made as to the relevance of the information if the dataset is to be utilised after a significant period of time has elapsed from the date of investigation.

2 The Site

2.1 Site Location

The Site is situated at National Grid Reference (NGR) SS 760 874 and is approximately 2.2 km south-southwest from Port Talbot Parkway railway station. The location of The Site is shown in Figure 1:

Figure 1: Site Location



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2.2 Current Use

The Site currently comprises part of an active Dwr Cymru/Welsh Water water treatment works site.

The Site is rectangular in shape and measures approximately 30 m by 90 m and is laid to concrete hardstanding, macadam and gravel sub-base. The Site is used for the storage of waste product associated with the water treatment works. In the west of The Site is a concrete wall used to retain waste product. This measures approximately 20 m in length and is a horse shoe shape.

The Site is bounded to the north, east and west by access tracks associated with the Port Talbot Steelworks and scrubland and to the south by the settlement tanks of Afan Water Treatment Works.

2.3 Anticipated Ground Conditions

The anticipated ground conditions have been assessed using the data available on the British Geological Survey (BGS) GeoIndex (onshore) Map Viewer (2025) and the published BGS map (map no. 247, 2011), these are summarised within Table 2:

Table 2: Anticipated Ground Conditions

Artificial Ground	None recorded	N/A
Superficial Deposits	Blown Sand	Sand
Solid Geology	South Wales Middle Coal Measures Formation	Mudstone, Siltstone and Sandstone

An inferred coal seam is indicated approximately 170 m north of The Site. This is indicated to trend in a northwest-southeast direction. The dip direction is unknown.

The Department for Environment, Food & Rural Affairs (DEFRA) MAGIC mapping system (2025) indicates The Site is located within an area where the superficial deposits are classified as a nonproductive aquifer, and the bedrock is classified as a secondary A aquifer.

3 Fieldwork

3.1 General Information

The fieldwork was completed on 25 and 26 June, and 7 July 2025.

The ground investigation was undertaken in accordance with BS5930:2015+A1:2020. The works were supervised by a trained and competent JGS engineer.

The layout of the investigation locations and their unique identifiers were determined by Pebble in conjunction with JGS. This information was provided to JGS prior to works commencing onsite. JGS set out the locations onsite from local features.

Service drawings were provided to JGS by Alun Griffiths (Contractors) Ltd prior to works commencing on site and the location of the proposed investigation locations was checked against the service drawings prior to excavation.

Prior to excavation a PAS 128 Type B compliant survey was undertaken to confirm the absence of services beneath the proposed excavation.

All exploratory hole locations, with the exception of machine excavated trial pits, were excavated to a depth of 1.20 m by hand prior to using mechanical plant. As hand excavation progressed, the excavations were scanned using a Cable Avoidance Tool (CAT) to continue to confirm the absence of services.

Photographs of the materials encountered were taken in accordance with The Specification and are presented in Appendix II.

Following completion of the fieldwork, all investigation locations been surveyed to National Grid and Ordnance Datum. The location of the exploratory holes is shown on the drawing within Appendix I. The survey was completed by JGS.

3.2 Exploratory Holes

The proposed numbers of exploratory holes, their unique identifiers, termination depths and installation requirements were provided to JGS within The Specification. The details of the as built exploratory holes, including the location ID, construction method, actual termination depth and installation detail, are listed within Table 3.

Table 3: Exploratory Hole Details

Exploratory Hole ID	Construction Method	Termination Depth (m)	Installation Details		
			Type	Diameter (mm)	Response Zone (m bgl)
TP1	Machine excavated trial pit	2.40	Backfilled with gravel		
TP2		2.20			
TP3		1.65			
TP3A		1.55			
WS1	Dynamic Windowless Sampling	5.00	SP	50	2.00-3.50
WS2		1.43	Backfilled with bentonite		
WS3		4.80	SP	50	1.00-3.50
WS4		4.90	SP	50	2.00-3.50
WS5		2.00	SP	50	1.00-2.00

Notes: SP – Standpipe piezometer; P – Piezometer

During construction of the dynamic windowless sampler boreholes, all boreholes with the exception of WS1 were terminated shallower than the scheduled depth of 5.00 m due to refusal.

During the excavation of trial pits TP1 and TP2 the pits were terminated shallower than their scheduled depth due to collapse of the trial pit walls.

During the excavation of trial pit TP3, the pit was terminated at a shallower depth than scheduled due to a concrete obstruction. The location was moved and re-excavated as location TP3A, which also refused at a shallow depth due to a concrete obstruction.

Fair copy logs, which record the method, samples obtained, in-situ testing completed within the exploratory holes, backfill and descriptions of the material encountered, are presented within Appendix II.

3.3 Logging and Sampling

Samples of the materials encountered were obtained in accordance with The Specification for descriptive and geotechnical and geoenvironmental testing purposes.

The description of the materials encountered was completed in accordance with BS5930:2015+A1:2020, BS EN ISO 14688-1 (2018) and BS EN ISO 14689 (2018).

Geotechnical samples were stored at ambient temperature and protected from extremes of weather until lab testing commenced, either onsite or at the JGS Llantrisant sample storage facility. Once scheduled for testing, the samples were transported to Geo Site and Testing Services Limited (GSTL).

Geoenvironmental samples were packaged appropriately and dispatched directly from site to Eurofins Chemtest ensuring compliance with the deviant sampling policy. The samples were subsequently stored under laboratory conditions until testing commenced.

3.4 In-situ Testing

In-situ testing was completed in accordance with The Specification and relevant associated technical standards. In summary, the in-situ testing comprised the following:

- Standard Penetration testing
- Soakaway Testing

The lateral and vertical spacing of the in-situ testing was determined by Pebble Engineering.

In order to complete the soakaway testing, it was necessary to fill the pits with gravel infill in order to ensure their stability. As gravel infill was not initially allowed for, the pits were re-excavated on 7 July 2025 and backfilled with gravel.

The in-situ testing results are presented within Appendix II. Where an in-situ test is not listed as separate item on the appendix cover page, the results of the in-situ testing are presented on the exploratory hole logs. Calibration certificates for the equipment used are presented within Appendix II as appropriate.

3.5 Post Fieldwork Monitoring and Sampling

Monitoring of the ground gas and groundwater was undertaken post fieldwork by JGS in accordance with The Specification and relevant technical standards. One post fieldwork monitoring visit was undertaken; this comprised monitoring groundwater and ground gas levels from within the installations. The monitoring was completed on 18 July 2025. Records of the groundwater and gas levels recorded during monitoring are presented within Appendix II along with associated calibration certificates for the equipment used.

A round of groundwater sampling was also undertaken on 18 July 2025, however all boreholes were dry and as such no groundwater samples could be obtained.

4 Laboratory Testing

4.1 Geotechnical Testing

Laboratory testing for geotechnical purposes was completed at GSTL, UKAS registration number 2788. The testing requirements were specified by JGS and the testing has been completed in accordance with the requirements of The Specification and relevant technical standards. The geotechnical testing was completed on 21 July 2025. The testing is summarised in Table 4 and the results are presented within Appendix IV.

Table 4: Geotechnical Testing Summary

Test Type	Number of Tests
Particle Size Distribution Analysis	4

4.2 Geoenvironmental and Geochemical Testing

Laboratory testing for geoenvironmental and geochemical purposes was completed at Eurofins Chemtest, UKAS registration number 2183. The testing requirements were specified by TACP and JGS and the testing has been completed in accordance with The Specification and relevant technical standards. The geoenvironmental and geochemical testing was completed on 21 July 2025. The testing in summarised within Table 5 and the results are presented within Appendix V.

Table 5: Geoenvironmental and Geochemical Testing Summary

Test Type	Number of Tests
BRE SD1 Suite D	5
General Soil Suite	5
Asbestos screen	5
TPH CWG	5
PAH	5
General Soil Leachate Suite	3
PAH Leachate	3
WAC Suite	4

5 Ground Conditions Summary

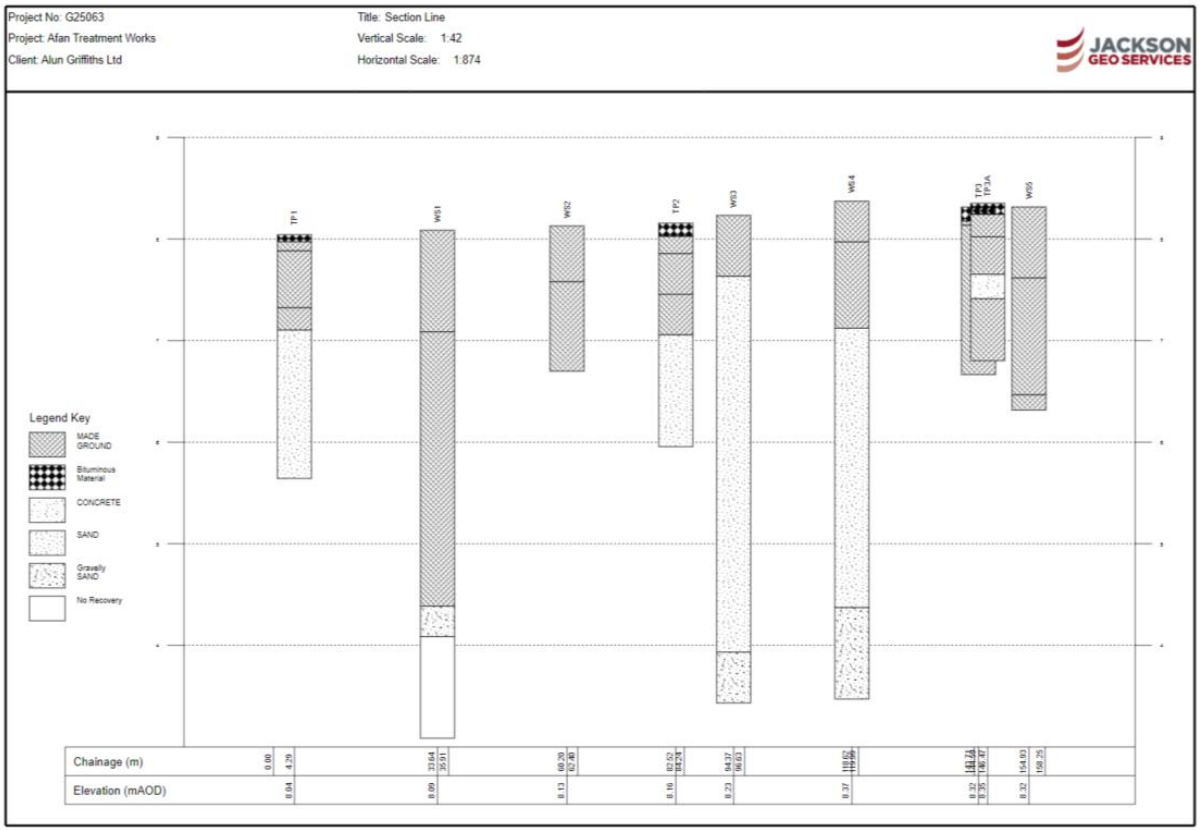
The ground conditions encountered during the fieldwork were broadly consistent with the anticipated ground conditions as outlined within Section 3.3. The ground conditions encountered are summarised within Table 7:

Table 6: Encountered Ground Conditions

Stratum	Top Depth (m bgl)	Maximum thickness (m)	Remarks
Made Ground	Ground level	3.70	Encountered within all exploratory holes.
Blown Sand	0.60	4.20	Encountered within TP1, TP2, WS1, WS3, WS4. Base not proven.

Variations in depth in these materials against ground level are shown in the simplified section in Figure 2 below:

Figure 2: Simplified Cross Section



5.1 Made Ground

Made Ground was encountered within all exploratory hole locations to a maximum depth of 3.70 m. The Made Ground was variable in nature and included clinker plus cobbles of slag and concrete suggesting the Made Ground does not comprise an engineered fill.

At exploratory hole locations TP1 to TP3 and TP3A macadam was encountered at ground level. This was immediately underlain by subbase comprising red sandy angular fine to coarse gravel of limestone. Sand is fine to coarse. The subbase ranged in thickness between 0.07 m and 0.22 m.

The Made Ground predominantly comprised coarse materials and was generally a brown, dark brown and grey sandy angular to subangular fine to coarse gravel of various materials including limestone, slag, clinker, ironstone, sandstone, concrete and brick with medium cobble content. Sand is fine to coarse. Cobbles are subangular to subrounded of various materials including sandstone, concrete, brick and slag.

Additional features of note within the Made Ground are summarised within Table 7.

Table 7: Made Ground Additional Features

Location	Top Depth (m bgl)	Base Depth (m bgl)	Features
TP1	0.72	0.94	Strong light grey limestone slab
TP1	0.94	0.96	20mm diameter pipe
TP3	0.45	0.60	150mm diameter black corrugated plastic duct

TP3A	0.32	0.33	Geotextile Membrane
WS1	2.40	2.60	Orangish brown and brown staining with metal and plastic (possible degraded battery)
WS2	0.55	0.56	Geotextile Membrane
WS3	0.60	0.61	Geotextile Membrane
WS5	0.70	0.71	Geotextile Membrane

5.2 Blown Sand

Natural material deemed representative of the locally mapped Blown Sand was identified below the Made Ground within exploratory holes TP1, TP2, WS1, WS3, WS4. This was coarse in nature and predominately described as being a loose to medium dense, occasionally dense yellow fine slightly gravelly sand. Gravel is rounded find to medium of sandstone. Occasionally shells and shell fragments were observed.

Uncorrected SPT N values for this material range from N=5 to N=50. The general trend with the SPT N values indicated that the material was highly variable and encountered as loose to medium dense down to 4.80 m to 5.00 m bgl, before becoming very dense.

Particle size distribution analysis was undertaken on three samples of the blown sand. These indicated the material comprised 94 % to 98 % sand, 1 % to 4 % silt and clay and 1 % to 2 % gravel.

5.3 Groundwater

No groundwater was encountered within the exploratory hole locations during construction or within the standpipes during monitoring.

It should be noted that groundwater levels are influenced by seasonal fluctuations and therefore may vary when compared to the levels observed during the fieldwork period.

6 Geotechnical Assessment

6.1 Foundation Options

The results of this investigation have shown that Made Ground of varying thickness overlies natural strata comprising Blown Sand.

The Blown Sand is indicated to be variable and loose to medium dense to between 4.80 m and 5.00 m bgl, where the stratum becomes very dense.

It is therefore considered that the Blown Sand at 4.80 m to 5.00 m bgl would represent an acceptable founding stratum as at this depth they provide a consistent and suitable bearing stratum. However, this will likely require a mini piling or ground improvement scheme that may not be economically viable for this development.

Given the relatively light weight nature of the proposed structure it may also be possible to utilise shallow foundations, however, some further testing would need to be undertaken to assess the Made Ground at near surface to ensure it is of a consistent and suitable strength for the proposed development.

6.2 Shallow Foundations

It is considered that as the proposed structure will likely impose relatively low proposed bearing pressure it may be possible for shallow foundations to be utilised at The Site. It should be appreciated that should this be chosen as the preferred founding solution then the variability of the shallow soils will still need to be considered in the foundation design. These materials, the Made Ground and underlying Blown Sands, were encountered as varying from loose to medium dense not just with depth but also laterally across the site. In addition to variability of the materials there is no evidence that the Made Ground has been placed as a an engineered fill and this will need to be considered in the foundation and structure design.

It is recommended that some further testing in the form of plate bearing testing is undertaken between the ground surface and the required foundation depth to determine the suitability of the shallow soils and allow an assessment of the likely settlement which will occur should a loading of 50 kPa be applied to the ground. A test load of 150 kPa is recommended to include a factor of safety.

Should the plate bearing tests prove favourable, shallow strip foundations founded at 1 m depth may be appropriate for the proposed structure.

It needs to be appreciated that even if the plate testing indicates the Made Ground is suitable for shallow foundations then some further precautions will need to be allowed for such as the foundation level/excavation will need to be inspected by a suitably experienced person to ensure uniform and suitable soils have been encountered consistently across the foundation excavations. Any ‘soft/loose’ spots will need to be removed and replaced with suitable engineered backfill.

In addition, consideration will need to be given to potential use of reinforcement in the foundations to allow them to bridge potential localised soft spots that may not be apparent. A level of differential settlement may occur due to different rates of settlement due to the variable materials and the proposed structure should take these into account. Though the materials encountered were mostly granular in nature and the settlement should occur relatively quickly, there remains a potential for differential settlement to occur.

Historical structures were observed during the construction of the exploratory holes, should strip foundations intercept these features then they should be removed and the replaced with engineered backfilled materials to ensure no hard spots are present. These former structures may also present potential obstructions to any excavation works and therefore suitable excavation equipment should be allowed for.

7 Aggressive Chemical Environment for Concrete Classification

Chemical agents within the ground can provide a destructive environment to concrete with sulphates and acids most likely to attack and degrade concrete. This can lead to the softening and expansion of concrete, reducing its structural properties. In line with current practice, BRE Special Digest 1, Concrete in Aggressive Ground (2005) has been used to determine the Design Sulphate Class and Aggressive Chemical Environment for Concrete (ACEC) classification.

Five samples have been tested for the Brownfield testing suite as defined within BRE Special Digest 1, the results are presented within Appendix III. The classification has been completed using the population tested within each stratum, taking the maximum value within in each stratum in order to determine the DS and ACEC classification requirements for the concrete.

Made Ground

- pH = 8.1
- Water Soluble Sulphate as SO_4 = 520 mg/l
- Total Sulphur = 0.28 %
- Sulphate (Acid Soluble) = 0.16 g/l
- Total Potential Sulphate levels (3 times total sulphur) = 0.84 %

Total potential sulphate and oxidisable sulphide levels (both calculated) indicate that Pyrite is likely present in this stratum therefore and the assessment for this stratum is based on total potential sulphate levels.

Blown Sand

- pH = 8.7
- Water Soluble Sulphate as SO_4 = 27 mg/l
- Total Sulphur = 0.03 %
- Sulphate (Acid Soluble) = 0.01 g/l

Comparison of these values to Table C2, ACEC Classification for Brownfield Locations (and a mobile water regime given the coarse nature of the materials encountered) presented within BRE Special Digest indicates a Design Sulphate Classification for location of DS-3 and an ACEC classification of AC-3 would be acceptable for all materials.

If concrete was placed just within the Blown Sand, and not in contact with the Made Ground, a Design Sulphate Classification of DS-1 and an ACEC classification of AC-1 would be appropriate, however given the widespread Made Ground encountered onsite it is considered unlikely that and foundations would not be in contact with the Made Ground.

8 INDICATIVE WASTE CLASSIFICATION

8.1 Current Legislation and Guidance

JGS undertake the classification of soil waste in broad accordance with the technical guidance provided by the Environment Agency (EA) within technical guidance document WM3, Waste Classification: Guidance on the classification and assessment of waste (Version 1.2) (dated October 2021) (EA, 2021). This guidance document gives information both on how to sample waste materials and the how to complete the classification process.

The classification process for soils is broken into two distinct phases; a first phase classification to determine if the waste is hazardous or non-hazardous based upon its chemical and levels of asbestos within the material, followed by a second phase classification to determine the route for disposal at landfill.

Following completion of the first phase classification, the List of Waste Code as per the List of Waste Regulations (2005) can be applied to the waste.

8.2 Sampling Regime

Environment Agency technical guidance document WM3 provides guidance on Waste Sampling within Appendix D of the document. This suggests that a Sampling Plan should be developed prior to onsite sampling being completed, and a statistical approach is selected based upon the volume and types of waste to be tested.

However, at this time it is not known how much waste is to be removed from site, and as such not possible to create an accurate sampling plan in accordance with Appendix D. In order to provide an indicative classification, four samples from a range of depths and locations were obtained for analysis.

It should be noted that further testing may be required once the actual volumes of waste to be disposed of are known.

8.3 First Phase Classification

8.3.1 Chemical Classification

In accordance with technical guidance document WM3 a first phase classification has been completed to determine if the material is hazardous or non-hazardous waste. JGS have utilised the HazWasteOnline web based software package to complete this assessment.

The report sheets from the HazWasteOnline assessment are included within the appendix and indicate that samples are non-hazardous waste.

8.3.2 Asbestos Assessment

Within Chapter 3, Section 1 of technical guidance document WM3, the document discussed asbestos. The document states the following process should be followed to assess the levels of asbestos and determine if the waste is hazardous or non-hazardous:

"The assessment of asbestos containing waste considers both the presence of asbestos as:

- *fibres that are free and dispersed, and*
- *identifiable pieces of asbestos containing material*

If the waste contains fibres that are free and dispersed then the waste will be hazardous if the waste as a whole contains 0.1% or more asbestos. If the waste contains any identifiable pieces of suspected asbestos containing material they must be assessed as set out below. This would also apply to any dispersed fibres produced by deliberately breaking up such identifiable pieces.
Where the waste contains identifiable pieces of asbestos containing material; (i.e. any particle of a size that can be identified as potentially being asbestos by a competent person if examined by the naked eye); then these pieces must be assessed separately. The waste is hazardous if the concentration of asbestos in the piece of asbestos containing material is 0.1% or more."

Asbestos was not encountered visually on site during sampling or during laboratory testing.

The sampled materials could, therefore, be considered as non-hazardous waste with respect to asbestos.

8.4 Indicative List of Waste Code

The assessment of the waste indicates a likely suitable List of Waste (LoW) code for the samples could be '**17 05 04 Soil and stones other than those mentioned in 17 05 03',** i.e. non-hazardous waste.

8.5 Second Phase Classification - Waste Acceptance Criteria (WAC)

Full WAC testing comprising a mixture of single stage 1:10 and two-stage leachate has been carried out on four samples, which were initially classified as non-hazardous waste.

Materials classified as non-hazardous may be disposed of at inert landfill subject to meeting inert WAC thresholds, whilst materials which exceed the inert WAC should be disposed of as non-hazardous waste.

No samples exceeded the inert WAC thresholds and as such the material is considered to be inert waste.

8.6 Indicative Waste Classification Summary

This indicative waste classification has determined that the material designated for disposal as waste has a classification of inert and a List of Waste Code 17 05 04 Soil and stones other than those mentioned in 17 05 03.

It should be noted that all wastes removed from site should be assessed and attributed a classification in accordance with UK legislation prior to their transport and disposal.

9 References

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- BRE Digest DG 365. Soakaway design. Building Research Establishment, Garston, Watford. (2016)
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- BS EN ISO 14688-1. Geotechnical investigation and testing. Identification and classification of soil. Part 1 Identification and description (2018)
- BS EN ISO 14688-2. Geotechnical investigation and testing. Identification and classification of soil. Part 2 Principles for a classification (2018)
- BS EN ISO 14689. Geotechnical investigation and testing. Identification, description and classification of rock (2018)
- BS EN ISO 22475-1. Geotechnical investigation and testing. Sampling methods and groundwater measurements. Part 1Technical principles for the sampling of soil, rock and groundwater. British Standards Institution. (2021)
- BS EN ISO 22476-3:2005+A1. Geotechnical investigation and testing. Field testing. Part 3 Standard penetration test. British Standards Institution. (2011)
- Department for Environment, Food and Rural Affairs (DEFRA) MAGIC maps online application. DEFRA (2025)
- Open Street Map (2025)

Appendix I

Drawings

Exploratory Hole Plan **Drawing Number: JGS-G25063-001**

SITE PLAN

Project	Afan Treatment Works
Client	Alun Griffiths Ltd
Project Number	G25063
Drawing Number	G25063-JGS-001
Scale	1:500
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Legend Key

- Locations By Type - TP
- Locations By Type - WLS



Appendix II

Exploratory Hole Logs and In-situ Testing

SPT Hammer Calibration Certificate	Certificate Number: Dart554
Dynamic Windowless Sampler	WS1 to WS5
Borehole Logs	
Trial Pits Logs	TP1 to TP3 and TP3A
Soakaway Test Results	TP1 Test 1 to 3 and TP2 Test 1 to 3

JACKSON GEO SERVICES

SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

ARCHWAY ENGINEERING (UK) LTD
AINLEYS INDUSTRIAL ESTATE
ELLAND
WEST YORKSHIRE
HX5 9JP

SPT Hammer Ref:	DART554
Test Date:	03/12/2024
Report Date:	04/12/2024
File Name:	DART554.spt
Test Operator:	TW

Instrumented Rod Data

Diameter d_r (mm):	54
Wall Thickness t_r (mm):	6.4
Assumed Modulus E_a (GPa):	208
Accelerometer No.1:	72572
Accelerometer No.2:	72572

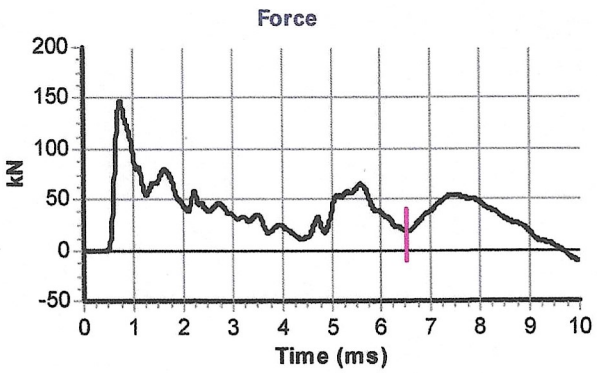
SPT Hammer Information

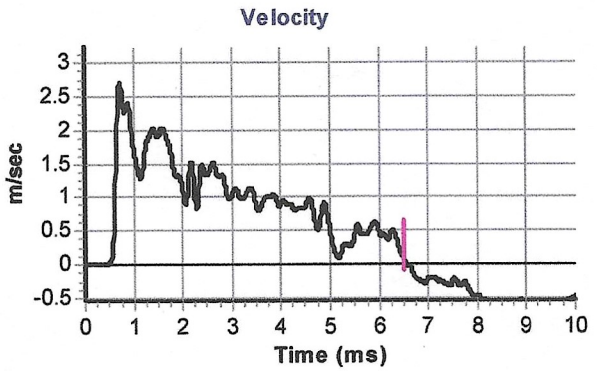
Hammer Mass m (kg):	63.5
Falling Height h (mm):	760
SPT String Length L (m):	10.0

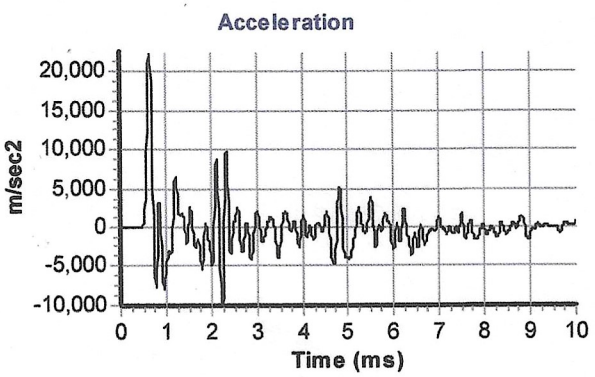
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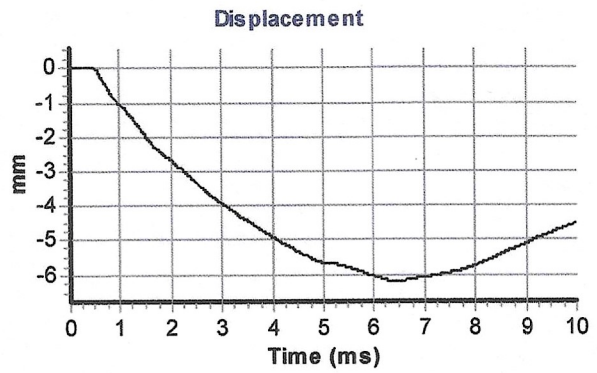
SOUTH WALES GROUND TESTING

92009









Calculations

Area of Rod A (mm2):	957
Theoretical Energy E_{theor} (J):	473
Measured Energy E_{meas} (J):	353

Energy Ratio E_r (%): **75**

Signed: T WILKINSON

Title: FITTER

The recommended calibration interval is 12 months

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DYNAMIC SAMPLING EXPLORATORY HOLE LOG

Exploratory Hole Progress by Time				Exploratory Hole
Date and Time	Depth	Casing Depth	Water Depth	WS1
25/06/2025 09:30	0.00			
25/06/2025 10:30	5.00	0.00	Wet	

Project	Afan Treatment Works			**Equipment**	Insulated Hand Tools/Archway Dart	Sheet 1 of 2	
Client	Alun Griffiths Ltd			**Method**	IP/WLS	**Scale**	1:20
Project No	G25063	**Level**	8.09 mAOD	**Inclination**	90 degrees	**Drilled**	LE
Easting	276036.17	**Northing**	187463.79	**SPT Hammer Serial Number**	DART554	**Logged**	JP
Termination Reason	Terminated at scheduled depth			**SPT Hammer Energy Ratio**	75 %	**Checked**	AP

Samples	Sampling and Testing Depths	Insitu Testing and Depth Related Remarks	Depth (Thickness)	Level (mAOD)	Legend	Description	Scale	Backfill
			0.00			Dark brown sandy angular to subrounded fine to coarse GRAVEL of limestone, sandstone, concrete, ironstone and slag with medium cobble content. Sand is fine to coarse. Cobbles are subangular to subrounded of sandstone, ironstone and slag. (MADE GROUND)		
1 ES 2 B	0.30 0.30 - 0.50							
			(1.00)				0.50	
			1.00	7.09		Loose to medium dense slightly gravelly fine SAND. Gravel is rounded fine to medium of sandstone and slag. (MADE GROUND)	1.00	
	1.20	SPT(S) N=17 (6,7/6,4,4,3) Casing: 0.00 Water: Dry						
ES 6 ES	1.50 - 1.60 1.50 - 1.60						1.50	
9 D	1.80 - 2.00							
3 D	2.00 - 2.45 2.00	SPT(S) N=9 (1,1/2,2,2,3) Casing: 0.00 Water: Dry					2.00	
			(2.70)					
7 ES	2.40 - 2.60					*2.40m - 2.60m Orangish brown and brown staining with metal and plastic (possible degraded battery).*	2.50	
10 D	2.70 - 3.00							
4 D	3.00 - 3.45 3.00	SPT(S) N=14 (2,2/2,4,5,3) Casing: 0.00 Water: Dry					3.00	
8 ES	3.50 - 3.70 3.50 - 5.00	Hole collapsed back to 3.50m 2 Vials and 1 pot only					3.50	
11 D	3.70 - 4.00		3.70	4.39		Medium dense slightly gravelly fine to medium SAND. Gravel is rounded fine to medium of sandstone. Frequent coarse sand to fine gravel sized fragments of shell. (BLOWN SAND)		
			(0.30)					
5 D	4.00 - 4.45		4.00	4.09		Continued on next Sheet	4.00	

Dynamic Sampling Run Details

Test No.	Depth Top	Depth Base	Diameter	Duration (hh:mm:ss)	Recovery
1	1.20	2.00	101mm		100%
2	2.00	3.00	87mm		100%
3	3.00	4.00	77mm		75%
4	4.00	5.00	67mm		0%

Hole Diameter

Depth Base	Diameter
1.20	300mm
2.00	116mm
3.00	102mm
4.00	86mm
5.00	76mm

Casing Diameter

Depth Base	Diameter

Water Strikes

Date and Time	Casing	Strike	Sealed	Rising to	Time	Remarks

Remarks
Hand excavated inspection pit from GL to 1.20m depth. Dynamic windowless sampling from 1.20m to 5.00m depth.

DYNAMIC SAMPLING EXPLORATORY HOLE LOG

Exploratory Hole Progress by Time				Exploratory Hole
Date and Time	Depth	Casing Depth	Water Depth	WS1
25/06/2025 09:30	0.00			
25/06/2025 10:30	5.00	0.00	Wet	

Project	Afan Treatment Works			**Equipment**	Insulated Hand Tools/Archway Dart	Sheet 2 of 2	
Client	Alun Griffiths Ltd			**Method**	IP/WLS	**Scale**	1:20
Project No	G25063	**Level**	8.09 mAOD	**Inclination**	90 degrees	**Drilled**	LE
Easting	276036.17	**Northing**	187463.79	**SPT Hammer Serial Number**	DART554	**Logged**	JP
Termination Reason	Terminated at scheduled depth			**SPT Hammer Energy Ratio**	75 %	**Checked**	AP

Samples	Sampling and Testing Depths	Insitu Testing and Depth Related Remarks	Depth (Thickness)	Level (mAOD)	Legend	Description	Scale	Backfill
	4.00	SPT(S) N=20 (2,3/5,5,5,5) Casing: 0.00 Water: Wet	(1.00)			No Recovery. SAND (Driller's description). (BLOWN SAND)	4.50	
	5.00	SPT(S) N=50 (14,15/50 for 155mm) Casing: 0.00 Water: Wet		3.09		End of Exploratory Hole at 5.00m	5.00 5.50 6.00 6.50 7.00 7.50 8.00	

Dynamic Sampling Run Details

Test No.	Depth Top	Depth Base	Diameter	Duration (hh:mm:ss)	Recovery
1	1.20	2.00	101mm		100%
2	2.00	3.00	87mm		100%
3	3.00	4.00	77mm		75%
4	4.00	5.00	67mm		0%

Hole Diameter

Depth Base	Diameter
1.20	300mm
2.00	116mm
3.00	102mm
4.00	86mm
5.00	76mm

Casing Diameter

Depth Base	Diameter

Water Strikes

Date and Time	Casing	Strike	Sealed	Rising to	Time	Remarks

Remarks
Hand excavated inspection pit from GL to 1.20m depth. Dynamic windowless sampling from 1.20m to 5.00m depth.

EXPLORATORY HOLE PHOTOGRAPHS

Exploratory Hole

WS1

Project	Afan Treatment Works	**Easting**	276036.17	**Equipment**	Insulated Hand Tools/Archway Dart	Sheet 1 of 2
Client	Alun Griffiths Ltd	**Northing**	187463.79	**Method**	IP/WLS	
Project No	G25063	**Level**	8.09 mAOD	**Termination Reason**	Terminated at scheduled depth	



WS1 1.20 m to 2.00 m



WS1 2.00 m to 3.00 m

EXPLORATORY HOLE PHOTOGRAPHS

Exploratory Hole
WS1

Project	Afan Treatment Works	**Easting**	276036.17	**Equipment**	Insulated Hand Tools/Archway Dart	Sheet 2 of 2
Client	Alun Griffiths Ltd	**Northing**	187463.79	**Method**	IP/WLS	
Project No	G25063	**Level**	8.09 mAOD	**Termination Reason**	Terminated at scheduled depth	



WS1 3.00 m to 4.00 m

DYNAMIC SAMPLING EXPLORATORY HOLE LOG

Exploratory Hole Progress by Time				Exploratory Hole
Date and Time	Depth	Casing Depth	Water Depth	WS2
25/06/2025 10:45	0.00			
25/06/2025 11:15	1.43	0.00	Dry	

Project	Afan Treatment Works			**Equipment**	Insulated Hand Tools/Archway Dart	Sheet 1 of 1	
Client	Alun Griffiths Ltd			**Method**	IP/WLS	**Scale**	1:20
Project No	G25063	**Level**	8.13 mAOD	**Inclination**	90 degrees	**Drilled**	LE
Easting	276059.56	**Northing**	187464.54	**SPT Hammer Serial Number**	DART554	**Logged**	JP
Termination Reason	Terminated due to refusal			**SPT Hammer Energy Ratio**	75 %	**Checked**	AP

Samples	Sampling and Testing Depths	Insitu Testing and Depth Related Remarks	Depth (Thickness)	Level (mAOD)	Legend	Description
			0.00			Grey sandy subangular to subrounded fine to coarse GRAVEL of slag with low cobble content. Sand is fine to coarse. Cobbles are subangular to subrounded of slag. (MADE GROUND)
1 ES 2 B	0.30 0.30 - 0.50		(0.55)			
3 B	0.50 - 1.00		0.55	7.58		Very dense slightly gravelly fine SAND. Gravel is angular to subrounded fine to coarse of slag and clinker. (MADE GROUND) *0.55m - 0.56m Geotextile membrane.*
			(0.88)			
4 ES 5 D	1.20 - 1.43 1.20 - 1.43 1.20	SPT(S) N=50 (4,4/50 for 80mm) Casing: 0.00 Water: Dry		6.70		End of Exploratory Hole at 1.43m

Scale: 0.50, 1.00, 1.50, 2.00, 2.50, 3.00, 3.50, 4.00

Backfill

Dynamic Sampling Run Details

Test No.	Depth Top	Depth Base	Diameter	Duration (hh:mm:ss)	Recovery
1	1.20	1.43	101mm		100%

Hole Diameter

Depth Base	Diameter
1.20	300mm
1.43	116mm

Casing Diameter

Depth Base	Diameter

Water Strikes

Date and Time	Casing	Strike	Sealed	Rising to	Time	Remarks

Remarks
Hand excavated inspection pit from GL to 1.20m depth. Dynamic windowless sampling from 1.20m to 1.43m depth.

EXPLORATORY HOLE PHOTOGRAPHS

Exploratory Hole
WS2

Project	Afan Treatment Works	**Easting**	276059.56	**Equipment**	Insulated Hand Tools/Archway Dart	Sheet 1 of 1
Client	Alun Griffiths Ltd	**Northing**	187464.54	**Method**	IP/WLS	
Project No	G25063	**Level**	8.13 mAOD	**Termination Reason**	Terminated due to refusal	



WS2 1.20 m to 1.43 m

DYNAMIC SAMPLING EXPLORATORY HOLE LOG

Exploratory Hole Progress by Time				Exploratory Hole
Date and Time	Depth	Casing Depth	Water Depth	WS3
25/06/2025 11:30	0.00			
25/06/2025 13:00	4.80	0.00	Dry	

Project	Afan Treatment Works			**Equipment**	Archway Dart/Insualted Hand Tools	Sheet 1 of 2	
Client	Alun Griffiths Ltd			**Method**	WLS/IP	**Scale**	1:20
Project No	G25063	**Level**	8.23 mAOD	**Inclination**	90 degrees	**Drilled**	LE
Easting	276081.92	**Northing**	187477.41	**SPT Hammer Serial Number**	DART554	**Logged**	JP
Termination Reason	Terminated due to refusal			**SPT Hammer Energy Ratio**	75 %	**Checked**	AP

Samples	Sampling and Testing Depths	Insitu Testing and Depth Related Remarks	Depth (Thickness)	Level (mAOD)	Description
			0.00		Grey sandy subangular to subrounded fine to coarse GRAVEL of slag with medium cobble content. Sand is fine to coarse. Cobbles are subangular of slag. (MADE GROUND)
1 ES 2 B	0.30 0.30 - 0.50		(0.60)		
			0.60	7.63	Loose to medium dense fine SAND with occasional coarse sand to fine gravel sized fragments of shell. (BLOWN SAND) *0.60m - 0.61m Geotextile membrane*
3 D 4 ES	1.20 - 1.40 1.20 - 1.65 1.20	SPT(S) N=6 (2,2/1,2,2,1) Casing: 0.00 Water: Dry			
5 B	1.40 - 2.00				
6 D 7 B	2.00 - 2.45 2.00 - 3.00 2.00	SPT(S) N=22 (5,5/6,6,5,5) Casing: 0.00 Water: Dry			
			(3.70)		
8 D 9 B	3.00 - 3.45 3.00 - 4.30 3.00	SPT(S) N=4 (1,1/1,1,1,1) Casing: 0.00 Water: Dry			
	3.50 - 4.80	Hole collapsed back to 3.50m.			
10 D	4.00 - 4.45				

Continued on next Sheet

Dynamic Sampling Run Details

Test No.	Depth Top	Depth Base	Diameter	Duration (hh:mm:ss)	Recovery
1	1.20	2.00	101mm		100%
2	2.00	3.00	87mm		85%
3	3.00	4.00	77mm		75%
4	4.00	4.80	67mm		100%

Hole Diameter

Depth Base	Diameter
1.20	300mm
2.00	116mm
3.00	102mm
4.00	86mm
4.80	76mm

Casing Diameter

Depth Base	Diameter

Water Strikes

Date and Time	Casing	Strike	Sealed	Rising to	Time	Remarks

Remarks
Hand excavated inspection pit from GL to 1.20m depth. Dynamic windowless sampling from 1.20m to 4.80m depth.

DYNAMIC SAMPLING EXPLORATORY HOLE LOG

Exploratory Hole Progress by Time				Exploratory Hole
Date and Time	Depth	Casing Depth	Water Depth	WS3
25/06/2025 11:30	0.00			
25/06/2025 13:00	4.80	0.00	Dry	

Project	Afan Treatment Works			**Equipment**	Archway Dart/Insualted Hand Tools	Sheet 2 of 2	
Client	Alun Griffiths Ltd			**Method**	WLS/IP	**Scale**	1:20
Project No	G25063	**Level**	8.23 mAOD	**Inclination**	90 degrees	**Drilled**	LE
Easting	276081.92	**Northing**	187477.41	**SPT Hammer Serial Number**	DART554	**Logged**	JP
Termination Reason	Terminated due to refusal			**SPT Hammer Energy Ratio**	75 %	**Checked**	AP

Samples	Sampling and Testing Depths	Insitu Testing and Depth Related Remarks	Depth (Thickness)	Level (mAOD)	Legend	Description
3 ES	4.00 - 4.45 4.00	SPT(S) N=16 (2,2/2,3,5,6) Casing: 0.00 Water: Dry				Loose to medium dense fine SAND with occasional coarse sand to fine gravel sized fragments of shell. (BLOWN SAND)
11 B	4.30 - 4.80		4.30 (0.50)	3.93		Medium dense becoming very dense yellow gravelly fine to medium SAND. Gravel is subrounded to rounded fine to medium of sandstone and coal. Frequent fine gravel sized fragments of shell. (BLOWN SAND)
12 D	4.80 4.80	SPT(S) N=50 (9,9/50 for 245mm) Casing: 0.00 Water: Dry		3.43		End of Exploratory Hole at 4.80m

Scale: 4.50, 5.00, 5.50, 6.00, 6.50, 7.00, 7.50, 8.00

Backfill

Dynamic Sampling Run Details

Test No.	Depth Top	Depth Base	Diameter	Duration (hh:mm:ss)	Recovery
1	1.20	2.00	101mm		100%
2	2.00	3.00	87mm		85%
3	3.00	4.00	77mm		75%
4	4.00	4.80	67mm		100%

Hole Diameter

Depth Base	Diameter
1.20	300mm
2.00	116mm
3.00	102mm
4.00	86mm
4.80	76mm

Casing Diameter

Depth Base	Diameter

Water Strikes

Date and Time	Casing	Strike	Sealed	Rising to	Time	Remarks

Remarks
Hand excavated inspection pit from GL to 1.20m depth. Dynamic windowless sampling from 1.20m to 4.80m depth.

EXPLORATORY HOLE PHOTOGRAPHS

Exploratory Hole
WS3

Project	Afan Treatment Works	**Easting**	276081.92	**Equipment**	Archway Dart/Insualted Hand Tools	Sheet 1 of 2
Client	Alun Griffiths Ltd	**Northing**	187477.41	**Method**	WLS/IP	
Project No	G25063	**Level**	8.23 mAOD	**Termination Reason**	Terminated due to refusal	



WS3 1.20 m to 2.00 m



WS3 2.00 m to 3.00 m

EXPLORATORY HOLE PHOTOGRAPHS

Exploratory Hole
WS3

Project	Afan Treatment Works	**Easting**	276081.92	**Equipment**	Archway Dart/Insualted Hand Tools	Sheet 2 of 2
Client	Alun Griffiths Ltd	**Northing**	187477.41	**Method**	WLS/IP	
Project No	G25063	**Level**	8.23 mAOD	**Termination Reason**	Terminated due to refusal	



WS3 3.00 m to 4.00 m



WS3 4.00 m to 4.80 m

DYNAMIC SAMPLING EXPLORATORY HOLE LOG

JACKSON GEO SERVICES

Exploratory Hole Progress by Time				Exploratory Hole
Date and Time	Depth	Casing Depth	Water Depth	WS4
25/06/2025 15:30	0.00			
25/06/2025 17:00	4.90	0.00	Dry	

Project	Afan Treatment Works			**Equipment**	Archway Dart/Insulated Hand Tools	Sheet 1 of 2	
Client	Alun Griffiths Ltd			**Method**	WLS/IP	**Scale**	1:20
Project No	G25063	**Level**	8.37 mAOD	**Inclination**	90 degrees	**Drilled**	LE
Easting	276085.96	**Northing**	187498.51	**SPT Hammer Serial Number**	DART554	**Logged**	JP
Termination Reason	Terminated due to refusal			**SPT Hammer Energy Ratio**	75 %	**Checked**	AP

Samples	Sampling and Testing Depths	Insitu Testing and Depth Related Remarks	Depth (Thickness)	Level (mAOD)	Description	Scale	Backfill
			0.00		Reddish brown sandy angular fine to coarse GRAVEL of limestone. Sand is fine to coarse (MADE GROUND)		
2 B	0.20 - 0.40		(0.40)				
1 ES	0.30						
			0.40	7.97	Dense grey to black sandy subangular to subrounded fine to coarse GRAVEL of slag. Sand is fine to coarse. (MADE GROUND)	0.50	
6 ES	0.60 - 1.25 0.60	SPT(C) N=32 (11,11/7,7,11,7) Casing: 0.00 Water: Dry					
			(0.85)				
	1.05	SPT(C) N=44 (8,9/9,9,13,13) Casing: 0.00 Water: Dry				1.00	
8 B	1.25 - 2.00		1.25	7.12	Loose yellow fine SAND. (BLOWN SAND)	1.50	
3 D	2.00 - 2.45 2.00	SPT(S) N=9 (3,2/2,2,3,2) Casing: 0.00 Water: Dry				2.00	
7 ES	2.30 - 2.60						
						2.50	
9 B	2.60 - 4.00		(2.75)		*2.65m - 2.69m Gravel sized fragments of brick (possibly pushed from above).*		
4 D	3.00 - 3.45 3.00	SPT(S) N=5 (1,1/2,1,1,1) Casing: 0.00 Water: Dry				3.00	
	3.50 - 4.90	Hole collapsed back to 3.50m.				3.50	
10 B	4.00 - 4.90		4.00	4.37	Continued on next Sheet	4.00	

Dynamic Sampling Run Details

Test No.	Depth Top	Depth Base	Diameter	Duration (hh:mm:ss)	Recovery
1	0.60	1.00	101mm		75%
2	1.00	2.00	87mm		100%
3	2.00	3.00	77mm		80%
4	3.00	4.00	67mm		60%
5	4.00	4.90	67mm		111%

Hole Diameter

Depth Base	Diameter
0.60	300mm
1.00	116mm
2.00	102mm
3.00	86mm
4.00	76mm
4.90	76mm

Casing Diameter

Depth Base	Diameter

Water Strikes

Date and Time	Casing	Strike	Sealed	Rising to	Time	Remarks

Remarks
Hand excavated inspection pit from GL to 0.60m depth. Dynamic windowless sampling from 0.60m to 5.00m depth.

DYNAMIC SAMPLING EXPLORATORY HOLE LOG

Exploratory Hole Progress by Time				Exploratory Hole
Date and Time	Depth	Casing Depth	Water Depth	WS4
25/06/2025 15:30	0.00			
25/06/2025 17:00	4.90	0.00	Dry	

Project	Afan Treatment Works			**Equipment**	Archway Dart/Insulated Hand Tools	Sheet 2 of 2	
Client	Alun Griffiths Ltd			**Method**	WLS/IP	**Scale**	1:20
Project No	G25063	**Level**	8.37 mAOD	**Inclination**	90 degrees	**Drilled**	LE
Easting	276085.96	**Northing**	187498.51	**SPT Hammer Serial Number**	DART554	**Logged**	JP
Termination Reason	Terminated due to refusal			**SPT Hammer Energy Ratio**	75 %	**Checked**	AP

Samples	Sampling and Testing Depths	Insitu Testing and Depth Related Remarks	Depth (Thickness)	Level (mAOD)	Legend	Description	Scale	Backfill
	4.00	SPT(S) N=7 (1,1/1,2,2,2) Casing: 0.00 Water: Dry	(0.90)			Loose becoming very dense below 4.90m slightly gravelly fine light brown SAND. Gravel is angular to rounded fine to medium of sandstone and coal. Frequent coarse sand to fine gravel sized fragments of shell. (BLOWN SAND)	4.50	
5 D	4.90 4.90	SPT(S) N=50 (11,14/50 for 125mm) Casing: 0.00 Water: Dry		3.47		End of Exploratory Hole at 4.90m	5.00 5.50 6.00 6.50 7.00 7.50 8.00	

Dynamic Sampling Run Details

Test No.	Depth Top	Depth Base	Diameter	Duration (hh:mm:ss)	Recovery
1	0.60	1.00	101mm		75%
2	1.00	2.00	87mm		100%
3	2.00	3.00	77mm		80%
4	3.00	4.00	67mm		60%
5	4.00	4.90	67mm		111%

Hole Diameter

Depth Base	Diameter
0.60	300mm
1.00	116mm
2.00	102mm
3.00	86mm
4.00	76mm
4.90	76mm

Casing Diameter

Depth Base	Diameter

Water Strikes

Date and Time	Casing	Strike	Sealed	Rising to	Time	Remarks

Remarks
Hand excavated inspection pit from GL to 0.60m depth. Dynamic windowless sampling from 0.60m to 5.00m depth.

EXPLORATORY HOLE PHOTOGRAPHS

Exploratory Hole
WS4

Project	Afan Treatment Works	**Easting**	276085.96	**Equipment**	Archway Dart/Insulated Hand Tools	Sheet 1 of 3
Client	Alun Griffiths Ltd	**Northing**	187498.51	**Method**	WLS/IP	
Project No	G25063	**Level**	8.37 mAOD	**Termination Reason**	Terminated due to refusal	



WS4 0.60 m to 1.00 m



WS4 1.00 m to 2.00 m

EXPLORATORY HOLE PHOTOGRAPHS

Exploratory Hole
WS4

Project	Afan Treatment Works	**Easting**	276085.96	**Equipment**	Archway Dart/Insulated Hand Tools	Sheet 2 of 3
Client	Alun Griffiths Ltd	**Northing**	187498.51	**Method**	WLS/IP	
Project No	G25063	**Level**	8.37 mAOD	**Termination Reason**	Terminated due to refusal	



WS4 2.00 m to 3.00 m



WS4 3.00 m to 4.00 m

EXPLORATORY HOLE PHOTOGRAPHS

Exploratory Hole

WS4

Project	Afan Treatment Works	**Easting**	276085.96	**Equipment**	Archway Dart/Insulated Hand Tools	Sheet 3 of 3
Client	Alun Griffiths Ltd	**Northing**	187498.51	**Method**	WLS/IP	
Project No	G25063	**Level**	8.37 mAOD	**Termination Reason**	Terminated due to refusal	



WS4 4.00 m to 4.90 m

DYNAMIC SAMPLING EXPLORATORY HOLE LOG

JACKSON GEO SERVICES

Exploratory Hole Progress by Time				Exploratory Hole
Date and Time	Depth	Casing Depth	Water Depth	WS5
25/06/2025 14:00	0.00			
25/06/2025 15:00	2.00	0.00	Dry	

Project	Afan Treatment Works			**Equipment**	Archway Dart/Insulated Hand Tools	Sheet 1 of 1	
Client	Alun Griffiths Ltd			**Method**	WLS/IP	**Scale**	1:20
Project No	G25063	**Level**	8.32 mAOD	**Inclination**	90 degrees	**Drilled**	LE
Easting	276114.12	**Northing**	187495.80	**SPT Hammer Serial Number**	DART554	**Logged**	JP
Termination Reason	Terminated due to refusal			**SPT Hammer Energy Ratio**	75 %	**Checked**	AP

Samples	Sampling and Testing Depths	Insitu Testing and Depth Related Remarks	Depth (Thickness)	Level (mAOD)	Legend	Description
			0.00			Grey sandy angular to subrounded fine to coarse GRAVEL of limestone and slag with medium cobble content. Sand is fine to coarse. Cobbles are subangular to subrounded of slag. (MADE GROUND)
1 ES 2 B	0.30 0.30 - 0.50		(0.70)			
			0.70	7.62		Medium dense yellow fine SAND. (MADE GROUND) *0.70m - 0.71m Geotextile membrane*
3 D 5 ES 4 B	1.20 - 1.40 1.20 - 1.45 1.20 1.40 - 1.80	SPT(S) N=13 (3,3/3,3,4,3) Casing: 0.00 Water: Dry	(1.15)			
6 ES	1.80 - 2.00	2 vials and 1 pot	1.85	6.47		Very dense black to grey sandy angular to subangular fine to coarse GRAVEL of slag, clinker and brick. Sand is fine to coarse. (MADE GROUND)
	2.00	SPT(S) N=50 (12,10/50 for 255mm) Casing: 0.00 Water: Dry	(0.15)	6.32		End of Exploratory Hole at 2.00m

Scale: 0.50, 1.00, 1.50, 2.00, 2.50, 3.00, 3.50, 4.00

Backfill

Dynamic Sampling Run Details

Test No.	Depth Top	Depth Base	Diameter	Duration (hh:mm:ss)	Recovery
1	1.00	2.00	101mm		80%

Hole Diameter

Depth Base	Diameter
1.20	300mm
2.00	116mm

Casing Diameter

Depth Base	Diameter

Water Strikes

Date and Time	Casing	Strike	Sealed	Rising to	Time	Remarks

Remarks
Hand excavated inspection pit from GL to 1.20m depth. Dynamic windowless sampling from 1.20m to 5.00m depth.

JACKSON GEO SERVICES	EXPLORATORY HOLE PHOTOGRAPHS				Exploratory Hole WS5
Project	Afan Treatment Works	**Easting**	276114.12	**Equipment**	Archway Dart/Insulated Hand Tools	Sheet 1 of 1
Client	Alun Griffiths Ltd	**Northing**	187495.80	**Method**	WLS/IP	
Project No	G25063	**Level**	8.32 mAOD	**Termination Reason**	Terminated due to refusal	



WS5 1.00 m to 2.00 m

TRIAL PIT EXPLORATORY HOLE LOG

JACKSON GEO SERVICES

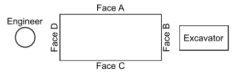
Exploratory Hole Progress by Time			Exploratory Hole
Date and Time	Depth	Water Depth	TP1
26/06/2025 09:45	0.00	Dry	
26/06/2025 10:21	2.40		Sheet 1 of 1

Project	Afan Treatment Works			**Equipment**	JCB 3cx	**Scale**	1:20
Client	Alun Griffiths Ltd			**Method**	TP		
Project No	G25063	**Level**	8.04 mAOD	**Orientation**	266 degrees		
Easting	276043.53	**Northing**	187435.36	**Length**	2.20	**Logged**	JP
Termination Reason	Unable to achieve scheduled depth due to cave ins.			**Width**	0.87	**Checked**	AP

Samples	Sampling and Testing Depths	Insitu Testing and Depth Related Remarks	Depth (Thickness)	Level (mAOD)	Legend	Description	Scale	Backfill
			0.00					
			(0.07)	7.97		Black MACADAM. (MADE GROUND)		
			0.07					
			(0.09)	7.88		Red sandy angular fine to coarse GRAVEL of limestone. Sand is fine to coarse. (MADE GROUND)		
			0.16					
1 ES 2 B	0.30 0.30 - 0.50					Brown to grey sandy subangular to subrounded fine to coarse GRAVEL of slag with medium cobble content. Sand is fine to coarse. Cobbles are subangular to subrounded of slag. (MADE GROUND)		
			(0.56)				0.50	
			0.72	7.32		Strong light grey LIMESTONE slab. (MADE GROUND)		
			(0.22)					
			0.94	7.10		Yellow fine SAND. (BLOWN SAND) *0.94m - 0.96m 20mm diameter pipe (cut off) from Face A across Face B.*	1.00	
3 ES 4 B	1.30 1.30 - 1.50						1.50	
			(1.46)					
	1.75 - 2.40	Hole collapsed during first soakaway cycle.					2.00	
5 B	2.30 - 2.40							
				5.64		End of Exploratory Hole at 2.40m	2.50	
							3.00	
							3.50	
							4.00	

Weather	Cloudy
Shoring	None
Stability	Stable

Trial Pit Excavation Onsite Layout



Log presents Face A unless otherwise noted.

Water Strikes

Date and Time	Strike	Rising to	Time	Remarks

Remarks
Machine excavated trial pit from GL to 2.40m.

EXPLORATORY HOLE PHOTOGRAPHS

Exploratory Hole
TP1

Project	Afan Treatment Works	**Easting**	276043.53	**Equipment**	JCB 3cx	Sheet 1 of 2
Client	Alun Griffiths Ltd	**Northing**	187435.36	**Method**	TP	
Project No	G25063	**Level**	8.04 mAOD	**Termination Reason**	Unable to achieve scheduled depth due to cave ins.	



TP1 - GL to 2.40m - Face C



TP1 - GL to 2.40m - Face B

EXPLORATORY HOLE PHOTOGRAPHS

Exploratory Hole
TP1

Project	Afan Treatment Works	**Easting**	276043.53	**Equipment**	JCB 3cx	Sheet 2 of 2
Client	Alun Griffiths Ltd	**Northing**	187435.36	**Method**	TP	
Project No	G25063	**Level**	8.04 mAOD	**Termination Reason**	Unable to achieve scheduled depth due to cave ins.	



TP1 - GL to 2.40m - Spoil

TRIAL PIT EXPLORATORY HOLE LOG

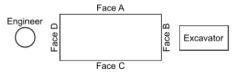
Exploratory Hole Progress by Time			Exploratory Hole
Date and Time	Depth	Water Depth	TP2
26/06/2025 11:20	0.00		
26/06/2025 12:19	2.20	Dry	

Project	Afan Treatment Works			**Equipment**	JCB 3cx	Sheet 1 of 1	
Client	Alun Griffiths Ltd			**Method**	TP	**Scale**	1:20
Project No	G25063	**Level**	8.16 mAOD	**Orientation**	352 degrees		
Easting	276072.68	**Northing**	187481.59	**Length**	1.50	**Logged**	JP
Termination Reason	Terminated due to collapse			**Width**	0.70	**Checked**	AP

Samples	Sampling and Testing Depths	Insitu Testing and Depth Related Remarks	Depth (Thickness)	Level (mAOD)	Legend	Description	Scale	Backfill
			0.00					
			(0.13)			Black MACADAM. (MADE GROUND)		
			0.13	8.03				
			(0.17)			Red sandy angular fine to coarse GRAVEL of limestone. Sand is fine to coarse. (MADE GROUND)		
			0.30	7.86				
1 ES 2 B	0.35 0.35 - 0.50					Grey sandy subangular to subrounded fine to coarse GRAVEL of slag with medium cobble content. Sand is fine to coarse. Cobbles are subangular to subrounded of slag. (MADE GROUND)	0.50	
			(0.40)					
			0.70	7.46		Brown sandy angular to subrounded fine to coarse GRAVEL of limestone, sandstone, slag, concrete, clinker and coal with medium cobble content. Sand is fine to coarse. Cobbles are subangular to subrounded of sandstone, slag and brick. (MADE GROUND)		
			(0.40)					
3 ES 4 B	1.00 1.00 - 1.10						1.00	
			1.10	7.06		Yellow fine SAND. (BLOWN SAND)		
			(1.10)				1.50	
5 ES 6 B	2.00 2.00 - 2.10						2.00	
				5.96		End of Exploratory Hole at 2.20m		
							2.50	
							3.00	
							3.50	
							4.00	

Weather	Sunny
Shoring	None
Stability	Unstable in all faces

Trial Pit Excavation Onsite Layout



Log presents Face A unless otherwise noted.

Water Strikes

Date and Time	Strike	Rising to	Time	Remarks

Remarks
Machine excavated trial pit from GL to 2.20m.

EXPLORATORY HOLE PHOTOGRAPHS

Exploratory Hole

TP2

Project	Afan Treatment Works	**Easting**	276072.68	**Equipment**	JCB 3cx	Sheet 1 of 2
Client	Alun Griffiths Ltd	**Northing**	187481.59	**Method**	TP	
Project No	G25063	**Level**	8.16 mAOD	**Termination Reason**	Terminated due to collapse	



TP2 - GL to 2.20m - Face A



TP2 - GL to 2.20m - Face B

EXPLORATORY HOLE PHOTOGRAPHS

Exploratory Hole

TP2

Project	Afan Treatment Works	**Easting**	276072.68	**Equipment**	JCB 3cx	Sheet 2 of 2
Client	Alun Griffiths Ltd	**Northing**	187481.59	**Method**	TP	
Project No	G25063	**Level**	8.16 mAOD	**Termination Reason**	Terminated due to collapse	



TP2 - GL to 2.20m - Spoil

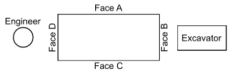
TRIAL PIT EXPLORATORY HOLE LOG

JACKSON GEO SERVICES

Exploratory Hole Progress by Time			Exploratory Hole
Date and Time	Depth	Water Depth	TP3
26/06/2025 12:20	0.00		
26/06/2025 13:20	1.65	Dry	

Project	Afan Treatment Works			**Equipment**	JCB 3cx	Sheet 1 of 1	
Client	Alun Griffiths Ltd			**Method**	TP	**Scale**	1:20
Project No	G25063	**Level**	8.32 mAOD	**Orientation**	334 degrees	**Logged**	JP
Easting	276110.19	**Northing**	187505.40	**Length**	2.25	**Checked**	AP
Termination Reason	Possible concrete obstruction			**Width**	0.65		

Samples	Sampling and Testing Depths	Insitu Testing and Depth Related Remarks	Depth (Thickness)	Level (mAOD)	Legend	Description	Scale	Backfill
			0.00 (0.14)			Black MACADAM. (MADE GROUND)		
			0.14 (0.04)	8.18 8.14		Red sandy angular fine to coarse GRAVEL of limestone. Sand is fine to coarse. (MADE GROUND)		
1 ES 2 B	0.50 0.50 - 0.70		0.18 (1.47)			Black sandy angular to subrounded fine to coarse GRAVEL of slag, limestone, sandstone, concrete, brick and clinker with medium cobble content. Sand is fine to coarse. Cobbles are subangular to subrounded of slag, sandstone, concrete and brick. (MADE GROUND) *0.45m - 0.60m 150mm diameter black corrugated plastic duct.*	0.50 1.00 1.50	
				6.66		*1.64m - 1.65m Suspected concrete obstruction.* End of Exploratory Hole at 1.65m	2.00 2.50 3.00 3.50 4.00	

Weather	Sunny	**Trial Pit Excavation Onsite Layout**	**Water Strikes**
Shoring	None		
Stability	Stable	Log presents Face A unless otherwise noted.	

Date and Time	Strike	Rising to	Time	Remarks

Remarks
Machine excavated trial pit from GL to 1.65m.

EXPLORATORY HOLE PHOTOGRAPHS

Exploratory Hole

TP3

Project	Afan Treatment Works	**Easting**	276110.19	**Equipment**	JCB 3cx	Sheet 1 of 2
Client	Alun Griffiths Ltd	**Northing**	187505.40	**Method**	TP	
Project No	G25063	**Level**	8.32 mAOD	**Termination Reason**	Possible concrete obstruction	



TP3 - GL to 1.65m - Face A



TP3 - GL to 1.65m - Face D

JACKSON GEO SERVICES	EXPLORATORY HOLE PHOTOGRAPHS					Exploratory Hole TP3
Project	Afan Treatment Works	**Easting**	276110.19	**Equipment**	JCB 3cx	Sheet 2 of 2
Client	Alun Griffiths Ltd	**Northing**	187505.40	**Method**	TP	
Project No	G25063	**Level**	8.32 mAOD	**Termination Reason**	Possible concrete obstruction	



TP3 - GL to 1.65m - Face D



TP3 - GL to 1.65m - Spoil

TRIAL PIT EXPLORATORY HOLE LOG

JACKSON GEO SERVICES

Exploratory Hole Progress by Time			Exploratory Hole
Date and Time	Depth	Water Depth	TP3A
26/06/2025 13:25	0.00		
26/06/2025 14:36	1.55	Dry	

Project	Afan Treatment Works			**Equipment**	JCB 3cx	Sheet 1 of 1	
Client	Alun Griffiths Ltd			**Method**	TP	**Scale**	1:20
Project No	G25063	**Level**	8.35 mAOD	**Orientation**	334 degrees	**Logged**	JP
Easting	276111.00	**Northing**	187503.69	**Length**	2.20	**Checked**	AP
Termination Reason	Suspected concrete obstruction			**Width**	1.20		

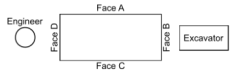
Samples	Sampling and Testing Depths	Insitu Testing and Depth Related Remarks	Depth (Thickness)	Level (mAOD)	Legend	Description
			0.00			
			(0.11)			Black MACADAM. (MADE GROUND)
			0.11	8.24		
			(0.22)			Red sandy angular fine to coarse GRAVEL of limestone. (MADE GROUND)
1 ES	0.35		0.33	8.02		*0.32m - 0.33m Geotextile membrane*
			(0.37)			Grey sandy subangular to subrounded fine to coarse GRAVEL of slag with medium cobble content. Sand is fine to coarse. Cobbles are subangular to subrounded of slag. (MADE GROUND)
			0.70	7.65		
			(0.24)			Strong dark grey reinforced CONCRETE. Rebar approximately 12mm diameter. (MADE GROUND)
			0.94	7.41		
2 ES 3 B	1.00 1.00 - 1.10					Black sandy angular to subrounded fine to coarse GRAVEL of slag, limestone, brick, concrete, sandstone and clinker with medium cobble content. Sand is fine to coarse. Cobbles are subangular to subrounded of slag, sandstone, concrete and brick. (MADE GROUND)
			(0.61)			
				6.80		End of Exploratory Hole at 1.55m

Scale: 0.50, 1.00, 1.50, 2.00, 2.50, 3.00, 3.50, 4.00

Backfill

Weather	Sunny
Shoring	None
Stability	Stable

Trial Pit Excavation Onsite Layout



Log presents Face A unless otherwise noted.

Water Strikes

Date and Time	Strike	Rising to	Time	Remarks

Remarks
Machine excavated trial pit from GL to 1.55m.

EXPLORATORY HOLE PHOTOGRAPHS

Exploratory Hole

TP3A

Project	Afan Treatment Works	**Easting**	276111.00	**Equipment**	JCB 3cx	Sheet 1 of 2
Client	Alun Griffiths Ltd	**Northing**	187503.69	**Method**	TP	
Project No	G25063	**Level**	8.35 mAOD	**Termination Reason**	Suspected concrete obstruction	



TP3A - GL to 1.55m - Face A



TP3A - GL to 1.55m - Face D

JACKSON GEO SERVICES	EXPLORATORY HOLE PHOTOGRAPHS				Exploratory Hole TP3A
Project	Afan Treatment Works	**Easting**	276111.00	**Equipment**	JCB 3cx	Sheet 2 of 2
Client	Alun Griffiths Ltd	**Northing**	187503.69	**Method**	TP	
Project No	G25063	**Level**	8.35 mAOD	**Termination Reason**	Suspected concrete obstruction	



TP3A - GL to 1.55m - Face D



TP3A - GL to 1.55m - Spoil

SOIL SOAKAWAY INFILTRATION TEST

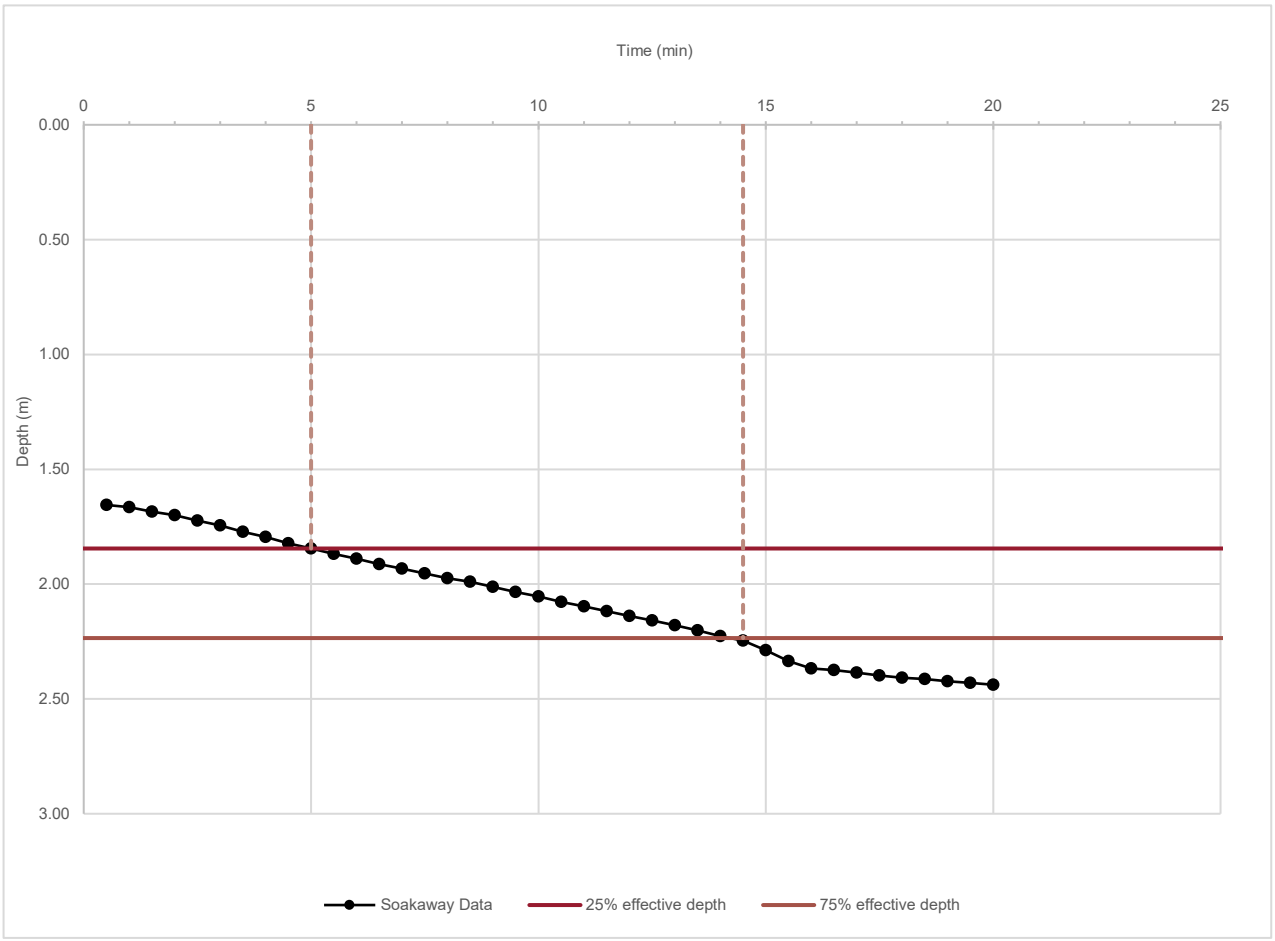
Project	Afan Treatments Works	Project No	G25063	Client	Alun Griffiths		
Exploratory Hole ID	Test No	Easting	Northing	Ground Level	Depth (m)	Length (m)	Width (m)
TP1	1	276043.53	187435.36	8.04	2.43	2.20	0.87

Soakaway Construction		Vertical sides trimmed square. Stone Fill		Water Depth Test Start (m)	1.65	Base area (m^2)	1.914
				Water Depth Test End (m)	2.43	Pit sides area (m^2)	4.7892
Date of Test	07/07/2025	Test Duration (mins)	20	75% effective depth (m)	1.845	Vp75-25 (m^3)	0.74646
Fill Porosity	0.6	Weather	Sunny	50% effective depth (m)	2.04	ap50 (m^2)	4.3086
Operative	JP	Checked by		25% effective depth (m)	2.235		

Time water level reaches 75% effective depth (Tp75) (mins)	5	**Soil Infiltration Rate (f) (m/s)**	3.04E-04
Time water level reaches 25% effective depth (Tp25) (mins)	14.5		

Remarks

Undertaken in accordance with BRE digest 365 (2016). For raw groundwater levels see diver data.



SOIL SOAKAWAY INFILTRATION TEST

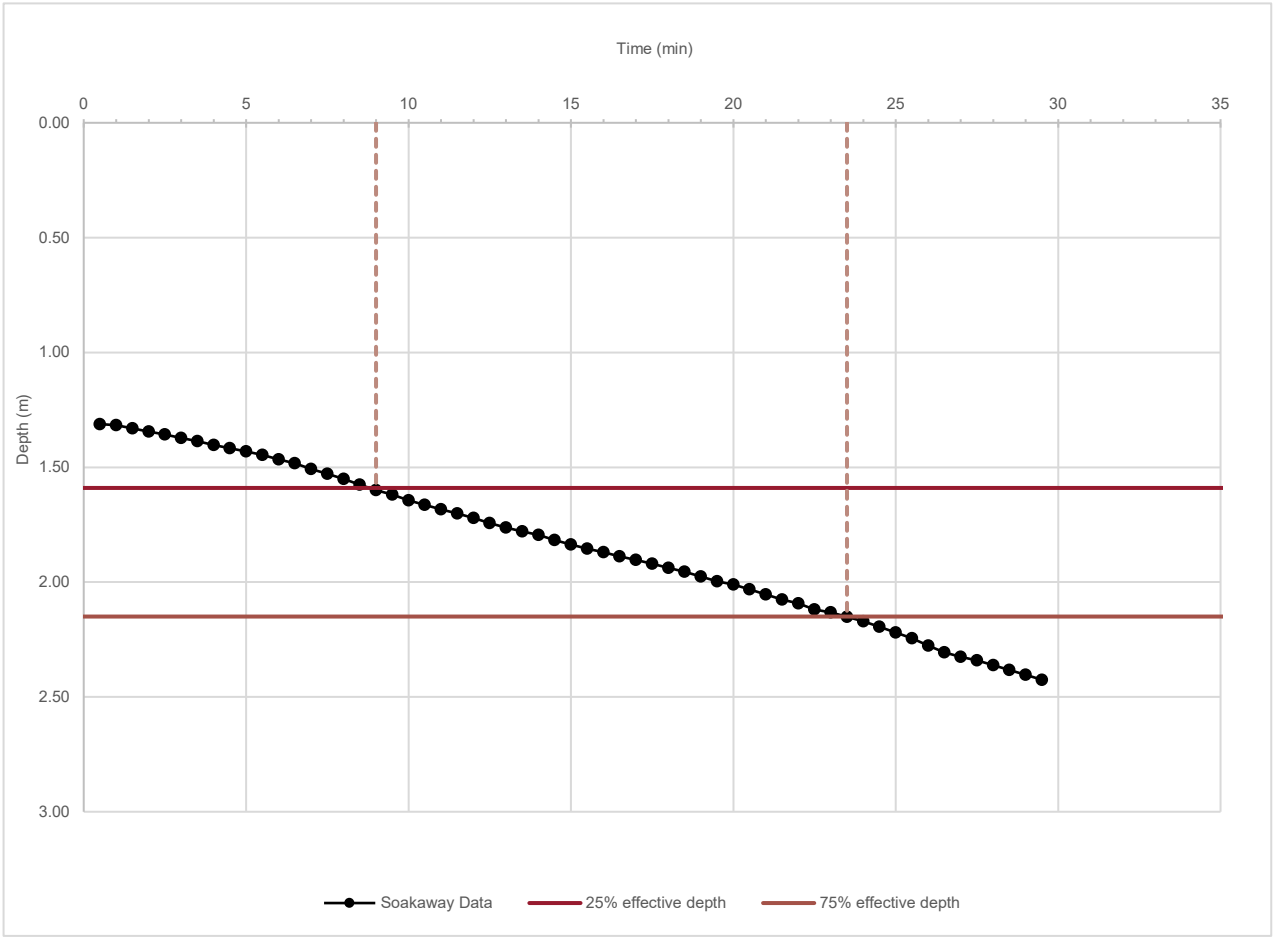
Project	Afan Treatments Works	Project No	G25063	Client	Alun Griffiths		
Exploratory Hole ID	Test No	Easting	Northing	Ground Level	Depth (m)	Length (m)	Width (m)
TP1	2	276043.53	187435.36	8.04	2.43	2.20	0.87

Soakaway Construction		Vertical sides trimmed square. Stone Fill		Water Depth Test Start (m)	1.31	Base area (m^2)	1.914
				Water Depth Test End (m)	2.43	Pit sides area (m^2)	6.8768
Date of Test	07/07/2025	Test Duration (mins)	29.5	75% effective depth (m)	1.59	Vp75-25 (m^3)	1.07184
Fill Porosity	0.6	Weather	Sunny	50% effective depth (m)	1.87	ap50 (m^2)	5.3524
Operative	JP	Checked by		25% effective depth (m)	2.15		

Time water level reaches 75% effective depth (Tp75) (mins)	9	**Soil Infiltration Rate (f) (m/s)**	2.30E-04
Time water level reaches 25% effective depth (Tp25) (mins)	23.5		

Remarks

Undertaken in accordance with BRE digest 365 (2016). For raw groundwater levels see diver data.



SOIL SOAKAWAY INFILTRATION TEST

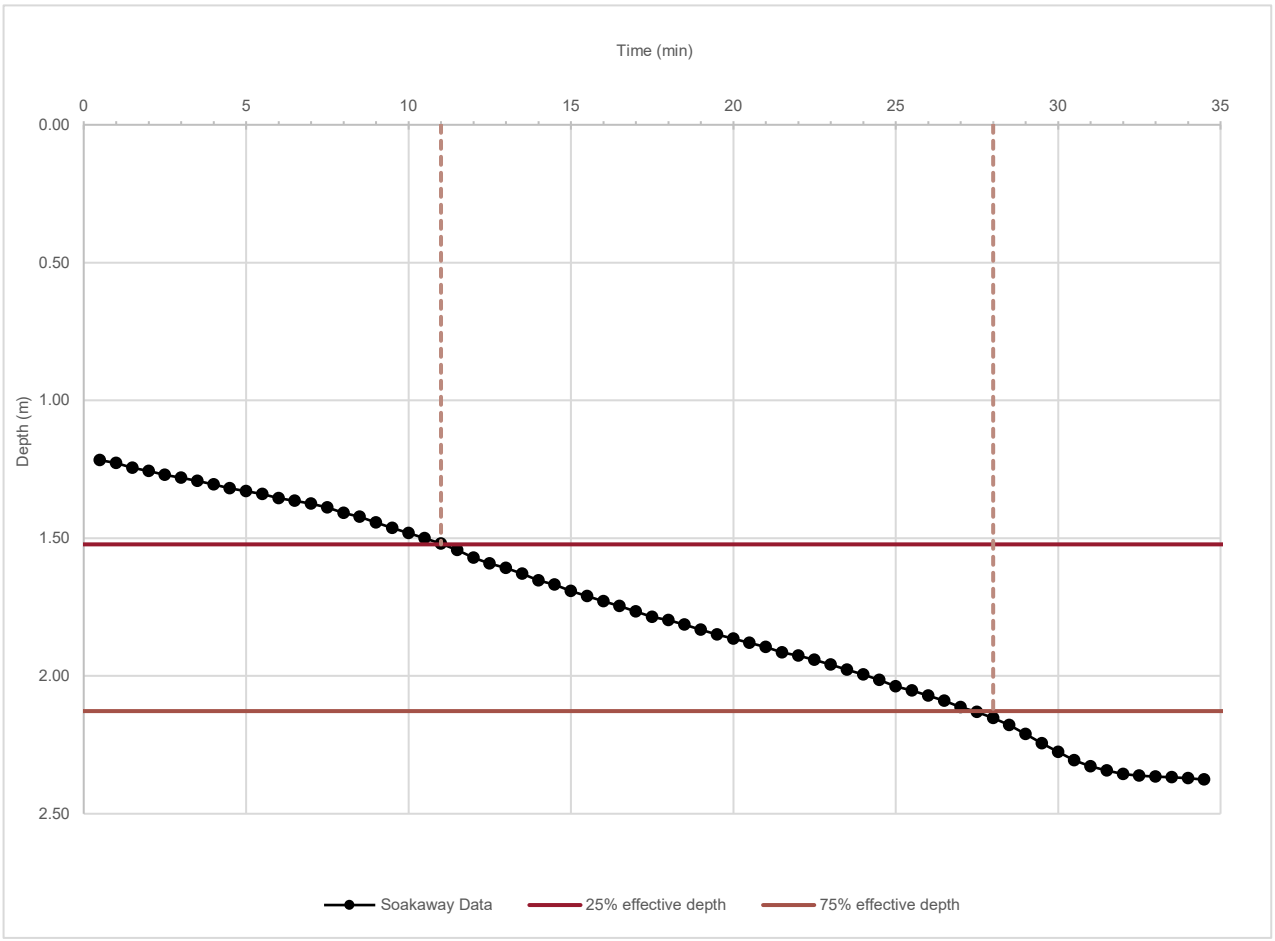
Project	Afan Treatments Works	Project No	G25063	Client	Alun Griffiths		
Exploratory Hole ID	Test No	Easting	Northing	Ground Level	Depth (m)	Length (m)	Width (m)
TP1	3	276043.53	187435.36	8.04	2.43	2.20	0.87

Soakaway Construction		Vertical sides trimmed square. Stone Fill		Water Depth Test Start (m)	1.22	Base area (m^2)	1.914
				Water Depth Test End (m)	2.38	Pit sides area (m^2)	7.4294
Date of Test	07/07/2025	Test Duration (mins)	34.5	75% effective depth (m)	1.5225	Vp75-25 (m^3)	1.15797
Fill Porosity	0.6	Weather	Sunny	50% effective depth (m)	1.825	ap50 (m^2)	5.6287
Operative	JP	Checked by		25% effective depth (m)	2.1275		

Time water level reaches 75% effective depth (Tp75) (mins)	11	**Soil Infiltration Rate (f) (m/s)**	2.02E-04
Time water level reaches 25% effective depth (Tp25) (mins)	28		

Remarks

Undertaken in accordance with BRE digest 365 (2016). For raw groundwater levels see diver data.



SOIL SOAKAWAY INFILTRATION TEST

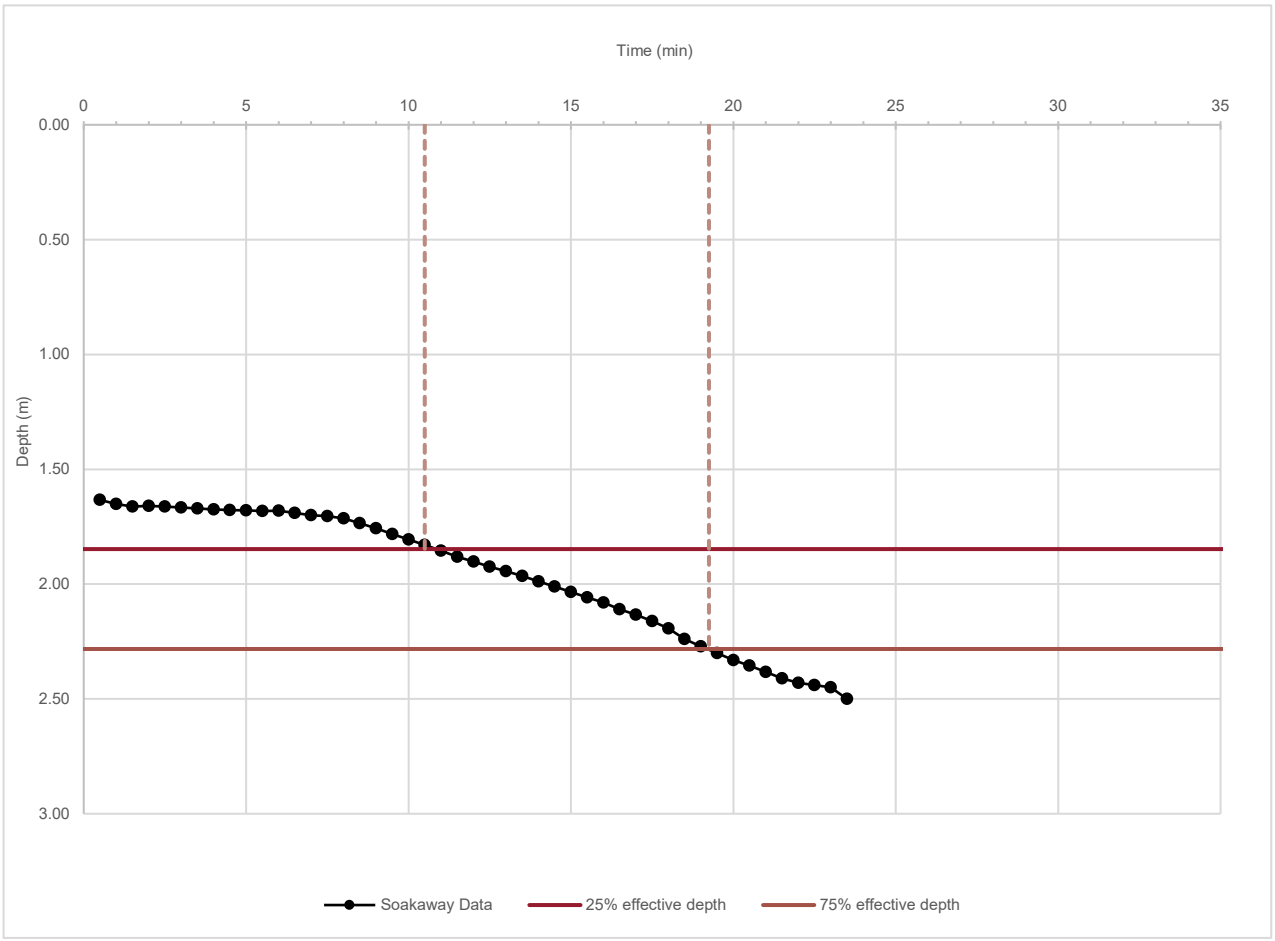
Project	Afan Treatments Works	Project No	G25063	Client	Alun Griffiths		
Exploratory Hole ID	Test No	Easting	Northing	Ground Level	Depth (m)	Length (m)	Width (m)
TP2	1	276072.68	187481.59	8.16	2.50	1.50	0.70

Soakaway Construction		Vertical sides trimmed square. Stone Fill		Water Depth Test Start (m)	1.63	Base area (m^2)	1.05
				Water Depth Test End (m)	2.5	Pit sides area (m^2)	3.828
Date of Test	07/07/2025	Test Duration (mins)	23.5	75% effective depth (m)	1.8475	Vp75-25 (m^3)	0.45675
Fill Porosity	0.6	Weather	Sunny	50% effective depth (m)	2.065	ap50 (m^2)	2.964
Operative	JP	Checked by		25% effective depth (m)	2.2825		

Time water level reaches 75% effective depth (Tp75) (mins)	10.5	**Soil Infiltration Rate (f) (m/s)**	2.94E-04
Time water level reaches 25% effective depth (Tp25) (mins)	19.25		

Remarks

Undertaken in accordance with BRE digest 365 (2016). For raw groundwater levels see diver data.



SOIL SOAKAWAY INFILTRATION TEST

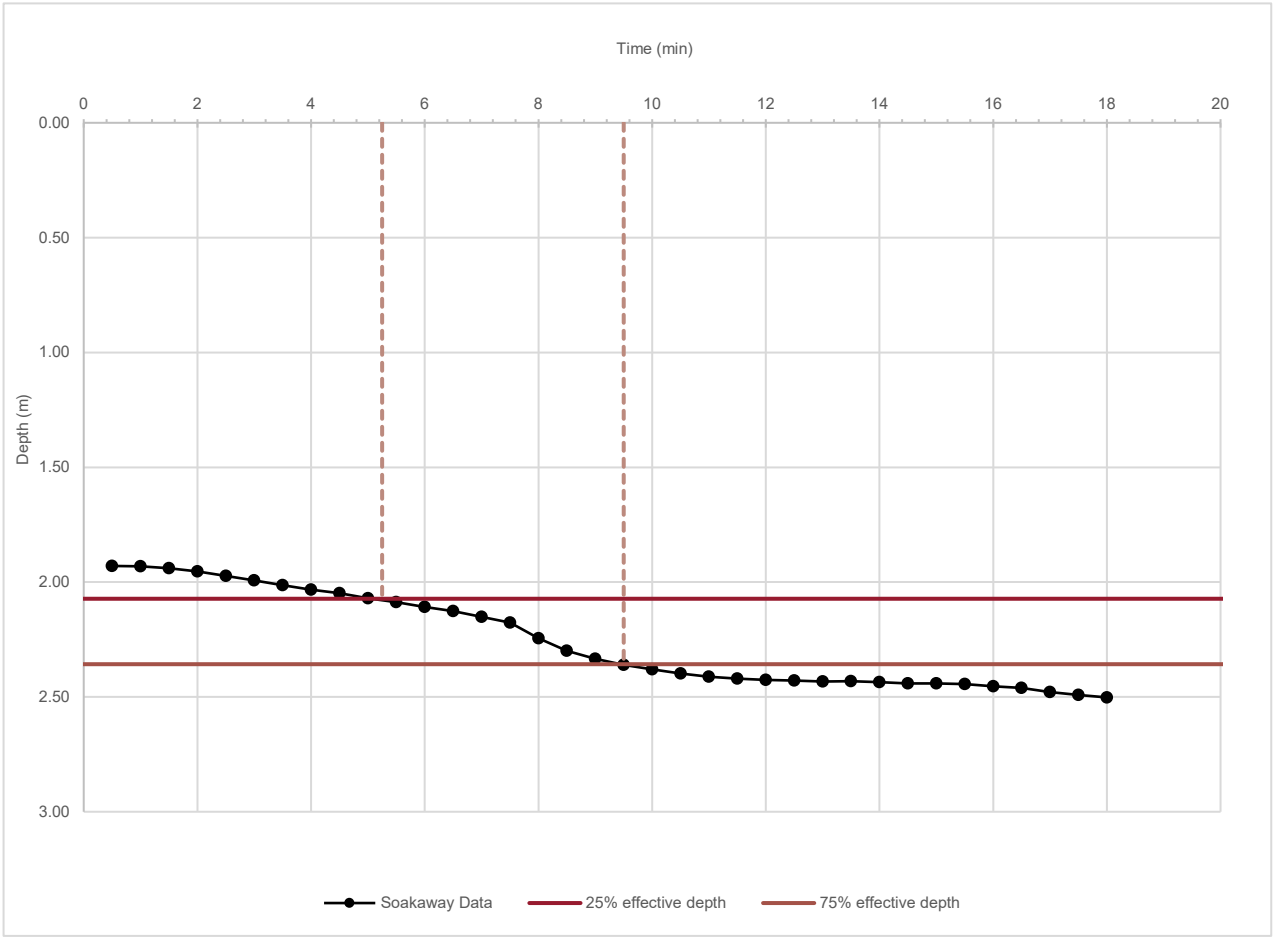
Project	Afan Treatments Works	Project No	G25063	Client	Alun Griffiths		
Exploratory Hole ID	Test No	Easting	Northing	Ground Level	Depth (m)	Length (m)	Width (m)
TP2	2	276072.68	187481.59	8.16	2.50	1.50	0.70

Soakaway Construction		Vertical sides trimmed square. Stone Fill		Water Depth Test Start (m)	1.93	Base area (m^2)	1.05
				Water Depth Test End (m)	2.5	Pit sides area (m^2)	2.508
Date of Test	07/07/2025	Test Duration (mins)	18	75% effective depth (m)	2.0725	Vp75-25 (m^3)	0.29925
Fill Porosity	0.6	Weather	Sunny	50% effective depth (m)	2.215	ap50 (m^2)	2.304
Operative	JP	Checked by		25% effective depth (m)	2.3575		

Time water level reaches 75% effective depth (Tp75) (mins)	5.25	**Soil Infiltration Rate (f) (m/s)**	5.09E-04
Time water level reaches 25% effective depth (Tp25) (mins)	9.5		

Remarks

Undertaken in accordance with BRE digest 365 (2016). For raw groundwater levels see diver data.



SOIL SOAKAWAY INFILTRATION TEST

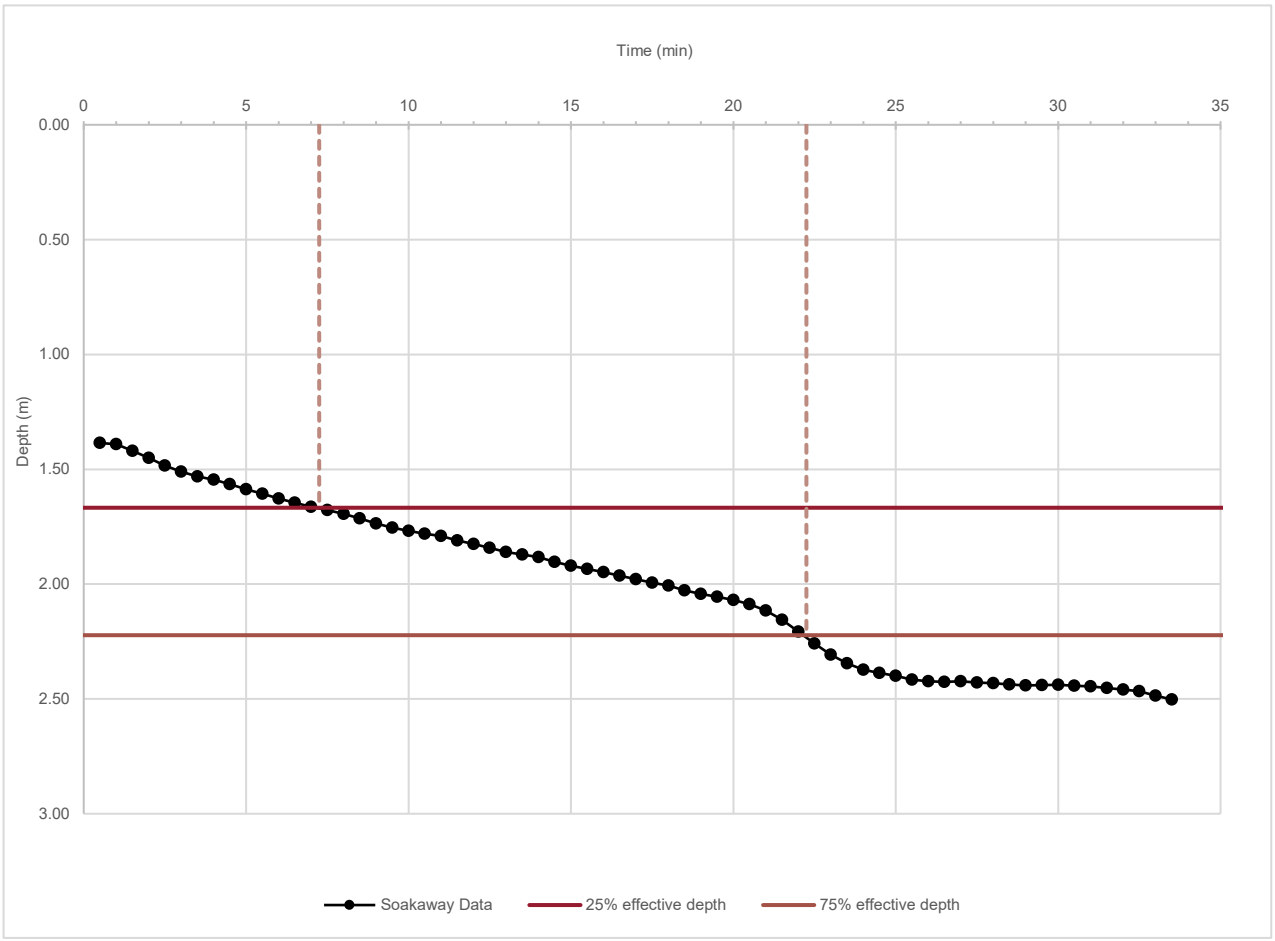
Project	Afan Treatments Works	Project No	G25063	Client	Alun Griffiths		
Exploratory Hole ID	Test No	Easting	Northing	Ground Level	Depth (m)	Length (m)	Width (m)
TP2	3	276072.68	187481.59	8.16	2.50	1.50	0.70

Soakaway Construction		Vertical sides trimmed square. Stone Fill		Water Depth Test Start (m)	1.39	Base area (m^2)	1.05
				Water Depth Test End (m)	2.5	Pit sides area (m^2)	4.884
Date of Test	07/07/2025	Test Duration (mins)	18	75% effective depth (m)	1.6675	Vp75-25 (m^3)	0.58275
Fill Porosity	0.6	Weather	Sunny	50% effective depth (m)	1.945	ap50 (m^2)	3.492
Operative	JP	Checked by		25% effective depth (m)	2.2225		

Time water level reaches 75% effective depth (Tp75) (mins)	7.25	**Soil Infiltration Rate (f) (m/s)**	1.85E-04
Time water level reaches 25% effective depth (Tp25) (mins)	22.25		

Remarks

Undertaken in accordance with BRE digest 365 (2016). For raw groundwater levels see diver data.



Appendix III

Monitoring

Gas Monitor Calibration Certificate

Certificate Number:

G504748_10/38882

Gas and Groundwater Monitoring

JACKSON GEO SERVICES

CERTIFICATION OF CALIBRATION

PJLA Calibration
No. 66916

Date Of Calibration: 26-Jun-2025

Certificate Number: G504748_10/38882

Issued by: QED Environmental Systems Inc.

Customer: **MARTON GEOTECHNICAL SERVICES LIMITED**
ROUGHAM INDUSTRIAL ESTATE ROUGHAM BURY ST EDMUNDS, SUFFOLK IP30 9ND

Description:

Model: GA5000

Serial Number: G504748

Accredited Results:

Methane (CH4)

Certified Gas (%)	Instrument Reading (%)	Uncertainty (%)
5.0	5.0	0.42
15.0	15.0	0.66
60.0	59.7	1.03

Carbon Dioxide (CO2)

Certified Gas (%)	Instrument Reading (%)	Uncertainty (%)
5.0	4.8	0.43
15.0	14.7	0.71
40.0	40.1	1.19

Oxygen (O2)

Certified Gas (%)	Instrument Reading (%)	Uncertainty (%)
21.3	21.4	0.25

Gas cylinders are traceable and details can be provided if requested.

CH4, CO2 readings recorded at: 31.7 °C/89.1 °F Barometric Pressure: 0984 mbar/29.05 "Hg

O2 readings recorded at: 22.1 °C/71.8 °F

Method of Test : The analyzer is calibrated in a temperature controlled chamber using a series of reference gases, in compliance with procedure ISP17.

Instrument has passed calibration as the measurement result is within the specification limit. The specification limit takes into account the measurement uncertainty.

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with NIST requirements.

The calibration results published in this certificate were obtained using equipment capable of producing results that are traceable through NIST to the International System of Units (SI). Certification only applies to results shown. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

www.qedenv.com (800) 624-2026 info@qedenv.com

QED Environmental Systems Inc. 2355 Bishop Circle West, Dexter, MI 48130

GAS AND GROUNDWATER MONITORING DATA

Project	Afan Treatment Works	Project No	G25063	Client	Alun Griffiths Ltd

Exploratory Hole	Pipe Ref.	Date and Time	Reading Type	Reading	Units	Detection Limit	Instrument	Remarks
WS1	1	18/07/2025 10:25	Barometric Pressure	1012	mbar	5	GA5000 SN:G504748	
WS1	1	18/07/2025 10:26	Peak Carbon Dioxide	0.2	%	0.5	GA5000 SN:G504748	
WS1	1	18/07/2025 10:26	Steady Carbon Dioxide	0.2	%	0.5	GA5000 SN:G504748	
WS1	1	18/07/2025 10:26	Carbon Monoxide	0	ppm	2	GA5000 SN:G504748	
WS1	1	18/07/2025 10:26	Gas Flow Rate	0.2	l/hr	0.3	GA5000 SN:G504748	
WS1	1	18/07/2025 10:26	Hydrogen Sulphide	0	ppm	1.5	GA5000 SN:G504748	
WS1	1	18/07/2025 10:26	Differential Pressure	0.05	mbar	4	GA5000 SN:G504748	
WS1	1	18/07/2025 10:26	Peak Methane	0	%	0.5	GA5000 SN:G504748	
WS1	1	18/07/2025 10:26	Steady Methane	0	%	0.5	GA5000 SN:G504748	
WS1	1	18/07/2025 10:26	Steady Oxygen	18.9	%	1	GA5000 SN:G504748	
WS1	1	18/07/2025 10:26	Peak Oxygen	18.9	%	1	GA5000 SN:G504748	
WS1	1	18/07/2025 10:30	Water Level		m	0.01	Dip Meter	Base dipped at 3.53m. Borehole dry.
WS3	1	18/07/2025 10:38	Peak Methane	0	%	0.5	GA5000 SN:G504748	
WS3	1	18/07/2025 10:38	Steady Oxygen	20.1	%	1	GA5000 SN:G504748	
WS3	1	18/07/2025 10:38	Peak Oxygen	20.1	%	1	GA5000 SN:G504748	
WS3	1	18/07/2025 10:38	Differential Pressure	0	mbar	4	GA5000 SN:G504748	
WS3	1	18/07/2025 10:38	Steady Methane	0	%	0.5	GA5000 SN:G504748	
WS3	1	18/07/2025 10:38	Hydrogen Sulphide	1	ppm	1.5	GA5000 SN:G504748	
WS3	1	18/07/2025 10:38	Gas Flow Rate	0.1	l/hr	0.3	GA5000 SN:G504748	
WS3	1	18/07/2025 10:38	Carbon Monoxide	0	ppm	2	GA5000 SN:G504748	
WS3	1	18/07/2025 10:38	Steady Carbon Dioxide	0.1	%	0.5	GA5000 SN:G504748	
WS3	1	18/07/2025 10:38	Peak Carbon Dioxide	1012	%	0.5	GA5000 SN:G504748	
WS3	1	18/07/2025 10:38	Peak Carbon Dioxide	0.1	%	0.5	GA5000 SN:G504748	
WS3	1	18/07/2025 10:43	Water Level		m	0.01	Dip Meter	Base dipped at 3.47m. Borehole dry.
WS4	1	18/07/2025 10:48	Steady Oxygen	19.3	%	1	GA5000 SN:G504748	
WS4	1	18/07/2025 10:48	Peak Oxygen	19.3	%	1	GA5000 SN:G504748	
WS4	1	18/07/2025 10:48	Peak Carbon Dioxide	0.8	%	0.5	GA5000 SN:G504748	
WS4	1	18/07/2025 10:48	Barometric Pressure	1013	mbar	5	GA5000 SN:G504748	
WS4	1	18/07/2025 10:48	Steady Carbon Dioxide	0.8	%	0.5	GA5000 SN:G504748	
WS4	1	18/07/2025 10:48	Gas Flow Rate	0.3	l/hr	0.3	GA5000 SN:G504748	
WS4	1	18/07/2025 10:48	Carbon Monoxide	0	ppm	2	GA5000 SN:G504748	
WS4	1	18/07/2025 10:48	Hydrogen Sulphide	1	ppm	1.5	GA5000 SN:G504748	
WS4	1	18/07/2025 10:48	Steady Methane	0	%	0.5	GA5000 SN:G504748	
WS4	1	18/07/2025 10:48	Differential Pressure	0	mbar	4	GA5000 SN:G504748	
WS4	1	18/07/2025 10:48	Peak Methane	0	%	0.5	GA5000 SN:G504748	
WS4	1	18/07/2025 10:53	Water Level		m	0.01	Dip Meter	Base dipped at 3.49m. Borehole dry.
WS5	1	18/07/2025 11:01	Steady Oxygen	20.4	%	1	GA5000 SN:G504748	
WS5	1	18/07/2025 11:01	Peak Oxygen	20.3	%	1	GA5000 SN:G504748	
WS5	1	18/07/2025 11:01	Peak Methane	0	%	0.5	GA5000 SN:G504748	

GAS AND GROUNDWATER MONITORING DATA

Project	Afan Treatment Works	Project No	G25063	Client	Alun Griffiths Ltd

Exploratory Hole	Pipe Ref.	Date and Time	Reading Type	Reading	Units	Detection Limit	Instrument	Remarks
WS5	1	18/07/2025 11:01	Steady Methane	0	%	0.5	GA5000 SN:G504748	
WS5	1	18/07/2025 11:01	Gas Flow Rate	0.3	l/hr	0.3	GA5000 SN:G504748	
WS5	1	18/07/2025 11:01	Hydrogen Sulphide	1	ppm	1.5	GA5000 SN:G504748	
WS5	1	18/07/2025 11:01	Differential Pressure	0	mbar	4	GA5000 SN:G504748	
WS5	1	18/07/2025 11:01	Carbon Monoxide	0	ppm	2	GA5000 SN:G504748	
WS5	1	18/07/2025 11:01	Steady Carbon Dioxide	0.1	%	0.5	GA5000 SN:G504748	
WS5	1	18/07/2025 11:01	Barometric Pressure	1013	mbar	5	GA5000 SN:G504748	
WS5	1	18/07/2025 11:01	Peak Carbon Dioxide	0.1	%	0.5	GA5000 SN:G504748	
WS5	1	18/07/2025 11:05	Water Level		m	0.01	Dip Meter	Base dipped at 1.93m. Borehole dry.

Appendix IV

Geotechnical Testing

GSTL Lab Report 79687

JACKSON GEO SERVICES

Laboratory Report

UKAS TESTING 2788

GSTL GEOTECHNICAL SITE & TESTING LABORATORIES A PHENNA GROUP COMPANY

Contract Number: 79687

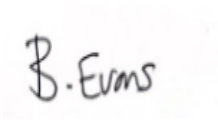
Client Ref: **G25063**
Client PO: **G25063**

Client: **Jackson Drilling Holdings Ltd**

Contract Title: **Afan treatment Works**
For the attention of: **Adam Putt**

Date Received: **09-07-2025**
Date Completed: **21-07-2025**
Report Date: **21-07-2025**

This report has been checked and approved by:



Brendan Evans
Senior Office Administrator

Description	Qty
Particle Size Distribution BS EN ISO 17892-4 : 5.1 - * UKAS	4

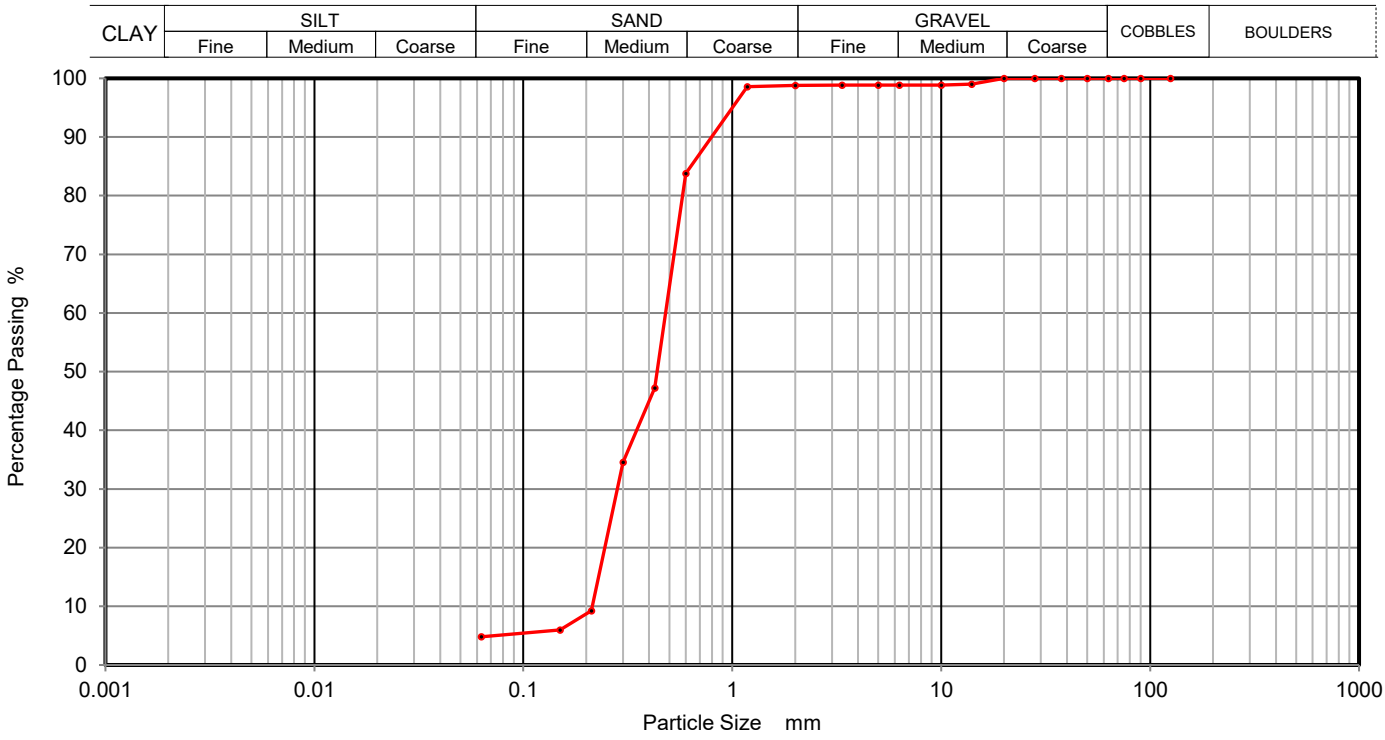
Notes: **Observations and Interpretations are outside the UKAS Accreditation**
*** - denotes test included in laboratory scope of accreditation**
- denotes test carried out by approved contractor
@ - denotes non accredited tests

This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This test report/certificate shall not be reproduced except in full, without the approval of GEO Site & Testing Services Ltd. Any opinions or interpretations stated - within this report/certificate are excluded from the laboratories UKAS accreditation.

Approved Signatories:
Brendan Evans (Senior Office Administrator) - Brendan Evans (Business Support Co-ordinator) - Darren Bourne (Quality Senior Technician)
Paul Evans (Director) - Richard John (Quality/Technical Manager) - Shaun Jones (Laboratory manager)
Shaun Thomas (Site Manager) - Wayne Honey (HR & HSE Manager)

GEO Site & Testing Services Ltd
Unit 3-4 Heol Aur, Dafen Ind Est, Llanelli, Carmarthenshire SA14 8QN
Tel: 01554 784 040 Fax: 01554 784 040 info@gstl.co.uk https://gstl.co.uk

GSTL GEOTECHNICAL SITE & TESTING LABORATORIES	PARTICLE SIZE DISTRIBUTION BS EN ISO 17892-4:2016 Wet Sieve, Clause 5.2	Contract Number	79687
		Borehole/Pit No.	WS1
Project Name	Afan treatment Works	Sample No.	10
Sample Description	Brown slightly gravelly slightly silty/ clayey fine to coarse SAND	Depth Top	2.70
		Depth Base	3.00
Date Tested	18/07/2025	Sample Type	D



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	99		
10	99		
6.3	99		
5	99		
3.35	99		
2	99		
1.18	99		
0.63	84		
0.425	47		
0.30	35		
0.20	9		
0.15	6		
0.063	5		

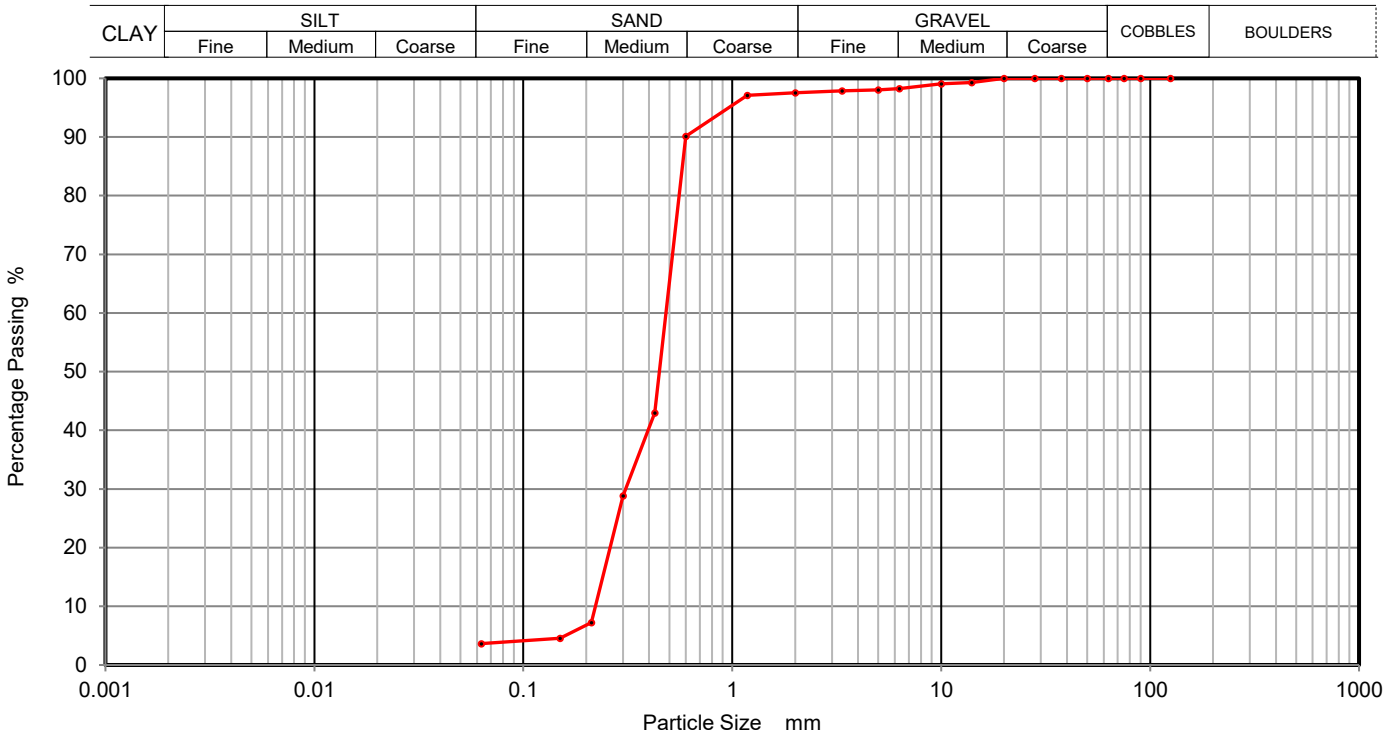
Sample Proportions	% dry mass
Cobbles	0
Gravel	1
Sand	94
Silt and Clay	5

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Operator
Ben. J

GSTL GEOTECHNICAL SITE & TESTING LABORATORIES	**PARTICLE SIZE DISTRIBUTION BS EN ISO 17892-4:2016 Wet Sieve, Clause 5.2**	Contract Number	**79687**
		Borehole/Pit No.	**WS3**
Project Name	**Afan treatment Works**	Sample No.	**5**
Sample Description	Brown slightly gravelly slightly silty/ clayey fine to coarse SAND	Depth Top	**1.40**
		Depth Base	**2.00**
Date Tested	18/07/2025	Sample Type	**B**



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	99		
10	99		
6.3	98		
5	98		
3.35	98		
2	98		
1.18	97		
0.63	90		
0.425	43		
0.30	29		
0.20	7		
0.15	5		
0.063	4		

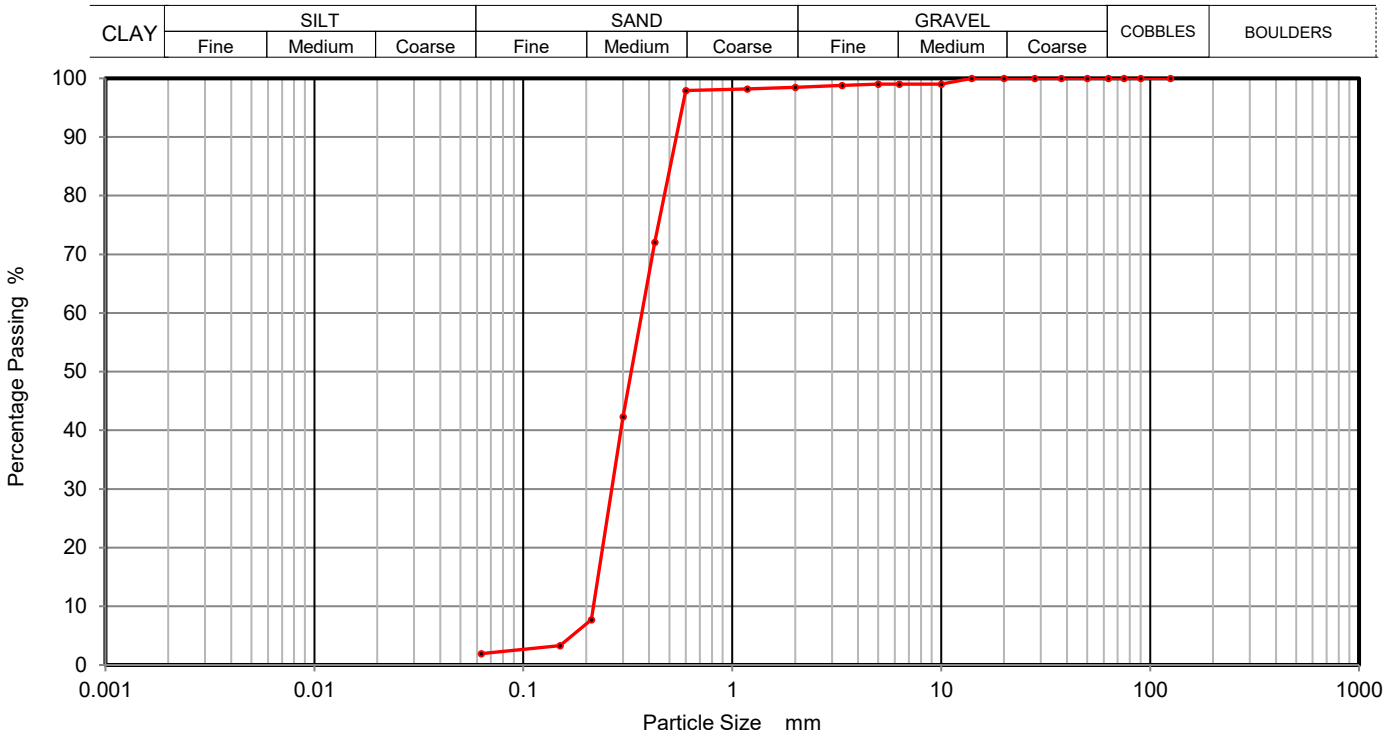
Sample Proportions	% dry mass
Cobbles	0
Gravel	2
Sand	94
Silt and Clay	4

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Operator
Ben. J

GSTL GEOTECHNICAL SITE & TESTING LABORATORIES	PARTICLE SIZE DISTRIBUTION BS EN ISO 17892-4:2016 Wet Sieve, Clause 5.2	Contract Number	79687
		Borehole/Pit No.	WS3
Project Name	Afan treatment Works	Sample No.	10
Sample Description	Brown slightly silty/ clayey slightly gravelly fine to coarse SAND	Depth Top	4.00
		Depth Base	4.50
Date Tested	18/07/2025	Sample Type	D



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	99		
6.3	99		
5	99		
3.35	99		
2	98		
1.18	98		
0.63	98		
0.425	72		
0.30	42		
0.20	8		
0.15	3		
0.063	2		

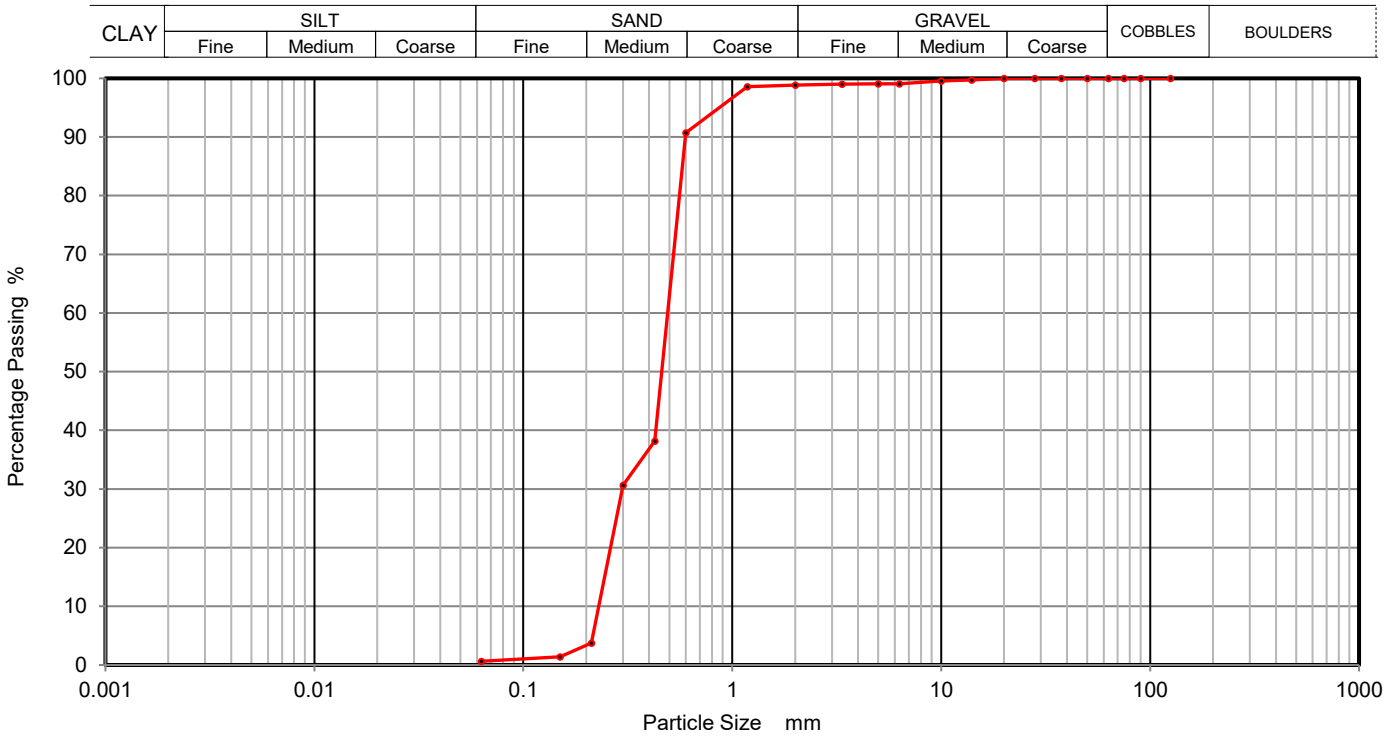
Sample Proportions	% dry mass
Cobbles	0
Gravel	2
Sand	96
Silt and Clay	2

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Operator
Ben. J

GSTL GEOTECHNICAL SITE & TESTING LABORATORIES	**PARTICLE SIZE DISTRIBUTION BS EN ISO 17892-4:2016 Wet Sieve, Clause 5.2**	Contract Number	**79687**
		Borehole/Pit No.	**WS4**
Project Name	**Afan treatment Works**	Sample No.	**9**
Sample Description	Brown slightly silty/ clayey slightly gravelly fine to coarse SAND	Depth Top	**2.60**
		Depth Base	**4.00**
Date Tested	18/07/2025	Sample Type	**D**



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	99		
5	99		
3.35	99		
2	99		
1.18	99		
0.63	91		
0.425	38		
0.30	31		
0.20	4		
0.15	1		
0.063	1		

Sample Proportions	% dry mass
Cobbles	0
Gravel	1
Sand	98
Silt and Clay	1

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Operator
Ben. J

Appendix V

Geoenvironmental and Geochemical Testing

Eurofins Chemtest Laboratory Reports **25-21266, 25-21434, 25-22217, 25-22281 and 25-22491**

JACKSON GEO SERVICES

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.: 25-21266-1

Initial Date of Issue: 16-Jul-2025

Re-Issue Details:

Client *Jackson Geo Services*

Client Address: *Unit B3 Fram Enterprise Centre*
Parc Busnes Edwards
Llantrisant
Pontyclun
CF72 8QZ

Contact(s): *Adam Putt*

Project *G25063 Afan Treatment Works*

Quotation No.: *Q25-38258* **Date Received:** 27-Jun-2025

Order No.: **Date Instructed:** 03-Jul-2025

No. of Samples: *2*

Turnaround (Wkdays): 8 **Results Due:** 14-Jul-2025

Date Approved: 16-Jul-2025

Approved By:



Details: David Smith, Technical Director

For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report

Results - Leachate

Project: G25063 Afan Treatment Works

Client: Jackson Geo Services				**Chemtest Job No.:**		25-21266
Quotation No.: Q25-38258				**Chemtest Sample ID.:**		1992219
Order No.:				*Client Sample Ref.:*		*6*
				Client Sample ID.:		*#42829201799 00006*
				Client Reference:		*WS1*
				Sample Type:		*SOIL*
				Top Depth (m):		*1.50*
				Bottom Depth (m):		*1.60*
				Date Sampled:		*25-Jun-2025*
				Time Sampled:		*11:21*
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**	
pH at 20C	U	1010	2:1		4.0	8.6
Chloride	U	1220	2:1	mg/l	1.0	< 1.0
Ammoniacal Nitrogen	U	1220	2:1	mg/l	0.050	0.17
Cyanide (Total)	U	1300	2:1	mg/l	0.050	< 0.050
Arsenic (Dissolved)	U	1455	2:1	µg/l	0.20	7.2
Beryllium (Dissolved)	U	1455	2:1	µg/l	1.00	< 1.0
Cadmium (Dissolved)	U	1455	2:1	µg/l	0.11	< 0.11
Chromium (Dissolved)	U	1455	2:1	µg/l	0.50	1.5
Copper (Dissolved)	U	1455	2:1	µg/l	0.50	3.3
Mercury (Dissolved)	U	1455	2:1	µg/l	0.05	< 0.05
Nickel (Dissolved)	U	1455	2:1	µg/l	0.50	0.72
Lead (Dissolved)	U	1455	2:1	µg/l	0.50	2.5
Antimony (Dissolved)	U	1455	2:1	µg/l	0.50	0.89
Selenium (Dissolved)	U	1455	2:1	µg/l	0.50	1.3
Vanadium (Dissolved)	U	1455	2:1	µg/l	0.50	34
Zinc (Dissolved)	U	1455	2:1	µg/l	2.5	5.7
Naphthalene	U	1800	2:1	µg/l	0.10	< 0.10
Acenaphthylene	U	1800	2:1	µg/l	0.10	< 0.10
Acenaphthene	U	1800	2:1	µg/l	0.10	< 0.10
Fluorene	U	1800	2:1	µg/l	0.10	< 0.10
Phenanthrene	U	1800	2:1	µg/l	0.10	< 0.10
Anthracene	U	1800	2:1	µg/l	0.10	< 0.10
Fluoranthene	U	1800	2:1	µg/l	0.10	< 0.10
Pyrene	U	1800	2:1	µg/l	0.10	< 0.10
Benzo[a]anthracene	U	1800	2:1	µg/l	0.10	< 0.10
Chrysene	U	1800	2:1	µg/l	0.10	< 0.10
Benzo[b]fluoranthene	U	1800	2:1	µg/l	0.10	< 0.10
Benzo[k]fluoranthene	U	1800	2:1	µg/l	0.10	< 0.10
Benzo[a]pyrene	U	1800	2:1	µg/l	0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	1800	2:1	µg/l	0.10	< 0.10
Dibenz(a,h)Anthracene	U	1800	2:1	µg/l	0.10	< 0.10
Benzo[g,h,i]perylene	U	1800	2:1	µg/l	0.10	< 0.10
Total Of 16 PAH's	U	1800	2:1	µg/l	2.0	< 2.0
Total Phenols	U	1920	2:1	mg/l	0.030	< 0.030

Results - Soil

Project: G25063 Afan Treatment Works

Client: Jackson Geo Services				**Chemtest Job No.:**		25-21266	25-21266
Quotation No.: Q25-38258				**Chemtest Sample ID.:**		1992219	1992222
Order No.:				*Client Sample Ref.:*		*6*	*1*
				Client Sample ID.:		*#42829201799 00006*	*#01097748948 10001*
				Client Reference:		*WS1*	*WS2*
				Sample Type:		*SOIL*	*SOIL*
				Top Depth (m):		*1.50*	*0.30*
				Bottom Depth (m):		*1.60*	
				Date Sampled:		*25-Jun-2025*	*25-Jun-2025*
				Time Sampled:		*11:21*	*13:21*
				Asbestos Lab:		NEW-ASB	NEW-ASB
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**		
ACM Type		N	2192		N/A	-	-
Asbestos Identification		U	2192		N/A	No Asbestos Detected	No Asbestos Detected
Moisture		N	2030	%	0.020	4.4	3.9
Soil Colour		N	2030		N/A	Brown	Brown
Other Material		N	2030		N/A	None	Stones
Soil Texture		N	2030		N/A	Sand	Sand
pH at 20C		U	2010		4.0	8.5	9.2
Boron (Hot Water Soluble)		U	2120	mg/kg	0.40	< 0.40	2.1
Cyanide (Total)		U	2300	mg/kg	0.50	< 0.50	< 0.50
Arsenic		U	2455	mg/kg	0.5	8.6	1.9
Beryllium		U	2455	mg/kg	0.5	< 0.5	3.2
Cadmium		U	2455	mg/kg	0.10	< 0.10	0.22
Chromium		U	2455	mg/kg	0.5	4.5	17
Copper		U	2455	mg/kg	0.50	4.9	10
Mercury		U	2455	mg/kg	0.05	< 0.05	0.11
Nickel		U	2455	mg/kg	0.50	6.8	14
Lead		U	2455	mg/kg	0.50	9.6	14
Selenium		U	2455	mg/kg	0.25	< 0.25	1.1
Vanadium		U	2455	mg/kg	0.5	16	21
Zinc		U	2455	mg/kg	0.50	46	100
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50	< 0.50
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C8 (Sum)	HS_2D_AL	N	2780	mg/kg	0.10	< 0.10	< 0.10
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	< 0.25	< 0.25
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	U	2690	mg/kg	2.00	3.3	3.4
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	U	2690	mg/kg	1.00	< 1.0	< 1.0
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	U	2690	mg/kg	2.00	< 2.0	< 2.0
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	U	2690	mg/kg	3.00	< 3.0	< 3.0
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	< 10	< 10
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	U	2690	mg/kg	5.00	5.8	< 5.0

Results - Soil

Project: G25063 Afan Treatment Works

Client: Jackson Geo Services				**Chemtest Job No.:**		25-21266	25-21266
Quotation No.: Q25-38258				**Chemtest Sample ID.:**		1992219	1992222
Order No.:				*Client Sample Ref.:*		*6*	*1*
				Client Sample ID.:		*#42829201799 00006*	*#01097748948 10001*
				Client Reference:		*WS1*	*WS2*
				Sample Type:		*SOIL*	*SOIL*
				Top Depth (m):		*1.50*	*0.30*
				Bottom Depth (m):		*1.60*	
				Date Sampled:		*25-Jun-2025*	*25-Jun-2025*
				Time Sampled:		*11:21*	*13:21*
				Asbestos Lab:		NEW-ASB	NEW-ASB
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**		
Total Aliphatic EPH >C10-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	< 10	< 10
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0	< 1.0
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0	< 1.0
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	3.1	2.2
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	< 2.0	< 2.0
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00	< 1.0	< 1.0
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00	< 5.0	< 5.0
Total Aromatic EPH >C10-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	10.00	< 10	< 10
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	< 0.50	< 0.50
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00	< 10	< 10
Total EPH >C10-C40 MC	EH_2D_Total_#1	N	2690	mg/kg	10.00	< 10	< 10
Total Organic Carbon		U	2625	%	0.20	0.62	1.3
Benzene		U	2760	µg/kg	1.0	< 1.0	< 1.0
Toluene		U	2760	µg/kg	1.0	< 1.0	< 1.0
Ethylbenzene		U	2760	µg/kg	1.0	< 1.0	< 1.0
m & p-Xylene		U	2760	µg/kg	1.0	< 1.0	< 1.0
o-Xylene		U	2760	µg/kg	1.0	< 1.0	< 1.0
Naphthalene		U	2800	mg/kg	0.10	< 0.10	0.14
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10	< 0.10
Acenaphthene		U	2800	mg/kg	0.10	< 0.10	< 0.10
Fluorene		U	2800	mg/kg	0.10	< 0.10	< 0.10
Phenanthrene		U	2800	mg/kg	0.10	< 0.10	0.23
Anthracene		U	2800	mg/kg	0.10	< 0.10	< 0.10
Fluoranthene		U	2800	mg/kg	0.10	< 0.10	0.35
Pyrene		U	2800	mg/kg	0.10	< 0.10	0.31
Benzo[a]anthracene		U	2800	mg/kg	0.10	< 0.10	0.23
Chrysene		U	2800	mg/kg	0.10	< 0.10	0.24
Benzo[b]fluoranthene		U	2800	mg/kg	0.10	< 0.10	0.42
Benzo[k]fluoranthene		U	2800	mg/kg	0.10	< 0.10	0.19
Benzo[a]pyrene		U	2800	mg/kg	0.10	< 0.10	0.30

Results - Soil

Project: G25063 Afan Treatment Works

Client: Jackson Geo Services						**Chemtest Job No.:**	25-21266	25-21266
Quotation No.: Q25-38258						**Chemtest Sample ID.:**	1992219	1992222
Order No.:						*Client Sample Ref.:*	*6*	*1*
						Client Sample ID.:	*#42829201799 00006*	*#01097748948 10001*
						Client Reference:	*WS1*	*WS2*
						Sample Type:	*SOIL*	*SOIL*
						Top Depth (m):	*1.50*	*0.30*
						Bottom Depth (m):	*1.60*	
						Date Sampled:	*25-Jun-2025*	*25-Jun-2025*
						Time Sampled:	*11:21*	*13:21*
						Asbestos Lab:	NEW-ASB	NEW-ASB
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**			
Indeno(1,2,3-c,d)Pyrene		U	2800	mg/kg	0.10		< 0.10	0.21
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10		< 0.10	< 0.10
Benzo[g,h,i]perylene		U	2800	mg/kg	0.10		< 0.10	0.20
Total Of 16 PAH's		N	2800	mg/kg	2.0		< 2.0	2.8
Total Phenols		U	2920	mg/kg	0.10		< 0.10	< 0.10

Results - Single Stage WAC

Project: G25063 Afan Treatment Works

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-21266							
Chemtest Sample ID:	1992222							
Sample Ref:	*1*							
Sample ID:	*#0109774894810001*					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Client Reference:	*WS2*							
Top Depth(m):	*0.30*							
Bottom Depth(m):								
Sampling Date:	*25-Jun-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		U	%	1.3	3	5	6
Loss On Ignition	2610		U	%	0.81	--	--	10
Total BTEX	2760		U	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		U	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	U	mg/kg	< 10	500	--	--
Total (Of 17) PAH's	2700		N	mg/kg	5.3	100	--	--
pH at 20C	2010		U		9.2	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.042	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0002	0.0021	0.5	2	25
Barium	1455		U	0.13	1.3	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	< 0.0005	< 0.0050	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	< 0.0002	< 0.0020	0.5	10	30
Nickel	1455		U	< 0.0005	< 0.0050	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	0.0017	0.017	0.1	0.5	7
Zinc	1455		U	< 0.003	< 0.025	4	50	200
Chloride	1220		U	1.2	12	800	15000	25000
Fluoride	1220		U	0.13	1.3	10	150	500
Sulphate	1220		U	8.5	85	1000	20000	50000
Total Dissolved Solids	1020		N	42	420	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	< 2.5	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	7.9
WAC Sample Weight	2003

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - 2 Stage WAC

Project: G25063 Afan Treatment Works

							Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-21266								
Chemtest Sample ID:	1992219								
Sample Ref:	*6*						**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:	*#4282920179900006*								
Client Reference:	*WS1*								
Top Depth(m):	*1.50*								
Bottom Depth(m):	*1.60*								
Sampling Date:	*25-Jun-2025*								
Determinand	**SOP**	**Accred.**	**Units**						
Total Organic Carbon	2625	U	%			0.62	3	5	6
Loss On Ignition	2610	U	%			0.99	--	--	10
Total BTEX	2760	U	mg/kg			< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	U	mg/kg			< 0.05	1	--	--
TPH Total WAC	2670	U	mg/kg			< 10	500	--	--
Total (Of 17) PAH's	2700	N	mg/kg			< 2.0	100	--	--
pH at 20C	2010	U				8.5	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg			0.026	--	To evaluate	To evaluate
Eluate Analysis			**2:1 mg/l**	**8:1 mg/l**	**2:1 mg/kg**	**Cumulative mg/kg 10:1**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic							0.5	2	25
Barium							20	100	300
Cadmium							0.04	1	5
Chromium							0.5	10	70
Copper							2	50	100
Mercury							0.01	0.2	2
Molybdenum							0.5	10	30
Nickel							0.4	10	40
Lead							0.5	10	50
Antimony							0.06	0.7	5
Selenium							0.1	0.5	7
Zinc							4	50	200
Chloride							800	15000	25000
Fluoride							10	150	500
Sulphate							1000	20000	50000
Total Dissolved Solids							4000	60000	100000
Phenol Index							1	-	-
Dissolved Organic Carbon							500	800	1000

Solid Information	
Dry mass of test portion/kg	0.175
Moisture (%)	14
WAC Sample Weight	

Leachate Test Information	
Leachant volume 1st extract/l	
Leachant volume 2nd extract/l	
Eluant recovered from 1st extract/l	

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
1010	pH Value of Waters	pH at 20°C	pH Meter	
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity at 25°C and Total Dissolved Solids (TDS) in Waters	Conductivity Meter	
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.	RE PW PL LE DW GW
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.	
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).	RE PW PL SW DW GW
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation	PL SW GW
1800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-MS	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GCMS detection	
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.	
2010	pH Value of Soils	pH at 20°C	pH Meter	
2015	Acid Neutralisation Capacity	Acid Reserve	Titration	
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <30°C.	
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES	
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry	
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.	
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.	
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.	
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.	
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID	
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40	Acetone/Heptane extraction / GCxGC FID detection	

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)	
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.	
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection	
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS	
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS. Reported PCB 101 results may contain contributions from PCB 90 due to inseparable chromatography.	
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.	
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	
650	Characterisation of Waste (Leaching C2,C8,C10,WAC)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	

Report Information

Key	
U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection
Text example	All items indicated in italic font represent customer-supplied information that may not be independently verified by the laboratory

This report shall not be reproduced except in full, and only with the prior approval of the laboratory.

Any comments or interpretations are outside the scope of UKAS accreditation.

The Laboratory is not accredited for any sampling activities and reported results relate to the samples 'as received' at the laboratory.

Uncertainty of measurement for the determinands tested are available upon request .

None of the results in this report have been recovery corrected.

All results are expressed on a dry weight basis.

The following tests were analysed on samples 'as received' and the results subsequently corrected to a dry weight basis EPH, VPH, TPH, BTEX, VOCs, SVOCs, PCBs, Phenols.

For all other tests the samples were dried at ≤ 30°C prior to analysis.

All Asbestos testing is performed at the indicated laboratory .

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1.

NEW_ASB	Eurofins Chemtest Limited, 11 Depot Road, Newmarket, CB8 0AL
DURHAM	Eurofins Chemtest Limited, Unit A North Wing, Prospect Business Park, Crookhall Lane, Consett, Co Durham, DH8 7PW

Sample Deviation Codes

As a result of any of the below deviations applying, the test results may be unreliable

A - Date of sampling not supplied

B - Sample age exceeds stability time (sampling to extraction)

C - Sample not received in appropriate containers

D - Broken Container

E - The required amount of sample for analysis was not received

H - Appropriate cooling measures were not taken for sample transportation

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt.

All water samples will be retained for 14 days from the date of receipt.

Charges may apply to extended sample storage.

Report Information

Water Sample Category Key for Accreditation

DW - Drinking Water
GW - Ground Water
LE - Land Leachate
NA - Not Applicable
PL - Prepared Leachate
PW - Processed Water
RE - Recreational Water
SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

Clean Up Codes

NC - No Clean Up
MC - Mathematical Clean Up
FC - Florisil Clean Up

HWOL Acronym System

HS - Headspace analysis
EH - Extractable hydrocarbons – i.e. everything extracted by the solvent
CU - Clean-up – e.g. by Florisil, silica gel
1D - GC – Single coil gas chromatography
Total - Aliphatics & Aromatics
AL - Aliphatics only
AR - Aromatic only
2D - GC-GC – Double coil gas chromatography
#1 - EH_2D_Total but with humics mathematically subtracted
#2 - EH_2D_Total but with fatty acids mathematically subtracted
+ - Operator to indicate cumulative e.g. EH+EH_Total or EH_CU+HS_Total

Asbestos Tests LOD = LOQ

Limit of Detection = Limit of Quantification for asbestos results only

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.: 25-21434-1

Initial Date of Issue: 14-Jul-2025

Re-Issue Details:

Client *Jackson Geo Services*

Client Address: *Unit B3 Fram Enterprise Centre*
Parc Busnes Edwards
Llantrisant
Pontyclun
CF72 8QZ

Contact(s): *Adam Putt*

Project *G25063 Afan Treatment Works*

Quotation No.: *Q25-38258* **Date Received:** 30-Jun-2025

Order No.: **Date Instructed:** 03-Jul-2025

No. of Samples: *4*

Turnaround (Wkdays): 5 **Results Due:** 09-Jul-2025

Date Approved: 14-Jul-2025

Approved By:



Details: David Smith, Technical Director

For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report

Results - Leachate

Project: G25063 Afan Treatment Works

Client: Jackson Geo Services				**Chemtest Job No.:**		25-21434	25-21434
Quotation No.: Q25-38258				**Chemtest Sample ID.:**		1992708	1992713
Order No.:				*Client Sample Ref.:*		*3*	*6*
				Client Sample ID.:		*#10006006350 80003*	*#07441026655 60006*
				Client Reference:		*TP2*	*WS4*
				Sample Type:		*SOIL*	*SOIL*
				Top Depth (m):		*1.00*	*0.60*
				Bottom Depth (m):			*1.25*
				Date Sampled:		*26-Jun-2025*	*27-Jun-2025*
				Time Sampled:		*12:32*	*10:17*
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**		
pH at 20C	U	1010	2:1		4.0	8.9	8.0
Chloride	U	1220	2:1	mg/l	1.0	3.4	87
Ammoniacal Nitrogen	U	1220	2:1	mg/l	0.050	0.093	< 0.050
Cyanide (Total)	U	1300	2:1	mg/l	0.050	< 0.050	< 0.050
Arsenic (Dissolved)	U	1455	2:1	µg/l	0.20	11	0.33
Beryllium (Dissolved)	U	1455	2:1	µg/l	1.00	< 1.0	< 1.0
Cadmium (Dissolved)	U	1455	2:1	µg/l	0.11	< 0.11	< 0.11
Chromium (Dissolved)	U	1455	2:1	µg/l	0.50	3.1	0.68
Copper (Dissolved)	U	1455	2:1	µg/l	0.50	1.7	0.97
Mercury (Dissolved)	U	1455	2:1	µg/l	0.05	< 0.05	0.06
Nickel (Dissolved)	U	1455	2:1	µg/l	0.50	< 0.50	< 0.50
Lead (Dissolved)	U	1455	2:1	µg/l	0.50	1.8	< 0.50
Antimony (Dissolved)	U	1455	2:1	µg/l	0.50	0.86	< 0.50
Selenium (Dissolved)	U	1455	2:1	µg/l	0.50	1.1	11
Vanadium (Dissolved)	U	1455	2:1	µg/l	0.50	110	140
Zinc (Dissolved)	U	1455	2:1	µg/l	2.5	4.8	< 2.5
Naphthalene	U	1800	2:1	µg/l	0.10	< 0.10	< 0.10
Acenaphthylene	U	1800	2:1	µg/l	0.10	< 0.10	< 0.10
Acenaphthene	U	1800	2:1	µg/l	0.10	< 0.10	< 0.10
Fluorene	U	1800	2:1	µg/l	0.10	< 0.10	< 0.10
Phenanthrene	U	1800	2:1	µg/l	0.10	< 0.10	< 0.10
Anthracene	U	1800	2:1	µg/l	0.10	< 0.10	< 0.10
Fluoranthene	U	1800	2:1	µg/l	0.10	< 0.10	< 0.10
Pyrene	U	1800	2:1	µg/l	0.10	< 0.10	< 0.10
Benzo[a]anthracene	U	1800	2:1	µg/l	0.10	< 0.10	< 0.10
Chrysene	U	1800	2:1	µg/l	0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	U	1800	2:1	µg/l	0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	U	1800	2:1	µg/l	0.10	< 0.10	< 0.10
Benzo[a]pyrene	U	1800	2:1	µg/l	0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	1800	2:1	µg/l	0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	1800	2:1	µg/l	0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	U	1800	2:1	µg/l	0.10	< 0.10	< 0.10
Total Of 16 PAH's	U	1800	2:1	µg/l	2.0	< 2.0	< 2.0
Total Phenols	U	1920	2:1	mg/l	0.030	< 0.030	< 0.030

Results - Soil

Project: G25063 Afan Treatment Works

Client: Jackson Geo Services				**Chemtest Job No.:**		25-21434	25-21434	25-21434	25-21434
Quotation No.: Q25-38258				**Chemtest Sample ID.:**		1992705	1992708	1992710	1992713
Order No.:				*Client Sample Ref.:*		*1*	*3*	*1*	*6*
				Client Sample ID.:		*#51758503499 70001*	*#10006006350 80003*	*#46172990317 50001*	*#07441026655 60006*
				Client Reference:		*TP1*	*TP2*	*TP3*	*WS4*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*0.30*	*1.00*	*0.50*	*0.60*
				Bottom Depth (m):					*1.25*
				Date Sampled:		*26-Jun-2025*	*26-Jun-2025*	*26-Jun-2025*	*27-Jun-2025*
				Time Sampled:		*9:56*	*12:32*	*14:26*	*10:17*
				Asbestos Lab:		NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**				
ACM Type		N	2192		N/A	-	-	-	-
Asbestos Identification		U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture		N	2030	%	0.020	0.91	0.50	1.3	6.6
Soil Colour		N	2030		N/A	Brown	Brown	Brown	Brown
Other Material		N	2030		N/A	Stones	Stones	Stones	Stones
Soil Texture		N	2030		N/A	Loam	Sand	Loam	Loam
pH at 20C		U	2010		4.0	9.6	9.1	8.9	9.8
Boron (Hot Water Soluble)		U	2120	mg/kg	0.40	3.7	0.55	2.1	1.5
Cyanide (Total)		U	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Arsenic		U	2455	mg/kg	0.5	5.1	9.6	7.1	5.4
Beryllium		U	2455	mg/kg	0.5	1.7	< 0.5	< 0.5	2.5
Cadmium		U	2455	mg/kg	0.10	< 0.10	0.28	< 0.10	< 0.10
Chromium		U	2455	mg/kg	0.5	7.3	24	8.1	39
Copper		U	2455	mg/kg	0.50	4.1	11	30	12
Mercury		U	2455	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel		U	2455	mg/kg	0.50	4.3	7.6	4.8	4.0
Lead		U	2455	mg/kg	0.50	11	48	22	22
Selenium		U	2455	mg/kg	0.25	1.0	0.26	0.26	0.31
Vanadium		U	2455	mg/kg	0.5	10	28	9.5	50
Zinc		U	2455	mg/kg	0.50	36	120	39	74
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C8 (Sum)	HS_2D_AL	N	2780	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	U	2690	mg/kg	2.00	3.4	< 2.0	4.9	7.6
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	U	2690	mg/kg	1.00	< 1.0	< 1.0	3.7	13
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	U	2690	mg/kg	2.00	3.5	< 2.0	4.7	21
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	U	2690	mg/kg	3.00	85	< 3.0	30	82
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	46	< 10	27	19
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	U	2690	mg/kg	5.00	92	< 5.0	43	120

Results - Soil

Project: G25063 Afan Treatment Works

Client: Jackson Geo Services						**Chemtest Job No.:**	25-21434	25-21434	25-21434	25-21434
Quotation No.: Q25-38258						**Chemtest Sample ID.:**	1992705	1992708	1992710	1992713
Order No.:						*Client Sample Ref.:*	*1*	*3*	*1*	*6*
						Client Sample ID.:	*#51758503499 70001*	*#10006006350 80003*	*#46172990317 50001*	*#07441026655 60006*
						Client Reference:	*TP1*	*TP2*	*TP3*	*WS4*
						Sample Type:	*SOIL*	*SOIL*	*SOIL*	*SOIL*
						Top Depth (m):	*0.30*	*1.00*	*0.50*	*0.60*
						Bottom Depth (m):				*1.25*
						Date Sampled:	*26-Jun-2025*	*26-Jun-2025*	*26-Jun-2025*	*27-Jun-2025*
						Time Sampled:	*9:56*	*12:32*	*14:26*	*10:17*
						Asbestos Lab:	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**					
Total Aliphatic EPH >C10-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00		140	< 10	70	140
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05		< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05		< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05		< 0.05	< 0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25		< 0.25	< 0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00		< 1.0	< 1.0	< 1.0	< 1.0
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00		< 1.0	< 1.0	2.8	8.4
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00		3.0	< 2.0	55	21
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00		11	< 2.0	91	13
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00		3.5	< 1.0	30	< 1.0
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00		14	< 5.0	150	43
Total Aromatic EPH >C10-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	10.00		18	< 10	180	43
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00		110	< 10	190	170
Total EPH >C10-C40 MC	EH_2D_Total_#1	N	2690	mg/kg	10.00		160	< 10	250	180
Total Organic Carbon		U	2625	%	0.20		1.5	0.37	18	1.6
Benzene		U	2760	µg/kg	1.0		< 1.0	< 1.0	2.3	U/S
Toluene		U	2760	µg/kg	1.0		< 1.0	< 1.0	2.5	U/S
Ethylbenzene		U	2760	µg/kg	1.0		< 1.0	< 1.0	1.2	U/S
m & p-Xylene		U	2760	µg/kg	1.0		< 1.0	< 1.0	2.7	U/S
o-Xylene		U	2760	µg/kg	1.0		< 1.0	< 1.0	6.5	U/S
Naphthalene		U	2800	mg/kg	0.10		< 0.10	< 0.10	0.47	0.20
Acenaphthylene		N	2800	mg/kg	0.10		< 0.10	< 0.10	0.69	< 0.10
Acenaphthene		U	2800	mg/kg	0.10		< 0.10	< 0.10	0.53	< 0.10
Fluorene		U	2800	mg/kg	0.10		< 0.10	< 0.10	1.1	< 0.10
Phenanthrene		U	2800	mg/kg	0.10		< 0.10	< 0.10	10	0.69
Anthracene		U	2800	mg/kg	0.10		< 0.10	< 0.10	2.9	0.12
Fluoranthene		U	2800	mg/kg	0.10		< 0.10	< 0.10	13	0.80
Pyrene		U	2800	mg/kg	0.10		< 0.10	< 0.10	9.8	0.72
Benzo[a]anthracene		U	2800	mg/kg	0.10		< 0.10	< 0.10	6.2	0.64
Chrysene		U	2800	mg/kg	0.10		< 0.10	< 0.10	6.0	0.81
Benzo[b]fluoranthene		U	2800	mg/kg	0.10		< 0.10	< 0.10	7.0	0.74
Benzo[k]fluoranthene		U	2800	mg/kg	0.10		< 0.10	< 0.10	2.8	0.44
Benzo[a]pyrene		U	2800	mg/kg	0.10		< 0.10	< 0.10	5.5	0.64

Results - Soil

Project: G25063 Afan Treatment Works

Client: Jackson Geo Services				**Chemtest Job No.:**		25-21434	25-21434	25-21434	25-21434
Quotation No.: Q25-38258				**Chemtest Sample ID.:**		1992705	1992708	1992710	1992713
Order No.:				*Client Sample Ref.:*		*1*	*3*	*1*	*6*
				Client Sample ID.:		*#51758503499 70001*	*#10006006350 80003*	*#46172990317 50001*	*#07441026655 60006*
				Client Reference:		*TP1*	*TP2*	*TP3*	*WS4*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*0.30*	*1.00*	*0.50*	*0.60*
				Bottom Depth (m):					*1.25*
				Date Sampled:		*26-Jun-2025*	*26-Jun-2025*	*26-Jun-2025*	*27-Jun-2025*
				Time Sampled:		*9:56*	*12:32*	*14:26*	*10:17*
				Asbestos Lab:		NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**				
Indeno(1,2,3-c,d)Pyrene		U	2800	mg/kg	0.10	< 0.10	< 0.10	3.8	0.59
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	< 0.10	< 0.10	1.4	0.34
Benzo[g,h,i]perylene		U	2800	mg/kg	0.10	< 0.10	< 0.10	3.7	0.61
Total Of 16 PAH's		N	2800	mg/kg	2.0	< 2.0	< 2.0	75	7.3
Total Phenols		U	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10

Results - 2 Stage WAC

Project: G25063 Afan Treatment Works

							Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-21434								
Chemtest Sample ID:	1992708								
Sample Ref:	*3*						**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:	*#1000600635080003*								
Client Reference:	*TP2*								
Top Depth(m):	*1.00*								
Bottom Depth(m):									
Sampling Date:	*26-Jun-2025*								
Determinand	**SOP**	**Accred.**	**Units**						
Total Organic Carbon	2625	U	%			0.37	3	5	6
Loss On Ignition	2610	U	%			1.1	--	--	10
Total BTEX	2760	U	mg/kg			< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	U	mg/kg			< 0.05	1	--	--
TPH Total WAC	2670	U	mg/kg			< 10	500	--	--
Total (Of 17) PAH's	2700	N	mg/kg			< 2.0	100	--	--
pH at 20C	2010	U				9.1	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg			0.011	--	To evaluate	To evaluate
Eluate Analysis			**2:1 mg/l**	**8:1 mg/l**	**2:1 mg/kg**	**Cumulative mg/kg 10:1**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic							0.5	2	25
Barium							20	100	300
Cadmium							0.04	1	5
Chromium							0.5	10	70
Copper							2	50	100
Mercury							0.01	0.2	2
Molybdenum							0.5	10	30
Nickel							0.4	10	40
Lead							0.5	10	50
Antimony							0.06	0.7	5
Selenium							0.1	0.5	7
Zinc							4	50	200
Chloride							800	15000	25000
Fluoride							10	150	500
Sulphate							1000	20000	50000
Total Dissolved Solids							4000	60000	100000
Phenol Index							1	-	-
Dissolved Organic Carbon							500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	6.0
WAC Sample Weight	

Leachate Test Information	
Leachant volume 1st extract/l	
Leachant volume 2nd extract/l	
Eluant recovered from 1st extract/l	

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - 2 Stage WAC

Project: G25063 Afan Treatment Works

							Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-21434								
Chemtest Sample ID:	1992713								
Sample Ref:	*6*						**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:	*#0744102665560006*								
Client Reference:	*WS4*								
Top Depth(m):	*0.60*								
Bottom Depth(m):	*1.25*								
Sampling Date:	*27-Jun-2025*								
Determinand	**SOP**	**Accred.**	**Units**						
Total Organic Carbon	2625	U	%			1.6	3	5	6
Loss On Ignition	2610	U	%			3.8	--	--	10
Total BTEX	2760	U	mg/kg			U/S	6	--	--
Total PCBs (7 Congeners)	2815	U	mg/kg			< 0.05	1	--	--
TPH Total WAC	2670	U	mg/kg			< 10	500	--	--
Total (Of 17) PAH's	2700	N	mg/kg			6.3	100	--	--
pH at 20C	2010	U				9.8	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg			0.0060	--	To evaluate	To evaluate
Eluate Analysis			**2:1 mg/l**	**8:1 mg/l**	**2:1 mg/kg**	**Cumulative mg/kg 10:1**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic							0.5	2	25
Barium							20	100	300
Cadmium							0.04	1	5
Chromium							0.5	10	70
Copper							2	50	100
Mercury							0.01	0.2	2
Molybdenum							0.5	10	30
Nickel							0.4	10	40
Lead							0.5	10	50
Antimony							0.06	0.7	5
Selenium							0.1	0.5	7
Zinc							4	50	200
Chloride							800	15000	25000
Fluoride							10	150	500
Sulphate							1000	20000	50000
Total Dissolved Solids							4000	60000	100000
Phenol Index							1	-	-
Dissolved Organic Carbon							500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	8.4
WAC Sample Weight	

Leachate Test Information	
Leachant volume 1st extract/l	
Leachant volume 2nd extract/l	
Eluant recovered from 1st extract/l	

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request.The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Chemtest Sample ID	*Clients Sample Ref:*	*Clients Sample ID:*	*Clients Reference:*	*Sampled Date:*	Deviation Code(s):	Containers Received:
1992713	*6*	*#0744102665560006*	*WS4*	*27-Jun-2025*	E	Amber Glass 250ml
1992713	*6*	*#0744102665560006*	*WS4*	*27-Jun-2025*	E	Amber Glass 60ml
1992713	*6*	*#0744102665560006*	*WS4*	*27-Jun-2025*	E	Plastic Tub 1000g

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
1010	pH Value of Waters	pH at 20°C	pH Meter	
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.	RE PW PL LE DW GW
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.	
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).	RE PW PL SW DW GW
1800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-MS	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GCMS detection	
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.	
2010	pH Value of Soils	pH at 20°C	pH Meter	
2015	Acid Neutralisation Capacity	Acid Reserve	Titration	
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <30°C.	
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES	
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry	
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.	
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.	
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.	
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.	
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID	
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40	Acetone/Heptane extraction / GCxGC FID detection	
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)	

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.	
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection	
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS	
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS. Reported PCB 101 results may contain contributions from PCB 90 due to inseparable chromatography.	
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.	
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	
650	Characterisation of Waste (Leaching C2,C8,C10,WAC)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	

Report Information

Key	
U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection
Text example	All items indicated in italic font represent customer-supplied information that may not be independently verified by the laboratory

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Any comments or interpretations are outside the scope of UKAS accreditation.

The Laboratory is not accredited for any sampling activities and reported results relate to the samples 'as received' at the laboratory.

Uncertainty of measurement for the determinands tested are available upon request .

None of the results in this report have been recovery corrected.

All results are expressed on a dry weight basis.

The following tests were analysed on samples 'as received' and the results subsequently corrected to a dry weight basis EPH, VPH, TPH, BTEX, VOCs, SVOCs, PCBs, Phenols.

For all other tests the samples were dried at ≤ 30°C prior to analysis.

All Asbestos testing is performed at the indicated laboratory .

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1.

NEW_ASB	Eurofins Chemtest Limited, 11 Depot Road, Newmarket, CB8 0AL
DURHAM	Eurofins Chemtest Limited, Unit A North Wing, Prospect Business Park, Crookhall Lane, Consett, Co Durham, DH8 7PW

Sample Deviation Codes

As a result of any of the below deviations applying, the test results may be unreliable

A - Date of sampling not supplied

B - Sample age exceeds stability time (sampling to extraction)

C - Sample not received in appropriate containers

D - Broken Container

E - The required amount of sample for analysis was not received

H - Appropriate cooling measures were not taken for sample transportation

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt.

All water samples will be retained for 14 days from the date of receipt.

Charges may apply to extended sample storage.

Report Information

Water Sample Category Key for Accreditation

DW - Drinking Water
GW - Ground Water
LE - Land Leachate
NA - Not Applicable
PL - Prepared Leachate
PW - Processed Water
RE - Recreational Water
SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

Clean Up Codes

NC - No Clean Up
MC - Mathematical Clean Up
FC - Florisil Clean Up

HWOL Acronym System

HS - Headspace analysis
EH - Extractable hydrocarbons – i.e. everything extracted by the solvent
CU - Clean-up – e.g. by Florisil, silica gel
1D - GC – Single coil gas chromatography
Total - Aliphatics & Aromatics
AL - Aliphatics only
AR - Aromatic only
2D - GC-GC – Double coil gas chromatography
#1 - EH_2D_Total but with humics mathematically subtracted
#2 - EH_2D_Total but with fatty acids mathematically subtracted
+ - Operator to indicate cumulative e.g. EH+EH_Total or EH_CU+HS_Total

Asbestos Tests LOD = LOQ

Limit of Detection = Limit of Quantification for asbestos results only

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	25-22217-1
Initial Date of Issue:	17-Jul-2025
Re-Issue Details:	
Client	*Jackson Geo Services*
Client Address:	*Unit B3 Fram Enterprise Centre* *Parc Busnes Edwards* *Llantrisant* *Pontyclun* *CF72 8QZ*
Contact(s):	*Adam Putt*
Project	*G25063 Afan Treatment Works*
Quotation No.:	
Order No.:	
No. of Samples:	*1*
Turnaround (Wkdays):	5
Date Approved:	17-Jul-2025
Approved By:	
Details:	David Smith, Technical Director

Date Received:	04-Jul-2025
Date Instructed:	04-Jul-2025
Results Due:	10-Jul-2025

For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report

Results - Single Stage WAC

Project: G25063 Afan Treatment Works

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-22217							
Chemtest Sample ID:	1995706							
Sample Ref:								
Sample ID:								
Client Reference:	*WS1*							
Top Depth(m):	*1.50*							
Bottom Depth(m):	*1.60*							
Sampling Date:	*25-Jun-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	0.27	3	5	6
Loss On Ignition	2610		M	%	3.8	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total (Of 17) PAH's	2700		N	mg/kg	15	100	--	--
pH at 20C	2010		M		9.3	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.050	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0031	0.031	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	0.0006	0.0060	0.5	10	70
Copper	1455		U	0.0019	0.019	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0002	0.0023	0.5	10	30
Nickel	1455		U	< 0.0005	< 0.0050	0.4	10	40
Lead	1455		U	0.0024	0.024	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	0.0005	0.0051	0.1	0.5	7
Zinc	1455		U	0.009	0.091	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.17	1.7	10	150	500
Sulphate	1220		U	2.9	29	1000	20000	50000
Total Dissolved Solids	1020		N	41	410	4000	60000	100000
Phenol Index	1920		U	0.29	2.9	1	-	-
Dissolved Organic Carbon	1610		U	3.2	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	7.6
WAC Sample Weight	2000

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity at 25°C and Total Dissolved Solids (TDS) in Waters	Conductivity Meter	
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.	RE PW PL LE DW GW
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).	RE PW PL SW DW GW
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation	PL SW GW
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.	
2010	pH Value of Soils	pH at 20°C	pH Meter	
2015	Acid Neutralisation Capacity	Acid Reserve	Titration	
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <30°C.	
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.	
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID	
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)	
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.	
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS. Reported PCB 101 results may contain contributions from PCB 90 due to inseparable chromatography.	
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	
650	Characterisation of Waste (Leaching C2,C8,C10,WAC)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	

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All results are expressed on a dry weight basis.

The following tests were analysed on samples 'as received' and the results subsequently corrected to a dry weight basis EPH, VPH, TPH, BTEX, VOCs, SVOCs, PCBs, Phenols.

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NEW_ASB	Eurofins Chemtest Limited, 11 Depot Road, Newmarket, CB8 0AL
DURHAM	Eurofins Chemtest Limited, Unit A North Wing, Prospect Business Park, Crookhall Lane, Consett, Co Durham, DH8 7PW

Sample Deviation Codes

As a result of any of the below deviations applying, the test results may be unreliable

A - Date of sampling not supplied

B - Sample age exceeds stability time (sampling to extraction)

C - Sample not received in appropriate containers

D - Broken Container

E - The required amount of sample for analysis was not received

H - Appropriate cooling measures were not taken for sample transportation

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt.

All water samples will be retained for 14 days from the date of receipt.

Charges may apply to extended sample storage.

Report Information

Water Sample Category Key for Accreditation

DW - Drinking Water
GW - Ground Water
LE - Land Leachate
NA - Not Applicable
PL - Prepared Leachate
PW - Processed Water
RE - Recreational Water
SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

Clean Up Codes

NC - No Clean Up
MC - Mathematical Clean Up
FC - Florisil Clean Up

HWOL Acronym System

HS - Headspace analysis
EH - Extractable hydrocarbons – i.e. everything extracted by the solvent
CU - Clean-up – e.g. by Florisil, silica gel
1D - GC – Single coil gas chromatography
Total - Aliphatics & Aromatics
AL - Aliphatics only
AR - Aromatic only
2D - GC-GC – Double coil gas chromatography
#1 - EH_2D_Total but with humics mathematically subtracted
#2 - EH_2D_Total but with fatty acids mathematically subtracted
+ - Operator to indicate cumulative e.g. EH+EH_Total or EH_CU+HS_Total

Asbestos Tests LOD = LOQ

Limit of Detection = Limit of Quantification for asbestos results only

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	25-22281-1
Initial Date of Issue:	16-Jul-2025
Re-Issue Details:	
Client	*Jackson Geo Services*
Client Address:	*Unit B3 Fram Enterprise Centre* *Parc Busnes Edwards* *Llantrisant* *Pontyclun* *CF72 8QZ*
Contact(s):	*Adam Putt*
Project	*G25063 Afan Treatment Works*

Quotation No.:		**Date Received:**	04-Jul-2025
Order No.:		**Date Instructed:**	04-Jul-2025
No. of Samples:	*2*		
Turnaround (Wkdays):	5	**Results Due:**	10-Jul-2025
Date Approved:	16-Jul-2025		

Approved By:



Details: David Smith, Technical Director

For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report

Results - Single Stage WAC

Project: G25063 Afan Treatment Works

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-22281							
Chemtest Sample ID:	1996020							
Sample Ref:								
Sample ID:								
Client Reference:	*TP2*					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Top Depth(m):	*1.00*							
Bottom Depth(m):								
Sampling Date:	*26-Jun-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	0.41	3	5	6
Loss On Ignition	2610		M	%	1.4	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total (Of 17) PAH's	2700		N	mg/kg	< 2.0	100	--	--
pH at 20C	2010		M		8.8	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.034	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0098	0.098	0.5	2	25
Barium	1455		U	0.008	0.084	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	0.0022	0.022	0.5	10	70
Copper	1455		U	0.0015	0.015	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0004	0.0035	0.5	10	30
Nickel	1455		U	< 0.0005	< 0.0050	0.4	10	40
Lead	1455		U	0.0079	0.079	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	0.0011	0.011	0.1	0.5	7
Zinc	1455		U	0.013	0.13	4	50	200
Chloride	1220		U	1.0	10	800	15000	25000
Fluoride	1220		U	0.28	2.8	10	150	500
Sulphate	1220		U	7.8	78	1000	20000	50000
Total Dissolved Solids	1020		N	53	530	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	2.7	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	4.7
WAC Sample Weight	2000

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: G25063 Afan Treatment Works

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-22281							
Chemtest Sample ID:	1996021							
Sample Ref:						**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:								
Client Reference:	*WS4*							
Top Depth(m):	*0.60*							
Bottom Depth(m):	*1.25*							
Sampling Date:	*26-Jun-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	2.5	3	5	6
Loss On Ignition	2610		M	%	8.4	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	150	500	--	--
Total (Of 17) PAH's	2700		N	mg/kg	3.2	100	--	--
pH at 20C	2010		M		8.6	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.027	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0002	0.0024	0.5	2	25
Barium	1455		U	0.32	3.2	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	< 0.0005	< 0.0050	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	< 0.0002	< 0.0020	0.5	10	30
Nickel	1455		U	< 0.0005	< 0.0050	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	0.0039	0.039	0.1	0.5	7
Zinc	1455		U	< 0.003	< 0.025	4	50	200
Chloride	1220		U	17	170	800	15000	25000
Fluoride	1220		U	0.19	1.9	10	150	500
Sulphate	1220		U	19	190	1000	20000	50000
Total Dissolved Solids	1020		N	120	1200	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	< 2.5	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	3.8
WAC Sample Weight	2000

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity at 25°C and Total Dissolved Solids (TDS) in Waters	Conductivity Meter	
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.	RE PW PL LE DW GW
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).	RE PW PL SW DW GW
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation	PL SW GW
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.	
2010	pH Value of Soils	pH at 20°C	pH Meter	
2015	Acid Neutralisation Capacity	Acid Reserve	Titration	
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <30°C.	
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.	
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID	
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)	
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.	
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS. Reported PCB 101 results may contain contributions from PCB 90 due to inseparable chromatography.	
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	
650	Characterisation of Waste (Leaching C2,C8,C10,WAC)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	

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The following tests were analysed on samples 'as received' and the results subsequently corrected to a dry weight basis EPH, VPH, TPH, BTEX, VOCs, SVOCs, PCBs, Phenols.

For all other tests the samples were dried at ≤ 30°C prior to analysis.

All Asbestos testing is performed at the indicated laboratory .

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1.

NEW_ASB	Eurofins Chemtest Limited, 11 Depot Road, Newmarket, CB8 0AL
DURHAM	Eurofins Chemtest Limited, Unit A North Wing, Prospect Business Park, Crookhall Lane, Consett, Co Durham, DH8 7PW

Sample Deviation Codes

As a result of any of the below deviations applying, the test results may be unreliable

A - Date of sampling not supplied

B - Sample age exceeds stability time (sampling to extraction)

C - Sample not received in appropriate containers

D - Broken Container

E - The required amount of sample for analysis was not received

H - Appropriate cooling measures were not taken for sample transportation

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt.

All water samples will be retained for 14 days from the date of receipt.

Charges may apply to extended sample storage.

Report Information

Water Sample Category Key for Accreditation

DW - Drinking Water
GW - Ground Water
LE - Land Leachate
NA - Not Applicable
PL - Prepared Leachate
PW - Processed Water
RE - Recreational Water
SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

Clean Up Codes

NC - No Clean Up
MC - Mathematical Clean Up
FC - Florisil Clean Up

HWOL Acronym System

HS - Headspace analysis
EH - Extractable hydrocarbons – i.e. everything extracted by the solvent
CU - Clean-up – e.g. by Florisil, silica gel
1D - GC – Single coil gas chromatography
Total - Aliphatics & Aromatics
AL - Aliphatics only
AR - Aromatic only
2D - GC-GC – Double coil gas chromatography
#1 - EH_2D_Total but with humics mathematically subtracted
#2 - EH_2D_Total but with fatty acids mathematically subtracted
+ - Operator to indicate cumulative e.g. EH+EH_Total or EH_CU+HS_Total

Asbestos Tests LOD = LOQ

Limit of Detection = Limit of Quantification for asbestos results only

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	25-22491-1
Initial Date of Issue:	20-Jul-2025
Re-Issue Details:	
Client	*Jackson Geo Services*
Client Address:	*Unit B3 Fram Enterprise Centre* *Parc Busnes Edwards* *Llantrisant* *Pontyclun* *CF72 8QZ*
Contact(s):	*Adam Putt*
Project	*G25022 Afan Cake Storage*
Quotation No.:	*Q22-29781*
Order No.:	
No. of Samples:	*5*
Turnaround (Wkdays):	6
Date Approved:	20-Jul-2025
Approved By:	



Date Received:	08-Jul-2025
Date Instructed:	08-Jul-2025
Results Due:	15-Jul-2025

Details: David Smith, Technical Director

For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report

Results - Soil

Project: G25022 Afan Cake Storage

Client: Jackson Geo Services				**Chemtest Job No.:**		25-22491	25-22491	25-22491	25-22491	25-22491
Quotation No.: Q22-29781				**Chemtest Sample ID.:**		1996922	1996923	1996924	1996925	1996926
Order No.:				*Client Sample Ref.:*		*3*	*3*	*2*	*2*	*3*
				Client Sample ID.:		*#42829201799 00003*	*#02538658124 30003*	*#07441026655 60002*	*#43185127218 50002*	
				Client Reference:		*WS1*	*WS3*	*WS4*	*WS5*	*WS3*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*2.00*	*1.20*	*0.20*	*0.30*	*4.00*
				Bottom Depth (m):		*2.45*	*1.65*	*0.40*	*0.50*	*4.45*
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**					
Moisture		N	2030	%	0.020	5.3	4.7	3.7	5.1	6.8
Soil Colour		N	2030		N/A	Brown	Brown	Brown	Brown	Brown
Other Material		N	2030		N/A	Stones	Stones	Stones and Roots	Stones and Roots	Stones
Soil Texture		N	2030		N/A	Sand	Sand	Sand	Sand	Sand
pH (2.5:1) at 20C		N	2010		4.0	8.1	8.7	9.5	9.7	9.0
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010	0.051	0.017	0.11	0.52	0.027
Total Sulphur		U	2175	%	0.010	0.020	0.030	0.13	0.28	0.020
Sulphate (Acid Soluble)		U	2430	%	0.010	0.014	0.011	0.012	0.16	< 0.010

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request.The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Chemtest Sample ID	*Clients Sample Ref:*	*Clients Sample ID:*	*Clients Reference:*	*Sampled Date:*	Deviation Code(s):	Containers Received:
1996922	*3*	*#4282920179900003*	*WS1*		A	Plastic Tub 1000g
1996923	*3*	*#0253865812430003*	*WS3*		A	Plastic Tub 1000g
1996924	*2*	*#0744102665560002*	*WS4*		A	Plastic Tub 1000g
1996925	*2*	*#4318512721850002*	*WS5*		A	Plastic Tub 1000g
1996926	*3*		*WS3*		A	Plastic Tub 1000g

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
2010	pH Value of Soils	pH at 20°C	pH Meter	
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <30°C.	
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES	
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.	

Report Information

Key	
U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection
Text example	All items indicated in italic font represent customer-supplied information that may not be independently verified by the laboratory

This report shall not be reproduced except in full, and only with the prior approval of the laboratory.

Any comments or interpretations are outside the scope of UKAS accreditation.

The Laboratory is not accredited for any sampling activities and reported results relate to the samples 'as received' at the laboratory.

Uncertainty of measurement for the determinands tested are available upon request .

None of the results in this report have been recovery corrected.

All results are expressed on a dry weight basis.

The following tests were analysed on samples 'as received' and the results subsequently corrected to a dry weight basis EPH, VPH, TPH, BTEX, VOCs, SVOCs, PCBs, Phenols.

For all other tests the samples were dried at ≤ 30°C prior to analysis.

All Asbestos testing is performed at the indicated laboratory .

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1.

NEW_ASB	Eurofins Chemtest Limited, 11 Depot Road, Newmarket, CB8 0AL
DURHAM	Eurofins Chemtest Limited, Unit A North Wing, Prospect Business Park, Crookhall Lane, Consett, Co Durham, DH8 7PW

Sample Deviation Codes

As a result of any of the below deviations applying, the test results may be unreliable

A - Date of sampling not supplied

B - Sample age exceeds stability time (sampling to extraction)

C - Sample not received in appropriate containers

D - Broken Container

E - The required amount of sample for analysis was not received

H - Appropriate cooling measures were not taken for sample transportation

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt.

All water samples will be retained for 14 days from the date of receipt.

Charges may apply to extended sample storage.

Report Information

Water Sample Category Key for Accreditation

DW - Drinking Water
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LE - Land Leachate
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UL - Unspecified Liquid

Clean Up Codes

NC - No Clean Up
MC - Mathematical Clean Up
FC - Florisil Clean Up

HWOL Acronym System

HS - Headspace analysis
EH - Extractable hydrocarbons – i.e. everything extracted by the solvent
CU - Clean-up – e.g. by Florisil, silica gel
1D - GC – Single coil gas chromatography
Total - Aliphatics & Aromatics
AL - Aliphatics only
AR - Aromatic only
2D - GC-GC – Double coil gas chromatography
#1 - EH_2D_Total but with humics mathematically subtracted
#2 - EH_2D_Total but with fatty acids mathematically subtracted
+ - Operator to indicate cumulative e.g. EH+EH_Total or EH_CU+HS_Total

Asbestos Tests LOD = LOQ

Limit of Detection = Limit of Quantification for asbestos results only

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Appendix VI

Waste Classification Report

HazWasteOnline Classification Report FITXT-NTFU8-IMIP2

JACKSON GEO SERVICES

Waste Classification Report

HazWasteOnline™ classifies waste as either **hazardous** or **non-hazardous** based on its chemical composition, related legislation and the rules and data defined in the current UK or EU technical guidance (Appendix C) (note that HP 9 Infectious is not assessed). It is the responsibility of the classifier named below to:

a) understand the origin of the waste
b) select the correct List of Waste code(s)
c) confirm that the list of determinands, results and sampling plan are fit for purpose
d) select and justify the chosen metal species (Appendix B)
e) correctly apply moisture correction and other available corrections
f) add the meta data for their user-defined substances (Appendix A)
g) check that the classification engine is suitable with respect to the national destination of the waste (Appendix C)

To aid the reviewer, the laboratory results, assumptions and justifications managed by the classifier are highlighted in pale yellow.

FITXT-NTFU8-IMIP2

Report is invalid if pages are removed.

Job name

Afan Waste Water Treatment Works

Description/Comments

Project

G25063

Site

Afan Waste Water Treatment Works

Classified by

Name:
Adam Putt
Date:
29 Jul 2025 20:09 GMT
Telephone:
07935861880

Company:
Jackson Geo Services
Unit B3 Fram Enterprise Centre Parc
Busnes Edwards
Pontyclun
CF728QZ

HazWasteOnline™ provides a two day, hazardous waste classification course that covers the use of the software and both basic and advanced waste classification techniques. Certification has to be renewed every 3 years.

HazWasteOnline™ Certification: CERTIFIED

Course	Date
Hazardous Waste Classification	04 Feb 2021
Most recent 3 year Refresher	06 Feb 2024

Next 3 year Refresher due by Feb 2027

Purpose of classification

2 - Material Characterisation

Address of the waste

Afan Water Treatment Works, Port Talbot **Post Code** SA13 1RB

SIC for the process giving rise to the waste

Description of industry/producer giving rise to the waste

Water Industry

Description of the specific process, sub-process and/or activity that created the waste

Infrastructure Development

Description of the waste

New Filter Cake Storage Facility

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	#4282920179900006-25/06/2025-1.50	1.50-1.60	Non Hazardous		3
2	#0109774894810001-25/06/2025-0.30	0.30	Non Hazardous		6
3	#1000600635080003-26/06/2025-1.00	1.00	Non Hazardous		9
4	#0744102665560006-27/06/2025-0.60	0.60-1.25	Non Hazardous		12

Related documents

#	Name	Description
1	HWOL_25-21266-20250729 141012.hwol	Eurofins Chemtest .hwol file used to populate the Job
2	JGS waste stream assessment for soils	waste stream template used to create this Job

Report

Created by: Adam Putt

Created date: 29 Jul 2025 20:09 GMT

Appendices	Page
Appendix A: Classifier defined and non GB MCL determinands	15
Appendix B: Rationale for selection of metal species	16
Appendix C: Version	17

Classification of sample: #4282920179900006-25/06/2025-1.50

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
#4282920179900006-25/06/2025-1.50
Sample Depth:
1.50-1.60 m
Moisture content:
4.4%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 4.4% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		8.6	mg/kg	1.32	10.855	mg/kg	0.00109 %	✓	
2	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		<0.5	mg/kg	2.775	<1.388	mg/kg	<0.000139 %		<LOD
3	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		<0.4	mg/kg	3.22	<1.288	mg/kg	<0.000129 %		<LOD
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1	mg/kg	1.142	<0.114	mg/kg	<0.0000114 %		<LOD
5	chromium in Cr(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		4.5	mg/kg	1.462	6.288	mg/kg	0.000629 %	✓	
6	chromium in Cr(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<0.5	mg/kg	2.27	<1.135	mg/kg	<0.000113 %		<LOD
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		4.9	mg/kg	1.126	5.274	mg/kg	0.000527 %	✓	
8	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	9.6	mg/kg		9.178	mg/kg	0.000918 %	✓	
9	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.05	mg/kg	1.353	<0.0677	mg/kg	<0.00000677 %		<LOD
10	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		6.8	mg/kg	2.637	17.141	mg/kg	0.00171 %	✓	
11	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<0.25	mg/kg	2.554	<0.638	mg/kg	<0.0000638 %		<LOD
12	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		46	mg/kg	2.469	108.59	mg/kg	0.0109 %	✓	
13	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
14	benzene	601-020-00-8	200-753-7	71-43-2		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
15		toluene	601-021-00-3	203-625-9	108-88-3		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
16		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
17		xylene	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		<LOD
18		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		<LOD
19		pH			PH		8.6	pH		8.6	pH	8.6 pH		
20		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
21		acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
22		acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
23		fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
24		phenanthrene		201-581-5	85-01-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
25		anthracene		204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
26		fluoranthene		205-912-4	206-44-0		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
27		pyrene		204-927-3	129-00-0		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
28		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
29		chrysene	601-048-00-0	205-923-4	218-01-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
30		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
31		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
32		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
33		indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
34		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
35		benzo[ghi]perylene		205-883-8	191-24-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
36		vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		16	mg/kg	1.785	27.306	mg/kg	0.00273 %	✓	
37		monohydric phenols			P1186		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
											Total:	0.0185 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: #0109774894810001-25/06/2025-0.30

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
#0109774894810001-25/06/2025-0.30
Sample Depth:
0.30 m
Moisture content:
3.9%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 3.9% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		1.9 mg/kg	1.32	2.411 mg/kg	0.000241 %	✓	
2	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		3.2 mg/kg	2.775	8.535 mg/kg	0.000853 %	✓	
3	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		2.1 mg/kg	3.22	6.498 mg/kg	0.00065 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.22 mg/kg	1.142	0.242 mg/kg	0.0000242 %	✓	
5	chromium in Cr(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		17 mg/kg	1.462	23.877 mg/kg	0.00239 %	✓	
6	chromium in Cr(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<0.5 mg/kg	2.27	<1.135 mg/kg	<0.000113 %		<LOD
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		10 mg/kg	1.126	10.82 mg/kg	0.00108 %	✓	
8	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	14 mg/kg		13.454 mg/kg	0.00135 %	✓	
9	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.11 mg/kg	1.353	0.143 mg/kg	0.0000143 %	✓	
10	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		14 mg/kg	2.637	35.474 mg/kg	0.00355 %	✓	
11	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		1.1 mg/kg	2.554	2.7 mg/kg	0.00027 %	✓	
12	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		100 mg/kg	2.469	237.299 mg/kg	0.0237 %	✓	
13	TPH (C6 to C40) petroleum group			TPH		<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
14	benzene	601-020-00-8	200-753-7	71-43-2		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
15		toluene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
16		ethylbenzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
17		xylene				<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		<**LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
18		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		<**LOD**
		006-007-00-5											
19		pH				9.2	pH		9.2	pH	9.2 pH		
				PH									
20		naphthalene				0.14	mg/kg		0.135	mg/kg	0.0000135 %	✓	
		601-052-00-2	202-049-5	91-20-3									
21		acenaphthylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			205-917-1	208-96-8									
22		acenaphthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			201-469-6	83-32-9									
23		fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			201-695-5	86-73-7									
24		phenanthrene				0.23	mg/kg		0.221	mg/kg	0.0000221 %	✓	
			201-581-5	85-01-8									
25		anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			204-371-1	120-12-7									
26		fluoranthene				0.35	mg/kg		0.336	mg/kg	0.0000336 %	✓	
			205-912-4	206-44-0									
27		pyrene				0.31	mg/kg		0.298	mg/kg	0.0000298 %	✓	
			204-927-3	129-00-0									
28		benzo[a]anthracene				0.23	mg/kg		0.221	mg/kg	0.0000221 %	✓	
		601-033-00-9	200-280-6	56-55-3									
29		chrysene				0.24	mg/kg		0.231	mg/kg	0.0000231 %	✓	
		601-048-00-0	205-923-4	218-01-9									
30		benzo[b]fluoranthene				0.42	mg/kg		0.404	mg/kg	0.0000404 %	✓	
		601-034-00-4	205-911-9	205-99-2									
31		benzo[k]fluoranthene				0.19	mg/kg		0.183	mg/kg	0.0000183 %	✓	
		601-036-00-5	205-916-6	207-08-9									
32		benzo[a]pyrene; benzo[def]chrysene				0.3	mg/kg		0.288	mg/kg	0.0000288 %	✓	
		601-032-00-3	200-028-5	50-32-8									
33		indeno[123-cd]pyrene				0.21	mg/kg		0.202	mg/kg	0.0000202 %	✓	
			205-893-2	193-39-5									
34		dibenz[a,h]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
35		benzo[ghi]perylene				0.2	mg/kg		0.192	mg/kg	0.0000192 %	✓	
			205-883-8	191-24-2									
36		vanadium { divanadium pentaoxide; vanadium pentoxide }				21	mg/kg	1.785	36.027	mg/kg	0.0036 %	✓	
		023-001-00-8	215-239-8	1314-62-1									
37		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
				P1186									
										Total:	0.038 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: #1000600635080003-26/06/2025-1.00

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
#1000600635080003-26/06/2025-1.00
Sample Depth:
1.00 m
Moisture content:
0.5%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0.5% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		9.6	mg/kg	1.32	12.612	mg/kg	0.00126 %	✓	
2	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		<0.5	mg/kg	2.775	<1.388	mg/kg	<0.000139 %		<LOD
3	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		0.55	mg/kg	3.22	1.762	mg/kg	0.000176 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.28	mg/kg	1.142	0.318	mg/kg	0.0000318 %	✓	
5	chromium in Cr(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		24	mg/kg	1.462	34.902	mg/kg	0.00349 %	✓	
6	chromium in Cr(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<0.5	mg/kg	2.27	<1.135	mg/kg	<0.000113 %		<LOD
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		11	mg/kg	1.126	12.323	mg/kg	0.00123 %	✓	
8	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	48	mg/kg		47.76	mg/kg	0.00478 %	✓	
9	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.05	mg/kg	1.353	<0.0677	mg/kg	<0.00000677 %		<LOD
10	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		7.6	mg/kg	2.637	19.939	mg/kg	0.00199 %	✓	
11	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		0.26	mg/kg	2.554	0.661	mg/kg	0.0000661 %	✓	
12	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		120	mg/kg	2.469	294.834	mg/kg	0.0295 %	✓	
13	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
14	benzene	601-020-00-8	200-753-7	71-43-2		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
15		toluene	601-021-00-3	203-625-9	108-88-3		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
16		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
17		xylene	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		<LOD
18		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		<LOD
19		pH			PH		9.1	pH		9.1	pH	9.1 pH		
20		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
21		acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
22		acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
23		fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
24		phenanthrene		201-581-5	85-01-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
25		anthracene		204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
26		fluoranthene		205-912-4	206-44-0		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
27		pyrene		204-927-3	129-00-0		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
28		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
29		chrysene	601-048-00-0	205-923-4	218-01-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
30		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
31		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
32		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
33		indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
34		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
35		benzo[ghi]perylene		205-883-8	191-24-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
36		vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		28	mg/kg	1.785	49.735	mg/kg	0.00497 %	✓	
37		monohydric phenols			P1186		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
											Total:	0.0475 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: #0744102665560006-27/06/2025-0.60

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
#0744102665560006-27/06/2025-0.60
Sample Depth:
0.60-1.25 m
Moisture content:
6.6%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 6.6% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		5.4 mg/kg	1.32	6.659 mg/kg	0.000666 %	✓	
2	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		2.5 mg/kg	2.775	6.48 mg/kg	0.000648 %	✓	
3	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		1.5 mg/kg	3.22	4.511 mg/kg	0.000451 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1 mg/kg	1.142	<0.114 mg/kg	<0.0000114 %		<**LOD**
5	chromium in Cr(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		39 mg/kg	1.462	53.239 mg/kg	0.00532 %	✓	
6	chromium in Cr(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<0.5 mg/kg	2.27	<1.135 mg/kg	<0.000113 %		<**LOD**
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		12 mg/kg	1.126	12.619 mg/kg	0.00126 %	✓	
8	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	22 mg/kg		20.548 mg/kg	0.00205 %	✓	
9	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.05 mg/kg	1.353	<0.0677 mg/kg	<0.00000677 %		<**LOD**
10	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		4 mg/kg	2.637	9.851 mg/kg	0.000985 %	✓	
11	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		0.31 mg/kg	2.554	0.739 mg/kg	0.0000739 %	✓	
12	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		74 mg/kg	2.469	170.668 mg/kg	0.0171 %	✓	
13	TPH (C6 to C40) petroleum group			TPH		180 mg/kg		168.12 mg/kg	0.0168 %	✓	
14	confirm TPH has NOT arisen from diesel or petrol					☑					

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
15		xylene				<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
16		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		<LOD
		006-007-00-5											
17		pH				9.8	pH		9.8	pH	9.8 pH		
				PH									
18		naphthalene				0.2	mg/kg		0.187	mg/kg	0.0000187 %	✓	
		601-052-00-2	202-049-5	91-20-3									
19		acenaphthylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-917-1	208-96-8									
20		acenaphthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-469-6	83-32-9									
21		fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-695-5	86-73-7									
22		phenanthrene				0.69	mg/kg		0.644	mg/kg	0.0000644 %	✓	
			201-581-5	85-01-8									
23		anthracene				0.12	mg/kg		0.112	mg/kg	0.0000112 %	✓	
			204-371-1	120-12-7									
24		fluoranthene				0.8	mg/kg		0.747	mg/kg	0.0000747 %	✓	
			205-912-4	206-44-0									
25		pyrene				0.72	mg/kg		0.672	mg/kg	0.0000672 %	✓	
			204-927-3	129-00-0									
26		benzo[a]anthracene				0.64	mg/kg		0.598	mg/kg	0.0000598 %	✓	
		601-033-00-9	200-280-6	56-55-3									
27		chrysene				0.81	mg/kg		0.757	mg/kg	0.0000757 %	✓	
		601-048-00-0	205-923-4	218-01-9									
28		benzo[b]fluoranthene				0.74	mg/kg		0.691	mg/kg	0.0000691 %	✓	
		601-034-00-4	205-911-9	205-99-2									
29		benzo[k]fluoranthene				0.44	mg/kg		0.411	mg/kg	0.0000411 %	✓	
		601-036-00-5	205-916-6	207-08-9									
30		benzo[a]pyrene; benzo[def]chrysene				0.64	mg/kg		0.598	mg/kg	0.0000598 %	✓	
		601-032-00-3	200-028-5	50-32-8									
31		indeno[123-cd]pyrene				0.59	mg/kg		0.551	mg/kg	0.0000551 %	✓	
			205-893-2	193-39-5									
32		dibenz[a,h]anthracene				0.34	mg/kg		0.318	mg/kg	0.0000318 %	✓	
		601-041-00-2	200-181-8	53-70-3									
33		benzo[ghi]perylene				0.61	mg/kg		0.57	mg/kg	0.000057 %	✓	
			205-883-8	191-24-2									
34		vanadium { divanadium pentaoxide; vanadium pentoxide }				50	mg/kg	1.785	83.368	mg/kg	0.00834 %	✓	
		023-001-00-8	215-239-8	1314-62-1									
35		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
				P1186									
										Total:	0.0544 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous Property to non-hazardous for cumulative determinand results below the threshold of: 1000 mg/kg (0.1%) because: No free product observed. Not lower carbon fractions.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group (conc.: 0.0168%)

Appendix A: Classifier defined and non GB MCL determinands

chromium(III) oxide (worst case) (EC Number: 215-160-9, CAS Number: 1308-38-9)

Description/Comments: Data from C&L Inventory Database
Data source: https://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/33806
Data source date: 17 Jul 2015
Hazard Statements: Acute Tox. 4; H332 , Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Resp. Sens. 1; H334 , Skin Sens. 1; H317 , Repr. 1B; H360FD , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

lead compounds with the exception of those specified elsewhere in this Annex (worst case)

GB MCL index number: 082-001-00-6
Description/Comments: Worst Case: IARC considers lead compounds Group 2A; Probably carcinogenic to humans; Lead REACH Consortium, following MCL protocols, considers lead compounds from smelting industries, flue dust and similar to be Carcinogenic category 1A
Additional Hazard Statement(s): Carc. 1A; H350
Reason for additional Hazards Statement(s):
20 Nov 2021 - Carc. 1A; H350 hazard statement sourced from: IARC Group 2A (Sup 7, 87) 2006; Lead REACH Consortium www.reach-lead.eu/substanceinformation.html (worst case lead compounds). Review date 29/09/2015

TPH (C6 to C40) petroleum group (CAS Number: TPH)

Description/Comments: Unknown Oil

Hazard statements taken from WM3 1st Edition 2015
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: Flam. Liq. 3; H226 , Asp. Tox. 1; H304 , STOT RE 2; H373 , Muta. 1B; H340 , Carc. 1B; H350 , Repr. 2; H361d , Aquatic Chronic 2; H411

ethylbenzene (EC Number: 202-849-4, CAS Number: 100-41-4)

GB MCL index number: 601-023-00-4
Description/Comments:
Additional Hazard Statement(s): Carc. 2; H351
Reason for additional Hazards Statement(s):
20 Nov 2021 - Carc. 2; H351 hazard statement sourced from: IARC Group 2B (77) 2000

salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex

GB MCL index number: 006-007-00-5
Description/Comments: Conversion factor based on a worst case compound: sodium cyanide
Additional Hazard Statement(s): EUH032 >= 0.2 %
Reason for additional Hazards Statement(s):
20 Nov 2021 - EUH032 >= 0.2 % hazard statement sourced from: WM3, Table C12.2

pH (CAS Number: PH)

Description/Comments: Appendix C4
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: None.

acenaphthylene (EC Number: 205-917-1, CAS Number: 208-96-8)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Acute Tox. 4; H302 , Acute Tox. 1; H330 , Acute Tox. 1; H310 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315

acenaphthene (EC Number: 201-469-6, CAS Number: 83-32-9)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Aquatic Chronic 2; H411

fluorene (EC Number: 201-695-5, CAS Number: 86-73-7)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **phenanthrene** (EC Number: 201-581-5, CAS Number: 85-01-8)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Carc. 2; H351 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Skin Irrit. 2; H315

- **anthracene** (EC Number: 204-371-1, CAS Number: 120-12-7)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **fluoranthene** (EC Number: 205-912-4, CAS Number: 206-44-0)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21 Aug 2015
Hazard Statements: Acute Tox. 4; H302 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **pyrene** (EC Number: 204-927-3, CAS Number: 129-00-0)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 2014
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21 Aug 2015
Hazard Statements: Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **indeno[123-cd]pyrene** (EC Number: 205-893-2, CAS Number: 193-39-5)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Carc. 2; H351

- **benzo[ghi]perylene** (EC Number: 205-883-8, CAS Number: 191-24-2)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 28/02/2015
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 23 Jul 2015
Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **monohydric phenols** (CAS Number: P1186)

Description/Comments: Combined hazards statements from harmonised entries in CLP for phenol, cresols and xylenols (604-001-00-2, 604-004-00-9, 604-006-00-X)
Data source: CLP combined data
Data source date: 26 Mar 2019
Hazard Statements: Muta. 2; H341 , Acute Tox. 3; H331 , Acute Tox. 3; H311 , Acute Tox. 3; H301 , STOT RE 2; H373 , Skin Corr. 1B; H314 , Skin Corr. 1B; H314 >= 3 % , Skin Irrit. 2; H315 1 <= conc. < 3 % , Eye Irrit. 2; H319 1 <= conc. < 3 % , Aquatic Chronic 2; H411

- **confirm TPH has NOT arisen from diesel or petrol**

Description/Comments: Chapter 3, section 4b requires a positive confirmation for benzo[a]pyrene to be used as a marker in evaluating Carc. 1B; H350 (HP 7) and Muta. 1B; H340 (HP 11)
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: None.

Appendix B: Rationale for selection of metal species

arsenic {arsenic trioxide}

Reasonable case CLP species based on hazard statements/molecular weight and most common (stable) oxide of arsenic. Industrial sources include: smelting; main precursor to other arsenic compounds

beryllium {beryllium oxide}

Reasonable case CLP species based on hazard statements/molecular weight. Industrial sources include: most common (non alloy) form, used in ceramics

boron {diboron trioxide}

Reasonable case CLP species based on hazard statements/ molecular weight, physical form and low solubility. Industrial sources include: fluxing agent for glass/enamels; additive for fibre optics, borosilicate glass

cadmium {cadmium oxide}

Reasonable case CLP species based on hazard statements/molecular weight, very low solubility in water. Industrial sources include: electroplating baths, electrodes for storage batteries, catalysts, ceramic glazes, phosphors, pigments and nematocides. Worst case

compounds in CLP: cadmium sulphate, chloride, fluoride & iodide not expected as either very soluble and/or compound's industrial usage not related to site history

chromium in Cr(III) compounds {chromium(III) oxide (worst case)}

Reasonable case species based on hazard statements/molecular weight. Industrial sources include: tanning, pigment in paint, inks and glass

chromium in Cr(VI) compounds {chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex}

Worst case species based on hazard statements/molecular weight

copper {dicopper oxide; copper (I) oxide}

Reasonable case CLP species based on hazard statements/molecular weight and insolubility in water. Industrial sources include: oxidised copper metal, brake pads, pigments, antifouling paints, fungicide. Worse case copper sulphate is very soluble and likely to have been leached away if ever present and/or not enough soluble sulphate detected.

lead {lead compounds with the exception of those specified elsewhere in this Annex (worst case)}

Worst case based on absence of chromium VI

mercury {mercury dichloride}

Worst case CLP species based on hazard statements/molecular weight

nickel {nickel sulfate}

Worst case based on absence of chromium VI

selenium {nickel selenate}

Worst case CLP species based on hazard statements/molecular weight

zinc {zinc sulphate}

Worst case based on absence of chromium VI

cyanides {salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex}

Harmonised group entry used as most reasonable case as complex cyanides and those specified elsewhere in the annex are not likely to be present in this soil: [Note conversion factor based on a worst case compound: sodium cyanide] (edit as required)

vanadium {divanadium pentaoxide; vanadium pentoxide}

Most likely species

Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition v1.2.GB - Oct 2021
HazWasteOnline Classification Engine Version: 2025.206.6723.12195 (27 Jul 2025)
HazWasteOnline Database: 2025.206.6723.12195 (27 Jul 2025)

This classification utilises the following guidance and legislation:
WM3 v1.2.GB - Waste Classification - 1st Edition v1.2.GB - Oct 2021
CLP Regulation - Regulation 1272/2008/EC of 16 December 2008
1st ATP - Regulation 790/2009/EC of 10 August 2009
2nd ATP - Regulation 286/2011/EC of 10 March 2011
3rd ATP - Regulation 618/2012/EU of 10 July 2012
4th ATP - Regulation 487/2013/EU of 8 May 2013
Correction to 1st ATP - Regulation 758/2013/EU of 7 August 2013
5th ATP - Regulation 944/2013/EU of 2 October 2013
6th ATP - Regulation 605/2014/EU of 5 June 2014
WFD Annex III replacement - Regulation 1357/2014/EU of 18 December 2014
Revised List of Waste 2014 - Decision 2014/955/EU of 18 December 2014
7th ATP - Regulation 2015/1221/EU of 24 July 2015
8th ATP - Regulation (EU) 2016/918 of 19 May 2016
9th ATP - Regulation (EU) 2016/1179 of 19 July 2016
10th ATP - Regulation (EU) 2017/776 of 4 May 2017
HP14 amendment - Regulation (EU) 2017/997 of 8 June 2017
13th ATP - Regulation (EU) 2018/1480 of 4 October 2018
14th ATP - Regulation (EU) 2020/217 of 4 October 2019
15th ATP - Regulation (EU) 2020/1182 of 19 May 2020
The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use)(Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1567 of 16th December 2020
The Waste and Environmental Permitting etc. (Legislative Functions and Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1540 of 16th December 2020
GB MCL List - version 1.1 of 09 June 2021
GB MCL List v2.0 - version 2.0 of 20th October 2023
GB MCL List v3.0 - version 3.0 of 11th January 2024
GB MCL List v4.0 - version 4.0 of 2nd March 2024
GB MCL List v5.0 - version 5.0 of 26th June 2024
GB MCL List v6.0 - version 6.0 of 15th February 2025