BakerHicks.
One Warwick Technology Park
Gallows Hill
Warwick, CV34 6YL

T. (0)1926 567800

bakerhicks.com

GROUND INVESTIGATION REPORT: MARGAM SUBSTATION

Margam Connection

LAING O'ROURKE REFERENCE: **MARPT-BHK-01-XX-RP-G-090001**

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1. Information

1.1. Scope and Objectives of the Report

This Ground Investigation Report (GIR) summarises data from a recent Ground Investigation (GI) carried out at the proposed Margam Substation site between 23rd July and 20th September 2024. This report has been written based on the Geotechnics final factual report (Ref [1]). The interpretation outlined in this report will assist with the detailed design phase of this project.

This report was originally issued by BakerHicks to the Client in January and February 2025, when the proposals at that time comprised two options for the location of the substation. Revision P03 of this report acknowledges the finalisation of the site location. It is understood that this report is to be submitted in support of a future Planning Application.

This report is an Interpretative Ground Investigation Report (GIR) and generally follows the requirements of BS EN 1997 – Eurocode 7 (Ref. [2], [3]) and BS 10175:2011+A2:2017 – Investigation of Potentially Contaminated Sites (Ref [4]).

Existing geotechnical and land quality data for the scheme is summarised in Section 2 of this report using freely available online information and the previously completed Geotechnical Desk Study (Ref. [5]) which included a review of an Envirocheck Report (Ref. [6]) for the project.

This report is intended to:

- Present appropriate geotechnical information, geological features and other relevant data;
- Present an evaluation of the information, and stating assumptions made in the interpretation of the data;
- State known limitations of the results, as appropriate;
- Present design values and recommendations in terms of foundations, excavations, and pavements and the management of site won materials;
- Provide a geo-environmental screen of the site; and
- Present a geotechnical risk register for the proposed works.

This report considers the proposed Margam Substation only. The proposed high voltage underground cable route and Port Talbot Substation are covered in separate reports.

1.2. Summary of Proposed Works

The site is proposed to be developed into a National Grid Electricity Transmission (NGET) substation. A summary of the proposed works for this project are expected to comprise construction of the following components:

- GIS Hall;
- Overhead Line Gantries;
- MSCDN Compound;
- Busbars connecting existing;
- Amenity Building;
- Flood wall;
- Fencing;
- Drainage and attenuation pond; and
- Pavement areas and walkways.

The proposed site plan is shown on the Margam GIS Hall – Proposed Site Plan drawing (ref: MARPT-BHK-01-ZZ-DG-A-130023 Rev P05, dated July 2025), a copy of which is included in Appendix E.

1.3. Site Location and Description

The proposed Margam Substation (hereby referred to as “the site”) is approximately 1.65 ha in size and is located in the Port Talbot suburb of Margam in the Welsh county borough of Neath Port Talbot, South Wales. The National Grid Reference for the centre of the site is SS 78580 86373. A site location plan is included as Figure 1.1 and the full red line site boundary is shown as Figure 1.2.

The site currently comprises undeveloped low-lying marshland and woodland with multiple small ditches which discharge into the Upper Mother Ditch. The existing Margam substation is immediately adjacent on the western boundary of the site. The existing TATA steel plant is present to the west of the site, beyond the Great Western Main Line, which runs beyond the western extent of the site, running in an approximate north south orientation.

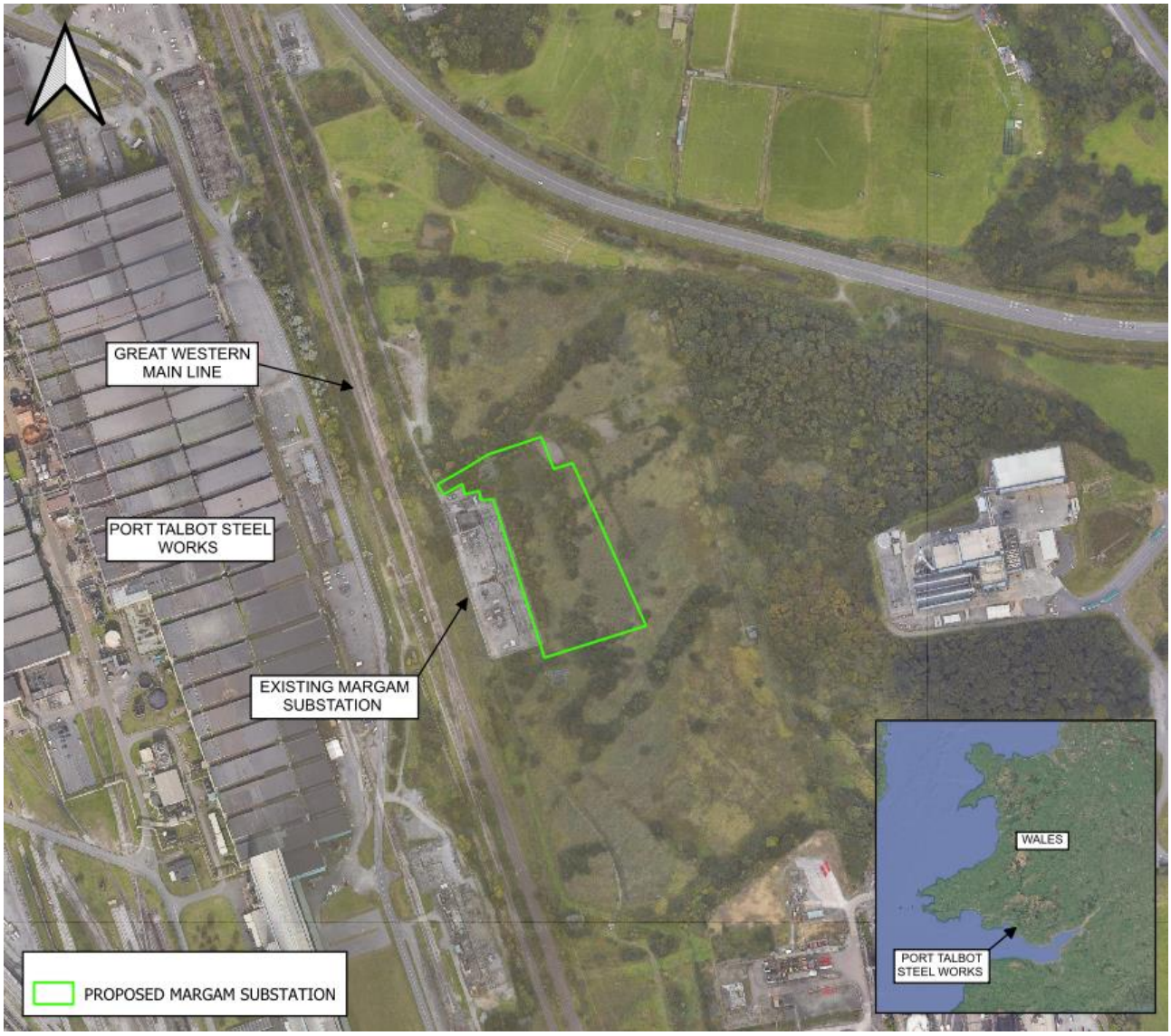


Figure 1.1 Site Location Plan

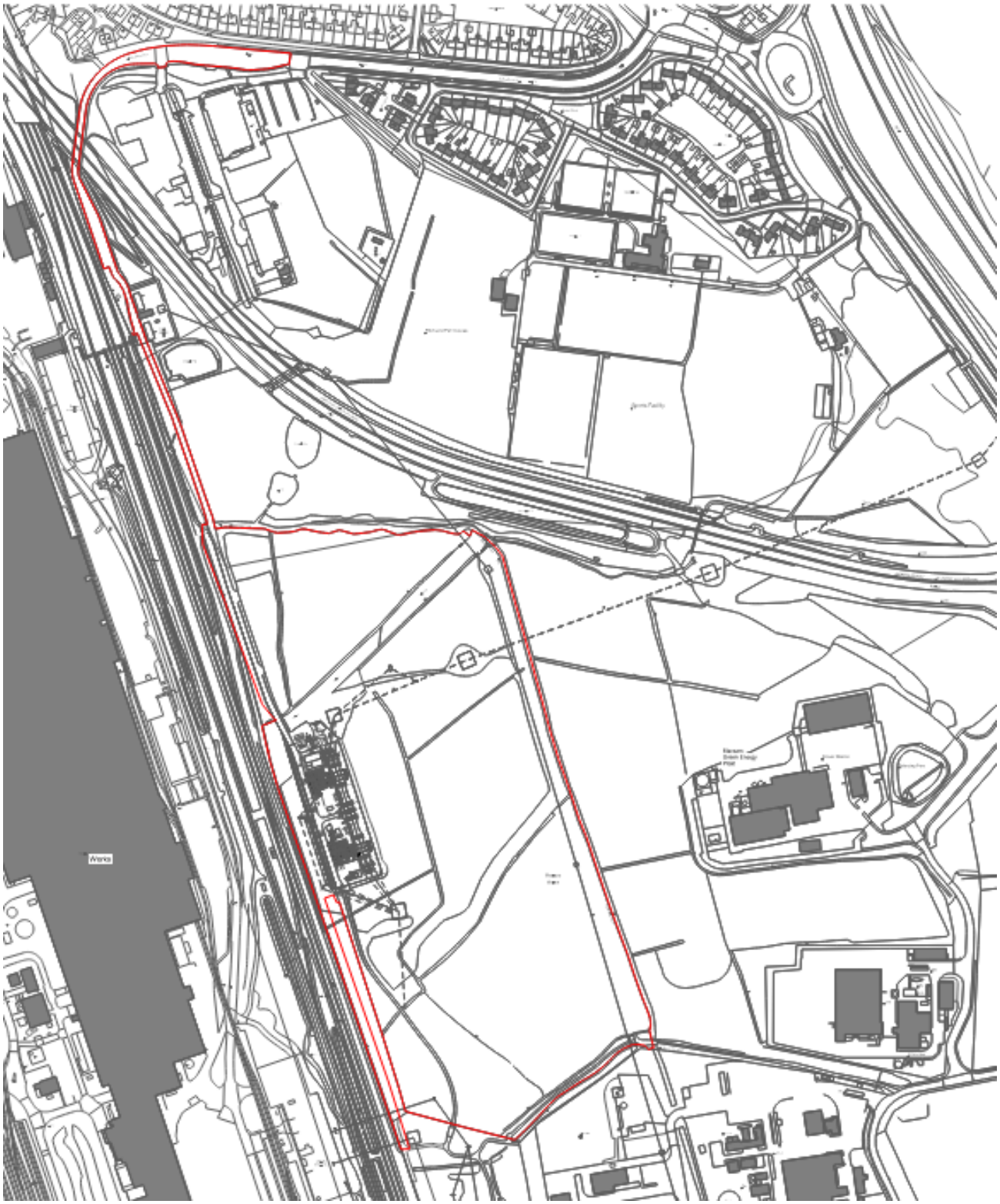


Figure 1.2 Red Line Boundary

1.4. Geotechnical Category

Eurocode 7 states “in order to establish minimum requirements for the extent and content of geotechnical investigations, calculations and construction control checks, the complexity of each geotechnical design shall be identified together with associated risks”.

To determine the design requirements, the following three categories are utilised:

- Category 1 – assigned to small and relatively simple structures.
- Category 2 – assigned to conventional types of structures and foundations with no exceptional risk or difficult ground or loading conditions; and
- Category 3 – assigned to complex ground conditions and large complex structures.

This scheme falls into the requirements of a Category 2 scheme, whose designs should use quantitative geotechnical data and analysis to ensure that the fundamental requirements are satisfied with this data being supported by routine procedures for field and laboratory testing.

1.5. Assumptions and Limitations

BakerHicks is responsible for selecting and summarising the data supplied by the client or other parties but cannot be held responsible for any mistakes or inaccuracies or the completeness of third-party data on which it has relied. As with any point data, ground conditions can only be inferred between test locations and as such localised conditions on site may vary between point locations and conditions may be encountered that have not been identified during the investigations.

This Ground Investigation Report has been prepared solely for Laing O’Rourke in connection with the proposed development. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party. This report has been prepared from the Phase 1 (i.e., National Grid area) ground investigation, which was designed based on the layout site layout at that time. Should the recommendations of findings be used for other purposes they will need to be revisited to confirm they remain valid and suitable change in purpose.

This report and the ground investigation has been undertaken to support the detailed design at the site. The design of the ground investigation was originally undertaken for National Grid (NG) for the purposes of a FEED study which covered 2no. substation options: Option 2 & Option 4. Due to wider programme requirements the FEED study was not complete, and the project moved straight onto the detailed design stage. In line with this, the proposed FEED GI was revised to capture the GI required to enable the detailed design of Margam Substation Option 4, however without the initial FEED GI to identify ground conditions the detailed design GI could not be as targeted and therefore unforeseen geotechnical risks could remain. The proposed GI specification was discussed and agreed with Laing O’Rourke. Aspects relating to the previous site layouts are captured in earlier revisions of this report, with this version focused on the proposed site layout shown in Figure 1.3.

Where appropriate, this report only identifies potential asbestos occurrences, however, detailed advice should be sought from a specialist contractor on specialist measures for dealing with it safely.

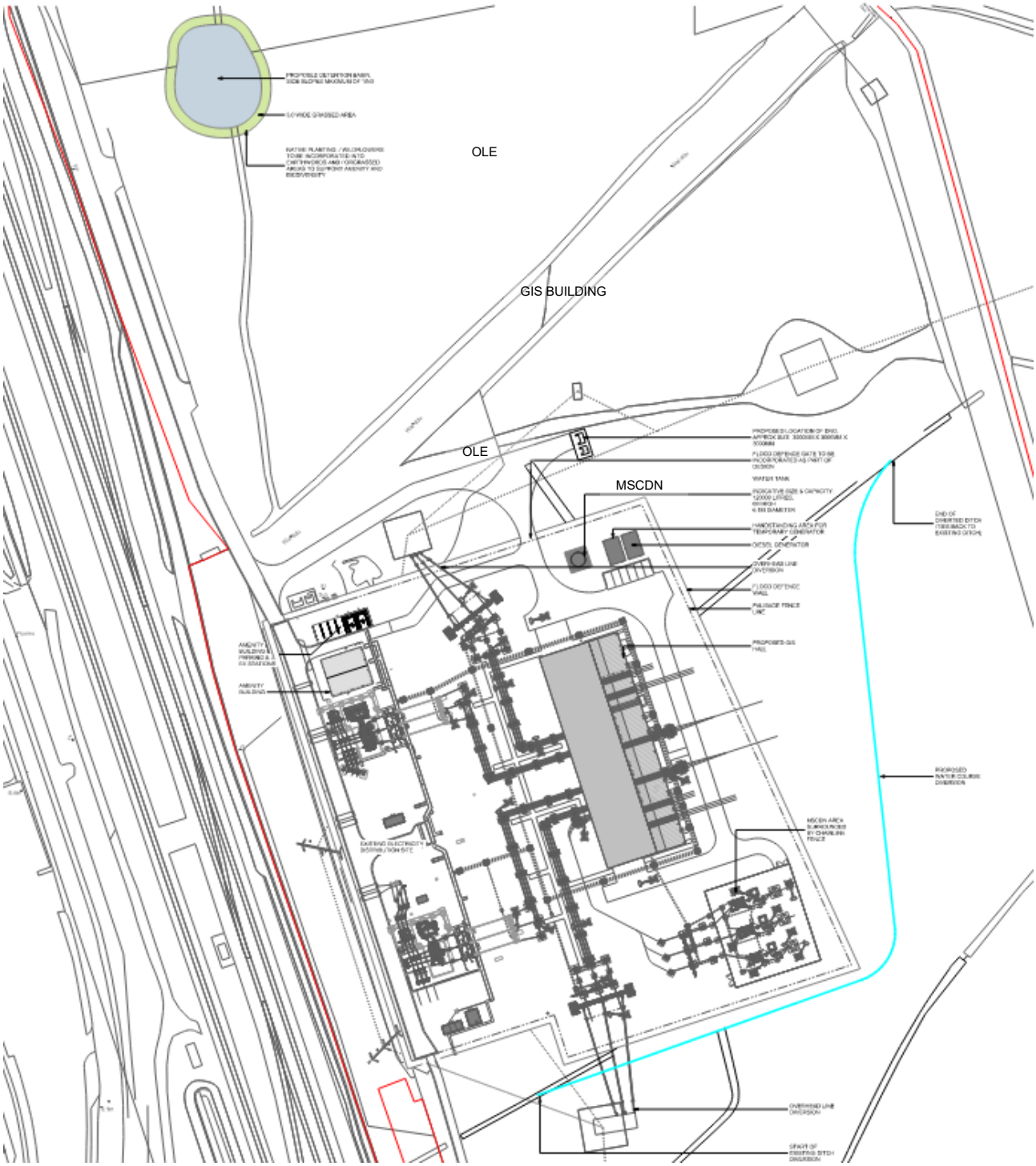


Figure 1.3. Proposed Margam Site Layout

2. Existing Information

A summary of desk study information relative to this GIR, as presented in the Geotechnical Desk Study Report (Ref. [7]) is summarised below. The Geotechnical Desk Study was prepared for the wider scheme which includes the development of the Port Talbot Substation and High Voltage Cable Route. Reference should be made to the Geotechnical Desk Study report for further detail.

2.1.1. Conceptual Site Model

The report identified a series of potentially active pollution linkage within the Preliminary Conceptual Site Model for the scheme which were grouped together in the initial CSM with onsite sources separated by study area and off-site sources grouped for the scheme as a whole.

It is highlighted that the Tata site is more local to the majority of the high-risk sources in the area. As a result, Table *2.1* below breaks down the source pathway receptor linkage from the report into a site specific CSM for the Margam Option 4 site.

Table 2.1. Conceptual Site Model

Potential Source	Potential Pathway	Potential Receptor	Probability	Consequence	Risk (without mitigation)
Onsite Sources	-				
No onsite sources identified					
Offsite Sources					
Existing Margam Substation adjacent to the site, including associated tanks and infrastructure. (Off Site)	Lateral Migration	Future Site Users	Medium	Moderate	Moderate
Current and former uses associated with historic railway line dating from 1876 to present day (off site 80m west)	Lateral Migration	Future Site Users	Low to Medium	Moderate	Moderate/low to Moderate
	Inhalation of Fibres	Future Site Users	Low	Severe	Moderate
Former and current site uses associated with steel works dating from 1950 to present day (off site 205m west)	Lateral Migration	Future Site Users	Low to Medium	Moderate	Moderate/low to Moderate
	Inhalation of Fibres	Future Site Users	Low	Severe	Moderate
	Migration Into Confined Spaces	Future Site Users	Low	Severe	Moderate
Historic infilled ponds north of the site and series of drainage ditches within 250m (Off Site)	Migration into confined spaces	Future Site Users	Low	Severe	Moderate
Contemporary Trade Entry within 300m of the site (offsite)	Lateral Migration	Future site users	Medium	Moderate	Moderate

The following sources were deemed to be too far distant to have a credible SPR linkage for this part of the site due to being located further than 250m from the site boundary;

- Former Abbot Pit and Morfa Colliery 60-160m north of TATA substation. Approximately 530m northwest of the site boundary.
- Power station west of proposed Port Talbot Substation site. Approximately 1.04km west of the Margam Substation site boundary.

Additionally, the historic ponds have been lowered in risk likelihood from medium to low due to the smaller nature of the sources located within the 250m radius around the site.

Based on the potential pollution linkages, a preliminary investigation was proposed to determine if pollution linkages were active or inactive.

2.2. Topography

A review of the topography was undertaken using freely available online resources including LiDAR data from the Welsh Government (Ref. [8]); Google Earth (Ref. [9]); and OS maps gathered within the Envirocheck Report (Ref [6]).

The area forming the proposed site is relatively flat, with the available LiDAR showing that the site is approximately 3m AOD. It was noted that there is an approximate 1m rise in ground level on the western boundary of the site likely associated with the existing Margam Substation. The OS and aerial mapping shows 3no. small ditches within the site boundary. One ditch runs approximately north/south splitting the site in the centre, another ditch splits from this at the southern boundary of the site running east. Another ditch feeds into this central ditch from the west towards the northeast boundary of the site. Aerial mapping shows much of the site is grassland/marshland, however mature trees are present particularly on the boundary of the main ditch running through the site.

2.3. Geology and Hydrogeology

The following sources of information have been reviewed and are discussed below:

The following sources of information have been reviewed and discussed below.

- British Geological Survey, 1:50,000 New Series, Sheet 247 Swansea, Bedrock, 2011 (Ref. [10])
- British Geological Survey, 1:50,000 New Series, Sheet 247 Swansea, Bedrock and Superficial, 2011 (Ref. [11]).
- British Geological Survey, 1:10,000 Series, Sheet SS78NE, Solid and Drift, 1970 (Ref. [12]).
- British Geological Survey GeoIndex (Onshore) (Ref. [13]).
- Envirocheck Report (Ref. [6])

Information is summarised in Table 2.2 with further commentary below.

Table 2.2. Summary of Published Geology.

Geological Unit	Formation Name	Description	Aquifer Classification
Artificial Ground	Not Recorded	-	-
Superficial	Tidal Flat Deposits	Unconsolidated sediment, mainly mud and/or sand.	Secondary Undifferentiated Aquifer
Bedrock	South Wales Middle Coal Measures Formation	Coal bearing mudstones/siltstones, with seatearths and minor sandstones.	Secondary A Aquifer

The site is not recorded as being within a source protection zone.

2.3.1. Artificial Geology

Published BGS geological mapping does not record the presence of Made Ground on the site.

2.3.2. Superficial Geology

BGS maps indicate the site is underlain by Tidal Flat Deposits. The Envirocheck report (Ref. [6]) records the following ground stability hazards relating to superficial geology:

- Moderate Risk from Compressible Ground.
- Moderate Risk from Running Sands.
- Very Low Risk from Landslides.
- Very Low Risk from Shrink/Swell Clays.

2.3.3. Solid Geology

The solid geology is mapped as the South Wales Middle Coal Measures Formation. The Envirocheck report (Ref. [6]) indicates that there is no hazard of ground dissolution or collapsible ground.

A thrust fault is recorded approximately 20m north of the site which runs approximately east-west. The southern side is recorded as downthrown. Due to the movement of the thrust fault many of the recorded coal seams are likely to be present at shallower depths on the north side of the fault. The Margam Substation is on the south side of the fault.

Due to the site lying within a coal mining reporting area a Coal Mining Risk Assessment was undertaken (Ref. [14]).The BGS 1:10,000 geological map (Ref. [12]) shows that the shallowest coal seam beneath the site is the 2ft 9 seam which sub-crops south of the site and is shown to be dipping towards the north. However, as discussed in the CMRA, the shallowest recorded worked seam is the Five Foot seam which is present at a depth of at least 85m beneath the site with a recorded worked thickness of 3.3m. CIRIA C785D (Ref. [15]) suggests that a criterion of ten times worked seam thickness provides reasonable assurance against surface subsidence. Using this criterion, 33m of rock cover is required to mitigate surface subsidence. Therefore, the worked Five Foot seam at 85m depth is unlikely to be within influencing depth of the proposed development. The Coal Mining Risk Assessment concluded that there is a moderate risk of potential unrecorded shallow workings across the site. Therefore, the GI was also specified to investigate this to help mitigate this risk. This is discussed further in Section 9.7.

2.3.4. Historical Ground Investigation

A review of BGS GeoIndex (Ref [13]) concluded there were no boreholes within 100m of the site.

A previous GI was undertaken by Jacobs in 2009 (Ref. [16]) within an area of land approximately 40m north of the site. The GI comprised 8no. Trial pits and 5no. boreholes.

The ground investigation encountered superficial material comprising Tidal Flat deposits including Peat underlain by granular and cohesive Glacial deposits. The superficial deposits were underlain by bedrock of the Coal Measures formation with rockhead varying from 12.7m to 15m depth below ground level.

Made Ground was not encountered during the GI. A geo-environmental assessment was undertaken by Jacobs which concluded that the soil samples showed no sign of significant contamination although some of the groundwater results exceeded EQS values for Lead, Zinc and Ammonia.

3. Ground Investigation

A ground investigation (GI) was undertaken by Geotechnics Ltd between August and September 2024 to support the detailed design. The aims of the GI were as follows:

- To investigate the nature and depth of any superficial deposits and bedrock geology;
- To collect samples for geotechnical testing to provide indicative material properties of the strata at the site;
- To collect samples for geo-environmental testing to determine the presence and level of contamination at the site;
- To understand the thermal resistivity and pH of the ground;
- To install gas and groundwater monitoring installations and provide information on the gas and groundwater conditions of the site.
- To investigate the risk from coal mining identified as part of the Coal Mining Risk Assessment (Ref. [14]).

3.1. Scope of the Completed Ground Investigation

The scope of the ground investigation was revised on 5no. occasions. The original GI scope was designed for the purpose of a FEED study. The GI scope was developed for the entire scheme which included the proposed Port Talbot Substation and High Voltage Cable Route. Revisions were made to satisfy the following:

- Inclusion of additional substation options at FEED;
- Revision of GI phasing from 1no. phase to 4no. phases due to land access constraints;
- Following receipt of a detailed UXO Assessment which outlined a low risk of UXO;
- To update the FEED GI specification to a detailed design GI specification.
- To update the specification based on additional requirements from LOR including the rising head permeability tests and sampling for soil stabilisation testing.

Soil stabilisation testing was requested by LOR which BHK commissioned with Deep Soil Mixing Ltd based on specification provided by VolkerFitzpatrick Ltd. The findings of this testing are not discussed in this report.

The scope of the GI undertaken is detailed in revision P05 of the GI Specification (Ref. [17]). It should be noted that this specification covers 4no. Phases of GI within different land areas:

- National Grid Land
- BOC Land
- TATA Operational Land
- TATA Non-Operational Land

The GI was specified to inform design on multiple elements of the project including the Margam Substation.

The factual records from the ground investigation are presented in the Geotechnics Final Factual Ground Investigation Report (Ref. [1]), included in Appendix A. It should be noted that for the geotechnical assessment contained within this report only the data from exploratory positions within the proposed Margam Substation boundary (Figure 1.3) has been included. A summary of the information used is presented within Table 3.1. For the Geoenvironmental assessment all data within the Phase 1 GI has been considered.

Table 3.1: Summary of the ground investigation works within Margam Substation used in the geotechnical assessment.

Exploratory Hole Type	Quantity and ID		Termination depth (m bgl)
Cable percussive boreholes	5	BH105, BH106, BH108, BH110, BH111	12.20-15.00
Cable percussive with rotary core follow on	2	BH107, BH109	49.50
Trial Pits	11	TP105, TP105A, TP105B, TP106, TP108-TP114	0.50-3.00
Dynamic Cone Penetrometer (DCP)	10	DCP105, DCP105A, DCP106, DCP108 – DCP114	0.49-2.22
Soakaway Tests	3[1]	TP109, TP110 & TP112	1.50

[1] Scheduled but not complete due to high groundwater level.

The completed GI varied from the specification due to encountered site conditions. This included:

- Due to the shallow groundwater and artesian water at the site only 1no. install was successfully installed.
- TP105 being terminated at 0.50m bgl due to being unable to advance through the made ground with a toothless bucket. The trial pit was moved and undertaken as TP105A.
- Addition of TP105B to collect environmental samples that weren't collected in TP105.
- Cable Percussive boreholes: BH106, BH108, BH110 & BH111 being terminated shallower than scheduled 15m bgl due to encountering rockhead slightly shallower than anticipated.

3.2. Laboratory Investigation

3.2.1. Geotechnical Testing

The laboratory tests, where appropriate, conform to BS 1377-2 (Ref. [18]), BS EN ISO 17892-1 (Ref. [19]), BS EN ISO 17892-3 (Ref. [20]), and BS EN ISO 17892-4 (Ref. [21]).

Presented in Table 3.2 is a summary of the laboratory testing undertaken to assess the classification, strength and reusability of the soil samples. It should be noted that since the completion of the GI works additional testing has been scheduled the results of which are outstanding but will be included in final revision of this report. Any variation to the scheduled testing including non-conformance report (NCR) notes is shown within the comments in the table below.

Table 3.2: Summary of in-situ and laboratory geotechnical testing.

Category	Test	Scheduled	Completed	Comments
Laboratory Classification Tests	Particle Size Distribution BS1377 (Wet Sieve)	19	19	Additional test complete on TP106 0.3m
	Particle Size Distribution BS1377 (Sedimentation)	8	7	Additional test complete on BH106 7.7m. 2no samples note tests as <15% fines.
	Moisture Content	42	48	

Category	Test	Scheduled	Completed	Comments
	Atterberg Limits	32	32	
Laboratory Strength Tests	Quick Undrained Triaxial Tests	6	4	2no. NCR sample too gravelly. 1no. Shear Box scheduled instead.
	Shear Box Tests	1	1	
	Point Load Tests	7	14	
	UCS Tests	12	7	11no. Tests replaced by Point Load tests due to sample size
Laboratory Consolidation Test	Oedometer Tests	9	3	5no NCR sample too gravelly or too wet.
Laboratory Compaction Test	Compaction 2.5kg	3	1	2no. NCR sample too gravelly.
	Remoulded California Bearing Ratio	3	3	
Laboratory Permeability Tests	Constant Head in a Permeameter	3	3	
	Constant Head in a Triaxial Cell	6	6	
Laboratory Chemical Tests	BRE Suite D	17	17	
	Organic Test	6	6	
Laboratory Thermal Tests	Thermal Resistivity Tests	7	7	

3.2.2. Soil / Water Contaminant Analysis

An assessment of a broad suite of determinants has been undertaken. Determinants include metals, polycyclic aromatic hydrocarbons (PAHs), total petroleum hydrocarbons (TPHs) and asbestos. The following tests were performed across the Phase 1 GI to determine the presence and level of contamination of the soil samples:

- 42 No. Soil Suite E (ICE 3rd Edition (Ref [22]);
- 6 No. Soil Leachate Suite;
- 10 No. Soil WAC Suites;
- 1 No. Water Suite F (ICE 3rd Edition (Ref [22]);

4. Ground Summary

4.1. Introduction

The following section presents a summary of the reported ground conditions at the site based on the ground investigation carried out by Geotechnics Ltd.

The investigation confirmed that the site is underlain by Tidal Flat Deposits and ultimately the solid geology of the South Wales Middle Coal Measures Formation. However, the investigation found that there is a significant thickness of peat deposits within the Tidal Flat Deposits. The investigation also recorded that the Tidal Flat Deposits are underlain by both cohesive and granular glacial deposits before encountering the South Wales Middle Coal Measures.

Made ground is present in TP05, TP05A & TP05B up to a depth of 2.30m bgl. Due to the Made Ground being encountered in 3no. trial pits within close proximity to one another in an area of the site where the only development proposed is a road with no load bearing structures or earthworks, this material has not been considered within the ground model for the site as it is unlikely to be beneath any major proposed major structures. The access road design needs to consider the CBR values from the DCP tests undertaken within the made ground. Additional confirmatory CBR testing should be undertaken during construction if required.

A high-level summary of the encountered geology is presented in Table 4.1.

Table 4.1: Summary ground model.

Strata	Depth of top (m bgl)	Elevation of top (m AOD)	Thickness range (m)
Topsoil	0.00	2.95 to 3.15	0.20 to 0.70
Tidal Flat Deposits - Cohesive (TFD)	0.20 to 0.70	2.95 to 2.27	0.60 to 4.50
Tidal Flat Deposit – Peat (Peat)	0.20 to 3.60	2.75 to -0.45	0.50 to 4.70
Cohesive Glacial Deposits	4.30 to 8.60	-1.25 to -5.56	0.50 to 6.30
Granular Glacial Deposits	4.70 to 5.80	-1.55 to -2.77	0.20 to 3.10
Weathered Coal Measures Formation [1]	11.90 to 13.30	-8.83 to -10.26	1.00 to 5.70
Coal Measures Formation [2]	14.30 to 18.80	-11.26 to -15.85	35.20 +

[1] Thickness proven in BH107 & BH109 only.
[2] Thickness not proven.

Factual descriptions for the encountered geological units are provided in Sections 4.2 to 4.7. These descriptions are as provided within the appended Geotechnics Ltd Factual Report (Appendix A).

4.2. Topsoil

Topsoil was encountered across the site in all exploratory positions except TP05, TP05A and TP05B from ground level to depths between 0.20m and 0.70m bgl, this was typically described as:

- Grass over very soft dark brown slightly sandy organic clay with occasional rootlets and roots.
- Soft dark brown slightly sandy organic clay with many roots.

4.3. Made Ground

Made Ground was encountered within TP05, TP05A and TP05B from ground level to depths between 0.50m and 2.30m bgl. The depth of made ground was not proven in these trial pits. This was encountered as granular and cohesive material and described as:

- Light brown clay bound sandy gravel with occasional metal girders and a high cobble content of concrete and slag. Gravel is angular to subangular fine to coarse concrete and slag.
- Black slightly clayey gravelly sand with some ash. Gravel is angular to subangular fine to coarse brick and coal.
- Soft dark grey slightly sandy gravelly clay with occasional roots (up to 50mm in diameter). Gravel is angular to subangular fine to coarse slag.

The presence of made ground was limited to 3no. trial pits which were in close proximity to each other. These trial pits were located in the northern part of the site where a road is proposed. The presence of this made ground is likely to be associated with the existing Margam Substation part of the road formation to the existing OHL gantries.

4.4. Tidal Flat Deposits - Cohesive

The Cohesive Tidal Flat Deposits (TFD-C) were encountered in all exploratory positions apart from TP105, TP105A and TP105B beneath the topsoil to depths between 1.10m and 5.40m bgl. It was typically described as:

- Very soft to soft blueish grey slightly sandy CLAY.
- Very soft to soft blueish grey slightly sandy CLAY with occasional roots or pockets of peat between 15mm and 100mm in size.

4.5. Tidal Flat Deposits - Peat

A layer of peat was encountered which is geologically part of the Tidal Flat Deposits but has been separated out as part of the interpretation due to its geotechnical properties.

The peat layer was encountered in all exploratory positions apart from BH105, TP105, TP105A and TP105B either below or within the cohesive element of the Tidal Flat Deposits. The peat extended to proven depths between 3.50m and 5.80m bgl. It was typically described as:

- Spongy dark brown fibrous & pseudo fibrous PEAT, occasional roots and wood fragments also recorded.

4.6. Glacial Till Deposits – Granular

The granular glacial deposits were encountered in all the borehole positions but was not recorded in any of the machine excavated trial pits due to their termination depth. This material was largely encountered below the TFD-C and Peat layer. Within 3no. boreholes (BH108, BH110 & BH111) this material was identified below the Cohesive Glacial Till deposits.

It's likely that this granular material represents a glacial meltwater channel within the wider Cohesive Glacial Till deposit. The Granular Glacial Till deposits extended to a proven depth between 6.00m and 8.60m bgl. This material was typically described as:

- Medium dense dark brown slightly sandy GRAVEL with a low cobble content of subrounded sandstone and quartzite. Gravel is subangular to subrounded fine to coarse of sandstone and quartzite.
- Dense dark brown sandy GRAVEL with a low cobble content of subrounded sandstone and quartzite. Gravel is subangular to subrounded fine to coarse of sandstone and quartzite.

4.7. Glacial Till Deposits – Cohesive

This material was encountered within all borehole positions but was not recorded within any of the machine excavated trial pits due to their termination depth. The Cohesive Glacial Till deposits were encountered beneath the Granular Glacial Till deposits except within 3no. boreholes (BH108, BH110 & BH111) where they are recorded beneath the Tidal Flat Deposits and again beneath the Granular Glacial Till deposits. The Cohesive Glacial Till deposits extended to a proven depth between 11.90m and 13.30m bgl. This material was typically described as:

- Firm brownish grey slightly sandy slightly gravelly CLAY with occasional sand/gravel lenses up to 200mm thick. Gravel is subangular to subrounded fine to coarse of sandstone and rare coal.
- Stiff greyish brown/dark brown slightly sandy gravelly CLAY. Gravel is angular to subangular fine to coarse of sandstone and quartzite.
- Very stiff brownish grey slightly sandy gravelly CLAY. Gravel is angular to subangular fine to coarse of sandstone.

There was one entry within BH107 between 4.50m and 5.40m where this material is recorded as “Very soft dark brown slightly gravelly sandy CLAY. This is not viewed as representative of this material.

4.8. Weathered Coal Measures Formation

This material was encountered within all borehole positions but was not recorded within any of the machine excavated trial pits due to their termination depth. This material was encountered beneath the Cohesive Glacial Till deposits and extended to a proven depth of between 14.40m and 18.80m bgl. This material was typically described as:

- Extremely weak grey MUDSTONE, recovered as angular to subangular fine to coarse gravel.
- Extremely weak dark grey MUDSTONE with occasional coal fragments up to 15mm in diameter.
- Stiff grey slightly sandy gravelly CLAY with many mudstone lithorelics up to 100mm in size.

4.9. Coal Measures Formation

The Coal Measures formation was only encountered within 2no. exploratory positions: BH107 & BH109. This was encountered immediately below the weathered coal measures and extended to borehole termination depths of 49.50m bgl. This unit was encountered at 18.

This unit was encountered as interbedded siltstones and mudstones which were typically described as:

- Medium to Very Strong SILTSTONE with rare very strong ironstone nodules.
- Medium to Very Strong SILTSTONE with occasional pyrite crystals and gypsum veins.
- Extremely/Very weak to Medium Strong MUDSTONE.

One entry of coal was logged within BH109 at 42.55m bgl with a thickness of 0.25m bgl.

As part of the wider Phase 1 GI works intact coal was logged within the following boreholes associated with earlier options for the Margam Substation:

- BH101 approximately 110m north of the site, coal logged at 14.50m bgl with a thickness of 0.35m
- BH104 approximately 40m east of the site, coal logged at 15.70m bgl with a thickness of 1.40m.

It should be noted that BH101 and BH104 are located on the northern side of the thrust fault (Section 2.3.3) present north of the site. Therefore, the encountered coal seams appear at significantly shallower depths than those recorded within BH109.

4.10. Summary Ground Model

A series of geological cross sections showing the ground model at the site has been included as Appendix C. This should be used as a reference for material depths and thicknesses within different parts of the site. As the design is still in development, during the detailed design a ground model specific to respective structures is to be developed.

4.11. Visual and olfactory evidence of contamination

As detailed within the 2024 GI (Ref [1]), visual evidence of contamination was noted within one location within the Made Ground, at 0.5m bgl in TP105. This evidence was a slight oily sheen on the groundwater encountered within the Made Ground.

TP105, TP105A and TP105B also had evidence of contamination contained within the Made Ground with colour descriptions including black which is often an indication of more contaminated ground and soil descriptions including slag and ash potentially indicating contaminated ground.

Table 4.2. Visual and olfactory evidence of contamination.

Location	Depth (m bgl)	Comment
TP105	0.20-0.50	Presence of slag within the gravel and oily sheen on water seepage.
TP105A	0.15-0.40	Black gravelly sand with some ash.
TP105A	0.40-2.30	Presence of slag within gravel.
TP105B	0.20-0.80	Presence of slag up to 0.15m in diameter

4.12. Groundwater

Groundwater was observed during the ground investigation within the trial pits and boreholes. Table *4.3* summarises the groundwater strikes with respect to the strata.

Table 4.3. Summary of encountered groundwater.

Exploratory Position	Strata	Strike		After 20 mins – Boreholes only		
		Depth (m bgl)	Level (mAOD)	Depth (m bgl)	Level (mAOD)	Comments
BH105	Topsoil	0.20	2.84	0.20	2.84	
BH105	Granular Glacial Deposits	5.00	-1.96	0.80	2.24	Sub Artesian
BH106	Topsoil	0.00	3.15	0.00	3.15	
BH106	Granular Glacial Deposits	4.70	-1.55	2.10	1.05	
BH107	Granular Glacial Deposits	5.40	-2.45	-0.46	3.41	Artesian

Exploratory Position	Strata	Strike		After 20 mins – Boreholes only		
		Depth (m bgl)	Level (mAOD)	Depth (m bgl)	Level (mAOD)	Comments
BH107	Coal Measures	21.00	-18.05	14.30	-11.35	
BH108	Granular Glacial Deposits	5.80	-2.75	-0.45	3.5	Artesian
BH109	Topsoil	0.10	2.94	0.00	3.04	
BH109	Granular Glacial Deposits	6.00	-2.96	-0.12	3.16	Artesian
BH110	Topsoil	0.00	3.07	0.00	3.07	
BH110	Granular Glacial Deposits	6.00	-2.93	1.90	1.17	
BH111	Topsoil	0.00	3.03	0.00	3.03	
BH111	Granular Glacial Deposits	5.80	-2.77	4.90	-1.87	
TP105A	Made Ground	0.70	2.965	-		Water standing on completion of excavation
TP105B	Made Ground	0.65	2.965	-		
TP108	Tidal Flat Deposits – Cohesive	1.65	1.36	-		
TP109	Tidal Flat Deposits – Peat	1.45	1.59	-		
TP110	Tidal Flat Deposits – Peat	2.60	0.46	-		
TP111	Tidal Flat Deposits – Peat	2.30	0.76	-		
TP112	Tidal Flat Deposits – Cohesive	0.70	2.27	-		
TP113	Tidal Flat Deposits – Peat	1.60	1.48	-		
TP114	Tidal Flat Deposits – Peat	1.20	1.95	-		

In addition to the groundwater level, some seepages were recorded within the topsoil and made ground at the following depths:

- TP105 at 0.50m bgl within the made ground, this was noted to have an oily sheen.
- TP106 at 0.20m bgl within the topsoil.

Due to the shallow groundwater, artesian and sub-artesian ground water conditions encountered during the GI, only 1no. borehole was installed with a gas and groundwater monitoring standpipe for further monitoring after the completion of the GI. This is because in boreholes with artesian conditions needed to be sealed to prevent groundwater flowing to surface. These boreholes were fully sealed with bentonite pellets. It is possible that the groundwater is tidally connected however conclusive evidence of this was not found as it is unlikely to have significant bearing on the design.

At the time of writing this report, 6no. return visits have been undertaken to site to monitor groundwater levels and ground gas on the following dates:

- 20th September 2024
- 30th September 2024
- 6th November 2024
- 20th November 2024
- 10th December 2024
- 17th January 2025

A summary of the groundwater levels monitored to date are presented in Table 4.4.

Table 4.4: Summary of groundwater monitoring.

Exploratory hole	Screen zone (m bgl)	Measured depth to base (m bgl)	Depth of water (m bgl)	Groundwater elevation (mAOD)	Stratum
BH111	1.00-4.50	4.50	0.00	3.03	Tidal Flat Deposits

* Groundwater level could not be measured on the 10/12/24 due to the borehole being inaccessible due to surface water at the site.

4.13. Permeability Tests

During the GI 1no. in-situ rising head permeability test was undertaken in accordance with BS EN ISO 22282-2:2012 (Ref. [23]). The test was undertaken in BH108 at 6.00m bgl within the Granular Glacial Till deposits. The test showed that this material has a permeability of 9.52×10^{-4} m/sec.

4.14. Soakaway Assessments

3no. infiltration tests in accordance with BRE Digest 365 (Ref [24]) were scheduled to be undertaken within TP109, TP110 and TP112 to assess the infiltration performance of the ground and the opportunity for infiltration methods for the Sustainable Drainage Systems (SuDS). Due to the high groundwater encountered in these trial pits the soakaway tests could not be undertaken.

4.15. California Bearing Ratio Results

Two forms of tests were undertaken to assess California Bearing Ratio (CBR) values at the site; in situ Dynamic Cone Penetrometer (DCP) tests and remoulded CBR tests in the laboratory. A summary of the results is provided in Table 4.5.

From the DCP tests undertaken at the site, the in situ CBR values computed for the assumed subgrade formation level between 0.50m and 0.80m bgl were assessed to be in the range of 0.3-302.0%.

Table 4.5: Summary of CBR results for assumed 0.50m – 0.80m subgrade formation level.

Stratum	No. of tests	Method	Thickness nominal CBR (%) range
Tidal Flat Deposits – Cohesive	1	Laboratory	0.22
	8	DCP	0.3 – 16.1
Made Ground	1	DCP	78.6 – 302.0

The CBR values encountered at the site associated with the Tidal Flat Deposits are highly variable and at shallow depths are particularly low. This in combination with the fact that both the cohesive Tidal Flats and Peat are soft materials. Minimum required subgrade CBR for National Grid pavements is 3% therefore some form of improvement would be required as part of the pavement design, this could be the inclusion of geogrids.

4.16. Thermal Resistivity Testing

24no. in situ thermal resistivity tests were undertaken within Trial Pits TP106, TP108 to TP114. 3no. tests were undertaken at 1.20m depth bgl along 3no. sides of the trial pit. Where a test could not be undertaken at 1.2m it was undertaken at 1.00m bgl.

In addition to the in-situ testing, 7no. Laboratory thermal resistivity tests were undertaken on samples collected within the trial pits.

The test results are summarised with respect to each stratum in Table 4.6.

Table 4.6. Summary of Thermal Resistivity Testing.

Stratum	No. of tests	Method	Thermal Resistivity (mK/W) range
Tidal Flat Deposits – Cohesive	2	Laboratory	3.30-3.55
	18	In-Situ	0.61 – 0.87
Flat Deposits – Peat Tidal	2	Laboratory	8.06 – 11.54
	6	In-Situ	0.68 – 1.72
Glacial Till Deposits – Cohesive	2	Laboratory	0.86 – 1.54
Glacial Till Deposits – Granular	1	Laboratory	4.03

5. Ground Conditions and Material Properties

5.1. Introduction

This section of the report provides a summary of the geological strata and a discussion of proposed material indicative parameters and derivation methods. Relevant parameter plots are presented in Appendix B of this report. Proposed outline soil parameters for the site are presented in Table 5.7.

5.2. Topsoil

The topsoil is typically present across the entire site to a maximum depth of up to 0.7m bgl.

It is assumed that the Topsoil will be stripped prior to construction and therefore no strength or compressibility parameters are derived.

5.3. Made Ground

The made ground is present in TP05, TP05A & TP05B up to a depth of 2.30m bgl. Due to the made ground being encountered in 3no. trial pits within close proximity to one another in an area of the site where the only development proposed is a road with no load bearing structures or earthworks, material parameters have therefore not been derived for the made ground.

5.4. Tidal Flat Deposits – Cohesive

The Cohesive Tidal Flat Deposits (TFD-C) were typically encountered as a very soft slightly sandy CLAY with some logs recording occasional pockets of peat between 15mm and 100mm in size.

The plasticity tests conducted on this material shown on Figure B.4 indicate that this material ranges between an intermediate and high plasticity CLAY however is generally a high plasticity CLAY. There is a medium volume change potential in this unit.

The Particle Size Distribution (PSD) results shown in Figure B.8 show that the material is predominantly clay with small fractions of sand and gravel. This is similar to the log descriptions.

9no. SPTs were obtained within this unit, these have been corrected to N60 values using the hammer energy ratio certificates and presented in Figure B.12. The N60 values ranged between 0 and 2. Using a correlation from N60 to undrained shear strength this material has extremely low strength.

A summary of testing and available results undertaken in this geological unit are summarised in Table 5.1.

Table 5.1: Summary of geotechnical testing results for TFD-Cohesive.

Test / Parameter	No. of tests	Value / Range	Assessment
Natural Moisture Content (%)	13	29.9 – 59.6	BS EN ISO 17892-1:2014
Liquid Limit (%)	12	45 - 65	BS EN ISO 17892-12:2018
Plastic Limit (%)	12	21 – 26	
Plasticity Index (PI) (%)	12	24 - 40	
Modified PI (%) [1]	12	24 - 38	BRE Digest 240
Organic Content (%)	1	1.6	
Particle Size Distribution [wet sieve]	6	Total percentage:	BS EN ISO 17892-4:2016

		Very coarse: 0 Gravel: 0 - 4 Sand: 1 - 10 Fines (<0.063mm): 86 – 99 1no. Sedimentation Silt: 57 Clay: 29	
Corrected SPT (N60) [2]	9	0 - 2	In-situ SPT
CBR Test (%)	3	0.13 – 1.60	BS1377: Part 4
2.5kg Compaction Test	1	Max Dry Density (Mg/m3): 1.55 Optimum Moisture Content (%): 22	BS1377: Part 4
Permeability (m/s) [Triaxial Permeability Test]	3	1.1-1.8 x 10^{-10}	BS EN ISO 17892-11: 2019

Note:
1. The modified plasticity index has been calculated based upon the percentage passing the 0.425mm sieve to understand the risk of volume change of the material according to BRE Digest 240.
2. The SPT N values have been corrected to N60 values using the SPT hammer energy ratio

5.5. Tidal Flat Deposits - Peat

The Peat within the Tidal Flat Deposits was typically encountered as a Spongy dark brown fibrous & pseudo fibrous PEAT. The description is representative of peat which has undergone low to moderate decomposition.

The moisture content, shown in Figure B.2, was shown to be typically over 400%.

Two plasticity tests showed that the material to be non-plastic, however one result returned a plastic result which likely coincides with a clay inclusion within the peat.

The 11no. SPT N60 values are plotted within Figure B.11 which all show a value of 0.

A summary of testing and available results undertaken in this geological unit are summarised in Table 5.2.

Table 5.2: Summary of geotechnical testing results for TFD- Peat.

Test / Parameter	No. of tests	Value / Range	Assessment
Natural Moisture Content (%)	13	52.6 - 786	BS EN ISO 17892-1:2014
Liquid Limit (%) [1]	3	57 – 740	BS EN ISO 17892-12:2018
Plastic Limit (%) [1]	3	NP – 27	
Plasticity Index (PI) (%) [1]	3	NP - 30	
Organic Matter	5	5.8 – >25	
Modified PI (%) [2]	3	NP - 20	BRE Digest 240
Corrected SPT (N60) [3]	11	0	In-situ SPT
Coefficient of volume compressibility, m_v (m^2/MN) [One Dimensional Consolidation Test]	2	Overburden: 4.1-5.2	BS EN ISO 17892-5:2017
Coefficient of Consolidation C_v	2	0.5-0.1	BS EN ISO 17892-5:2017

[One Dimensional Consolidation Test]			

Note:
1. 1no. Atterberg test returned as plastic which coincides which a logged clayey layer, this is not representative of the wider layer and is therefore not discussed further or included in parameter plots.
2. The modified plasticity index has been calculated based upon the percentage passing the 0.425mm sieve to understand the risk of volume change of the material according to BRE Digest 240.
3. The SPT N values have been corrected to N60 values using the SPT hammer energy ratio

5.6. Glacial Till Deposits – Granular

The granular Glacial Till deposits was typically encountered as a medium dense to dense slightly sandy GRAVEL.

The PSD results shown in Figure B.10 confirm this the field description of this material.

20no. SPTs were obtained within this unit, these have been corrected to N60 values using the hammer energy ratio certificates and presented in Figure B.14. Omitting the 2no. refusals the N60 values ranged between 15 and 41. This indicates that the gravel is between medium dense and dense.

A summary of testing and available results undertaken in this geological unit are summarised in Table *5.3*.

Table 5.3. Summary of geotechnical testing results for Glacial Deposits – Granular.

Test / Parameter	No. of tests	Value / Range	Assessment
Particle Size Distribution [wet sieve]	6	Total percentage: Very coarse: 0 - 25 Gravel: 62 - 92 Sand: 3 - 35 Fines (<0.063mm): 1 - 3	BS EN ISO 17892-4:2016
Corrected SPT (N60) [1]	20	15 – 41[2]	In-situ SPT
Permeability (m/s) [Constant Head Permeameter]	3	1.8×10^{-4} to 4.2×10^{-3}	BS EN ISO 17892-11: 2019

Note:
1. The SPT N values have been corrected to N60 values using the SPT hammer energy ratio.
2. 2no. Refusals recorded

5.7. Glacial Till Deposits – Cohesive

The cohesive Glacial Till deposits were typically encountered as a firm to very stiff slightly sandy gravelly CLAY.

The plasticity tests conducted on this material, shown on Figure B.5, show that this material is predominantly a low plasticity CLAY with 2no. results showing an intermediate plasticity CLAY.

The PSD results shown in Figure B.9 show that this material is generally well graded with material consistent with the field descriptions and proportions consistent for a cohesive material.

14no. SPTs were obtained within this unit, these have been corrected to N60 values using the hammer energy ratio certificates and presented in Figure B.13. Omitting the 1no. refusal the N60 values ranged between 23 and 52.

The undrained shear strength obtained from SPT N60 correlations and triaxial tests indicate a high to very high strength clay as shown in Figure B.15. It should be noted that 2no. triaxial tests undertaken which

exhibited compound failure show low to medium undrained shear strengths. These results were significantly less than in situ SPT correlated values and were therefore not considered representative of this material.

A summary of testing and available results undertaken in this geological unit are summarised in Table *5.4*.

Table 5.4. Summary of geotechnical testing results for Glacial Deposits – Cohesive.

Test / Parameter	No. of tests	Value / Range	Assessment
Natural Moisture Content (%)	21	10.2 – 25.1	BS1377: Part 2
Liquid Limit (%)	16	21 - 36	BS1377: Part 2
Plastic Limit (%)	16	13 - 17	BS1377: Part 2
Plasticity Index (PI) (%)	16	6 - 19	BS1377: Part 2
Modified PI (%) [1]	16	2 – 18	BRE Digest 240
Particle Size Distribution [wet sieve]	7	Total percentage: Very coarse: 0 Gravel: 9 - 39 Sand: 22 - 34 Fines (<0.063mm): 39 – 57 6no. Sedimentation Silt: 26 – 40 Clay: 17 - 22	BS1377: Part 2 (Clause 9.2 & 9.4)
Corrected SPT (N60) [2]	14	23 – 52[3]	In-situ SPT
Shear Box Test Peak Angle of Friction, φ' (°)	1	26	BS1377: Part 7
Undrained Triaxial Test Single Stage	4	33 - 186	BS EN ISO 17892-8:2018
Coefficient of volume compressibility, mv (m2/MN) [One Dimensional Consolidation Test]	1	Overburden: 0.41	BS EN ISO 17892-5:2017
Coefficient of Consolidation Cv [One Dimensional Consolidation Test]	1	0.5 – 1.6	BS EN ISO 17892-5:2017
Permeability (m/s) [Triaxial Permeability Test]	3	7.7×10^{-11} to 3.6×10^{-10}	BS EN ISO 17892-11: 2019

Note:
1. The plasticity index has been modified based upon the percentage passing the 0.425mm sieve to understand the risk of volume change of the material according to BRE Digest 240.
2. The SPT N values have been corrected to N60 values using the SPT hammer energy ratios.
3. 1no. Refusal was recorded.

5.8. Weathered Coal Measures Formation

The weathered coal measures was typically encountered as extremely weak MUDSTONE recovered as angular to subangular gravel.

All of the SPTs within the weathered coal measures were refusals. The recovery of material as a gravel is likely a product of the drilling method. In-situ the weathered formation is likely an extremely weak mudstone.

A summary of testing and available results undertaken in this geological unit are summarised in Table *5.5*.

Table 5.5. Summary of geotechnical testing results for Weathered Coal Measures Formation.

Test / Parameter	No. of tests	Value / Range	Assessment
Corrected SPT (N60) [1]	12	56[2]	In-situ SPT

Note: 1. The SPT N values have been corrected to N60 values using the SPT hammer energy ratio
2. All SPT values were refusals

5.9. Coal Measures Formation

The coal measures formation was typically encountered as a medium to very Strong SILTSTONE with some layers of weak to medium strong MUDSTONE.

The Unconfined Compressive Strength (UCS) and point load testing undertaken on this formation is shown to be highly variable see Figure B.19, values are largely shown to be less than 50MPa but there is no clear correlation with depth and no relationship between the UCS values within the siltstone layers as opposed to the mudstone layers.

A summary of testing and available results undertaken in this geological unit are summarised in Table *5.6*.

Table 5.6. Summary of geotechnical testing results for Coal Measures Formation.

Test / Parameter	No. of tests	Value / Range	Assessment
Axial Point Load Tests, converted UCS MPa [1]	14	1.3 – 154.0	ISRM Methods
Uniaxial Compressive Strength (UCS) MPa	6	4.3 – 81.4	ASTM D7012-14 Method C
Water Content (%)	20	0.4 – 3.6	In above tests

Note: 1. UCS values have been converted using a factor based on tested rock type. Values reported are axial UCS only.

5.10. Assessment of Geotechnical Design Parameters

5.10.1. General

Geotechnical design parameters for each of the geological units has been determined based on:

- Laboratory test results;
- Published literature;
- Engineering judgement.

Unless stated, these values will be selected in accordance with BS8004:2015 (Ref [25]) and Eurocode 7 (Ref [2], [3]).

5.10.2. Unit weight

The unit weight of the geological units has been determined based upon:

- Material descriptions and in-situ tests
- BS 8004 (Ref [25]) which presents typical weight density ranges for materials.

The indicative unit weights for each geological unit are presented in Table 5.7.

5.10.3. Effective Friction Angle

The effective friction angle has been derived based on:

- Material descriptions and PSD results;
- Empirical correlation using SPT N60 values and soil plasticity index parameters.
- Shear Box testing
- Values from literature

The angle of friction for cohesive soils has been determined from the correlation between plasticity index and the critical state angle of shearing resistance as presented in BS 8002:2015 (Ref [26]):

$$\varphi'_{cv} = 42° - 12.5 \times \log_{10} \mathrm{PI}$$

The angle of friction for granular soils is based on correlations presented in BS8002:2015 (Ref [26]):

$$\varphi'_{pk,k} = \varphi'_{cv,k} + \varphi'_{dil}$$

Where:

$\varphi'_{cv,k}$ Critical state angle of friction of the soil and is given by:

$$\varphi'_{cv,k} = 30° + \varphi'_{ang} + \varphi'_{PSD}$$

φ'_{ang} is the contribution due to the angularity of the soil particles;

φ'_{PSD} is the contribution due to the soil's particle size distribution;

φ'_{dil} is the contribution to the critical state angle due to soil dilatancy.

The recommended effective angle of friction for each geological unit are presented in Table 5.7.

5.10.4. Undrained Shear Strength

The undrained shear strength of cohesive soils has been assessed using the following:

- In situ hand shear vane tests;
- Laboratory undrained triaxial tests;
- Empirical correlations using SPT N60 values
- Values from literature

The correlation by Stroud presented in CIRIA 143 (Ref [27]) has been used to derive the undrained shear strength (C_u) of cohesive soils from SPT N60 values:

$$C_u = f_1 \times N$$

f_1 is based on the design plasticity index for the unit. For the cohesive Glacial deposits a f_1 value of 6 has been assumed. For the cohesive Tidal Flat deposits a f_1 value of 4.5 has been assumed.

The recommended undrained shear strengths for each geological unit are presented in Table 5.7.

5.10.5. Undrained Young's Modulus

The undrained Young's Modulus (E_u) of the units has been assessed using the following:

- Empirical correlation using SPT N60 values

The correlation presented in CIRIA 143 (Ref [27]) has been used to derive the undrained Young's Modulus of cohesive soils from SPT N60 values:

$$E_u = (1.0 - 1.2) \times N60$$

The recommended stiffness parameters for each unit are presented in Table 5.7.

5.10.6. Drained Young's Modulus

The drained Young's Modulus of the units has been assessed using the following:

- Conversion from the undrained modulus using Worth (1972) relationship;
- Empirical correlations using SPT N60 values

Worth (1972) stated that the drained modulus of cohesive soils is related to the undrained modulus by the following:

$$E' = \frac{2(1+v)}{3} \times E_u$$

Where:

v Poisson's ratio

The correlation by Stroud presented in CIRIA 143 (Ref [27]) has been used to derive the drained Young's modulus from corrected SPT N60 values:

$$E' = 0.90 \times N60 \text{ (in MPa)}$$

Poisson's ratio is typically between 0.20 and 0.45, with a lower Poisson ratio applied to stiff/dense soils increasing to 0.45 for soft/loose materials (Ref [28]).

5.10.7. Compressibility

Coefficient of volume compressibility has been assessed using the following:

- Laboratory oedometer test;
- Empirical correlations using SPT N60 values
- Values from literature

The correlation presented in CIRIA 143 (Ref [27]) has been used to derive the coefficient of volume compressibility from corrected SPT N60 values:

$$m_v(m^2/MN) = \frac{1}{f_2} \times N$$

f_2 coefficient is based on the design plasticity index for the unit from CIRIA 143 (Ref [27])

5.10.8. Uniaxial Compressive Strength

The Uniaxial Compressive Strength (UCS) has been calculated based on:

- UCS laboratory testing
- Point Load Index Laboratory testing

The point load index values have been converted to UCS using the following equation:

$$UCS\ (MPa) = Is(50) \times k$$

K is the conversion factor based on rock type from Rusnak and Mark (2000) where:

- k = 20.0 (Siltstone)
- k = 12.0 (Mudstone)

5.11. Indicative Design Parameters

The indicative design values have been determined for each geotechnical design parameter in accordance with Eurocode 7 (BS EN 1997-1:2004+A1:2013): Geotechnical Design (Ref [2]), from values measured directly in situ, by laboratory testing or by correlation of values derived empirically and indirectly by in situ or laboratory testing. Where it was not possible to derive values directly or indirectly, published values were consulted (with engineering judgement and experience) to establish an appropriate value for a particular geotechnical parameter.

Presented in Table 5.7 are the outline values proposed for the geological units expected at the site. Note that topsoil has not been included as it is anticipated to be removed during construction works. Design parameters for the made ground have not been developed as it was encountered in a localised area at the northern part of the site where no major load bearing structures are proposed. Currently a new access road is proposed in the area where made ground is present therefore it's likely that the construction thickness of the road will increase or there will be incorporation of geogrid to account for the made ground.

Table 5.7: Material indicative parameters.

Material Parameter	Tidal Flat Deposits – Cohesive	Tidal Flat Deposits - Peat	Glacial Deposits – Granular	Glacial Deposits – Cohesive	Weathered Coal Measures	Coal Measures	Derivation Notes
Unit weight, γ (kN/m³)	18	12	20	22	24	24	Value for TFD-C based on indicative weight density from BS8004:2015 (Ref. [25]). Value for Peat from Table 1 from Ref ([29]) Value for Glacial Deposits – Granular developed from SPT N Values using CIRIA 143 (Ref. [27]) and values for indicative weight density from BS8004:2015 (Ref. [25]) Value for Glacial Deposits – Cohesive values for indicative weight density from BS8004:2015 (Ref. [25])
Effective angle of friction (°)	22	N/A	34	27	20-27 (Mudstone)	27-34 (Siltstone) 20-27 (Mudstone)	TFD-C value determined from equation in BS8004:2015 (Ref. [25]) for fine grained soils using the 75th Percentile for PI: $\varphi'_{cv} = 42° - 12.5 \times \log_{10} \mathrm{PI}$ Glacial Deposits-C determined from above correlation and shear box result. Glacial Deposits-G value based on the 25th Percentile N60 value and Figure 36 presented in CIRIA 143 (Ref. [27]).
Effective cohesion, c' (kPa)	0	0	0	0	0	0	
Undrained shear strength, C_u (kPa)	10	5	N/A	140	N/A	N/A	TFD-C determined from estimate of limited in-situ hand shear vanes. TFD- Peat determined from values presented in Ref ([29]).

Material Parameter	Tidal Flat Deposits – Cohesive	Tidal Flat Deposits - Peat	Glacial Deposits – Granular	Glacial Deposits – Cohesive	Weathered Coal Measures	Coal Measures	Derivation Notes
							Glacial Deposits – C determined from the 25th Percentile SPT and correlation as per Stroud in CIRIA 143 with an f_1 value of 4.5 and 2no. undrained triaxial tests. 2no. other triaxial tests recorded uncharacteristically low Cu values which were a function of a compound failure mode therefore these results were not considered.
Undrained Young's Modulus, E_u (MPa)	1	0.1-0.5	N/A	31	N/A	N/A	TFD-C based on equation 2 for high plasticity clays from Ref ([30]) $E_U = 100 \times Cu$ Peat range calculated based on inverse of Mv value Glacial Deposits-C range based on 25th Percentile of SPT N60 value. Correlation presented in CIRIA C143 (Ref. [27]): $E_U = (1.0 - 1.2) \times N60$
Drained Young's Modulus, E (MPa)	1	0.1-0.5	23	28	N/A	N/A	TFD-C and Peat value based on correlation presented in Worth (1972) between drained and undrained Young's modulus where v=0.5: $E' = \frac{2(1+v)}{3} \times Eu$ Glacial Deposits-C and Glacial Deposits-G based on Percentile of SPT N60 value. Correlation presented in CIRIA C143 (Ref [27]) For cohesive materials: $E' = 0.9 \times N60$ For granular materials: $E' = 1.0 \times N60$

Material Parameter	Tidal Flat Deposits – Cohesive	Tidal Flat Deposits - Peat	Glacial Deposits – Granular	Glacial Deposits – Cohesive	Weathered Coal Measures	Coal Measures	Derivation Notes
Coefficient of volume compressibility, m_v (m^2/MN)	>1.50	6.5-7.6	N/A	0.41	N/A	N/A	Tidal Flat Deposits- C determined from Table 2.11 from Tomlinson (Ref. [31]) upper bound determined from SPT Tidal Flat Deposits – Peat determined from Oedometer testing for in-situ loads. Glacial Deposits-C range based Oedometer test results for in-situ loads.
Permeability (m/s)	1.8×10^{-10}		4.2×10^{-3}	3.6×10^{-10}			Tidal Flat Deposits – Cohesive, Glacial Deposits Granular & Cohesive values determined from upper bound laboratory permeability testing results.
Unconfined Compressive Strength (MPa)	N/A	N/A	N/A	N/A	0.6-1.0	6.5	Weathered Coal Measures value from Table 2 in BS EN 14689-2018 for extremely weak rock (Ref. [32]). Coal Measures Value determined from 25th percentile of the UCS results.

5.12. Buried Concrete Design

17no. BRE Suite D tests were scheduled to assess potentially aggressive ground conditions at the site to assess the potentially aggressive ground conditions to inform the concrete design. The assessment was done assuming brownfield site conditions with pyrite present and mobile groundwater.

The indicative values and design classes have been assigned in accordance with BRE Special Digest 1 (SD1) (Ref [33]) and the proposed Aggressive Chemical Environment for Concrete (ACEC) classification is presented in Table 5.8 below.

It should be noted that gypsum was recorded within BH107 & BH109 within the rock mass at depth, inclusion of gypsum can result in elevated sulphate levels which could result in a requirement for a higher class of concrete. Peat can also have acidic pH which could have a bearing on concrete classification.

Table 5.8: BRE Suite D test results and classification.

Test Parameter	Units	Made Ground	Tidal Flat Deposits – Cohesive & Peat	Glacial Deposits – Cohesive	Glacial Deposits – Granular
No. of tests	-	1	8	5	3
Sample Depth Range (m bgl)	m bgl	1.50	0.50-3.20	4.80-11.80	6.00-7.00
pH		10	5.4-7.8	6.8-12.2	7.0-7.9
Sulphate (2:1 Water Soluble) as SO4	mg/l	260	47-1300	12-1400	17-77
Total Sulphur (%)		0.3	0.01-1.40	0.02-0.11	<0.01-0.02
Total Potential Sulphate (%)		0.9	0.03-4.20	0.06-0.33	0.03-0.06
Characteristic 2:1 SO4 Sulphate	mg/l	260 Highest 2:1 SO4	1200 Mean of the 2no. highest.	940 Mean of the 2no. highest	77 Highest 2:1 SO4
Characteristic Total Potential Sulphate (TPS) (%)		0.9 Highest TPS	3.59 Mean of the 2no. highest TPS	0.285 Mean of the 2no. highest TPS	0.06 Highest TPS
Characteristic pH		10 Lowest pH	5.7 Mean of the 2no. lowest pH	7.1 Mean of the 2no. lowest pH	7.0 Lowest pH
Design Sulphate Class	-	DS-3	DS-4*	DS-2	DS-1
ACEC Class	-	AC-3	AC-5	AC-2	AC-1

6. Contamination Assessment

6.1. Introduction

The assessment undertaken herein has been carried out generally in accordance with the current best-practice guidance for the assessment of land contamination as contained in the LCRM (Ref [34]).

Soil samples were obtained from the site during the ground investigation works and subjected to laboratory analytical testing in order to inform the assessment of the risks posed to human health (construction workers, future site users), and controlled waters from the presence of potential contaminant sources.

Further evaluation of the likely presence of pollutant linkages relevant to the site in its current state and after development has been undertaken to inform if there are further development implications for the scheme.

All chemical analyses were undertaken by the UKAS accredited Derwentside Environmental Testing Services Limited (DETS); the results of which are discussed in the following sections.

Laboratory analytical results are appended within the Factual Report provided in Appendix A.

6.2. Human Health Risk Assessment - Soils

6.2.1. Risk Assessment Criteria

Total soil chemical results were directly compared to appropriate Human Health Assessment Criteria (HHAC) LQM/CIEH S4UL (Ref [35]) and DEFRA C4SL (Ref [36]) and are summarised in the below sections.

Soils have been screened against a commercial land use based on the intended site development as an industrial facility (proposed new GIS substation) HHAC have been formulated with suitable consideration to associated pollution linkages, comprising inhalation, ingestion and dermal contact with soil / dust and inhalation of vapours associated with volatile compounds. Further details regarding the specific HHAC used is presented in Appendix C.

The assessment is based on the following assumptions:

- Suitable 4 Use Levels (S4UL) thresholds are used to the nearest Soil Organic Matter (SOM) percentage deemed appropriate (1%, 2.5% or 6%).
- The proposed site end use is of a low-risk rating (commercial/industrial). For analysis purposes, commercial is deemed the most appropriate end use.
- Geology beneath the site has been classified as a Secondary Undifferentiated Aquifer for superficial deposits and a Secondary A Aquifer for bedrock. Some protection of the bedrock aquifer (Secondary A Aquifer) would be afforded by the cohesive nature of the shallow Tidal Flat Deposits and the deeper Glacial Till Deposits. The site is not located within a Source Protection Zone.
- It is deemed that statistical analysis is not appropriate given the level of sample data and results being relatively low risk.
- Site history has indicated a **very low** risk of contamination.
- Transient risks to construction workers can be addressed by the adoption of appropriate health and safety measures, therefore, the primary residual risks that require assessment are Site End Users.

6.2.2. Deviating Samples

Deviating samples are associated with results contained within the Geotechnics Factual Report (Ref. [1]). Deviations relate to an exceedance of holding times for pH, conductivity, total sulphur, Chromium, Hexavalent (4 days), Kone (4 days), pH/Cond (1 days), Ammoniacal Nitrogen as NH4 (10 days), Ammoniacal Nitrogen as NH3 (10 days), Ni

trite as NO2 (5 days), PAH MS (4 days), SVOC (7 days) and one inappropriate container for tests (TP101 0.50m VOC) Detailed below in Table *6.1*. Full detail is provided within the laboratory testing certificates contained within the Geotechnics Factual Ground Investigation Report, included as Appendix A.

Table 6.1 Deviating Sample List.

Location ID and Depth (m bgl)	Tests Deviating	Reason
BH101 (0.50), TP105 (0.15, 0.40), TP105A (0.15, 1.40), TP106 (0.50) BH105 (0.25), TP107 (0.25), TP108 (0.20), TP109 (0.20), TP112 (0.25), BH111 (0.25, 0.50)	pH + Conductivity, VOC	Holding Time
BH102 3.00	Total sulphur + pH	Holding Time
TP101 0.50, TP115 0.50, BH106 (0.25), BH111 (0.25) TP105A 1.4, TP105 0.4	VOC	Inappropriate Container
TP105 0.15, 0.40 TP105A 0.15, 1.40 BH111 (0.25) Leachate	Chromium, Hexavalent Kone pH/Cond Ammoniacal Nitrogen as NH4 Ammoniacal Nitrogen as NH3, Nitrite as NO2, PAH MS, SVOC	Holding Time
BH103 (1.00), BH104 (1.00), TP101 (0.50), TP104 (2.00), TP105A (1.40-1.50)	Anions 2:1, Total Sulphur, Total Sulphate ICP, pH + Conductivity	Holding Time
BH103 (2.20-3.20), BH103 (3.20-3.80), BH104 (2.80), TP103 (1.80-2.00) TP108 (2.50), TP109 (1.40-2.00), TP106 (2.00-2.20)	Organic Matter (Manual)	Holding Time

Deviating samples are noted where the laboratory cannot confirm the integrity of the sample and as such laboratory results may be associated with differing concentrations to existing ground conditions.

6.2.3. Summary of Results

All 42no. samples subjected to laboratory testing returned results below the adopted screening criteria for commercial LQM/CIEH S4UL thresholds.

Screening of 42no. samples for asbestos content did not return any positive results.

As a result, it is considered that the soils collected from the near surface do not have the potential to present a significant risk to human health based on the proposed commercial end use.

Localised Total Petroleum Hydrocarbons were recorded within location TP115 0.2m bgl. Whilst the result falls below the adopted screening value total TPH was recorded with a concentration of 1,400mg/kg for chain length C21-35. Further consideration should be given to impact on disposal classification as is discussed further in Section 6.5.5

The assessment is appended to this report in Appendix C.

6.3. Controlled Waters Risk Assessment

Laboratory analytical results are appended within the Factual Report provided in Appendix A and associated screening is presented within Appendix C.

The results have been compared against UK Drinking Water Standards, WHO Guidelines for Drinking Water Quality (4th Edition 2011) and Environmental Quality Standards to provide a conservative assessment of the potential risk to sensitive receptors.

6.3.1. Groundwater Samples

A single groundwater sample was collected from location BH112 with all results below the adopted screening criteria.

6.3.2. Leachate Samples

Leachate testing was completed on 6no. samples from across the site to provide an assessment of risk associated with near surface concentrations. Leachate testing by the test method is considered to represent a worse case assessment of concentrations, such that screening of results to water quality standards can be deemed precautionary. However, screening of leachate samples returned results at the limit of detection or below the adopted screening criteria.

6.3.3. Discussion

Based on the above testing, with both groundwater and leachate samples returning results below the adopted screening criteria or limit of detection it is considered that near surface concentrations within the development area do not represent a significant risk to Controlled Waters.

6.4. Ground Gas Risk Assessment

6.4.1. General

Ground Gas Risk Assessment should be completed in general accordance with current British Standards and technical guidance, BS8576:2011 (Ref [37]), BS8485:2015+A1:2019 (Ref [38]) and CIRIA 665 [39].

The empirical semi-quantitative approach is based on the calculation of Gas Screening Values (GSV), as defined by BS8485 (Ref [38]). GSV are calculated by via assessment of gas concentration and gas flow rate, whilst considering of influencing factors.

CIRIA 665 (Ref [39]) states that typically six monitoring visits should be undertaken over a period of three months, with some visits to be undertaken in atmospheric conditions below 1000 mBar.

6.4.2. Ground Gas Boreholes Installations

As presented in Section 4.12, 2no. boreholes (BH111 and BH112) were installed with gas and groundwater instrumentation for monitoring purposes. Due to the presence of shallow groundwater, response zones were flooded such that it was not possible to complete ground gas screening during the monitoring period.

In order to further assess risks, consideration should be given to the Conceptual Site Model and potential for sources of ground gas within 250m of the site.

6.4.3. Ground Gas Sources

The Conceptual Site Model did not identify any sources of ground gas on site. However, two off site sources of ground gas within 250m have been identified relating to Made Ground associated with the surrounding current and historic use as a Steel Works (190m west) and infilled ponds (180m north) alongside the presence of drainage ditches around the site.

Following the site investigation, a potential source has been identified associated with the fine grained deposits, which were noted to be variable with general thicknesses of between 3.2m-7.0m of cohesive and organic soil including peat. The presence of these materials is a likely low generation source but has the potential to contain high concentrations of methane and carbon dioxide.

6.4.4. Risk Assessment

The precise ground gas regime at the site is currently unknown due to the artesian groundwater conditions at the site. However, due to the cohesive nature of the overlying superficial strata which inhibits permeability to such a degree that artesian groundwater is contained, the unit may be considered sufficient to limit ground gas movement in natural conditions, ie where a pathway is not introduced.

Given the low likelihood of migration from off-site sources due to the cohesive nature of the shallow superficial deposits and high groundwater table limiting lateral migration, it is considered that the only significant potentially active SPR linkage for ground gas at the site is the peat and organic soils below the site. Given these are a low generation potential and, due to the presence of ground water, consistently flooded it is considered highly unlikely that significant flows of ground gas would be generated within the organic stratum. This is supported by CL:AIRE Research Bulletin RB17 (Ref [40]); A pragmatic approach to ground gas risk assessment, which suggests the following;

Alluvial soils and buried peat can quite often give high concentrations of methane and carbon dioxide in monitoring wells, often methane concentrations can reach up to 90%. This is because the gas has been generated historically and is trapped in the pores due to limited transport (at low diffusion rates). The methane accumulates at increasing depth in peat columns, but this does not indicate high rates of production (Clymo and Bryant, 2008; Fritz et al., 2011).

There is no, or very little, current gas generation and the carbon dioxide has dissolved out of the gas trapped in the soil pores which causes a higher percentage of methane to be recorded. Experience on many dockland and similar sites has shown that sites on Alluvial soils[1] do not generate sufficient hazardous gas flows to exceed Characteristic Situation 2 as defined in BS 8485: 2007 (this has been demonstrated by monitoring under floor venting systems – Wilson and Card, 1999). Therefore, if gas monitoring is not undertaken it is acceptable to simply install Characteristic Situation 2 protection on sites where Alluvial soils are present.

[1]While Alluvial soils are not present at the site the Peat deposits within the shallow cohesive deposits are likely to behave in the same way due to the nature of the deposits.

Due to the shallow groundwater and artesian aspects at the site restricting ground gas monitoring it is considered that an assumption of a Characteristic Situation 2 protective measure may be undertaken to eliminate residual risk from the ground gas sources on the site.

In line with technical guidance set out in RB17 and in conjunction with the confined nature of underlying groundwater it is considered that Characteristic Situation 2 (CS-2) may be adopted for any structures constructed across the site.

Subsequent site specific risk assessment may allow revision in the gas classification, however this would be represent a separate package of work.

6.4.5. Typical Gas Protection Measures

For a site classified as CS-2 the following options are suggests as methods of ground gas protection; a) reinforced concrete cast in situ floor slab (suspended, non suspended or raft) with minimum 1200g DPM b) block and beam or precast concrete slab and minimum 2000g DPM/or reinforced gas membrane c) possibly under-floor venting or pressurisation in combination with a) and b) depending on use. All joints and penetrations sealed. The classification should be completed In line with BS8485 Table 5 and 6 (Ref [38]).

Due to potential depleted oxygen levels, access to trenches should be limited, or with the use of specific gas alarms. Control measures should be determined by the Principal Contractor.

It is advisable that all gas protection measures are agreed with the regulator prior to adoption in construction.

6.4.6. Ground Gas Requirements – Radon

As set out in the Phase 1 Desk Top Study, the site is in a lower probability radon area (less than 1% of properties are estimated to be at or above the Action Level). As a result no radon protective measures are necessary in the construction of the proposed scheme.

6.5. Construction Implications

6.5.1. Remedial Requirements

The human health risk assessment has confirmed that screened soils do not have the potential to present a significant risk to future site users based on the intended development proposal. Testing of leachate and groundwater samples has not returned any elevated concentrations. In view of this, it is considered that the development area does not have the potential to present a significant risk to Controlled Waters. As a result it is considered that remediation of the site soils/groundwater is unlikely to be required for the proposed site use.

6.5.2. Soils re-use

The human health risk assessment presented above has confirmed that soils comply with the adopted screening criteria, however localised Total Petroleum Hydrocarbon concentration has been identified associated within TP115 0.2m bgl. Whilst values fall below the adopted screening criteria the concentration are associated with an Elevated Classification for disposal off site. The extent of concentrations are unknown such that the immediate area should be confirmed to allow confirmation of disposal costs and avoid mixing of soils during excavation works. This may be completed as part of site enabling works, with waste management documentation produced to set out necessary materials handling, excavation, segregation and disposal process.

6.5.3. CL:AIRE Code of Practice – Materials Management

Once extents of elevated concentrations are known, the re-use of site won material within the site development or at an off-site location should be possible where compliant with methodology set out within the CL:AIRE Definition of Waste: Development Industry Code of Practice (Ref [41]). As such, where material reuse is proposed under the framework, it will be necessary for the Contractor to produce a Materials Management Plan, clearly and accurately detailing the proposed materials management scheme for the site. This should be completed before any materials have been excavated.

6.5.4. Risk to Construction Workers

No formal screening criteria are available for assessing risks to construction workers from short-term exposure to contaminants in soil. As set out above, elevated concentrations above the screening criteria were not identified within the near surface. As a result, it is considered unlikely that near surface soils within the development footprint will present an unacceptable risk to construction workers.

6.5.5. Waste Assessment

In accordance with the Landfill Regulations (2005) and Waste Framework Directive (WFD) (2008/98/EC), it is a statutory requirement that a waste is characterised and meets specific Waste Acceptance Criteria (WAC) prior to disposal at a landfill site. The waste producer has a Duty of Care to ensure that the waste is characterised, and the landfill operator must also be satisfied that a basic characterisation, is properly completed before the waste is accepted.

The basic characterisation requires solids testing for potential contaminants, derived from the knowledge of the site followed by a hazardous/hazardous assessment of the potential contaminants following the Environment Agency (EA) / SEPA regulatory guidance, 'Hazardous Waste: Interpretation of the definition and classification of hazardous waste, Technical Guidance WM3' (2015).

The Waste Acceptance Criteria (WAC) became mandatory in 2005 following the introduction of the Landfill Regulations. Landfills are classified according to whether they can accept hazardous, non-hazardous or inert wastes. Wastes can only be accepted at a landfill if they meet the waste acceptance criteria (WAC) for that class of landfill. The WAC testing includes solids and leachate testing to assess which class of landfill the waste may be accepted at.

Currently there are only acceptance criteria for inert, stable-non-reactive hazardous and hazardous landfills (SNRH). This means that WAC testing is only required for wastes destined for Inert, SNRH and Hazardous landfills.

It should be noted that the results of the assessments presented herein can only be seen as indicative as the final acceptance of any waste is at the sole discretion of the individual landfill operator. As such it is recommended that the results of assessment presented here are passed to the landfill operator to confirm the waste classification.

6.5.6. Waste Acceptance Criteria

WAC classification has been undertaken on 10no. samples obtained during the ground investigation.

Table 6.2 presents the WAC test results and comparison with the relevant WAC thresholds. Where classification exceedance varies by determinant this has been noted within the exceedance column alongside the overall likely classification.

Table 6.2: WAC Results.

Sample ID	Sample Depth (m bgl)	Likely Classification	Exceedances
BH103	*0.5*	*Inert**	*n/a*
TP101	*0.25*	*Stable Non-Reactive Hazardous*	*TOC*
TP118	*0.5*	*Hazardous*	*TOC, LOI*
TP115	*0.5*	*Inert**	*n/a*
TP105B	*0.5*	*Inert**	*n/a*
BH112	*0.4*	*Inert**	*n/a*
TP103	*0.15*	*Inert**	*n/a*
TP104	*0.25*	*Inert**	*n/a*
TP105	*0.2*	*Inert**	*n/a*
TP105A	*0.7*	*Stable Non-Reactive Hazardous*	*TOC*

*Compliant with Inert criteria for determinants tested.

With reference to Section 6.2.3, asbestos content was not identified in any sample across the site.

HAZWASTEONLINE

HazWasteOnline screening was completed on a selection of soil samples generally aligning with the locations tested for WAC. The output sheets demonstrate that of the 11no. samples screened the material is predominantly classified as Non-Hazardous, with a single result associated with a Hazardous classification.

Table 6.3: Preliminary HazWasteOnline Assessment.

Sample Location	Sample Depth (m bgl)	Classification	Hazard Properties
BH103	0.5	Non Hazardous	-
TP101	0.25	Non Hazardous	-
BH112	0.5	Non Hazardous	-
TP103	0.5	Non Hazardous	-
TP104	0.5	Non Hazardous	-
TP105	0.15	Non Hazardous	-
TP105A	0.15	Non Hazardous	-
TP105A	1.4	Non Hazardous	-
TP111	0.25	Non Hazardous	-
TP118	0.25	Non Hazardous	-
TP115	0.2	Hazardous	HP3, HP7, HP11

Summary-

WAC testing has returned results above the trigger value for Stable Non Reactive for two samples associated with Total Organic Content and Hazardous for Loss of Ignition. Screening of soils in line with WM3 guidance has returned a Non Hazardous classification for soils tested, alongside a Hazardous result associated with the presence of hydrocarbons within TP115 at a depth of 0.2m. Review of the chemical testing associates the classification with a value of 2,600 mg/kg. This result is located near to existing infrastructure, such that redevelopment works may lead to excavation of this material. Further assessment should be completed as part of site progression including delineation and determination of procedures for material handling.

Discussion should be held with the receiver to allow confirmation of disposal classification utilising all chemical testing results contained in this report and assessment against the licence held by the receiver.

In accordance with regulations, any uncontaminated natural ground (excluding topsoil where present) should be suitable for disposal to an inert or non-hazardous landfill.

In line with best practice, sampling of material due for disposal should be completed in accordance with Appendix D of WM3 (Technical Guidance, EA 2018) (Ref [14]). This must be completed to allow suitable, comprehensive assessment and waste classification. Sampling should be proportionate to the volume of materials and with regards to heterogeneity.

6.5.7. Unforeseen Contamination

There are inherent uncertainties associated with environmental sampling of heterogeneous subsurface materials and the potential for encountering unidentified / unforeseen contamination. Therefore, it is recommended that a watching brief is maintained for potential contamination during groundwork at the site. No allowance for ground conditions between the exploratory hole locations can be made.

Any potentially contaminated materials, which differ from those identified during the ground investigation should be segregated and subjected to sampling and appropriate analysis. Assessment of the material should be undertaken to determine, the suitability of the material for re-use within the scheme, re-use offsite, or for off-site disposal in accordance with UK best practice, and regulatory requirements.

7. Refined Environmental Conceptual Site Model

Based upon the findings of the ground investigation, the Conceptual Model has been refined as presented in Table 7.1.

Table 7.1. Revised Conceptual Site Model

Source	Potential Receptor	Likelihood of Occurrence	Discussion of Pollution Linkage
Organic soils generating ground gas.	Future Site Users	Low	Gas protection measures in line with CS-2 may be adopted.*

*Subsequent site specific risk assessment may allow revision in the gas classification, however this would be represent a separate package of work.

8. Geotechnical Risk Register

The geotechnical risk register in has been developed based on information and observations on site including the results of the ground investigations completed. The risk register focuses and contains the key geotechnical elements for consideration during the next project phase.

The scoring system adopted for the risk register utilised the following:

- The probability of occurrence ('P') (Table 8.1)
- The impact of occurrence ('I') (Table 8.2)
- The overall risk rating ('R') calculated ('P' multiplied by 'I') (Table 8.3)

The complete geotechnical risk register is presented in Table 8.4.

In addition to the risk the appropriate risk owner at this stage is presented as Client (CL), Designer (D) or Contractor (CO).

Table 8.1: Probability of occurrence (P)

Probability (P)	1	2	3	4	5
Description	Negligible	Unlikely	Probable	Likely	Very Likely

Table 8.2: Impact of occurrence (I)

Impact (I)		Programme	Health and Safety	Environment	Cost
Very High	5	>10 weeks' impact on completion date	Multiple fatalities	Major environmental incident with irreversible effects and threat to public health or protected natural resource.	>£1M
High	4	> 1 week on impact completion date	Fatality	Environmental incident leading to prosecution or protester action	£100K-£1M
Medium	3	> 4 weeks on activity: < 1 week on completion date	Major injury	Environmental incident requiring management input	£10K-£100K
Low	2	1 to 4 weeks on activity: none on completion date	Minor injury	Minor environmental incident	£1K-£10K
Very Low	1	1 week to activity: none on completion date	Negligible	Negligible	<£1K

Table 8.3: Overall risk rating (R)

Risk Rating (R)	1 to 4	5 to 8	9 to 12	13 to 25
Risk Response	Monitor	Regular Attention	Early Attention	Unacceptable

Table 8.4: Geotechnical Risk Register.

Item	Hazard	Risk	P	I	R	Consequence	Mitigation	P	I	R
1	Information reviewed from GI not being representative of in situ conditions.	GI undertaken at discreet locations. Ground conditions may vary between these locations. Therefore, Geotechnical Parameters and ground model outlined within this report might not fully be representative of ground conditions at the site	3	4	12	Inaccurate detailed design leading to potential excessive settlements, failure of foundations, structures and significant re-design, remedial costs.	Parameter selection has been undertaken using engineering judgement with data collected and guidance in EC7. Design will include the use of EC7 partial factors to further mitigate risk. (D)	2	4	8
2	Unforeseen Ground Conditions	Ground Investigation was scoped as part of the existing Margam Substation footprint detailed in Section 1.3. If changes are made to the proposed substation layout, then there is a risk of this GI being insufficient for detailed design.	3	4	12	Inability to undertake detailed design due to lack of information.	Undertake further GI if changes in scope occur prior to construction to enable detailed design. (CL)	2	4	8
3	Slag identified in Made Ground	Potential for swelling of slag within Made Ground	3	4	12	Heave and damage to foundations and access tracked.	Slag identified in localised area where an access track is proposed. If during construction made ground is found to be more extensive, it is recommended that additional testing to establish potential swelling from slag is to be undertaken. (CO)	2	4	8
4	Potential Unrecorded Shallow Mine Working	Proposed substation within influencing distance of an unrecorded worked coal seam.	3	4	12	Excessive settlements of structures and ground collapse leading to damage to structures rendering them unsafe.	A Coal Mining Risk Assessment was completed, with 2no. rotary boreholes scoped as part of GI works to investigate the stratigraphy beneath substation. No observable evidence of any worked seams was identified.	2	4	8
5	Highly Compressible Cohesive Material and Peat present at shallow depths and considerable thicknesses.	Excessive short-term primary and long-term secondary settlements are likely with any placed fill at the site. This will lead to settlement of the substation	3	4	12	Damage to drainage structures, shallow foundations rendering them unsuitable for	Optioneering for ground improvement was undertaken to advise on appropriate methods. (CI)	2	4	8

Item	Hazard	Risk	P	I	R	Consequence	Mitigation	P	I	R
		platform and any supported shallow foundations.				function/unsafe. Inability to excavate materials due to considerable thickness.	Drainage design may need to be flexible to allow for settlement, including long-term maintenance (D). Ground improvement and Engineered Fill to consider the loading requirements for permanent structures. (D). Working platform designs and construction will need to consider compressibility of the underlying strata. (D). Rigid inclusion design will need to consider downdrag/negative skin friction and overarching effect between rigid inclusions associated with highly compressible materials. (D).			
6	Differential Settlement	Due to the variability of the Tidal Flat Deposits any formed earthworks and any shallow foundations could experience differential settlement across the length of the earthwork/shallow foundation structure and between the platform and structures.	3	4	12	Cause damage to drainage and structures, rendering them unsuitable for function/unsafe.	An assessment of settlement for the substation platform should be undertaken and a requirement for ground improvement at the site is likely. (CL) Drainage design may need to be flexible to allow for settlement and long-term maintenance if in areas where ground improvement not proposed (D). Ground improvement for structures is proposed. (CL)	2	4	8
7	Extensive Organic materials present on site	Limitation on ground improvement methodology due to presence of organics.	3	4	12	Potential of additional costs associated with	Ground Improvement optioneering has been be undertaken to understand	2	4	8

Item	Hazard	Risk	P	I	R	Consequence	Mitigation	P	I	R
		Potential for additional swelling of treated ground if soil stabilisation is utilised as a ground improvement technique.				fewer options of ground improvement. Swelling leading to damage to foundations/structures during lifetime of proposed substation.	which options are most suitable for the site. (CL) A ground improvement specialist has been consulted to understand risk from ground conditions identified and to understand if soil stabilisation would result in expansion. Trials for this would be required. (CL).			
8	Aggressive Ground Conditions	Gypsum present in underlying rock. Gypsum can lead to more aggressive concrete conditions. Peat can also be acidic which can lead to more aggressive concrete conditions.	3	4	12	Aggressive ground conditions may attack concrete foundations. Degraded concrete will require replacing incurring costs.	Received BRE tests for shallow natural materials indicate DS-4. High concrete classification required for concrete within shallow Tidal Flat Deposits. (D) Received BRE test for made ground indicates DS-3/AC-2. Made ground was not encountered in the footprint of the substation where load bearing structures are present therefore its unlikely concrete will come into contact with this material. (D)	2	4	8
9	Collapse of formed excavations.	Excavations may collapse due to very soft materials and groundwater present at shallow depths	3	4	12	Excavations at shallow depths are unlikely to remain stable during construction unless suitably benched/shored.	Vigilant to signs of instability during any excavation. Temporary support/benching may need to be considered for excavations > 1.0m bgl (CO). De-watering of excavations will be required during construction. (CO).	2	4	8
10	Surface Water & Shallow Groundwater	During the GI surface water was often present and groundwater was typically encountered at shallow depths during boring & excavation.	3	4	12	Higher groundwater level could lead to foundation failure if not	Appropriate groundwater level to be used within the design of foundations (D)	2	4	8

Item	Hazard	Risk	P	I	R	Consequence	Mitigation	P	I	R
						considered in the design.	Design of earthworks and finish ground level to consider surface water at the site (D)			
11	Uncertainty in ground water regime	Due to limited installations due to artesian conditions the long-term groundwater regime across the site could be different to that identified.	3	4	12	Higher groundwater level than that observed could lead to foundation failure.	Appropriate groundwater level namely surface level is to be used within geotechnical design. (D)	2	4	8
12	Artesian Water	Water pressure resulting in challenging rigid inclusion or sheet pile flood wall installation including for potential of washout of fines material and concrete.	3	4	12	Challenging installation could lead to increased programme/costs and potentially a need to change foundation solution.	Rigid inclusion and sheet pile flood wall installation should be agreed with an appropriate specialist (CO, CI)	2	4	8
13	Buried services	Encountering/striking buried services during works.	3	3	9	Services will need to be identified and diverted prior to construction. Safety of site personnel.	Service drawings for the site should be reviewed to identify the location of known services less than 3 months old at the time of works starting. A buried service survey should be obtained in line with PAS 128. Suitable offset from buried services (CL, CO).	2	3	6
14	CBR of material for pavement design.	GI has identified that the CBR values at the site are highly variable. For areas where pavements/roads are proposed then additional design to account for lower CBR values will be required.	3	3	9	Lower CBR value could result in having to carry out extensive excavations to achieve a suitable subgrade CBR. This can lead to increase costs and potential delays to programme.	Geogrid to be incorporated into design to minimise required excavations (D). Road design to account for specific CBR tests undertaken at locations based on the proposed road. (D) Verification CBR testing to be undertaken during construction (CO). Roads will require regular maintenance or a floating road system due to	2	3	6

Item	Hazard	Risk	P	I	R	Consequence	Mitigation	P	I	R
							settlement of TFD unless Ground improvement undertaken across the whole area. (D)			
15	Materials with high moisture contents	High moisture content resulting in lower CBR values within materials.	3	3	9	Lower CBR value could result in having to carry out extensive excavations to achieve a suitable subgrade CBR. This can lead to increase costs and potential delays to programme.	Geogrid to be incorporated into design to minimise required excavations (D). Verification CBR testing to be undertaken during construction (CO).	2	3	6
16	Material Re-use	Material present on site at shallow depths are unsuitable for re-use as earthworks for engineering purposes. Material very wet of optimum moisture content.	3	3	9	No cut & fill is proposed as part of the earthworks, however, some reduced level excavation will be required to develop the piling platform. Any excavated material may need to be disposed off site leading to increased costs. Significant costs/time associated with treatment of in situ material for re-use.	Preparation of a peat management plan to ensure any peat is retained on site. Re-use of cohesive materials could be considered for new and reinstated ditches. (CL). Design to minimise further excavation, therefore limiting the requirement of re-use of materials (D).	2	3	6
17	Ground gas included depleted oxygen risk.	Ground gas monitoring restricted due to the presence of shallow groundwater and artesian conditions.	4	3	12	Impact to health of future site users.	Installation of CS-2 gas protection measures.	2	3	6

Item	Hazard	Risk	P	I	R	Consequence	Mitigation	P	I	R
		Characteristic Situation 2 adopted via risk assessment.				Unconfirmed protection classification. Impact to design.				
18	Hazardous Classification of soil in area of TP115 0.2m bgl	Area of impacted ground unconfirmed. Lateral extent unknown.	4	3	12	Elevated disposal costs associated with extended area.	Delineation of extent of TPH concentrations as part of site enabling works. Waste management documentation should be produced setting out necessary materials handling, excavation, segregation and disposal process. Watching brief to be maintained for visual and olfactory evidence of contamination during construction works. Where identified contact to be made with a suitably qualified specialist (CO)	2	3	6

9. Engineering Discussion

9.1. Materials Reuse

The topography of the site recorded a ground level between 2.95m to 3.67mAOD during the Geotechnics GI. It is understood that the ground level will be reduced by 1.0m below the existing ground level to facilitate the construction of the working platform, with a proposed finished substation level of 4.15mAOD anticipated. It should be noted that the materials present at excavatable depths comprise the cohesive Tidal Flat deposits and peat, these materials are not suitable for use as an engineering material due to their high compressibility and organic content.

9.2. Substation Platform

Development of the substation the site level will require consideration of high groundwater levels and a 1,000-year flood event (4.7mAOD). The perimeter of the substation platform will be formed using a flood wall, the height of which is currently understood to be 5.3mAOD. At the time of writing this report detailed design of the flood wall was in progress and will be reported separately following the completion of additional ground investigation works, anticipated to be October 2025.

All fill constituting the substation platform will be imported engineered fill. Any increase in ground level will lead to an increase in effective stress on the soils present at the site. The materials at shallow depths comprise soft cohesive Tidal Flat Deposits and Peat, which are highly compressible materials, therefore excessive settlement from the placement of any engineering fill is likely. However, the compressibility and consolidation behaviour of Peat is distinctly different from mineral soils as it experiences high initial rates of primary consolidation and secondary consolidation following the dissipation of pore pressures. Secondary compression of Peat can continue for long periods and can be difficult to quantify.

A ground improvement options report (Ref [42]) was prepared to evaluate the viability of several ground improvement options. The results of which were presented within a matrix. The most viable in terms of suitability, constructability, cost, risk, and environmental impact was the use of rigid inclusions and a load distribution mattress. Following the selection of the most appropriate solution a ground improvement performance specification (Ref [43]) based upon the requirements of National Grid Technical Guidance Note 318 (Ref [44]) was prepared and provided to the Ground Improvement Specialists. At the time of preparing this report Expanded Piling are undertaking the design of rigid inclusions within the superficial deposits and Tailor Engineering are designing the load distribution mattress.

BakerHicks is responsible for the design of the platform above the load distribution mattress and have prepared an Earthworks Specification (Ref [45]) for that element of the works.

9.3. Foundations

9.3.1. Shallow Foundations

As discussed in Section 9.2 others are designing a ground improvement scheme to meet the requirements of National Grid Guidance Note 318 (Ref [44]). They are responsible for the design of this aspect which comprises rigid inclusions and a load distribution mattress. This design is based upon a BakerHicks performance specification which includes the structural loading from the proposed buildings and infrastructure. BakerHicks are responsible for the substation platform design above the load distribution mattress. This shall be constructed using Selected Granular Fill that has been engineered in accordance with the earthworks specification and the structures shall be founded within this fill. Slag material shall not be used in the construction of the platform of load distribution mattress due to the risk of swelling.

9.4. Excavations

Minor excavations are likely as part of the formation preparation. As discussed in section 9.1 significant excavations as part of a cut/fill balance are unlikely due to the existing ground level being lower than the

proposed finished level. As discussed in Section 9.2 ground improvement is recommended to be explored. If ground improvement is utilised at the site, then some shallow foundations may be used for minor structures depending on final loads. These foundations will require excavations where temporary stability measures are likely to be needed. Conventional plant should be suitable for excavating within cohesive Tidal Flat Deposits and the peat. Due to the shallow groundwater and surface water present its likely that pumping of excavations will be required.

9.5. Surface Water Drainage

Three soakaway tests in accordance with BRE Special Digest 365 (Ref [24]) were attempted were not completed due to the high groundwater levels encountered at the site. Use of a groundwater level infiltration drainage system is not recommended at the site. However, alternative Sustainable Drainage Systems (SuDS) such as an attenuation system should be considered.

Alternatively, surface water should be managed and discharged by another means such as connection to sewer system or treated to an acceptable water quality and discharged to an existing nearby surface water feature subject to discharge consents. Flood assessments as part of the latter are not considered herein.

9.6. Groundwater

During the GI groundwater was typically encountered at surface or shallow depths associated with the Tidal Flat Deposits at the site, this level is likely influenced by the location of the site being on a low-lying marsh/grassland area. 1no. installation was placed within this material and all of the monitoring visits to date are showing groundwater level at the surface.

Groundwater was also encountered at depth associated with the granular Glacial Till deposits. Artesian water was also encountered at depth associated with the granular Glacial Till deposits present at the site. Out of 7no. strikes within this material 3no. were artesian rising to between -0.12m and -0.46m (above ground level). 1no. rising head test was undertaken in this material which returned a permeability of $9.52x10^{-4}$ m/s. The artesian water should be considered within the detailed design phase as it will need to be considered due to flood risks and it could result in uplift of the foundations. In situ permeability testing showed that the granular glacial deposits have high permeability, whereas the cohesive glacial deposits and cohesive tidal flat deposits have very low permeability.

9.7. Coal Mining

As mentioned earlier in the report and detailed within the Coal Mining Risk Assessment (Ref. [14]) there is a low risk of historical coal mining activities on this proposed development. As recommended in the CMRA a limited amount of deeper GI was undertaken: BH107 & BH109 to 50m to investigate the presence of any unrecorded workings beneath the site. There was no observable evidence of any worked seams. BH109 within the proposed Margam Substation boundary recorded intact coal at a depth of 42.55m bgl and a thickness of 0.5m. Given the thickness of this seam it is unlikely to have been worked. Furthermore, if the intact coal represented a pillar within a working, at the depth recorded this seam has 28.25m of rock cover which is sufficient to mitigate effects of surface subsidence based on encountered seam thickness and guidance in CIRIA C758D (Ref. [15]). In summary, worked coal seams are unlikely to be present within an influencing depth of the proposed development.

9.8. External areas, highways and pavements

Hard surfacing is expected for new platform, pavement areas and pedestrian footpaths to the structures and new car parking areas. According to CD 225 (Ref. [46]) the minimum permitted CBR value is 3%. Any CBR value less than 2.5% at subgrade is not considered to be of a suitable subgrade strength to support a pavement foundation and the subgrade requires improvement.

From the Dynamic Cone Penetrometer (DCP) tests undertaken at the site, the CBR values computed for the top of the cohesive Tidal Flat Deposits were assessed to range between 0.3% and 16.1%, which is highly variable. Higher values could be attributed to the gravel content of the material.

Therefore, for new hardstanding surface areas, in-situ CBR testing is required on the subbase at formation level. The Contractor should test to ensure the CBR of the subgrade is at least 2.5%, or as per pavement design prior to construction. As discussed in Section 9.2, ground improvement is required as part of the substation formation. As such, road formation could be undertaken using conventional methods with little material.

10. Summary and Recommendations

10.1. Geotechnical

Based on the discussion above, the following recommendations are provided:

- A ground improvement scheme shall take place to provide a substation platform that will meet the requirements of National Grid Technical Guidance Note 318 (Ref [44]). This is being designed by Expanded Piling (Rigid Inclusions) and Tailor Engineering (Load Distribution Mattress).
- Buried Concrete Design will need to consider the aggressive Tidal Flat Deposits at the site. BRE assessment demonstrated that concrete placed in these materials need to be of a sulphate class of DS-4 and an ACEC class of AC-5.
- The groundwater observations during the GI and the subsequent monitoring suggests that the design groundwater level should be at surface level. The detailed design should also account for uplift due to the artesian water within the granular Glacial Till deposits.
- Materials at shallow depth are unlikely to be excavated in significant quantities according to proposed cut/fill plan for the substation platform. However, these materials at shallow depth are not suitable to be re-used as engineered materials due to their high compressibility and high organic content.
- Once the ground improvement has been constructed the remainder of the substation platform shall be constructed using Selected Granular Fill, with foundations placed within this fill. Care will need to be taken to not damage any reinforcement with the load distribution mattress.
- Infiltration SuDS techniques, based on three soakaway tests attempted on site and high groundwater levels encountered during the ground investigation, are not suitable for the site.

10.2. Geo-environmental

The revised conceptual site model has identified a potential risk to future site users associated with ground gas migration. The source of ground gas is considered to be associated with organic soils. Industry guidance (Ref [40])) associates the risk with organic soils to necessitate the adoption of Characteristic Situation 2 protection measures. Subsequent site-specific risk assessment may allow revision in the gas classification, however this would represent a separate package of work.

In order to address the risk posed from ground gas a Remediation Strategy outlining the gas protection for the site will be required. Gas protection measures associated with a CS-2 classification require two levels of gas protective measures from the below.

The following options are suggested as methods of ground gas protection; a) reinforced concrete cast in situ floor slab (suspended, non-suspended or raft) with minimum 1200g DPM b) block and beam or precast concrete slab and minimum 2000g DPM/or reinforced gas membrane c) possibly under-floor venting or pressurisation in combination with a) and b) depending on use. All joints and penetrations sealed. The classification should be completed In line with BS8485 Table 5 and 6 (Ref [38]).

A validation Report will then be required to validate the ground gas protection measures have been implemented in line with the Remediation Strategy. It is recommended that the Remediation Strategy is submitted and agreed with the Local Authority prior to any implementation of protection measures.

Due to potential depleted oxygen levels, access to trenches should be limited, or with the use of specific gas alarms. Control measures should be determined by the Principal Contractor.

It is advisable that all gas protection measures are agreed with the regulator prior to adoption in construction.

Soil Reuse

The human health risk assessment presented above has confirmed that soils comply with the adopted screening criteria, however localised Total Petroleum Hydrocarbon concentration has been identified associated within TP115 0.2m bgl. Whilst values fall below the adopted screening criteria the concentration are associated with an Elevated Classification for disposal off site. The extent of concentrations are unknown such that the immediate area should be confirmed to allow confirmation of disposal costs and avoid mixing of soils during excavation works. This may be completed as part of site enabling works, with waste management documentation produced to set out necessary materials handling, excavation, segregation and disposal process.

Once extents of elevated concentrations are known, the re-use of site won material within the site development or at an off-site location should be possible where compliant with methodology set out within the CL:AIRE Definition of Waste: Development Industry Code of Practice (Ref [41]). As such, where material reuse is proposed under the framework, it will be necessary for the Contractor to produce a Materials Management Plan, clearly and accurately detailing the proposed materials management scheme for the site. This should be completed before any materials have been excavated.

Watching Brief

There are inherent uncertainties associated with environmental sampling of heterogeneous subsurface materials and the potential for encountering unidentified / unforeseen contamination persists. Therefore, it is recommended that a watching brief is maintained for potential contamination during groundwork at the site.

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Appendix A. FINAL Geotechnics Ltd Factual Ground Investigation Report & Laboratory Results

GEOTECHNICS

BUILD ON CONFIDENCE

Ground Investigation

at

Phase 1 [101677 Margam TATA Steel Connection]

Project No:	PC248745
Client:	National Grid
Engineer:	Baker Hicks
Date:	January 2025

Factual Report

Head Office
The Geotechnical Centre
203 Torrington Avenue
Tile Hill
Coventry, CV4 9UT
Tel: 02476 694664

South West Office
The Geotechnical Centre
Unit 5, Orchard Court
Heron Road, Sowton
Exeter, EX2 7NR
Tel: 01392 463110

North West Office
The Geotechnical Centre
Unit 1B, River Lane
Saltney
Chester, CH4 8RJ
Tel: 01244 671117

North East Office
Geotechnics Limited
4100 Park Approach
Thorpe Park
Leeds, LS15 8GB
Tel: 0113 397 0372

Geotechnics Limited
Registered in
England
No. 1757790 at 203
Torrington Avenue,
Tile Hill, Coventry
CV4 9UT



www.geotechnics.co.uk

GEOTECHNICS
BUILD ON CONFIDENCE

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1.0 INTRODUCTION

A geotechnical investigation was undertaken by Geotechnics Limited at the site for Phase 1 (of the National Grid - 101677 Margam TATA Steel Connection) at the TATA Port Talbot Steel Plant in Port Talbot, South Wales. The investigation was carried out to the instructions of the Engineer, Baker Hicks Limited on behalf of the Client, National Grid. This report describes the work undertaken and presents the data obtained.

2.0 OBJECT AND SCOPE OF THE INVESTIGATION

The object of the investigation was to obtain information on the ground, groundwater and hydrogeological conditions relating to the proposed development within the limitations posed by exploratory hole numbers, locations, depths, methods adopted and the scope of approved in situ and laboratory testing. The Brief for the project is included in Appendix 1. The investigation comprised cable percussive and rotary boreholes, trial pits, in situ and laboratory testing and reporting. A Factual Report was also commissioned.

3.0 PRESENTATION

A description of the site and a summary of the procedures followed during the investigation process are presented in Sections 4 to 6. The factual data so obtained are presented in Appendices 2 to 13 of this report. Attention is drawn to the General Notes and Investigation Procedures presented in Appendix 14 to aid an understanding of the procedures followed and the context in which the report should be read.

The report is presented in electronic PDF format with the data presented in accordance with "The Electronic Transfer of Geotechnical Data from Ground Investigations" published by the AGS (the AGS Format) are presented separately as a digital file.

4.0 THE SITE

4.1 Location

The site is located approximately 6km south east of the centre of Port Talbot, about 1km north west of Junction 38 of the M4 motorway and just to the east of the Port Talbot Steel Works. The approximate Ordnance Survey National Grid Reference for the centre of the site is SS 786 864 and an extract from the relevant 1:50,000 Scale O.S. Map (Sheet No. 170) is included as Appendix 2. Alternatively the centre of the site can be found using What-3-Words caked.fork.engulfing.

4.2 Description

The area investigated (the site) was approximately rectangular in shape covering an area of about 12.7ha. It comprised several water logged/boggy fields that were generally overgrown with (head-height) scrub, hedgerows and trees spread throughout the site and contained a network of drainage ditches.

An existing substation was located towards the centre of the western site boundary an access road to the substation running along the western boundary. Overhead power lines and pylons and poles associated to the substation are located across the site. Two areas of hardstanding were located underneath the power lines in the northern third of the site with another area of hardstanding located in the northern section of the western site boundary.

The site is bound to the north, south and east by trees and to the west by railway lines with Grange Road and the steelworks beyond. A mini golf course and A4242 dual carriageway is located beyond the northern site boundary. A BOC gas plant is located to the south of the site and behind the eastern site boundary are two separate power plants (Green energy and Bio energy).

Photographs of the site taken during and immediately prior to the fieldwork are presented in Appendix 3.

4.3 Site Geology

The British Geological Survey Website, https://mapapps2.bgs.ac.uk/geoindex/home.html, accessed on 20th September 2024, shows the site to be underlain by the South Wales Middle Coal Measures Formation – Mudstone, Siltstone and Sandstone. The superficial deposits are shown overlying the bedrock comprising Tidal Flat Deposits (Clay/Silt and Sand) with an area of Glaciofluvial deposits, Devensian – Sand and Gravel shown just to the east and south east of the site.

4.4 Hydrogeology

The DEFRA website, Magic Map Application (defra.gov.uk), accessed on the 20th September 2024, shows the Bedrock to be a Secondary A Aquifer and the superficial deposits to be Unproductive.

5.0 PROCEDURE

5.1 Commissioning

The work was awarded following submission of a tender for work designed by the Engineer for ground investigation of the site in accordance with the Clients requirements (see Appendix 1).

5.2 General

The procedures followed in this site investigation are based on BS 5930: 2015+A1:2020 – Code of Practice for Site Investigations and BS 10175:2011+A2:2017 - Investigation of Potentially Contaminated Sites. The soils and rocks encountered have been described in accordance with BS5930:2015+A1:2020, BS EN ISO 14688-1:2018 and BS EN ISO 14689:2018. The Borehole and Trial Pit Records are included in Appendices 4 and 6 and their approximate positions are shown on the Exploratory Hole Location Plans in Appendix 10.

The Exploratory Hole locations were specified by the Engineer. The co-ordinates and levels shown on the Exploratory Hole Records were measured using a Leica Smart Rover GPS survey device. The depths quoted on the exploratory hole records are in metres below ground level (bgl).

At each exploratory borehole location an inspection pit was excavated using hand tools to a depth of 1.20m below ground level (bgl) to check for the presence of underground services. Prior to and on completion of the excavation, the location was scanned using a cable avoidance tool (CAT).

5.3 Boreholes

Twelve (12 No.) boreholes (numbered BH101 to BH112) up to 200mm in diameter were sunk using either cable percussive drilling techniques or a combination of cable percussive and rotary coring techniques to depths of between

12.20 and 50.00m bgl. The work was carried out between the 12th August and 17th September 2024.

Eight (8 No.) of the boreholes (BH102, BH103, BH105, BH106, BH108 and BH110 to BH112) were drilled using cable percussive techniques to depths of between 12.20 and 15.00m bgl. The other four boreholes (BH101, BH104, BH107 and BH109) were drilled down to depths of between 13.90 and 14.70m bgl using cable percussive techniques before rotary casing was installed and the boreholes continued using rotary drilling techniques to depths of between 25.00 and 50.00m bgl.

In the cable percussion sections of the boreholes, representative disturbed (D and B) and driven open-tube thin-walled (UT) and (thick-walled) (U) samples of the soils encountered were obtained at regular intervals samples of the soils encountered were obtained at regular intervals. Standard Penetration Tests (SPTs) were undertaken at the depths indicated on the borehole records in accordance with BS EN ISO 22476-3:2005+A1:2011 to obtain a measure of the engineering properties of the proved strata. In addition, environmental soil samples (ES) were recovered at the depths indicated on the Borehole Records.

A rising head permeability test was carried out within BH108 at 6.00m bgl on 11th September 2024 with the results presented Appendix 11.

The drilling equipment used in the rotary sections of the boreholes on this contract utilised air mist as the flushing medium. Rock cores were extruded horizontally in transparent liners and placed into suitable core boxes. Photographs of the individual core boxes are included in Appendix 5.

On encountering groundwater, boring operations were suspended for 20 minutes to record any rise in water level. Full details of groundwater observations during site work are included on the Borehole Records. It should be noted that the addition of water to the borehole as part of the drilling process may have masked the presence of groundwater in the borehole. Where water was added it has been noted on the Borehole Records.

On completion, 50mm diameter standpipes were installed in Boreholes BH111 and BH112 (see Section 5.7). The other boreholes were backfilled with arisings or bentonite.

5.4 Trial Pits

Twenty (20 No.) Trial Pits (TP101 to TP118, TP105A and TP105B) were excavated to depths varying between 1.20m and 3.00m bgl using a tracked excavator between the 20th August and 2nd September 2024. Due to problems getting access to the proposed location with the machine, TP115 was excavated by insulated digging tools to a depth of 1.20m bgl. This work was supervised on site by a geotechnical / geo-environmental engineer.

The excavator was unable to penetrate below 0.50m bgl within TP105 due to the presence of concrete/slag as a result an additional two pits where excavated TP105A and TP105B to depths of 2.30m and 0.80m respectively. TP105B was excavated to allow for the sampling of ES within a specific Made Ground strata.

The profiles of strata or other features were recorded as excavation proceeded and measurements taken from ground level. Representative samples were taken, where appropriate, for laboratory examination and analysis and indicated on the Trial Pit Records. Samples were taken directly from excavated materials deposited at the surface. Groundwater observations and trench stability notes are included on the Trial Pit Records.

Thermal Resistivity, Dynamic Cone Penetrometer (DCP), Hand Vane and PID tests were carried out within the Trial Pits at the depths recorded on the Trial Pit Records (see Sections 5.6 to 5.9 below).

Soakaway tests where scheduled to be carried out at 1.50m bgl in TP109, TP110 and TP112. However, due to the high groundwater levels encountered with these trial pits it was no possible to undertake the tests.

Photographs of the trial pits are presented in Appendix 7.

5.6 Thermal Resistivity Testing

Forty eight (48 No.) Thermal Resistivity Tests were carried out in each of the trial pits except - TP105, TP105A, TP105B and TP118. The tests were carried out at depths ranging from 0.60m to 1.20m in accordance with ASTM D5334-22 using a TR-1 Thermal Resistivity probe. The test depths and results are presented in Appendix 8.

5.7 Dynamic Cone Penetration Tests

Nineteen (19 No.) Dynamic Cone Penetration (DCP) Tests were carried out at the location of the trial pits and numbered DCP101 to DCP118 and DCP105A, corresponding to the number of the trial pits. The tests were commenced from Ground Level and were performed to give an indication of CBR values at shallow depths Factual Report to aid pavement design.

During the fieldwork an additional 12 (Twelve No.) DCP Tests were carried out at three locations for the design of temporary access bridges. At each of the bridge locations four tests were carried at locations numbered BRIDCP01-04, BRID02DCP01-04 and BRID03DCP01-04. The tests commenced from Ground Level.

The test comprises the measurement of increments of penetration of a 60° cone driven into the ground using an 8kg hammer falling a distance of 575mm. The CBR is obtained from the relationship between the CBR and the DCP readings. $Log_{10}(CBR) = 2.48 – 1.057 \times Log_{10}(mm/blow)$ as defined in the Design Manual for Roads and Bridges Document CS229 Revision 0, March 2020, published by Highways England.

The test results are presented in Appendix 9.

5.8 Instrumentation and Monitoring

Long-term monitoring of the groundwater levels was made possible by the installation of piezometers and vibrating wire piezometers as follows:

Exploratory Hole	Standpipe Slotted Pipe and Filter Zone (m)
BH111	1.00 – 4.50
BH112	1.00 – 6.00

Monitoring of the groundwater levels in the standpipes was undertaken on the 20th September, 30th September and 6th November 2024. The results of the monitoring are included in Appendix 11.

6.0 LABORATORY TESTING

6.1 Geotechnical

The laboratory testing schedule was specified by the Engineer in order to relate to the proposed development. Unless otherwise stated, the tests were carried out in Geotechnics Limited's UKAS accredited Laboratory (Testing No. 1365) and were undertaken in accordance with the appropriate Standards as indicated below and on the Laboratory Test Certificate in Appendix 12. Any descriptions, opinions and interpretations are outside the scope of UKAS accreditation.

The tests undertaken can be summarised as follows:-

Standard	Test Description	Quantity
BS EN ISO 17892-1:2014	Water Content Determination	89
BS EN ISO 17892-4:2016	Particle Size Distribution Determination – Sieving Method	47
	Particle Size Distribution Determination – Pipette Method	10
BS EN ISO 17892-12:2018	Determination of Liquid and Plastic Limits	63
BS 1377:1990 Part 3: 9.5	pH	
BS EN ISO 17892-8:2018	Single Stage Quick Undrained Triaxial	7
BS 1377:1990 Part 4 - 3.3	Compaction 2.5kg	2
BS 1377:1990 Part 4: 7	CBR (2.5kg/4.5kg)	3
BS EN ISO 17892-5:2017	Oedometer	5
BS EN ISO 17892-5;2017	e/o Oedometer for tests in excess of 7 increments or 7 days (24 hours)	18
BS EN ISO 17892-5:2017	Determination of Swelling Pressure	4
ISRM Testing Methods	Point Load Determination	22
ISRM Testing Methods	Unconfined Compressive Strength Determination	8
ASTM D5334-22a e1	Determination of Thermal Conductivity of Soil and Soft Rock by Thermal Needle Probe – Single Point at NWC	7
BS EN ISO 17892-2:2014 Cl.5.1	Bulk Density by Linear Measurement	1
BS1377-4:1990	Extra Over the above Bulk Density by Linear Measurement for recompaction	1
Non BS1377 Test	Shear Strength by Hand Vane	5
BS EN ISO 17892-10:2018	Shear Strength by Direct Shear (Small Shear Box Apparatus) (Peak and residual)	1
	Triaxial Permeability	6
	Constant Head Permeability test in Permeameter	3

The following testing was carried out at the laboratories of Normec DETS Limited (UKAS Accredited Laboratory, Number 2139).

Test Description	Quantity
Organic Matter	9
BRE Special Digest 1 Suite comprising: Soluble Sulphate Acid Soluble Sulphate Total Sulphur Soluble Magnesium Ammonium Nitrate Chloride	36

The results of these tests are presented in Appendix 12.

6.2 Contamination

Selected samples of soil, groundwater were tested at the laboratories of DETS Limited for a number of determinands in order to check on potential site contamination. The determinands were specified by the Client and are detailed on the results sheets in Appendix 13 together with the test result as well as the test method, accreditation and detection limit.

Signed for and on behalf of Geotechnics Limited

Prepared by:

Iain Jackson
BSc (Hons)
Senior Engineer

Reviewed by:

Trevor Hardie
BSc, MSc, DIC, MICE, CEng
Chief Geotechnical Engineer

APPENDIX 1

The Brief

Name of contract National Grid Onshore Civil Design - Margam FEED
Anticipated drift geology Tidal Flat Deposits comprising unconsolidated SILT & CLAY with PEAT underlain by Glacial Deposits comprising cohesive and granular material.
Anticipated solid geology South Wales Coal Measures Formation
BDA Category of site Yellow
UXO Risk category Low

Schedule 2

Hole Number	Type [1]	Scheduled Depth (m below ground level)	Approx. National grid reference		Installations / In-situ Testing [2]	Installations [2]
			Easting	Northing		
PHASE 1 – National Grid Working Area						
BH101	CP + RC	CP to 15m RC to 25m	278493	186568	SPT, Hand Shear Vane, PID, Open-tube UT100 Samples, In situ SPT	50 mm standpipe
BH102	CP	To rockhead (Anticipated at 15m)	278527	186599	SPT, Hand Shear Vane, PID, Open-tube UT100 Samples, In situ SPT	N/A
BH103	CP	To rockhead (Anticipated at 15m)	278529	186535	SPT, Hand Shear Vane, PID, Open-tube UT100 Samples, In situ SPT	50 mm standpipe
BH104	CP + RC	CP to 15m RC to 25m	278632	186473	SPT, Hand Shear Vane, PID, Open-tube UT100 Samples, In situ SPT	50 mm standpipe
BH105	CP	To rockhead (Anticipated at 15m)	278542	186424	SPT, Hand Shear Vane, PID, Open-tube UT100 Samples, In situ SPT	50 mm standpipe
BH106	CP	To rockhead (Anticipated at 15m)	278574	186393	SPT, Hand Shear Vane, PID, Open-tube UT100 Samples, In situ SPT	N/A

Hole Number	Type [1]	Scheduled Depth (m below ground level)	Approx. National grid reference		Installations / In-situ Testing [2]	Installations [2]
			Easting	Northing		
BH107	CP + RC	CP to 15m RC to 50m	278602	186380	SPT, Hand Shear Vane, PID, Open-tube UT100 Samples, In situ SPT	50 mm standpipe
BH108	CP	To rockhead (Anticipated at 15m)	278584	186365	SPT, Hand Shear Vane, PID, Open-tube UT100 Samples, In situ SPT	N/A
BH109	CP + RC	CP to 15m RC to 50m	278582	186338	SPT, Hand Shear Vane, PID, Open-tube UT100 Samples, In situ SPT	50 mm standpipe
BH110	CP	To rockhead (Anticipated at 15m)	278578	186301	SPT, Hand Shear Vane, PID, Open-tube UT100 Samples, In situ SPT	50 mm standpipe
BH111	CP	To rockhead (Anticipated at 15m)	278640	186097	SPT, Hand Shear Vane, PID, Open-tube UT100 Samples, In situ SPT	50 mm standpipe
BH112	CP	To rockhead (Anticipated at 15m)	278640	186097	SPT, Hand Shear Vane, PID, Open-tube UT100 Samples, In situ SPT	50 mm standpipe
TP101	TP	3	278461	186540	Hand Shear Vane, Thermal Resistivity, PID, Dynamic Cone Penetrometer (DCP101)	N/A
TP102	TP	3	278485	186503	Hand Shear Vane, Thermal Resistivity, PID, Dynamic Cone Penetrometer (DCP102)	N/A
TP103	TP	3	278498	186537	Hand Shear Vane, Thermal Resistivity, PID, Dynamic Cone Penetrometer (DCP103)	N/A
TP104	TP	3	278542	186569	Hand Shear Vane, Thermal Resistivity, PID, Dynamic Cone Penetrometer (DCP104)	N/A

Hole Number	Type [1]	Scheduled Depth (m below ground level)	Approx. National grid reference		Installations / In-situ Testing [2]	Installations [2]
			Easting	Northing		
TP105	TP	3	278519	186456	Hand Shear Vane, Thermal Resistivity, PID, Dynamic Cone Penetrometer (DCP105)	N/A
TP106	TP	3	278558	186478	Hand Shear Vane, Thermal Resistivity, PID, Dynamic Cone Penetrometer (DCP106)	N/A
TP107	TP	3	278603	186501	Hand Shear Vane, Thermal Resistivity, PID, Dynamic Cone Penetrometer (DCP107)	N/A
TP108	TP	3	278559	186437	Hand Shear Vane, Thermal Resistivity, PID, Dynamic Cone Penetrometer (DCP108)	N/A
TP109/SA109	TP	3	278594	186426	Soakaway at 1.5m bgl. Hand Shear Vane, Thermal Resistivity, PID, Dynamic Cone Penetrometer (DCP109)	N/A
TP110/SA110	TP	3	278559	186382	Soakaway at 1.5m bgl. Hand Shear Vane, Thermal Resistivity, PID, Dynamic Cone Penetrometer (DCP110)	N/A
TP111	TP	3	278569	186360	Hand Shear Vane, Thermal Resistivity, PID, Dynamic Cone Penetrometer (DCP111)	N/A
TP112/SA112	TP	3	278619	186345	Soakaway at 1.5m bgl. Hand Shear Vane, Thermal Resistivity, PID, Dynamic Cone Penetrometer (DCP112)	N/A
TP113	TP	3	278592	186334	Hand Shear Vane, Thermal Resistivity, PID, Dynamic Cone Penetrometer (DCP113)	N/A
TP114	TP	3	278580	186295	Hand Shear Vane, Thermal Resistivity, PID, Dynamic Cone Penetrometer (DCP114)	N/A

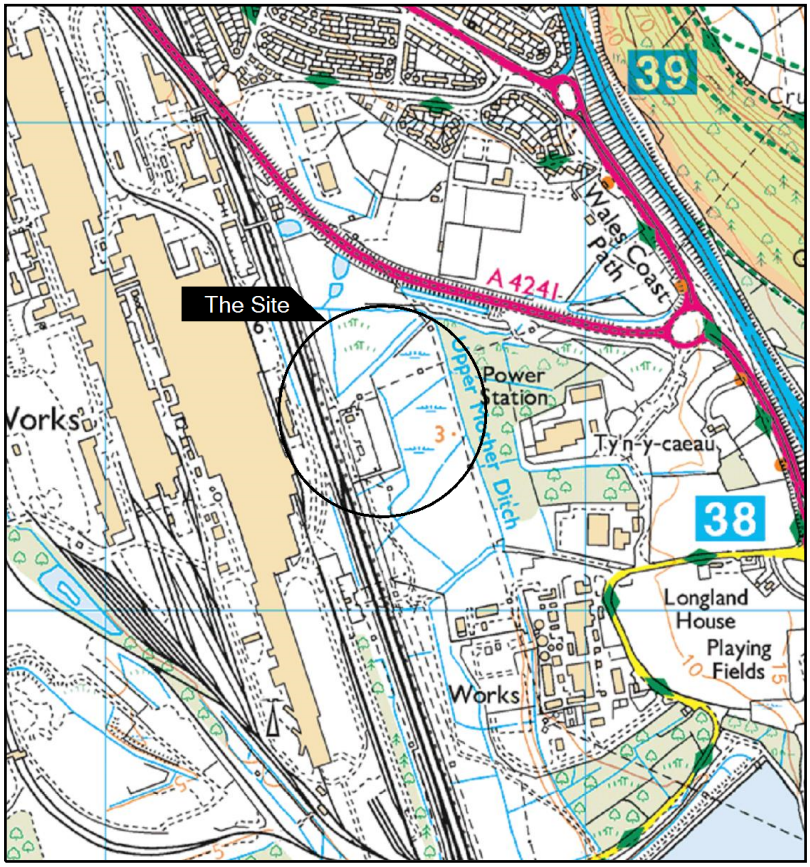
Hole Number	Type [1]	Scheduled Depth (m below ground level)	Approx. National grid reference		Installations / In-situ Testing [2]	Installations [2]
			Easting	Northing		
TP115	TP	3	278607	186263	Hand Shear Vane, Thermal Resistivity, PID, Dynamic Cone Penetrometer (DCP115)	N/A
TP116	TP	3	278629	186194	Hand Shear Vane, Thermal Resistivity, PID, Dynamic Cone Penetrometer (DCP116)	N/A
TP117	TP	3	278643	186134	Hand Shear Vane, Thermal Resistivity, PID, Dynamic Cone Penetrometer (DCP117)	N/A
TP118	TP	3	278655	186084	Hand Shear Vane, Thermal Resistivity, PID, Dynamic Cone Penetrometer (DCP118)	N/A

APPENDIX 2

Site Location Plan

APPENDIX 2

Site Location Plan



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APPENDIX 3

Site Photographs

Pre works access to BH101, BH102 and BH103..



Pre works access to BH101, BH102 and BH103



Pre works access to BH102



Pre works access to BH103



Pre-access bridge to BH101, BH102 and BH103



Pre works looking west towards access for



Pre works mid site access road [north of Substation]



Pre works mid site access [north of Substation ii]



Pre works access to TP104



Pre works mid site looking east towards



De-vegetation route to BH101, BH102 and BH103



Pre works looking east towards TP115



Pre works looking north east towards TP116



Pre works looking east towards TP117



Site Photo, BH109



APPENDIX 4

Borehole Records

DATA SHEET - Symbols and Abbreviations used on Records

Sample Types

B	Bulk disturbed sample
BLK	Block sample
C	Core sample
D	Small disturbed sample (tub/jar)
E	Environmental test sample
ES	Environmental soil sample
EW	Environmental water sample
G	Gas sample
L	Liner sample
LB	Large bulk disturbed sample
P	Piston sample (PF - failed P sample)
TW	Thin walled push in sample
U	Open Tube - 102mm diameter with blows to take sample. (UF - failed U sample)
UT	Thin wall open drive tube sampler - 102mm diameter with blows to take sample. (UTF - failed UT sample)
V	Vial sample
W	Water sample
#	Sample Not Recovered

Insitu Testing / Properties

CBRP	CBR using TRL probe
CHP	Constant Head Permeability Test
COND	Electrical conductivity
TC	Thermal Conductivity
TR	Thermal Resistivity
HV	Strength from Hand Vane
ICBR	CBR Test
IDEN	Density Test
IRES	Resistivity Test
MEX	CBR using Mexecone Probe Test
PKR	Packer Permeability Test
PLT	Plate Load Test
PP	Strength from Pocket Penetrometer
Temp	Temperature
VHP	Variable Head Permeability Test
VN	Strength from Insitu Vane
w%	Water content

(All other strengths from undrained triaxial testing)

S	Standard Penetration Test (SPT)
C	SPT with cone
N	SPT Result
-/-	Blows/penetration (mm) after seating drive
-*/- (mm)	Total blows/penetration
( )	Extrapolated value

Groundwater

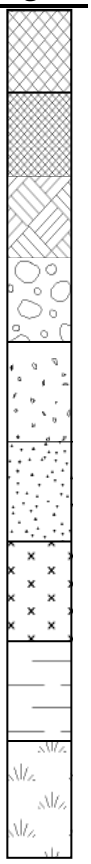
Water Strike

Depth Water Rose To

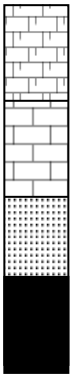
Instrumentation



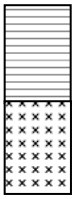
Strata / Legend



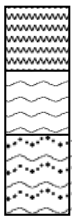
Note: Composite soil types shown by combined symbols



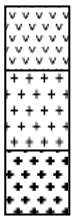
Strata, Continued



Metamorphic Rock



Igneous Rock



Backfill Materials



Rotary Core

RQD	Rock Quality Designation (% of intact core >100mm)
FRACTURE INDEX	Fractures/metre
NI	Non-intact core
NR	No core recovery
AZCL	Assumed zone of core loss

BOREHOLE RECORD - *Cable Percussion and Rotary*

Project	National Grid - 101677 Margam TATA Steel Connection	**Engineer**	Baker Hicks	**Project No.**	PC248745 - Phase 1
Client	National Grid	**National Grid Coordinates**	378492.7 E 186568.4 N	**Borehole**	BH101
				Ground Level	3.36 m OD

Scale 1:50

Sampling			Properties		Strata			
Depth	Sample Type	Depth Cased & (to Water)	Results	SPT N	Description	Depth	Legend	Level (m OD)
0.10 - 0.30	B				TOPSOIL: Grass over soft dark brown slightly sandy clay with occasional rootlets and roots up to 8mm in diameter.			
0.20	D					0.30		3.06
0.25	ES				Soft grey mottled brown slightly sandy CLAY with occasional roots up to 10mm in diameter.			
0.25			PID: <0.1 ppm					
0.25	HV		30/32/31 kPa		Below 0.50m, roots absent.			
0.40 - 0.80	B							
0.50	D		w: 24 %					
0.50	ES					1.20		2.16
0.50			PID: <0.1 ppm		Very soft grey slightly sandy CLAY with occasional pockets (up to 10mm in size) of organic material.			
0.60	HV		39/40/38 kPa					
1.00	D							
1.00	ES							
1.00			PID: <0.1 ppm					
1.20 - 1.65		1.20 (0.80)		S0*/ 450mm				
1.20 - 1.65	D							
1.20 - 2.20	B							
1.80	D		w: 77 %					
2.20 - 2.65	UT	2.20	6 blows					
2.20 - 2.65		(DRY)	cu: 16 kPa					
2.50 - 3.20	B							
2.65 - 2.80	D							
3.00	D		w: 80 %					
3.20 - 3.65		3.20 (DRY)		S1				
3.20 - 3.65	D					3.80		-0.44
3.80 - 4.20	B				Very dense dark brown sandy GRAVEL with a low cobble content of subrounded sandstone. Gravel is subangular to subrounded fine to coarse sandstone and quartzite.			
4.00	D							
4.20 - 4.34		4.20 (1.20)		C50/ 70mm				
4.20 - 5.20	B							
5.00	D							
5.20 - 5.65		5.20 (-0.14)		C38	At 5.20m, dense.			
5.20 - 6.00	B							
6.10	D							
6.30 - 6.64		6.20 (0.00)		C50/ 190mm				
6.30 - 7.00	B							
6.80	D							
7.10 - 7.44		7.00 (0.00)		C50/ 190mm				
7.10 - 8.00	B							
7.50	D							
8.00 - 8.37		8.00 (0.00)		C50/ 220mm				
8.00 - 8.80	B							
8.60	D							
9.10 - 9.55		9.10 (0.00)		C39	At 9.10m, dense.			
9.10 - 10.00	B							
9.80	D							
10.00 - 10.45		10.00 (0.00)		C42				

Boring

Depth	Hole Dia.	Technique	Crew
1.20	0.30	Inspection Pit	MR/SS
14.70	0.20	Cable Percussion	MR/SS
15.00	0.12	Rotary Open Hole	CJ/IJ
25.00	0.12	Rotary Core	CJ/IJ

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
0.00			12/08/24	08:00
7.00	7.00	0.00	12/08/24	18:00
7.00	7.00	0.00	13/08/24	08:00
14.85	14.70	11.10	13/08/24	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.00		0.80	20		Artesian
4.00	4.00	1.20	20		
5.20	5.20	-0.14	30		
18.00	15.00	1.40	20		

Remarks

Inspection pit hand excavated to 1.20m depth and no services were found.
Chiselling: 6.50-6.70m for 30 minutes & 8.50-8.80m for 40 minutes.
Artesian water noted at 5.20mbgl.
ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars and 1 x 1 litre plastic tub.
At 14.50m, water level rose to 0.49m in 10mins. Rotary casing installed. Flush:Air/Mist

Logged by SI

Figure Sheet 1 of 4
05/02/2025

Symbols and abbrevations are explained on the accompanying key sheets.
All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

GEOTECHNICS

BOREHOLE RECORD - *Cable Percussion and Rotary*

Project	National Grid - 101677 Margam TATA Steel Connection	**Engineer**	Baker Hicks	**Project No.**	PC248745 - Phase 1
Client	National Grid	**National Grid Coordinates**	378492.7 E 186568.4 N	**Borehole**	BH101
				Ground Level	3.36 m OD

Scale 1:50

Sampling Depth	Sample Type	Depth Cased & (to Water)	Properties Results	SPT N	Strata Description	Depth	Legend	Level (m OD)
10.20 - 11.50	B				Very stiff dark brown and dark grey slightly sandy slightly gravelly CLAY with a low cobble content of subangular sandstone. Gravel is angular to subangular fine to coarse sandstone.	10.20		-6.84
11.00	D		w: 16 %					
11.50 - 11.95		11.50 (10.40)		S41				
11.50 - 11.95	D							
12.10 - 13.50	B				Extremely weak brownish grey MUDSTONE, possibly interbedded and extremely weak SANDSTONE,	12.10		-8.74
13.00	D							
13.50 - 13.84		12.00 (11.20)		S50/ 190mm	Extremely weak grey MUDSTONE, recovered as clayey gravel.	13.60		-10.24
13.50 - 13.84	D							
13.60 - 14.50	B							
14.00	D							
14.60	D				Extremely weak black COAL.	14.50		-11.14
14.70 - 14.85		12.00 (11.10)		S50/ 75mm	***Borehole continued using alternative techniques - see next page***			
14.70 - 14.85	D							

Boring

Depth	Hole Dia.	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
14.85	14.70	-0.70	27/08/24	08:00
22.50	15.00	1.10	27/08/24	17:00
22.50	15.00	0.00	28/08/24	08:00
25.00	15.00		28/08/24	16:40

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbrevations are explained on the accompanying key sheets.
All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

Logged by SI

Figure

05/02/2025

GEOTECHNICS

BOREHOLE RECORD - *Cable Percussion and Rotary*

Project	National Grid - 101677 Margam TATA Steel Connection	**Engineer**	Baker Hicks	**Project No.**	PC248745 - Phase 1
Client	National Grid	**National Grid Coordinates**	378492.7 E 186568.4 N	**Borehole**	BH101
				Ground Level	3.36 m OD

Scale 1:50

Sampling/Testing		Drilling					Strata				
Sample / SPT Depth	SPT N / Type	Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	TCR/ SCR (%)	RQD (%)	FI	General	Detail	Depth	Legend	Level (m OD)
							Borehole continued using rotary drilling techniques - see below				
							Extremely weak black COAL.		14.85		-11.49
		15.00 - 16.50	15.00	80 33	10	AZCL NI 2 NI 9 NI NI NI	Very weak and weak light grey MUDSTONE with occasional plant fossils up to 5mm diameter. Discontinuities are subhorizontal (0-10 degrees), very closely and closely spaced, stepped, rough and clean.	Between 15.00m - 15.30m. assumed zone of core loss. Between 15.30m - 15.50m, non-intact, recovered as angular to subangular fine to coarse gravel of very strong light grey sandstone, quartzite and coal. Between 15.50m - 15.70m, with numerous plant fossils. Between 15.70m - 15.92m, 16.15m - 16.28m and 16.35m - 16.50m, non-intact, recovered as angular and subangular fine to coarse gravel.			
16.28 - 16.40	C										
		16.50 - 18.00	15.00	100 93	13	9	Medium strong grey SILTSTONE with occasional very strong sandstone layers. Discontinuities are subhorizontal (0-15 degrees), very closely and closely spaced, stepped, rough and clean.	Between 16.90m - 17.00m. very strong sandstone layer.	16.90		-13.54
16.90 - 16.99	C										
		18.00 - 19.50	15.00	97 60	47	NI	Strong to very strong dark grey SILTSTONE with gypsum veins up to (2mm thick). Discontinuities are generally inclined at (15 degrees), very closely and closely spaced, plannar, stepped, smooth and clean	Between 17.90m - 18.22m. very strong sandstone with occasional gypsum and pyrite veins up to (1mm thick) with discontinuities subhorizontal, stepped and rough. Between 18.22m - 18.36m. non-intact recovered as angular to subangular fine to coarse gravel.	18.36		-15.00
18.81 - 18.91	C					8		Between 19.62m - 19.72m, non-intact, recovered as angular to subangular fine to coarse gravel. Between 19.76m - 19.90m. very strong sandstone layer.			
		19.50 - 21.00	15.00	99 87	60	NI					

Boring

Depth	Hole Dia.	Technique	Crew
1.20	0.30	Inspection Pit	MR/SS
14.70	0.20	Cable Percussion	MR/SS
15.00	0.12	Rotary Open Hole	CJ/IJ
25.00	0.12	Rotary Core	CJ/IJ

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
0.00			12/08/24	08:00
7.00	7.00	0.00	12/08/24	18:00
7.00	7.00	0.00	13/08/24	08:00
14.85	14.70	11.10	13/08/24	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.00		0.80	20		Artesian
4.00	4.00	1.20	20		
5.20	5.20	-0.14	30		
18.00	15.00	1.40	20		

Remarks

Inspection pit hand excavated to 1.20m depth and no services were found.
Chiselling: 6.50-6.70m for 30 minutes & 8.50-8.80m for 40 minutes.
Artesian water noted at 5.20mbgl.
ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars and 1 x 1 litre plastic tub.
At 14.50m, water level rose to 0.49m in 10mins. Rotary casing installed. Flush:Air/Mist

Logged by SI

Figure Sheet 3 of 4

05/02/2025

Symbols and abbrevations are explained on the accompanying key sheets.
All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

GEOTECHNICS

BOREHOLE RECORD - *Cable Percussion and Rotary*

Project	National Grid - 101677 Margam TATA Steel Connection	**Engineer**	Baker Hicks	**Project No.**	PC248745 - Phase 1
Client	National Grid	**National Grid Coordinates**	378492.7 E 186568.4 N	**Borehole**	BH101
				Ground Level	3.36 m OD

Sampling/Testing | Drilling | Strata — Scale 1:50

Sample / SPT Depth	SPT N / Type	Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	TCR/ SCR (%)	RQD (%)	FI	General	Detail	Depth	Legend	Level (m OD)
20.10 - 20.32	C	19.50 - 21.00	15.00	99 87	60	7					
		21.00 - 22.50	15.00	53 47	9	AZCL		Between 21.00m - 21.70m, assumed zone of core loss.			
						NI		Between 21.70m - 21.80m, non-intact, recovered as angular to subangular fine to coarse gravel.			
						11					
22.68 - 22.76	C	22.50 - 24.00	15.00	53 30	0	AZCL		Between 22.50m - 23.20m, assumed zone of core loss.			
						NI		Between 23.20m - 23.55m, very weak dark grey mudstone, recovered as angular to subangular fine to coarse gravel.			
						11					
		24.00 - 25.00	15.00	60 15	15	AZCL		Between 24.00m - 24.40m. assumed zone of core loss.			
						NI		Between 24.40m - 24.85m. non-intact, recovered as angular to subangular fine to coarse gravel of siltstone and sandstone.			
						7		Between 24.85m - 25.00m, very strong sandstone with occasional gypsum veins (1mm thick) with discontinuities subhorizontal stepped and rough.	25.00		-21.64
								End of Borehole			

Boring

Depth	Hole Dia.	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
14.85	14.70	-0.70	27/08/24	08:00
22.50	15.00	1.10	27/08/24	17:00
22.50	15.00	0.00	28/08/24	08:00
25.00	15.00		28/08/24	16:40

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbrevations are explained on the accompanying key sheets.
All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

Logged by SI

Figure

05/02/2025

GEOTECHNICS

BOREHOLE RECORD - *Cable Percussion*

Project	National Grid - 101677 Margam TATA Steel Connection	**Engineer**	Baker Hicks	**Project No.**	PC248745 - Phase 1
Client	National Grid	**National Grid Coordinates**	378526.6 E 186599.0 N	**Borehole**	BH102
				Ground Level	2.95 m OD

Sampling			Properties		Strata			Scale 1:50
Depth	Sample Type	Depth Cased & (to Water)	Results	SPT N	Description	Depth	Legend	Level (m OD)
0.10 - 0.30	B				TOPSOIL: Grass over very soft dark brown slightly sandy organic clay with occasional rootlets and roots (up to 8mm in diameter).			
0.20	HV		15/18/17 kPa			0.30		2.65
0.25	D				Soft grey mottled brown slightly sandy CLAY with occasional rootlets and roots (up to 10mm in diameter).			
0.25	ES							
0.25			PID: <0.1 ppm					
0.30 - 0.80	B				Spongy dark brown mottled black slightly clayey fibrous PEAT.	0.80		2.15
0.50	D							
0.50	ES							
0.50			PID: <0.1 ppm					
0.50	HV		32/30/34 kPa					
0.80 - 1.20	B				Very soft dark brown and grey slightly sandy organic CLAY with occasional pockets (up to 10mm in size) of organic material.	1.60		1.35
1.00	D		w: 448 %					
1.00	ES							
1.00			PID: 5 ppm					
1.20 - 1.65		1.20 (0.70)		S0*/ 450mm				
1.20 - 1.65	D							
1.60 - 2.20	B							
2.00	D		w: 36 %					
2.20 - 2.65	UT	2.20 (1.70)	2 blows		At 3.00m, grading to clayey sand.			
2.20 - 3.20	B					3.30		-0.35
2.65 - 2.80	D				Firm grey mottled brown slightly gravelly sandy CLAY. Gravel is angular to subangular fine to coarse sandstone.			
3.00	D							
3.20 - 3.65		3.20 (2.90)		S9				
3.20 - 3.65	D					4.00		-1.05
3.30 - 4.00	B				Dense dark brown sandy GRAVEL with a low cobble content of subrounded sandstone. Gravel is subangular to subrounded fine to coarse sandstone and quartzite.			
3.80	D		w: 17 %					
4.20 - 4.65		4.20 (4.10)		C41	Between 4.00-8.30m, driller notes boulders.			
4.20 - 5.20	B							
5.00	D							
5.20 - 5.52		5.20 (5.00)		C50/ 175mm	At 5.20m, very dense.			
5.20 - 6.20	B							
6.00	D							
6.20 - 6.65		6.20 (0.00)		C36				
6.20 - 7.20	B							
7.00	D							
7.20 - 7.40		7.20 (0.00)		C50/ 90mm	At 7.20m, very dense.			
7.20 - 8.00	B							
7.50	D							
8.00 - 8.45		8.00 (0.60)		C18				
8.30 - 9.50	B					8.30		-5.35
9.00	D		w: 5 %		Stiff dark brown and dark grey slightly sandy slightly gravelly CLAY with a low cobble content of subangular sandstone. Gravel is angular to subangular fine to coarse sandstone.			
9.50 - 9.50		9.00 (8.60)		S50/ 0mm				
10.00 - 11.20	B							

Boring

Depth	Hole Dia.	Technique	Crew
1.20		Inspection Pit	MR/SS
13.18	0.20	Cable Percussion	MR/SS

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
0.00			14/08/24	08:00
11.65	9.00	8.20	14/08/24	18:00
11.65	9.00	-0.20	15/08/24	08:00
13.18	9.00	6.10	15/08/24	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.20		0.70	20		For the -0.41m water strike only : Water level above ground level
6.20	6.20	-0.41	20		

Remarks

Inspection pit hand excavated to 1.20m depth and no services were found.
ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars and 1 x 1 litre plastic tub.
Chiselling: 6.60-6.90m for 60 minutes, 9.50-10.00m for 60 minutes & 12.80-13.00m for 30 minutes.
Artesian water noted at 6.20mbgl. Driller notes water rising around casing.
Borehole terminated at 13.18m, on Clients instruction following 30 minutes chiselling and SPT N value >50.
Borehole backfilled with bentonite on completion.

Logged by SI

Figure Sheet 1 of 2

05/02/2025

Symbols and abbrevations are explained on the accompanying key sheets.
All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

GEOTECHNICS

BOREHOLE RECORD **-** *Cable Percussion*

Project	National Grid - 101677 Margam TATA Steel Connection	**Engineer**	Baker Hicks	**Project No.**	PC248745 - Phase 1
				Borehole	BH102
Client	National Grid	**National Grid Coordinates**	378526.6 E 186599.0 N	**Ground Level**	2.95 m OD

Sampling | Properties | Strata — Scale 1:50

Depth	Sample Type	Depth Cased & (to Water)	Results	SPT N	Description	Depth	Legend	Level (m OD)
10.80	D							
11.20 - 11.65		9.00 (8.20)		S30				
11.20 - 11.65	D							
11.80	D				Extremely weak grey MUDSTONE. Probably interbedded with extremely weak grey SANDSTONE, recovered as clayey gravel.	11.70		-8.75
12.00 - 12.30		9.00 (6.60)		S50/ 150mm				
12.00 - 12.30	D							
12.00 - 13.00	B							
12.80	D							
13.00 - 13.18		9.00 (6.10)		S50/ 85mm				
13.00 - 13.18	D				End of Borehole	13.18		-10.23

Boring				Progress					Groundwater					
Depth	Hole Dia.	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbrevations are explained on the accompanying key sheets.
All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

Logged by SI

Figure

05/02/2025

GEOTECHNICS

BOREHOLE RECORD - *Cable Percussion*

Project	National Grid - 101677 Margam TATA Steel Connection	**Engineer**	Baker Hicks	**Project No.**	PC248745 - Phase 1
Client	National Grid	**National Grid Coordinates**	378529.0 E 186531.9 N	**Borehole**	BH103
				Ground Level	3.20 m OD

Sampling			Properties		Strata			Scale 1:50	
Depth	Sample Type	Depth Cased & (to Water)	Results	SPT N	Description	Depth	Legend		Level (m OD)
0.10 - 0.30	B				TOPSOIL: Grass over very soft dark brown slightly sandy clay with occasional rootlets and roots (up to 15mm in diameter).				
0.20	HV		10/13/15 kPa			0.30			2.90
0.25	D				Soft dark brown occasionally mottled grey slightly sandy CLAY.				
0.25	ES								
0.25			PID: <0.1 ppm						
0.30 - 1.00	B								
0.50	D		w: 45 %						
0.50	ES								
0.50			PID: <0.1 ppm						
0.50	HV		25/28/24 kPa		Very soft greyish brown and brown slightly sandy organic CLAY with occasional pockets (up to 10mm in size) of organic material.	1.30			1.90
1.00	D								
1.00	ES								
1.00			PID: <0.1 ppm						
1.20 - 1.65		1.20 (0.40)		S0*/ 450mm					
1.20 - 1.65	D								
1.30 - 2.20	B								
1.80	D		w: 54 %						
2.20 - 2.65	UT	1.90 (1.60)	6 blows						
2.20 - 3.20	B								
2.80	D		w: 49 %		Very soft dark brown slightly sandy organic CLAY with many pockets (upto 80mm in size) of fibrous peat.	3.20			0.00
3.20 - 3.65		3.20 (2.10)		S2					
3.20 - 3.65	D								
3.20 - 3.80	B		w: 146 %		Stiff greyish brown slightly gravelly sandy CLAY. Gravel is angular to subangular fine to coarse sandstone.	3.80			-0.60
3.80 - 4.40	B								
4.00	D		w: 24 %						
4.40 - 4.85		4.40 (0.00)		S33	Dense dark brown slightly sandy GRAVEL. Gravel is subangular to subrounded fine to coarse sandstone and quartzite.	4.40			-1.20
4.40 - 4.85	D								
4.40 - 5.30	B								
5.00	D								
5.30 - 5.75		5.30 (0.00)		C30					
5.30 - 6.30	B								
6.00	D								
6.30 - 6.72		6.30 (0.00)		C50/ 275mm	At 6.30m, very dense.				
6.30 - 7.20	B								
7.00	D								
7.20 - 7.65		7.20 (-0.10)		C35					
7.20 - 7.70	B								
7.50	D								
7.70 - 8.10	B				Very stiff dark brown slightly sandy gravelly CLAY with a low cobble content of subrounded sandstone. Gravel is angular to subrounded fine to coarse sandstone.	7.70			-4.50
8.00	D		w: 15 %						
8.10 - 8.55		8.00 (2.20)		S39					
8.10 - 8.55	D								
8.50 - 9.50	B								
9.00	D								
9.50 - 9.95	UT	9.50 (5.40)	56 blows cu: 144 kPa						
9.50 - 9.95									
10.00 - 11.20	B								

Boring

Depth	Hole Dia.	Technique	Crew
1.20		Inspection Pit	MR/TS
14.27	0.20	Cable Percussion	MR/TS

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
0.00			20/08/24	08:00
14.27	9.50	5.50	20/08/24	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
0.75		0.40	20		Water level above ground level.
4.40	4.40	-0.41	20		

Remarks

Inspection pit hand excavated to 1.20m depth and no services were found.
ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars and 1 x 1 litre plastic tub.
Borehole backfilled with bentonite completion.

Logged by SI

Figure Sheet 1 of 2

05/02/2025

Symbols and abbrevations are explained on the accompanying key sheets.
All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

GEOTECHNICS

BOREHOLE RECORD **-** *Cable Percussion*

Project	National Grid - 101677 Margam TATA Steel Connection	**Engineer**	Baker Hicks	**Project No.**	PC248745 - Phase 1
				Borehole	BH103
Client	National Grid	**National Grid Coordinates**	378529.0 E 186531.9 N	**Ground Level**	3.20 m OD

Scale 1:50

Sampling			Properties	Strata			
Depth	Sample Type	Depth Cased & (to Water)	Results	SPT N	Description	Depth	Legend	Level (m OD)
10.80	D							
11.20 - 11.54		9.50 (5.50)		S50/ 190mm				
11.20 - 11.54	D							
11.20 - 12.50	B							
12.00	D		w: 15 %					
12.70	D				Extremely weak dark grey MUDSTONE with occasional coal fragments (up to 6mm in size), recovered as clayey gravel.	12.60		-9.40
12.80 - 13.12		9.50 (5.40)		S50/ 190mm				
12.80 - 13.12	D							
13.00 - 14.00	B							
13.50	D							
14.00 - 14.27		9.50 (5.50)		S50/ 150mm				
14.00 - 14.27	D				End of Borehole	14.27		-11.07

Boring				Progress					Groundwater					
Depth	Hole Dia.	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbrevations are explained on the accompanying key sheets.
All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

Logged by SI

Figure Sheet 2 of 2

05/02/2025

GEOTECHNICS

BOREHOLE RECORD - *Cable Percussion and Rotary*

Project	National Grid - 101677 Margam TATA Steel Connection	**Engineer**	Baker Hicks	**Project No.**	PC248745 - Phase 1
Client	National Grid	**National Grid Coordinates**	378634.4 E 186469.8 N	**Borehole**	BH104

Sampling			Properties		Strata			Scale 1:50
Depth	Sample Type	Depth Cased & (to Water)	Results	SPT N	Description	Depth	Legend	Level (m OD)
0.10 - 0.30	B				TOPSOIL: Grass over very soft slightly sandy organic clay with many rootlets and occasional roots (up to 15mm diameter).			
0.20	HV		15/17/16 kPa			0.30		
0.25	D				Very soft grey and dark brown slightly sandy CLAY with occasional pockets (up to 10mm in size) of organic material and occasional roots (up to 20mm diameter).			
0.25	ES							
0.25			PID: 0.1 ppm					
0.30 - 1.00	B							
0.50	D				Below 1.00m, roots absent.			
0.50	ES							
0.50			PID: <0.1 ppm					
0.50	HV		20/19/20 kPa					
1.00	D							
1.00	ES							
1.00			PID: 5 ppm					
1.20 - 1.65	UTF	1.20 (0.00)	1 blows		Spongy brown fibrous PEAT with many pockets (up to 80mm in size) of brownish grey organic clay and occasional wood fragments (up to 40mm in size).	2.00		
1.20 - 2.00	D		w: 53 %					
2.00 - 2.45		2.00 (0.00)		S1				
2.00 - 2.45	D							
2.00 - 3.20	B							
2.80	D		w: 162 %					
3.20 - 3.65	UT	3.00 (0.80)	8 blows			3.40		
3.40 - 4.50	B				Stiff dark brown and dark grey slightly gravelly sandy CLAY with a low cobble content of subangular sandstone. Gravel is subangular to subrounded fine to coarse sandstone.			
4.00	D		w: 17 %					
4.50 - 4.95		4.50 (2.10)		S19				
4.50 - 4.95	D							
5.10 - 6.00	B				Medium dense dark brown sandy GRAVEL with a low cobble content of subrounded sandstone. Gravel is subangular to subrounded fine to coarse sandstone and quartzite.	5.10		
5.50	D							
6.00 - 6.45		6.00 (4.10)		C20				
6.20 - 7.00	B				Stiff dark grey slightly gravelly sandy CLAY. Gravel is angular to subangular fine to coarse sandstone and quartzite.	6.20		
6.50	D		w: 15 %					
7.00 - 7.45		7.00 (DRY)		S23				
7.00 - 7.45	D							
7.00 - 8.20	B							
7.80	D							
7.80	W							
8.20 - 8.65		7.50 (DRY)		S33				
8.20 - 8.65	D							
8.20 - 9.00	B							
9.30	D							
9.50 - 9.95	UT	7.50 (DRY)	36 blows cu: 304 kPa					
9.50 - 9.95								
9.95 - 10.10	D							
10.00 - 11.00	B							

Boring

Depth	Hole Dia.	Technique	Crew
1.20		Inspection Pit	MR/SS
11.80	0.20	Cable Percussion	MR/SS
13.90	0.15	Cable Percussion	MR/SS
25.50	0.12	Rotary Core	CJ/IJ

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
0.00			15/08/24	08:00
6.45	6.00	4.10	15/08/24	18:00
6.45	6.00	DRY	16/08/24	08:00
11.80	7.50	7.80	16/08/24	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
0.20		0.00	20		
11.80	7.50	7.80	20		

Remarks

Inspection pit hand excavated to 1.20m depth and no services were found.
ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars and 1 x 1 litre plastic tub.
Flush : Air/Mist

Logged by SI

Figure Sheet 1 of 4

05/02/2025

Symbols and abbrevations are explained on the accompanying key sheets.
All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

GEOTECHNICS

BOREHOLE RECORD - *Cable Percussion and Rotary*

Project	National Grid - 101677 Margam TATA Steel Connection	**Engineer**	Baker Hicks	**Project No.**	PC248745 - Phase 1
Client	National Grid	**National Grid Coordinates**	378634.4 E 186469.8 N	**Borehole**	BH104

Sampling | Properties | Strata | Scale 1:50

Depth	Sample Type	Depth Cased & (to Water)	Results	SPT N	Description	Depth	Legend	Level (m OD)
10.80	D		w: 13 %					
11.00 - 11.45		7.50 (10.60)		S35				
11.00 - 11.45	D							
11.80 - 12.20	B							
					Dense grey slightly sandy GRAVEL. Gravel is angular to subangular fine to coarse sandstone.	11.80		
12.20 - 12.65		12.20 (1.20)		C37				
12.20	D					12.40		
12.40 - 13.20	B				Extremely weak dark grey MUDSTONE, recovered as angular to subangular fine to coarse gravel.			
12.80	D							
13.20 - 13.48		13.20 (1.00)		S50/ 150mm				
13.20 - 13.48	D							
13.20 - 13.90	B							
13.50	D							
13.90 - 14.00		13.90 (0.00)		S50/ 50mm	***Borehole continued using alternative techniques - see next page***	13.90		
13.90 - 14.00	D							

Boring

Depth	Hole Dia.	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
11.80	7.50	-0.10	19/08/24	08:00
13.90	13.90	0.00	19/08/24	18:00
13.90	14.50	-0.30	29/08/24	08:00
25.50	14.50	0.00	29/08/24	17:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbrevations are explained on the accompanying key sheets.
All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

Logged by SI

Figure

05/02/2025

GEOTECHNICS

BOREHOLE RECORD - *Cable Percussion and Rotary*

Project	National Grid - 101677 Margam TATA Steel Connection	**Engineer**	Baker Hicks	**Project No.**	PC248745 - Phase 1
Client	National Grid	**National Grid Coordinates**	378634.4 E 186469.8 N	**Borehole**	BH104

Sampling/Testing | Drilling | Strata | Scale 1:50

Sample / SPT Depth	SPT N / Type	Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	TCR/ SCR (%)	RQD (%)	FI	General	Detail	Depth	Legend	Level (m OD)
							Borehole continued using rotary drilling techniques - see below				
		13.90 - 15.00	13.90	100 64	0	NI 16	Weak to medium strong dark grey SILTSTONE. Discontinuities are subhorizontal (0-15 degrees), very closely and closely spaced, stepped, rough and clean.	Between 13.90m-14.30m, non-intact, recovered as angular to subangular fine to coarse gravel.			
15.47 - 15.55	C	15.00 - 16.50	13.90	93 33	0	AZCL 17 NI 1	Very weak black COAL, recovered as angular and subangular fine to coarse gravel.	Between 15.00m-15.10m, assumed zone of core loss.	15.70		
		16.50 - 18.00	13.90	90 60	8	AZCL NI 11	Strong grey SILTSTONE with occasional very strong ironstone nodules up to 20mm in size. Discontinuities are (Set i) subhorizontal (0-15 degrees) closely and medium spaced, stepped, rough with occasional pyrite mineralisation (1mm thick). (Set ii) (75-90 degrees) open/closed, subhorizontal undulating stepped, rough with occasional pyrite crystals.	Between 16.50m-16.65m. assumed zone of core loss. Between 17.10m-17.50m. subhorizontal discontinuities (75-90 degrees) undulating, partially open, stepped, rough with occasional pyrite mineralisation (1mm thick). Between 18.00m-18.50m. subhorizontal discontinuity, partially open and clean, stepped, rough with pryite mineralisation up to (10mm thick). Between 18.60m-18.75m. discontinuity inclined at (70 degrees) stepped and rough. Between 19.40m and 19.50m. discontinuity inclined between (60-70 degrees), stepped rough and clean. Between 19.50m and 19.75m. discontinuity subhorozontal, undulating and closed.	17.10		
18.00 - 18.33	C	18.00 - 19.50	13.90	100 95	54	4					
20.00 - 20.10	C	19.50 - 21.00	13.90	100 100	94						

Boring

Depth	Hole Dia.	Technique	Crew
1.20		Inspection Pit	MR/SS
11.80	0.20	Cable Percussion	MR/SS
13.90	0.15	Cable Percussion	MR/SS
25.50	0.12	Rotary Core	CJ/IJ

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
0.00			15/08/24	08:00
6.45	6.00	4.10	15/08/24	18:00
6.45	6.00	DRY	16/08/24	08:00
11.80	7.50	7.80	16/08/24	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
0.20		0.00	20		
11.80	7.50	7.80	20		

Remarks

Inspection pit hand excavated to 1.20m depth and no services were found.
ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars and 1 x 1 litre plastic tub.
Flush : Air/Mist

Logged by SI

Figure Sheet 3 of 4
05/02/2025

Symbols and abbrevations are explained on the accompanying key sheets.
All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

GEOTECHNICS

BOREHOLE RECORD - *Cable Percussion and Rotary*

Project	National Grid - 101677 Margam TATA Steel Connection	**Engineer**	Baker Hicks	**Project No.**	PC248745 - Phase 1
Client	National Grid	**National Grid Coordinates**	378634.4 E 186469.8 N	**Borehole**	BH104

Sampling/Testing | Drilling | Strata | Scale 1:50

Sample / SPT Depth	SPT N / Type	Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	TCR/ SCR (%)	RQD (%)	FI	General	Detail	Depth	Legend	Level (m OD)
		19.50 - 21.00	13.90	100 100	94		Very strong grey dark grey SILSTONE. Discontinuities are (Set i) subhorizontal (0-15 degrees) medium and closely spaced, stepped, rough and clean. (Set ii) subvertical (75-90 degrees), partly open, undulating, stepped, rough with pyrite crystals.		20.10		
		21.00 - 22.50	13.90	100 97	94						
21.45 - 21.89	C					NI		Between 21.38m and 21.46m. non-intact, recovered as angular to subangular fine to coarse gravel.			
						1					
		22.50 - 24.00	13.90	100 97	74						
							Strong grey SILSTONE. Discontinuities are (Set i) subhorizontal (0-15 degrees) closely and medium spaced, stepped, rough and clean. (Set ii) discontinuities inclined between (60-70 degrees) undulating and stepped, rough and clean.	At 22.95m. Ironstone nodule.	23.00		
23.55 - 23.75	C							Between 23.10m and 23.40m. discontinuity subhorozontal (80-90 degrees), stepped, rough and clean.			
						4		Between 23.80m and 24.00m. fracture inclined at (70 degrees), closed.			
		24.00 - 25.50	13.90	100 87	57			Between 24.10m and 24.40m. discontinuity inclined between (60 and 70 degrees) stepped, rough and clean.			
24.95 - 25.35	C					NI		Between 24.80m and 25.00m, weak and dark grey, non-intact, recovered as angular to subangular fine to coarse gravel.			
						4		Below 25.00m. becoming very strong.	25.50		
								End of Borehole			

Boring

Depth	Hole Dia.	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
11.80	7.50	-0.10	19/08/24	08:00
13.90	13.90	0.00	19/08/24	18:00
13.90	14.50	-0.30	29/08/24	08:00
25.50	14.50	0.00	29/08/24	17:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbrevations are explained on the accompanying key sheets.
All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

Logged by SI

Figure

05/02/2025

GEOTECHNICS

BOREHOLE RECORD - *Cable Percussion*

Project	National Grid - 101677 Margam TATA Steel Connection	**Engineer**	Baker Hicks	**Project No.**	PC248745 - Phase 1
Client	National Grid	**National Grid Coordinates**	378542.2 E 186424.2 N	**Borehole**	BH105
				Ground Level	3.04 m OD

Sampling			Properties		Strata			Scale 1:50
Depth	Sample Type	Depth Cased & (to Water)	Results	SPT N	Description	Depth	Legend	Level (m OD)
0.10 - 0.30	B				TOPSOIL: Grass over very soft dark brown slightly sandy organic clay with occasional rootlets up to 20mm in diameter.			
0.25	D					0.30		2.74
0.25	ES				Soft blueish grey slightly sandy CLAY with occasional roots up to 10mm in diameter.			
0.25			PID: <0.1 ppm					
0.25	HV		15/18/17 kPa					
0.50	D		w: 34 %					
0.50	ES							
0.50 - 1.00	B					1.20		1.84
0.50			PID: <0.1 ppm		Very soft bluish grey slightly sandy organic CLAY with large pockets (up to 100mm in size) of peat.			
0.50	HV		40/38/39 kPa					
1.00	D							
1.00	ES							
1.00			PID: 0.10 ppm					
1.20 - 1.65		1.20 (0.20)		S1				
1.20 - 1.65	D		w: 38 %					
1.20 - 2.20	B							
2.00	D							
2.20 - 2.65	UT	2.20 (DRY)	2 blows					
2.20 - 3.20	B							
2.65 - 2.80	D							
2.80	D							
3.00	D				Below 3.50m, driller noted presence of peat bands.			
3.20 - 3.65		3.20 (3.20)		S0*/ 450mm				
3.20 - 3.65	D							
3.20 - 4.40	B							
4.00	D							
4.40 - 4.85	UT	4.40 (DRY)	4 blows					
4.80 - 5.20	B					4.80		-1.76
5.00	D				Medium dense dark brown slightly sandy GRAVEL with a low cobble content of subrounded sandstone and quartzite. Gravel is subangular to subrounded fine to coarse of sandstone and quartzite.			
5.20 - 5.65		5.20 (0.80)		S25				
5.20 - 6.50	B							
6.00	D							
6.50 - 6.57		6.50 (1.00)		C50/ 10mm	At 6.50m, very dense.			
6.50 - 7.30	B							
7.00	D							
7.30						7.30		-4.26
7.40	D		w: 11 %		Stiff dark brown slightly sandy slightly gravelly CLAY with a low cobble content of subrounded quartzite and sandstone. Gravel is subangular to subrounded fine to coarse of sandstone and quartzite.			
7.50 - 7.95		7.50 (7.50)		S26				
7.50 - 7.95	D							
7.50 - 8.50	B							
8.00	D							
8.50 - 8.95	UT	8.50 (7.60)	47 blows					
8.50 - 9.50	B							
8.95 - 9.10	D							
8.95 - 9.10	UT		20 blows					
9.40	D							
9.50 - 9.95		9.00 (7.60)		S35	Below 9.50m, becoming very stiff.			
9.50 - 9.95	D							
10.00 - 11.00	B							

Boring

Depth	Hole Dia.	Technique	Crew
1.20	0.30	Inspection Pit	MR/TS
3.20	0.20	Cable Percussion	MR/TS

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
0.00			27/08/24	13:00
3.20	3.20	3.20	27/08/24	18:00
3.20	3.20	DRY	28/08/24	08:00
15.00	9.00	11.60	28/08/24	14:41

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
0.20	1.20	0.20	20		
5.00	5.00	0.80	20		

Remarks

Inspection pit hand excavated to 1.20m depth and no services were found.
ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars and 1 x 1 litre plastic tub. Chiselling 6.50 - 6.70m 30mins and 14.50 - 14.70m 30 mins. At 11.00m, UT catcher and shoe broken during sampling.

Logged by SI

Figure

Sheet 1 of 2

05/02/2025

Symbols and abbrevations are explained on the accompanying key sheets.
All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

GEOTECHNICS

BOREHOLE RECORD - *Cable Percussion*

Project	National Grid - 101677 Margam TATA Steel Connection	**Engineer**	Baker Hicks	**Project No.**	PC248745 - Phase 1
Client	National Grid	**National Grid Coordinates**	378542.2 E 186424.2 N	**Borehole**	BH105
				Ground Level	3.04 m OD

Scale 1:50

Sampling			Properties		Strata			
Depth	Sample Type	Depth Cased & (to Water)	Results	SPT N	Description	Depth	Legend	Level (m OD)
10.50	D							
11.00	UT	9.00 (10.20)	61 blows					
11.00 - 12.10	B							
11.45 - 11.60	D		w: 12 %					
11.80	D							
12.10 - 12.41		9.00 (10.10)		S50/ 156mm				
12.10 - 12.41	D							
12.70 - 13.40	B				Extremely weak greyish brown MUDSTONE, recovered as gravelly clay.	12.70		-9.66
13.00	D							
13.50	D				Extremely weak grey MUDSTONE, recovered as angular to subangular fine to coarse gravel.	13.40		-10.36
13.60 - 13.98		9.00 (12.10)		S50/ 225mm				
13.60 - 13.98	D							
13.60 - 14.70	B							
14.50	D							
14.70 - 14.99		9.00 (11.60)		S50/ 145mm				
14.70 - 14.98	D				End of Borehole	15.00		-11.96

Boring				Progress					Groundwater					
Depth	Hole Dia.	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbrevations are explained on the accompanying key sheets.
All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

Logged by SI

Figure

05/02/2025

GEOTECHNICS

BOREHOLE RECORD - *Cable Percussion*

Project	National Grid - 101677 Margam TATA Steel Connection	**Engineer**	Baker Hicks	**Project No.**	PC248745 - Phase 1
Client	National Grid	**National Grid Coordinates**	378571.7 E 186406.9 N	**Borehole**	BH106
				Ground Level	3.15 m OD

Sampling			Properties		Strata			Scale 1:50
Depth	Sample Type	Depth Cased & (to Water)	Results	SPT N	Description	Depth	Legend	Level (m OD)
0.10 - 0.40	B				TOPSOIL: Very soft dark brown slightly sandy organic clay with occasional rootlets and roots up to 20mm in diameter.			
0.25	D							
0.25	ES					0.40		2.75
0.25			PID: <0.1 ppm		Very soft bluish grey slightly sandy CLAY.			
0.25	HV		12/11/15 kPa					
0.50	D							
0.50	ES							
0.50 - 1.00	B		w: 53 %					
0.50			PID: <0.1 ppm					
0.50	HV		18/20/19 kPa					
1.00	D							
1.00	ES				Below 1.60m: with occasional large pockets (up to 80mm in size) of peat.			
1.00			PID: <0.1 ppm					
1.20 - 1.65		1.20 (0.00)		S0*/ 450mm				
1.20 - 1.65	D							
1.60 - 2.50	B							
2.00	D							
2.50 - 2.95		2.50		S0*/				
2.50 - 2.95	D	(DRY)		450mm				
2.50 - 3.50	B							
3.00	D							
3.50 - 3.95		3.50		S0*/				
3.50 - 3.95	D	(DRY)		450mm		3.60		-0.45
3.50 - 4.50	B				Spongy dark brown fiberous PEAT.			
4.00	D							
4.50 - 4.95		4.50 (2.70)		S26				
4.50 - 4.95	D					4.70		-1.55
4.70 - 5.50	B				Medium dense dark brown slightly sandy GRAVEL with a low subangular cobble content of sandstone and quartzite. Gravel is subangular to subrounded fine to coarse of sandstone and quartzite.			
5.00	D							
5.50 - 5.95		5.50 (1.10)		C33	At 5.50m, dense.			
5.50 - 6.50	B							
6.00	D							
6.50 - 6.90		6.50 (0.00)		C50/ 250mm	Below 6.50m: with a medium subrounded cobble content of sandstone and quartzite.			
6.50 - 7.50	B				At 6.50m, very dense.			
7.00	D							
7.50 - 7.95		7.50 (0.00)		C19				
7.80 - 8.50	B					7.80		-4.65
8.00	D		w: 12 %		Very stiff brownish grey slightly sandy gravelly CLAY. Gravel is angular to subanhgular fine to coarse of sandstone.			
8.50	UT	8.50 (7.10)	26 blows cu: 140 kPa		At 8.50m: becoming sandy clay.			
8.95 - 9.10	D							
9.00 - 10.00	B							
9.50	D							
10.00 - 10.45		9.00 (9.00)		S47				

Boring

Depth	Hole Dia.	Technique	Crew
1.20	0.30	Inspection Pit	MR/SS
14.14	0.20	Cable Percussion	MR/SS

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
0.00			12/09/24	08:00
14.14	9.00	12.10	12/09/24	17:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
0.00	0.00	0.00	20		
4.70	4.70	2.10	20		

Remarks

Inspection pit hand excavated to 1.20m depth and no services were found.
ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars and 1 x 1 litre plastic tub.
Chiseling 7.10-7.30m 30mins.
Artesian water noted at a depth of 6.00m.

Logged by SI

Figure

Sheet 1 of 2

05/02/2025

Symbols and abbrevations are explained on the accompanying key sheets.
All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

GEOTECHNICS

BOREHOLE RECORD **-** *Cable Percussion*

Project	National Grid - 101677 Margam TATA Steel Connection	**Engineer**	Baker Hicks	**Project No.**	PC248745 - Phase 1
				Borehole	BH106
Client	National Grid	**National Grid Coordinates**	378571.7 E 186406.9 N	**Ground Level**	3.15 m OD

Scale 1:50

Sampling			Properties		Strata			
Depth	Sample Type	Depth Cased & (to Water)	Results	SPT N	Description	Depth	Legend	Level (m OD)
10.00 - 10.45	D							
10.50 - 11.50	B							
11.00	D		w: 13 %		Very stiff grey slightly gravelly sandy CLAY. Gravel is angular to subangular fine to coarse of sandstone.	11.00		-7.85
11.50 - 11.95		9.00 (10.30)		S31				
11.50 - 11.95	D							
12.20 - 13.00	B				Extremely weak grey MUDSTONE, recovered as angular to subangular fine to coarse gravel.	12.20		-9.05
12.50	D							
13.10 - 13.50		9.00 (11.60)		S50/ 245mm				
13.10 - 13.50	D							
13.40	D							
13.80 - 14.14		9.00 (12.10)		S50/ 195mm				
13.80 - 14.14	D				End of Borehole	14.14		-10.99

Boring				Progress					Groundwater					
Depth	Hole Dia.	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbrevations are explained on the accompanying key sheets.
All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

Logged by SI

Figure

05/02/2025

GEOTECHNICS

BOREHOLE RECORD - *Cable Percussion and Rotary*

Project	National Grid - 101677 Margam TATA Steel Connection	**Engineer**	Baker Hicks	**Project No.**	PC248745 - Phase 1
Client	National Grid	**National Grid Coordinates**	378601.9 E 186379.5 N	**Borehole**	BH107
				Ground Level	2.95 m OD

Sampling | Properties | Strata — Scale 1:50

Depth	Sample Type	Depth Cased & (to Water)	Results	SPT N	Description	Depth	Legend	Level (m OD)
0.10 - 0.20	B				TOPSOIL: Grass over very soft dark brown slightly sandy organic clay with occasional rootlets and roots up to 20mm in diameter.			
0.10	HV		5/8/6 kPa			0.20		2.75
					Spongy dark brown to black fiberous PEAT.			
0.50	D							
0.50	ES							
0.50			PID: 0.10 ppm					
1.20 - 1.65		1.20 (0.20)		S0*/ 450mm				
1.20 - 2.50	D		w: 271 %					
2.50 - 2.95		2.50 (0.30)		S0*/ 450mm				
2.50 - 3.50	D							
3.50 - 3.95		3.50 (0.60)		S0*/ 450mm				
3.50 - 4.50	B							
4.00	D		w: 53 %		Below 4.00m, becoming slightly clayey fiberous peat.			
4.50	UTF	4.50 (1.00)	10 blows		Soft dark brown slightly gravelly sandy CLAY. Gravel is subangular and subrounded fine to coarse of sandstone and quartzite.	4.50		-1.55
4.50 - 5.40	B		w: 22 %					
5.20	D							
5.40 - 5.85		5.40 (1.80)		S23	Medium dense greyish brown sandy GRAVEL with a low subangular cobble content of sandstone and quartzite. Gravel is subangular and subrounded fine to coarse of sandstone and quartzite.	5.40		-2.45
5.40 - 5.85	D							
5.50 - 6.50	B							
6.00	D							
6.50 - 6.95		6.50 (0.00)		S33	At 6.50m, dense.			
6.50 - 7.50	B							
7.00	D							
7.50 - 7.95		7.50 (1.80)		S18				
7.70 - 8.70	B				Stiff to very stiff dark brown slightly sandy gravelly CLAY. Gravel is angular and subangular fine to coarse of sandstone and quartzite.	7.70		-4.75
8.20	D		w: 14 %					
8.70 - 9.15	UT	8.70 (DRY)	57 blows					
8.70 - 9.15			cu: 64 kPa					
9.15 - 9.30	D							
9.30 - 10.00	B							
9.50	D							
10.00 - 10.45		9.00 (DRY)		S31				
10.00 - 10.45	D							

Boring

Depth	Hole Dia.	Technique	Crew
1.20	0.30	Inspection Pit	MR/TS
14.70	0.20	Cable Percussion	MR/TS
49.50	0.12	Rotary Core	CJ/IJ

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
0.00			09/09/24	08:00
14.50	9.00	8.80	09/09/24	17:00
14.50	14.50	1.20	11/09/24	08:00
25.50	14.50	2.90	11/09/24	17:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
5.40	5.40	-0.46	20		
21.00	14.50	14.30	20		

Remarks

AGS

Inspection pit hand excavated to 1.20m depth and no services were found.
ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars and 1 x 1 litre plastic tub. Not possible to take ES samples at 0.25 and 1.00m due to excessive water and little recovery.
Artesian water noted at 5.40m, water level to 0.46m above ground level.
Flush:Air/Mist.

Logged by SI

Figure

Sheet 1 of 7

05/02/2025

Symbols and abbrevations are explained on the accompanying key sheets.
All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

GEOTECHNICS

BOREHOLE RECORD **-** *Cable Percussion and Rotary*

Project	National Grid - 101677 Margam TATA Steel Connection	**Engineer**	Baker Hicks	**Project No.**	PC248745 - Phase 1
				Borehole	BH107
Client	National Grid	**National Grid Coordinates**	378601.9 E 186379.5 N	**Ground Level**	2.95 m OD

Sampling | Properties | Strata — Scale 1:50

Depth	Sample Type	Depth Cased & (to Water)	Results	SPT N	Description	Depth	Legend	Level (m OD)
					Below 10.00m, becoming very stiff.			
10.50 - 11.50	B							
11.00	D		w: 17 %					
11.50 - 11.95		9.00		S38				
11.50 - 11.95	D	(DRY)						
12.00 - 13.00	B							
12.50	D							
13.20 - 13.52		9.00 (8.80)		S50/ 165mm	Extremely weak dark grey MUDSTONE, recovered as angular and tabular fine to coarse gravel.	13.10		-10.15
13.20 - 13.52	D							
13.50 - 14.50	B							
14.00	D							
14.50 - 14.70		9.00 (8.80)		S50/ 115mm	Between 14.50m - 16.80m, no recovery.	14.70		-11.75
14.50	D				***Borehole continued using alternative techniques - see next page***			

Boring

Depth	Hole Dia.	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
25.50	14.50	-0.30	12/09/24	08:00
39.00	14.50	12.00	12/09/24	17:00
39.00	14.50	-0.65	13/09/24	08:00
49.50	14.50		13/09/24	17:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbrevations are explained on the accompanying key sheets.
All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

Logged by SI

Figure

05/02/2025

GEOTECHNICS

BOREHOLE RECORD - *Cable Percussion and Rotary*

Project	National Grid - 101677 Margam TATA Steel Connection	**Engineer**	Baker Hicks	**Project No.**	PC248745 - Phase 1
Client	National Grid	**National Grid Coordinates**	378601.9 E 186379.5 N	**Borehole**	BH107
				Ground Level	2.95 m OD

Scale 1:50

Sampling/Testing		Drilling					Strata				
Sample / SPT Depth	SPT N / Type	Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	TCR/ SCR (%)	RQD (%)	FI	General	Detail	Depth	Legend	Level (m OD)
							Borehole continued using rotary drilling techniques - see below				
		14.50 - 16.00	14.50	0 NA	NA	NR	Soft MUDSTONE to gravelly clay. (drillers description)				
		16.00 - 16.50	14.50	0 NA	NA		Soft MUDSTONE. (drillers description)		16.00		-13.05
		16.50 - 18.00	14.50	14 7	0	NI	Extremely weak black carbonaceous MUDSTONE. Generally non-intact, recovered as angular to subangular fine to coarse gravel.		16.50		-13.55
		18.00 - 19.50	14.50	54 47	7	AZCL		Between 18.00m - 18.70m. assumed zone of core loss.			
18.95 - 19.05	C					11	Weak dark grey slightly sandy MUDSTONE with occasional black plant remains up to 5mm diameter on discontinuity surface. Discontinuities are generally subhorizontal (0-15 degrees) very closely and closely spaced, stepped, rough.		18.80		-15.85
		19.50 - 21.00	14.50	73 60	23	AZCL		Between 19.50m - 19.90m. assumed zone of core loss.			

Boring

Depth	Hole Dia.	Technique	Crew
1.20	0.30	Inspection Pit	MR/TS
14.70	0.20	Cable Percussion	MR/TS
49.50	0.12	Rotary Core	CJ/IJ

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
0.00			09/09/24	08:00
14.50	9.00	8.80	09/09/24	17:00
14.50	14.50	1.20	11/09/24	08:00
25.50	14.50	2.90	11/09/24	17:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
5.40	5.40	-0.46	20		
21.00	14.50	14.30	20		

Remarks

Inspection pit hand excavated to 1.20m depth and no services were found.
ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars and 1 x 1 litre plastic tub. Not possible to take ES samples at 0.25 and 1.00m due to excessive water and little recovery.
Artesian water noted at 5.40m, water level to 0.46m above ground level.
Flush:Air/Mist.

Logged by SI

Figure

05/02/2025

Symbols and abbrevations are explained on the accompanying key sheets.
All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

GEOTECHNICS

BOREHOLE RECORD - *Cable Percussion and Rotary*

Project	National Grid - 101677 Margam TATA Steel Connection	**Engineer**	Baker Hicks	**Project No.**	PC248745 - Phase 1
Client	National Grid	**National Grid Coordinates**	378601.9 E 186379.5 N	**Borehole**	BH107
				Ground Level	2.95 m OD

Sampling/Testing | Drilling | Strata — Scale 1:50

Sample / SPT Depth	SPT N / Type	Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	TCR/ SCR (%)	RQD (%)	FI	General	Detail	Depth	Legend	Level (m OD)
		19.50 - 21.00	14.50	73 60	23	12		Between 20.00m - 20.40m. with occasional coal fragments up to 5mm diameter.			
							Very strong grey SILTSTONE with rare gypsum veins up to 1mm thick. Discontinuities are (Set i) subhorizontal (0-15 degrees) very closely and medium spaced, stepped, rough and clean. (Set ii) subvertical (80-90degrees) varying to between (60-70 degrees), stepped, rough with rare gypsum veins (up to 1mm thick) on discontinuity surfaces.	Between 20.60 - 20.80m, 20.80 - 21.20m, 21.40 - 21.52m, 21.52 -21.73 and 21.90 - 22.50m discontinuities vertical inclined between (70-90 degrees) stepped, rough with rare gypsum veins (up to 1mm thick)	20.60		-17.65
		21.00 - 22.50	14.50	99 73	43	8					
21.35 - 21.52	C										
		22.50 - 24.00	14.50	100 80	7	NI	Medium strong dark grey SILTSTONE. discontinuities are predominantly subhorizontal (15 degrees) plannar, smooth and clean.	Between 22.50 - 22.60m. non-intact recovered as angular to subangular fine to coarse gravel fragments.	22.50		-19.55
23.15 - 23.28	C					13					
						NI		Between 23.65 - 23.90m. non-intact recovered as angular and subangular fine to coarse gravel.	23.90		-20.95
						20					
		24.00 - 25.50	14.50	87 47	0	AZCL	Weak to medium strong dark grey slightly sandy MUDSTONE with rare very strong siltstone bands up to 50mm thick. Discontinuities are subhorizontal (0-15 degrees) very closely and closely spaced plannar, rough and clean.				
						NI		Between 24.10m - 24.25m, non-intact, recovered as angular to subangular fine to coarse gravel.			
						7					
						NI		Between 24.68m - 24.80m, non-intact recovered as angular to subangular fine to coarse gravel.			
						19		Between 25.00m - 25.80m. assumed zone of core loss.			
		25.50 - 27.00	14.50	80 47	0	AZCL					
						+25		At 26.10m. layer of very strong siltstone. Between 26.10m - 26.15m, 26.55m - 26.60m, 26.70m - 26.78m and 26.87m - 26.95m, non-intact recovered as angular to subangular fine to coarse gravel, possibly extremely closely fractured.	27.00		-24.05
		27.00 - 28.50	14.50	87 54	11	AZCL	Very strong grey SILTSTONE with many discontinuities subhorizontal black carbonaceous lenses (up to 1mm thick). Discontinuities are (Set i) subhorizontal (0-15 degrees) very closely and closely spaced, stepped, rough and clean. (Set ii) subhorizontal (75-90 degrees) inclined, stepped, rough with occasional pyrite crystals and gypsum veins (up to 1mm thick).				
27.40 - 27.50	C					12		Between 27.00m - 27.20m. assumed zone of core loss.			
						NI		Between 27.80m - 27.88m, non-intact, recovered as angular to subangular fine to coarse gravel.			
28.15 - 28.33	C					7					
						NI		Between 28.30m - 28.50m. non-intact, recovered as angular to subangular fine to coarse gravel.			
		28.50 - 30.00	14.50	63 47	0	AZCL		Between 28.50m - 29.05m. assumed zone of core loss.			
						12		Between 29.20m - 29.30m, 29.38m - 29.48m, 29.50m - 29.58m and 29.60m - 29.80m, discontinuities inclined between (70-80 degrees), stepped rough, with occasional sand infill (up to 2mm thick).			

Boring

Depth	Hole Dia.	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
25.50	14.50	-0.30	12/09/24	08:00
39.00	14.50	12.00	12/09/24	17:00
39.00	14.50	-0.65	13/09/24	08:00
49.50	14.50		13/09/24	17:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbrevations are explained on the accompanying key sheets.
All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

Logged by SI

Figure

05/02/2025

GEOTECHNICS

BOREHOLE RECORD - *Cable Percussion and Rotary*

Project	National Grid - 101677 Margam TATA Steel Connection	**Engineer**	Baker Hicks	**Project No.**	PC248745 - Phase 1
Client	National Grid	**National Grid Coordinates**	378601.9 E 186379.5 N	**Borehole**	BH107
				Ground Level	2.95 m OD

Scale 1:50

Sampling/Testing		Drilling					Strata			
Sample / SPT Depth	SPT N / Type	Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	TCR/ SCR (%)	RQD (%)	FI	General	Detail	Depth	Level (m OD)
		30.00 - 31.00	14.50	90 48	36	AZCL NI 4 NI		Between 30.00m - 30.10m. assumed zone of core loss. Between 30.10m - 30.33m. non-intact recovered as angular to subangular fine to coarse gravel. At 30.30m. Discontinuities inclined (60-70 degrees), stepped, rough and clean.		
		31.00 - 32.30	14.50	85 54	10	AZCL NI 13 NI		Between 31.00m - 31.20m, assumed zone of core loss. Between 31.20m - 31.46m, non-intact, recovered as angular to subvangular fine to coarse gravel. Between 31.46m - 31.63m and 31.90m - 32.00m, discontinuities vertical (90 degrees), stepped, rough and clean.		
		32.30 - 33.60	14.50	100 88	54	9 NI		Between 32.00m - 32.50m, non-intact, recovered as angular and subangular fine to coarse gravel and cobbles. Between 32.50m - 33.10m, vertical discontinuity (90 degrees), stepped, rough and clean.		
		33.60 - 35.00	14.50	71 43	11	AZCL NI 13 NI 14		Between 33.50m - 33.60m. non-intact, recovered as angular to subangular fine to coarse gravel.	34.00	-31.05
		35.00 - 36.00	14.50	100 90	45	+25 20	Strong to very strong dark grey thinly laminated SILTSTONE with rare gypsum veins up to 1mm thick. Discontinuities are (Set i) subhorizontal (0-15 degrees) very closely and closely spaced plannar, rough and clean. (Set ii) Vertical (80-90 degrees), stepped, rough with occasional gypsum veins (up to 1mm thick) on surface.	Between 34.00m - 34.10m and 34.26m - 34.34m, non-intact, recovered as angular and tabular fine to coarse gravel. At 34.60m., discontinuity inclined between (80-90 degrees), undulating, stepped, rough and clean.	34.90	-31.95
36.25 - 36.30	C	36.00 - 37.50	14.50	100 83	37	8	Very strong grey SILTSTONE. Discontinuities subhorizontal (0-15 degrees) closely and medium spaced, stepped, rough and clean. Black carbonaceous lenses (up to 1mm thick).	Between 35.00m - 35.30m, non-inact, recovered as angular to subangular fine to coarse gravel. 35.70m - 35.90m. discontinuity inclined at (70 degrees) stepped, rough and clean. Between 36.50m - 36.70m. vertical discontinuity inclined (85 degrees) stepped, rough and clean.		
37.10 - 37.24	C									
38.00 - 38.25	C	37.50 - 39.00	14.50	93 80	49	AZCL 8 NI 20		Between 37.50m - 37.60m. assumed zone of core loss.		
		39.00 - 40.50	14.50	100 90	51	10 +25	Very strong grey SILTSTONE. Discontinuities predominantly subhorizontal (0-15 degrees), closely and medium spaced, stepped, rough and clean.	Between 39.30m - 39.56m. discontinuities subhorizontal extremely closely spaced.	39.56	-36.61

Boring

Depth	Hole Dia.	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
49.50	14.50		16/09/24	08:00
49.50	14.50		16/09/24	17:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbrevations are explained on the accompanying key sheets.
All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

Logged by SI

Figure

05/02/2025

GEOTECHNICS

BOREHOLE RECORD - *Cable Percussion and Rotary*

Project	National Grid - 101677 Margam TATA Steel Connection	**Engineer**	Baker Hicks	**Project No.**	PC248745 - Phase 1
Client	National Grid	**National Grid Coordinates**	378601.9 E 186379.5 N	**Borehole**	BH107
				Ground Level	2.95 m OD

Sampling/Testing | Drilling | Strata — Scale 1:50

Sample / SPT Depth	SPT N / Type	Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	TCR/ SCR (%)	RQD (%)	FI	General	Detail	Depth	Legend	Level (m OD)
		39.00 - 40.50	14.50	100 90	51	5					
		40.50 - 42.00	14.50	100 98	73	NI		Between 40.78m - 40.82m. non-intact, recovered as angular and subangular fine to coarse gravel. Between 40.90m - 41.00m. discontinuity inclined (60 degrees), closely spaced, plannar, rough and clean.			
		42.00 - 43.50	14.50	100 93	47	6		Between 42.56m - 42.67m, 42.80m - 42.92m and 42.95m - 43.10m. discontinuities inclined (50-70 degrees), stepped, rough and clean.			
		43.50 - 45.00	14.50	100 87	27	NI 7		Between 43.50m - 43.62m. non-intact, recovered as angular to subangular fine to coarse gravel. Between 43.75m - 43.95m. discontinuities inclined at (70 degrees), stepped, rough and clean. Between 44.10m - 44.25m, 44.72m - 44.98m. discontinuities inclined (40-60 degrees), stepped, rough and clean.			
		45.00 - 46.50	14.50	87 67	33	AZCL 9 NI 10	Weak to medium strong dark grey SILTSTONE. Discontinuities are (Set i) subhorizontal very closely and closely spaced, stepped, rough and clean. (Set ii) inclined (40-70 degrees), stepped, rough and clean.	Between 45.00m - 45.20m. assumed zone of core loss. Between 45.30m - 45.38m, 45.40m - 45.48m, 45.51m - 45.59m, 45.90m - 45.98m and 46.32m - 46.42m. discontinuities inclined (40-70 degrees) stepped, rough and clean.	45.90		-42.95
		46.50 - 48.00	14.50	100 67	33	8 NI		Between 46.00m - 46.20m. non-intact, recovered as angular to subangular fine to coarse gravel. Between 46.60m - 46.70m, 46.90m - 47.10m and 47.50m - 47.55m, discontinuities inclined at (40-70 degrees) stepped, rough and clean.			
		48.00 - 49.50	14.50	93 73	24	AZCL 9		Between 48.00m - 48.10m, assumed zone of core loss. Between 48.40m - 48.46m, 48.70m - 48.90m and 48.90m - 49.10m, discontinuities inclined at (40-70 degrees) stepped, rough and clean.			
								End of Borehole	50.00		-47.05

Boring

Depth	Hole Dia.	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbrevations are explained on the accompanying key sheets.
All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

Logged by SI

Figure

05/02/2025

GEOTECHNICS

BOREHOLE RECORD **-** *Cable Percussion and Rotary*

Project	National Grid - 101677 Margam TATA Steel Connection	**Engineer**	Baker Hicks	**Project No.**	PC248745 - Phase 1
				Borehole	BH107
Client	National Grid	**National Grid Coordinates**	378601.9 E 186379.5 N	**Ground Level**	2.95 m OD

Sampling/Testing		Drilling					Strata				Scale 1:50
Sample / SPT Depth	SPT N / Type	Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	TCR/ SCR (%)	RQD (%)	FI	General	Detail	Depth	Legend	Level (m OD)

Boring				Progress					Groundwater					
Depth	Hole Dia.	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbrevations are explained on the accompanying key sheets.
All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

Logged by SI

Figure

05/02/2025

GEOTECHNICS

BOREHOLE RECORD - *Cable Percussion*

Project	National Grid - 101677 Margam TATA Steel Connection	**Engineer**	Baker Hicks	**Project No.**	PC248745 - Phase 1
Client	National Grid	**National Grid Coordinates**	378582.9 E 186364.4 N	**Borehole**	BH108
				Ground Level	3.05 m OD

Scale 1:50

Depth	Sample Type	Depth Cased & (to Water)	Results	SPT N	Description	Depth	Legend	Level (m OD)
0.25	D				TOPSOIL: Grass over very soft dark brown slightly sandy organic clay with occasional rootlets and roots up to 20mm in diameter.			
0.25	ES					0.40		2.65
0.25			PID: <0.1 ppm		Soft bluish grey slightly sandy CLAY.			
0.25	HV		10/12/11 kPa					
0.40 - 1.00	B							
0.50	D		w: 54 %			1.00		2.05
0.50	ES				Spongy dark brown fiberous PEAT.			
0.50			PID: <0.1 ppm					
0.50	HV		37/40/38 kPa					
1.00			PID: <0.1 ppm					
1.10	D							
1.10	ES							
1.20 - 1.65		1.20 (0.00)		S0*/ 450mm				
1.20 - 1.65	D							
1.20 - 2.50	B							
2.00	D							
2.50 - 2.95		2.50 (1.80)		S0*/ 450mm				
2.50 - 3.50	B							
3.00	D							
3.50 - 3.95		3.50 (2.10)		S0*/ 450mm				
3.50 - 3.95	D							
3.50 - 4.30	B							
4.00	D							
4.40	D		w: 25 %			4.30		-1.25
4.60	UT	4.50 (DRY)	31 blows w: 23 %		Stiff greyish brown slightly sandy gravelly CLAY. Gravel is angular to subangular fine to coarse of sandstone and quartzite.			
4.60 - 5.50	B							
5.05 - 5.20	D							
5.40	D							
5.50 - 5.95		5.50 (5.10)		S35		5.50		-2.45
5.50	D				Medium dense greyish brown slightly sandy GRAVEL. Gravel is subangular to subrounded fine to coarse of sandstone and quartzite.			
5.50 - 6.50	B							
6.00	D							
6.50 - 6.95		6.50 (-0.12)		C33				
6.50 - 7.50	B							
7.00	D							
7.50 - 7.95		7.50 (2.10)		C14				
7.70 - 8.50	B					7.70		-4.65
8.00	D		w: 19 %		Stiff dark brown slightly sandy gravelly CLAY. Gravel is angular to subangular fine to coarse of sandstone and quartzite.			
8.50 - 8.95	UT	8.50 (7.70)	52 blows w: 21 %					
8.95 - 9.10	D							
9.00 - 10.00	B							
9.50	D							
10.00 - 10.45		9.00 (9.00)		S27				

Boring

Depth	Hole Dia.	Technique	Crew
1.20	0.30	Inspection Pit	MR/SS
14.66	0.20	Cable Percussion	MR/SS

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
0.00			11/09/24	09:00
11.50	9.00	11.30	11/09/24	17:00
11.50	9.00	DRY	12/09/24	08:00
14.66	9.00	DRY	12/09/24	09:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
5.80	5.80	+0.45	20		Water level above ground level.

Remarks

Inspection pit hand excavated to 1.20m depth and no services were found.
ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars and 1 x 1 litre plastic tub.
In-situ permeability test carried out at 6.00m.

Logged by SI

Figure

05/02/2025

Symbols and abbrevations are explained on the accompanying key sheets.
All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

GEOTECHNICS

BOREHOLE RECORD **-** *Cable Percussion*

Project	National Grid - 101677 Margam TATA Steel Connection	**Engineer**	Baker Hicks	**Project No.**	PC248745 - Phase 1
				Borehole	BH108
Client	National Grid	**National Grid Coordinates**	378582.9 E 186364.4 N	**Ground Level**	3.05 m OD

Scale 1:50

Sampling			Properties	Strata				
Depth	Sample Type	Depth Cased & (to Water)	Results	SPT N	Description	Depth	Legend	Level (m OD)
10.00 - 10.45	D							
10.50 - 11.50	B							
11.00	D							
11.50 - 11.95		9.00 (11.30)		S21				
11.50 - 11.95	D							
12.00 - 12.90	B				Stiff grey slightly sandy gravelly CLAY with many mudstone lithorelics up to 100mm in size. Gravel is subangular to angular fine to coarse of mudstone and sandstone.	12.00		-8.95
12.50	D							
13.20 - 13.46		9.00 (DRY)		S50/ 120mm	Extremely weak dark grey MUDSTONE with occasional coal fragments up to 15mm in diameter.	12.90		-9.85
13.20 - 13.46	D							
13.50 - 14.50	B							
14.00	D							
14.50 - 14.66		9.00 (DRY)		S50/ 85mm				
14.50 - 14.66	D				End of Borehole	14.66		-11.61

Boring				Progress					Groundwater					
Depth	Hole Dia.	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbrevations are explained on the accompanying key sheets.
All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

Logged by SI

Figure Sheet 2 of 2

05/02/2025

GEOTECHNICS

BOREHOLE RECORD - *Cable Percussion and Rotary*

Project	National Grid - 101677 Margam TATA Steel Connection	**Engineer**	Baker Hicks	**Project No.**	PC248745 - Phase 1
Client	National Grid	**National Grid Coordinates**	378581.1 E 186340.3 N	**Borehole**	BH109
				Ground Level	3.04 m OD

Sampling			Properties		Strata			Scale 1:50
Depth	Sample Type	Depth Cased & (to Water)	Results	SPT N	Description	Depth	Legend	Level (m OD)
0.10 - 0.30	B				TOPSOIL: Grass over very soft dark brown slightly sandy organic clay with occasional rootlets and roots up to 20mm in diameter.			
0.25	D					0.30		2.74
0.25	ES				Very soft bluish grey slightly sandy CLAY with occasional roots up to 10mm in diameter.			
0.25			PID: <0.1 ppm					
0.25	HV		15/16/14 kPa					
0.40 - 1.10	B							
0.50	D		w: 60 %					
0.50	ES					1.10		1.94
0.50			PID: <0.1 ppm		Spongy dark brown fiberous PEAT with large pocket of clay (up to 100mm) in size.			
0.50	HV		18/19/16 kPa		Between 1.10m - 5.80m: bluish grey clay noted.			
1.00	D							
1.00	ES							
1.20 - 1.65		1.20 (0.00)		S0				
1.20 - 1.65	D							
1.20 - 2.50	B							
2.00	D		w: 84 %					
2.50 - 2.95	UT	2.50 (1.60)	2 blows					
2.50 - 3.50	B							
3.00	D							
3.50 - 3.95		3.20 (1.90)		S0				
3.50 - 3.95	D							
3.50 - 4.50	B							
4.00	D							
4.50 - 4.95	UT	2.60 (4.00)	4 blows					
4.50 - 5.50	D		w: 494 %					
5.50 - 5.95		5.50 (2.60)		S13				
5.50	D					5.80		-2.76
5.80 - 6.50	B				Dense dark brown sandy GRAVEL with a low cobble content of subrounded sandstone and quartzite. Gravel is subangular to subrounded fine to coarse of sandstone and quartzite.			
6.00	D							
6.50 - 6.95		6.50 (-0.12)		S33				
6.50 - 7.50	B							
7.00	D							
7.50 - 7.95		7.50 (0.00)		S37				
7.50 - 8.50	B							
8.00	D							
8.50 - 8.95		8.50 (0.00)		S22				
8.60 - 9.50	B				Firm brownish grey slightly sandy slightly gravelly CLAY with occasional sand/gravel lenses up to 200mm thick. Gravel is subangular to subrounded fine to coarse of sandstone and rare coal.	8.60		-5.56
9.00	D		w: 19 %					
9.50 - 9.95	UT	9.50 (DRY)	51 blows					
9.95 - 10.10	D							
10.00 - 11.00	B							

Boring

Depth	Hole Dia.	Technique	Crew
1.20	0.30	Inspection Pit	MR/TS
14.30	0.20	Cable Percussion	MR/TS
49.50	0.12	Rotary Core	CJ/IJ

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
0.00			29/08/24	08:00
11.45	9.50	DRY	29/08/24	18:00
11.45	9.50	5.90	30/08/24	08:00
14.30	9.50	13.30	30/08/24	14:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
0.10	0.00	0.00	20		
6.00	6.00	-0.12	20		

Remarks

Inspection pit hand excavated to 1.20m depth and no services were found.
ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars and 1 x 1 litre plastic tub.
Chiselling 6.60m 6.80m 40mins and 14.20m - 14.30m 30mins. Flush:Air/Mist
Borehole backfilled on completion GL to 49.50 Bentonite pellets.

Logged by SI

Figure Sheet 1 of 6

05/02/2025

Symbols and abbrevations are explained on the accompanying key sheets.
All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

GEOTECHNICS

BOREHOLE RECORD - *Cable Percussion and Rotary*

Project	National Grid - 101677 Margam TATA Steel Connection	**Engineer**	Baker Hicks	**Project No.**	PC248745 - Phase 1
Client	National Grid	**National Grid Coordinates**	378581.1 E 186340.3 N	**Borehole**	BH109
				Ground Level	3.04 m OD

Sampling			Properties		Strata			Scale 1:50
Depth	Sample Type	Depth Cased & (to Water)	Results	SPT N	Description	Depth	Legend	Level (m OD)
10.50	D							
11.00 - 11.45		9.50 (DRY)		S27				
11.00 - 11.45	D							
11.50 - 12.50	B				Below 11.50:m, becoming stiff.			
12.00	D		w: 13 %					
12.50 - 12.95	UT	9.50 (DRY)	58 blows					
12.50 - 13.30	B							
12.50 - 12.95			cu: 186 kPa					
12.95 - 13.10	D							
13.00	D							
13.30 - 14.00	B				Extremely weak grey and dark grey MUDSTONE.	13.30		-10.26
13.50	D							
14.00 - 14.21		9.50 (13.30)		S50/ 60mm				
14.00 - 14.21	D				***Borehole continued using alternative techniques - see next page***	14.30		-11.26
14.30 - 14.32		9.50 (13.30)		S50/ 10mm				
14.30 - 14.32	D							

Boring				Progress					Groundwater					
Depth	Hole Dia.	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
				14.30	14.30	0.00	03/09/24	08:00						
				21.00	14.30	1.60	03/09/24	17:00						
				21.00	14.30	-0.80	04/09/24	08:00						
				34.50	14.30	1.20	04/09/24	17:00						

Remarks

Symbols and abbrevations are explained on the accompanying key sheets.
All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

Logged by SI

Figure

05/02/2025

GEOTECHNICS

BOREHOLE RECORD **-** *Cable Percussion and Rotary*

Project	National Grid - 101677 Margam TATA Steel Connection	**Engineer**	Baker Hicks	**Project No.**	PC248745 - Phase 1
Client	National Grid	**National Grid Coordinates**	378581.1 E 186340.3 N	**Borehole**	BH109
				Ground Level	3.04 m OD

Sampling/Testing | Drilling | Strata — Scale 1:50

Sample / SPT Depth	SPT N / Type	Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	TCR/ SCR (%)	RQD (%)	FI	General	Detail	Depth	Legend	Level (m OD)
							Borehole continued using rotary drilling techniques - see below				
		14.30 - 15.00	14.30	43 0	0	AZCL	Strong grey SILTSTONE with many subhorizontal (0-15 degrees) black carbonaceous lenses (1mm thick). Below 18.30m discontinuities subhorizontal (0-15 degrees) very closely spaced, plannar, stepped, rough and clean.	Between 14.30m - 14.70m, assumed zone of core loss. Between 14.70m - 15.00m, non-intact, recovered as angular and subangular fine to coarse gravel.			
						NI					
		15.00 - 16.50	14.30	33 0	0	AZCL		Between 15.00m - 16.00m. assumed zone of core loss. Between 16.00m - 16.50m, non-intact, recovered as angular to subangular fine to coarse gravel with cobble.			
						NI					
		16.50 - 18.00	14.30	67 33	0	AZCL		Between 16.50m 17.00m. assumed zone of core loss. Between 17.00m - 18.30m, discontinuities subhorizontal, very closely spaced, planar, stepped, rough and clean.			
						>25					
18.20 - 18.25	C	18.00 - 18.50	14.30	100 80	0			Between 18.70m - 18.90m, non-intact, recovered as angular to subangular fine to coarse gravel.			
						18					
		18.50 - 18.80	14.30	100 40	0			Between 19.20m - 19.48m. discontinuity inclined (70-80 degrees) stepped, rough with occasional gypsum veins (<1mm thick).			
		18.80 - 19.50	14.30	79 50	14	NI					
						6					
		19.50 - 21.00	14.30	93 77	7	AZCL		Between 19.50m - 19.60m. assumed zone of core loss. Between 19.60m - 19.70m, non-intact, recovered as angular to subangular fine to coarse gravel.			
						NI					

Boring

Depth	Hole Dia.	Technique	Crew
1.20	0.30	Inspection Pit	MR/TS
14.30	0.20	Cable Percussion	MR/TS
49.50	0.12	Rotary Core	CJ/IJ

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
0.00			29/08/24	08:00
11.45	9.50	DRY	29/08/24	18:00
11.45	9.50	5.90	30/08/24	08:00
14.30	9.50	13.30	30/08/24	14:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
0.10	0.00	0.00	20		
6.00	6.00	-0.12	20		

Remarks

Inspection pit hand excavated to 1.20m depth and no services were found.
ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars and 1 x 1 litre plastic tub.
Chiselling 6.60m 6.80m 40mins and 14.20m - 14.30m 30mins. Flush:Air/Mist
Borehole backfilled on completion GL to 49.50 Bentonite pellets.

Logged by SI

Figure Sheet 3 of 6
05/02/2025

Symbols and abbrevations are explained on the accompanying key sheets.
All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

GEOTECHNICS

BOREHOLE RECORD - *Cable Percussion and Rotary*

Project	National Grid - 101677 Margam TATA Steel Connection	**Engineer**	Baker Hicks	**Project No.**	PC248745 - Phase 1
Client	National Grid	**National Grid Coordinates**	378581.1 E 186340.3 N	**Borehole**	BH109
				Ground Level	3.04 m OD

Scale 1:50

Sampling/Testing		Drilling					Strata				
Sample / SPT Depth	SPT N / Type	Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	TCR/ SCR (%)	RQD (%)	FI	General	Detail	Depth	Legend	Level (m OD)
		19.50 - 21.00	14.30	93 77	7	13 NI >25 10		Between 20.30m - 20.41m. non-intact, recovered as angular to subangular fine to coarse gravel. Between 20.80m - 21.00m. discontinuity subvertical inclined stepped, rough with occasional gypsum veins up to (1mm thick) Between 21.00m - 21.30m. assumed zone of core loss.			
		21.00 - 22.50	14.30	80 67	0	AZCL >25 NI	Very strong dark grey SILTSTONE with many subhorizontal (15 degrees) black carbonaceous lenses up to (2mm thick). Discontinuities are subhorizontal (15 degrees) very closely and closely spaced, plannar, stepped, rough.	Between 21.30m - 21.70m. discontinuities very closely spaced.	21.70		-18.66
		22.50 - 24.00	14.30	100 90	27	10		Between 21.70m - 21.80m. non-intact, recovered as angular to subangular fine to coarse gravel. Between 22.40m - 22.50m, discontinuity subvertical (80 degrees) stepped, rough with occasional gypsum up to (1mm thick) on surface. Between 23.10m - 23.30m, discontinuity inclined (40-60 degrees) stepped, rough and clean.			
23.35 - 23.48	C										
		24.00 - 24.70	14.30	89 61	43	NI 7	Very strong grey SILTSTONE. Discontinuities are subhorizontal (0-15 degrees) closely spaced, stepped, rough and clean.	At 23.90m. discontinuity inclined (70 degrees) plannar, rough and clean. Between 24.00m - 24.27m, non-intact, recovered as angular to subangular fine to coarse gravel.	23.70		-20.66
		24.70 - 25.50	14.30	100 75	0	NI 10 NI 13		Between 24.50m - 24.70m. discontinuity closely spaced subvertical (80-90 degrees) undulating, rough with gypsum vein up to (2mm thick). Between 24.70m - 24.80m and 25.00m - 25.40m. non-intact, recovered as angular to subangular fine to coarse gravel. Between 25.55m - 25.65m, discontinuity inclined (45-60 degrees) plannar, rough and clean. Between 25.60m - 27.00m driller noted traces of coal. Between 25.65m - 25.75m, non-intact, recovered as angular to subangular fine to coarse gravel.			
		25.50 - 27.00	14.30	96 73	17	0 NI >25	Medium strong dark grey SILTSTONE with many subhorizontal black carbonaceous lenses up to (2mm thick). Discontinuities are predominantly subhorizontal (15 degrees) very closely spaced, plannar, rough and clean.	Between 25.84m - 25.93m, non-intact, recovered as angular to subangular fine to coarse gravel.	25.84		-22.80
26.40 - 26.50	C										
27.00 - 27.26	C	27.00 - 28.50	14.30	100 83	33	8 NI	Very strong dark grey SILTSTONE. Discontinuity is closely spaced, stepped, rough and clean.	Between 26.90m - 27.00m, discontinuity inclined (60 degrees) stepped, rough and clean. Between 27.65m - 28.00m. discontinuity inclined (70-80 degrees) stepped, rough and clean. Between 28.00m - 28.20m, discontinuities inclined (80-90 degrees), stepped, rough and clean. Between 28.24m - 28.30m, non-intact, recovered as angular to subangular fine to coarse gravel.	26.75		-23.72
		28.50 - 30.00	14.30	100 80	20	10 NI					

Boring

Depth	Hole Dia.	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
14.30	14.30	0.00	03/09/24	08:00
21.00	14.30	1.60	03/09/24	17:00
21.00	14.30	-0.80	04/09/24	08:00
34.50	14.30	1.20	04/09/24	17:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbrevations are explained on the accompanying key sheets.
All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

Logged by SI

Figure

05/02/2025

GEOTECHNICS

BOREHOLE RECORD - *Cable Percussion and Rotary*

Project	National Grid - 101677 Margam TATA Steel Connection	**Engineer**	Baker Hicks	**Project No.**	PC248745 - Phase 1
Client	National Grid	**National Grid Coordinates**	378581.1 E 186340.3 N	**Borehole**	BH109
				Ground Level	3.04 m OD

Scale 1:50

Sampling/Testing		Drilling					Strata				
Sample / SPT Depth	SPT N / Type	Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	TCR/ SCR (%)	RQD (%)	FI	General	Detail	Depth	Legend	Level (m OD)
		30.00 - 31.50	14.30	100 99	37			Between 28.40m - 28.50m, discontinuity inclined (70 degrees) stepped, rough and clean. Between 28.80m - 28.90m, non-intact, recovered as angular to subangular fine to coarse gravel. Between 29.10m - 29.20m and 29.52m - 29.60m. discontinuities inclined (45-60 degrees) plannar, rough and clean.			
30.40 - 30.57	C										
		31.50 - 33.00	14.30	100 99	30	8		At 31.60m, discontinuity inclined (45 degrees) stepped, rough. Between 31.75m - 31.80m, discontinuity inclined (60 degrees) stepped, rough and clean. Between 31.90m - 32.00m, discontinuity inclined (70 degrees) stepped, rough. Between 32.25m - 32.55m, discontinuity inclined (50-60 degrees) stepped, rough and clean.			
		33.00 - 34.50	14.30	100 90	22			At 32.35m, discontinuity inclined at (80 degrees) stepped, rough and clean. Between 32.56m - 32.65m, discontinuity inclined (60-70 degrees) stepped, rough and clean.			
						NI 12 NI					
34.03 - 34.22	C										
						7		At 32.65m and 33.20m discontinuity inclined (40-50 degrees) stepped, rough and clean.			
34.50 - 34.77	C	34.50 - 36.00	14.30	97 73	45		Weak to medium strong dark grey MUDSTONE. Discontinuities are subhorizontal (0-15 degrees) closely spaced, stepped, rough and clean.		34.50		-31.46
34.91 - 35.00	C					NI 8 NI		Between 33.35m - 33.42m, non-intact, recovered as angular to subangular fine to coarse gravel. Between 33.58m - 33.64m, 33.66m - 33.71m, non-intact, recovered as angular to subangular fine to coarse gravel. At 33.76m, discontinuity inclined (40-60 degrees) stepped, rough. Between 33.88m - 33.96m, discontinuities inclined (20 degrees) closely spaced, plannar, rough and clean.			
						6	Medium strong to strong grey SILTSTONE with occasional very strong ironstone nodules (up to 80mm in diameter) Discontinuities are subhorizontal, closely spaced rough and clean.		35.40		-32.36
		36.00 - 37.50	14.30	93 73	15	AZCL 7 NI 0 NI					
						8		Between 35.00m - 35.10m, non-intact, recovered as angular to subangular fine to coarse gravel. Between 35.22m - 35.32m, non-intact, recovered as angular to subangular fine to coarse gravel.			
		37.50 - 39.00	14.30	100 87	53			Between 36.00m - 36.10m, assumed zone core loss. Between 36.40m - 36.48m, non-intact, recovered as angular to subangular fine to coarse of gravel and ironstone cobble. At 36.40m and 36.55m, very strong ironstone nodules up to (80mm in diameter). Between 26.53m - 36.63m, non-intact, recovered as angular to subangular fine to coarse gravel. Between 36.58m - 36.65m. becoming very weak and dark			
38.00 - 38.25	C										
38.12 - 38.24	C					NI					
38.74 - 38.92	C					6					
		39.00 - 40.50	14.30	60 0	0	AZCL	Extremely weak dark grey MUDSTONE with rare very strong itonstone nodules. Recovered as angular to subangular fine to coarse gravel and cobbles.		39.00		-35.97

Boring

Depth	Hole Dia.	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
34.50	14.30	-0.65	05/09/24	08:00
43.50	14.30	1.20	05/09/24	10:04
43.50	14.30	-0.90	06/09/24	08:00
49.50	14.30		06/09/24	17:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbrevations are explained on the accompanying key sheets.
All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

Logged by SI

Figure

05/02/2025

GEOTECHNICS

BOREHOLE RECORD - *Cable Percussion and Rotary*

Project	National Grid - 101677 Margam TATA Steel Connection	**Engineer**	Baker Hicks	**Project No.**	PC248745 - Phase 1
Client	National Grid	**National Grid Coordinates**	378581.1 E 186340.3 N	**Borehole**	BH109
				Ground Level	3.04 m OD

Sampling/Testing | Drilling | Strata — Scale 1:50

Sample / SPT Depth	SPT N / Type	Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	TCR/ SCR (%)	RQD (%)	FI	General	Detail	Depth	Legend	Level (m OD)
		39.00 - 40.50	14.30	60 0	0	NI		grey. At 37.20m, very strong ironstone nodule. Between 38.10m - 38.22m, very strong ironstone. Between 38.22m - 32.33m, non-intact, recovered as angular to subangular fine to coarse gravel.			
		40.50 - 42.00	14.30	73 33	7	19 NI					
							Medium strong to strong black carbonaceous SILSTONE. Discontinuities are subhorizontal closely and medium spaced, plannar, smooth and clean.		41.18		-38.15
42.03 - 42.16	C	42.00 - 43.50	14.30	80 47	25	7		Between 39.00m - 39.60m, assumed zone of core loss. Between 39.60m - 40.40m, non-intact, recovered as angular to subangular fine to coarse gravel. Between 40.40m - 40.66m, siltstone layer.. Between 40.66m - 41.18m, non-intact, recovered as angular to subangular fine to coarse gravel.			
						NI	Weak black COAL. recovered as angular to subangular fine to coarse gravel with pyrite crystals		42.55		-39.52
							Weak to medium strong light grey MUDSTONE. Discontinuities are subhorizontal (0-15 degrees) closely and medium spaced, stepped.	Between 42.80m - 43.50m, non-intact, recovered as angular to subangular fine to coarse gravel.	42.80		-39.76
		43.50 - 45.00	14.30	100 90	73	3					
							Medium strong to strong grey SILTSTONE with rare very strong light grey ironstone nodules. Discontinuities are subhorizontal (0-15 degrees) closely and medium spaced stepped, rough and clean.		44.30		-41.26
		45.00 - 46.50	14.30	100 90	50	NI		Between 44.62m - 44.75m, non-intact, recovered as angular to subangular fine to coarse gravel. Between 44.75m - 44.90m and 45.00m - 45.10m, discontinuities inclined (40-60 degrees) stepped, rough and clean. Between 45.00m - 45.30m, discontinuities inclined (60-80 degrees) undulating, rough and clean.			
							Very weak to weak dark grey MUDSTONE with occasional very strong ironstone nodules. Discontinuities are closely spaced plannar, smooth and clean.		45.50		-42.46
		46.50 - 48.00	14.30	100 73	17	7					
		48.00 - 49.50	14.30	93 87	21	AZCL 12 NI 1 NI 2					
								End of Borehole	49.50		-46.46

Boring				Progress					Groundwater					
Depth	Hole Dia.	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbrevations are explained on the accompanying key sheets.
All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

Logged by SI

Figure

05/02/2025

GEOTECHNICS

BOREHOLE RECORD - *Cable Percussion*

Project	National Grid - 101677 Margam TATA Steel Connection	**Engineer**	Baker Hicks	**Project No.**	PC248745 - Phase 1
Client	National Grid	**National Grid Coordinates**	378577.5 E 186301.0 N	**Borehole**	BH110
				Ground Level	3.07 m OD

Sampling			Properties		Strata			Scale 1:50
Depth	Sample Type	Depth Cased & (to Water)	Results	SPT N	Description	Depth	Legend	Level (m OD)
0.10 - 0.40	B				TOPSOIL: Grass over very soft dark brown slightly sandy organic clay with occasional rootlets and roots up to 20mm in diameter.			
0.25	D							
0.25	ES					0.40		2.67
0.25			PID: <0.1 ppm		Very soft blueish grey slightly sandy CLAY.			
0.25	HV		10/16/11 kPa					
0.50	D							
0.50	ES							
0.50 - 1.00	B							
0.50			PID: <0.1 ppm			1.30		1.77
0.50	HV		38/39/40 kPa		Spongy dark brown fiberous PEAT.			
1.00	D							
1.00	ES							
1.00			PID: 0.10 ppm					
1.20 - 1.65		1.20 (0.00)		S0*/ 450mm				
1.20 - 1.65	D							
1.30 - 2.50	B							
2.00	D							
2.50 - 2.95		2.50		S0*/				
2.50 - 2.95	D	(DRY)		450mm				
2.50 - 3.50	B							
3.00	D		w: 473 %					
3.50	UT	3.50 (DRY)	3 blows					
3.50 - 4.50	B		w: 611 %					
3.95 - 4.10	D							
4.30	D		w: 600 %		Below 4.30m: becoming slightly clayey fiberous peat.			
4.50 - 4.95		4.50		S0*/				
4.50 - 4.95	D	(DRY)		450mm				
5.10 - 5.60	B					5.10		-2.03
5.30	D		w: 10 %		Stiff to very stiff greyish brown slightly sandy gravelly CLAY. Gravel is angular to subangular fine to coarse of sandstone and quartzite.			
5.50 - 6.60	B							
5.60 - 6.60	B					5.60		-2.53
5.70 - 6.15		5.70		S31	Medium dense greyish brown slightly sandy GRAVEL. Gravel is subangular to subrounded fine to coarse of sandstone and quartzite,			
6.00	D							
6.60 - 7.05		6.60 (1.90)		S26				
6.60 - 7.50	B							
7.00	D							
7.50 - 7.95		7.50 (2.10)		C15		7.60		-4.53
7.60 - 8.80	B				Stiff grey slightly sandy gravelly CLAY. Gravel is angular to subangular fine to coarse of sandstone and quartzite.			
8.50	D		w: 16 %					
8.80 - 9.25		8.80 (7.10)		S30				
8.80	D							
9.00 - 10.00	B							
9.50	D							
10.00 - 10.45	UT	8.80 (8.00)	54 blows w: 17 %					

Boring

Depth	Hole Dia.	Technique	Crew
1.20	0.30	Inspection Pit	MR/TS
12.22	0.20	Cable Percussion	MR/TS

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
0.00			10/09/24	08:00
12.05	8.80	11.20	10/09/24	17:00
12.05	8.80	-0.46	11/09/24	08:00
12.22	8.80	-0.12	11/09/24	09:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
0.00		0.00	20		
6.00	6.00	1.90	20		

Remarks

Inspection pit hand excavated to 1.20m depth and no services were found.
ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars and 1 x 1 litre plastic tub.
Groundwater noted as artesian at 6.10m.
Chiselling 12.00 - 12.10m 30mins and 12.10 - 12.20m 30 mins.

Symbols and abbrevations are explained on the accompanying key sheets.
All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

Logged by SI

Figure

05/02/2025

GEOTECHNICS

BOREHOLE RECORD - *Cable Percussion*

Project	National Grid - 101677 Margam TATA Steel Connection	**Engineer**	Baker Hicks	**Project No.**	PC248745 - Phase 1
Client	National Grid	**National Grid Coordinates**	378577.5 E 186301.0 N	**Borehole**	BH110
				Ground Level	3.07 m OD

Sampling | Properties | Strata | Scale 1:50

Depth	Sample Type	Depth Cased & (to Water)	Results	SPT N	Description	Depth	Legend	Level (m OD)
10.45 - 10.60	D							
11.00 - 12.00	B							
11.50 - 11.95		8.80 (10.30)		S32				
11.50	D							
11.50 - 11.95	D					11.90		-8.83
12.00 - 12.20	D				Weak dark grey fine grained SANDSTONE. Recovered as angular fine to coarse gravel.			
12.05 - 12.07		8.80 (11.20)		S50/ 10mm		12.20		-9.13
12.05 - 12.06	D				End of Borehole			

Boring

Depth	Hole Dia.	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbrevations are explained on the accompanying key sheets.
All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

Logged by SI

Figure Sheet 2 of 2

05/02/2025

GEOTECHNICS

BOREHOLE RECORD - *Cable Percussion*

Project	National Grid - 101677 Margam TATA Steel Connection	**Engineer**	Baker Hicks	**Project No.**	PC248745 - Phase 1
Client	National Grid	**National Grid Coordinates**	378625.1 E 186324.6 N	**Borehole**	BH111
				Ground Level	3.03 m OD

Scale 1:50

Sampling Depth	Sample Type	Depth Cased & (to Water)	Properties Results	SPT N	Strata Description	Depth	Legend	Level (m OD)
0.25	D				TOPSOIL: Grass over very soft dark brown slightly sandy organic clay with occasional rootlets and roots up to 20mm in diameter.			
0.25	ES					0.40		2.63
0.25			PID: <0.1 ppm		Very soft bluish grey slightly sandy CLAY with occasional pockets up to 15mm in size of peat.			
0.25	HV		12/10/13 kPa					
0.40 - 1.20	B							
0.50	D		w: 40 %					
0.50	ES							
0.50			PID: <0.1 ppm			1.30		1.73
0.50	HV		18/19/17 kPa		Spongy dark brown fiberous PEAT.			
1.00	D							
1.00	ES							
1.00			PID: <0.1 ppm					
1.20 - 1.65		1.20 (0.00)		S0*/ 450mm				
1.20	D							
1.30 - 2.50	B							
2.00	D							
2.50 - 2.95		2.50 (1.80)		S0*/ 450mm				
2.50 - 3.50	B							
3.00	D							
3.50 - 3.95		3.50 (2.10)		S0*/ 450mm		3.50		-0.47
3.50	D				Very soft bluish grey CLAY with large pockets up to 100mm in size of peat.			
3.50 - 4.50	B							
4.00	D							
4.50 - 4.95		4.50 (3.30)		S2				
4.50	D					4.80		-1.77
4.80 - 5.50	B				Stiff dark grey slightly gravelly sandy CLAY. Gravel is angular to subangular fine to coarse of sandstone.			
5.00	D		w: 22 %					
5.80 - 6.25		5.80 (4.90)		C21	Medium dense brownish grey slightly sandy GRAVEL. Gravel is subangular to subrounded fine to coarse of sandstone and quartzite.	5.80		-2.77
5.80 - 6.00	D					6.00		-2.97
5.80 - 6.50	D				Stiff to very stiff brownish grey slightly sandy gravelly CLAY. Gravel is angular to subangular fine to coarse sandstone and quartzite.			
6.00 - 7.00	B							
6.60	D							
7.20 - 7.65		7.20 (DRY)		S35				
7.20	D							
7.20 - 8.50	B							
8.00	D		w: 17 %					
8.50	UT	7.30 (DRY`)	59 blows w: 11 %					
8.95 - 9.10	D							
9.00 - 10.00	B							
9.50	D							
10.00 - 10.45		7.30 (DRY)		S32				

Boring

Depth	Hole Dia.	Technique	Crew
1.20	0.30	Inspection Pit	MR/SS
14.29	0.20	Cable Percussion	MR/SS

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
0.00			16/09/24	08:00
14.29	7.30	DRY	16/09/24	17:00
14.29	7.30	0.00	17/09/24	08:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
0.00		0.00	20		
5.80	5.80	4.90	20		

Remarks

Inspection pit hand excavated to 1.20m depth and no services were found.
ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars and 1 x 1 litre plastic tub.
Chiselling 13.80 -14.00m 30mins.
53mm standpipe installed GL to 1.00m plain pipe, 1.00m to 4.50m bgl slotted pipe, 4.50m to base bentonite backfill.

Logged by SI

Figure Sheet 1 of 2

05/02/2025

Symbols and abbrevations are explained on the accompanying key sheets.
All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

GEOTECHNICS

BOREHOLE RECORD - *Cable Percussion*

Project	National Grid - 101677 Margam TATA Steel Connection	**Engineer**	Baker Hicks	**Project No.**	PC248745 - Phase 1
Client	National Grid	**National Grid Coordinates**	378625.1 E 186324.6 N	**Borehole**	BH111
				Ground Level	3.03 m OD

Scale 1:50

Sampling			Properties		Strata			
Depth	Sample Type	Depth Cased & (to Water)	Results	SPT N	Description	Depth	Legend	Level (m OD)
10.00	D							
10.50 - 11.50	B							
11.00	D		w: 11 %					
11.50 - 11.95	UT	7.30 (DRY)	61 blows w: 11 %					
11.95 - 12.10	D							
12.30 - 13.00	B							
12.50	D				Extremely weak grey MUDSTONE, recovered as gravel.	12.30		-9.27
13.00 - 13.37		7.30 (DRY)		S50/ 220mm				
13.00 - 13.37	D							
13.00 - 14.00	B							
13.50	D							
14.00 - 14.29		7.30 (DRY)		S50/ 145mm				
14.00	D				End of Borehole	14.29		-11.26

Boring				Progress					Groundwater					
Depth	Hole Dia.	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbrevations are explained on the accompanying key sheets.
All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

Logged by SI

Figure

05/02/2025

GEOTECHNICS

BOREHOLE RECORD - *Cable Percussion*

Project	National Grid - 101677 Margam TATA Steel Connection	**Engineer**	Baker Hicks	**Project No.**	PC248745 - Phase 1
Client	National Grid	**National Grid Coordinates**	378640.5 E 186097.3 N	**Borehole**	BH112
				Ground Level	3.57 m OD

Scale 1:50

Sampling Depth	Sample Type	Depth Cased & (to Water)	Properties Results	SPT N	Strata Description	Depth	Legend	Level (m OD)
0.10 - 0.30	B				TOPSOIL: Grass over very soft dark brown slightly sandy clay with occasional rootlets and many roots (up to 15mm in diameter).			
0.25	D					0.30		3.27
0.25	ES				Soft brown mottled grey slightly sandy CLAY with occasional rootlets.			
0.25			PID: <0.1 ppm					
0.25	HV		18/15/16 kPa					
0.30 - 0.70	B				Soft to firm brownish grey slightly sandy CLAY with rare rootlets.	0.70		2.87
0.50	D							
0.50	ES							
0.50			PID: <0.1 ppm					
0.50	HV		39/40/39 kPa					
0.70 - 1.20	B				Very soft bluish grey and brown slightly sandy CLAY.	1.60		1.97
1.00	D		w: 39 %					
1.00	ES							
1.00			PID: <0.1 ppm					
1.20 - 1.65	UT	1.20 (0.80)	6 blows		Very soft grey slightly sandy organic CLAY with many pockets (up to 80mm in size) of peat.	2.30		1.27
1.60 - 2.30	B							
1.65 - 1.80	D							
2.00	D		w: 56 %					
2.30 - 2.75		2.30 (1.30)		S1				
2.30 - 2.75	D							
2.30 - 3.20	B							
3.00	D							
3.20 - 3.65		3.20 (3.20)		S0*/ 450mm				
3.20 - 3.65	D							
3.20 - 4.50	B							
4.00	D							
4.50	EW							
4.50 - 4.65	UT	4.50 (4.30)	7 blows					
4.50 - 5.50	B							
5.20	D		w: 230 %					
5.50 - 5.95		5.50 (5.30)		S6				
5.50 - 5.95	D							
5.80 - 6.10	D							
6.10 - 6.50	B				Very soft dark grey sandy organic CLAY.	6.10		-2.53
6.30	D							
6.50 - 6.95		6.50 (6.50)		S0*/ 450mm				
6.50 - 6.95	D							
6.50 - 7.30	B							
7.10	D		w: 31 %					
7.40	D				Dense brown sandy GRAVEL with a low cobble content of subangular sandstone and quartzite. Gravel is subangular to subrounded fine to coarse sandstone and quartzite.	7.30		-3.73
7.50 - 7.95		7.50 (1.00)		C43				
7.50 - 8.50	B							
8.00	D							
8.50 - 8.95		8.50 (0.10)		C17	At 8.50m, medium dense.			
8.50 - 9.20	B							
9.00	D							
9.30	D				Stiff dark grey slightly sandy slightly gravelly CLAY. Gravel is angular to subangular fine to coarse sandstone.	9.30		-5.73
9.40 - 9.85		9.40 (4.10)		S24				
9.40 - 9.85	D							
10.00 - 11.00	B							

Boring

Depth	Hole Dia.	Technique	Crew
1.20	0.30	Inspection Pit	MR/TS
14.46	0.20	Cable Percussion	MR/TS

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
0.00			22/08/24	08:00
12.50	9.50	DRY	22/08/24	18:00
12.50	9.50	8.10	27/08/24	08:00
14.46	9.50	12.40	27/08/24	12:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
0.80		0.60	20		Fast inflow.
7.50	7.50	1.00	20		

Remarks

Inspection pit hand excavated to 1.20m depth and no services were found.
ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars and 1 x 1 litre plastic tub.
Chiselling 14.20m - 14.40m 30mins. 50mm standpipe - slotted 1.00m - 6.00m with raised cover.
Backfill: Bentonite 6.00m - 14.00m, gravel filter 1.00m - 6.00m, Bentonite seal 0.30m - 1.00m, concrete GL - 0.30m.

Logged by SI

Figure Sheet 1 of 2

05/02/2025

Symbols and abbrevations are explained on the accompanying key sheets.
All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

GEOTECHNICS

BOREHOLE RECORD **-** *Cable Percussion*

Project	National Grid - 101677 Margam TATA Steel Connection	**Engineer**	Baker Hicks	**Project No.**	PC248745 - Phase 1
				Borehole	BH112
Client	National Grid	**National Grid Coordinates**	378640.5 E 186097.3 N	**Ground Level**	3.57 m OD

Sampling			Properties		Strata			Scale 1:50
Depth	Sample Type	Depth Cased & (to Water)	Results	SPT N	Description	Depth	Legend	Level (m OD)
10.50	D							
11.00 - 11.45		9.50 (DRY)		S24				
11.00 - 11.45	D							
11.50 - 12.50	B							
12.00	D		w: 14 %					
12.50 - 12.95		9.50 (DRY)		S31				
12.50 - 12.95	D							
12.50 - 13.10	B							
12.80	D				Extremely weak grey MUDSTONE, recovered as angular to subangular fine to coarse gravel.	13.10		-9.53
13.10 - 14.00	B							
13.50	D							
14.00 - 14.17		9.50 (12.30)		S50/ 50mm				
14.00 - 14.17	D							
14.20	D				End of Borehole	14.46		-10.89
14.40 - 14.46		9.50 (12.40)		S50/ 20mm				
14.40 - 14.46	D							

Boring				Progress					Groundwater					
Depth	Hole Dia.	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbrevations are explained on the accompanying key sheets.
All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

Logged by SI

Figure

05/02/2025

GEOTECHNICS

FIELDWORK RESULTS *SPT Results Summary*

Project National Grid - 101677 Margam TATA Steel Connection **Engineer** Baker Hicks **Project No.** PC248745 - Phase 1

Client National Grid

Borehole	Depth (m bgl)	Level (m OD)	SPT Type	Seating Drive		Test Drive				SPT *N* -value	Uncorrected SPT *N* 10 20 30 40 50
				0 - 75 (mm)	75 - 150 (mm)	0 - 75 (mm)	75 - 150 (mm)	150 - 225 (mm)	225 - 300 (mm)		
BH101	1.20	2.16	S	-	-	-	-	-	-	0*/450	
BH101	3.20	0.16	S	1	-	-	1	-	-	1	
BH101	4.20	-0.84	C	25/70		50/70				50/70	
BH101	5.20	-1.84	C	8	7	7	7	12	12	38	
BH101	6.30	-2.94	C	9	10	16	19	15/40		50/190	
BH101	7.10	-3.74	C	9	10	16	21	13/40		50/190	
BH101	8.00	-4.64	C	8	9	16	17	17/70		50/220	
BH101	9.10	-5.74	C	8	9	9	10	10	10	39	
BH101	10.00	-6.64	C	7	9	9	10	11	12	42	
BH101	11.50	-8.14	S	6	7	9	9	10	13	41	
BH101	13.50	-10.14	S	9	11	15	18	17/40		50/190	
BH101	14.70	-11.34	S	25		50				50/75	

Hammer No.:	AR3000	**Remarks**
Energy Ratio, Er (%):	67	

-/- Blows / penetration (mm) -*/- Total blows / total penetration (mm) SWP Penetration under own weight (mm)

S - SPT with split spoon sampler C - SPT with cone L - Split Spoon liner used

FIELDWORK RESULTS *SPT Results Summary*

Project National Grid - 101677 Margam TATA Steel Connection **Engineer** Baker Hicks **Project No.** PC248745 - Phase 1

Client National Grid

Borehole	Depth (m bgl)	Level (m OD)	SPT Type	Seating Drive		Test Drive				SPT *N*-value	Uncorrected SPT *N*
				0 - 75 (mm)	75 - 150 (mm)	0 - 75 (mm)	75 - 150 (mm)	150 - 225 (mm)	225 - 300 (mm)		10 20 30 40 50
BH102	1.20	1.75	S	-	-	-	-	-	-	0*/450	
BH102	3.20	-0.25	S	1	2	2	2	3	2	9	
BH102	4.20	-1.25	C	8	10	10	9	10	12	41	
BH102	5.20	-2.25	C	6	13	18	20	12/25		50/175	
BH102	6.20	-3.25	C	6	7	7	9	10	10	36	
BH102	7.20	-4.25	C	16	9/40	36	14/15			50/90	
BH102	8.00	-5.05	C	8	7	4	4	5	5	18	
BH102	9.50	-6.55	S	25/0		50/0				50/0	
BH102	11.20	-8.25	S	6	6	6	7	8	9	30	
BH102	12.00	-9.05	S	10	15	20	30			50/150	
BH102	13.00	-10.05	S	17	8/20	41	9/10			50/85	

Hammer No.:	AR3000	**Remarks**
Energy Ratio, Er (%):	67	

-/- Blows / penetration (mm) -*/- Total blows / total penetration (mm) SWP Penetration under own weight (mm)

S - SPT with split spoon sampler C - SPT with cone L - Split Spoon liner used

FIELDWORK RESULTS *SPT Results Summary*

Project National Grid - 101677 Margam TATA Steel Connection **Engineer** Baker Hicks **Project No.** PC248745 - Phase 1

Client National Grid

Borehole	Depth (m bgl)	Level (m OD)	SPT Type	Seating Drive		Test Drive				SPT *N*-value	Uncorrected SPT *N* 10 20 30 40 50
				0 - 75 (mm)	75 - 150 (mm)	0 - 75 (mm)	75 - 150 (mm)	150 - 225 (mm)	225 - 300 (mm)		
BH103	1.20	2.00	S	-	-	-	-	-	-	0*/450	
BH103	3.20	0.00	S	-	-	-	-	1	1	2	
BH103	4.40	-1.20	S	5	5	6	7	8	12	33	
BH103	5.30	-2.10	C	4	5	7	7	8	8	30	
BH103	6.30	-3.10	C	8	10	9	15	13	13/50	50/275	
BH103	7.20	-4.00	C	6	7	7	9	9	10	35	
BH103	8.10	-4.90	S	2	3	6	9	15	9	39	
BH103	11.20	-8.00	S	10	15/70	19	21	10/40		50/190	
BH103	12.80	-9.60	S	10	15/50	17	17	16/40		50/190	
BH103	14.00	-10.80	S	11	14/45	20	30			50/150	

Hammer No.:	AR3000	**Remarks**
Energy Ratio, Er (%):	67	

-/- Blows / penetration (mm) -*/- Total blows / total penetration (mm) SWP Penetration under own weight (mm)

S - SPT with split spoon sampler C - SPT with cone L - Split Spoon liner used

FIELDWORK RESULTS *SPT Results Summary*

Project National Grid - 101677 Margam TATA Steel Connection **Engineer** Baker Hicks **Project No.** PC248745 - Phase 1

Client National Grid

Borehole	Depth (m bgl)	Level (m OD)	SPT Type	Seating Drive		Test Drive				SPT *N* -value	Uncorrected SPT *N* 10 20 30 40 50
				0 - 75 (mm)	75 - 150 (mm)	0 - 75 (mm)	75 - 150 (mm)	150 - 225 (mm)	225 - 300 (mm)		
BH104	2.00	0.97	S	1	-	-	1	-	-	1	
BH104	4.50	-1.53	S	3	3	4	5	5	5	19	
BH104	6.00	-3.03	C	3	3	4	4	6	6	20	
BH104	7.00	-4.03	S	3	4	5	5	6	7	23	
BH104	8.20	-5.23	S	5	6	7	8	8	10	33	
BH104	11.00	-8.03	S	7	7	8	9	9	9	35	
BH104	12.20	-9.23	C	5	7	7	7	10	13	37	
BH104	13.20	-10.23	S	11	14/50	19	26	5/0		50/150	
BH104	13.90	-10.93	S	25/50		50/50				50/50	

FIELDWORK RESULTS *SPT Results Summary*

Project National Grid - 101677 Margam TATA Steel Connection **Engineer** Baker Hicks **Project No.** PC248745 - Phase 1

Client National Grid

Borehole	Depth (m bgl)	Level (m OD)	SPT Type	Seating Drive		Test Drive				SPT *N* -value	Uncorrected SPT *N* 10 20 30 40 50
				0 - 75 (mm)	75 - 150 (mm)	0 - 75 (mm)	75 - 150 (mm)	150 - 225 (mm)	225 - 300 (mm)		
BH105	1.20	1.84	S	1	-	-	-	1	-	1	
BH105	3.20	-0.16	S	-	-	-	-	-	-	0*/450	
BH105	5.20	-2.16	S	4	5	5	6	7	7	25	
BH105	6.50	-3.46	C	25/60		50/10				50/10	
BH105	7.50	-4.46	S	3	4	5	5	7	9	26	
BH105	9.50	-6.46	S	6	7	7	8	10	10	35	
BH105	12.10	-9.06	S	8	9	15	31	4/6		50/156	
BH105	13.60	-10.56	S	9	12	15	15	20		50/225	
BH105	14.70	-11.66	S	10	15/70	23	27/70			50/145	

Hammer No.:	AR3000	**Remarks**
Energy Ratio, Er (%):	67	

-/- Blows / penetration (mm) -*/- Total blows / total penetration (mm) SWP Penetration under own weight (mm)

S - SPT with split spoon sampler C - SPT with cone L - Split Spoon liner used

FIELDWORK RESULTS *SPT Results Summary*

Project National Grid - 101677 Margam TATA Steel Connection **Engineer** Baker Hicks **Project No.** PC248745 - Phase 1

Client National Grid

Borehole	Depth (m bgl)	Level (m OD)	SPT Type	Seating Drive		Test Drive				SPT *N* -value	Uncorrected SPT *N* 10 20 30 40 50
				0 - 75 (mm)	75 - 150 (mm)	0 - 75 (mm)	75 - 150 (mm)	150 - 225 (mm)	225 - 300 (mm)		
BH106	1.20	1.95	S	-	-	-	-	-	-	0*/450	
BH106	2.50	0.65	S	-	-	-	-	-	-	0*/450	
BH106	3.50	-0.35	S	-	-	-	-	-	-	0*/450	
BH106	4.50	-1.35	S	3	4	5	7	7	7	26	
BH106	5.50	-2.35	C	5	6	7	8	8	10	33	
BH106	6.50	-3.35	C	7	8	12	12	18	8/25	50/250	
BH106	7.50	-4.35	C	6	7	5	5	4	5	19	
BH106	10.00	-6.85	S	7	9	10	12	12	13	47	
BH106	11.50	-8.35	S	8	11	8	7	8	8	31	
BH106	13.10	-9.95	S	8	9	11	15	15	9/20	50/245	
BH106	13.80	-10.65	S	9	11	17	17	16/45		50/195	

Hammer No.:	AR3000	**Remarks**
Energy Ratio, Er (%):	67	

-/- Blows / penetration (mm) -*/- Total blows / total penetration (mm) SWP Penetration under own weight (mm)

S - SPT with split spoon sampler C - SPT with cone L - Split Spoon liner used

FIELDWORK RESULTS *SPT Results Summary*

Project National Grid - 101677 Margam TATA Steel Connection **Engineer** Baker Hicks **Project No.** PC248745 - Phase 1

Client National Grid

Borehole	Depth (m bgl)	Level (m OD)	SPT Type	Seating Drive		Test Drive				SPT *N* -value	Uncorrected SPT *N* 10 20 30 40 50
				0 - 75 (mm)	75 - 150 (mm)	0 - 75 (mm)	75 - 150 (mm)	150 - 225 (mm)	225 - 300 (mm)		
BH107	1.20	1.75	S	-	-	-	-	-	-	0*/450	
BH107	2.50	0.45	S	-	-	-	-	-	-	0*/450	
BH107	3.50	-0.55	S	-	-	-	-	-	-	0*/450	
BH107	5.40	-2.45	S	5	6	6	5	6	6	23	
BH107	6.50	-3.55	S	8	12	8	8	9	8	33	
BH107	7.50	-4.55	S	3	4	4	5	4	5	18	
BH107	10.00	-7.05	S	6	7	7	8	8	8	31	
BH107	11.50	-8.55	S	7	8	8	9	12	9	38	
BH107	13.20	-10.25	S	5	8	15	26	9/15		50/165	
BH107	14.50	-11.55	S	18	7/15	32	18/40			50/115	

Hammer No.:	AR3000	**Remarks**
Energy Ratio, Er (%):	67	

-/- Blows / penetration (mm) -*/- Total blows / total penetration (mm) SWP Penetration under own weight (mm)

S - SPT with split spoon sampler C - SPT with cone L - Split Spoon liner used

FIELDWORK RESULTS *SPT Results Summary*

Project National Grid - 101677 Margam TATA Steel Connection **Engineer** Baker Hicks **Project No.** PC248745 - Phase 1

Client National Grid

Borehole	Depth (m bgl)	Level (m OD)	SPT Type	Seating Drive		Test Drive				SPT *N* -value	Uncorrected SPT *N* 10 20 30 40 50
				0 - 75 (mm)	75 - 150 (mm)	0 - 75 (mm)	75 - 150 (mm)	150 - 225 (mm)	225 - 300 (mm)		
BH108	1.20	1.85	S	-	-	-	-	-	-	0*/450	
BH108	2.50	0.55	S	-	-	-	-	-	-	0*/450	
BH108	3.50	-0.45	S	-	-	-	-	-	-	0*/450	
BH108	5.50	-2.45	S	6	7	8	9	9	9	35	
BH108	6.50	-3.45	C	3	4	7	7	9	10	33	
BH108	7.50	-4.45	C	4	3	3	4	3	4	14	
BH108	10.00	-6.95	S	8	8	7	7	6	7	27	
BH108	11.50	-8.45	S	7	7	6	5	5	5	21	
BH108	13.20	-10.15	S	10	15/60	27	23/45			50/120	
BH108	14.50	-11.45	S	25		40	10/10			50/85	

Hammer No.:	AR3000	**Remarks**
Energy Ratio, Er (%):	67	

-/- Blows / penetration (mm) -*/- Total blows / total penetration (mm) SWP Penetration under own weight (mm)

S - SPT with split spoon sampler C - SPT with cone L - Split Spoon liner used

FIELDWORK RESULTS *SPT Results Summary*

Project National Grid - 101677 Margam TATA Steel Connection **Engineer** Baker Hicks **Project No.** PC248745 - Phase 1

Client National Grid

Borehole	Depth (m bgl)	Level (m OD)	SPT Type	Seating Drive		Test Drive				SPT *N* -value	Uncorrected SPT *N* 10 20 30 40 50
				0 - 75 (mm)	75 - 150 (mm)	0 - 75 (mm)	75 - 150 (mm)	150 - 225 (mm)	225 - 300 (mm)		
BH109	1.20	1.84	S	1	-	-	-	-	-	0	
BH109	3.50	-0.47	S	1	-	-	-	-	-	0	
BH109	5.50	-2.47	S	1	2	2	3	4	4	13	
BH109	6.50	-3.47	S	3	4	7	7	9	10	33	
BH109	7.50	-4.47	S	4	5	7	8	10	12	37	
BH109	8.50	-5.47	S	3	4	5	5	6	6	22	
BH109	11.00	-7.97	S	7	6	7	7	6	7	27	
BH109	14.00	-10.97	S	8	16	50/60				50/60	
BH109	14.30	-11.27	S	25/10		50/10				50/10	

Hammer No.:	AR3000	**Remarks**
Energy Ratio, Er (%):	67	

-/- Blows / penetration (mm) -*/- Total blows / total penetration (mm) SWP Penetration under own weight (mm)

S - SPT with split spoon sampler C - SPT with cone L - Split Spoon liner used

FIELDWORK RESULTS *SPT Results Summary*

Project National Grid - 101677 Margam TATA Steel Connection **Engineer** Baker Hicks **Project No.** PC248745 - Phase 1

Client National Grid

Borehole	Depth (m bgl)	Level (m OD)	SPT Type	Seating Drive		Test Drive				SPT *N* -value	Uncorrected SPT *N* 10 20 30 40 50
				0 - 75 (mm)	75 - 150 (mm)	0 - 75 (mm)	75 - 150 (mm)	150 - 225 (mm)	225 - 300 (mm)		
BH110	1.20	1.87	S	-	-	-	-	-	-	0*/450	
BH110	2.50	0.57	S	-	-	-	-	-	-	0*/450	
BH110	4.50	-1.43	S	-	-	-	-	-	-	0*/450	
BH110	5.70	-2.63	S	3	4	7	7	8	9	31	
BH110	6.60	-3.53	S	4	6	6	7	6	7	26	
BH110	7.50	-4.43	S	2	3	3	3	4	5	15	
BH110	8.80	-5.73	S	5	6	6	7	8	9	30	
BH110	11.50	-8.43	S	6	6	7	8	8	9	32	
BH110	12.05	-8.98	S	25/10		50/10				50/10	

Hammer No.:	AR3000	**Remarks**
Energy Ratio, Er (%):	67	

-/- Blows / penetration (mm) -*/- Total blows / total penetration (mm) SWP Penetration under own weight (mm)

S - SPT with split spoon sampler C - SPT with cone L - Split Spoon liner used

FIELDWORK RESULTS *SPT Results Summary*

Project National Grid - 101677 Margam TATA Steel Connection **Engineer** Baker Hicks **Project No.** PC248745 - Phase 1

Client National Grid

Borehole	Depth (m bgl)	Level (m OD)	SPT Type	Seating Drive		Test Drive				SPT *N* -value	Uncorrected SPT *N* 10 20 30 40 50
				0 - 75 (mm)	75 - 150 (mm)	0 - 75 (mm)	75 - 150 (mm)	150 - 225 (mm)	225 - 300 (mm)		
BH111	1.20	1.83	S	-	-	-	-	-	-	0*/450	
BH111	2.50	0.53	S	-	-	-	-	-	-	0*/450	
BH111	3.50	-0.47	S	-	-	-	-	-	-	0*/450	
BH111	4.50	-1.47	S	-	-	-	-	1	1	2	
BH111	5.80	-2.77	C	3	4	4	5	6	6	21	
BH111	7.20	-4.17	S	5	6	8	9	9	9	35	
BH111	10.00	-6.97	S	3	4	5	8	9	10	32	
BH111	13.00	-9.97	S	8	10	15	16	19/70		50/220	
BH111	14.00	-10.97	S	10	15/70	22	28/70			50/145	

Hammer No.:	AR3000	**Remarks**
Energy Ratio, Er (%):	67	

-/- Blows / penetration (mm) -*/- Total blows / total penetration (mm) SWP Penetration under own weight (mm)

S - SPT with split spoon sampler C - SPT with cone L - Split Spoon liner used

FIELDWORK RESULTS *SPT Results Summary*

Project National Grid - 101677 Margam TATA Steel Connection **Engineer** Baker Hicks **Project No.** PC248745 - Phase 1

Client National Grid

Borehole	Depth (m bgl)	Level (m OD)	SPT Type	Seating Drive		Test Drive				SPT *N* -value	Uncorrected SPT *N* 10 20 30 40 50
				0 - 75 (mm)	75 - 150 (mm)	0 - 75 (mm)	75 - 150 (mm)	150 - 225 (mm)	225 - 300 (mm)		
BH112	2.30	1.27	S	1	-	-	-	1	-	1	
BH112	3.20	0.37	S	-	-	-	-	-	-	0*/450	
BH112	5.50	-1.93	S	-	-	1	1	2	2	6	
BH112	6.50	-2.93	S	-	-	-	-	-	-	0*/450	
BH112	7.50	-3.93	C	6	10	10	11	10	12	43	
BH112	8.50	-4.93	C	6	5	4	4	5	4	17	
BH112	9.40	-5.83	S	4	5	5	6	6	7	24	
BH112	14.00	-10.43	S	8	17/45	50/50				50/50	
BH112	14.40	-10.83	S	25/40		50/20				50/20	

Hammer No.:	AR3000	**Remarks**
Energy Ratio, Er (%):	67	

-/- Blows / penetration (mm) -*/- Total blows / total penetration (mm) SWP Penetration under own weight (mm)

S - SPT with split spoon sampler C - SPT with cone L - Split Spoon liner used

///SAFER RIG SERVICES

SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

Safer Rig Services
Portview Road
Avonmouth
BS11 9JE
info@saferrigservices.co.uk

SPT Hammer Ref:	AB1
Test Date:	09/08/2023
Report Date:	09/08/2023
File Name:	AB1.spt
Test Operator:	NR

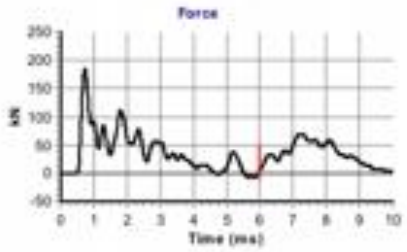
Instrumented Rod Data

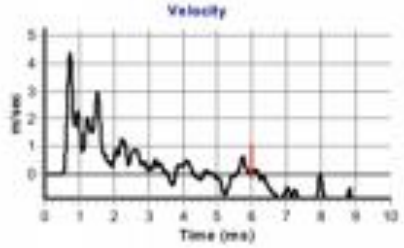
Diameter d_r (mm):	54
Wall Thickness t_r (mm):	6.8
Assumed Modulus E_a (GPa):	208
Accelerometer No.1:	73534
Accelerometer No.2:	73538

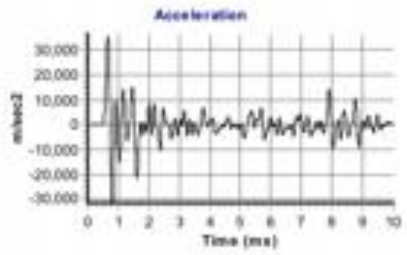
SPT Hammer Information

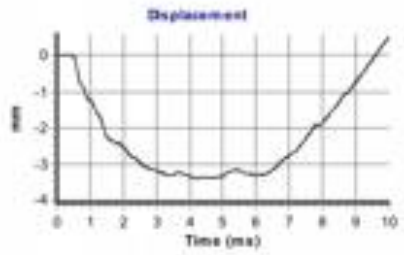
Hammer Mass m (kg):	63.5
Falling Height h (mm):	760
SPT String Length L (m):	10.3

Comments / Location









Calculations

Area of Rod A (mm2):	1008
Theoretical Energy E_{theor} (J):	473
Measured Energy E_{meas} (J):	305

Energy Ratio E_r (%): **64**

Signed: Nick Reichelt

Title:

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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:	AR3000
Test Date:	07/09/2023
Report Date:	07/09/2023
File Name:	AR3000.spt
Test Operator:	JL

Instrumented Rod Data

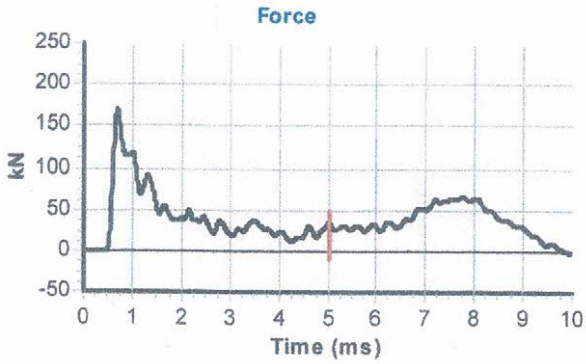
Diameter d_r (mm):	54
Wall Thickness t_r (mm):	6.5
Assumed Modulus E_a (GPa):	208
Accelerometer No.1:	72572
Accelerometer No.2:	72757

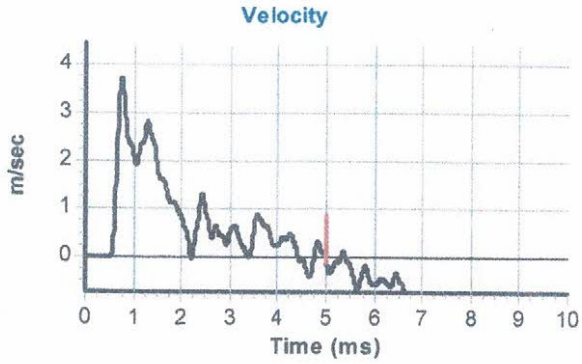
SPT Hammer Information

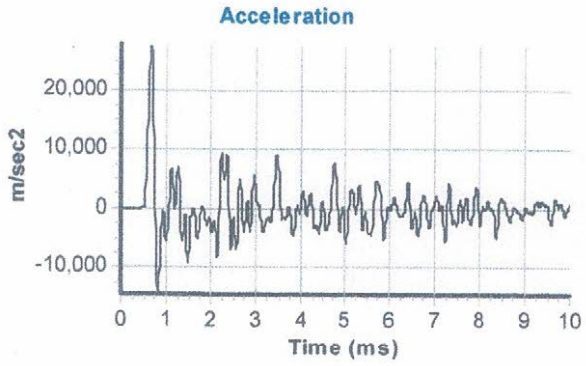
Hammer Mass m (kg):	63.5
Falling Height h (mm):	760
SPT String Length L (m):	10.0

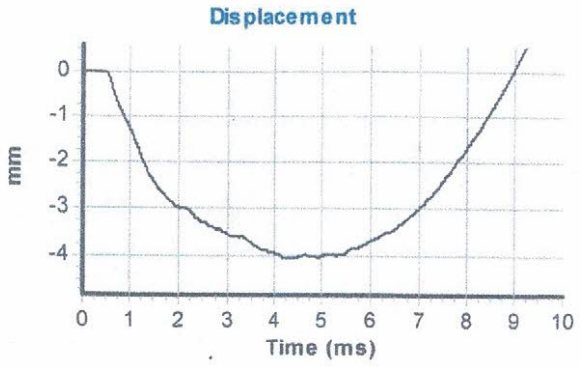
Comments / Location

SOUTH YORKSHIRE DRILLING - 86411









Calculations

Area of Rod A (mm2):	970
Theoretical Energy E_{theor} (J):	473
Measured Energy E_{meas} (J):	319

Energy Ratio E_r (%): **67**

Signed: J.LOCK

Title: FITTER

The recommended calibration interval is 12 months

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APPENDIX 5

Rotary Core Photographs

BH101 15.00-18.00m



BH101 18.00-21.00m



BH101 21.00-25.00m



BH104 13.90-16.50m



BH104 16.50-19.50m



BH104 19.50-21.00m



BH104 21.00-22.50m



BH104 22.50-25.50m



BH107 14.50-21.00m.



BH107 21.00-24.00m.



BH107 24.00-27.00m.



BH107 27.00-30.00m.



BH107 30.00-32.30m.



BH107 32.30-35.00m



BH107 35.00-37.50m.



BH107 37.50-39.00m.



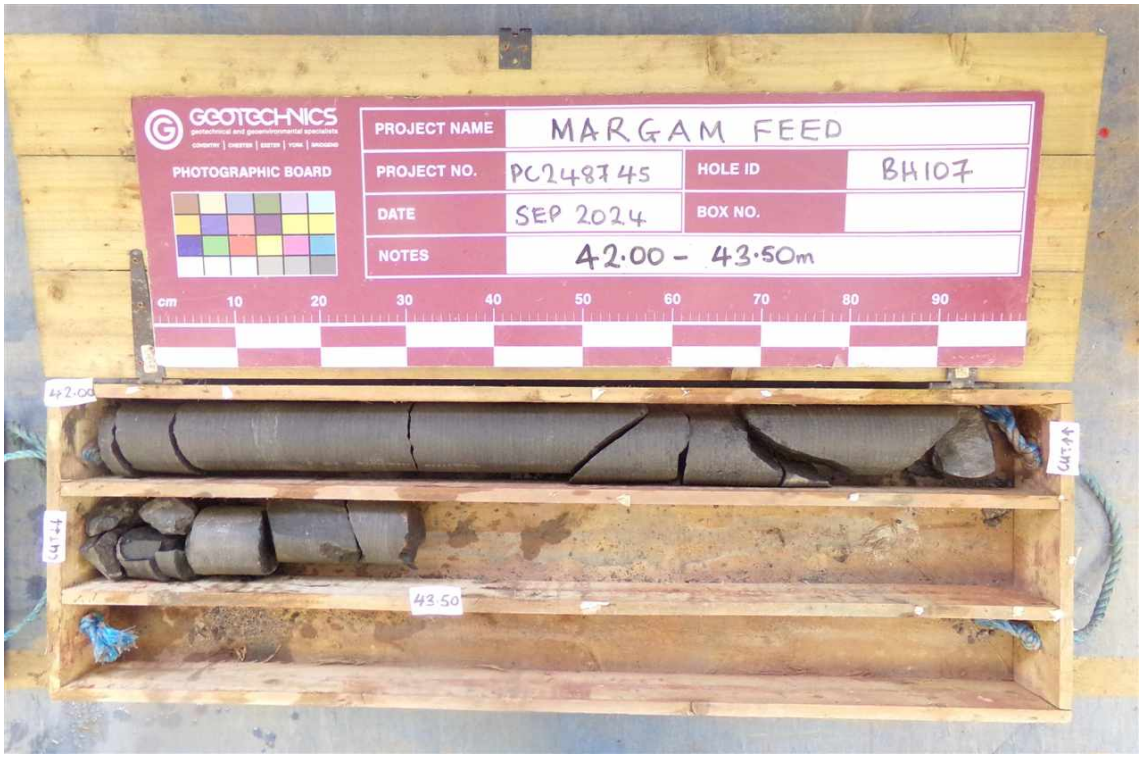
BH107 39.00-40.50m



BH107 40.50-42.00m



BH107 42.00-43.50m.



BH107 43.50-45.00m.



BH107 45.00-46.50m.



BH107 46.50-49.50m.



BH109 14.30-18.80m.



BH109 18.80-21.00m.



BH109 21.00-24.00m.



BH109 24.00-25.50m.



BH109 25.50-27.00m



BH109 27.00-30.00m.



BH109 30.00-31.50m.



BH109 31.50-34.50m.



BH109 34.50-36.00m



BH109 36.00-37.50



BH109 37.50-40.50m.



BH109 40.50-42.00m.



BH109 42.00-43.50m.



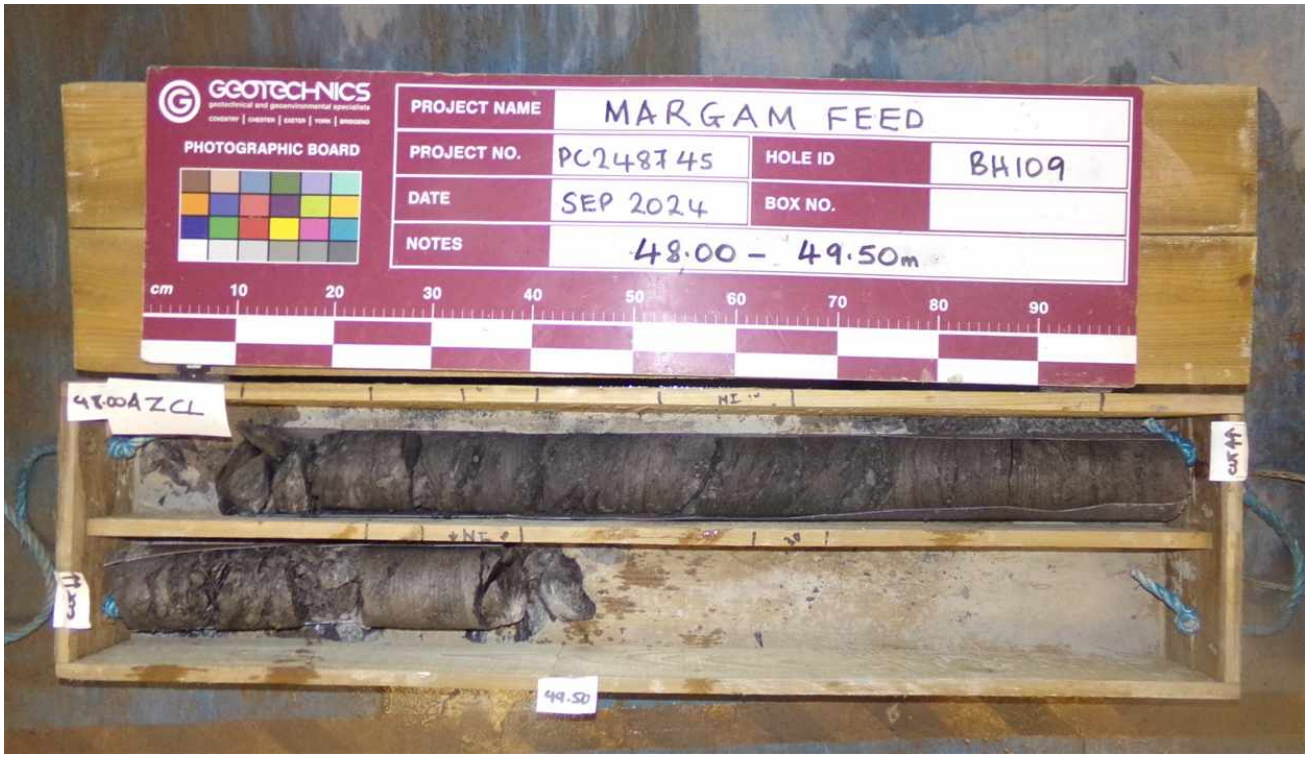
BH109 43.50-46.50m.



BH109 46.50-48.00m.



BH109 48.00-49.50m.



APPENDIX 6

Trial Pit Records

TRIAL PIT RECORD - *Trial Pit*

Project	National Grid - 101677 Margam TATA Steel Connection	**Engineer**	Baker Hicks	**Project No.**	PC248745 - Phase 1
				Location ID	TP101
Client	National Grid	**National Grid Coordinates**	278461.1 E 186540.0 N	**Ground Level**	3.68 m OD

Samples and Tests | Strata | Scale 1:50

Depth	Sample Type	Stratum No.	Results	Description	Depth	Legend	Level (m OD)
0.00 - 0.30	B			MADE GROUND: Grey sandy slightly clayey gravel with a low cobble content of subrounded sandstone. Gravel is angular to subangular fine to coarse sandstone and quartzite.			
0.25	D						
0.25	ES				0.45		3.23
0.25			PID: <0.1 ppm	At 0.30m, geotextile membrane.			
0.45 - 0.55	B			At 0.45m, geotextile membrane.	0.55		3.13
0.50	D			Soft dark brown slightly sandy organic CLAY with many rootlets.			
0.50	ES			Soft to firm greyish brown slightly sandy CLAY with occasional rootlets.			
0.50			PID: <0.1 ppm				
0.50	HV		42/40/41 kPa				
1.00	ES						
1.00 - 1.20	B						
1.00 - 1.20	D						
1.00			PID: <0.1 ppm				
1.20	HV		25/23/22 kPa				
1.60 - 2.00	B				2.20		1.48
1.60	HV		30/26 kPa	Spongy dark brown pseudo-fibrous PEAT with occasional wood/tree root fragments (up to 100mm in diameter).			
2.00	D		w: 63 %				
2.80 - 3.00	B		w: 296 %				
3.00	D			End of Excavation	3.00		0.68

Excavation

Plant	8 tonne tracked excavator	**Width (B)**	0.80
Date	20/08/2024	**Length (C)**	3.00
Shoring	None.	**Orientation (degrees)**	174
		Date Backfilled	20/08/2024
Stability	Stable during excavation.		

Groundwater

Depth Observed	Depth of Pit	Rose to	in Mins	Remarks
1.50	1.50			Seepage from base of pit at 3.00m

Remarks

ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars and 1 x 1 litre plastic tub.
In situ DCP Test carried out from 0.45m (see record for DCP101)
Trial Pit backfilled with arisings on completion.
Groundwater encountered at 1.50m during excavation.

Logged by WA

Figure Sheet 1 of 1

05/02/2025

Symbols and abbrevations are explained on the accompanying key sheets.
All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

GEOTECHNICS

TRIAL PIT RECORD - *Trial Pit*

Project	National Grid - 101677 Margam TATA Steel Connection	**Engineer**	Baker Hicks	**Project No.**	PC248745 - Phase 1
				Location ID	TP102
Client	National Grid	**National Grid Coordinates**	278484.9 E 186503.4 N	**Ground Level**	3.45 m OD

Scale 1:50

Samples and Tests				Strata			
Depth	Sample Type	Stratum No.	Results	Description	Depth	Legend	Level (m OD)
				TOPSOIL: Soft dark brown slightly sandy organic clay with many rootlets.			
0.20 - 0.30	ES				0.20		3.25
0.20 - 0.40	B			Soft greyish brown slightly sandy CLAY with many rootlets.			
0.20 - 0.40	D				0.50		2.95
0.20			PID: <0.1 ppm	Soft grey slightly sandy CLAY with few rootlets.			
0.40	HV		49/65/60 kPa				
0.50	ES						
0.50 - 1.10	B						
0.50			PID: <0.1 ppm				
0.60 - 0.70	D						
1.00	ES				1.50		1.95
1.00 - 1.20	D			Very soft grey slightly sandy CLAY.			
1.00			PID: <0.1 ppm				
1.80 - 2.10	B						
2.00	D		w: 52 %				
2.00	HV		12/12/12 kPa				
2.50 - 3.00	B						
3.00	D			End of Excavation	3.00		0.45

Excavation

Plant	8 tonne tracked excavator	**Width (B)**	0.80
Date	22/08/2024	**Length (C)**	3.00
Shoring	None.	**Orientation (degrees)**	310
		Date Backfilled	22/08/2024
Stability	Stable during excavation.		

Groundwater

Depth Observed	Depth of Pit	Rose to	in Mins	Remarks
0.20	0.20			Steady seepage

Remarks

ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars and 1 x 1 litre plastic tub.
In situ DCP Test carried out from ground level (see record for DCP102)
Trial Pit backfilled with arisings on completion.
Groundwater encountered at 0.20m during excavation.

Logged by WA

Figure Sheet 1 of 1

05/02/2025

Symbols and abbrevations are explained on the accompanying key sheets.
All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

GEOTECHNICS

TRIAL PIT RECORD - *Trial Pit*

Project	National Grid - 101677 Margam TATA Steel Connection	**Engineer**	Baker Hicks	**Project No.**	PC248745 - Phase 1
				Location ID	TP103
Client	National Grid	**National Grid Coordinates**	278499.1 E 186538.4 N	**Ground Level**	3.21 m OD

Samples and Tests | Strata | Scale 1:50

Depth	Sample Type	Stratum No.	Results	Description	Depth	Legend	Level (m OD)
				TOPSOIL: Soft dark brown slightly sandy organic clay..	0.15		3.06
0.25	ES			Soft to firm greyish brown slightly sandy CLAY with many rootlets.			
0.25			PID: <0.1 ppm				
0.30	HV		36/38/40 kPa		0.50		2.71
0.50	ES			Very soft grey slightly sandy CLAY with many rootlets.			
0.50 - 0.75	D						
0.50 - 1.00	B						
0.50			PID: <0.1 ppm				
1.00	ES						
1.00 - 1.25	D						
1.00			PID: <0.1 ppm	At 1.50m, shell fragment (70mm in size).			
1.50 - 1.60	D						
1.50	HV		10/18/12 kPa		1.80		1.41
1.80 - 2.00	B		w: 241 %	Spongy black mottled dark brown pseudo-fibrous PEAT with frequent wood and root fragments up to 30mm in size.			
1.80 - 2.00	D						
2.50	D						
2.80 - 3.00	B						
2.80 - 3.00	D						
				End of Excavation	3.00		0.21

Excavation

Plant	8 tonne tracked excavator	**Width (B)**	0.80
Date	22/08/2024	**Length (C)**	3.00
Shoring	None.	**Orientation (degrees)**	335
		Date Backfilled	22/08/2024
Stability	Stable during excavation.		

Groundwater

Depth Observed	Depth of Pit	Rose to	in Mins	Remarks
1.00	1.00			Seepage

Remarks

ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars and 1 x 1 litre plastic tub.
In situ DCP Test carried out from ground level (see record for DCP103)
Trial Pit backfilled with arisings on completion.
Groundwater encountered at 1.00m during excavation.

Logged by WA

Figure Sheet 1 of 1

05/02/2025

Symbols and abbrevations are explained on the accompanying key sheets.
All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

GEOTECHNICS

TRIAL PIT RECORD - *Trial Pit*

Project	National Grid - 101677 Margam TATA Steel Connection	**Engineer**	Baker Hicks	**Project No.**	PC248745 - Phase 1
				Location ID	TP104
Client	National Grid	**National Grid Coordinates**	278542.7 E 186568.7 N	**Ground Level**	3.12 m OD

Samples and Tests | Strata | Scale 1:50

Depth	Sample Type	Stratum No.	Results	Description	Depth	Legend	Level (m OD)
				TOPSOIL: Very soft dark brown slightly sandy clay.	0.15		2.97
0.25	ES			Soft to firm light greyish brown slightly sandy CLAY with many rootlets.			
0.25			PID: <0.1 ppm				
0.40 - 0.50	D						
0.40	HV		50/47/52 kPa				
0.50	ES						
0.50			PID: <0.1 ppm				
0.50	HV		30/32/40 kPa	Firm grey mottled brown slightly sandy CLAY with many rootlets.	1.00		2.12
0.80 - 1.00	B				1.30		1.82
0.90 - 1.00	D			Spongy dark brown pseudo-fibrous PEAT with occasional wood fragments (up to 200mm in size).			
1.00	ES						
1.00			PID: <0.1 ppm				
1.30 - 1.50	D		w: 484 %				
1.90 - 2.00	B						
2.00	D						
2.30 - 2.50	B			Grey mottled brown clayey SAND.	2.30		0.82
2.50	D						
2.80 - 3.00	B				2.80		0.32
3.00	D		w: 28 %	Stiff grey very sandy CLAY with many rootlets and a low cobble content of subrounded sandstone.	3.00		0.12
3.00	HV		52/42/45 kPa	End of Excavation			

Excavation

Plant	8 tonne tracked excavator	**Width (B)**	0.80
Date	22/08/2024	**Length (C)**	3.00
Shoring	None.	**Orientation (degrees)**	080
		Date Backfilled	22/08/2024
Stability	Stable during excavation.		

Groundwater

Depth Observed	Depth of Pit	Rose to	in Mins	Remarks
1.40	1.40			Medium inflow.

Remarks

AGS ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars and 1 x 1 litre plastic tub.
In situ DCP Test carried out from ground level (see record for DCP104)
Trial Pit backfilled with arisings on completion.
Groundwater encountered at 1.40m during excavation.

Logged by WA

Figure Sheet 1 of 1
05/02/2025

Symbols and abbrevations are explained on the accompanying key sheets.
All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

GEOTECHNICS

TRIAL PIT RECORD - *Trial Pit*

Project	National Grid - 101677 Margam TATA Steel Connection	**Engineer**	Baker Hicks	**Project No.**	PC248745 - Phase 1
				Location ID	TP105
Client	National Grid	**National Grid Coordinates**	278518.9 E 186455.9 N	**Ground Level**	3.40 m OD

Samples and Tests | Strata | Scale 1:50

Depth	Sample Type	Stratum No.	Results	Description	Depth	Legend	Level (m OD)
0.15	ES			MADE GROUND: Grass over dark brown slightly sandy gravelly clay with many rootlets, a high cobble content of concrete and yellow brick and occasional concrete boulders (up to 400mm in length/size). Gravel is angular fine to coarse concrete and brick.	0.20		3.20
0.15			PID: <0.1 ppm				
0.20 - 0.40	B			MADE GROUND: Light brown clay bound sandy gravel with occasional metal girders and a high cobble content of concrete and slag. Gravel is angular to subangular fine to coarse concrete and slag.	0.50		2.90
0.30 - 0.50	D						
0.40	ES						
0.40			PID: <0.1 ppm				
				End of Excavation			

Excavation

Plant	8 tonne tracked excavator	**Width (B)**	0.80
Date	23/08/2024	**Length (C)**	2.00
Shoring	None.	**Orientation (degrees)**	245
		Date Backfilled	23/08/2024
Stability	Stable during excavation.		

Groundwater

Depth Observed	Depth of Pit	Rose to	in Mins	Remarks
0.50	0.50			Seepage (slight oily sheen)

Remarks

AGS ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars and 1 x 1 litre plastic tub.
In situ DCP Test carried out from ground level (see record for DCP105)
Trial Pit terminated at 0.50m as unable to progress through made ground with toothless bucket.
Groundwater encountered at 0.50m during excavation.

Logged by WA

Figure Sheet 1 of 1
05/02/2025

Symbols and abbrevations are explained on the accompanying key sheets.
All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

GEOTECHNICS

TRIAL PIT RECORD - *Trial Pit*

Project	National Grid - 101677 Margam TATA Steel Connection	**Engineer**	Baker Hicks	**Project No.**	PC248745 - Phase 1
				Location ID	TP105A
Client	National Grid	**National Grid Coordinates**	278519.5 E 186465.8 N	**Ground Level**	3.40 m OD

Samples and Tests | Strata | Scale 1:50

Depth	Sample Type	Stratum No.	Results	Description	Depth	Legend	Level (m OD)
0.15	ES			MADE GROUND: Soft dark brown slightly sandy gravelly clay with many rootlets. Gravel is angular to subangular fine to coarse concrete and slag.	0.15		3.24
0.15 - 0.40	D			MADE GROUND: Black slightly clayey gravelly sand with some ash. Gravel is angular to subangular fine to coarse brick and coal.	0.40		3.00
0.15			PID: <0.1 ppm				
0.50 - 0.90	B			MADE GROUND: Light grey sandy gravel with some ash, a medium cobble content of slag and occasional boulders of slag (up to 600mm in size). Gravel is angular to subangular fine to coarse brick, concrete and slag.			
0.50 - 0.90	D						
1.40	ES				1.40		2.00
1.40 - 1.50	D			MADE GROUND: Soft dark grey slightly sandy gravelly clay with occasional roots (up to 50mm in diameter). Gravel is angular to subangular fine to coarse slag.			
1.40			PID: <0.1 ppm				
2.00 - 2.30	B			At 2.00m, wooden board (600x250x10mm in size) and glass bottle.			
2.00 - 2.30	D		w: 74 %				
				End of Excavation	2.30		1.10

Excavation

Plant	8 tonne tracked excavator	**Width (B)**	3.00
Date	23/08/2024	**Length (C)**	0.80
Shoring	None.	**Orientation (degrees)**	210
		Date Backfilled	23/08/2024
Stability	Unstable.		

Groundwater

Depth Observed	Depth of Pit	Rose to	in Mins	Remarks
0.70	0.70			Water standing at 0.70m on completion of excavation.

Remarks

ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars and 1 x 1 litre plastic tub.
In situ DCP Test carried out from ground level (see record for DCP105).
Unable to undertake thermal resistivity testing at scheduled depth due to unstable granular made ground with groundwater ingress.
Trial pit terminated at 2.30m due to instability.
Trial Pit backfilled with arisings on completion.
Groundwater encountered at 0.70m during excavation.

Logged by WA

Figure Sheet 1 of 1

05/02/2025

Symbols and abbrevations are explained on the accompanying key sheets.
All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

GEOTECHNICS

TRIAL PIT RECORD - *Trial Pit*

Project	National Grid - 101677 Margam TATA Steel Connection	**Engineer**	Baker Hicks	**Project No.**	PC248745 - Phase 1
				Location ID	TP105B
Client	National Grid	**National Grid Coordinates**	278517.0 E 186465.8 N	**Ground Level**	3.39 m OD

Scale 1:50

Samples and Tests				Strata			
Depth	Sample Type	Stratum No.	Results	Description	Depth	Legend	Level (m OD)
				MADE GROUND: Brown sandy gravelly clay. Gravel is angular fine to coarse of concrete and slag.	0.20		3.19
				MADE GROUND: Dark brown sandy gravel. Gravel is angular fine to coarse of slag occasional coal. Occasional cobble of slag up to 0.15m in diameter.	0.40		2.99
0.70	ES			MADE GROUND: Light brown slightly sandy gravel. Gravel is angular fine to coarse of slag. Occasional cobble of slag up to 0.15m in diameter.	0.80		2.59
0.70 - 0.80	D			End of Excavation			
0.70			PID: <0.1 ppm				

Excavation

Plant	Insulated digging tools	**Width (B)**	0.30
Date	09/09/2024	**Length (C)**	0.30
Shoring	None.	**Date Backfilled**	09/09/2024
Stability	Stable during excavation.		

Groundwater

Depth Observed	Depth of Pit	Rose to	in Mins	Remarks
0.65	0.65			

Remarks

ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars and 1 x 1 litre plastic tub.
Trial Pit backfilled with arisings on completion. TP terminated on hard strata at 0.80m bgl.
Groundwater encountered at 0.65m during excavation.

Logged by WA

Figure Sheet 1 of 1
05/02/2025

Symbols and abbrevations are explained on the accompanying key sheets.
All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

GEOTECHNICS

TRIAL PIT RECORD - *Trial Pit*

Project	National Grid - 101677 Margam TATA Steel Connection	**Engineer**	Baker Hicks	**Project No.**	PC248745 - Phase 1
				Location ID	TP106
Client	National Grid	**National Grid Coordinates**	278558.0 E 186478.4 N	**Ground Level**	3.11 m OD

Samples and Tests | Strata | Scale 1:50

Depth	Sample Type	Stratum No.	Results	Description	Depth	Legend	Level (m OD)
0.25	ES			TOPSOIL: Very soft dark brown organic slightly sandy clay with many rootlets and roots (up to 60mm in diameter).	0.30		2.81
0.25			PID: <0.1 ppm	Soft to firm grey slightly sandy CLAY with many rootlets and roots (up to 50mm in diameter). Below 0.40m, roots absent.			
0.30 - 0.50	B						
0.30 - 0.50	D						
0.40	HV		30/48/58 kPa				
0.50	ES						
0.50			PID: <0.1 ppm				
1.00	ES						
1.00 - 1.10	D		w: 40 %				
1.00			PID: <0.1 ppm				
1.00	HV		60/60/70 kPa		1.70		1.41
1.50 - 1.60	D			Spongy dark brown pseudo-fibrous slightly clayey PEAT with occasional wood fragments (up to 200mm in size).			
2.00 - 2.10	D						
2.00 - 2.20	B						
2.50 - 2.70	D		w: 748 %				
2.70 - 3.00	B			At 2.70m, wood fragments up to 400mm in size.			
2.80 - 3.00	D						
				End of Excavation	3.00		0.11

Excavation

Plant	8 tonne tracked excavator	**Width (B)**	0.80
Date	23/08/2024	**Length (C)**	3.00
Shoring	None.	**Orientation (degrees)**	110
		Date Backfilled	23/08/2024
Stability	Stable during excavation.		

Groundwater

Depth Observed	Depth of Pit	Rose to	in Mins	Remarks
0.20	0.20			Seepage.

Remarks

ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars and 1 x 1 litre plastic tub.
In situ DCP Test carried out from ground level (see record for DCP106)
Trial Pit backfilled with arisings on completion.
Groundwater encountered at 0.20m during excavation.

Logged by WA

Figure Sheet 1 of 1

05/02/2025

Symbols and abbrevations are explained on the accompanying key sheets.
All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

GEOTECHNICS

TRIAL PIT RECORD - *Trial Pit*

Project	National Grid - 101677 Margam TATA Steel Connection	**Engineer**	Baker Hicks	**Project No.**	PC248745 - Phase 1
				Location ID	TP107
Client	National Grid	**National Grid Coordinates**	278603.2 E 186501.4 N	**Ground Level**	3.04 m OD

Samples and Tests | Strata | Scale 1:50

Depth	Sample Type	Stratum No.	Results	Description	Depth	Legend	Level (m OD)
0.00 - 0.35	B			TOPSOIL: Grass over very soft dark brown slightly sandy organic clay with occasional roots (up to 20mm diameter)			
0.25	D						
0.25	ES			Very soft dark grey slightly sandy CLAY with occasional roots up to 20mm diameter.	0.35		2.69
0.25			PID: <0.1 ppm				
0.35 - 0.60	B			Firm bluish grey slightly sandy CLAY.	0.60		2.44
0.50	D						
0.50	ES						
0.50			PID: <0.1 ppm				
0.50	HV		10/10/11 kPa				
0.60 - 1.40	B			Spongy black becoming dark brown fibrous PEAT.	1.40	▼	1.64
1.00	D		w: 34 %				
1.00	ES						
1.00			PID: <0.1 ppm				
1.00	HV		45/46/44 kPa				
1.40 - 2.00	B						
1.50	D						
2.00	D						
2.00 - 2.70	B		w: 600 %				
2.50	D			Very soft bluish grey mottled orangish brown sandy CLAY, with occasional sand pockets up to 20mm in size.	2.70		0.34
2.70 - 3.00	B			End of Excavation	3.00		0.04
2.70	HV		20/18/17 kPa				
3.00	D		w: 27 %				

Excavation

Plant	8 tonne tracked excavator	**Width (B)**	0.80
Date	27/08/2024	**Length (C)**	3.00
Shoring	None.	**Orientation (degrees)**	139
		Date Backfilled	27/08/2024
Stability	Stable during excavation.		

Groundwater

Depth Observed	Depth of Pit	Rose to	in Mins	Remarks
1.40	1.40			

Remarks

ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars and 1 x 1 litre plastic tub.
In situ DCP Test carried out from ground level (see record for DCP107)
Trial Pit backfilled with arisings on completion.
Groundwater encountered at 1.40m during excavation.

Logged by ON

Figure Sheet 1 of 1

05/02/2025

Symbols and abbrevations are explained on the accompanying key sheets.
All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

GEOTECHNICS

TRIAL PIT RECORD - *Trial Pit*

Project	National Grid - 101677 Margam TATA Steel Connection	**Engineer**	Baker Hicks	**Project No.**	PC248745 - Phase 1
				Location ID	TP108
Client	National Grid	**National Grid Coordinates**	278557.7 E 186435.8 N	**Ground Level**	3.01 m OD

Samples and Tests | Strata | Scale 1:50

Depth	Sample Type	Stratum No.	Results	Description	Depth	Legend	Level (m OD)
0.00 - 0.40	B			TOPSOIL: Grass over very soft dark brown slightly sandy organic clay with occasional rootlets up to 20mm in diameter.			
0.20	ES						
0.25	D				0.40		2.61
0.25	ES			Soft bluish grey slightly sandy CLAY with occasional roots up to 10mm in diameter.			
0.25			PID: <0.1 ppm				
0.40 - 1.40	B						
0.50	D						
0.50	ES						
0.50			PID: <0.1 ppm				
0.50	HV		44/38/42 kPa				
1.00	D		w: 40 %				
1.00	ES						
1.00			PID: <0.1 ppm				
1.00	HV		42/44/40 kPa				
1.40 - 2.40	B						
1.50	D						
2.00	D						
2.00	HV		22/20/17 kPa	Below 2.50m, with occasional pockets of dark brown spongy fiberous peat. (up to 500mm in size)			
2.40 - 3.00	B						
2.50	D						
2.50	HV		18/20/18 kPa	End of Excavation	3.00		0.01
3.00	D						

Excavation

Plant	8 tonne tracked excavator	**Width (B)**	0.80
Date	27/08/2024	**Length (C)**	3.00
Shoring	None.	**Orientation (degrees)**	235
		Date Backfilled	27/08/2024
Stability	Stable during excavation.		

Groundwater

Depth Observed	Depth of Pit	Rose to	in Mins	Remarks
1.65	1.65			

Remarks

AGS ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars and 1 x 1 litre plastic tub.
In situ DCP Test carried out from ground level (see record for DCP108)
Trial Pit backfilled with arisings on completion.
Groundwater encountered at 1.65m during excavation.

Logged by ON

Figure Sheet 1 of 1

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Symbols and abbrevations are explained on the accompanying key sheets.
All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

GEOTECHNICS

TRIAL PIT RECORD - *Trial Pit*

Project	National Grid - 101677 Margam TATA Steel Connection	**Engineer**	Baker Hicks	**Project No.**	PC248745 - Phase 1
				Location ID	TP109
Client	National Grid	**National Grid Coordinates**	278594.9 E 186425.3 N	**Ground Level**	3.04 m OD

Samples and Tests | Strata | Scale 1:50

Depth	Sample Type	Stratum No.	Results	Description	Depth	Legend	Level (m OD)
0.00 - 0.20	B			TOPSOIL: Grass over very soft dark brown slightly sandy organic clay with occasional rootlets up to 20mm in diameter.			
0.00 - 0.40	B						
0.20	D				0.40		2.64
0.20	ES			Soft bluish grey slightly sandy CLAY.			
0.20			PID: <0.1 ppm				
0.20	HV		10/15/12 kPa				
0.40 - 1.40	B						
0.50	D						
0.50	ES						
0.50			PID: <0.1 ppm		1.40		1.64
0.60 - 1.40	B			Spongy dark brown pseudo-fibrous PEAT.			
0.60	HV		44/40/46 kPa				
1.00	D		w: 40 %				
1.00	ES						
1.00			PID: <0.1 ppm				
1.30	HV		48/45/47 kPa				
1.40 - 2.00	B						
1.50	D						
2.00	D						
2.00 - 3.00	B						
2.50	D		w: 786 %	End of Excavation	3.00		0.04
3.00	D						

Excavation

Plant	8 Tonne Tracked Excavator	**Width (B)**	0.80
Date	27/08/2024	**Length (C)**	3.00
Shoring	None.	**Orientation (degrees)**	344
		Date Backfilled	27/08/2024
Stability	Stable during excavation.		

Groundwater

Depth Observed	Depth of Pit	Rose to	in Mins	Remarks
1.45	1.45			

Remarks

ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars and 1 x 1 litre plastic tub.
In situ DCP Test carried out from ground level (see record for DCP109)
Trial Pit backfilled with arisings on completion.
Groundwater encountered at 1.45m during excavation.

Logged by ON

Figure Sheet 1 of 1
05/02/2025

Symbols and abbrevations are explained on the accompanying key sheets.
All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

GEOTECHNICS

TRIAL PIT RECORD - *Trial Pit*

Project	National Grid - 101677 Margam TATA Steel Connection	**Engineer**	Baker Hicks	**Project No.**	PC248745 - Phase 1
				Location ID	TP110
Client	National Grid	**National Grid Coordinates**	278558.6 E 186381.9 N	**Ground Level**	3.06 m OD

Samples and Tests | Strata | Scale 1:50

Depth	Sample Type	Stratum No.	Results	Description	Depth	Legend	Level (m OD)
0.00 - 0.40	B			TOPSOIL: Very soft dark brown slightly sandy organic clay with occasional rootlets up to 20mm in diameter.			
0.25	D						
0.25	ES				0.40		2.66
0.25			PID: <0.1 ppm	Soft bluish grey slightly sandy CLAY with occasional roots up to 20mm in diameter.			
0.40 - 1.40	B						
0.50	D						
0.50	HV		26/22/23 kPa				
1.00	D		w: 30 %				
1.00	ES						
1.00			PID: <0.1 ppm				
1.00	HV		28/26/26 kPa				
1.40 - 2.40	B						
1.50	D						
1.50	HV		20/18/16 kPa	Below 2.00m, with occasional shell fragments up to 80mm in size.			
1.90 - 2.40	B						
2.00	D				2.40		0.66
2.00	HV		22/19/26 kPa	Spongy dark brown fibrous PEAT.			
2.40 - 3.00	B						
2.50	D		w: 621 %				
3.00	D			End of Excavation	3.00		0.06

Excavation

Plant	8 Tonne tracked excavator	**Width (B)**	0.80
Date	28/08/2024	**Length (C)**	3.00
Shoring	None.	**Orientation (degrees)**	140
		Date Backfilled	28/08/2024
Stability	Stable during excavation.		

Groundwater

Depth Observed	Depth of Pit	Rose to	in Mins	Remarks
2.60	2.60			

Remarks

ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars and 1 x 1 litre plastic tub.
In situ DCP Test carried out from ground level (see record for DCP110)
Trial Pit backfilled with arisings on completion.
Groundwater encountered at 2.60m during excavation.

Logged by ON

Figure Sheet 1 of 1
05/02/2025

Symbols and abbrevations are explained on the accompanying key sheets.
All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

GEOTECHNICS

TRIAL PIT RECORD - *Trial Pit*

Project	National Grid - 101677 Margam TATA Steel Connection	**Engineer**	Baker Hicks	**Project No.**	PC248745 - Phase 1
				Location ID	TP111
Client	National Grid	**National Grid Coordinates**	278567.9 E 186360.3 N	**Ground Level**	3.06 m OD

Samples and Tests | Strata | Scale 1:50

Depth	Sample Type	Stratum No.	Results	Description	Depth	Legend	Level (m OD)
0.00 - 0.40	B			TOPSOIL: Grass over very soft dark brown slightly sandy organic clay with occasional roots up to 20mm in diameter.			
0.25	D						
0.25	ES				0.40		2.66
0.25			PID: <0.1 ppm	Soft to firm bluish grey slightly sandy CLAY with occasional roots up to 10mm in diameter.			
0.25	HV		12/15/13 kPa				
0.40 - 1.00	B						
0.50	D		w: 38 %				
0.50	ES						
0.50			PID: <0.1 ppm				
0.50	HV		50/49/52 kPa				
1.00	D						
1.00	ES						
1.00 - 1.60	B						
1.00			PID: <0.1 ppm				
1.20	D				2.20		0.86
2.20 - 3.00	B			Spongy dark brown pseudo-fibrous PEAT.			
2.30	D						
3.00	D		w: 785 %	End of Excavation	3.00		0.06

Excavation

Plant	8 Tonne Tracked Excavator	**Width (B)**	0.80
Date	28/08/2024	**Length (C)**	3.00
Shoring	None.	**Orientation (degrees)**	060
		Date Backfilled	28/08/2024
Stability	Stable during excavation.		

Groundwater

Depth Observed	Depth of Pit	Rose to	in Mins	Remarks
2.30	2.30			

Remarks

ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars and 1 x 1 litre plastic tub.
In situ DCP Test carried out from ground level (see record for DCP111)
Trial Pit backfilled with arisings on completion.
Groundwater encountered at 2.30m during excavation.

Logged by ON

Figure Sheet 1 of 1
05/02/2025

Symbols and abbrevations are explained on the accompanying key sheets.
All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

GEOTECHNICS

TRIAL PIT RECORD - *Trial Pit*

Project	National Grid - 101677 Margam TATA Steel Connection	**Engineer**	Baker Hicks	**Project No.**	PC248745 - Phase 1
				Location ID	TP112.
Client	National Grid	**National Grid Coordinates**	278619.1 E 186345.2 N	**Ground Level**	2.97 m OD

Samples and Tests | Strata | Scale 1:50

Depth	Sample Type	Stratum No.	Results	Description	Depth	Legend	Level (m OD)
0.00 - 0.70	B			TOPSOIL: Soft dark brown slightly sandy organic clay with many roots up to 50mm in diameter.			
0.25	D						
0.25	ES						
0.25			PID: <0.1 ppm				
0.50	D				0.70		2.27
0.50	ES			Firm bluish grey slightly sandy CLAY with occasional rootlets.			
0.50			PID: <0.1 ppm				
0.70 - 1.30	B						
1.00	D				1.30		1.67
1.00	ES			Spongy dark brown black fiberous PEAT.			
1.00			PID: <0.1 ppm				
1.20	D		w: 37 %		1.80		1.17
1.30 - 1.80	B			Spongy brown pseudo-fibrous PEAT.			
1.50	D						
1.80 - 3.00	B						
2.00	D						
2.50	D						
3.00	D			End of Excavation	3.00		-0.03

Excavation

Plant	8 Tonne Tracked excavator	**Width (B)**	0.80
Date	29/08/2024	**Length (C)**	3.00
Shoring	None.	**Orientation (degrees)**	195
		Date Backfilled	29/08/2024
Stability	Stable during excavation.		

Groundwater

Depth Observed	Depth of Pit	Rose to	in Mins	Remarks
0.70	0.70			

Remarks

ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars and 1 x 1 litre plastic tub.
In situ DCP Test carried out from ground level (see record for DCP112)
Trial Pit backfilled with arisings on completion.
Groundwater encountered at 0.70m during excavation.

Logged by WA

Figure Sheet 1 of 1
05/02/2025

Symbols and abbrevations are explained on the accompanying key sheets.
All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

GEOTECHNICS

TRIAL PIT RECORD - *Trial Pit*

Project	National Grid - 101677 Margam TATA Steel Connection	**Engineer**	Baker Hicks	**Project No.**	PC248745 - Phase 1
				Location ID	TP113
Client	National Grid	**National Grid Coordinates**	278592.8 E 186333.2 N	**Ground Level**	3.08 m OD

Samples and Tests | Strata | Scale 1:50

Depth	Sample Type	Stratum No.	Results	Description	Depth	Legend	Level (m OD)
0.00 - 0.48	B			TOPSOIL: Grass over very soft dark brown slightly sandy organic clay with occasional rootlets up to 25mm in diameter.			
0.25	D						
0.25	ES				0.40		2.68
0.25			PID: <0.1 ppm	Soft bluish grey slightly sandy CLAY with occasional roots up to 10mm in diameter.			
0.25	HV		18/20/17 kPa				
0.48 - 1.10	B						
0.50	D		w: 43 %				
0.50	ES				1.10		1.98
0.50			PID: <0.1 ppm	Spongy dark brown pseudo-fibrous PEAT with occasional roots up to 10mm diameter.			
0.50	HV		38/40/40 kPa				
1.00 - 1.60	B						
1.10 - 1.50	B						
1.20	D						
1.20	ES						
1.20			PID: 0.10 ppm				
1.60 - 3.00	B						
2.00	D						
2.20 - 3.00	B						
3.00	D		w: 537 %	End of Excavation	3.00		0.08

Excavation

Plant	8 Tonne Tracked Excavator	**Width (B)**	0.80
Date	28/08/2024	**Length (C)**	3.00
Shoring	None.	**Orientation (degrees)**	285
		Date Backfilled	28/08/2024
Stability	Stable during excavation.		

Groundwater

Depth Observed	Depth of Pit	Rose to	in Mins	Remarks
1.60	1.60			

Remarks

ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars and 1 x 1 litre plastic tub.
In situ DCP Test carried out from ground level (see record for DCP113)
Trial Pit backfilled with arisings on completion.
Groundwater encountered at 1.60m during excavation.

Logged by ON

Figure Sheet 1 of 1

05/02/2025

Symbols and abbrevations are explained on the accompanying key sheets.
All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

GEOTECHNICS

TRIAL PIT RECORD - *Trial Pit*

Project	National Grid - 101677 Margam TATA Steel Connection	**Engineer**	Baker Hicks	**Project No.**	PC248745 - Phase 1
				Location ID	TP114
Client	National Grid	**National Grid Coordinates**	278580.2 E 186294.2 N	**Ground Level**	3.15 m OD

Samples and Tests | Strata | Scale 1:50

Depth	Sample Type	Stratum No.	Results	Description	Depth	Legend	Level (m OD)
0.00 - 0.20	B			TOPSOIL: Soft dark brown organic clay with many roots up to 20mm in diameter.			
0.15	D				0.20		2.95
0.15	ES			Soft to firm greyish brown slightly sandy CLAY with occasional rootlets and roots up to 20mm in diameter.	0.40		2.75
0.15			PID: <0.1 ppm	Firm grey slightly sandy CLAY with occasional roots up to 10mm in diameter			
0.40 - 1.00	B						
0.50	D						
0.50	ES				1.00		2.15
0.50			PID: <0.1 ppm	Spongy dark brown to black fiberous PEAT.			
1.00	D						
1.00	ES						
1.00 - 1.50	B				1.50		1.65
1.00			PID: <0.1 ppm	Spongy brown pseudo-fibrous PEAT.			
1.20	D						
1.50	D		w: 707 %				
2.00	D						
2.00 - 3.00	B						
2.50	D						
3.00	D			End of Excavation	3.00		0.15

Excavation

Plant	8 Tonne tracked Excavator	**Width (B)**	0.80
Date	30/08/2024	**Length (C)**	3.00
Shoring	None.	**Orientation (degrees)**	225
		Date Backfilled	30/08/2024
Stability	Stable during excavation.		

Groundwater

Depth Observed	Depth of Pit	Rose to	in Mins	Remarks
1.20	1.20			

Remarks

ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars and 1 x 1 litre plastic tub.
In situ DCP Test carried out from ground level (see record for DCP114)
Trial Pit backfilled with arisings on completion.
Groundwater encountered at 1.20m during excavation.

Logged by ON

Figure Sheet 1 of 1

05/02/2025

Symbols and abbrevations are explained on the accompanying key sheets.
All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

GEOTECHNICS

TRIAL PIT RECORD - *Trial Pit*

Project	National Grid - 101677 Margam TATA Steel Connection	**Engineer**	Baker Hicks	**Project No.**	PC248745 - Phase 1
				Location ID	TP115
Client	National Grid	**National Grid Coordinates**	278607.5 E 186262.7 N	**Ground Level**	3.14 m OD

Samples and Tests | Strata | Scale 1:50

Depth	Sample Type	Stratum No.	Results	Description	Depth	Legend	Level (m OD)
0.00 - 0.20	B			TOPSOIL: Dark brown slightly sandy organic clay with occasional roots up to 10mm in diameter.	0.20		2.94
0.20	D			Soft to firm bluish grey slightly sandy CLAY.			
0.20	ES						
0.20 - 1.20	B						
0.20			PID: 0.10 ppm				
0.50	D						
0.50	ES						
0.50			PID: 0.10 ppm				
0.50	HV		42/48/49 kPa	End of Excavation	1.20		1.94
0.70	D						
1.00	D						
1.00	ES						
1.00			PID: <0.1 ppm				
1.20	D		w: 41 %				

Excavation

Plant	Insulated digging tools	**Width (B)**	0.40
Date	02/09/2024	**Length (C)**	0.40
Shoring	None.	**Date Backfilled**	02/09/2024
Stability	Stable during excavation.		

Groundwater

Depth Observed	Depth of Pit	Rose to	in Mins	Remarks
0.80	0.80			

Remarks

AGS ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars and 1 x 1 litre plastic tub.
In situ DCP Test carried out from ground level (see record for DCP115)
Trial Pit backfilled with arisings on completion.
Groundwater encountered at 0.80m during excavation.

Logged by ON

Figure Sheet 1 of 1

05/02/2025

Symbols and abbrevations are explained on the accompanying key sheets.
All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

GEOTECHNICS

TRIAL PIT RECORD - *Trial Pit*

Project	National Grid - 101677 Margam TATA Steel Connection	**Engineer**	Baker Hicks	**Project No.**	PC248745 - Phase 1
				Location ID	TP116
Client	National Grid	**National Grid Coordinates**	278628.7 E 186194.2 N	**Ground Level**	3.17 m OD

Samples and Tests | Strata | Scale 1:50

Depth	Sample Type	Stratum No.	Results	Description	Depth	Legend	Level (m OD)
0.00 - 0.15	B			TOPSOIL: Grass over very soft dark brown slightly sandy organic clay with rootlets and roots up to 20mm in diameter.	0.15		3.02
0.10	D						
0.10	ES			Firm grey mottled orangish brown slightly sandy CLAY with occasional roots up to 20mm diameter.			
0.10	HV		12/13/12 kPa				
0.15	D						
0.15 - 1.00	B						
0.15			PID: <0.1 ppm				
0.50	D		w: 28 %	Soft bluish grey slightly sandy CLAY.	1.00		2.17
0.50	ES						
0.50			PID: <0.1 ppm	Spongy dark brown to black fibrous PEAT.	1.30		1.87
0.50	HV		45/48/46 kPa				
1.00	D						
1.00	ES						
1.00 - 1.30	B						
1.00			PID: <0.1 ppm				
1.20	D						
1.30 - 3.00	B						
1.50	D		w: 382 %				
3.00	D			End of Excavation	3.00		0.17

Excavation

Plant	8 Tonne Tracked Excavator	**Width (B)**	0.80
Date	29/08/2024	**Length (C)**	3.00
Shoring	None.	**Orientation (degrees)**	212
		Date Backfilled	29/08/2024
Stability	Stable during excavation.		

Groundwater

Depth Observed	Depth of Pit	Rose to	in Mins	Remarks
1.30	1.30			

Remarks

ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars and 1 x 1 litre plastic tub.
In situ DCP Test carried out from ground level (see record for DCP116)
Trial Pit backfilled with arisings on completion.
Groundwater encountered at 1.30m during excavation.

Logged by SI

Figure Sheet 1 of 1

05/02/2025

Symbols and abbrevations are explained on the accompanying key sheets.
All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

GEOTECHNICS

TRIAL PIT RECORD - *Trial Pit*

Project	National Grid - 101677 Margam TATA Steel Connection	**Engineer**	Baker Hicks	**Project No.**	PC248745 - Phase 1
				Location ID	TP117
Client	National Grid	**National Grid Coordinates**	278643.0 E 186133.9 N	**Ground Level**	3.26 m OD

Samples and Tests | Strata | Scale 1:50

Depth	Sample Type	Stratum No.	Results	Description	Depth	Legend	Level (m OD)
0.00 - 0.20	B			TOPSOIL: Grass over very soft dark brown organic clay with occasional rootlets and roots up to 20mm in diameter.	0.20		3.06
0.00 - 3.00	LB						
0.15			PID: <0.1 ppm	Firm grey mottled orangish brown slightly sandy CLAY with occasional roots up to 10mm in diameter.			
0.15	HV		18/15/18 kPa				
0.20	D						
0.20	ES						
0.20 - 1.00	B			Firm bluish grey slightly sandy CLAY.	1.00		2.26
0.50	D						
0.50	ES			Spongy dark brown fibrous PEAT.	1.23		2.03
0.50			PID: <0.1 ppm				
0.50	HV		58/60/55 kPa				
1.00	D		w: 46 %				
1.00 - 1.23	B						
1.00	HV		62/60/59 kPa	Below 2.00m: becoming brown pseudo-fibrous.			
1.20	D						
1.23 - 1.60	B						
1.50	D		w: 456 %				
2.00 - 3.00	B						
2.50	D						
3.00	D			End of Excavation	3.00		0.26

Excavation

Plant	8 Tonne Tracked Excavator	**Width (B)**	0.80
Date	29/08/2024	**Length (C)**	3.00
Shoring	None.	**Orientation (degrees)**	02
		Date Backfilled	29/08/2024
Stability	Stable during excavation.		

Groundwater

Depth Observed	Depth of Pit	Rose to	in Mins	Remarks
2.30	2.30			

Remarks

AGS ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars and 1 x 1 litre plastic tub.
In situ DCP Test carried out from ground level (see record for DCP117)
Trial Pit backfilled with arisings on completion.
Groundwater encountered at 2.30m during excavation.

Logged by SI

Figure Sheet 1 of 1

05/02/2025

Symbols and abbrevations are explained on the accompanying key sheets.
All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

GEOTECHNICS

TRIAL PIT RECORD - *Trial Pit*

Project	National Grid - 101677 Margam TATA Steel Connection	**Engineer**	Baker Hicks	**Project No.**	PC248745 - Phase 1
				Location ID	TP118
Client	National Grid	**National Grid Coordinates**	278654.7 E 186084.0 N	**Ground Level**	3.50 m OD

Samples and Tests | Strata | Scale 1:50

Depth	Sample Type	Stratum No.	Results
0.00 - 0.30	B		
0.25	D		
0.25	ES		
0.25			PID: <0.1 ppm
0.25	HV		10/12/13 kPa
0.30 - 1.00	B		
0.50	D		
0.50	ES		
0.50			PID: <0.1 ppm
0.50	HV		48/45/47 kPa
1.00 - 2.00	B		
1.20	D		w: 40 %
1.20	ES		
1.20			PID: <0.1 ppm
2.00 - 2.50	B		
2.50	D		

Description	Depth	Legend	Level (m OD)
TOPSOIL: Grass over very soft slightly sandy organic clay with occasional rootlets and roots up to 20mm in diameter.			
	0.30		3.20
Firm grey mottled orangish brown slightly sandy CLAY with occasional roots up to 10mm in diameter.			
	1.00		2.50
Firm bluish grey sandy CLAY.			
	2.00		1.50
Spongy dark brown fibrous clayey PEAT.			
	2.50		1.00
End of Excavation			

Excavation

Plant	8 Tonne Tracked Excavator	**Width (B)**	0.80
Date	29/08/2024	**Length (C)**	3.00
Shoring	None.	**Orientation (degrees)**	245
		Date Backfilled	29/08/2024
Stability	Constant side wall collapse during excavation between 0.50 and 2.10m bgl.		

Groundwater

Depth Observed	Depth of Pit	Rose to	in Mins	Remarks
1.50	1.50			

Remarks

ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars and 1 x 1 litre plastic tub.
In situ DCP Test carried out from ground level (see record for DCP118)
Trial Pit backfilled with arisings on completion.
Groundwater encountered at 1.50m during excavation.

Logged by SI

Figure Sheet 1 of 1

05/02/2025

Symbols and abbrevations are explained on the accompanying key sheets.
All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

GEOTECHNICS

APPENDIX 7

Trial Pit Photographs

TP101 before



TP101 [2]



TP101 [3]



TP101 [4]



TP101 [5]



TP101 after



TP102 before



TP102 - [2]



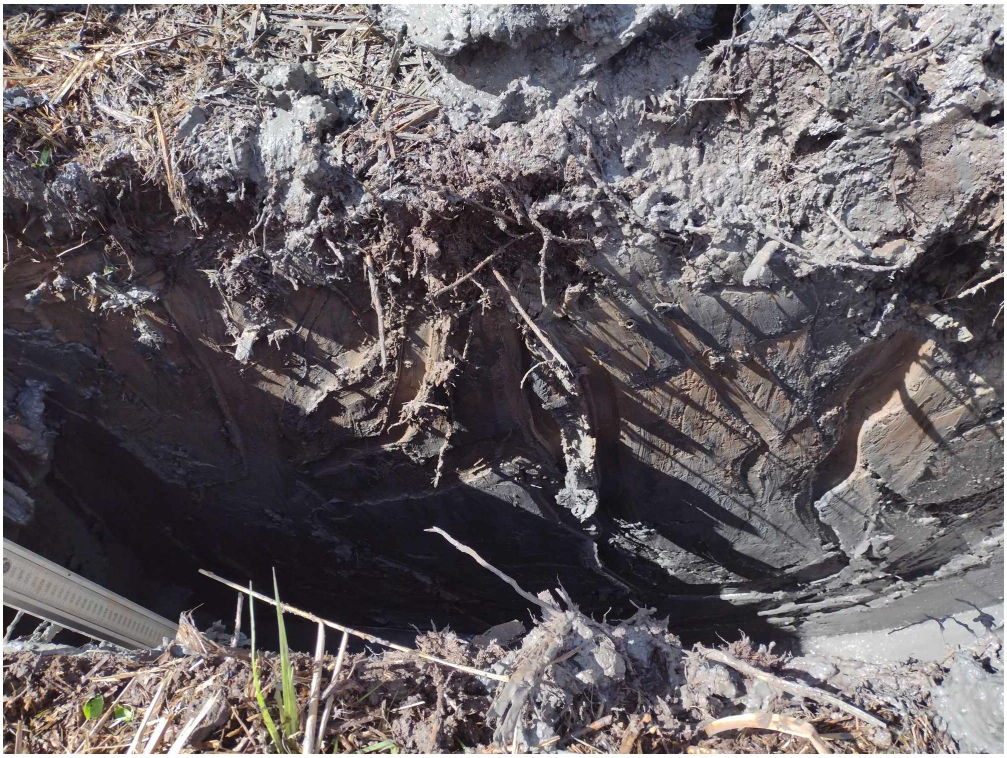
TP102 - [3]



TP102 - [4]



TP102 - [5]



TP102 - [6]



TP102 after



TP103- before



TP103 - [2]



TP103 - [3]



TP103 - [4]



TP103- [5]



TP103 - [6]



TP103 - [7]



TP103- after



TP104 - before



TP104- [2]



TP104- [3]



TP104- [4]



TP104- [5]



TP104- [6]



TP104- after



TP105- before



TP105 - [2]



TP105- [3]



TP105- [4]



TP105- after



TP105A- before



TP105A- [2]



TP105A- [3]



TP105A- [4]



TP105A- after



TP106- before



TP106- [2]



TP106- [3]



TP106- [4]



TP106 - [5]



TP106- after



TP107 - before



TP107- [2]



TP107- [3]



TP107- [4]



TP107- after



TP108- before



TP108 - [2]



TP108- [3]



TP108- [4]



TP108- [5]



TP108- [6]



TP108- after



TP109 - before



TP109- [2]



TP109- [3]



TP109- [4]



TP109- [5]



TP109- [6]



TP109- after


GEOTECHNICS
PHOTOGRAPHIC BOARD
PROJECT NAME
MARGAM FEED
PROJECT NO.
PC248745
HOLE ID
TP109
DATE
27/08/2024
BOX NO
NOTES
GL-3.00M

TP110- before



TP110- [2]



TP110- [3]



TP110- [4]



TP110- [5]



TP110- [6]



TP110- after



TP111- before



TP111 - [2]



TP111 - [3]



TP111 - [4]



TP111 - [5]



TP111- after



TP112- before



TP112- [2]



TP112- [3]



TP112- [4]



TP112- [5]



TP112- after



TP113 - [1]



TP113 - [2]



TP113 - [3]



TP114- before



TP114- [2]



TP114- [3]



TP114- [4]



TP114- after



TP115- before



TP115- [2]



TP115- [3]



TP115- [4]



TP115- [5]



TP115- after



TP116- [1]



TP116- [2]



TP116- [3]



TP116- [4]



TP116- [5]



TP116- [6]



TP116- after



TP117-[1]



TP117- [2]



TP117- [3]



TP117-[4]



TP117-[5]



TP117 after



TP118- before



TP118- [2]



TP118- [3]



TP118- [4]



TP118- [5]



TP118- [6]



TP118- after



APPENDIX 8

Thermal ResistivityTest Results

INSITU TESTING - Thermal Conductivity ASTM D5334-22a ^{e1}

Project: Phase 1 - 101677 Margam FEED Steel Connection

Project Number: PC248745

Client: National Grid

Notes: TR-1 probe is a single 2.4mm diameter, 100mm length needle designed for soil and other granular or porus materials. Sensor verified and tests undertaken in accordance with ASTM D5334-22a^{e1}, the internal microprocessor uses an algorithm to obtain the value of thermal conductivity. This negates the need for a graphical plot of temperature against time elapsed.

Hole ID	Depth (mbgl)	Test Date	Operative	Material Description	Probe Type	Probe Serial Number	Specimen Type	Needle Insertion	Thermal Compound Used	Water Content (%)	Dry Density (Mg/m^3)	Specimen Diameter (mm)	Specimen Length (mm)	Specimen Mass (g)	Initial Temperature (°C)	Thermal Conductivity (W/m.k)	Thermal Resistivity (m.k/W)
TP101	1.20	20/08/2024	ON	Grey slightly sandy CLAY	TR-1	00718	In-Situ	Pushed	None	-	-	-	-	-	18.1	**1.57**	**0.64**
TP101	1.20	20/08/2024	ON	Grey slightly sandy CLAY	TR-1	00718	In-Situ	Pushed	None	-	-	-	-	-	22.4	**1.40**	**0.71**
TP101	1.20	20/08/2024	ON	Grey slightly sandy CLAY	TR-1	00718	In-Situ	Pushed	None	-	-	-	-	-	18.1	**1.34**	**0.74**
TP102	0.70	22/08/2024	WA	Light greyish brown slightly sandy CLAY	TR-1	00718	In-Situ	Pushed	None	-	-	-	-	-	15.4	**1.56**	**0.64**
TP102	0.70	22/08/2024	WA	Light greyish brown slightly sandy CLAY	TR-1	00718	In-Situ	Pushed	None	-	-	-	-	-	14.8	**1.54**	**0.65**
TP102	0.70	22/08/2024	WA	Light greyish brown slightly sandy CLAY	TR-1	00718	In-Situ	Pushed	None	-	-	-	-	-	15.4	**1.56**	**0.64**
TP103	1.00	22/08/2024	WA	Grey slightly sandy CLAY	TR-1	00718	In-Situ	Pushed	None	-	-	-	-	-	14.5	**1.24**	**0.81**
TP103	1.00	22/08/2024	WA	Grey slightly sandy CLAY	TR-1	00718	In-Situ	Pushed	None	-	-	-	-	-	15.0	**1.17**	**0.86**
TP103	1.00	22/08/2024	WA	Grey slightly sandy CLAY	TR-1	00718	In-Situ	Pushed	None	-	-	-	-	-	15.0	**1.23**	**0.81**
TP104	1.00	22/08/2024	WA	Grey slightly sandy CLAY	TR-1	00718	In-Situ	Pushed	None	-	-	-	-	-	15.0	**1.27**	**0.78**
TP104	1.00	22/08/2024	WA	Grey slightly sandy CLAY	TR-1	00718	In-Situ	Pushed	None	-	-	-	-	-	16.1	**1.37**	**0.73**
TP104	1.00	22/08/2024	WA	Grey slightly sandy CLAY	TR-1	00718	In-Situ	Pushed	None	-	-	-	-	-	15.8	**1.37**	**0.73**
TP106	1.00	23/08/2024	WA	Grey slightly sandy CLAY	TR-1	00718	In-Situ	Pushed	None	-	-	-	-	-	15.3	**1.54**	**0.65**
TP106	1.00	23/08/2024	WA	Grey slightly sandy CLAY	TR-1	00718	In-Situ	Pushed	None	-	-	-	-	-	15.2	**1.53**	**0.65**
TP106	1.00	23/08/2024	WA	Grey slightly sandy CLAY	TR-1	00718	In-Situ	Pushed	None	-	-	-	-	-	15.2	**1.63**	**0.61**
TP107	1.00	27/08/2024	WA	Blueish grey slightly sandy CLAY	TR-1	00718	In-Situ	Pushed	None	-	-	-	-	-	14.7	**1.37**	**0.73**
TP107	1.00	27/08/2024	WA	Blueish grey slightly sandy CLAY	TR-1	00718	In-Situ	Pushed	None	-	-	-	-	-	14.6	**1.44**	**0.69**
TP107	1.00	27/08/2024	WA	Blueish grey slightly sandy CLAY	TR-1	00718	In-Situ	Pushed	None	-	-	-	-	-	14.8	**1.43**	**0.70**
TP108	1.00	27/08/2024	WA	Blueish grey slightly sandy CLAY	TR-1	00718	In-Situ	Pushed	None	-	-	-	-	-	14.3	**1.47**	**0.68**
TP108	1.00	27/08/2024	WA	Blueish grey slightly sandy CLAY	TR-1	00718	In-Situ	Pushed	None	-	-	-	-	-	14.6	**1.40**	**0.71**
TP108	1.00	27/08/2024	WA	Blueish grey slightly sandy CLAY	TR-1	00718	In-Situ	Pushed	None	-	-	-	-	-	14.7	**1.39**	**0.72**
TP109	1.00	27/08/2024	WA	Blueish grey slightly sandy CLAY	TR-1	00718	In-Situ	Pushed	None	-	-	-	-	-	14.3	**1.38**	**0.73**
TP109	1.00	27/08/2024	WA	Blueish grey slightly sandy CLAY	TR-1	00718	In-Situ	Pushed	None	-	-	-	-	-	14.3	**1.54**	**0.65**
TP109	1.00	27/08/2024	WA	Blueish grey slightly sandy CLAY	TR-1	00718	In-Situ	Pushed	None	-	-	-	-	-	14.0	**1.51**	**0.66**
TP110	1.20	28/08/2024	WA	Blueish grey slightly sandy CLAY	TR-1	00718	In-Situ	Pushed	None	-	-	-	-	-	13.8	**1.43**	**0.70**
TP110	1.20	28/08/2024	WA	Blueish grey slightly sandy CLAY	TR-1	00718	In-Situ	Pushed	None	-	-	-	-	-	14.5	**1.45**	**0.69**
TP110	1.20	28/08/2024	WA	Blueish grey slightly sandy CLAY	TR-1	00718	In-Situ	Pushed	None	-	-	-	-	-	14.8	**1.35**	**0.74**

GEOTECHNICS
BUILD ON CONFIDENCE

INSITU TESTING - Thermal Conductivity ASTM D5334-22a ^{e1}

Project: Phase 1 - 101677 Margam FEED Steel Connection

Project Number: PC248745

Client: National Grid

Notes: TR-1 probe is a single 2.4mm diameter, 100mm length needle designed for soil and other granular or porus materials. Sensor verified and tests undertaken in accordance with ASTM D5334-22a^{e1}, the internal microprocessor uses an algorithm to obtain the value of thermal conductivity. This negates the need for a graphical plot of temperature against time elapsed.

Hole ID	Depth (mbgl)	Test Date	Operative	Material Description	Probe Type	Probe Serial Number	Specimen Type	Needle Insertion	Thermal Compound Used	Water Content (%)	Dry Density (Mg/m^3)	Specimen Diameter (mm)	Specimen Length (mm)	Specimen Mass (g)	Initial Temperature (°C)	Thermal Conductivity (W/m.k)	Thermal Resistivity (m.k/W)
TP111	1.20	28/08/2024	WA	Blueish grey slightly sandy CLAY	TR-1	00718	In-Situ	Pushed	None	-	-	-	-	-	14.3	**1.35**	**0.74**
TP111	1.20	28/08/2024	WA	Blueish grey slightly sandy CLAY	TR-1	00718	In-Situ	Pushed	None	-	-	-	-	-	13.9	**1.33**	**0.75**
TP111	1.20	28/08/2024	WA	Blueish grey slightly sandy CLAY	TR-1	00718	In-Situ	Pushed	None	-	-	-	-	-	13.6	**1.32**	**0.76**
TP112	1.20	29/08/2024	WA	Blueish grey slightly sandy CLAY	TR-1	00718	In-Situ	Pushed	None	-	-	-	-	-	14.5	**1.15**	**0.87**
TP112	1.20	29/08/2024	WA	Blueish grey slightly sandy CLAY	TR-1	00718	In-Situ	Pushed	None	-	-	-	-	-	14.3	**1.35**	**0.74**
TP112	1.20	29/08/2024	WA	Blueish grey slightly sandy CLAY	TR-1	00718	In-Situ	Pushed	None	-	-	-	-	-	13.8	**1.23**	**0.81**
TP113	1.20	28/08/2024	WA	Blueish grey slightly sandy CLAY	TR-1	00718	In-Situ	Pushed	None	-	-	-	-	-	14.2	**0.73**	**1.36**
TP113	1.20	28/08/2024	WA	Blueish grey slightly sandy CLAY	TR-1	00718	In-Situ	Pushed	None	-	-	-	-	-	14.9	**1.47**	**0.68**
TP113	1.20	28/08/2024	WA	Blueish grey slightly sandy CLAY	TR-1	00718	In-Situ	Pushed	None	-	-	-	-	-	14.6	**1.37**	**0.73**
TP114	1.20	30/08/2024	WA	Spongy dark brown fiberous PEAT	TR-1	00718	In-Situ	Pushed	None	-	-	-	-	-	13.9	**0.61**	**1.65**
TP114	1.20	30/08/2024	WA	Spongy dark brown fiberous PEAT	TR-1	00718	In-Situ	Pushed	None	-	-	-	-	-	14.3	**0.62**	**1.62**
TP114	1.20	30/08/2024	WA	Spongy dark brown fiberous PEAT	TR-1	00718	In-Situ	Pushed	None	-	-	-	-	-	14.0	**0.58**	**1.72**
TP115	0.60	02/09/2024	WA	Blueish grey slightly sandy CLAY	TR-1	00718	In-Situ	Pushed	None	-	-	-	-	-	15.4	**1.42**	**0.70**
TP115	0.60	02/09/2024	WA	Blueish grey slightly sandy CLAY	TR-1	00718	In-Situ	Pushed	None	-	-	-	-	-	15.3	**1.37**	**0.73**
TP115	0.60	02/09/2024	WA	Blueish grey slightly sandy CLAY	TR-1	00718	In-Situ	Pushed	None	-	-	-	-	-	15.4	**1.40**	**0.71**
TP116	1.00	29/08/2024	WA	Blueish grey slightly sandy CLAY	TR-1	00718	In-Situ	Pushed	None	-	-	-	-	-	16.9	**1.78**	**0.56**
TP116	1.00	29/08/2024	WA	Blueish grey slightly sandy CLAY	TR-1	00718	In-Situ	Pushed	None	-	-	-	-	-	17.4	**1.60**	**0.63**
TP116	1.00	29/08/2024	WA	Blueish grey slightly sandy CLAY	TR-1	00718	In-Situ	Pushed	None	-	-	-	-	-	16.7	**1.78**	**0.56**
TP117	1.20	29/08/2024	WA	Blueish grey slightly sandy CLAY	TR-1	00718	In-Situ	Pushed	None	-	-	-	-	-	14.3	**0.67**	**1.49**
TP117	1.20	29/08/2024	WA	Blueish grey slightly sandy CLAY	TR-1	00718	In-Situ	Pushed	None	-	-	-	-	-	13.9	**0.77**	**1.30**
TP117	1.20	29/08/2024	WA	Blueish grey slightly sandy CLAY	TR-1	00718	In-Situ	Pushed	None	-	-	-	-	-	14.2	**1.22**	**0.82**

GEOTECHNICS
BUILD ON CONFIDENCE

INSITU TESTING - Thermal Conductivity ASTM D5334-22a ^{e1}

Project: Phase 1 - 101677 Margam FEED Steel Connection

Project Number: PC248745

Client: National Grid

Notes: TR-1 probe is a single 2.4mm diameter, 100mm length needle designed for soil and other granular or porus materials. Sensor verified and tests undertaken in accordance with ASTM D5334-22a^{e1}, the internal microprocessor uses an algorithm to obtain the value of thermal conductivity. This negates the need for a graphical plot of temperature against time elapsed.

Hole ID	**Depth** (mbgl)	**Test Date**	**Operative**	**Material Description**	**Probe Type**	**Probe Serial Number**	**Specimen Type**	**Needle Insertion**	**Thermal Compound Used**	**Water Content** (%)	**Dry Density** (Mg/m^3)	**Specimen Diameter** (mm)	**Specimen Length** (mm)	**Specimen Mass** (g)	**Initial Temperature** (°C)	**Thermal Conductivity** (W/m.k)	**Thermal Resistivity** (m.k/W)

GEOTECHNICS
BUILD ON CONFIDENCE

APPENDIX 9

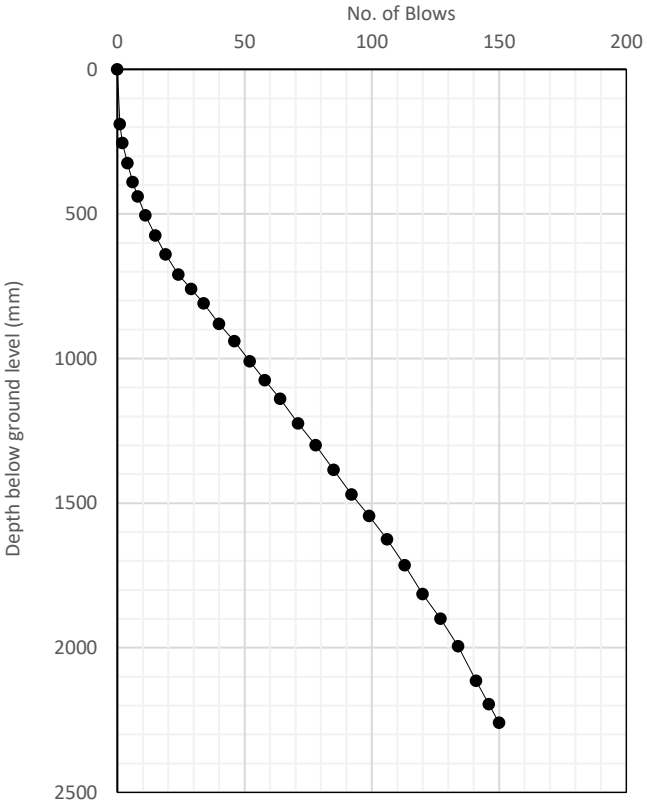
Dynamic Cone Penteration Tests

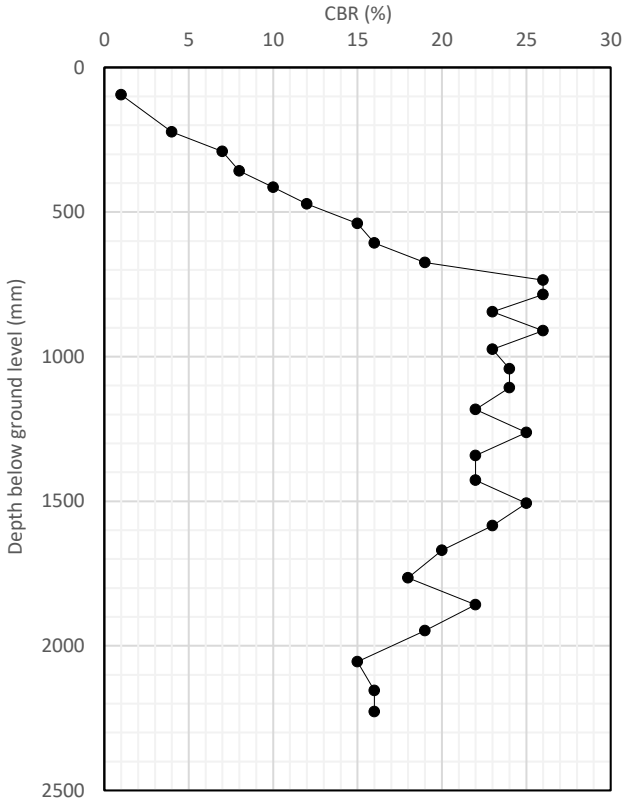
In Situ Testing - *Dynamic Cone Penetration Test*

Project	National Grid - 101677 Margam TATA Steel Connection	**Location No.**	DCP101
		Project No.	PC248745 - Phase 1
Client	National Grid	**Test No.**	1
Coordinates	278461.1 E, 186540.0 N **Ground Level** 3.68 m OD	**Test Date**	20/08/2024

Test started at	0.00m bgl	**Operator**	WA	**Checked By**	SC

Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)
0	0	155	0	7	92	1625	1470				
1	1	345	190	7	99	1700	1545				
1	2	410	255	7	106	1780	1625				
2	4	480	325	7	113	1870	1715				
2	6	545	390	7	120	1970	1815				
2	8	595	440	7	127	2055	1900				
3	11	660	505	7	134	2150	1995				
4	15	730	575	7	141	2270	2115				
4	19	795	640	5	146	2350	2195				
5	24	865	710	4	150	2415	2260				
5	29	915	760								
5	34	965	810								
6	40	1035	880								
6	46	1095	940								
6	52	1165	1010								
6	58	1230	1075								
6	64	1295	1140								
7	71	1380	1225								
7	78	1455	1300								
7	85	1540	1385								





Remarks

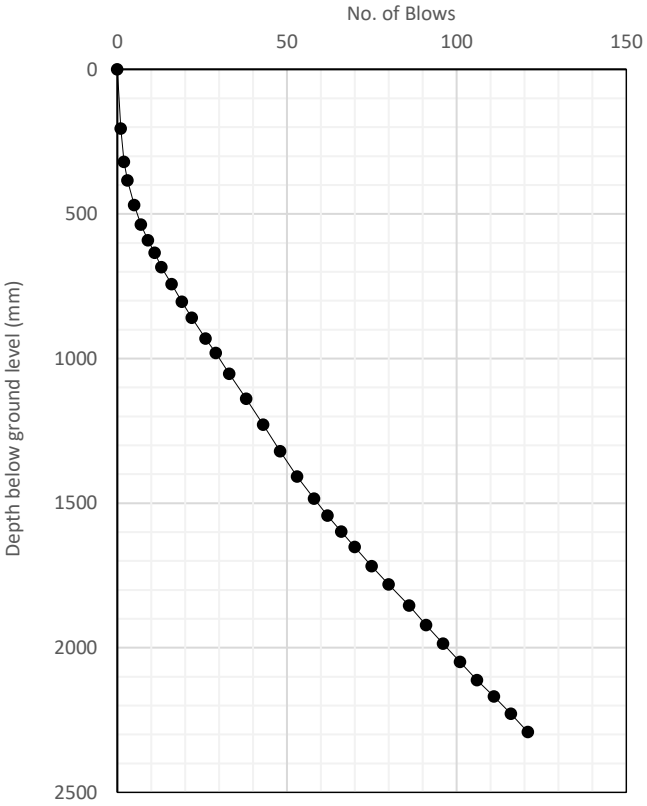
CBR estimated using the correlation in the HA Manual for Roads and Bridges, CS229, Rev. 0, 2020 between each test point on the 'No. of Blows vs. Depth' plot.

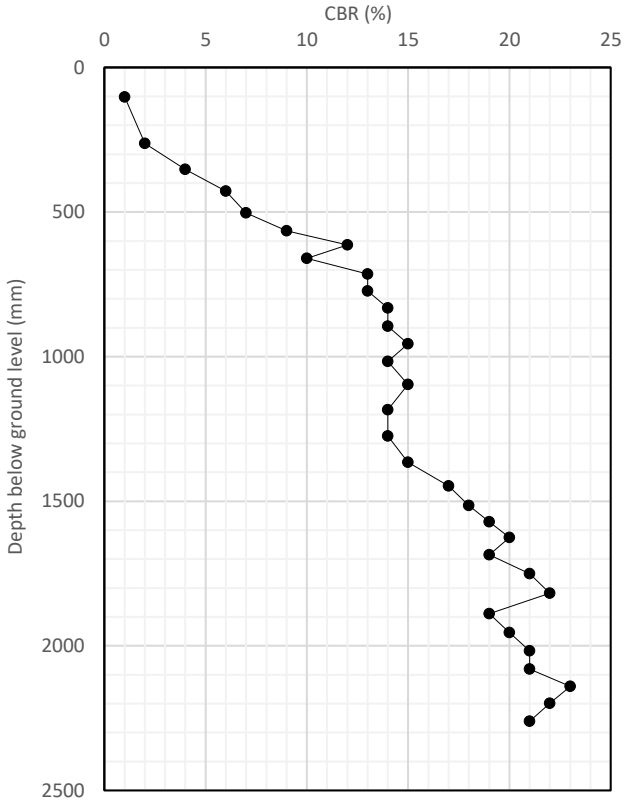
In Situ Testing - *Dynamic Cone Penetration Test*

Project	National Grid - 101677 Margam TATA Steel Connection	**Location No.**	DCP102
		Project No.	PC248745 - Phase 1
Client	National Grid	**Test No.**	1
Coordinates	278484.9 E, 186503.4 N **Ground Level** 3.45 m OD	**Test Date**	21/08/2024

Test started at	0.00m bgl	**Operator**	WA	**Checked By**	SC

Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)
0	0	125	0	4	62	1669	1544				
1	1	330	205	4	66	1724	1599				
1	2	445	320	4	70	1777	1652				
1	3	510	385	5	75	1844	1719				
2	5	595	470	5	80	1907	1782				
2	7	662	537	6	86	1980	1855				
2	9	717	592	5	91	2047	1922				
2	11	760	635	5	96	2111	1986				
2	13	810	685	5	101	2174	2049				
3	16	868	743	5	106	2237	2112				
3	19	929	804	5	111	2294	2169				
3	22	984	859	5	116	2354	2229				
4	26	1056	931	5	121	2417	2292				
3	29	1106	981								
4	33	1178	1053								
5	38	1264	1139								
5	43	1354	1229								
5	48	1446	1321								
5	53	1534	1409								
5	58	1610	1485								





Remarks

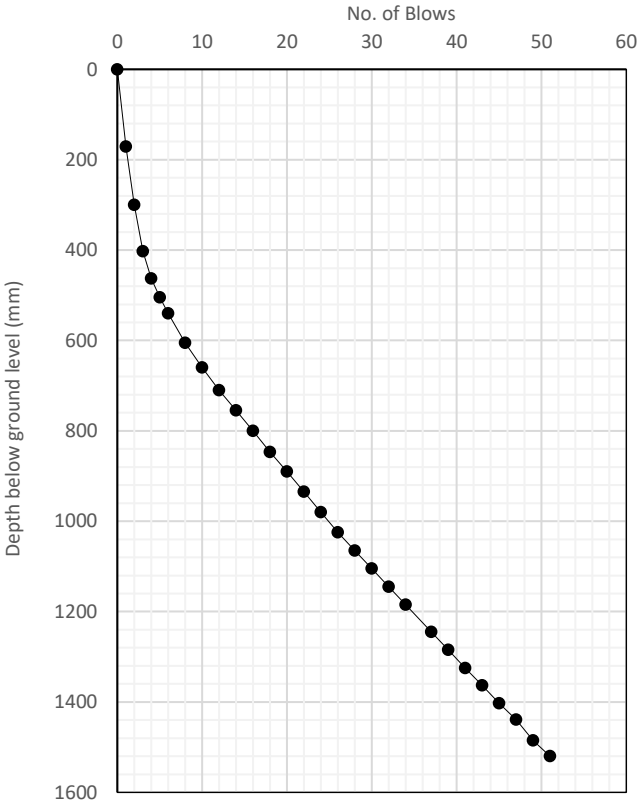
CBR estimated using the correlation in the HA Manual for Roads and Bridges, CS229, Rev. 0, 2020 between each test point on the 'No. of Blows vs. Depth' plot.

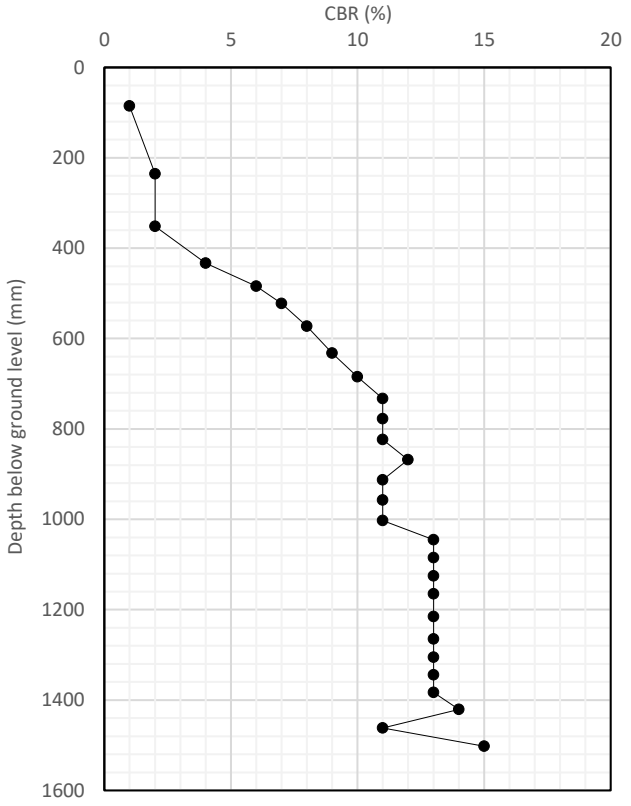
In Situ Testing - *Dynamic Cone Penetration Test*

Project	National Grid - 101677 Margam TATA Steel Connection	**Location No.**	DCP103
		Project No.	PC248745 - Phase 1
Client	National Grid	**Test No.**	1
Coordinates	278499.1 E, 186538.4 N **Ground Level** 3.21 m OD	**Test Date**	21/08/2024

Test started at	0.00m bgl	**Operator**	WA	**Checked By**	SC

Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)
0	0	120	0	2	34	1305	1185				
1	1	291	171	3	37	1365	1245				
1	2	420	300	2	39	1405	1285				
1	3	523	403	2	41	1445	1325				
1	4	583	463	2	43	1483	1363				
1	5	625	505	2	45	1523	1403				
1	6	660	540	2	47	1559	1439				
2	8	725	605	2	49	1605	1485				
2	10	780	660	2	51	1640	1520				
2	12	830	710								
2	14	875	755								
2	16	920	800								
2	18	967	847								
2	20	1010	890								
2	22	1055	935								
2	24	1100	980								
2	26	1145	1025								
2	28	1185	1065								
2	30	1225	1105								
2	32	1265	1145								





Remarks

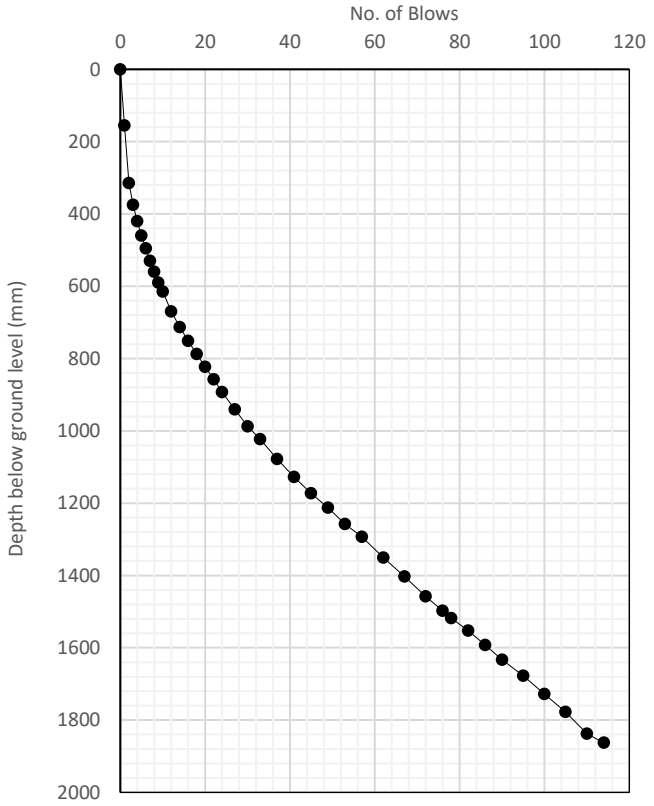
CBR estimated using the correlation in the HA Manual for Roads and Bridges, CS229, Rev. 0, 2020 between each test point on the 'No. of Blows vs. Depth' plot.

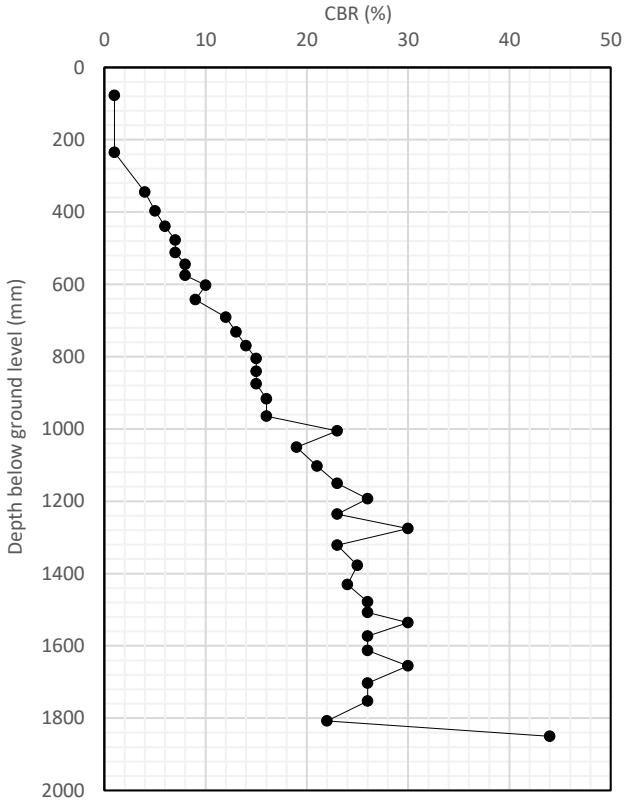
In Situ Testing - *Dynamic Cone Penetration Test*

Project	National Grid - 101677 Margam TATA Steel Connection	**Location No.**	DCP104
		Project No.	PC248745 - Phase 1
Client	National Grid	**Test No.**	1
Coordinates	278542.7 E, 186568.7 N **Ground Level** 3.12 m OD	**Test Date**	21/08/2024

Test started at	0.00m bgl	**Operator**	WA	**Checked By**	SC

Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)
0	0	120	0	3	33	1143	1023				
1	1	275	155	4	37	1198	1078				
1	2	435	315	4	41	1248	1128				
1	3	495	375	4	45	1293	1173				
1	4	540	420	4	49	1333	1213				
1	5	580	460	4	53	1378	1258				
1	6	615	495	4	57	1413	1293				
1	7	650	530	5	62	1471	1351				
1	8	680	560	5	67	1523	1403				
1	9	710	590	5	72	1578	1458				
1	10	735	615	4	76	1618	1498				
2	12	790	670	2	78	1638	1518				
2	14	833	713	4	82	1673	1553				
2	16	871	751	4	86	1713	1593				
2	18	908	788	4	90	1753	1633				
2	20	943	823	5	95	1798	1678				
2	22	978	858	5	100	1848	1728				
2	24	1013	893	5	105	1898	1778				
3	27	1061	941	5	110	1958	1838				
3	30	1108	988	4	114	1983	1863				





Remarks

CBR estimated using the correlation in the HA Manual for Roads and Bridges, CS229, Rev. 0, 2020 between each test point on the 'No. of Blows vs. Depth' plot.

In Situ Testing - *Dynamic Cone Penetration Test*

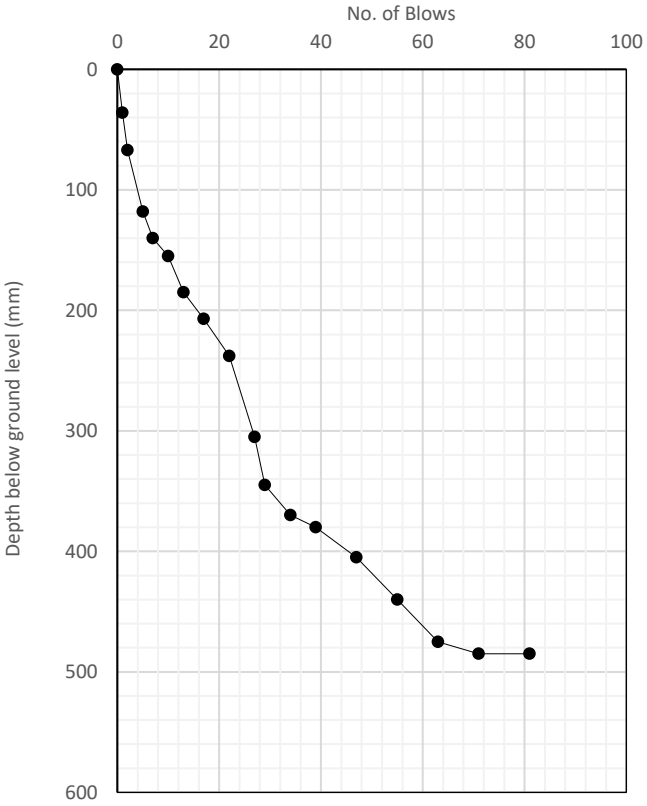
Project	National Grid - 101677 Margam TATA Steel Connection	**Location No.**	DCP105
		Project No.	PC248745 - Phase 1
Client	National Grid	**Test No.**	1
Coordinates	278518.9 E, 186455.9 N **Ground Level** 3.41 m OD	**Test Date**	21/08/2024

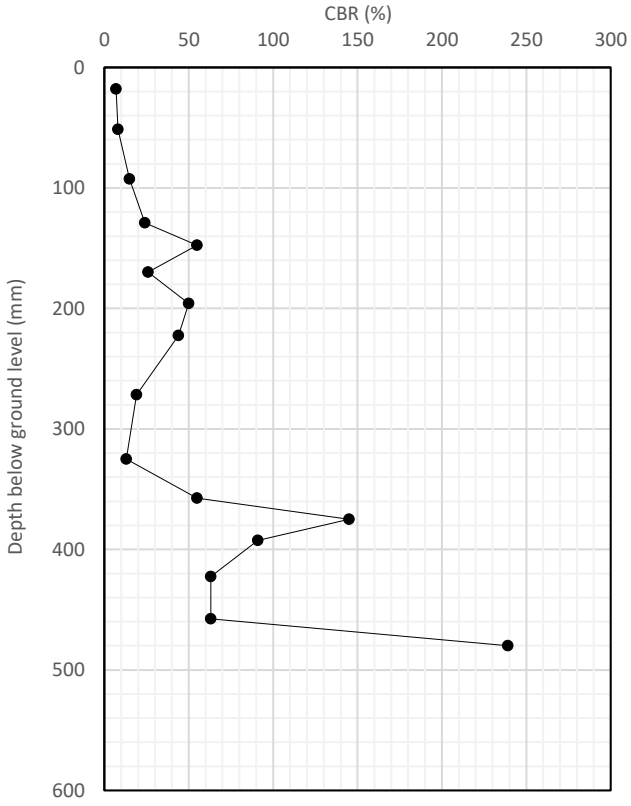
Test started at	0.00m bgl

Operator	WA

Checked By	SC

Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)
0	0	135	0
1	1	171	36
1	2	202	67
3	5	253	118
2	7	275	140
3	10	290	155
3	13	320	185
4	17	342	207
5	22	373	238
5	27	440	305
2	29	480	345
5	34	505	370
5	39	515	380
8	47	540	405
8	55	575	440
8	63	610	475
8	71	620	485
10	81	620	485





Remarks

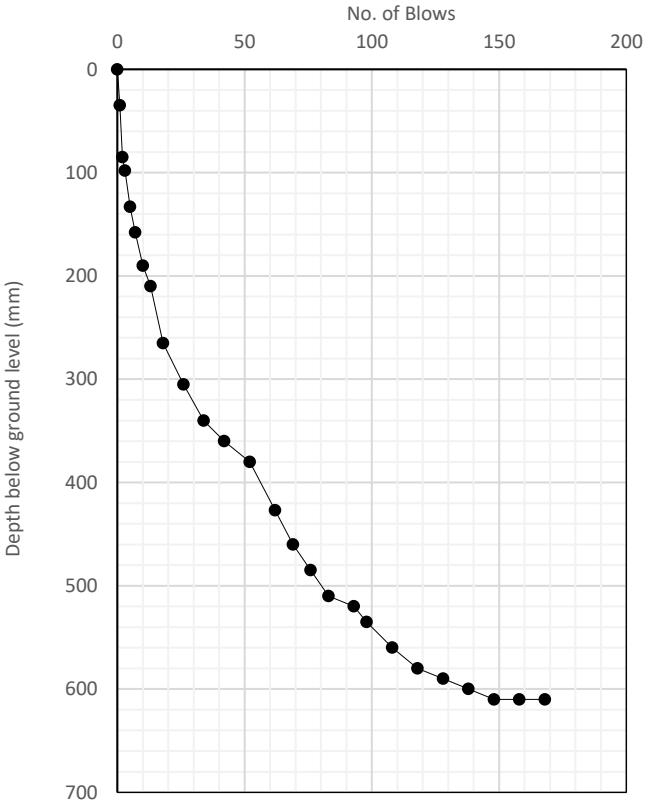
CBR estimated using the correlation in the HA Manual for Roads and Bridges, CS229, Rev. 0, 2020 between each test point on the 'No. of Blows vs. Depth' plot.

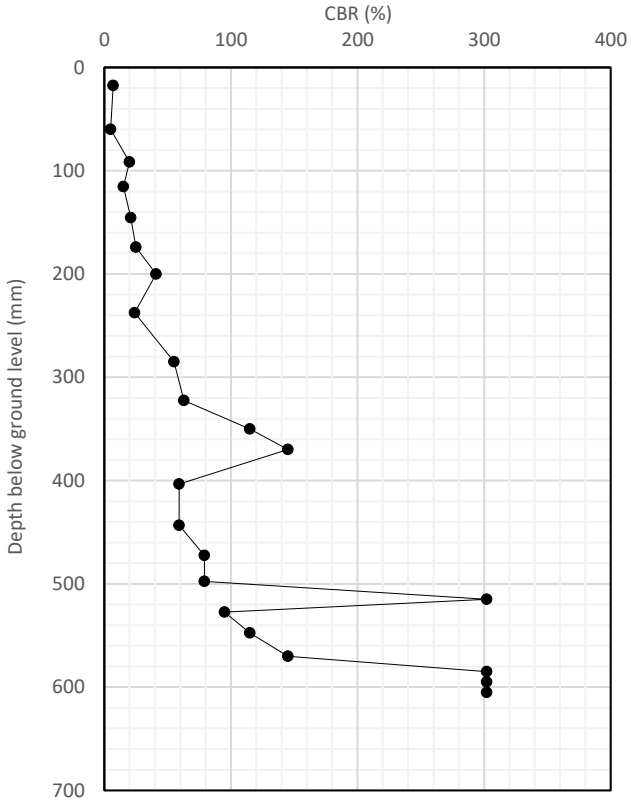
In Situ Testing - *Dynamic Cone Penetration Test*

Project	National Grid - 101677 Margam TATA Steel Connection	**Location No.**	DCP105A
		Project No.	PC248745 - Phase 1
Client	National Grid	**Test No.**	2
		Test Date	21/08/2024

Test started at	0.00m bgl	**Operator**	WA	**Checked By**	SC

Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)
0	0	120	0	10	118	700	580				
1	1	155	35	10	128	710	590				
1	2	205	85	10	138	720	600				
1	3	218	98	10	148	730	610				
2	5	253	133	10	158	730	610				
2	7	278	158	10	168	730	610				
3	10	310	190								
3	13	330	210								
5	18	385	265								
8	26	425	305								
8	34	460	340								
8	42	480	360								
10	52	500	380								
10	62	547	427								
7	69	580	460								
7	76	605	485								
7	83	630	510								
10	93	640	520								
5	98	655	535								
10	108	680	560								





Remarks

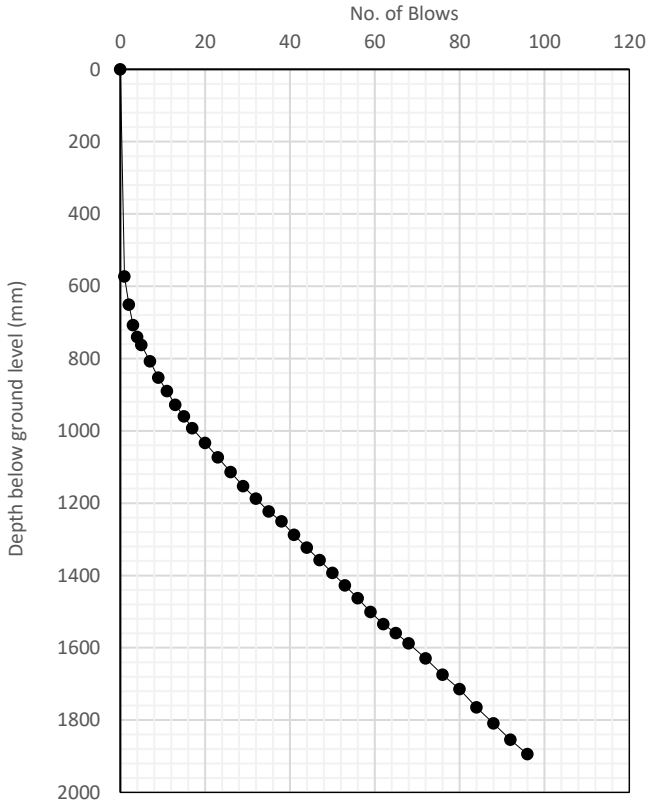
CBR estimated using the correlation in the HA Manual for Roads and Bridges, CS229, Rev. 0, 2020 between each test point on the 'No. of Blows vs. Depth' plot.

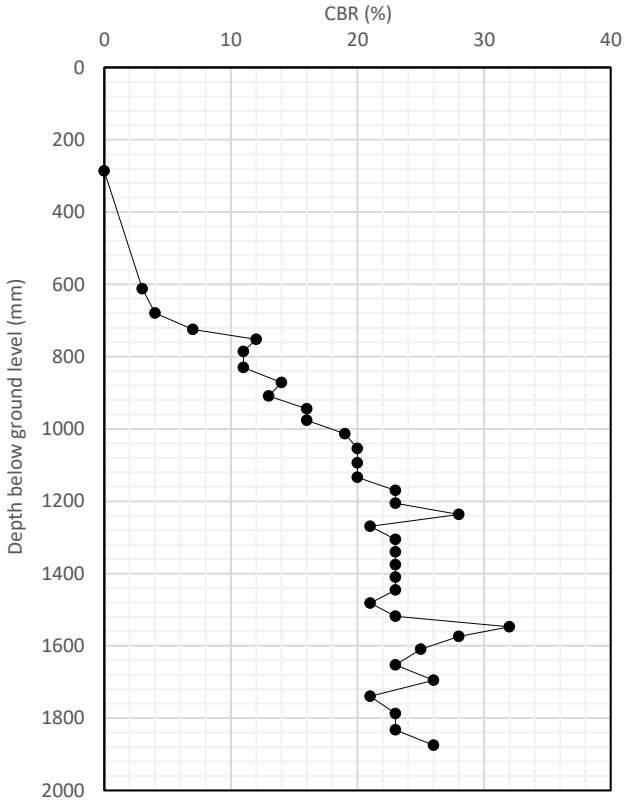
In Situ Testing - *Dynamic Cone Penetration Test*

Project	National Grid - 101677 Margam TATA Steel Connection	**Location No.**	DCP106
		Project No.	PC248745 - Phase 1
Client	National Grid	**Test No.**	1
Coordinates	278558.0 E, 186478.4 N **Ground Level** 3.11 m OD	**Test Date**	21/08/2024

Test started at	0.00m bgl	**Operator**	WA	**Checked By**	SC

Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)
0	0	132	0	3	44	1455	1323				
1	1	705	573	3	47	1490	1358				
1	2	783	651	3	50	1525	1393				
1	3	840	708	3	53	1560	1428				
1	4	873	741	3	56	1595	1463				
1	5	895	763	3	59	1633	1501				
2	7	940	808	3	62	1667	1535				
2	9	985	853	3	65	1692	1560				
2	11	1022	890	3	68	1720	1588				
2	13	1060	928	4	72	1762	1630				
2	15	1092	960	4	76	1807	1675				
2	17	1125	993	4	80	1847	1715				
3	20	1166	1034	4	84	1897	1765				
3	23	1206	1074	4	88	1942	1810				
3	26	1246	1114	4	92	1987	1855				
3	29	1285	1153	4	96	2027	1895				
3	32	1320	1188								
3	35	1355	1223								
3	38	1383	1251								
3	41	1420	1288								





Remarks

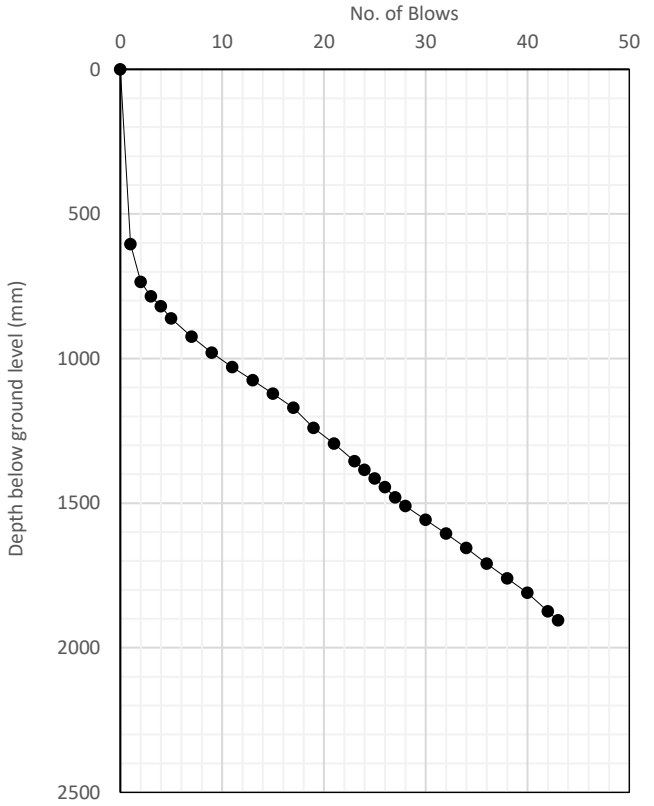
CBR estimated using the correlation in the HA Manual for Roads and Bridges, CS229, Rev. 0, 2020 between each test point on the 'No. of Blows vs. Depth' plot.

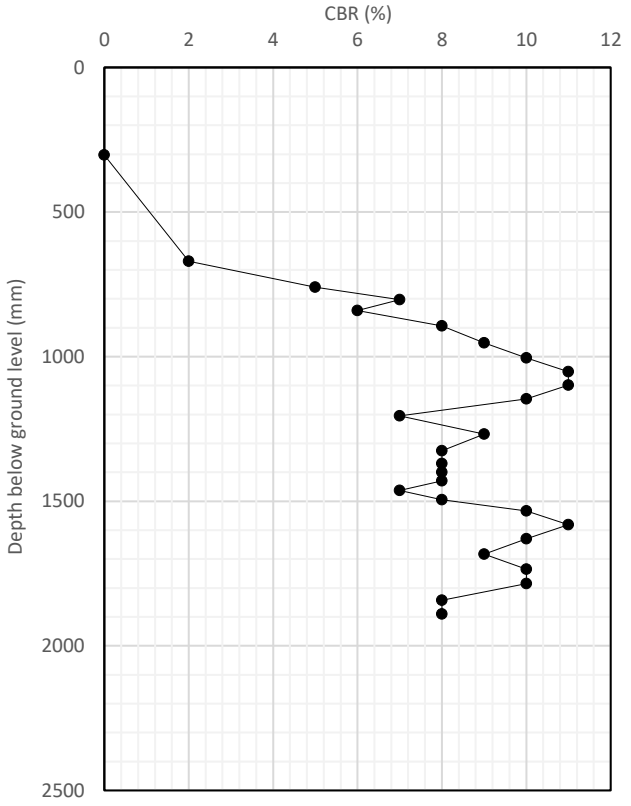
In Situ Testing - *Dynamic Cone Penetration Test*

Project	National Grid - 101677 Margam TATA Steel Connection	**Location No.**	DCP107
		Project No.	PC248745 - Phase 1
Client	National Grid	**Test No.**	1
Coordinates	278603.2 E, 186501.4 N **Ground Level** 3.04 m OD	**Test Date**	21/08/2024

Test started at	0.00m bgl	**Operator**	WA	**Checked By**	SC

Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)
0	0	120	0	2	30	1678	1558				
1	1	725	605	2	32	1725	1605				
1	2	855	735	2	34	1775	1655				
1	3	905	785	2	36	1830	1710				
1	4	940	820	2	38	1880	1760				
1	5	982	862	2	40	1930	1810				
2	7	1045	925	2	42	1995	1875				
2	9	1100	980	1	43	2025	1905				
2	11	1150	1030								
2	13	1195	1075								
2	15	1242	1122								
2	17	1290	1170								
2	19	1360	1240								
2	21	1415	1295								
2	23	1475	1355								
1	24	1505	1385								
1	25	1535	1415								
1	26	1565	1445								
1	27	1600	1480								
1	28	1630	1510								





Remarks

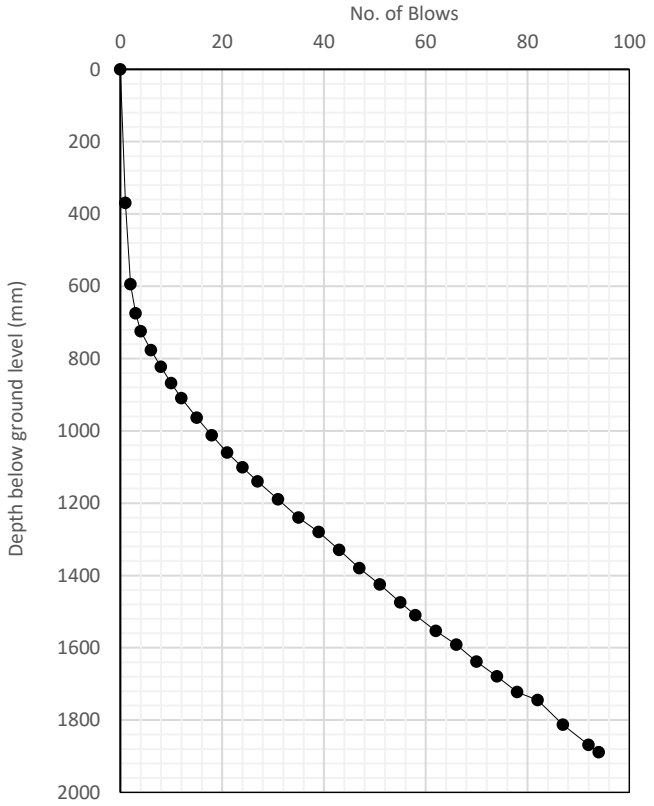
CBR estimated using the correlation in the HA Manual for Roads and Bridges, CS229, Rev. 0, 2020 between each test point on the 'No. of Blows vs. Depth' plot.

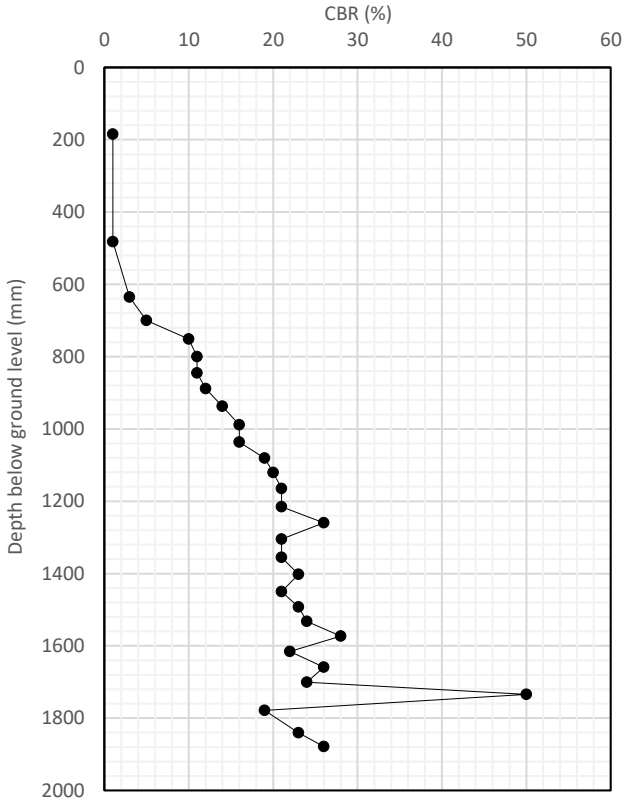
In Situ Testing - *Dynamic Cone Penetration Test*

Project	National Grid - 101677 Margam TATA Steel Connection			**Location No.**	DCP108
				Project No.	PC248745 - Phase 1
Client	National Grid			**Test No.**	1
Coordinates	278557.7 E, 186435.8 N	**Ground Level**	3.01 m OD	**Test Date**	21/08/2024

Test started at	0.00m bgl	**Operator**	WA	**Checked By**	SC

Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)
0	0	125	0	4	55	1600	1475				
1	1	495	370	3	58	1635	1510				
1	2	720	595	4	62	1679	1554				
1	3	800	675	4	66	1717	1592				
1	4	850	725	4	70	1764	1639				
2	6	902	777	4	74	1804	1679				
2	8	948	823	4	78	1848	1723				
2	10	993	868	4	82	1870	1745				
2	12	1035	910	5	87	1938	1813				
3	15	1089	964	5	92	1994	1869				
3	18	1138	1013	2	94	2014	1889				
3	21	1185	1060								
3	24	1226	1101								
3	27	1265	1140								
4	31	1315	1190								
4	35	1365	1240								
4	39	1405	1280								
4	43	1455	1330								
4	47	1505	1380								
4	51	1550	1425								





Remarks

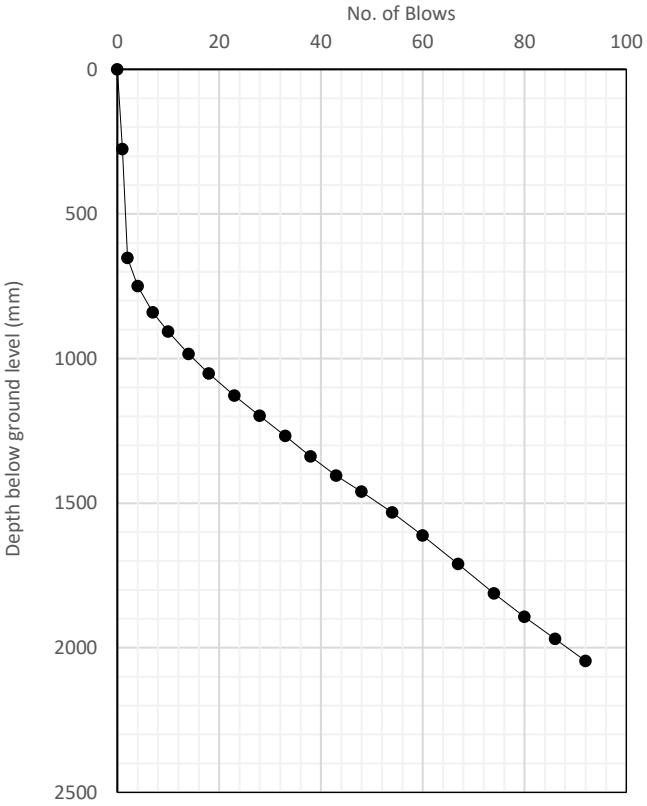
CBR estimated using the correlation in the HA Manual for Roads and Bridges, CS229, Rev. 0, 2020 between each test point on the 'No. of Blows vs. Depth' plot.

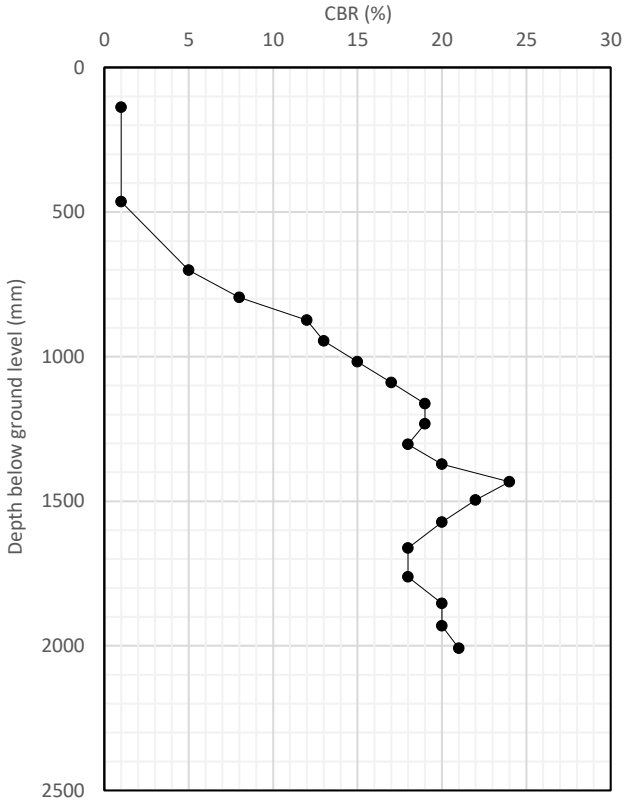
In Situ Testing - *Dynamic Cone Penetration Test*

Project	National Grid - 101677 Margam TATA Steel Connection	**Location No.**	DCP109
		Project No.	PC248745 - Phase 1
Client	National Grid	**Test No.**	1
Coordinates	278594.9 E, 186425.3 N **Ground Level** 3.04 m OD	**Test Date**	27/08/2024

Test started at	0.00m bgl	**Operator**	WA	**Checked By**	SC

Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)
0	0	121	0	6	92	2167	2046				
1	1	397	276								
1	2	773	652								
2	4	871	750								
3	7	962	841								
3	10	1028	907								
4	14	1105	984								
4	18	1173	1052								
5	23	1249	1128								
5	28	1319	1198								
5	33	1389	1268								
5	38	1460	1339								
5	43	1526	1405								
5	48	1581	1460								
6	54	1654	1533								
6	60	1733	1612								
7	67	1832	1711								
7	74	1934	1813								
6	80	2014	1893								
6	86	2091	1970								





Remarks

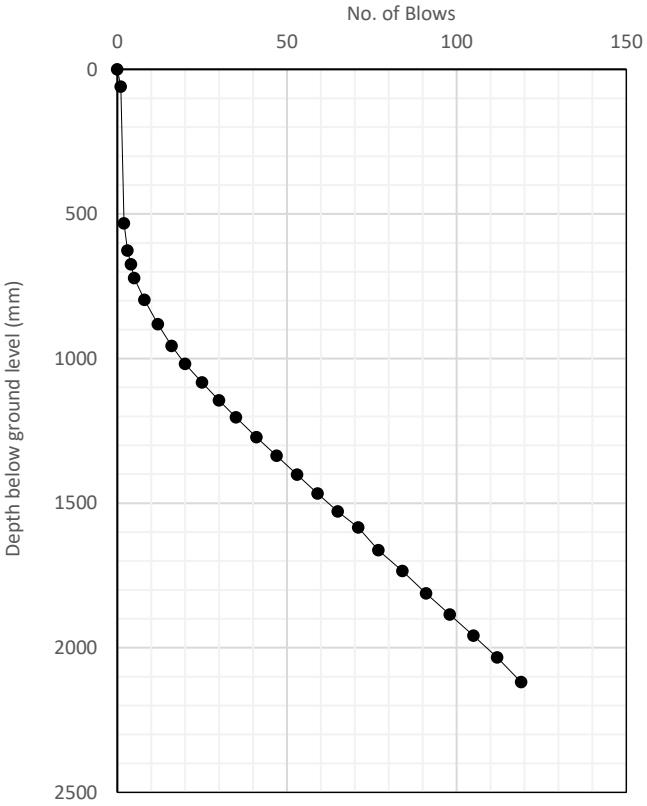
CBR estimated using the correlation in the HA Manual for Roads and Bridges, CS229, Rev. 0, 2020 between each test point on the 'No. of Blows vs. Depth' plot.

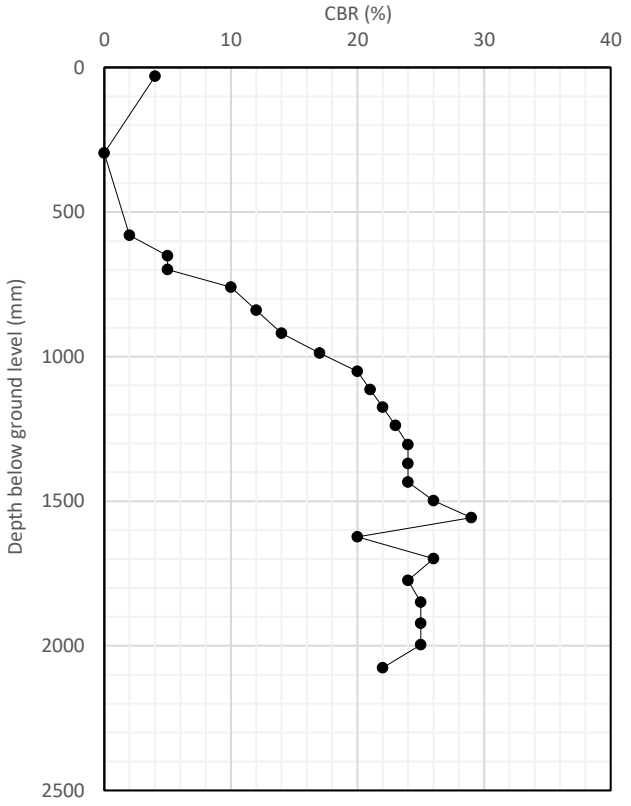
In Situ Testing - *Dynamic Cone Penetration Test*

Project	National Grid - 101677 Margam TATA Steel Connection	**Location No.**	DCP110
		Project No.	PC248745 - Phase 1
Client	National Grid	**Test No.**	1
Coordinates	278558.6 E, 186381.9 N **Ground Level** 3.06 m OD	**Test Date**	28/08/2024

Test started at	0.00m bgl	**Operator**	WA	**Checked By**	SC

Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)
0	0	140	0	7	84	1875	1735				
1	1	200	60	7	91	1952	1812				
1	2	673	533	7	98	2026	1886				
1	3	767	627	7	105	2099	1959				
1	4	815	675	7	112	2174	2034				
1	5	862	722	7	119	2259	2119				
3	8	937	797								
4	12	1022	882								
4	16	1097	957								
4	20	1159	1019								
5	25	1223	1083								
5	30	1285	1145								
5	35	1344	1204								
6	41	1412	1272								
6	47	1477	1337								
6	53	1542	1402								
6	59	1607	1467								
6	65	1669	1529								
6	71	1724	1584								
6	77	1803	1663								





Remarks

CBR estimated using the correlation in the HA Manual for Roads and Bridges, CS229, Rev. 0, 2020 between each test point on the 'No. of Blows vs. Depth' plot.

In Situ Testing - *Dynamic Cone Penetration Test*

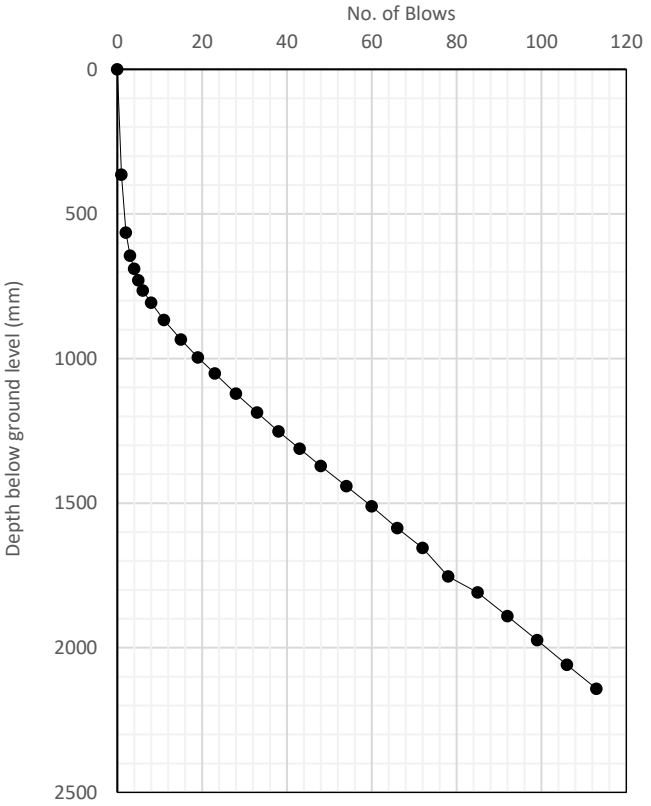
Project	National Grid - 101677 Margam TATA Steel Connection	**Location No.**	DCP111
		Project No.	PC248745 - Phase 1
Client	National Grid	**Test No.**	1
Coordinates	278567.9 E, 186360.3 N **Ground Level** 3.06 m OD	**Test Date**	28/08/2024

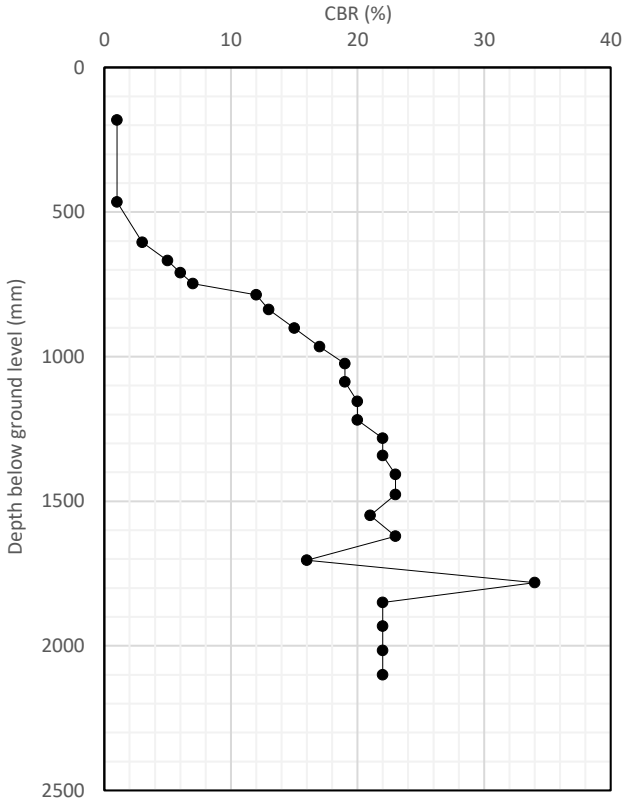
Test started at	0.00m bgl

Operator	WA

Checked By	SC

Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)
0	0	125	0	6	72	1780	1655				
1	1	490	365	6	78	1879	1754				
1	2	690	565	7	85	1934	1809				
1	3	770	645	7	92	2016	1891				
1	4	815	690	7	99	2099	1974				
1	5	855	730	7	106	2184	2059				
1	6	890	765	7	113	2267	2142				
2	8	932	807								
3	11	992	867								
4	15	1060	935								
4	19	1122	997								
4	23	1177	1052								
5	28	1247	1122								
5	33	1312	1187								
5	38	1377	1252								
5	43	1437	1312								
5	48	1497	1372								
6	54	1567	1442								
6	60	1637	1512								
6	66	1712	1587								





Remarks

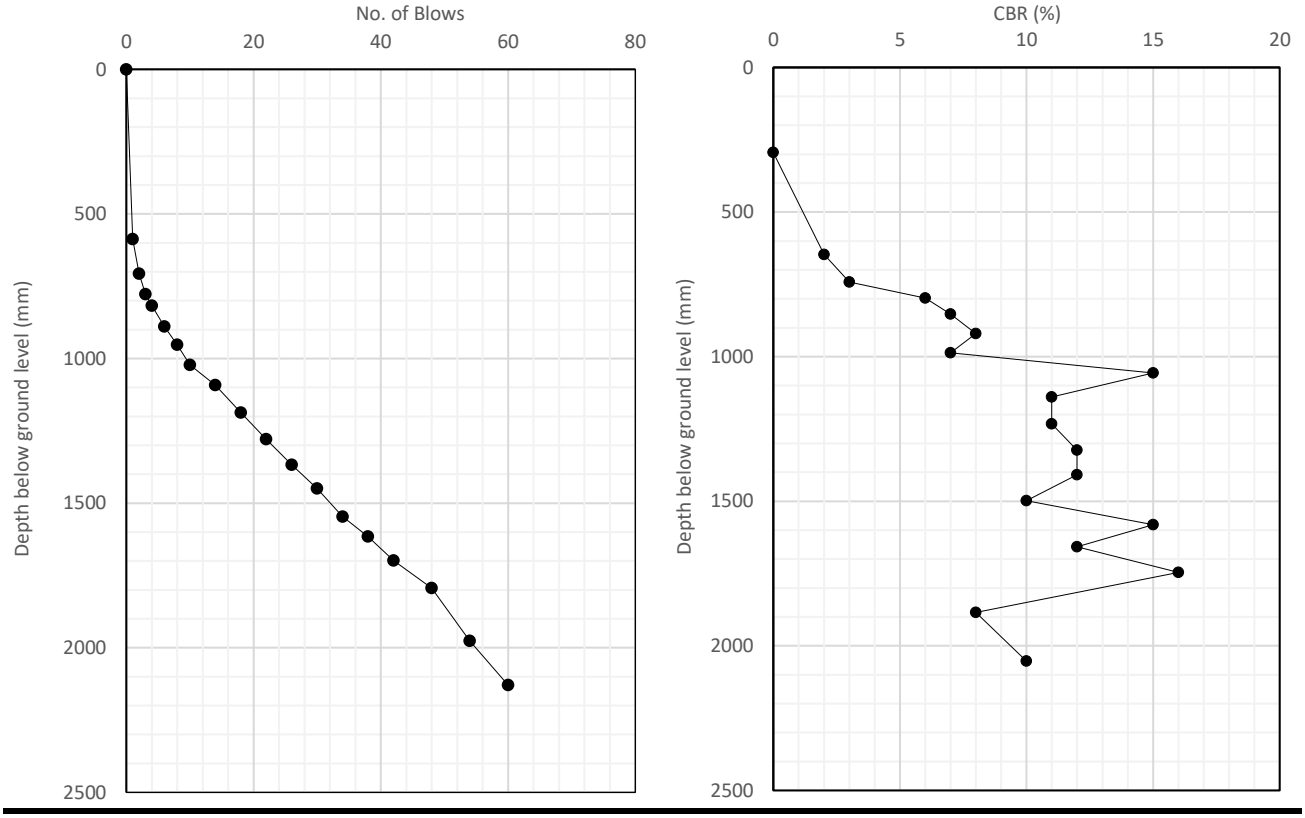
CBR estimated using the correlation in the HA Manual for Roads and Bridges, CS229, Rev. 0, 2020 between each test point on the 'No. of Blows vs. Depth' plot.

In Situ Testing - *Dynamic Cone Penetration Test*

Project	National Grid - 101677 Margam TATA Steel Connection	**Location No.**	DCP112
		Project No.	PC248745 - Phase 1
Client	National Grid	**Test No.**	1
Coordinates	278619.1 E, 186345.2 N **Ground Level** 2.97 m OD	**Test Date**	29/08/2024

Test started at	0.00m bgl	**Operator**	WA	**Checked By**	SC

Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)
0	0	123	0								
1	1	710	587								
1	2	830	707								
1	3	900	777								
1	4	940	817								
2	6	1012	889								
2	8	1075	952								
2	10	1145	1022								
4	14	1215	1092								
4	18	1310	1187								
4	22	1402	1279								
4	26	1490	1367								
4	30	1573	1450								
4	34	1670	1547								
4	38	1739	1616								
4	42	1822	1699								
6	48	1917	1794								
6	54	2099	1976								
6	60	2252	2129								



Remarks

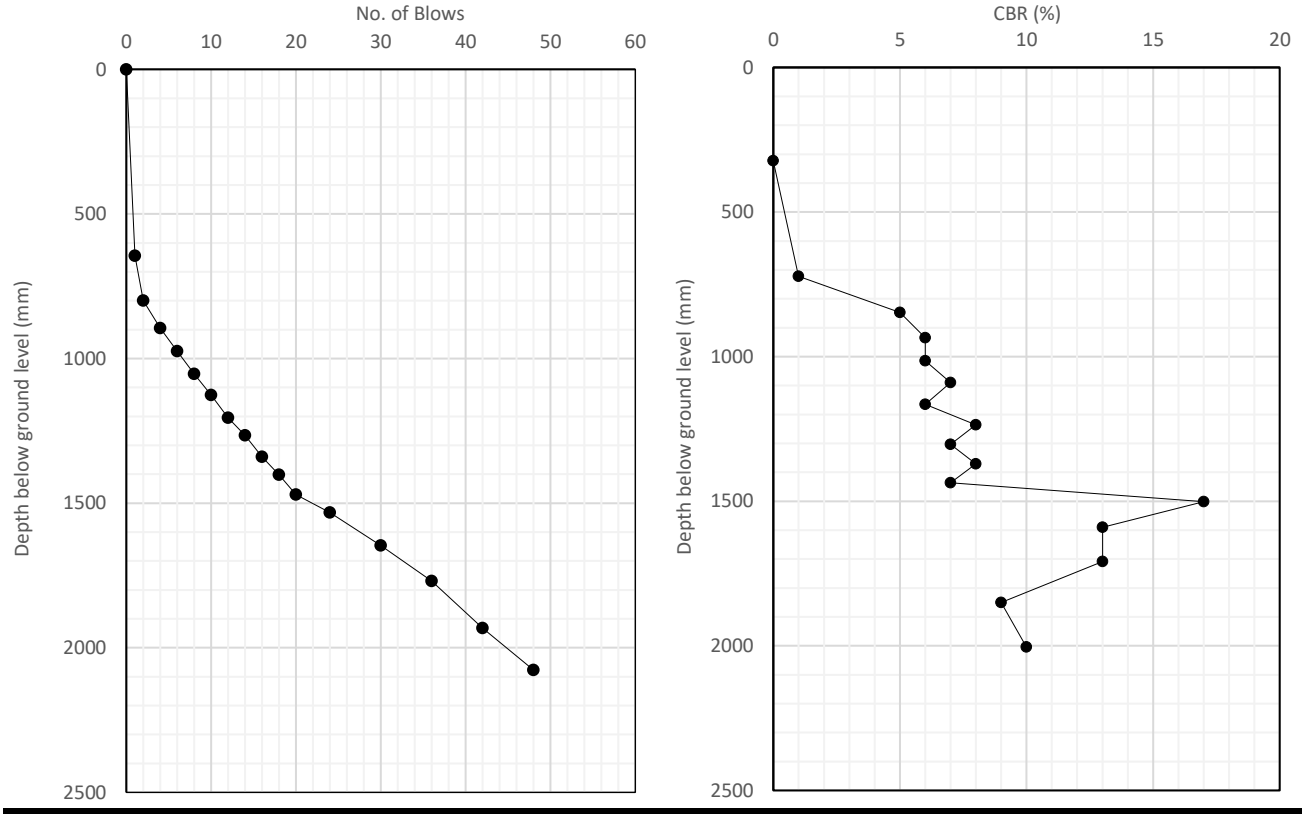
CBR estimated using the correlation in the HA Manual for Roads and Bridges, CS229, Rev. 0, 2020 between each test point on the 'No. of Blows vs. Depth' plot.

In Situ Testing - *Dynamic Cone Penetration Test*

Project	National Grid - 101677 Margam TATA Steel Connection	**Location No.**	DCP113
		Project No.	PC248745 - Phase 1
Client	National Grid	**Test No.**	1
Coordinates	278592.8 E, 186333.2 N **Ground Level** 3.08 m OD	**Test Date**	28/08/2024

Test started at	0.00m bgl	**Operator**	WA	**Checked By**	SC

Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)
0	0	120	0
1	1	765	645
1	2	920	800
2	4	1015	895
2	6	1095	975
2	8	1173	1053
2	10	1246	1126
2	12	1325	1205
2	14	1386	1266
2	16	1460	1340
2	18	1522	1402
2	20	1590	1470
4	24	1652	1532
6	30	1767	1647
6	36	1889	1769
6	42	2052	1932
6	48	2197	2077



Remarks

CBR estimated using the correlation in the HA Manual for Roads and Bridges, CS229, Rev. 0, 2020 between each test point on the 'No. of Blows vs. Depth' plot.

In Situ Testing - *Dynamic Cone Penetration Test*

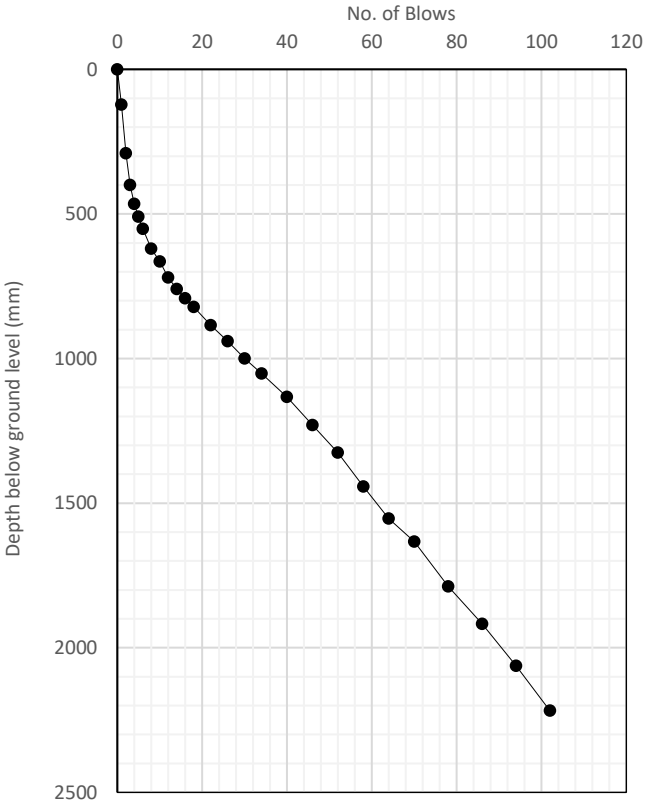
Project	National Grid - 101677 Margam TATA Steel Connection	**Location No.**	DCP114
		Project No.	PC248745 - Phase 1
Client	National Grid	**Test No.**	1
Coordinates	278580.2 E, 186294.2 N **Ground Level** 3.15 m OD	**Test Date**	30/08/2024

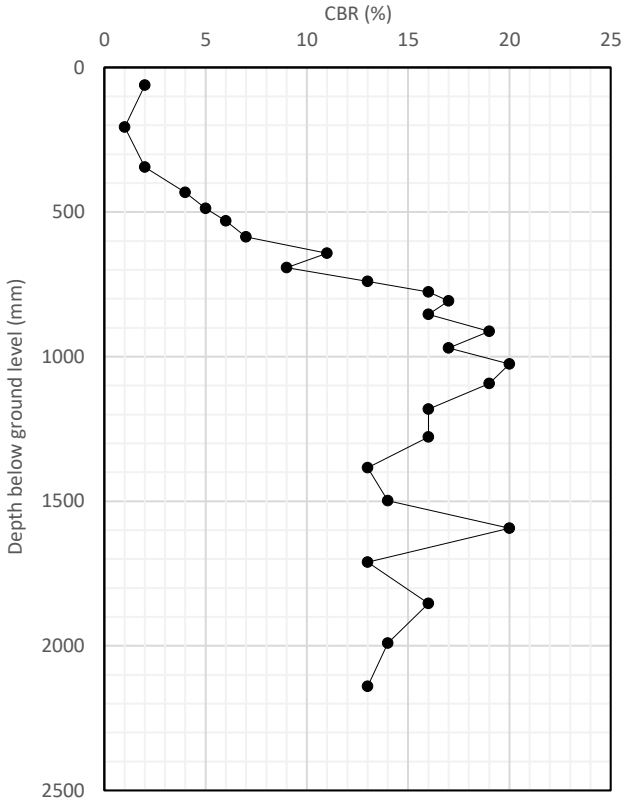
Test started at	0.00m bgl

Operator	WA

Checked By	SC

Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)
0	0	120	0	6	58	1563	1443				
1	1	242	122	6	64	1673	1553				
1	2	410	290	6	70	1753	1633				
1	3	520	400	8	78	1908	1788				
1	4	585	465	8	86	2038	1918				
1	5	630	510	8	94	2183	2063				
1	6	672	552	8	102	2338	2218				
2	8	740	620								
2	10	785	665								
2	12	840	720								
2	14	880	760								
2	16	912	792								
2	18	942	822								
4	22	1005	885								
4	26	1060	940								
4	30	1120	1000								
4	34	1172	1052								
6	40	1253	1133								
6	46	1350	1230								
6	52	1445	1325								





Remarks

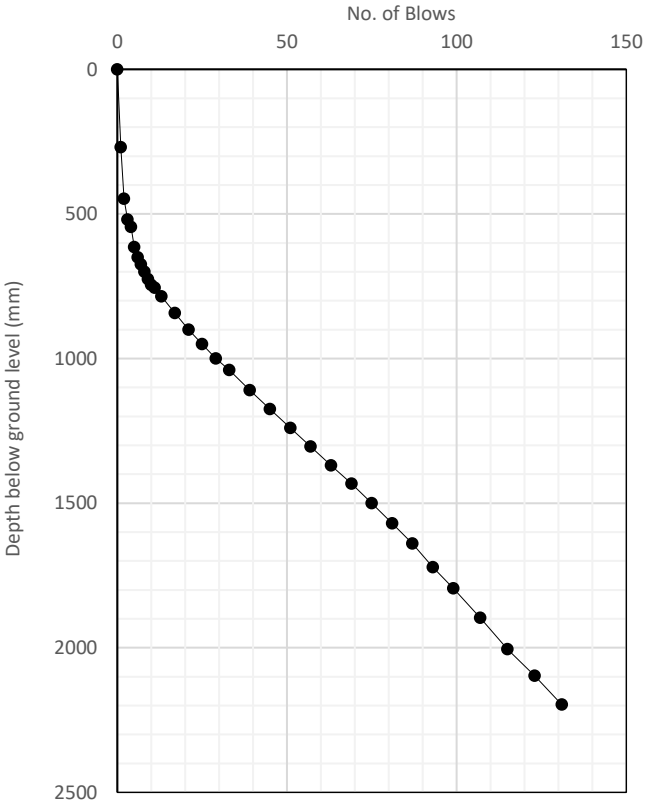
CBR estimated using the correlation in the HA Manual for Roads and Bridges, CS229, Rev. 0, 2020 between each test point on the 'No. of Blows vs. Depth' plot.

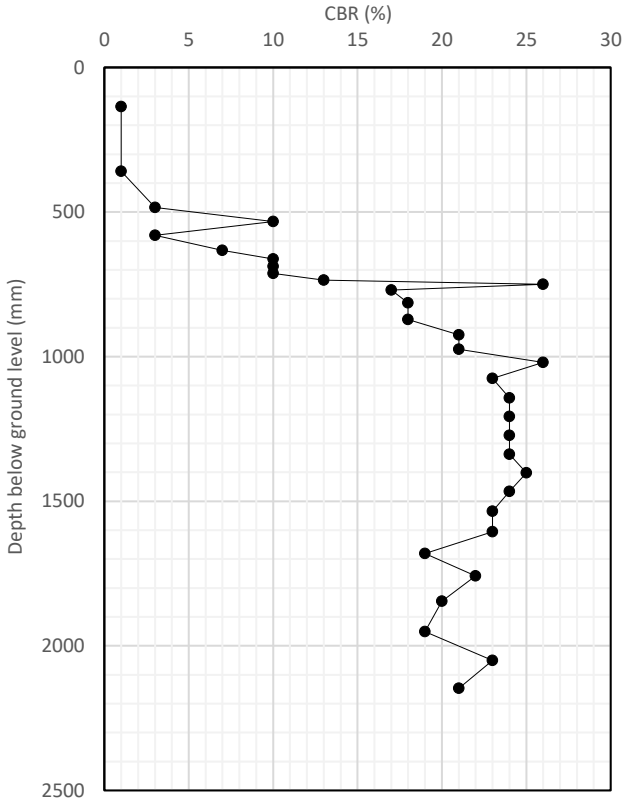
In Situ Testing - *Dynamic Cone Penetration Test*

Project	National Grid - 101677 Margam TATA Steel Connection	**Location No.**	DCP115
		Project No.	PC248745 - Phase 1
Client	National Grid	**Test No.**	1
Coordinates	278607.5 E, 186262.7 N **Ground Level** 3.14 m OD	**Test Date**	30/08/2024

Test started at	0.00m bgl	**Operator**	WA	**Checked By**	SC

Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)
0	0	125	0	6	51	1365	1240				
1	1	395	270	6	57	1430	1305				
1	2	573	448	6	63	1495	1370				
1	3	645	520	6	69	1558	1433				
1	4	670	545	6	75	1625	1500				
1	5	740	615	6	81	1695	1570				
1	6	775	650	6	87	1765	1640				
1	7	800	675	6	93	1847	1722				
1	8	825	700	6	99	1920	1795				
1	9	850	725	8	107	2022	1897				
1	10	870	745	8	115	2130	2005				
1	11	880	755	8	123	2222	2097				
2	13	910	785	8	131	2322	2197				
4	17	968	843								
4	21	1025	900								
4	25	1075	950								
4	29	1125	1000								
4	33	1165	1040								
6	39	1235	1110								
6	45	1300	1175								





Remarks

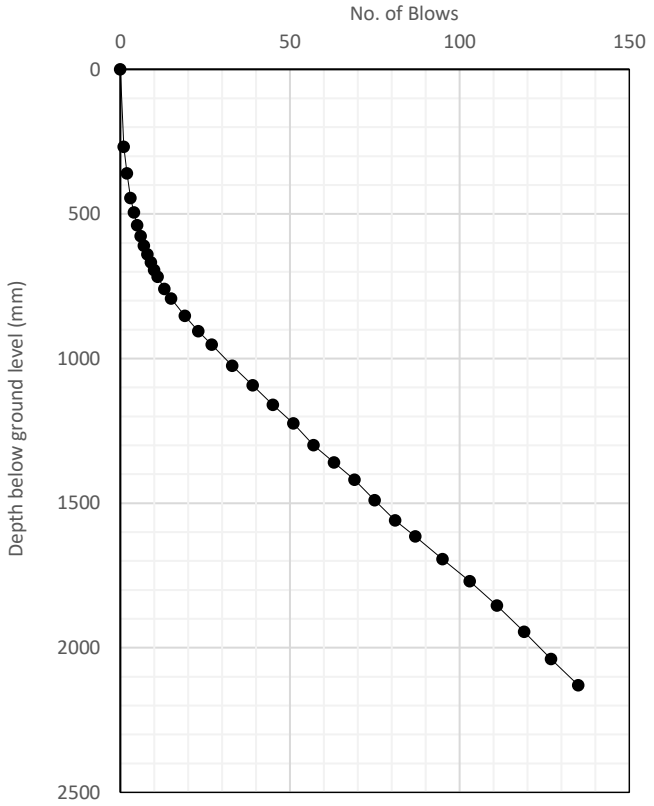
CBR estimated using the correlation in the HA Manual for Roads and Bridges, CS229, Rev. 0, 2020 between each test point on the 'No. of Blows vs. Depth' plot.

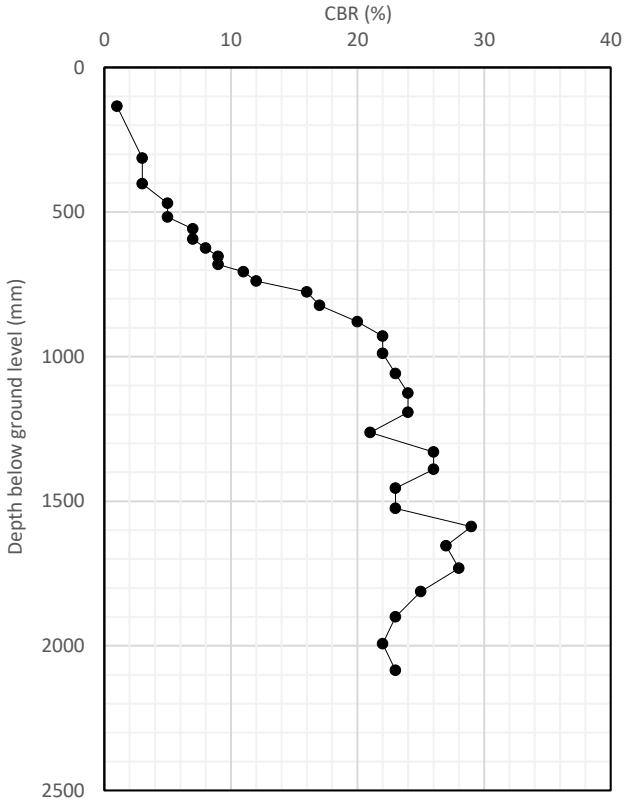
In Situ Testing - *Dynamic Cone Penetration Test*

Project	National Grid - 101677 Margam TATA Steel Connection	**Location No.**	DCP116
		Project No.	PC248745 - Phase 1
Client	National Grid	**Test No.**	1
Coordinates	278628.7 E, 186194.2 N **Ground Level** 3.17 m OD	**Test Date**	29/08/2024

Test started at	0.00m bgl	**Operator**	WA	**Checked By**	SC

Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)
0	0	125	0	6	51	1350	1225				
1	1	393	268	6	57	1425	1300				
1	2	485	360	6	63	1485	1360				
1	3	570	445	6	69	1545	1420				
1	4	620	495	6	75	1615	1490				
1	5	665	540	6	81	1685	1560				
1	6	702	577	6	87	1740	1615				
1	7	735	610	8	95	1819	1694				
1	8	765	640	8	103	1895	1770				
1	9	793	668	8	111	1980	1855				
1	10	820	695	8	119	2070	1945				
1	11	843	718	8	127	2165	2040				
2	13	885	760	8	135	2255	2130				
2	15	918	793								
4	19	978	853								
4	23	1031	906								
4	27	1078	953								
6	33	1150	1025								
6	39	1218	1093								
6	45	1285	1160								





Remarks

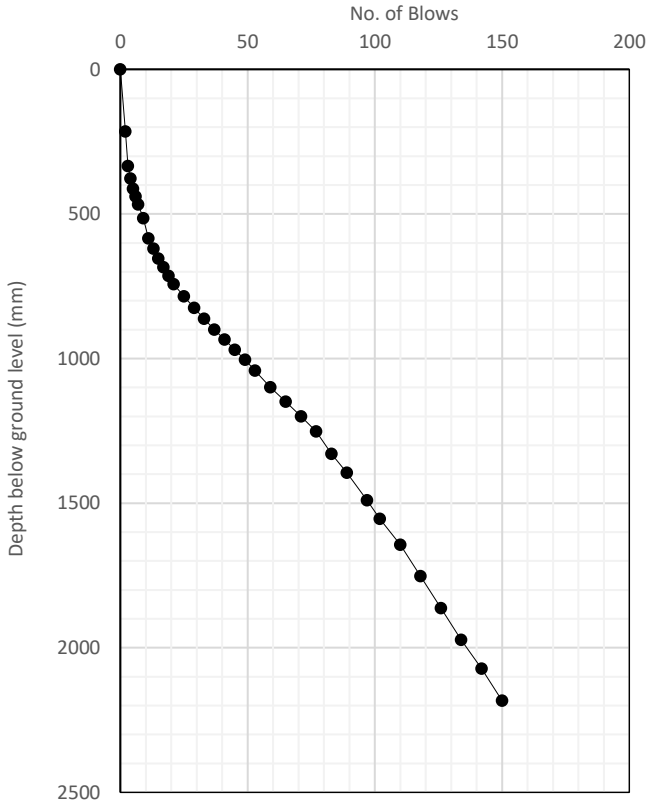
CBR estimated using the correlation in the HA Manual for Roads and Bridges, CS229, Rev. 0, 2020 between each test point on the 'No. of Blows vs. Depth' plot.

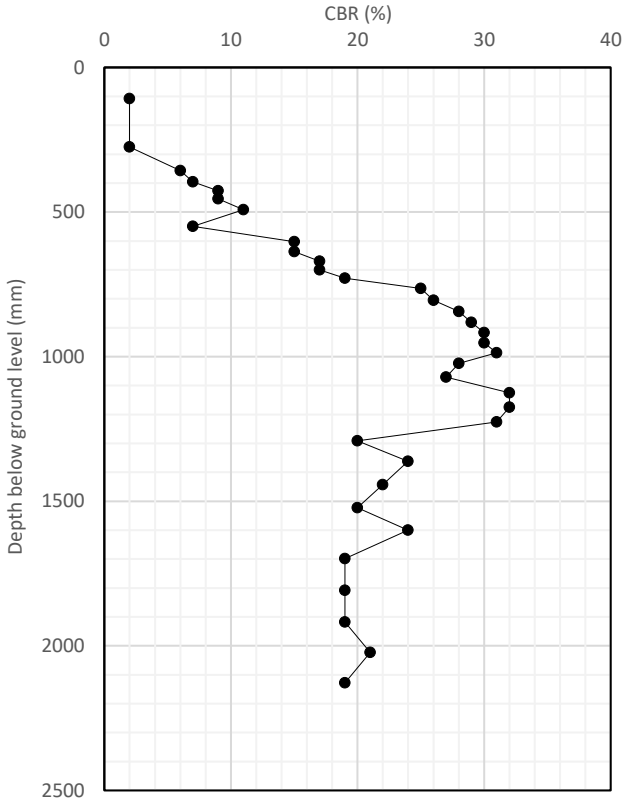
In Situ Testing - *Dynamic Cone Penetration Test*

Project	National Grid - 101677 Margam TATA Steel Connection	**Location No.**	DCP117
		Project No.	PC248745 - Phase 1
Client	National Grid	**Test No.**	1
Coordinates	278643.0 E, 186133.9 N **Ground Level** 3.26 m OD	**Test Date**	28/08/2024

Test started at	0.00m bgl	**Operator**	WA	**Checked By**	SC

Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)
0	0	125	0	4	49	1129	1004				
2	2	340	215	4	53	1167	1042				
1	3	460	335	6	59	1225	1100				
1	4	503	378	6	65	1275	1150				
1	5	538	413	6	71	1325	1200				
1	6	565	440	6	77	1377	1252				
1	7	593	468	6	83	1455	1330				
2	9	640	515	6	89	1520	1395				
2	11	710	585	8	97	1615	1490				
2	13	745	620	5	102	1680	1555				
2	15	780	655	8	110	1769	1644				
2	17	810	685	8	118	1878	1753				
2	19	840	715	8	126	1988	1863				
2	21	868	743	8	134	2098	1973				
4	25	910	785	8	142	2198	2073				
4	29	950	825	8	150	2308	2183				
4	33	988	863								
4	37	1025	900								
4	41	1060	935								
4	45	1095	970								





Remarks

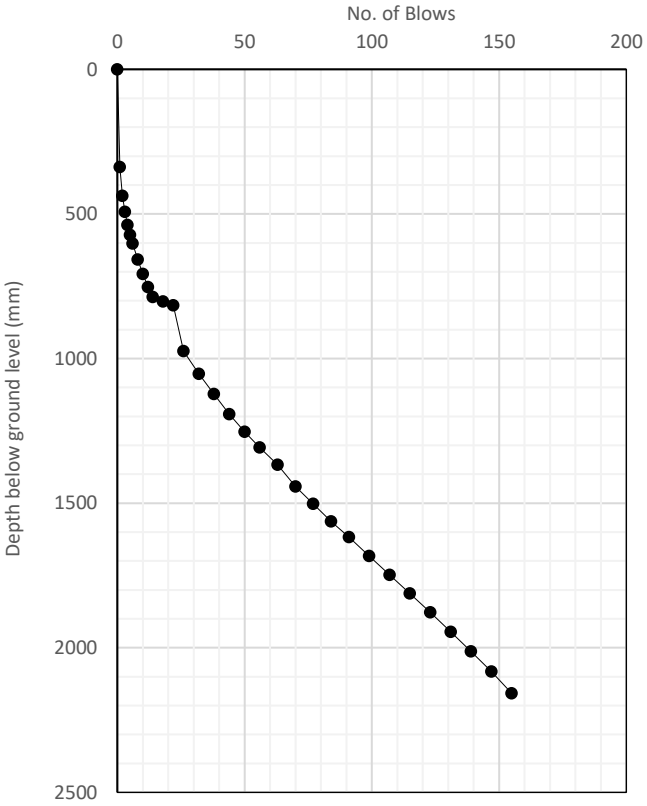
CBR estimated using the correlation in the HA Manual for Roads and Bridges, CS229, Rev. 0, 2020 between each test point on the 'No. of Blows vs. Depth' plot.

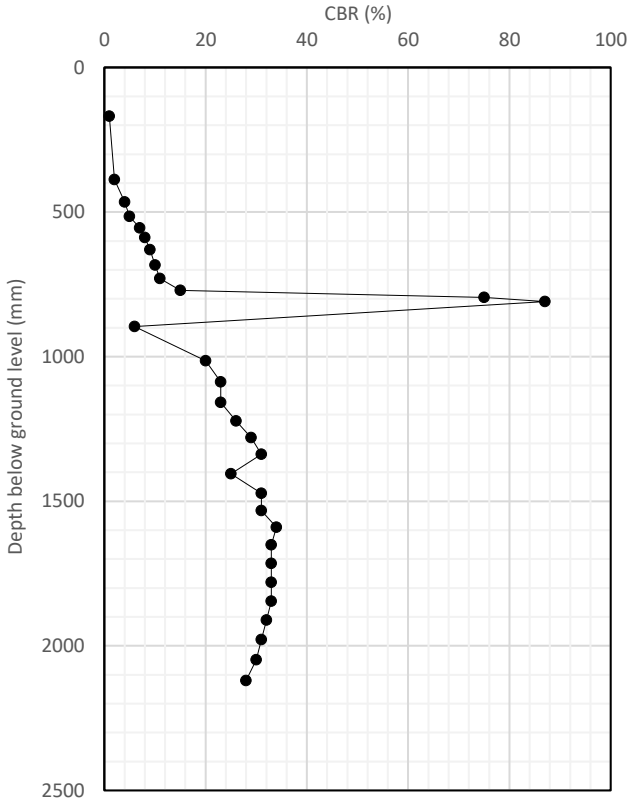
In Situ Testing - *Dynamic Cone Penetration Test*

Project	National Grid - 101677 Margam TATA Steel Connection	**Location No.**	DCP118
		Project No.	PC248745 - Phase 1
Client	National Grid	**Test No.**	1
Coordinates	278654.7 E, 186084.0 N **Ground Level** 3.50 m OD	**Test Date**	29/08/2024

Test started at	0.00m bgl	**Operator**	WA	**Checked By**	SC

Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)
0	0	122	0	7	70	1565	1443				
1	1	460	338	7	77	1625	1503				
1	2	560	438	7	84	1685	1563				
1	3	615	493	7	91	1740	1618				
1	4	660	538	8	99	1805	1683				
1	5	695	573	8	107	1870	1748				
1	6	725	603	8	115	1935	1813				
2	8	780	658	8	123	2000	1878				
2	10	830	708	8	131	2067	1945				
2	12	875	753	8	139	2135	2013				
2	14	910	788	8	147	2205	2083				
4	18	925	803	8	155	2280	2158				
4	22	938	816								
4	26	1097	975								
6	32	1175	1053								
6	38	1245	1123								
6	44	1315	1193								
6	50	1375	1253								
6	56	1430	1308								
7	63	1490	1368								





Remarks

CBR estimated using the correlation in the HA Manual for Roads and Bridges, CS229, Rev. 0, 2020 between each test point on the 'No. of Blows vs. Depth' plot.

In Situ Testing - *Dynamic Cone Penetration Test*

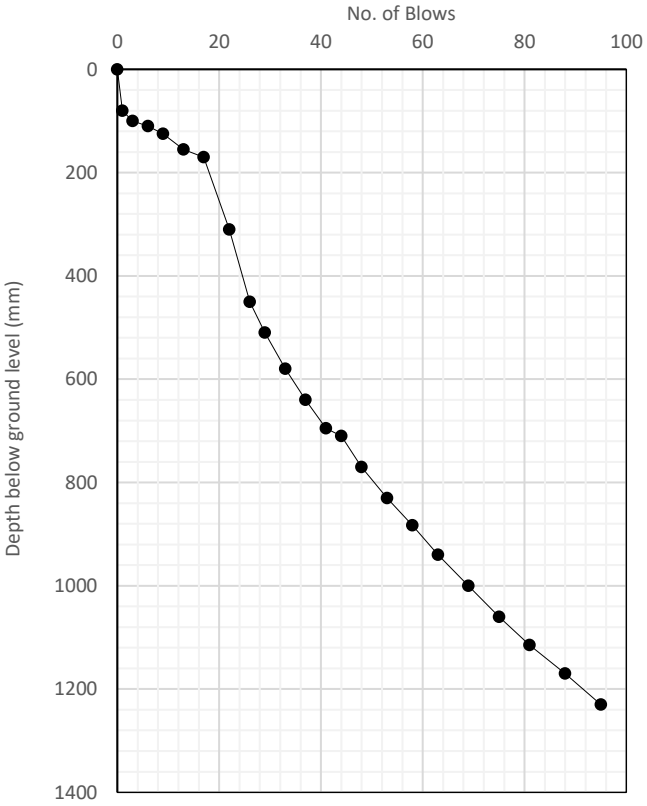
Project	National Grid - 101677 Margam TATA Steel Connection	**Location No.**	BRIDCP01
		Project No.	PC248745 - Phase 1
Client	National Grid	**Test No.**	1
Coordinates	278465.6 E, 186520.8 N **Ground Level** 3.75 m OD	**Test Date**	23/07/2024

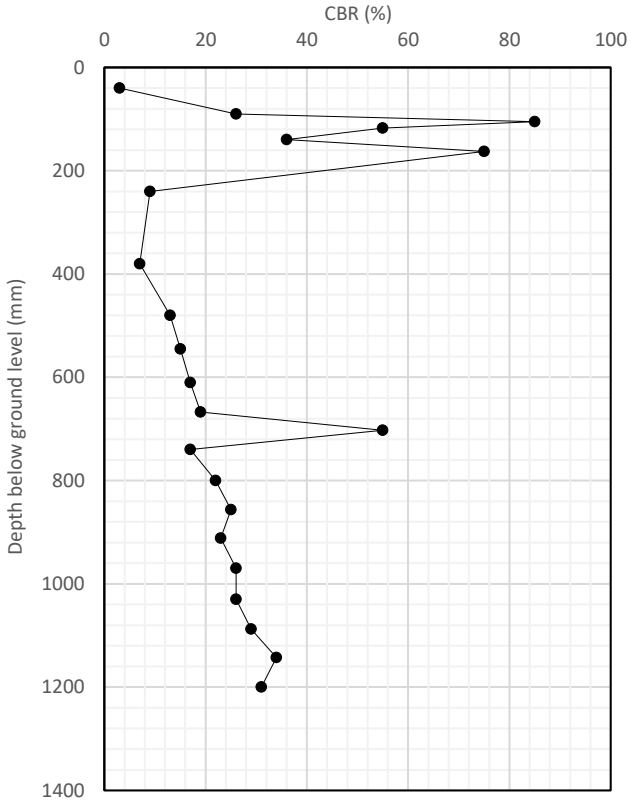
Test started at	0.00m bgl

Operator	SI

Checked By	IJ

Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)
0	0	130	0	6	81	1245	1115				
1	1	210	80	7	88	1300	1170				
2	3	230	100	7	95	1360	1230				
3	6	240	110								
3	9	255	125								
4	13	285	155								
4	17	300	170								
5	22	440	310								
4	26	580	450								
3	29	640	510								
4	33	710	580								
4	37	770	640								
4	41	825	695								
3	44	840	710								
4	48	900	770								
5	53	960	830								
5	58	1013	883								
5	63	1070	940								
6	69	1130	1000								
6	75	1190	1060								





Remarks

Fell under own weight to 40mm penetration below ground level.

CBR estimated using the correlation in the HA Manual for Roads and Bridges, CS229, Rev. 0, 2020 between each test point on the 'No. of Blows vs. Depth' plot.

In Situ Testing - *Dynamic Cone Penetration Test*

Project	National Grid - 101677 Margam TATA Steel Connection	**Location No.**	BRIDCP02
		Project No.	PC248745 - Phase 1
Client	National Grid	**Test No.**	1
Coordinates	278472.1 E, 186521.6 N **Ground Level** 3.40 m OD	**Test Date**	23/07/2024

Test started at	0.00m bgl

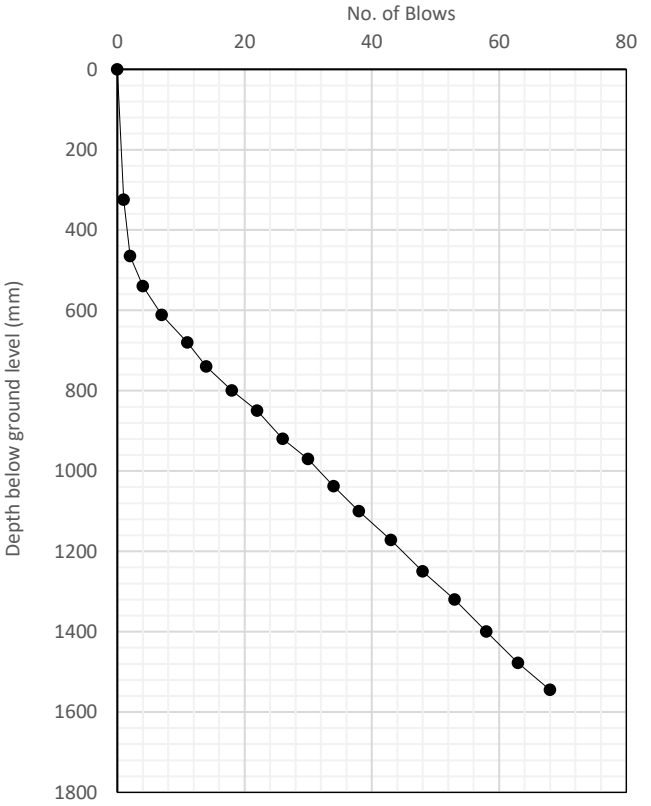
Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)
0	0	110	0
1	1	435	325
1	2	575	465
2	4	650	540
3	7	722	612
4	11	790	680
3	14	850	740
4	18	910	800
4	22	960	850
4	26	1030	920
4	30	1080	970
4	34	1148	1038
4	38	1210	1100
5	43	1282	1172
5	48	1360	1250
5	53	1430	1320
5	58	1510	1400
5	63	1588	1478
5	68	1655	1545

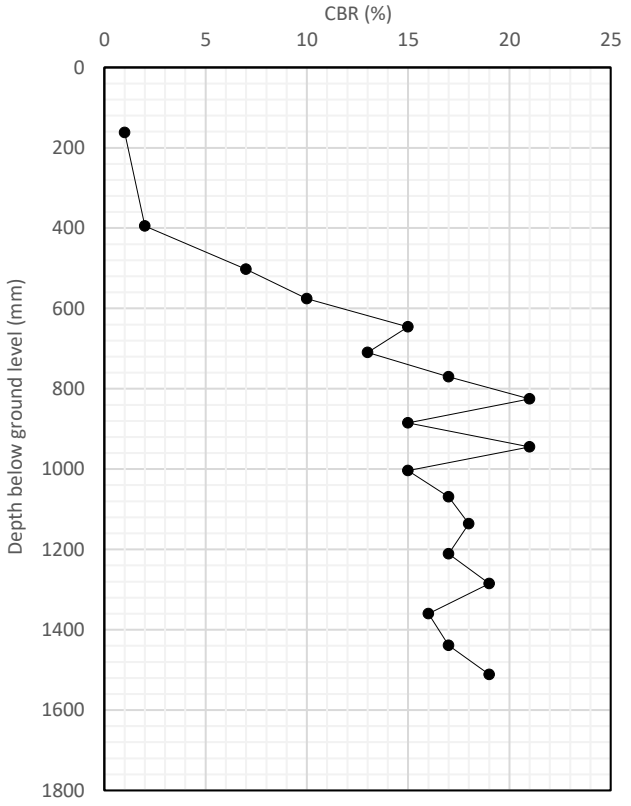
Operator	SI

Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)

Checked By	IJ

Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)





Remarks

Fell under own weight to 160mm penetration below ground level.

CBR estimated using the correlation in the HA Manual for Roads and Bridges, CS229, Rev. 0, 2020 between each test point on the 'No. of Blows vs. Depth' plot.

In Situ Testing - *Dynamic Cone Penetration Test*

Project	National Grid - 101677 Margam TATA Steel Connection	**Location No.**	BRIDCP03
		Project No.	PC248745 - Phase 1
Client	National Grid	**Test No.**	1
Coordinates	278472.0 E, 186520.3 N **Ground Level** 3.35 m OD	**Test Date**	23/07/2024

Test started at	0.00m bgl

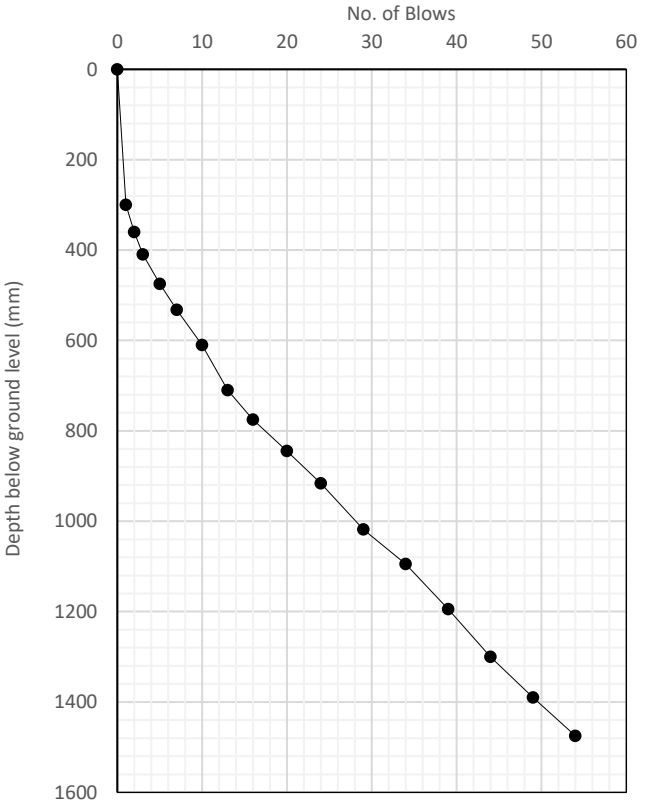
Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)
0	0	120	0
1	1	420	300
1	2	480	360
1	3	530	410
2	5	595	475
2	7	652	532
3	10	730	610
3	13	830	710
3	16	895	775
4	20	965	845
4	24	1036	916
5	29	1138	1018
5	34	1215	1095
5	39	1315	1195
5	44	1420	1300
5	49	1510	1390
5	54	1595	1475

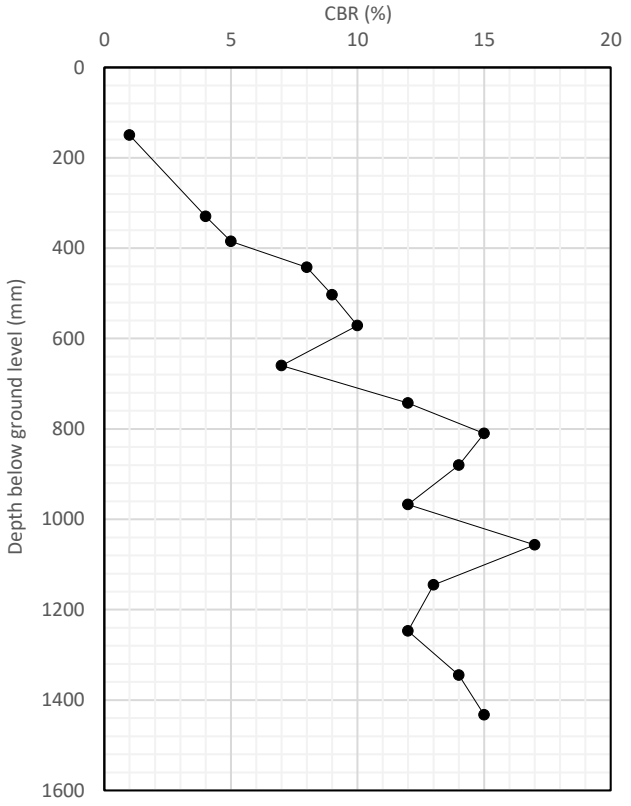
Operator	SI

Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)

Checked By	IJ

Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)





Remarks

CBR estimated using the correlation in the HA Manual for Roads and Bridges, CS229, Rev. 0, 2020 between each test point on the 'No. of Blows vs. Depth' plot.

In Situ Testing - *Dynamic Cone Penetration Test*

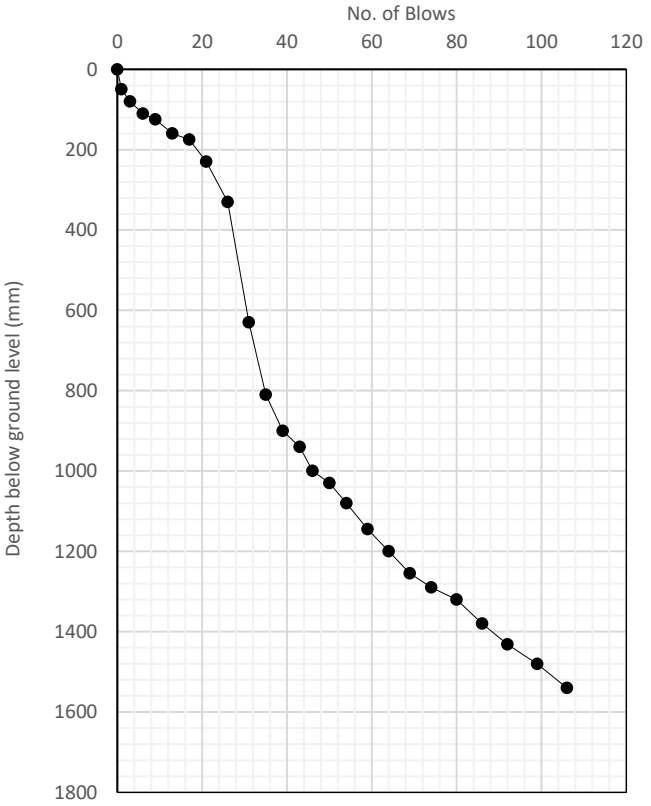
Project	National Grid - 101677 Margam TATA Steel Connection	**Location No.**	BRIDCP04
		Project No.	PC248745 - Phase 1
Client	National Grid	**Test No.**	1
Coordinates	278465.9 E, 186522.3 N **Ground Level** 3.75 m OD	**Test Date**	23/07/2024

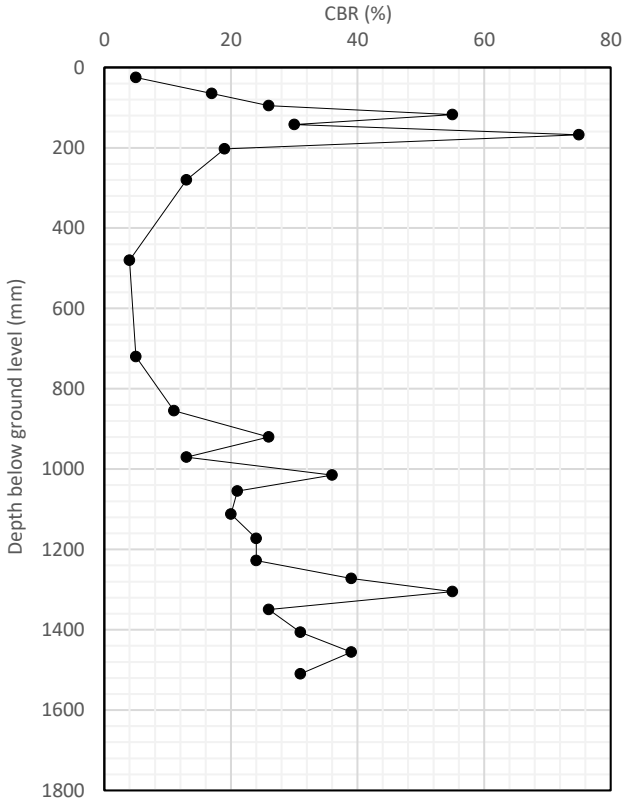
Test started at	0.00m bgl

Operator	SI

Checked By	IJ

Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)
0	0	120	0	6	80	1440	1320				
1	1	170	50	6	86	1500	1380				
2	3	200	80	6	92	1552	1432				
3	6	230	110	7	99	1600	1480				
3	9	245	125	7	106	1660	1540				
4	13	280	160								
4	17	295	175								
4	21	350	230								
5	26	450	330								
5	31	750	630								
4	35	930	810								
4	39	1020	900								
4	43	1060	940								
3	46	1120	1000								
4	50	1150	1030								
4	54	1200	1080								
5	59	1265	1145								
5	64	1320	1200								
5	69	1375	1255								
5	74	1410	1290								





Remarks

Fell under own weight to 30mm penetration below ground level.

CBR estimated using the correlation in the HA Manual for Roads and Bridges, CS229, Rev. 0, 2020 between each test point on the 'No. of Blows vs. Depth' plot.

In Situ Testing - *Dynamic Cone Penetration Test*

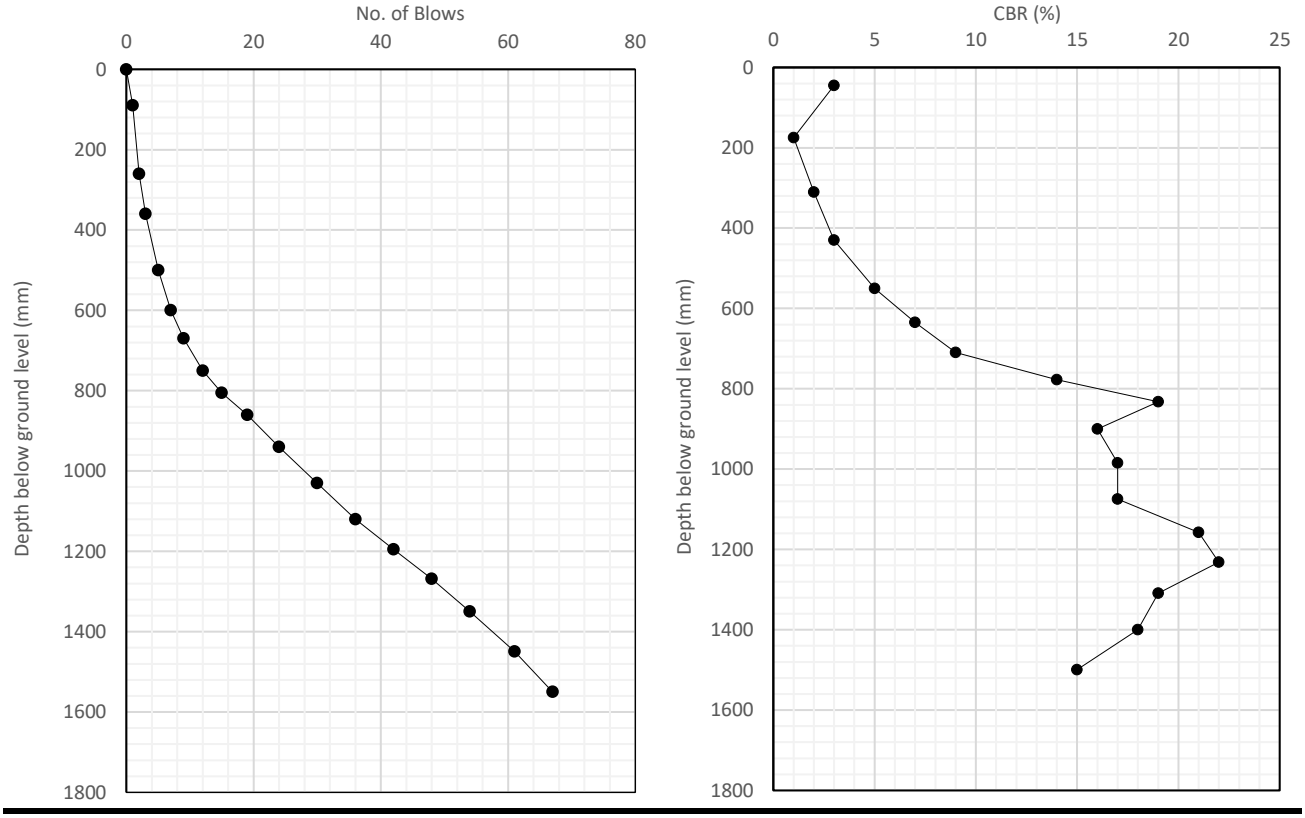
Project	National Grid - 101677 Margam TATA Steel Connection	**Location No.**	BRID02DCP01
		Project No.	PC248745 - Phase 1
Client	National Grid	**Test No.**	1
Coordinates	278566.9 E, 186454.4 N **Ground Level** 3.08 m OD	**Test Date**	30/07/2024

Test started at	0.00m bgl

Operator	SI

Checked By	SC

Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)
0	0	130	0
1	1	220	90
1	2	390	260
1	3	490	360
2	5	630	500
2	7	730	600
2	9	800	670
3	12	880	750
3	15	935	805
4	19	990	860
5	24	1070	940
6	30	1160	1030
6	36	1250	1120
6	42	1325	1195
6	48	1398	1268
6	54	1480	1350
7	61	1579	1449
6	67	1680	1550



Remarks

Fell under own weight to 40mm penetration below ground level.

CBR estimated using the correlation in the HA Manual for Roads and Bridges, CS229, Rev. 0, 2020 between each test point on the 'No. of Blows vs. Depth' plot.

In Situ Testing - *Dynamic Cone Penetration Test*

Project	National Grid - 101677 Margam TATA Steel Connection	**Location No.**	BRID02DCP02
		Project No.	PC248745 - Phase 1
Client	National Grid	**Test No.**	1
Coordinates	278568.3 E, 186452.8 N **Ground Level** 3.09 m OD	**Test Date**	30/07/2024

Test started at	0.00m bgl

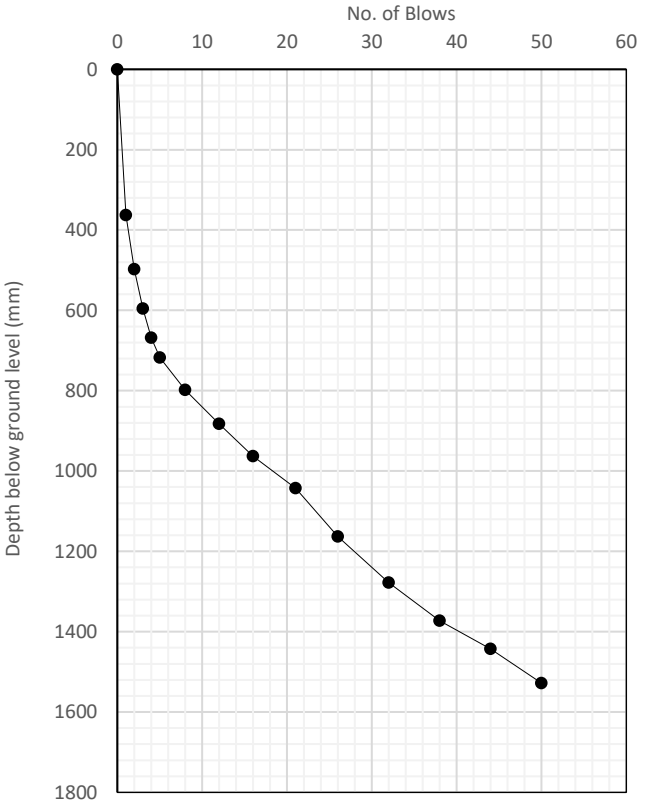
Operator	SI

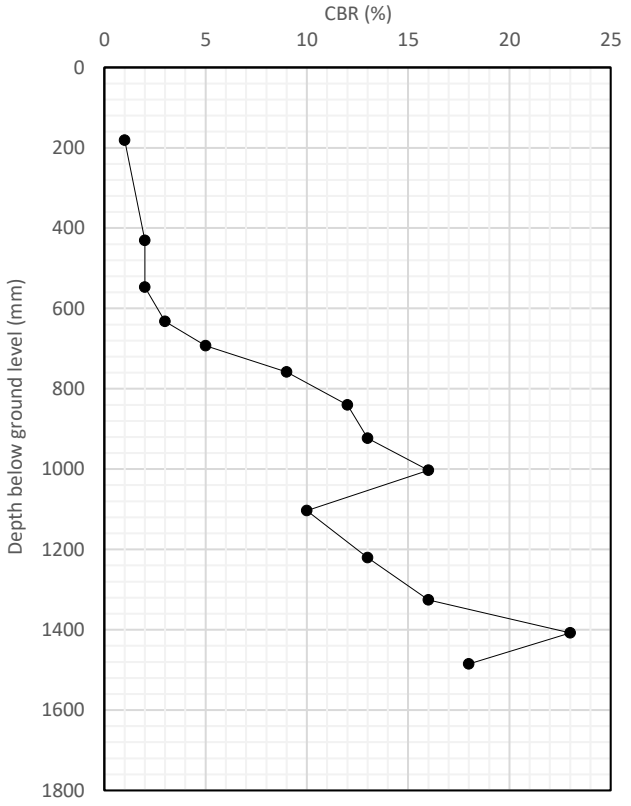
Checked By	SC

Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)
0	0	112	0
1	1	475	363
1	2	610	498
1	3	708	596
1	4	780	668
1	5	830	718
3	8	910	798
4	12	995	883
4	16	1075	963
5	21	1155	1043
5	26	1275	1163
6	32	1390	1278
6	38	1485	1373
6	44	1555	1443
6	50	1640	1528

Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)

Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)





Remarks

Fell under own weight to 160mm penetration below ground level.

CBR estimated using the correlation in the HA Manual for Roads and Bridges, CS229, Rev. 0, 2020 between each test point on the 'No. of Blows vs. Depth' plot.

In Situ Testing - *Dynamic Cone Penetration Test*

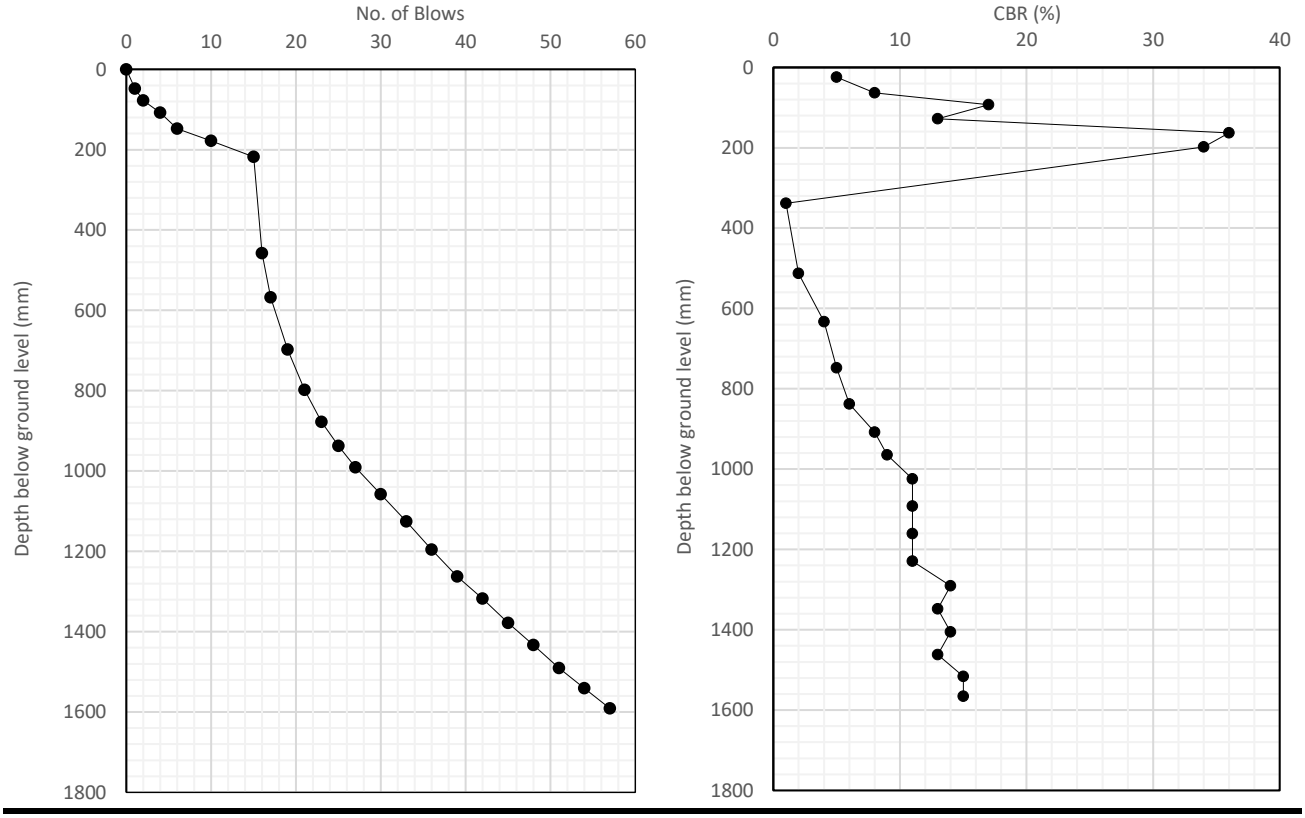
Project	National Grid - 101677 Margam TATA Steel Connection	**Location No.**	BRID02DCP03
		Project No.	PC248745 - Phase 1
Client	National Grid	**Test No.**	1
Coordinates	278563.9 E, 186452.1 N **Ground Level** 2.96 m OD	**Test Date**	30/07/2024

Test started at	0.00m bgl

Operator	

Checked By	

Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)
0	0	112	0	3	48	1545	1433				
1	1	160	48	3	51	1603	1491				
1	2	190	78	3	54	1653	1541				
2	4	220	108	3	57	1703	1591				
2	6	260	148								
4	10	290	178								
5	15	330	218								
1	16	570	458								
1	17	680	568								
2	19	810	698								
2	21	910	798								
2	23	990	878								
2	25	1050	938								
2	27	1103	991								
3	30	1170	1058								
3	33	1238	1126								
3	36	1308	1196								
3	39	1375	1263								
3	42	1430	1318								
3	45	1490	1378								



Remarks

CBR estimated using the correlation in the HA Manual for Roads and Bridges, CS229, Rev. 0, 2020 between each test point on the 'No. of Blows vs. Depth' plot.

In Situ Testing - *Dynamic Cone Penetration Test*

Project	National Grid - 101677 Margam TATA Steel Connection	**Location No.**	BRID02DCP04
		Project No.	PC248745 - Phase 1
Client	National Grid	**Test No.**	1
Coordinates	278565.1 E, 186450.8 N **Ground Level** 2.99 m OD	**Test Date**	30/07/2024

Test started at	0.00m bgl

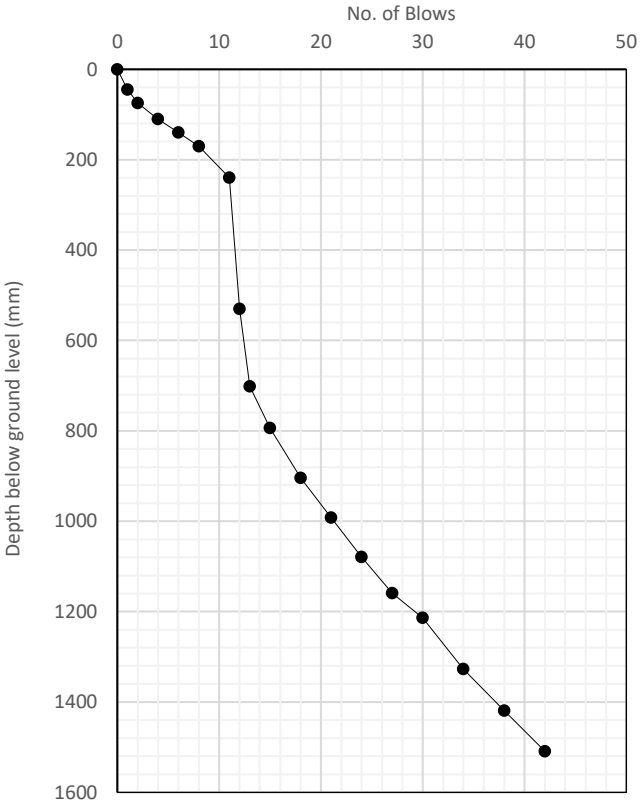
Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)
0	0	110	0
1	1	155	45
1	2	185	75
2	4	220	110
2	6	250	140
2	8	280	170
3	11	350	240
1	12	640	530
1	13	812	702
2	15	904	794
3	18	1014	904
3	21	1102	992
3	24	1189	1079
3	27	1269	1159
3	30	1324	1214
4	34	1437	1327
4	38	1529	1419
4	42	1619	1509

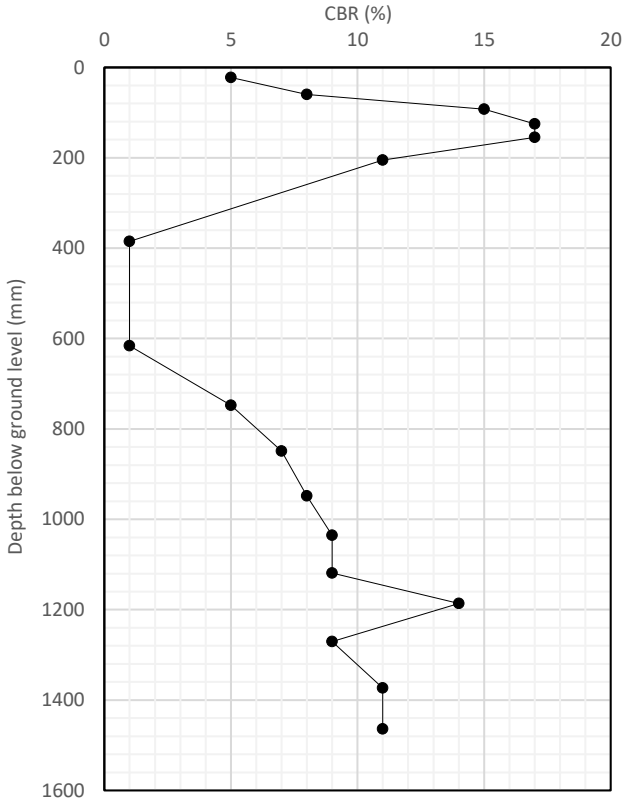
Operator	SI

Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)

Checked By	SC

Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)





Remarks

Fell under own weight to 30mm penetration below ground level.

CBR estimated using the correlation in the HA Manual for Roads and Bridges, CS229, Rev. 0, 2020 between each test point on the 'No. of Blows vs. Depth' plot.

In Situ Testing - *Dynamic Cone Penetration Test*

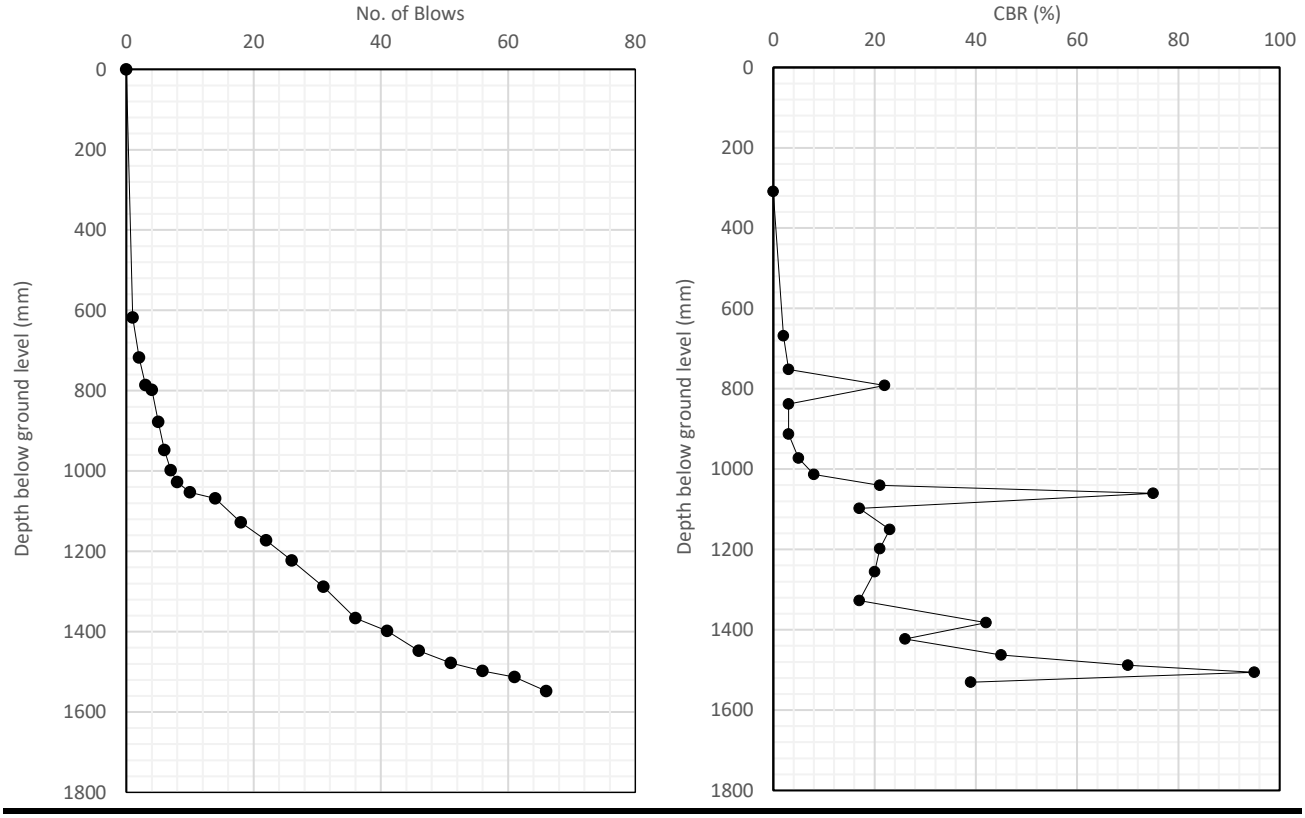
Project	National Grid - 101677 Margam TATA Steel Connection	**Location No.**	BRID03DCP01
		Project No.	PC248745 - Phase 1
Client	National Grid	**Test No.**	1
Coordinates	278599.8 E, 186344.7 N **Ground Level** 3.02 m OD	**Test Date**	08/08/2024

Test started at	0.00m bgl

Operator	SI

Checked By	IJ

Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)
0	0	112	0	5	61	1625	1513				
1	1	730	618	5	66	1660	1548				
1	2	830	718								
1	3	898	786								
1	4	910	798								
1	5	990	878								
1	6	1060	948								
1	7	1110	998								
1	8	1140	1028								
2	10	1165	1053								
4	14	1180	1068								
4	18	1240	1128								
4	22	1285	1173								
4	26	1335	1223								
5	31	1400	1288								
5	36	1478	1366								
5	41	1510	1398								
5	46	1560	1448								
5	51	1590	1478								
5	56	1610	1498								



Remarks

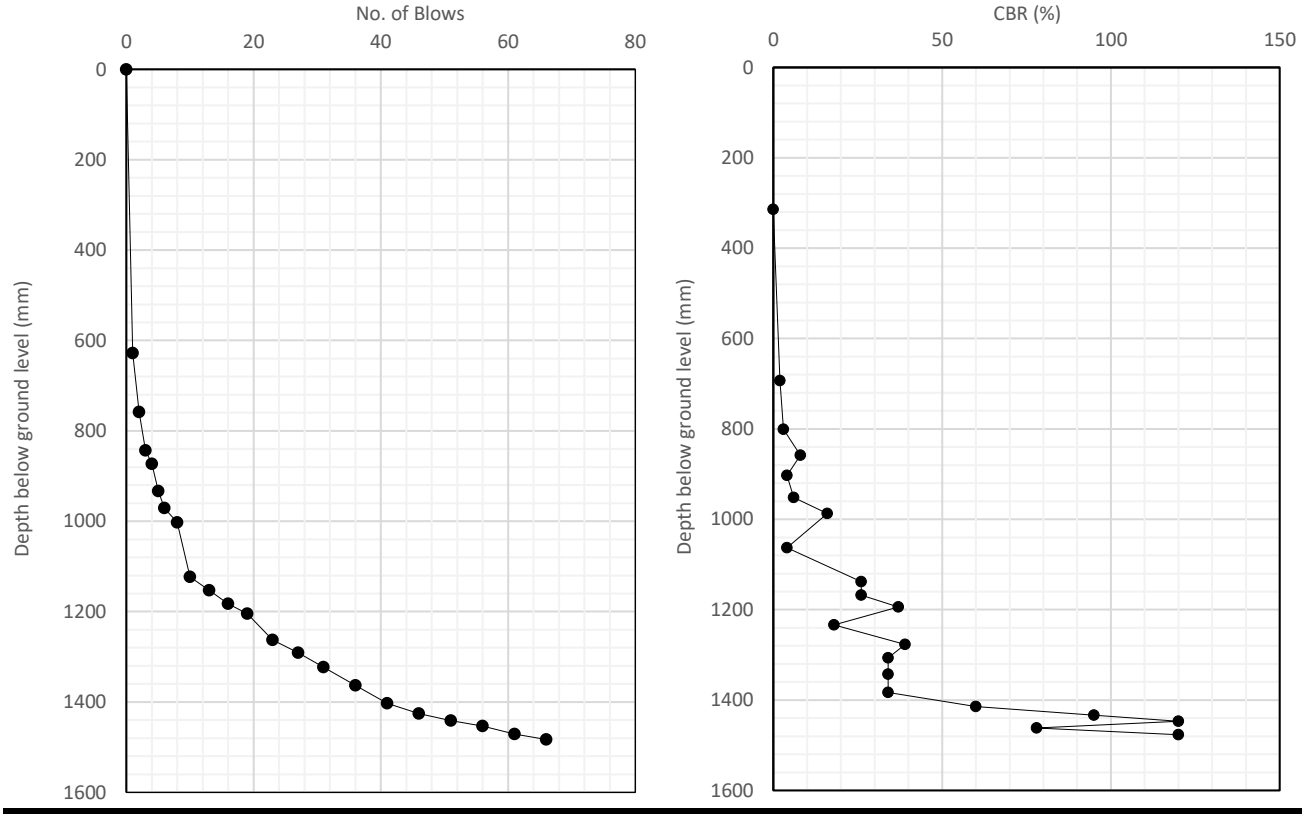
CBR estimated using the correlation in the HA Manual for Roads and Bridges, CS229, Rev. 0, 2020 between each test point on the 'No. of Blows vs. Depth' plot.

In Situ Testing - *Dynamic Cone Penetration Test*

Project	National Grid - 101677 Margam TATA Steel Connection	**Location No.**	BRID03DCP02
		Project No.	PC248745 - Phase 1
Client	National Grid	**Test No.**	1
Coordinates	278598.6 E, 186347.0 N **Ground Level** 3.15 m OD	**Test Date**	08/08/2024

Test started at	0.00m bgl	**Operator**	SI	**Checked By**	IJ

Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)
0	0	112	0	5	61	1583	1471				
1	1	740	628	5	66	1595	1483				
1	2	870	758								
1	3	955	843								
1	4	985	873								
1	5	1045	933								
1	6	1083	971								
2	8	1115	1003								
2	10	1235	1123								
3	13	1265	1153								
3	16	1295	1183								
3	19	1317	1205								
4	23	1375	1263								
4	27	1403	1291								
4	31	1435	1323								
5	36	1475	1363								
5	41	1515	1403								
5	46	1538	1426								
5	51	1553	1441								
5	56	1565	1453								



Remarks

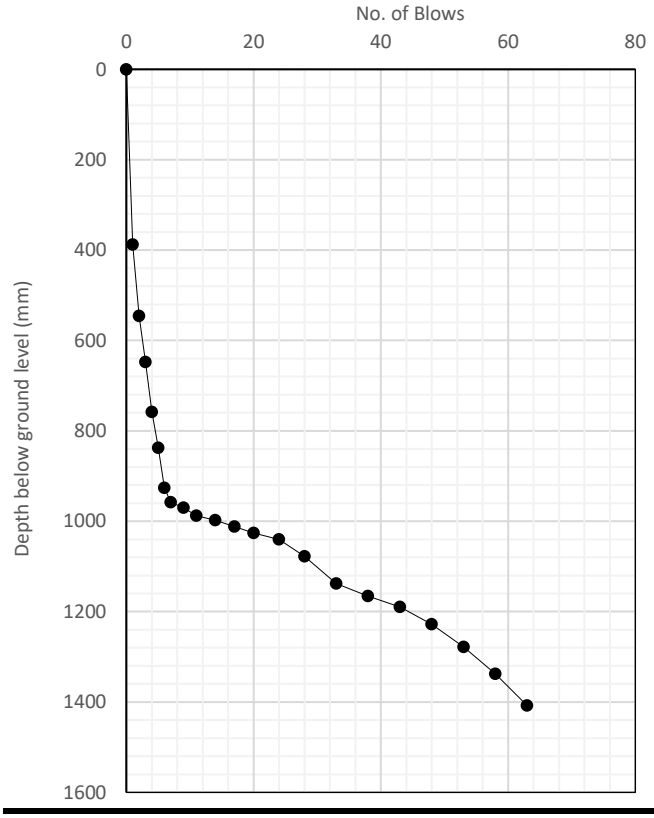
CBR estimated using the correlation in the HA Manual for Roads and Bridges, CS229, Rev. 0, 2020 between each test point on the 'No. of Blows vs. Depth' plot.

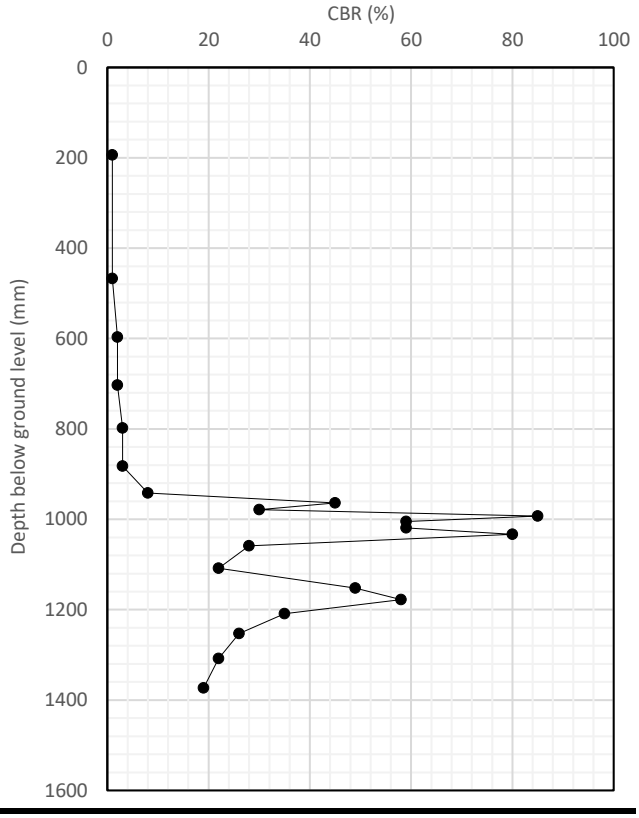
In Situ Testing - *Dynamic Cone Penetration Test*

Project	National Grid - 101677 Margam TATA Steel Connection	**Location No.**	BRID03DCP03
		Project No.	PC248745 - Phase 1
Client	National Grid	**Test No.**	1
Coordinates	278603.8 E, 1863482.0 N **Ground Level** 2.95 m OD	**Test Date**	08/08/2024

Test started at	0.00m bgl	**Operator**	SI	**Checked By**	IJ

Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)
0	0	112	0	5	58	1450	1338				
1	1	500	388	5	63	1520	1408				
1	2	658	546								
1	3	760	648								
1	4	870	758								
1	5	950	838								
1	6	1038	926								
1	7	1070	958								
2	9	1082	970								
2	11	1100	988								
3	14	1110	998								
3	17	1124	1012								
3	20	1138	1026								
4	24	1152	1040								
4	28	1190	1078								
5	33	1250	1138								
5	38	1278	1166								
5	43	1302	1190								
5	48	1340	1228								
5	53	1390	1278								





Remarks

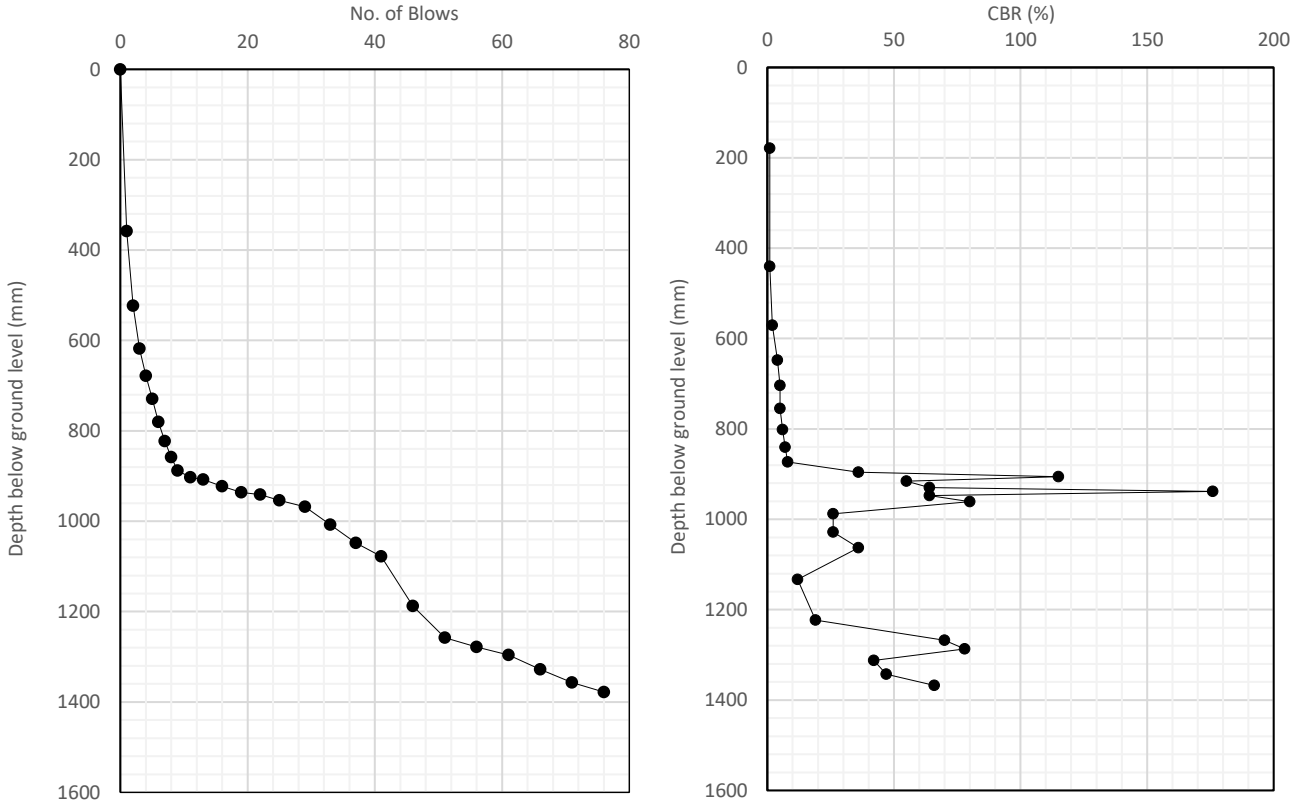
CBR estimated using the correlation in the HA Manual for Roads and Bridges, CS229, Rev. 0, 2020 between each test point on the 'No. of Blows vs. Depth' plot.

In Situ Testing - *Dynamic Cone Penetration Test*

Project	National Grid - 101677 Margam TATA Steel Connection	**Location No.**	BRID03DCP04
		Project No.	PC248745 - Phase 1
Client	National Grid	**Test No.**	1
Coordinates	278602.9 E, 186350.3 N **Ground Level** 2.86 m OD	**Test Date**	08/08/2024

Test started at	0.00m bgl	**Operator**	SI	**Checked By**	IJ

Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Reading (mm)	Corrected Depth (mm)
0	0	112	0	5	46	1300	1188				
1	1	470	358	5	51	1370	1258				
1	2	635	523	5	56	1390	1278				
1	3	730	618	5	61	1408	1296				
1	4	790	678	5	66	1440	1328				
1	5	841	729	5	71	1469	1357				
1	6	892	780	5	76	1490	1378				
1	7	935	823								
1	8	970	858								
1	9	1000	888								
2	11	1015	903								
2	13	1020	908								
3	16	1035	923								
3	19	1048	936								
3	22	1053	941								
3	25	1066	954								
4	29	1080	968								
4	33	1120	1008								
4	37	1160	1048								
4	41	1190	1078								



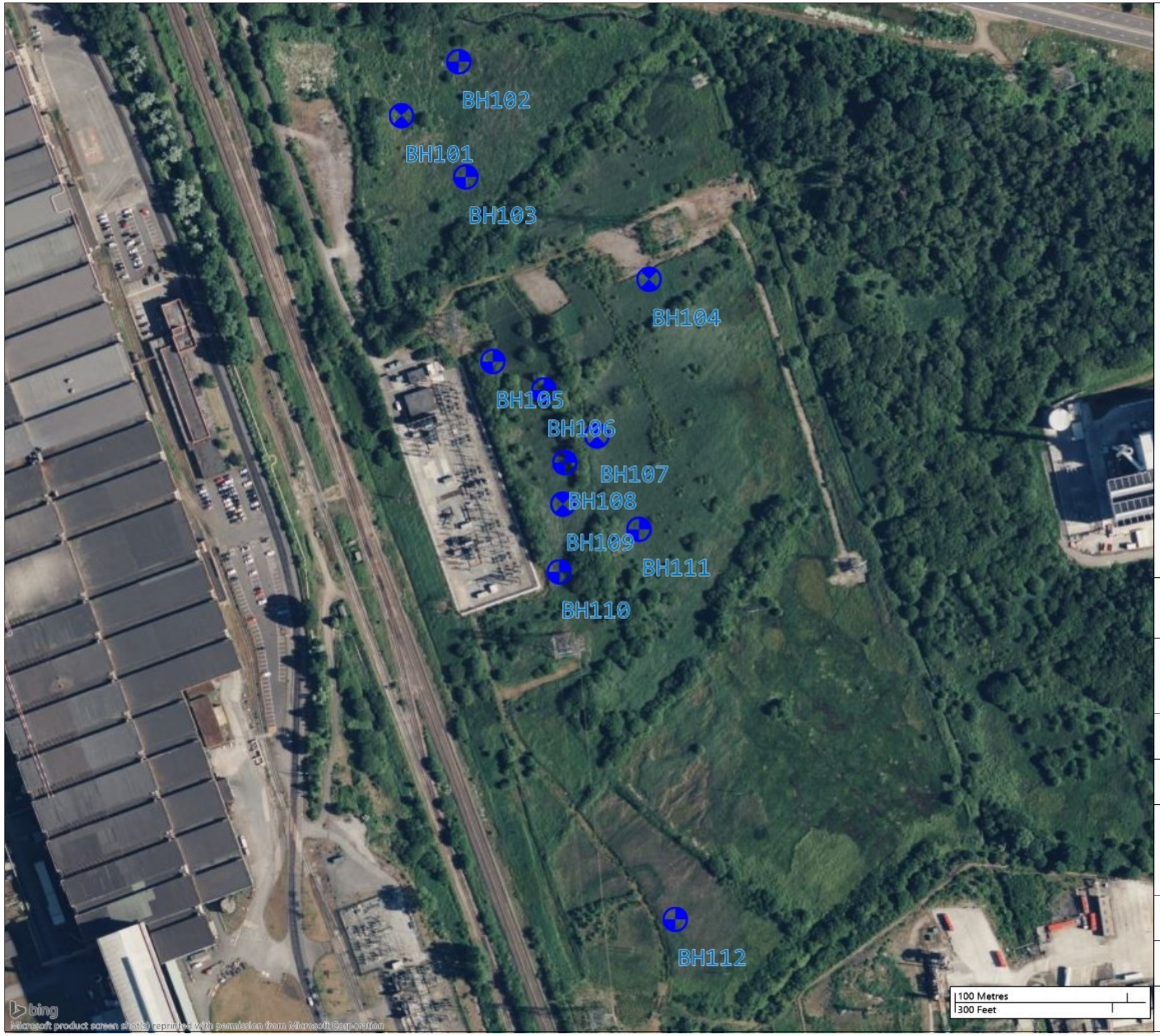
Remarks

CBR estimated using the correlation in the HA Manual for Roads and Bridges, CS229, Rev. 0, 2020 between each test point on the 'No. of Blows vs. Depth' plot.

APPENDIX 10

Exploratory Hole Location Plan

APPENDIX 10



N

Legend

- Locations By Type - CP
- Locations By Type - CP+RC

GEOTECHNICS

203 Torrington Avenue
Tile Hill
Coventry
CV4 9AP

Phone: 024 7669 4664
Email: mail@geotechnics.co.uk
www.geotechnics.co.uk

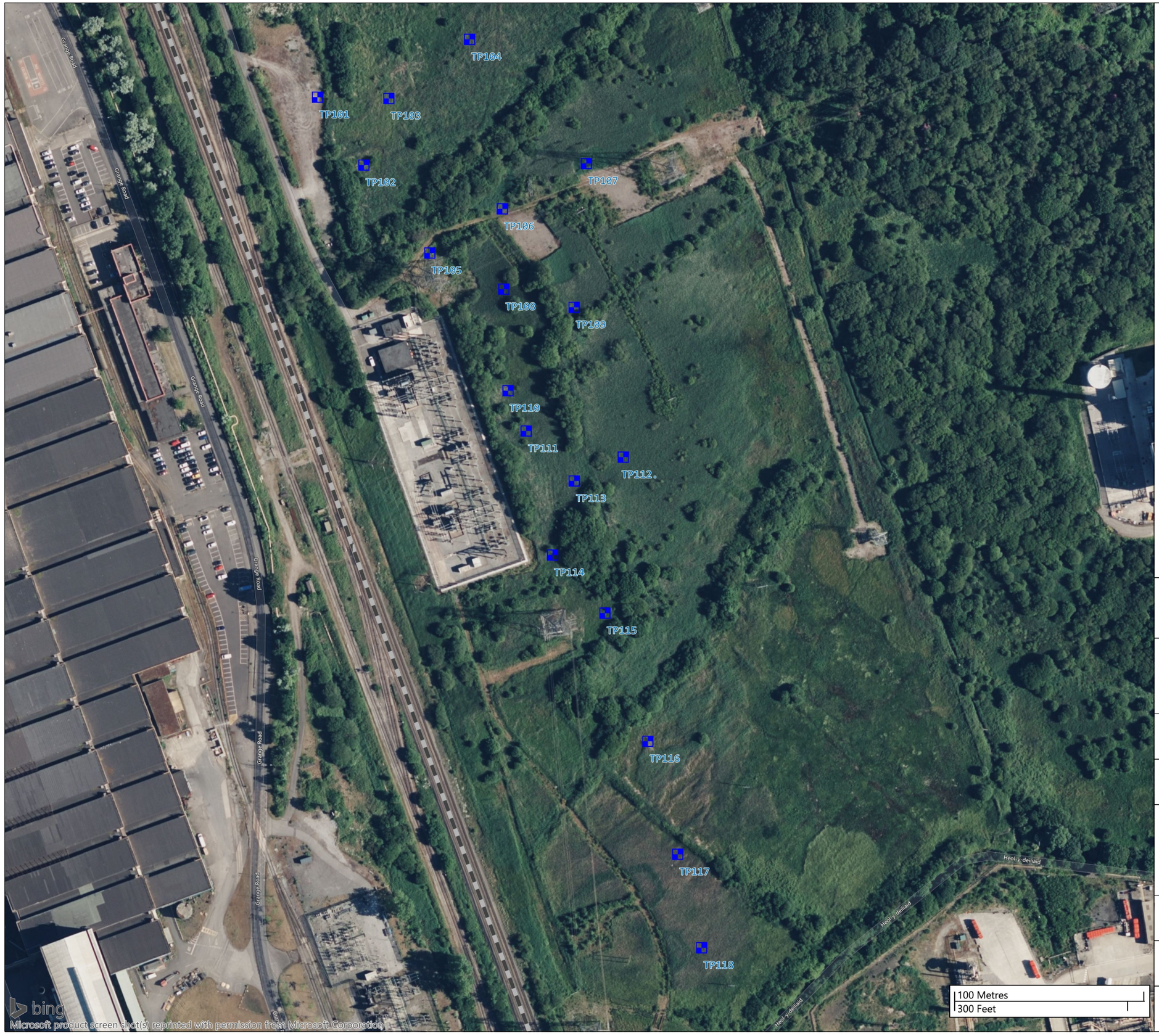
Engineer:
Baker Hicks

Client:
National Grid

Project:
National Grid - 101677 Margam TATA Steel Connection

Drawing Title:
Exploratory Hole Location Plan

Scale:	Date:
1:2200 at A3	**17/10/2024**
Project No.: **PC248745 - Phase 1**	**Exploratory Hole Location Plan**



N

Legend

Locations By Type - TP

GEOTECHNICS

203 Torrington Avenue
Tile Hill
Coventry
CV4 9AP

Phone: 024 7669 4664
Email: mail@geotechnics.co.uk
www.geotechnics.co.uk

Engineer:
Baker Hicks

Client:
National Grid

Project:
National Grid - 101677 Margam TATA Steel Connection

Drawing Title:
Exploratory Hole Location Plan

Scale:	Date:
1:2000 at A3	**29/01/2025**

Project No.:	
PC248745 - Phase 1	**Exploratory Hole Location Plan**



N

Legend

Locations By Type - DCP

GEOTECHNICS

203 Torrington Avenue
Tile Hill
Coventry
CV4 9AP

Phone: 024 7669 4664
Email: mail@geotechnics.co.uk
www.geotechnics.co.uk

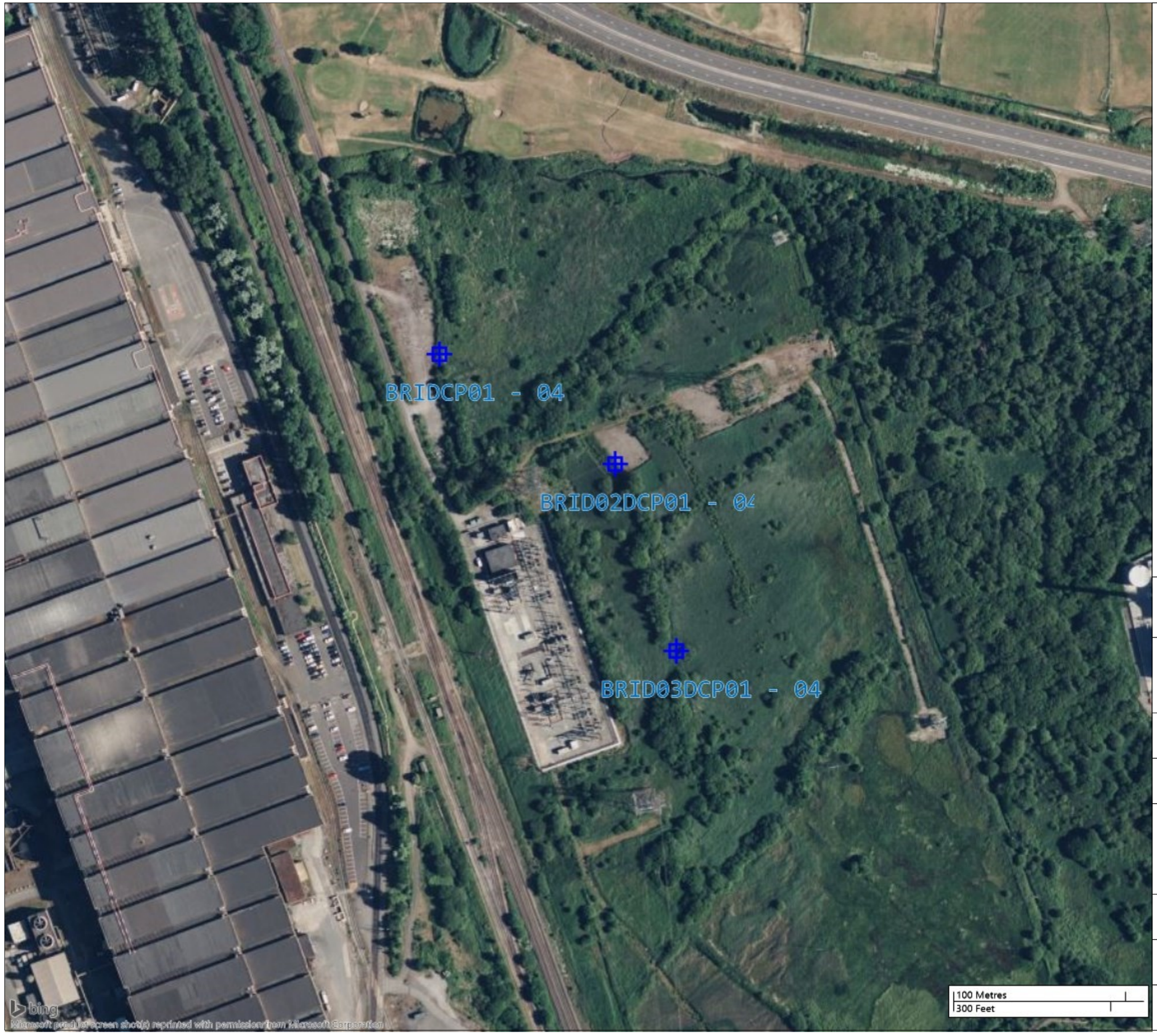
Engineer:
Baker Hicks

Client:
National Grid

Project:
National Grid - 101677 Margam TATA Steel Connection

Drawing Title:
Exploratory Hole Location Plan

Scale:	Date:
1:2000 at A3	**17/10/2024**
Project No.: **PC248745 - Phase 1**	**Exploratory Hole Location Plan**



N

Legend

Locations By Type - DCP

GEOTECHNICS

203 Torrington Avenue
Tile Hill
Coventry
CV4 9AP

Phone: 024 7669 4664
Email: mail@geotechnics.co.uk
www.geotechnics.co.uk

Engineer:
Baker Hicks

Client:
National Grid

Project:
National Grid - 101677 Margam TATA Steel Connection

Drawing Title:
Exploratory Hole Location Plan

Scale:	Date:
1:2200 at A3	**17/10/2024**

Project No.:	
PC248745 - Phase 1	**Exploratory Hole Location Plan**

APPENDIX 11

Monitoring Results

FIELDWORK - *In Situ Gas Monitoring - Hole Record*

Project National Grid - 101677 Margam TATA Steel Connection **Project No.** PC248745 -

Client National Grid **Location ID** BH111 (P1)

Sheet No. 1

Installation Details	Type	SP (52mm)					
	Depth to Base (m)	4.50					
	Ground Level (mOD)	3.03					
	Filter Zone (m)	1.00 - 4.50					
	Date Installed	17/09/2024					
	Cover Type	Upright lockable					
Reading	Date	**20/09/2024**	**30/09/2024**	**06/11/2024**	**20/11/2024**	**10/12/2024**	**17/01/2025**
	Time					**11:00**	**11:00**
Weather	Wind	Light	Light	Light	Light	Light	Light
	Precipitation	None	None	None	Slight	None	None
	Cloud Cover	Overcast	Overcast	Overcast	Overcast	Overcast	Slight
Atmospheric Pressure Trend							
Site Conditions	Temperature (°C)	13	12	12	1	9	7
	Ground Condition	Moist	Wet	Wet	Wet	Wet	Dry
Equipment used		Water Level Meter	Water Level Meter	Water Level Meter	Water Level Meter	Water Level Meter	Water Level Meter
Monitored by							
Depth to Water	m bgl	0.00	0.00	0.00	0.00	N/A	0.00
Methane (Peak) (CH_4)	% VOL						
Methane (Steady) (CH_4)	% VOL						
Carbon Dioxide (Peak)	% VOL						
Carbon Dioxide (Steady)	% VOL						
Oxygen (Peak)	% VOL						
Oxygen (Steady)	% VOL						
Hydrogen Sulphide (H_2S)	ppm						
Carbon Monoxide (CO)	ppm						
Barometric Pressure	mbar						
Differential Pressure	Pa						
Flow Rate (Peak)	l/hr						
Flow Rate (Steady)	l/hr						
PID Reading	ppm						
Remarks						Unable to monitor on saftey grounds	

GEOTECHNICS

FIELDWORK - *In Situ Gas Monitoring - Hole Record*

Project National Grid - 101677 Margam TATA Steel Connection **Project No.** PC248745 -

Client National Grid **Location ID** BH112 (P1)

Sheet No. 2

Installation Details	Type	SP (53mm)					
	Depth to Base (m)	6.00					
	Ground Level (mOD)	3.57					
	Filter Zone (m)	1.00 - 6.00					
	Date Installed	27/08/2024					
	Cover Type	Upright lockable					
Reading	Date	**20/09/2024**	**30/09/2024**	**06/11/2024**	**20/11/2024**	**10/12/2024**	**17/01/2025**
	Time					**11:00**	**11:00**
Weather	Wind	Light	Light	Light	Light	Light	Light
	Precipitation	None	None	None	Slight	None	None
	Cloud Cover	Overcast	Overcast	Overcast	Overcast	Overcast	Slight
Atmospheric Pressure Trend							
Site Conditions	Temperature (°C)	13	12	12	1	9	7
	Ground Condition	Moist	Wet	Wet	Wet	Wet	Dry
Equipment used		Water Level Meter	Water Level Meter	Water Level Meter	Water Level Meter	Water Level Meter	Water Level Meter
Monitored by							
Depth to Water	m bgl	0.10	0.10	0.10	0.10	0.10	0.10
Methane (Peak) (CH_4)	% VOL						
Methane (Steady) (CH_4)	% VOL						
Carbon Dioxide (Peak)	% VOL						
Carbon Dioxide (Steady)	% VOL						
Oxygen (Peak)	% VOL						
Oxygen (Steady)	% VOL						
Hydrogen Sulphide (H_2S)	ppm						
Carbon Monoxide (CO)	ppm						
Barometric Pressure	mbar						
Differential Pressure	Pa						
Flow Rate (Peak)	l/hr						
Flow Rate (Steady)	l/hr						
PID Reading	ppm						
Remarks							

GEOTECHNICS

INSITU TESTING - *Permeability (Borehole)*

Project	Margam FEED Phase 1	Borehole	BH108
		Project No	PC248745
		Test No	1
Client	Baker Hicks	Date	11/09/2024

Water Permeability Test in a Borehole using Open Systems in accordance with BS EN ISO 22282-2:2012

Borehole Details

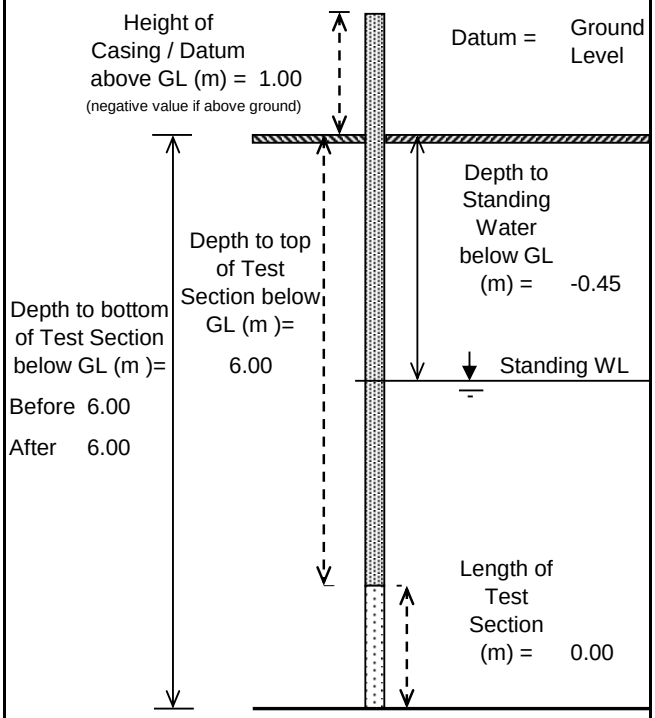
Inclination	Vertical
Method of Drilling	Cable Percussion
Co-ordinates (m)	E 278582.9
	N 186364.4
Level (m OD)	3.05

Test Details

Test Type	Variable Head - Rising
Hydrogeological Conditions	Test Section Saturated
Type of Filter	None
Isolation Device	None
Test Section Dia. (m)	0.20
Measuring Tube Dia. (m)	0.20

Test Measurements

Elapsed Time (minutes)	Depth of Water below Ground Level (m)		Elapsed Time (Continued) (minutes)	Depth of Water below Ground Level (continued) (m)
0.0	2.30			
0.5	1.50			
1.0	0.50			
1.5	0.00			
2.0	-0.45			



Before 6.00

After 6.00

Depth to Standing Water Level below Datum	-0.45	m
Depth to Induced Water Level below Datum	2.30	m
Differential head at start of Test (H_{o})	-2.75	m
Differential Head at end of Test (H_f)	0.00	m
Time Elapsed at end of test (t_f)	2.0	mins

Weather during Test	Windy
Test Carried Out By	SI
Test Checked By	IJ
Description of Test Section	Slightly sandy GRAVEL.

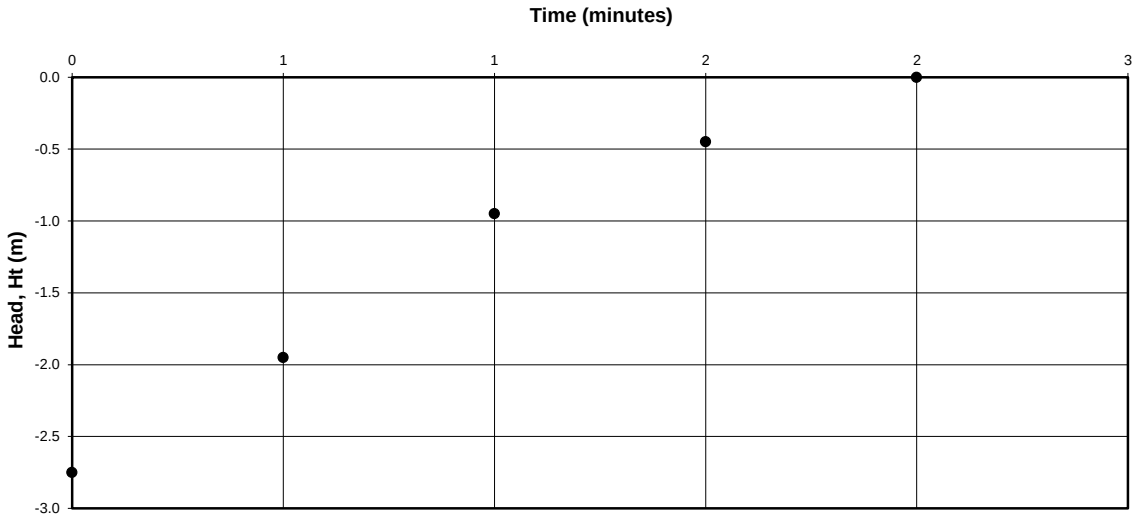
INSITU TESTING - *Permeability (Borehole)*

Project	Margam FEED Phase 1	Borehole	BH108
		Project No	PC248745
		Test No	1
Client	Baker Hicks	Date	11/09/2024

Test Results

Time (mins)	Measured Depth (m)	Relative Depth (m bgl)	Ht (m)	ΔH (m)
0.0	2.30	2.30	-2.75	0.00
0.5	1.50	1.50	-1.95	0.71
1.0	0.50	0.50	-0.95	0.35
1.5	0.00	0.00	-0.45	0.16
2.0	-0.45	-0.45	0.00	

Time (mins)	Measured Depth (m)	Relative Depth (m bgl)	Ht (m)	ΔH (m)



Remarks and Additional Information

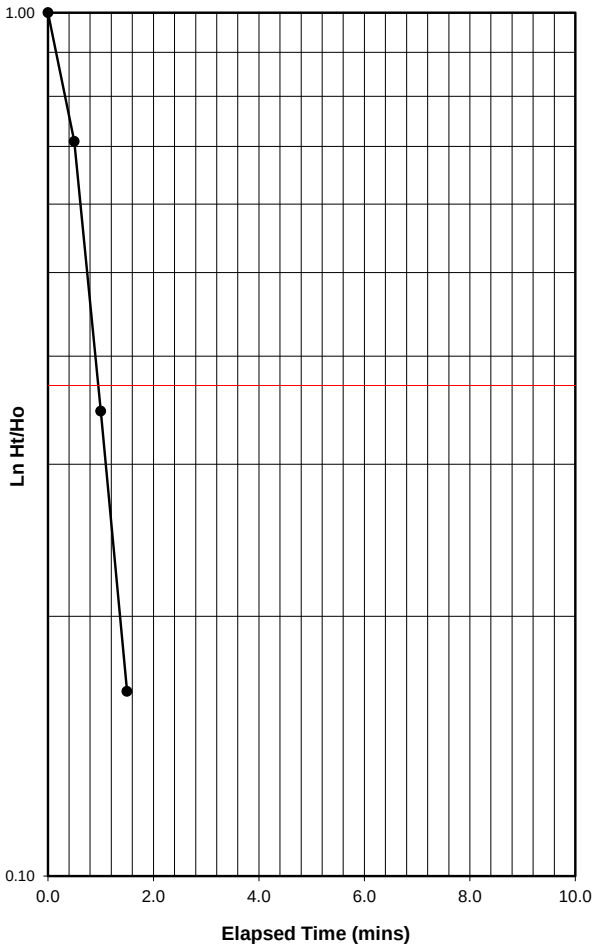
Shape Factor taken from BS 5930:1999 Figure 6b.

INSITU TESTING - *Permeability (Borehole)*

Project	Margam FEED Phase 1	Borehole	BH108
		Project No	PC248745
		Test No	1.000
Client	Baker Hicks	Date	11/09/2024

Calculation of Permeability using Hvorslev Method (Ref BS5930:1999 + A2:2010)

Time (mins)	Ht (m)	Ht/Ho	Time (mins)	Ht (m)	Ht/Ho	Time (mins)	Ht (m)	Ht/Ho
0.0	-2.75	1.00						
0.5	-1.95	0.71						
1.0	-0.95	0.35						
1.5	-0.45	0.16						
2.0	0.00	#N/A						



Type of Test	Variable Head - Rising	
Depth to Standing Water Level	-0.45	m
Depth to Induced Water Level	2.30	m
Differential head at start (H_{o})	-2.75	m
Diameter of Test Section	0.20	m
Diameter of Measuring Tub	0.20	m
Test Length (L)	0.00	m
Area of Test Section (As)	3.14E-02	m^2
Area of Measuring Tube (Al	3.14E-02	m^2

Time at ratio H/Ho=.37 :	1.00	mins

VARIABLE HEAD TEST	**(TIME LAG APPROACH)**	
Shape factor (F)	0.550	
Time Lag (T)	1.00	mins
Permeability (k) = A/FT	**9.52E-04**	**m/sec**

Remarks and Additional Information

Shape Factor taken from BS 5930:1999 Figure 6b.

APPENDIX 12

Laboratory Test Results - Geotechnical

APPENDIX 12

DATA SHEET - Laboratory Test Symbols

Classification and Strength

Symbol	**C - Clay**	**M - Silt**
	(0 - containing organic matter)	
	Plasticity	L - Low
		I - Intermediate
		H - High
		V - Very High
		E - Extremely High
Ip	Plasticity Index	
%	% retained on 425 µm sieve, shown under Ip value	
w_L	Liquid Limit	
w_P	Plastic Limit	
NP	Non-Plastic	
NAT	Sample tested in natural state	
w	Water Content	
P_d	Particle Density	
Test	**Quick undrained triaxial tests**	
	SS	Single stage - 102mm diameter.
	S3	Single stage - set of 3 38mm diameter.
	MS	Multistage - 102mm diameter.
	D	Drained Test
	HV	Hand Vane
	PP	Pocket Penetrometer (kg/cm²)
	NST	Not suitable for test
γ_b	Bulk Density	
σ_3	Triaxial Cell Pressure	
$\sigma_1 - \sigma_3$	Deviator Stress	
##	Excessive Strain	
c_u	Undrained Cohesion	
c	Cohesion Intercept	
ϕ	Angle of Shearing Resistance	
Linear Shrink	Linear Shrinkage	
Stab add-	Stabiliser which is added	

Consolidation

m_v	Coefficient of Volume Compressibility
c_{v50}	Coefficient of Consolidation - Log t
c_{v90}	Coefficient of Consolidation - $\sqrt{t}$

Rock

UF	Unacceptable Failure

Chemical Analysis

Acid Soluble	Total sulphate in specimen, expressed as SO_3 %, value in brackets expressed as SO_4 %
Water Soluble	Soluble sulphate in 2:1 water : soil extract, expressed as SO_3 g/l, value in brackets expressed as SO_4 g/l
In Water	Sulphate content of groundwater, expressed as SO_3 g/l, value in brackets expressed as SO_4 g/l
pH	pH value
Organic content	Organic content expressed as a percentage of dry weight
Chloride	Chloride Ion content expressed as a percentage of dry weight

MCV, Compaction, CBR

MCV	Moisture Condition Value at natural water content
MCC	Moisture Condition Calibration
CCV	Chalk Crushing Value

Compaction

Type	2.5	= 2.5 kg Rammer
	4.5	= 4.5 kg Rammer
	V	= Vibrating Hammer
γ_b	Bulk Density	
γ_d	Dry Density	

CBR California Bearing Ratio

Type	2.5	= Test on Specimen Recompacted using 2.5 kg Rammer
	4.5	= As above but using 4.5 kg Rammer
	V	= As above but using Vibrating Hammer
	M	= Test on open drive mould specimen cut in field
	S	= Soaked Specimen
Top	CBR at top of mould	
Bottom	CBR at bottom of mould	
ND	None Detected	
*	In the Sample Description denotes a laboratory only description	

LABORATORY TESTING - Shear Box

Sheet 1 *Form LAB002 Rev 0*

Project	National Grid - Margam FEED Phase 1	Hole	BH110
		Sample Depth	10.00 - 10.45m
Client	BakerHicks	Sample Type	UT
Project No.	PC248745	Sample Ref	

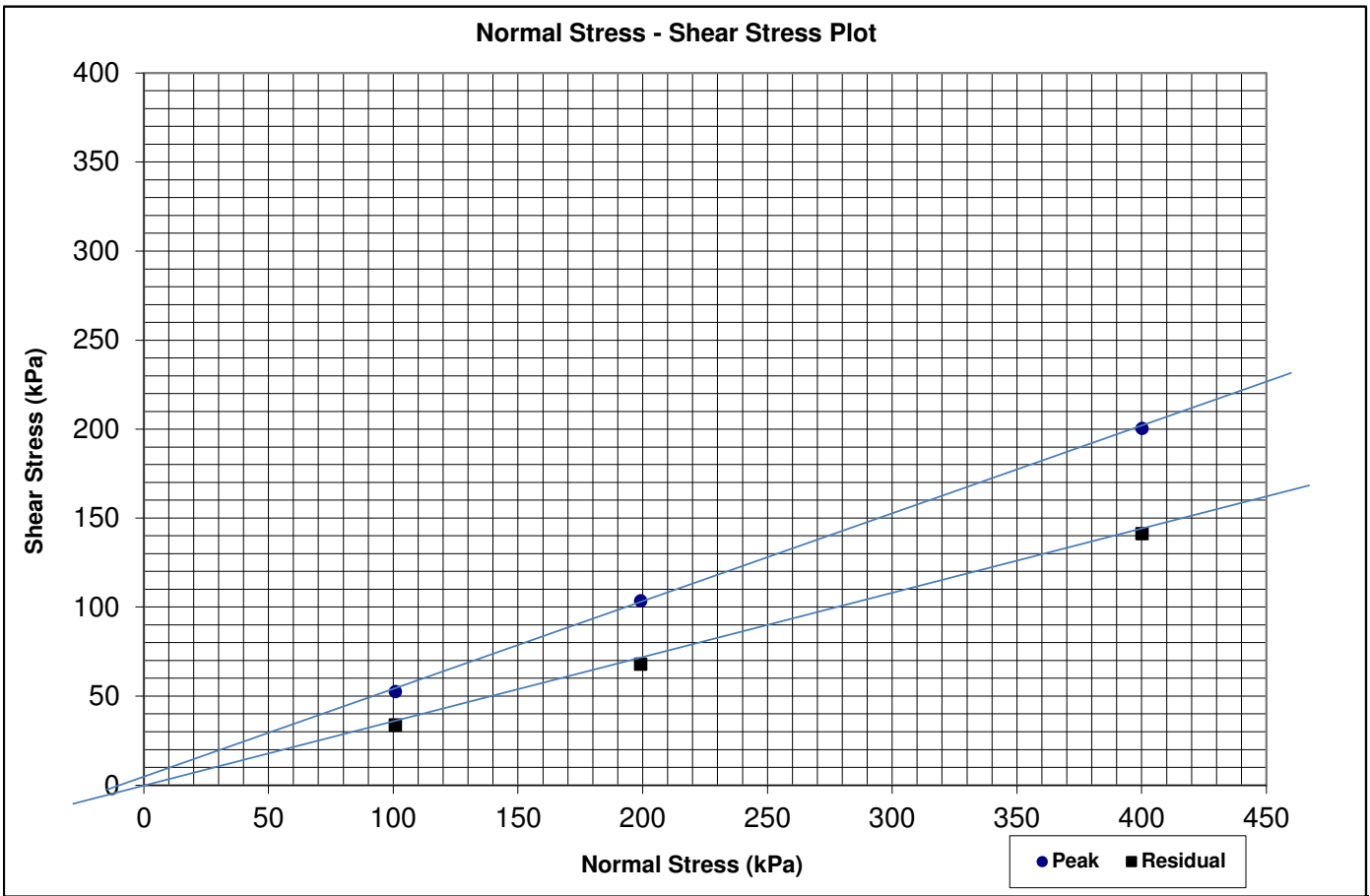
Test Type	Recompacted	Specimens Tested	Submerged at 19°C
Test Method	BS EN ISO 17892-10:2018		
Description	Dark grey gravelly CLAY		

Initial Dimensions

Specimen No.		1	2	3
Width	(mm)	60.060	60.060	60.040
Height	(mm)	23.90	23.91	23.90
Initial Water Content	(%)	15.0	14.8	14.9
Initial Bulk Density	(Mg/m^3)	2.17	2.18	2.19
Initial Dry Density	(Mg/m^3)	1.89	1.90	1.90
Particle Density	(Mg/m^3)	2.65 (Assumed)		
Initial Voids Ratio		0.405	0.396	0.392
Initial Degree of Saturation	(%)	98.0	99.2	100.5
Mass of Gravel retained on Shear Plane	(g)	-	-	-

Shear Box Test

Applied Normal Stress	(kPa)	100.9	199.2	400.3
Peak Shear Stress	(kPa)	52.45	103.40	200.22
Displacement to peak stress	(mm)	4.8	6.2	5.7
Residual Shear Stress	(kPa)	33.66	67.88	141.07
Displacement to residual stress	(mm)	6.3	8.2	7.7
Peak Rate of Strain	(mm/min)	0.02070		
Residual Rate of Strain	(mm/min)	0.02070		
Strain at Peak Shear Stress	(%)			

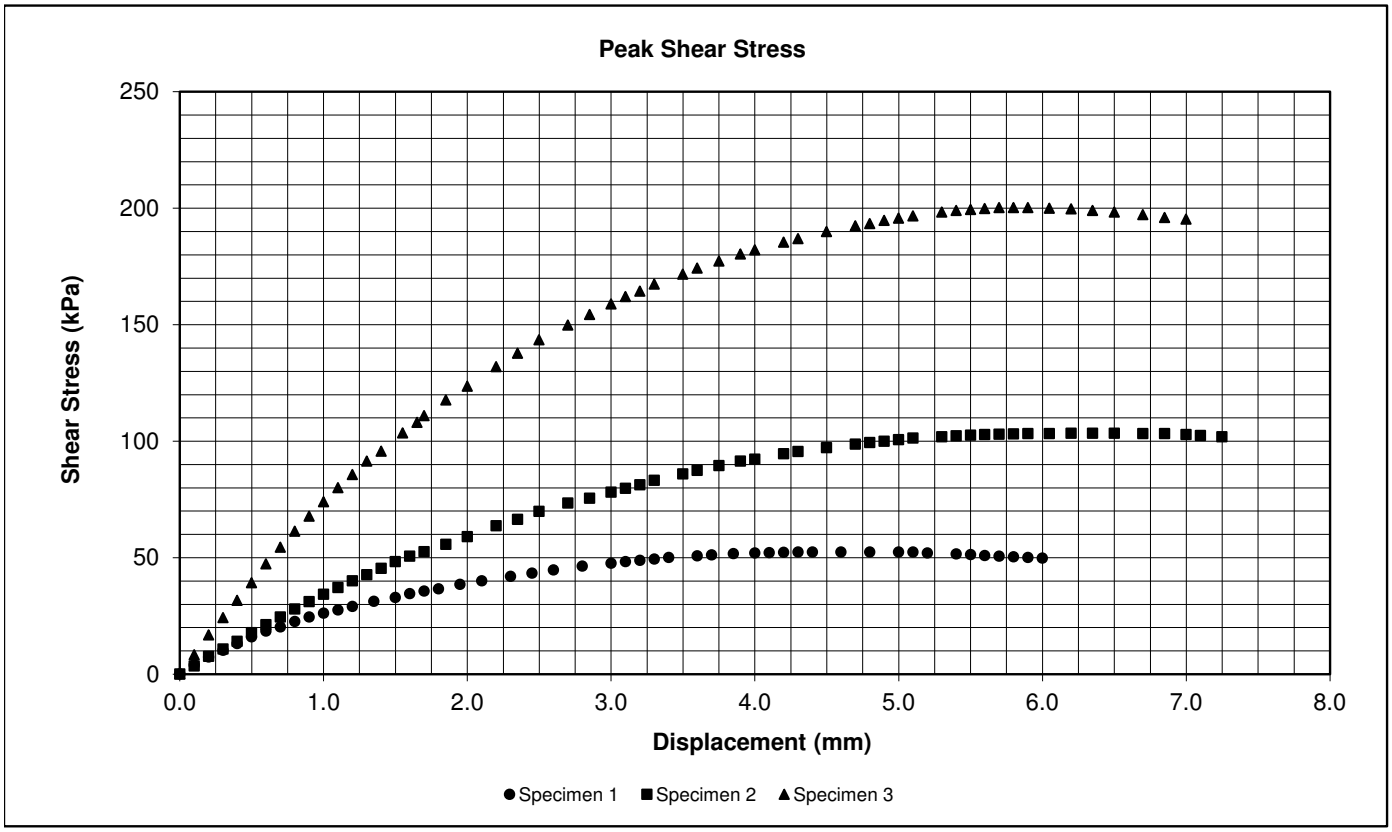


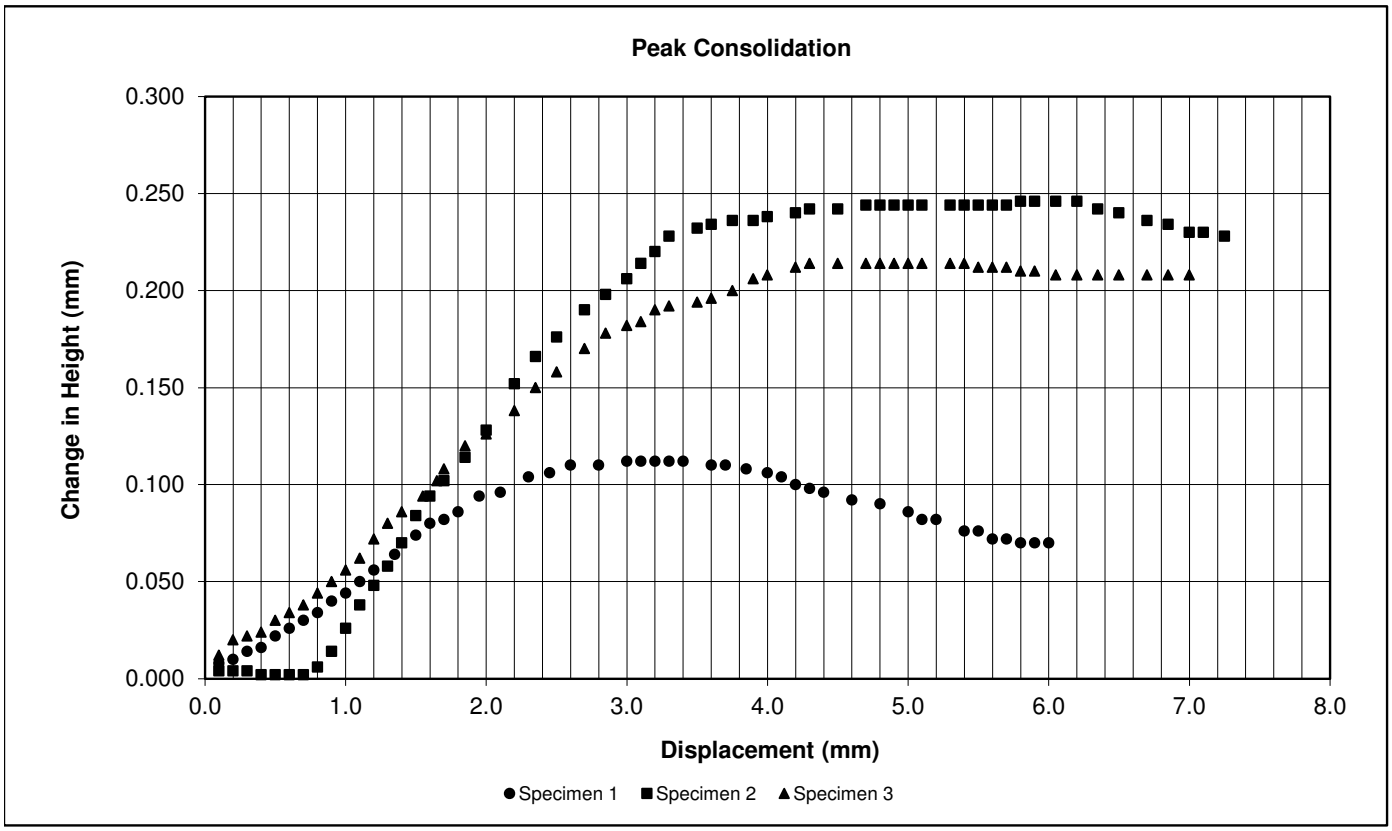
Peak Cohesion c' (kPa)	5.0	Residual Cohesion cr' (Kpa)	0.0
Peak Angle of Friction ϕ (°)	26.0	Residual Angle of Friction ϕr (°)	19.5

Remarks Recompacted using 2.5kg compaction rammer

GEOTECHNICS

Project	National Grid - Margam FEED Phase 1	Hole	BH110
		Sample Depth	10.00 - 10.45m
Client	BakerHicks	Sample Type	UT
Project No.	PC248745	Sample Ref	





Remarks

LABORATORY TESTING - Thermal Conductivity ASTM D5334-22a ^{e1}

Project	Margam FEED	Hole	BH106
		Sample Depth	2.50-3.50m
Client	BakerHicks	Sample Type	B
Project No.	PC248745	Test Date	30/10/2024

Specimen Description	Grey organic CLAY

Specimen	**1**	**2**	Units
Sample Diameter	100.10	-	mm
Sample Length	200.33	-	mm
Water Content	0.0	-	%
Bulk Density	1.29	-	Mg/m³
Dry Density	1.29	-	Mg/m³
Sample Mass	2036.1	-	g
Thermal Compound Applied to Needle	Yes	-	
Thermal Conductivity	**0.30**	**-**	W/(m.k)
Thermal Resistivity	**3.30**	**-**	(m.k)/W
Initial Temperature	18.8	-	°C

Test Method

Specimen 1 dried to constant mass at < 50°C with a pilot hole pre-formed prior to oven drying.

Needle inserted by pushing directly into sample (after cooling for oven dried specimen) and allowed to stabilise for 15 minutes to eliminate or minimize potential thermal drift.

Test Equipment

Tempos Readout unit with a TR-3 2.4mm diameter probe measures thermal conductivity and thermal resisitivity. The TR-3 probe is primarily designed for soil and other granular or porous materials. The probe heats for 60 seconds and concurrently records temperature and conductivity readings every 1 second.

The internal microprocessor uses an algorithm to obtain the value of thermal conductivity. This negates the need for a graphical plot of temperature against time elapsed.

Other Standards

BS EN 17892-2 : CL 5.1 Density by Linear Measurement (UKAS Accredited)

Remarks		GEOTECHNICS

LABORATORY TESTING - Thermal Conductivity ASTM D5334-22a ^{e1}

Project	Margam FEED	Hole	BH106
		Sample Depth	6.50-7.50m
Client	BakerHicks	Sample Type	B
Project No.	PC248745	Test Date	14/11/2024

Specimen Description	Sandy GRAVEL

Specimen	**1**	**2**	Units
Sample Diameter	99.82	-	mm
Sample Length	200.13	-	mm
Water Content	0.1	-	%
Bulk Density	1.88	-	Mg/m^3
Dry Density	1.87	-	Mg/m^3
Sample Mass	2938.3	-	g
Thermal Compound Applied to Needle	Yes	-	
Thermal Conductivity	**0.25**	**-**	W/(m.k)
Thermal Resistivity	**4.03**	**-**	(m.k)/W
Initial Temperature	23.4	-	°C

Test Method

Specimen 1 dried to constant mass at < 50°C with a pilot hole pre-formed prior to oven drying.

Needle inserted by pushing directly into sample (after cooling for oven dried specimen) and allowed to stabilise for 15 minutes to eliminate or minimize potential thermal drift.

Test Equipment

Tempos Readout unit with a TR-3 2.4mm diameter probe measures thermal conductivity and thermal resisitivity. The TR-3 probe is primarily designed for soil and other granular or porous materials. The probe heats for 60 seconds and concurrently records temperature and conductivity readings every 1 second.

The internal microprocessor uses an algorithm to obtain the value of thermal conductivity. This negates the need for a graphical plot of temperature against time elapsed.

Other Standards

BS EN 17892-2 : CL 5.1 Density by Linear Measurement (UKAS Accredited)

Remarks		GEOTECHNICS

LABORATORY TESTING - Thermal Conductivity ASTM D5334-22a ^{e1}

Project	Margam FEED	Hole	BH108
		Sample Depth	2.50-3.50m
Client	BakerHicks	Sample Type	B
Project No.	PC248745	Test Date	05/11/2024

Specimen Description	Black (wet) organic CLAY

Specimen	**1**	**2**	Units
Sample Diameter	100.07	-	mm
Sample Length	200.37	-	mm
Water Content	0.1	-	%
Bulk Density	1.15	-	Mg/m³
Dry Density	1.15	-	Mg/m³
Sample Mass	1812.2	-	g
Thermal Compound Applied to Needle	Yes	-	
Thermal Conductivity	**0.12**	**-**	W/(m.k)
Thermal Resistivity	**8.06**	**-**	(m.k)/W
Initial Temperature	17.9	-	°C

Test Method

Specimen 1 dried to constant mass at < 50°C with a pilot hole pre-formed prior to oven drying.

Needle inserted by pushing directly into sample (after cooling for oven dried specimen) and allowed to stabilise for 15 minutes to eliminate or minimize potential thermal drift.

Test Equipment

Tempos Readout unit with a TR-3 2.4mm diameter probe measures thermal conductivity and thermal resisitivity. The TR-3 probe is primarily designed for soil and other granular or porous materials. The probe heats for 60 seconds and concurrently records temperature and conductivity readings every 1 second.

The internal microprocessor uses an algorithm to obtain the value of thermal conductivity. This negates the need for a graphical plot of temperature against time elapsed.

Other Standards

BS EN 17892-2 : CL 5.1 Density by Linear Measurement (UKAS Accredited)

Remarks		GEOTECHNICS

LABORATORY TESTING - Thermal Conductivity ASTM D5334-22a ^{e1}

Project	Margam FEED	Hole	BH108
		Sample Depth	4.60-5.50m
Client	BakerHicks	Sample Type	B
Project No.	PC248745	Test Date	05/11/2024

Specimen Description	Dark grey slightly sandy slightly gravelly CLAY

Specimen	**1**	**2**	Units
Sample Diameter	100.07	-	mm
Sample Length	200.17	-	mm
Water Content	0.3	-	%
Bulk Density	1.80	-	Mg/m³
Dry Density	1.80	-	Mg/m³
Sample Mass	2840.8	-	g
Thermal Compound Applied to Needle	Yes	-	
Thermal Conductivity	**0.65**	**-**	W/(m.k)
Thermal Resistivity	**1.54**	**-**	(m.k)/W
Initial Temperature	17.5	-	°C

Test Method

Specimen 1 dried to constant mass at < 50°C with a pilot hole pre-formed prior to oven drying.

Needle inserted by pushing directly into sample (after cooling for oven dried specimen) and allowed to stabilise for 15 minutes to eliminate or minimize potential thermal drift.

Test Equipment

Tempos Readout unit with a TR-3 2.4mm diameter probe measures thermal conductivity and thermal resisitivity. The TR-3 probe is primarily designed for soil and other granular or porous materials. The probe heats for 60 seconds and concurrently records temperature and conductivity readings every 1 second.

The internal microprocessor uses an algorithm to obtain the value of thermal conductivity. This negates the need for a graphical plot of temperature against time elapsed.

Other Standards

BS EN 17892-2 : CL 5.1 Density by Linear Measurement (UKAS Accredited)

Remarks		GEOTECHNICS

LABORATORY TESTING - Thermal Conductivity ASTM D5334-22a ^{e1}

Project	Margam FEED	Hole	BH111
		Sample Depth	1.30-2.50m
Client	BakerHicks	Sample Type	B
Project No.	PC248745	Test Date	28/10/2024

Specimen Description	Dark grey organic CLAY

Specimen	**1**	**2**	Units
Sample Diameter	100.07	-	mm
Sample Length	200.17	-	mm
Water Content	0.0	-	%
Bulk Density	1.10	-	Mg/m³
Dry Density	1.10	-	Mg/m³
Sample Mass	1734.5	-	g
Thermal Compound Applied to Needle	Yes	-	
Thermal Conductivity	**0.09**	**-**	W/(m.k)
Thermal Resistivity	**11.54**	**-**	(m.k)/W
Initial Temperature	22.0	-	°C

Test Method

Specimen 1 dried to constant mass at < 50°C with a pilot hole pre-formed prior to oven drying.

Needle inserted by pushing directly into sample (after cooling for oven dried specimen) and allowed to stabilise for 15 minutes to eliminate or minimize potential thermal drift.

Test Equipment

Tempos Readout unit with a TR-3 2.4mm diameter probe measures thermal conductivity and thermal resisitivity. The TR-3 probe is primarily designed for soil and other granular or porous materials. The probe heats for 60 seconds and concurrently records temperature and conductivity readings every 1 second.

The internal microprocessor uses an algorithm to obtain the value of thermal conductivity. This negates the need for a graphical plot of temperature against time elapsed.

Other Standards

BS EN 17892-2 : CL 5.1 Density by Linear Measurement (UKAS Accredited)

Remarks		GEOTECHNICS

LABORATORY TESTING - Thermal Conductivity ASTM D5334-22a ^{e1}

Project	Margam FEED	Hole	BH111
		Sample Depth	3.50-4.50m
Client	BakerHicks	Sample Type	B
Project No.	PC248745	Test Date	22/10/2024

Specimen Description	Dark grey organic CLAY

Specimen	**1**	**2**	Units
Sample Diameter	100.07	-	mm
Sample Length	200.37	-	mm
Water Content	0.1	-	%
Bulk Density	1.06	-	Mg/m³
Dry Density	1.06	-	Mg/m³
Sample Mass	1676.8	-	g
Thermal Compound Applied to Needle	Yes	-	
Thermal Conductivity	**0.28**	**-**	W/(m.k)
Thermal Resistivity	**3.55**	**-**	(m.k)/W
Initial Temperature	24.5	-	°C

Test Method

Specimen 1 dried to constant mass at < 50°C with a pilot hole pre-formed prior to oven drying.

Needle inserted by pushing directly into sample (after cooling for oven dried specimen) and allowed to stabilise for 15 minutes to eliminate or minimize potential thermal drift.

Test Equipment

Tempos Readout unit with a TR-3 2.4mm diameter probe measures thermal conductivity and thermal resisitivity. The TR-3 probe is primarily designed for soil and other granular or porous materials. The probe heats for 60 seconds and concurrently records temperature and conductivity readings every 1 second.

The internal microprocessor uses an algorithm to obtain the value of thermal conductivity. This negates the need for a graphical plot of temperature against time elapsed.

Other Standards

BS EN 17892-2 : CL 5.1 Density by Linear Measurement (UKAS Accredited)

Remarks		GEOTECHNICS

LABORATORY TESTING - Thermal Conductivity ASTM D5334-22a ^{e1}

Project	Margam FEED	Hole	BH111
		Sample Depth	6.00-7.00m
Client	BakerHicks	Sample Type	B
Project No.	PC248745	Test Date	16/10/2024

Specimen Description	Grey gravelly CLAY

Specimen	**1**	**2**	Units
Sample Diameter	100.10	-	mm
Sample Length	200.33	-	mm
Water Content	0.1	-	%
Bulk Density	2.07	-	Mg/m³
Dry Density	2.07	-	Mg/m³
Sample Mass	3261.7	-	g
Thermal Compound Applied to Needle	Yes	-	
Thermal Conductivity	**1.17**	**-**	W/(m.k)
Thermal Resistivity	**0.86**	**-**	(m.k)/W
Initial Temperature	19.8	-	°C

Test Method

Specimen 1 dried to constant mass at < 50°C with a pilot hole pre-formed prior to oven drying.

Needle inserted by pushing directly into sample (after cooling for oven dried specimen) and allowed to stabilise for 15 minutes to eliminate or minimize potential thermal drift.

Test Equipment

Tempos Readout unit with a TR-3 2.4mm diameter probe measures thermal conductivity and thermal resisitivity. The TR-3 probe is primarily designed for soil and other granular or porous materials. The probe heats for 60 seconds and concurrently records temperature and conductivity readings every 1 second.

The internal microprocessor uses an algorithm to obtain the value of thermal conductivity. This negates the need for a graphical plot of temperature against time elapsed.

Other Standards

BS EN 17892-2 : CL 5.1 Density by Linear Measurement (UKAS Accredited)

Remarks		GEOTECHNICS

LABORATORY TESTING - Unconfined Compressive Strength

Project	National Grid - Margam FEED Phase 1	Hole	BH104
		Sample Depth	21.45-21.89m
Client	BakerHicks	Sample Type	C
Project No.	PC248745	Sample Ref	-

Laboratory Description	Light grey ROCK	Temp	19°C

Test Method: ASTM D7012-14 Method C
Preparation Method: ASTM D4543-19
Compression Device: VJT51-2011-2000kN EN Automatic Digital Compression Machine

Sample Diameter	85.88	mm
Sample Length	201.86	mm
Length to Diameter Ratio	2.4	

Water Content	1.0	%
Bulk Density	2.65	Mg/m^3
Dry Density	2.63	Mg/m^3

Flatness	Fail	≤0.025mm
Perpendicularity	Fail	≤0.0043
Straightness	Pass	≤0.50mm
Length to Diameter Ratio	Pass	≥ 2

*	**Unconfined Compressive Strength**	**64.86**	**MPa**
	Time To Failure	12:08	mins:secs
	Rate of Loading	0.5	kN/s
	Load at Failure	375.7	kN

Sample Failure Image



* Corrected for Compression device calibration

Remarks	

LABORATORY TESTING - Unconfined Compressive Strength

Project	National Grid - Margam FEED Phase 1	Hole	BH104
		Sample Depth	24.95-25.35m
Client	BakerHicks	Sample Type	C
Project No.	PC248745	Sample Ref	-

Laboratory Description	Dark grey ROCK	Temp	19°C

Test Method: ASTM D7012-14 Method C
Preparation Method: ASTM D4543-19
Compression Device: VJT51-2011-2000kN EN Automatic Digital Compression Machine

Sample Diameter	85.82	mm
Sample Length	201.49	mm
Length to Diameter Ratio	2.3	

Water Content	1.1	%
Bulk Density	2.67	Mg/m³
Dry Density	2.64	Mg/m³

Flatness	Fail	≤0.025mm
Perpendicularity	Fail	≤0.0043
Straightness	Pass	≤0.50mm
Length to Diameter Ratio	Pass	≥ 2

*	**Unconfined Compressive Strength**	**63.92**	**MPa**
	Time To Failure	12:16	mins:secs
	Rate of Loading	0.5	kN/s
	Load at Failure	369.8	kN

Sample Failure Image



* Corrected for Compression device calibration

Remarks	

LABORATORY TESTING - Unconfined Compressive Strength

Project	National Grid - Margam FEED Phase 1	Hole	BH107
		Sample Depth	28.15-28.33m
Client	BakerHicks	Sample Type	C
Project No.	PC248745	Sample Ref	-

Laboratory Description	Light grey ROCK	Temp	19°C

Test Method: ASTM D7012-14 Method C
Preparation Method: ASTM D4543-19
Compression Device: VJT51-2011-2000kN EN Automatic Digital Compression Machine

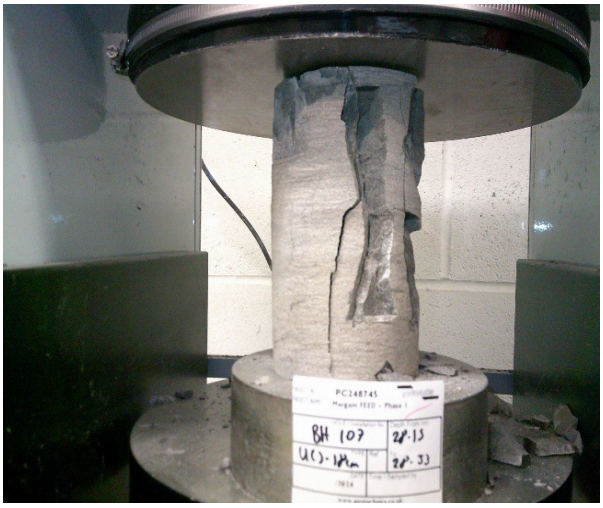
Sample Diameter	85.42	mm
Sample Length	150.59	mm
Length to Diameter Ratio	1.8	

Water Content	0.7	%
Bulk Density	2.58	Mg/m^3
Dry Density	2.56	Mg/m^3

Flatness	Fail	≤0.025mm
Perpendicularity	Fail	≤0.0043
Straightness	Fail	≤0.50mm
Length to Diameter Ratio	Fail	≥ 2

*	**Unconfined Compressive Strength**	**81.37**	**MPa**
	Time To Failure	09:27	mins:secs
	Rate of Loading	0.8	kN/s
	Load at Failure	466.3	kN

Sample Failure Image



* Corrected for Compression device calibration

Remarks	Where length to diameter ratio shows 'Fail', this indicates the test specimen is < 2:1 ratio. The reported results may differ from results obtained from a specimen that meets the requirements

LABORATORY TESTING - Unconfined Compressive Strength

Project	National Grid - Margam FEED Phase 1	Hole	BH107
		Sample Depth	36.25-36.50m
Client	BakerHicks	Sample Type	C
Project No.	PC248745	Sample Ref	-

Laboratory Description	Light grey ROCK	Temp	19°C

Test Method: ASTM D7012-14 Method C
Preparation Method: ASTM D4543-19
Compression Device: VJT51-2011-2000kN EN Automatic Digital Compression Machine

Sample Diameter	85.72	mm
Sample Length	200.71	mm
Length to Diameter Ratio	2.3	

Water Content	0.8	%
Bulk Density	2.55	Mg/m^3
Dry Density	2.53	Mg/m^3

Flatness	Fail	≤0.025mm
Perpendicularity	Fail	≤0.0043
Straightness	Pass	≤0.50mm
Length to Diameter Ratio	Pass	≥ 2

*	**Unconfined Compressive Strength**	**49.01**	**MPa**
	Time To Failure	09:27	mins:secs
	Rate of Loading	0.5	kN/s
	Load at Failure	282.8	kN

Sample Failure Image



* Corrected for Compression device calibration

Remarks	

LABORATORY TESTING - Unconfined Compressive Strength

Project	National Grid - Margam FEED Phase 1	Hole	BH109
		Sample Depth	27.00-27.26m
Client	BakerHicks	Sample Type	C
Project No.	PC248745	Sample Ref	-

Laboratory Description	Dark grey ROCK	Temp	19°C

Test Method: ASTM D7012-14 Method C
Preparation Method: ASTM D4543-19
Compression Device: VJT51-2011-2000kN EN Automatic Digital Compression Machine

Sample Diameter	85.70	mm
Sample Length	151.01	mm
Length to Diameter Ratio	1.8	

Water Content	1.0	%
Bulk Density	2.59	Mg/m^3
Dry Density	2.56	Mg/m^3

Flatness	Fail	≤0.025mm
Perpendicularity	Fail	≤0.0043
Straightness	Fail	≤0.50mm
Length to Diameter Ratio	Fail	≥ 2

*	**Unconfined Compressive Strength**	**48.47**	**MPa**
	Time To Failure	09:16	mins:secs
	Rate of Loading	0.5	kN/s
	Load at Failure	279.6	kN

Sample Failure Image



* Corrected for Compression device calibration

Remarks	Where length to diameter ratio shows 'Fail', this indicates the test specimen is < 2:1 ratio. The reported results may differ from results obtained from a specimen that meets the requirements

LABORATORY TESTING - Unconfined Compressive Strength

Project	National Grid - Margam FEED Phase 1	Hole	BH109
		Sample Depth	34.03-34.22m
Client	BakerHicks	Sample Type	C
Project No.	PC248745	Sample Ref	-

Laboratory Description	Dark grey ROCK	Temp	19°C

Test Method: ASTM D7012-14 Method C
Preparation Method: ASTM D4543-19
Compression Device: VJT51-2011-2000kN EN Automatic Digital Compression Machine

Sample Diameter	85.71	mm
Sample Length	131.48	mm
Length to Diameter Ratio	1.5	

Water Content	2.1	%
Bulk Density	2.47	Mg/m^3
Dry Density	2.42	Mg/m^3

Flatness	Fail	≤0.025mm
Perpendicularity	Fail	≤0.0043
Straightness	Fail	≤0.50mm
Length to Diameter Ratio	Fail	≥ 2

*	**Unconfined Compressive Strength**	**6.54**	**MPa**
	Time To Failure	01:39	mins:secs
	Rate of Loading	0.5	kN/s
	Load at Failure	37.7	kN

Sample Failure Image



* Corrected for Compression device calibration

Remarks	Where length to diameter ratio shows 'Fail', this indicates the test specimen is < 2:1 ratio. The reported results may differ from results obtained from a specimen that meets the requirements

LABORATORY TESTING - Unconfined Compressive Strength

Project	National Grid - Margam FEED Phase 1	Hole	BH109
		Sample Depth	34.50-34.77m
Client	BakerHicks	Sample Type	C
Project No.	PC248745	Sample Ref	-

Laboratory Description	Dark grey ROCK	Temp	19°C

Test Method: ASTM D7012-14 Method C
Preparation Method: ASTM D4543-19
Compression Device: VJT51-2011-2000kN EN Automatic Digital Compression Machine

Sample Diameter	85.55	mm
Sample Length	150.95	mm
Length to Diameter Ratio	1.8	

Water Content	2.1	%
Bulk Density	2.54	Mg/m^3
Dry Density	2.49	Mg/m^3

Flatness	Fail	≤0.025mm
Perpendicularity	Fail	≤0.0043
Straightness	Fail	≤0.50mm
Length to Diameter Ratio	Fail	≥ 2

*	**Unconfined Compressive Strength**	**8.28**	**MPa**
	Time To Failure	01:56	mins:secs
	Rate of Loading	0.5	kN/s
	Load at Failure	47.6	kN

Sample Failure Image



* Corrected for Compression device calibration

Remarks	Where length to diameter ratio shows 'Fail', this indicates the test specimen is < 2:1 ratio. The reported results may differ from results obtained from a specimen that meets the requirements

LABORATORY TESTING - Unconfined Compressive Strength

Project	National Grid - Margam FEED Phase 1	Hole	BH109
		Sample Depth	38.7-38.92m
Client	BakerHicks	Sample Type	C
Project No.	PC248745	Sample Ref	-

Laboratory Description	Dark grey ROCK	Temp	19°C

Test Method: ASTM D7012-14 Method C
Preparation Method: ASTM D4543-19
Compression Device: VJT51-2011-2000kN EN Automatic Digital Compression Machine

Sample Diameter	85.64	mm
Sample Length	132.77	mm
Length to Diameter Ratio	1.6	

Water Content	2.9	%
Bulk Density	2.54	Mg/m^3
Dry Density	2.47	Mg/m^3

Flatness	Fail	≤0.025mm
Perpendicularity	Fail	≤0.0043
Straightness	Fail	≤0.50mm
Length to Diameter Ratio	Fail	≥ 2

*	**Unconfined Compressive Strength**	**4.29**	**MPa**
	Time To Failure	02:01	mins:secs
	Rate of Loading	0.5	kN/s
	Load at Failure	24.7	kN

Sample Failure Image



* Corrected for Compression device calibration

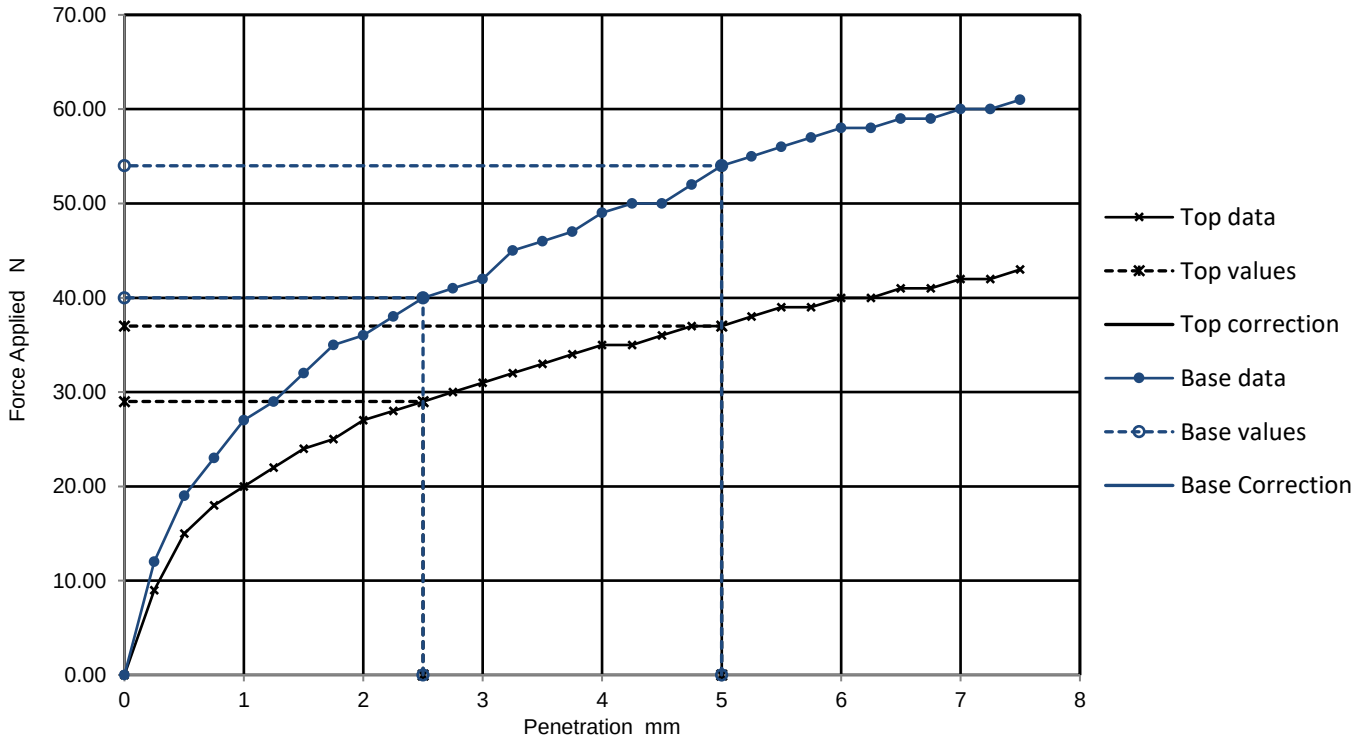
Remarks	Where length to diameter ratio shows 'Fail', this indicates the test specimen is < 2:1 ratio. The reported results may differ from results obtained from a specimen that meets the requirements

GEOTECHNICS	California Bearing Ratio (CBR)				Project Number	PC248745
					Hole Number	BH106
Project Name	National Grid - Margam FEED Phase 1				Sample Number	
Specimen Reference		Specimen Depth		m	Depth (m)	0.50 - 1.00
Specimen Description	Dark grey clayey PEAT				Sample Type	B
Test Method	BS1377 : Part 4 : 1990, clause 7					

Specimen Preparation

Condition	REMOULDED		* Soaking details	Not soaked	
Details	Recompacted with specified standard effort using 2.5kg rammer		Period of soaking		days
			Time to surface		days
			Amount of swell recorded		mm
Material retained on 20mm sieve removed	0	%	Dry density after soaking	0.94	Mg/m3
Initial Specimen details	Bulk density	1.54 Mg/m3	Surcharge applied	12.3	kg
	Dry density	0.94 Mg/m3	Equivalent Overburden	7	kPa
	Moisture content	%			

Force v Penetration Plots



Results

	Curve correction applied	CBR Values, % 2.5mm	5mm	Highest	#Average	Moisture Content %
TOP	No	0.2	0.2	0.2		62.4
BASE	No	0.3	0.3	0.3		65.3

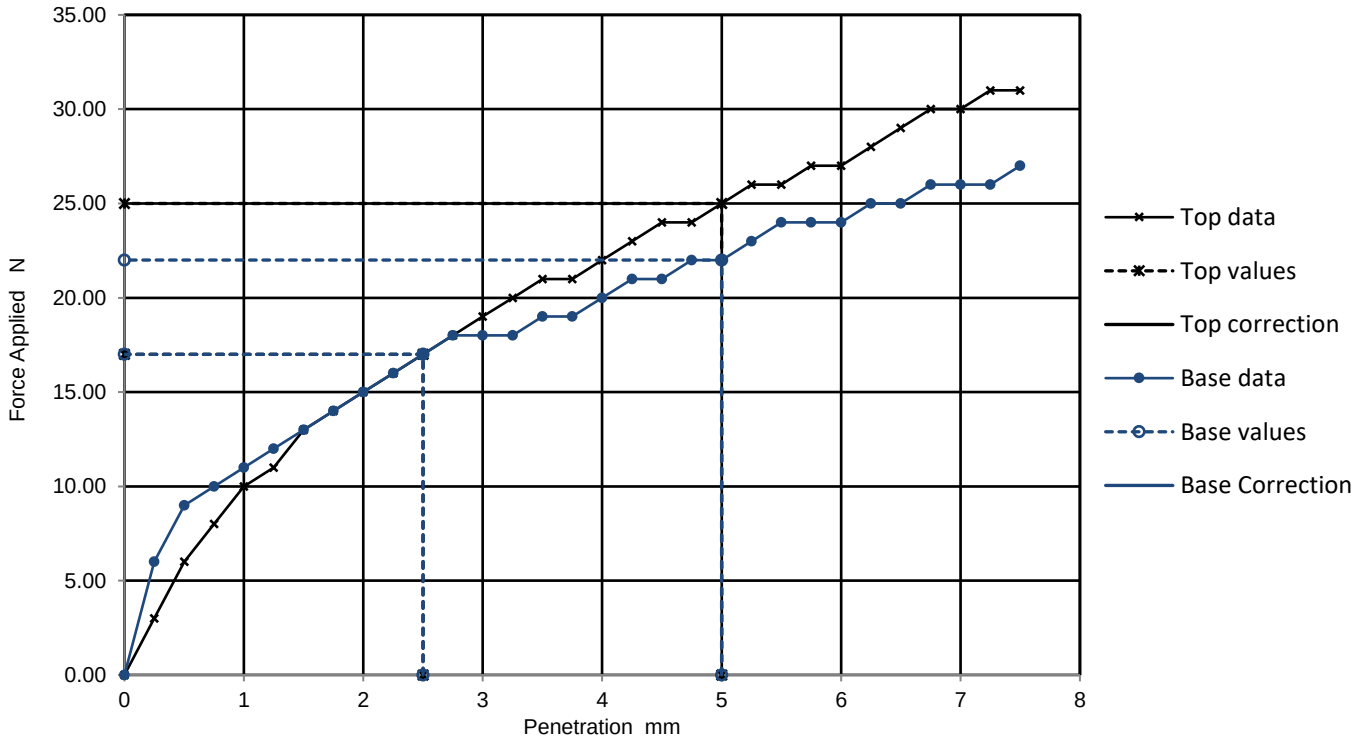
Remarks	Test Specific Remarks	Printed	
Dried at 50°C		18/11/2024	UKAS TESTING 1365
*Soaking (if applicable) not UKAS accredited. #Average value reported if ±10%			

GEOTECHNICS	California Bearing Ratio (CBR)				Project Number	PC248745
					Hole Number	BH106
Project Name	National Grid - Margam FEED Phase 1				Sample Number	
Specimen Reference		Specimen Depth		m	Depth (m)	2.50 - 3.50
Specimen Description	Grey organic CLAY				Sample Type	B
Test Method	BS1377 : Part 4 : 1990, clause 7					

Specimen Preparation

Condition	REMOULDED		* Soaking details	Not soaked	
Details	Recompacted with specified standard effort using 2.5kg rammer		Period of soaking		days
			Time to surface		days
			Amount of swell recorded		mm
Material retained on 20mm sieve removed	0	%	Dry density after soaking	0.63	Mg/m3
Initial Specimen details	Bulk density	1.34 Mg/m3	Surcharge applied	12.3	kg
	Dry density	0.63 Mg/m3	Equivalent Overburden	7	kPa
	Moisture content	%			

Force v Penetration Plots



Results

	Curve correction applied	CBR Values, %				Moisture Content %
		2.5mm	5mm	Highest	#Average	
TOP	No	0.1	0.1	0.1	0.1	113.2
BASE	No	0.1	0.1	0.1		112.2

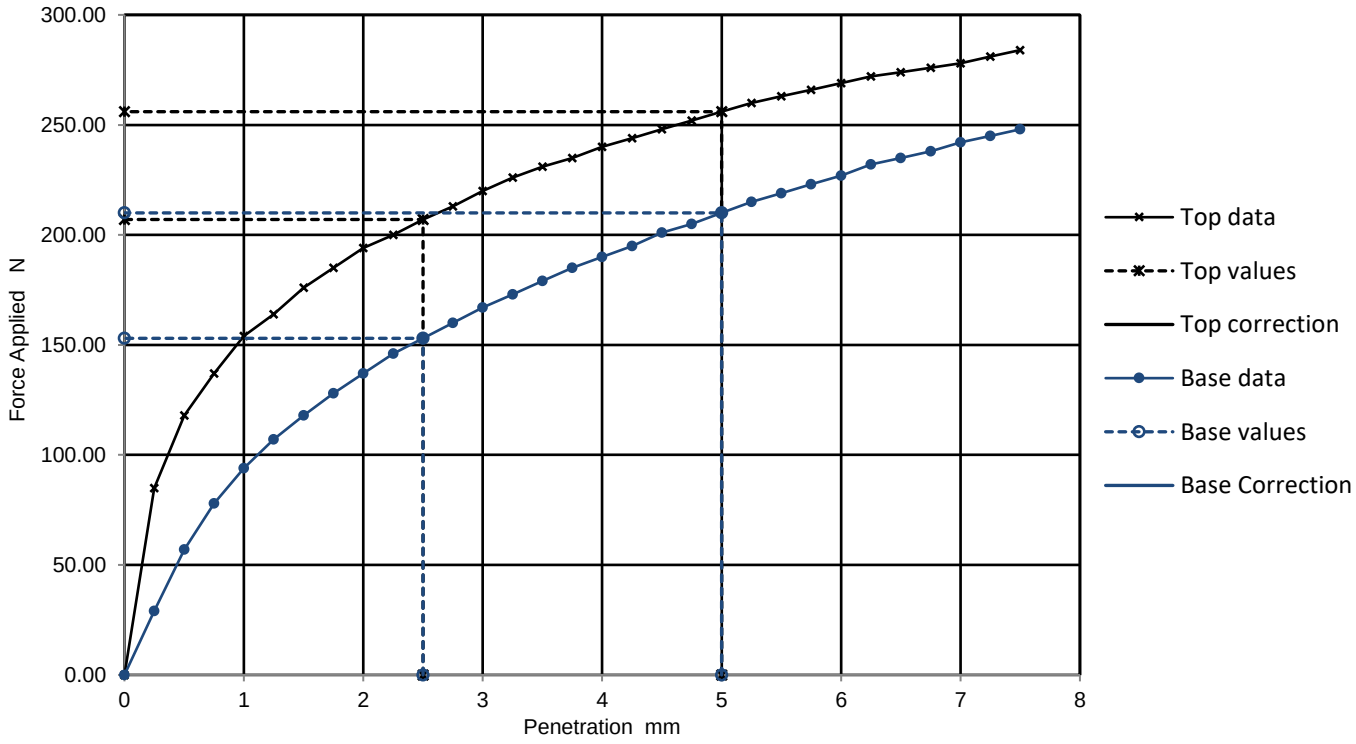
Remarks	Test Specific Remarks	Printed	
	Dried at 50°C	18/11/2024	UKAS TESTING 1365
*Soaking (if applicable) not UKAS accredited. #Average value reported if ±10%			

GEOTECHNICS	California Bearing Ratio (CBR)				Project Number	PC248745
					Hole Number	TP108
Project Name	National Grid - Margam FEED Phase 1				Sample Number	
Specimen Reference		Specimen Depth		m	Depth (m)	0.40 - 1.40
Specimen Description	Grey CLAY.				Sample Type	B
Test Method	BS1377 : Part 4 : 1990, clause 7					

Specimen Preparation

Condition	REMOULDED		* Soaking details	Not soaked	
Details	Recompacted with specified standard effort using 2.5kg rammer		Period of soaking		days
			Time to surface		days
			Amount of swell recorded		mm
Material retained on 20mm sieve removed	0	%	Dry density after soaking	1.35	Mg/m3
Initial Specimen details	Bulk density	1.83 Mg/m3	Surcharge applied	12.3	kg
	Dry density	1.35 Mg/m3	Equivalent Overburden	7	kPa
	Moisture content	%			

Force v Penetration Plots



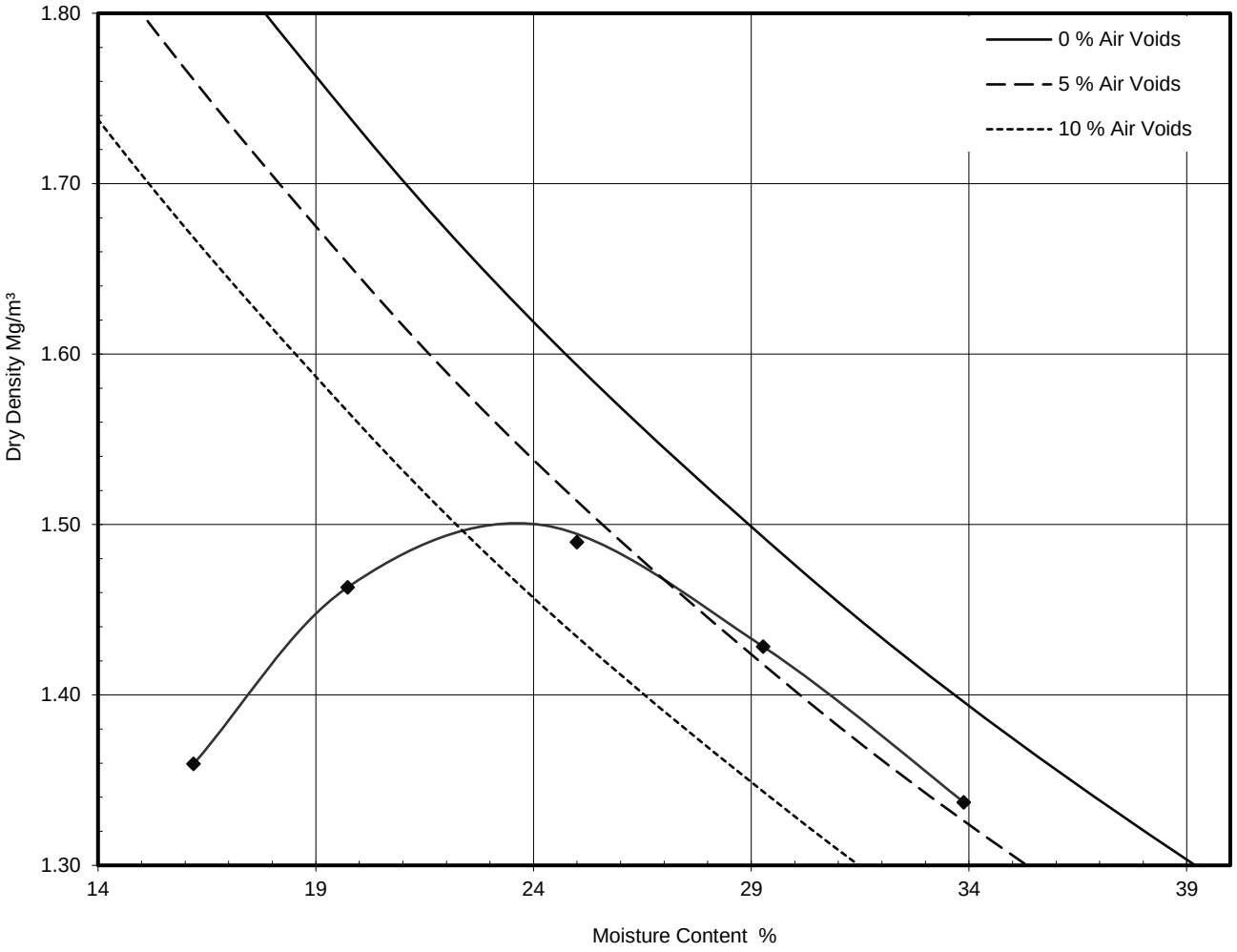
Results

	Curve correction applied	CBR Values, % 2.5mm	5mm	Highest	#Average	Moisture Content %
TOP	No	1.6	1.3	1.6		34.9
BASE	No	1.2	1.1	1.2		35.7

Remarks	Test Specific Remarks	Printed	
		18/11/2024	UKAS TESTING 1365

*Soaking (if applicable) not UKAS accredited. #Average value reported if ±10%

GEOTECHNICS	**Dry Density / Moisture Content Relationship 2.5kg Compaction**	Project Number	PC248745
		Hole Number	TP102
Project Name	National Grid - Margam FEED Phase 1	Sample Number	
Specimen Description	Dark grey organic CLAY	Depth m	2.50 - 3.00
Test Method	BS1377:Part 4:1990, clause 3.3, 2.5kg rammer	Sample Type	B



Preparation		Material used was natural
Mould Type		1 LITRE
Samples Used		Single sample tested.
Material Retained on 37.5 mm Sieve	%	0
Material Retained on 20.0 mm Sieve	%	0
Particle Density - Assumed	Mg/m³	2.65

Maximum Dry Density	Mg/m³	**1.50**
Optimum Moisture Content	%	**24**

Remarks

NMC = 55% All testing dried at <50°C

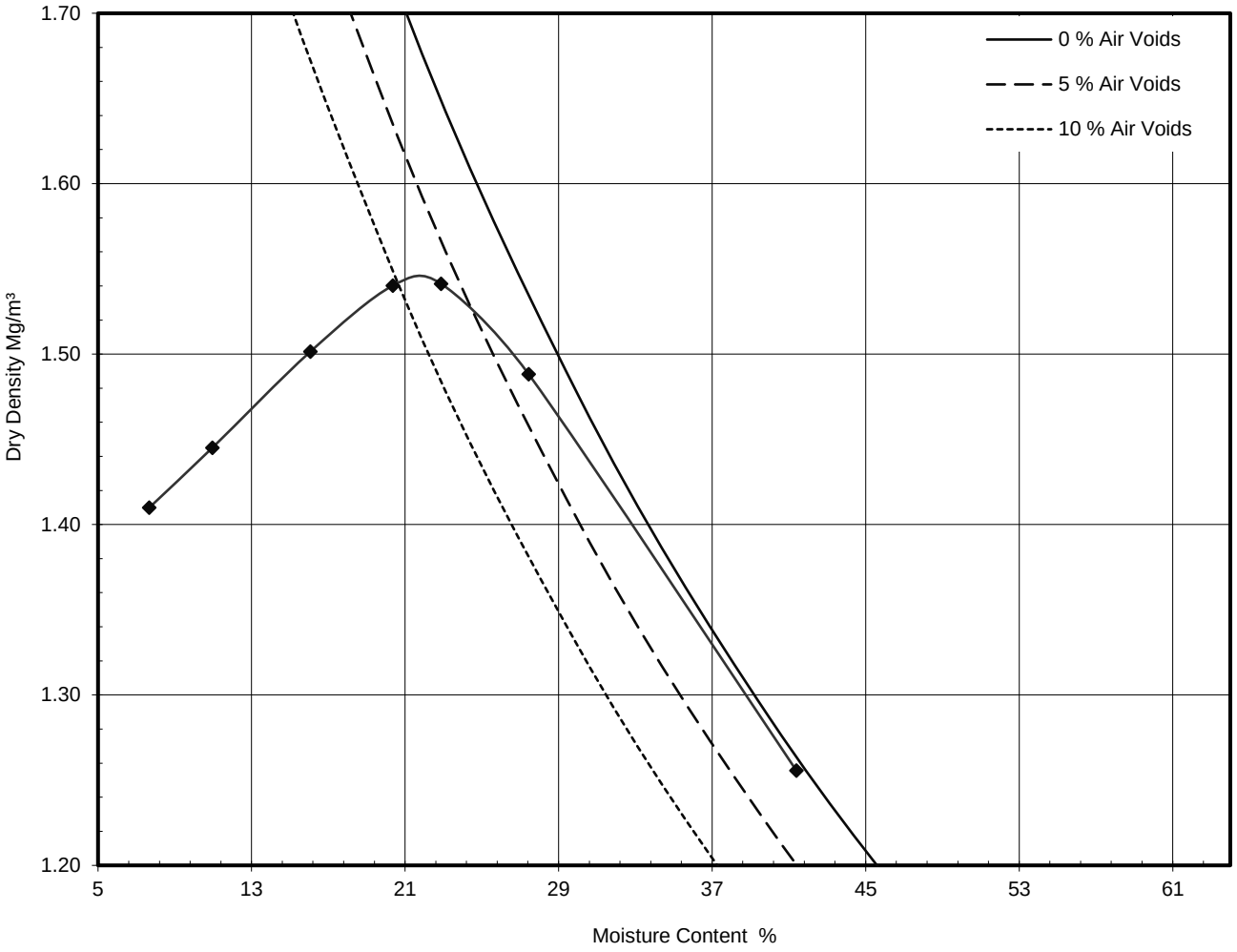
Printed

18/11/2024

UKAS TESTING

1365

GEOTECHNICS	**Dry Density / Moisture Content Relationship 2.5kg Compaction**	Project Number	PC248745
		Hole Number	TP111
Project Name	National Grid - Margam FEED Phase 1	Sample Number	
Specimen Description	Brown mottled black slightly gravelly CLAY with organic material	Depth m	1.00 - 1.60
Test Method	BS1377:Part 4:1990, clause 3.3, 2.5kg rammer	Sample Type	B



Preparation		Material used was natural
Mould Type		1 LITRE
Samples Used		Single sample tested.
Material Retained on 37.5 mm Sieve	%	0
Material Retained on 20.0 mm Sieve	%	0
Particle Density - Assumed	Mg/m³	2.65

Maximum Dry Density	Mg/m³	**1.55**

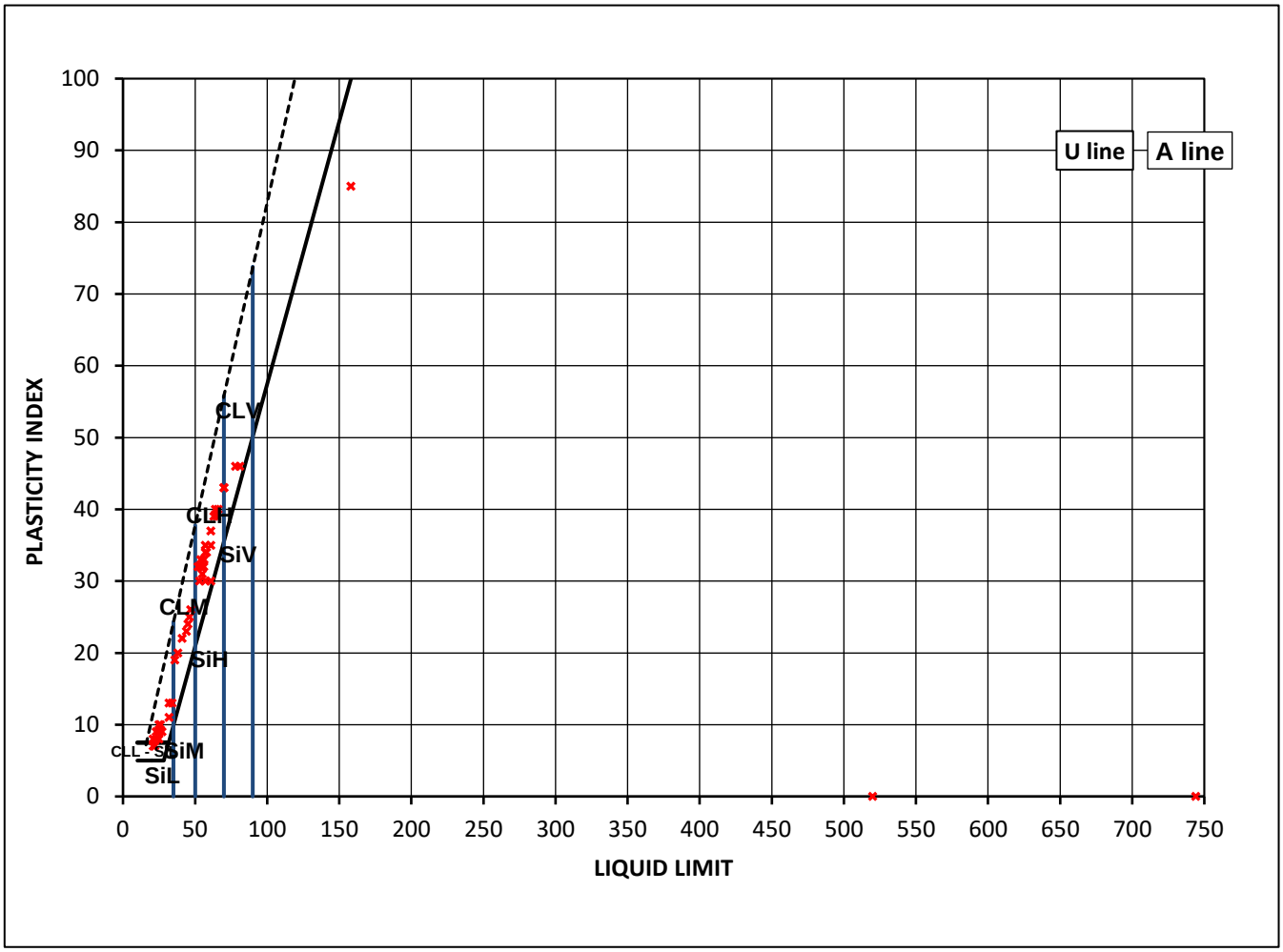
Optimum Moisture Content	%	**22**

Remarks	Printed	
NMC = 41%	18/11/2024	UKAS TESTING 1365

GEOTECHNICS

Plasticity (A-line) Chart

Project No.	Project Name
PC248745	National Grid - Margam FEED Phase 1



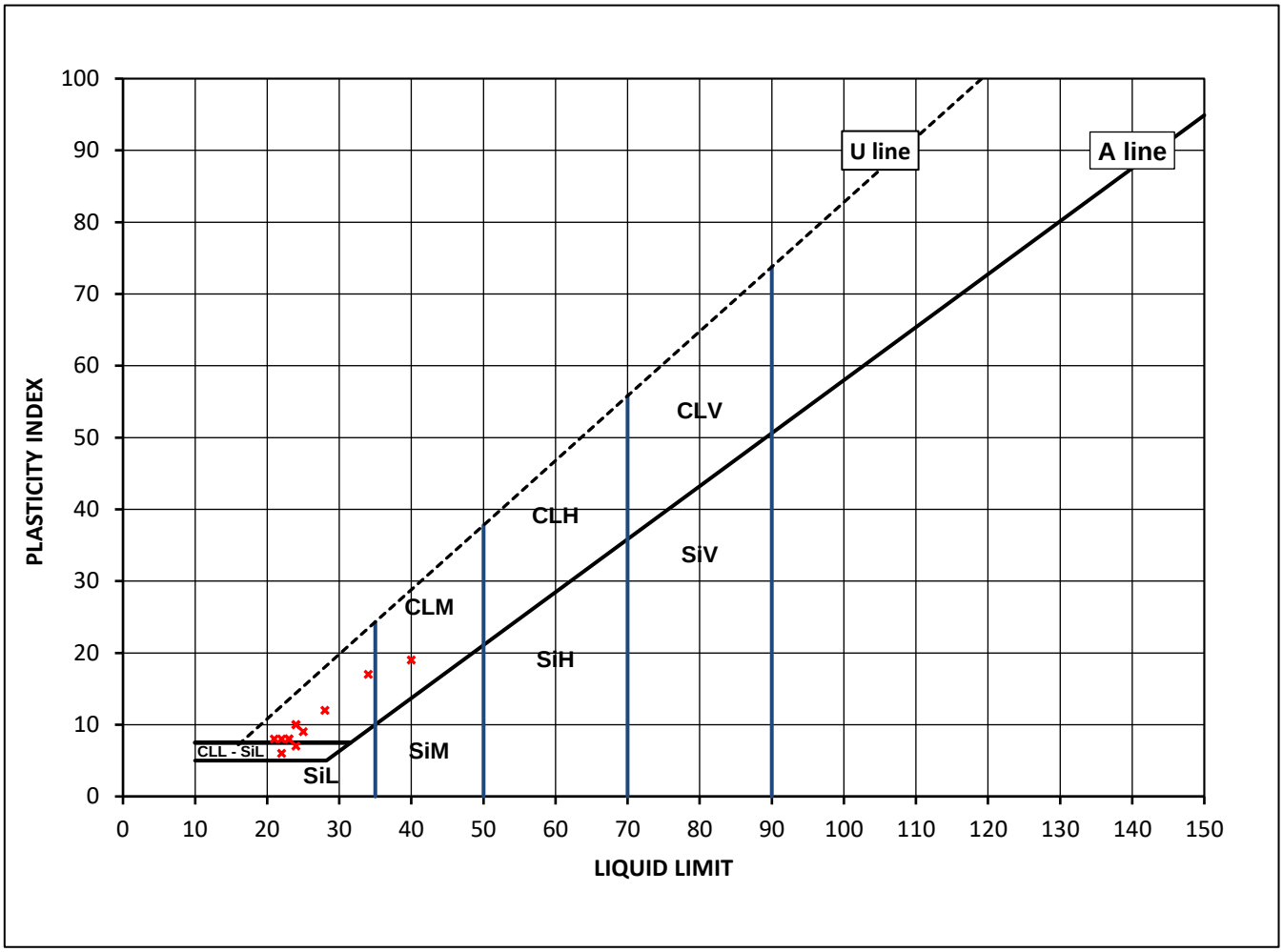
Legend based on BS EN ISO 14688-2:2018

		Plasticity		Liquid Limit
CL	Clay	L	Low	below 35
Si	Silt	I	Medium	35 to 50
		H	High	50 to 70
		V	Very high	70 to 90
	Organic	O	append to classification for organic material (eg CHO)	

Notes	Date Printed
Plotted Test results from BS EN ISO 17892-12 include 4pt and 1pt tests, unless otherwise detailed on the classification summary report. See individual results for more detail. A' line derivation above PI of 6, PI = 0.73 (LL-20)	18/11/2024

Plasticity (A-line) Chart

Project No.	Project Name
PC248745	National Grid - Margam FEED Phase 1



Legend based on BS EN ISO 14688-2:2018

		Plasticity		Liquid Limit
CL	Clay	L	Low	below 35
Si	Silt	I	Medium	35 to 50
		H	High	50 to 70
		V	Very high	70 to 90
	Organic	O	append to classification for organic material (eg CHO)	

Notes

Plotted Test results from BS EN ISO 17892-12 include 4pt and 1pt tests, unless otherwise detailed on the classification summary report. See individual results for more detail.

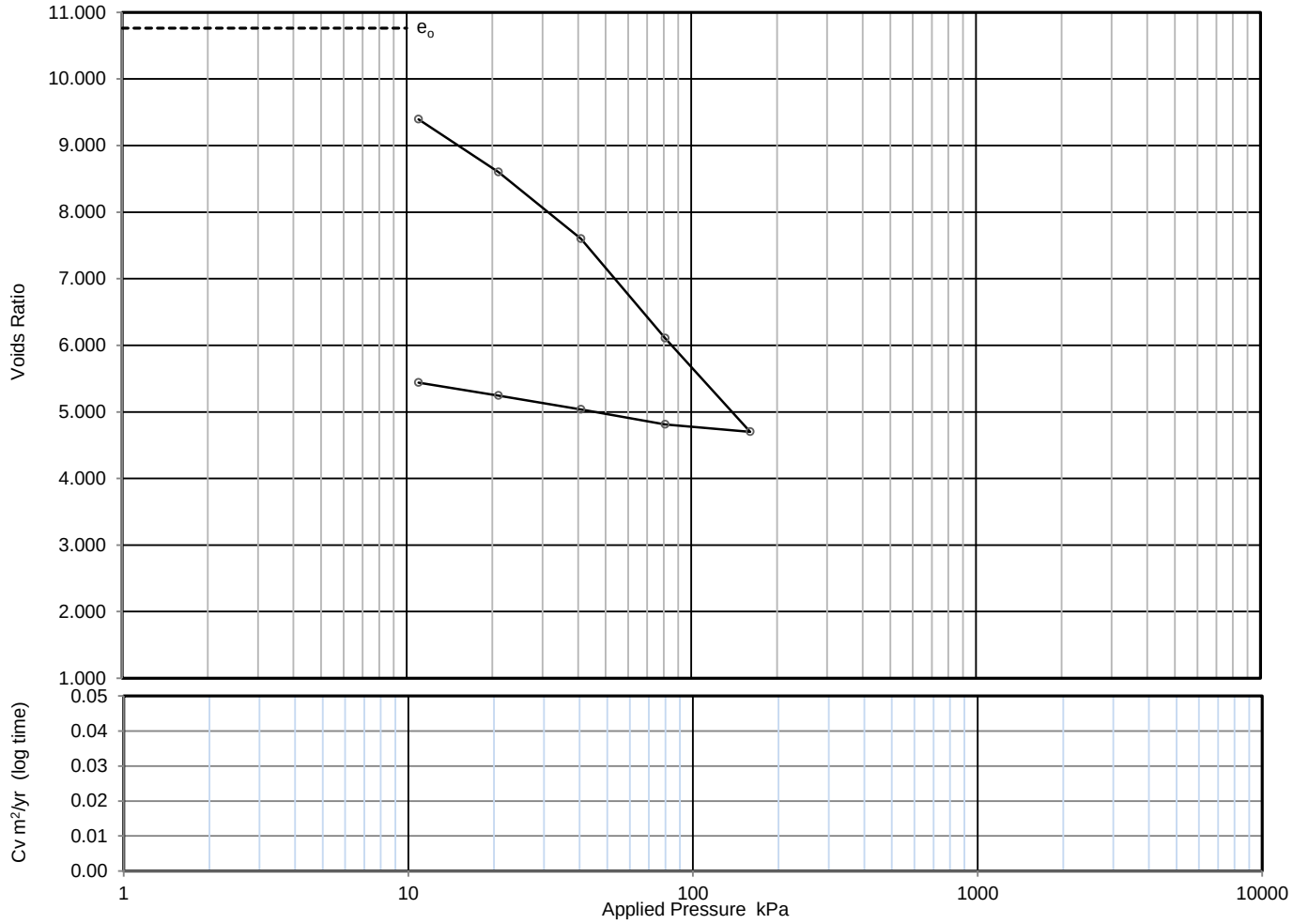
A' line derivation above PI of 6, PI = 0.73 (LL-20)

Date Printed

18/11/2024

ONE DIMENSIONAL CONSOLIDATION TEST
BS EN ISO 17892-5:2017

Project No.	PC248745 - Phase 1				
Hole No.	BH109				
Project Name	National Grid - 101677 Margam TATA Steel Connection			Sample No.	
Specimen Description	Dark grey / black organic CLAY			Depth (m)	2.50 - 2.95
Specimen Reference	2	Specimen Depth	2.90 m	Sample Type	UT
				Date started	09/12/2024



Applied Pressure kPa	Voids ratio	Mv m²/MN	Cv (t50 log) m²/yr	Cv (t90 root) m²/yr
1.0	10.763	-	-	-
11.0	9.394	12.00		0.5
21.0	8.603	7.60		0.2
41.0	7.598	5.20		0.2
81.0	6.106	4.30		0.3
161.0	4.700	2.50		0.1
81.0	4.810	0.24		
41.0	5.036	0.97		
21.0	5.245	1.70		
11.0	5.441	3.10		

Where Cv data is unavailable curve fitting unsuitable

Preparation: Specimen cut vertically from base of sample

Particle density	Assumed	2.65	Mg/m3

Specimen details	Initial	Final	
Diameter	74.86	-	mm
Height	20.04	10.97	mm
Water Content	399.8	232.6	%
Bulk density	1.13		Mg/m3
Dry density	0.23		Mg/m3
Voids Ratio	10.763		
			%
Average temperature for test	20.0		oC
Swelling Pressure	1		kPa
Settlement on saturation			%

Remarks: Sample dried at 50°C

GEOTECHNICS

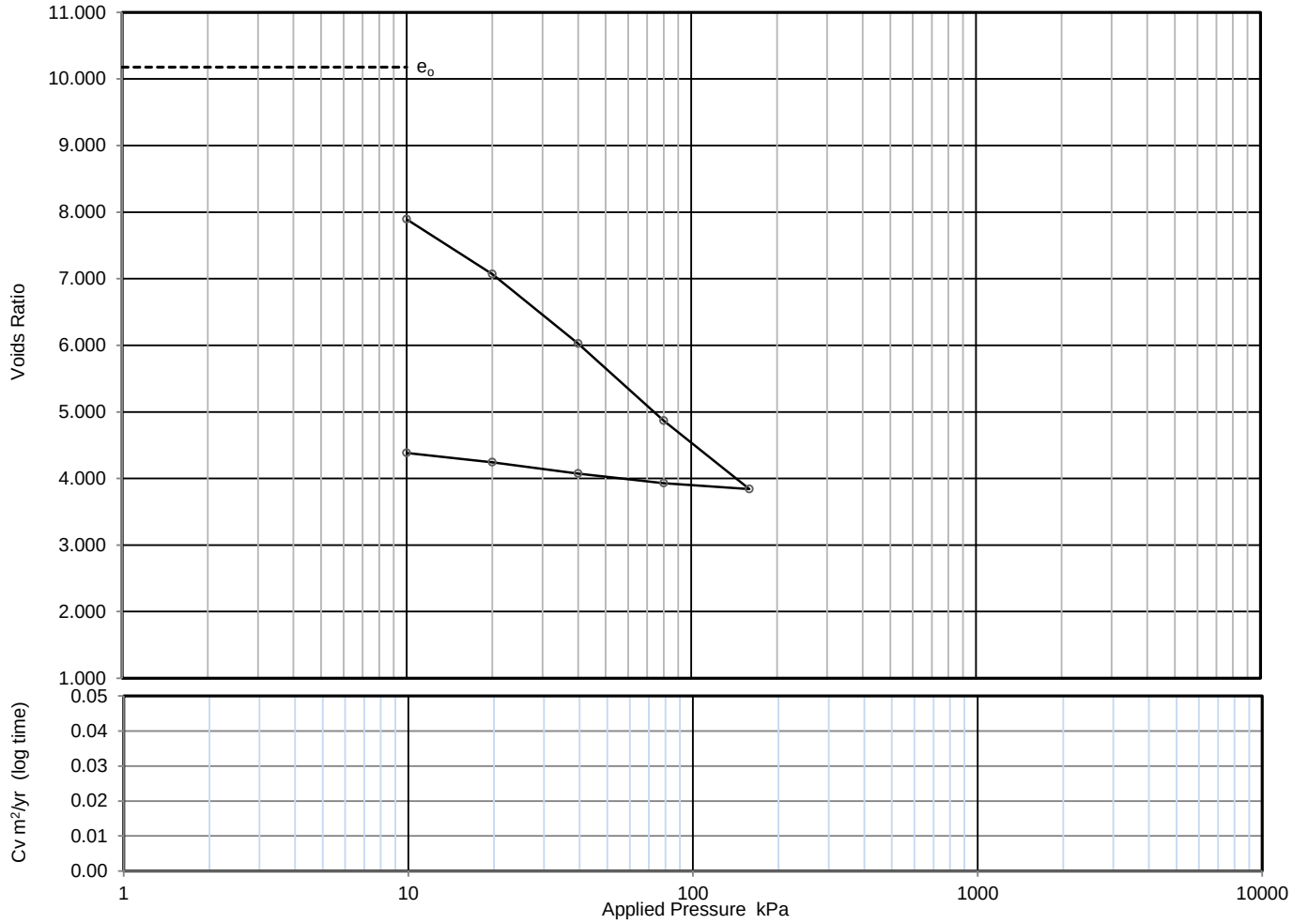
Settlement adjusted for machine deformation
Cv plotted at mid point of load increments
Cv corrected to 20°C

Printed : 13/01/2025

UKAS TESTING
1365

ONE DIMENSIONAL CONSOLIDATION TEST
BS EN ISO 17892-5:2017

Project No.	PC248745 - Phase 1					
Hole No.	BH109					
Project Name	National Grid - 101677 Margam TATA Steel Connection				Sample No.	
Specimen Description	Dark grey / black organic CLAY				Depth (m)	4.50 - 4.95
Specimen Reference	2	Specimen Depth	4.90	m	Sample Type	UT
					Date started	



Applied Pressure kPa	Voids ratio	Mv m²/MN	Cv (t50 log) m²/yr	Cv (t90 root) m²/yr
0.0	10.177	-	-	-
10.0	7.892	20.00		0.5
20.0	7.071	9.20		0.2
40.0	6.024	6.50		0.1
80.0	4.866	4.10		0.2
160.0	3.841	2.20		0.2
80.0	3.929	0.23		
40.0	4.075	0.74		
20.0	4.241	1.60		
10.0	4.383	2.70		

Where Cv data is unavailable curve fitting unsuitable

Preparation: Specimen cut vertically from base of sample

Particle density	Assumed	2.65	Mg/m3

Specimen details	Initial	Final	
Diameter	74.84	-	mm
Height	20.02	9.64	mm
Water Content	380.8	182.4	%
Bulk density	1.14		Mg/m3
Dry density	0.24		Mg/m3
Voids Ratio	10.177		
			%
Average temperature for test	20.0		oC
Swelling Pressure			kPa
Settlement on saturation			%

Remarks: Swelling pressure = 0kPa Sample dried at 50°C

Settlement adjusted for machine deformation
Cv plotted at mid point of load increments
Cv corrected to 20°C

Printed : 13/01/2025

GEOTECHNICS

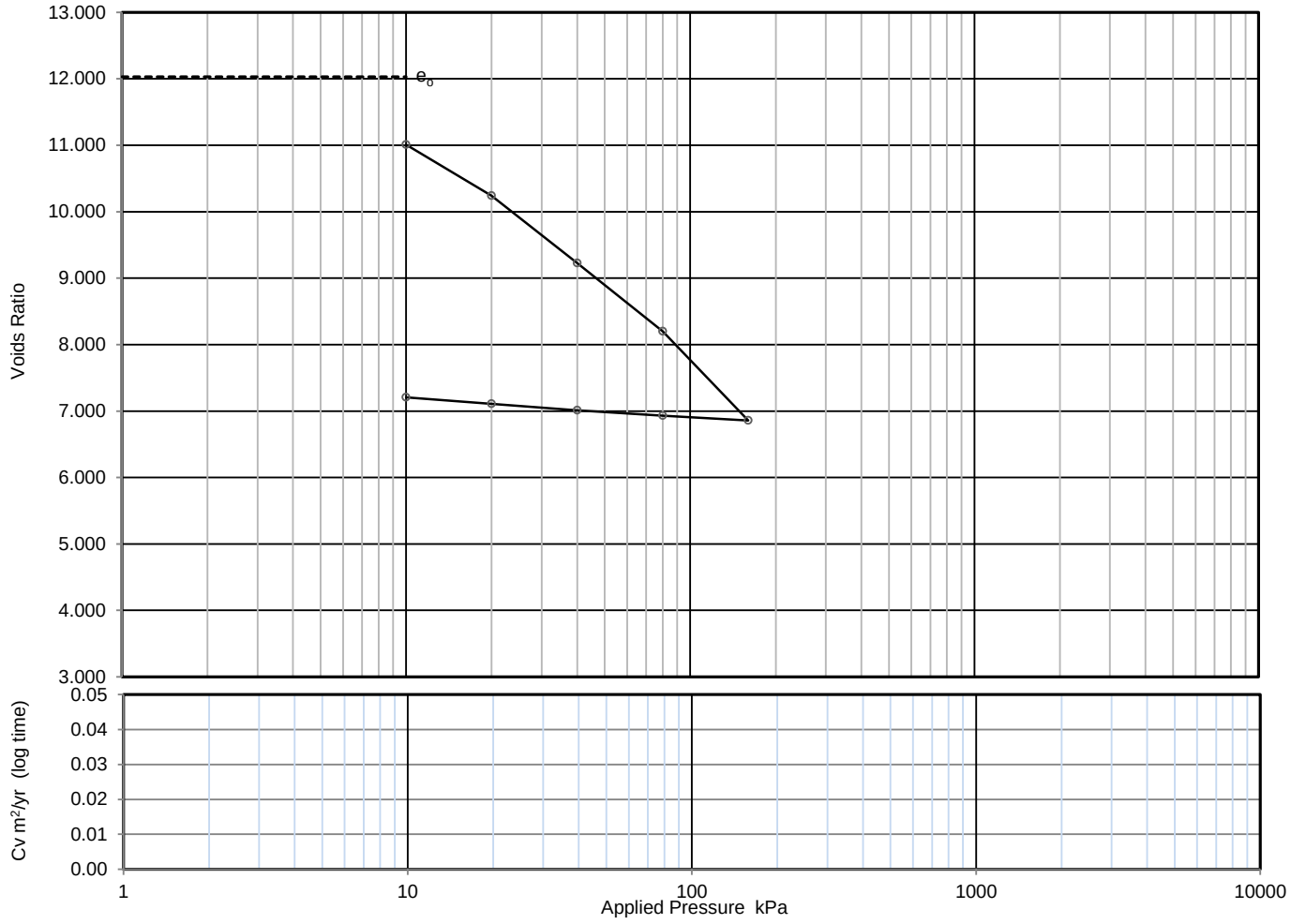
UKAS TESTING

1365

ONE DIMENSIONAL CONSOLIDATION TEST
BS EN ISO 17892-5:2017

Project Name	National Grid - 101677 Margam TATA Steel Connection			Sample No.	
Specimen Description	Dark grey / black organic CLAY			Depth (m)	4.50 - 4.65
Specimen Reference	2	Specimen Depth	4.90 m	Sample Type	UT
				Date started	10/12/2024

Project No.	PC248745 - Phase 1
Hole No.	BH112



Applied Pressure kPa	Voids ratio	Mv m²/MN	Cv (t50 log) m²/yr	Cv (t90 root) m²/yr
0.0	12.030	-	-	-
10.0	11.009	7.80		0.8
20.0	10.239	6.40		0.7
40.0	9.226	4.50		0.6
80.0	8.200	2.50		0.6
160.0	6.858	1.80		0.2
80.0	6.930	0.12		
40.0	7.012	0.26		
20.0	7.110	0.61		
10.0	7.207	1.20		

Where Cv data is unavailable curve fitting unsuitable

Preparation: Specimen cut vertically from base of sample

Particle density	Assumed	2.65	Mg/m3

Specimen details	Initial	Final	
Diameter	74.89	-	mm
Height	20.07	12.64	mm
Water Content	428.3	277.3	%
Bulk density	1.07		Mg/m3
Dry density	0.20		Mg/m3
Voids Ratio	12.030		
			%
Average temperature for test	20.0		oC
Swelling Pressure			kPa
Settlement on saturation			%

Remarks: Swelling Pressure = 0kPa Sample dried at 50°C

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Settlement adjusted for machine deformation
Cv plotted at mid point of load increments
Cv corrected to 20°C

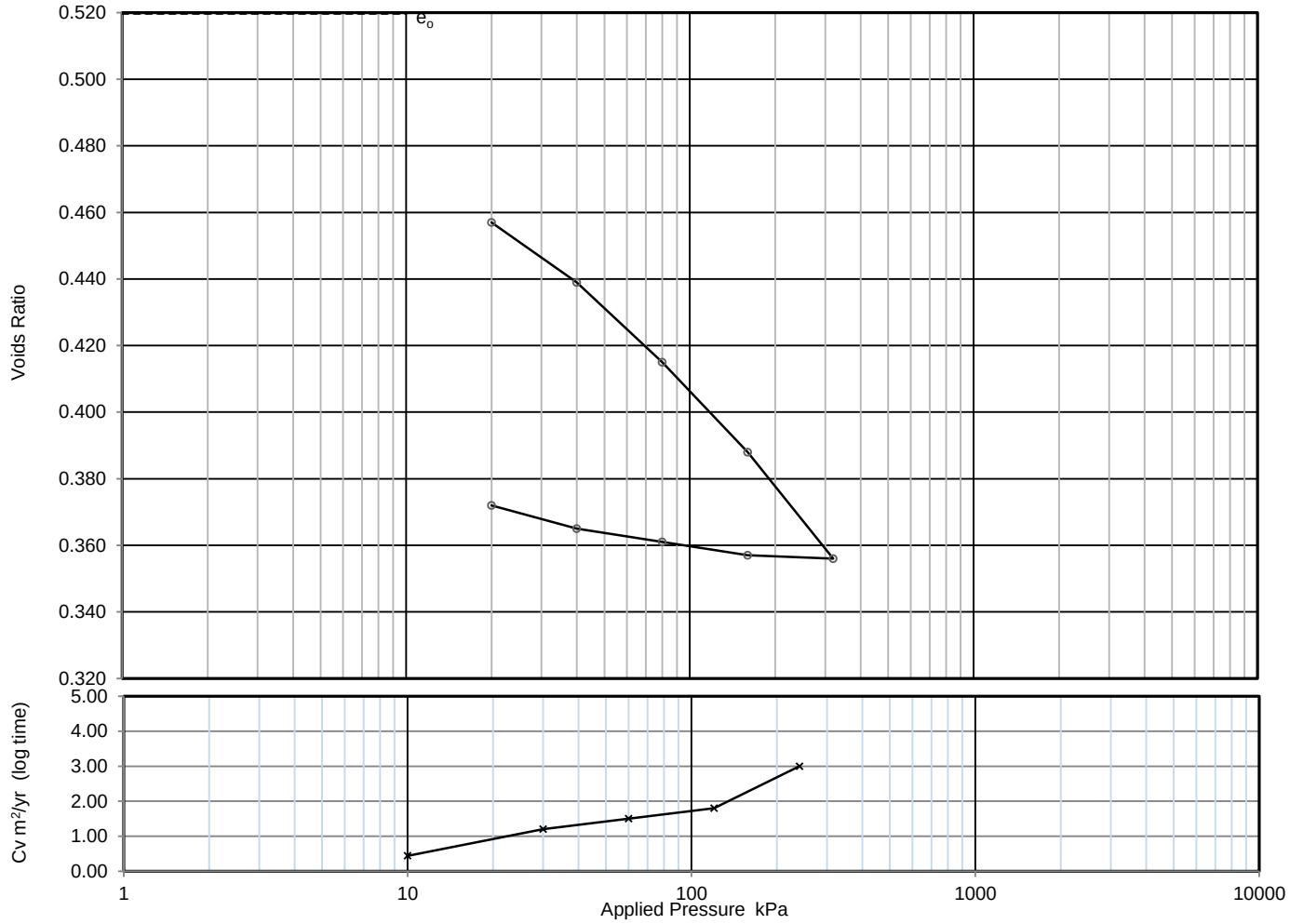
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UKAS TESTING
1365

ONE DIMENSIONAL CONSOLIDATION TEST
BS EN ISO 17892-5:2017

Project Name	National Grid - Margam FEED Phase 1			Sample No.	
Specimen Description	Dark grey gravelly CLAY			Depth (m)	4.60
Specimen Reference	4	Specimen Depth	5.00 m	Sample Type	UT
				Date started	03/10/2024

Project No.	PC248745
Hole No.	BH108



Applied Pressure kPa	Voids ratio	Mv m²/MN	Cv (t50 log) m²/yr	Cv (t90 root) m²/yr
0.0	0.520	-	-	-
20.0	0.457	2.10	0.4	0.5
40.0	0.439	0.64	1.2	0.6
80.0	0.415	0.41	1.5	0.5
160.0	0.388	0.24	1.8	0.5
320.0	0.356	0.14	3.0	1.6
160.0	0.357	0.01		
80.0	0.361	0.03		
40.0	0.365	0.09		
20.0	0.372	0.23		

Where Cv data is unavailable curve fitting unsuitable

Preparation: Specimen cut vertically from base of sample

Particle density: Assumed 2.65 Mg/m3

Specimen details	Initial	Final	
Diameter	74.84	-	mm
Height	20.02	18.07	mm
Water Content	21.7	17.7	%
Bulk density	2.12		Mg/m3
Dry density	1.74		Mg/m3
Voids Ratio	0.520		
			%
Average temperature for test	20.0		oC
Swelling Pressure			kPa
Settlement on saturation			%

Remarks: Swelling Pressure = 0kPa

Settlement adjusted for machine deformation
Cv plotted at mid point of load increments
Cv corrected to 20°C

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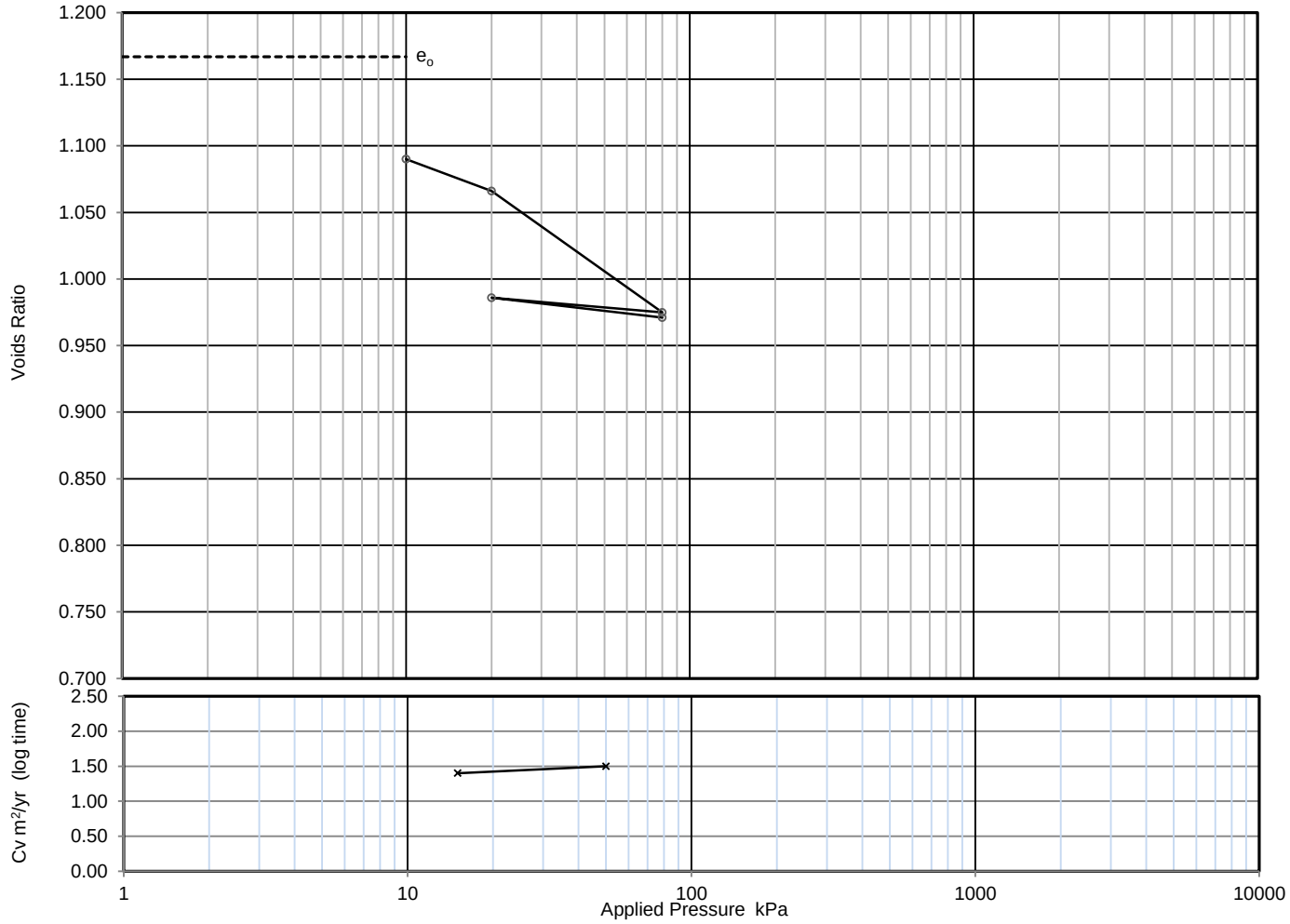
GEOTECHNICS

UKAS TESTING 1365

ONE DIMENSIONAL CONSOLIDATION TEST
BS EN ISO 17892-5:2017

Project Name	National Grid - Margam FEED Phase 1			Sample No.	
Specimen Description	Grey CLAY with fibrous material			Depth (m)	1.20 - 1.65
Specimen Reference	2	Specimen Depth	1.60 m	Sample Type	UT
				Date started	02/10/2024

Project No.	PC248745
Hole No.	BH112



Applied Pressure kPa	Voids ratio	Mv m²/MN	Cv (t50 log) m²/yr	Cv (t90 root) m²/yr
0.0	1.167	-	-	-
10.0	1.090	3.50		1.4
20.0	1.066	1.20	1.4	1.1
80.0	0.975	0.73	1.5	0.6
20.0	0.986	0.09		
80.0	0.971	0.12		1.6

Where Cv data is unavailable curve fitting unsuitable

Preparation: Specimen cut vertically from base of sample

Particle density: Assumed 2.65 Mg/m3

Specimen details	Initial	Final	
Diameter	74.86	-	mm
Height	20.04	18.23	mm
Water Content	43.4	39.3	%
Bulk density	1.75		Mg/m3
Dry density	1.22		Mg/m3
Voids Ratio	1.167		
			%
Average temperature for test	20.0		oC
Swelling Pressure			kPa
Settlement on saturation			%

Remarks

Settlement adjusted for machine deformation
Cv plotted at mid point of load increments
Cv corrected to 20°C

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GEOTECHNICS

Density Tests - Summary of Results

Project No.
PC248745

Project Name
National Grid - Margam FEED Phase 1

Hole No.	Sample				Specimen Description	Linear Measurement			* Immersion in fluid			*Fluid displacement			Remarks
	Ref	Top (m)	Base (m)	Type		Bulk density Mg/m³	Dry density Mg/m³	w %	Bulk density Mg/m³	Dry density Mg/m³	w %	Bulk density Mg/m³	Dry density Mg/m³	w %	
TP108		2.40	3.00	B	Dark grey organic CLAY	1.46	0.81	79.6							2.5kg recompacted specimen in 1 litre mould

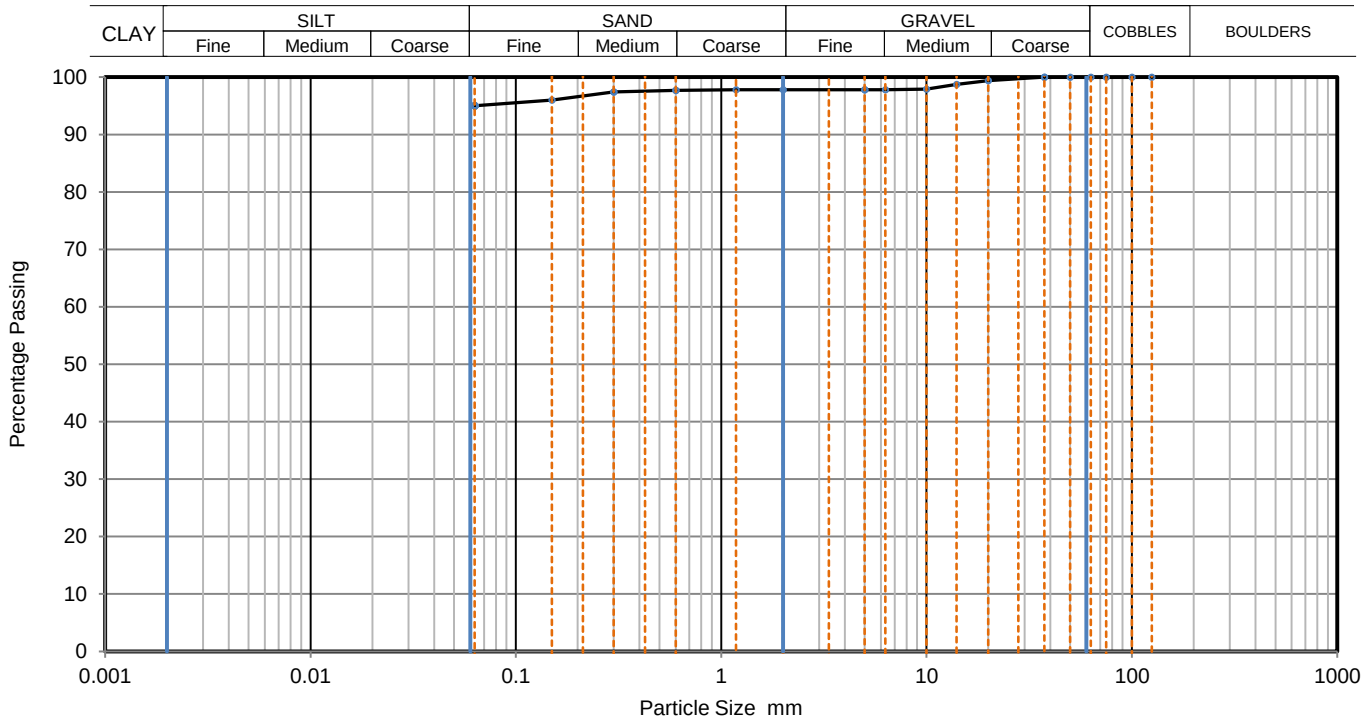
Key: w Water Content of the density test specimen

Notes
Tests carried out in accordance with the applicable clauses of BS EN ISO 17892-2:2014 unless specified otherwise
Water content performed to BS EN ISO 17892-1:2014
* Not UKAS accredited

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1365

GEOTECHNICS	PARTICLE SIZE DISTRIBUTION	Hole No.	BH101
		Sample No.	
Project Number:	PC248745	Depth m	0.40 - 0.80
Project Name:	National Grid - Margam FEED Phase 1	Sample Type	B
Specimen Description	Brown slightly sandy slightly gravelly CLAY.	Specimen Depth m	
Test Method	BS EN ISO 17892 -4:2016, by sieving on as received or wet sample		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	100		
63	100		
50	100		
37.5	100		
20	99		
14	99		
10	98		
6.3	98		
5	98		
2	98		
1.18	98		
0.6	98		
0.3	97		
0.15	96		
0.063	95		

Sample Proportions	% dry mass
Cobbles	0
Gravel	2
Sand	3
Fines <0.063mm	95

Grading Analysis		
D100	mm	37.5
D60	mm	
D30	mm	
D10	mm	
Uniformity Coefficient		

Remarks

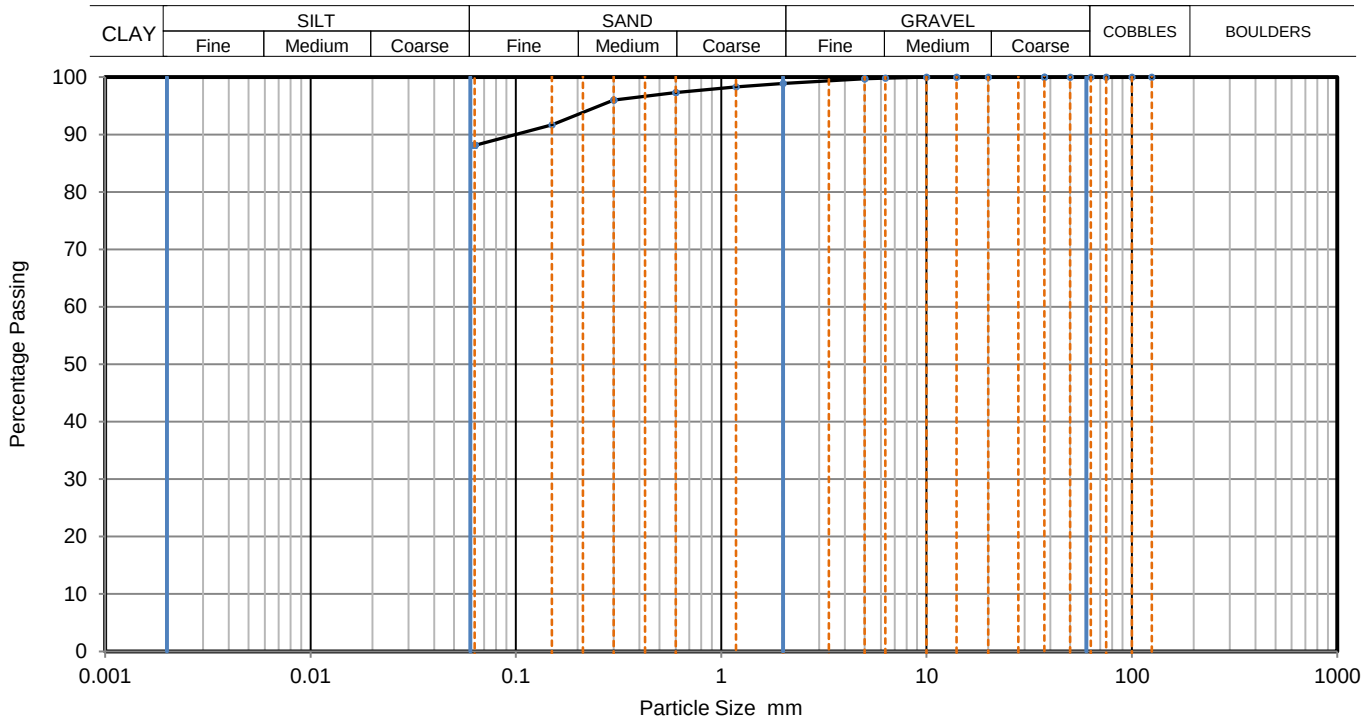
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UKAS TESTING

1365

GEOTECHNICS	PARTICLE SIZE DISTRIBUTION	Hole No.	BH101
		Sample No.	
Project Number:	PC248745	Depth m	1.20 - 2.20
Project Name:	National Grid - Margam FEED Phase 1	Sample Type	B
Specimen Description	Dark grey slightly sandy slightly gravelly very clayey PEAT.	Specimen Depth m	
Test Method	BS EN ISO 17892 -4:2016, by sieving on as received or wet sample		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	100		
63	100		
50	100		
37.5	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
2	99		
1.18	98		
0.6	97		
0.3	96		
0.15	92		
0.063	88		

Sample Proportions	% dry mass
Cobbles	0
Gravel	1
Sand	11
Fines <0.063mm	88

Grading Analysis		
D100	mm	10
D60	mm	
D30	mm	
D10	mm	
Uniformity Coefficient		

Remarks

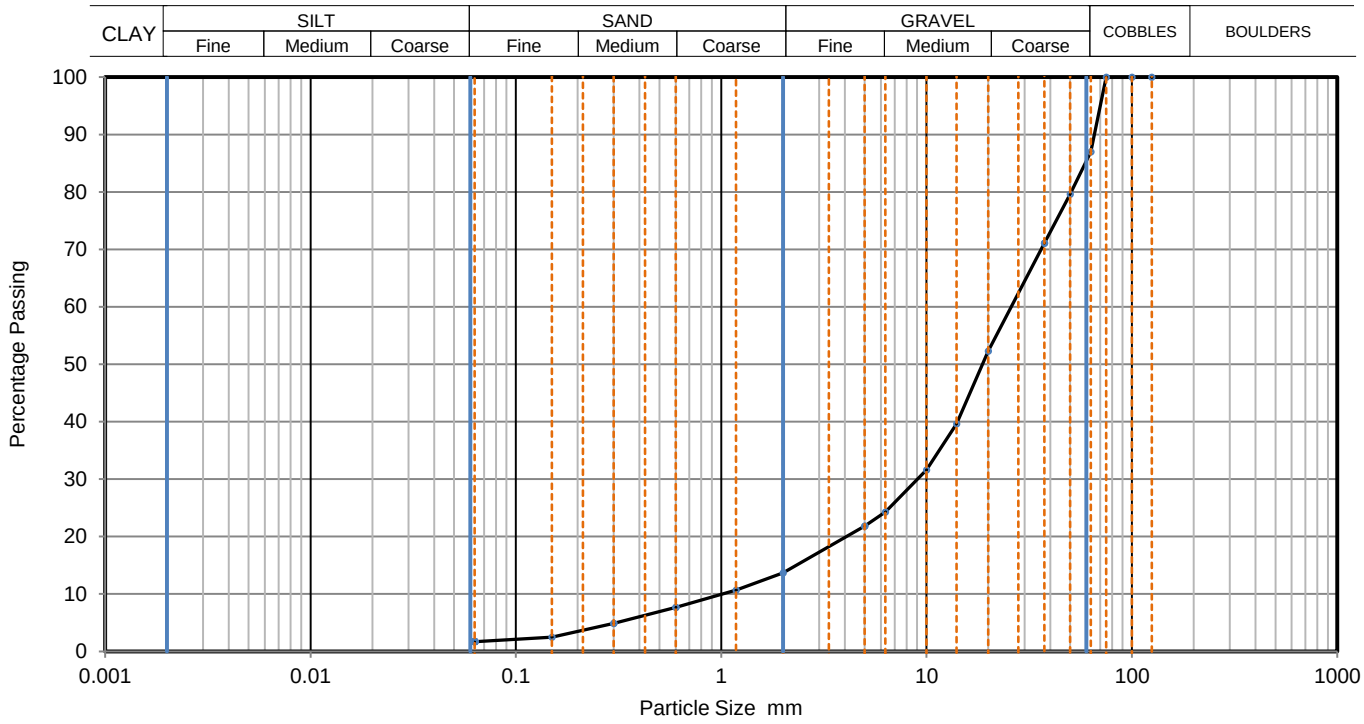
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UKAS TESTING

1365

GEOTECHNICS	PARTICLE SIZE DISTRIBUTION	Hole No.	BH101
		Sample No.	
Project Number:	PC248745	Depth m	4.20 - 5.20
Project Name:	National Grid - Margam FEED Phase 1	Sample Type	B
Specimen Description	Brown sandy slightly clayey GRAVEL with a medium cobble content.	Specimen Depth m	
Test Method	BS EN ISO 17892 -4:2016, by sieving on as received or wet sample		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	100		
63	87		
50	80		
37.5	71		
20	52		
14	40		
10	32		
6.3	24		
5	22		
2	14		
1.18	11		
0.6	8		
0.3	5		
0.15	3		
0.063	2		

Sample Proportions	% dry mass
Cobbles	13
Gravel	73
Sand	12
Fines <0.063mm	2

Grading Analysis		
D100	mm	75
D60	mm	25.9
D30	mm	9.04
D10	mm	1.01
Uniformity Coefficient		26

Initial sample mass less than BS EN ISO 17892 requirements

Remarks

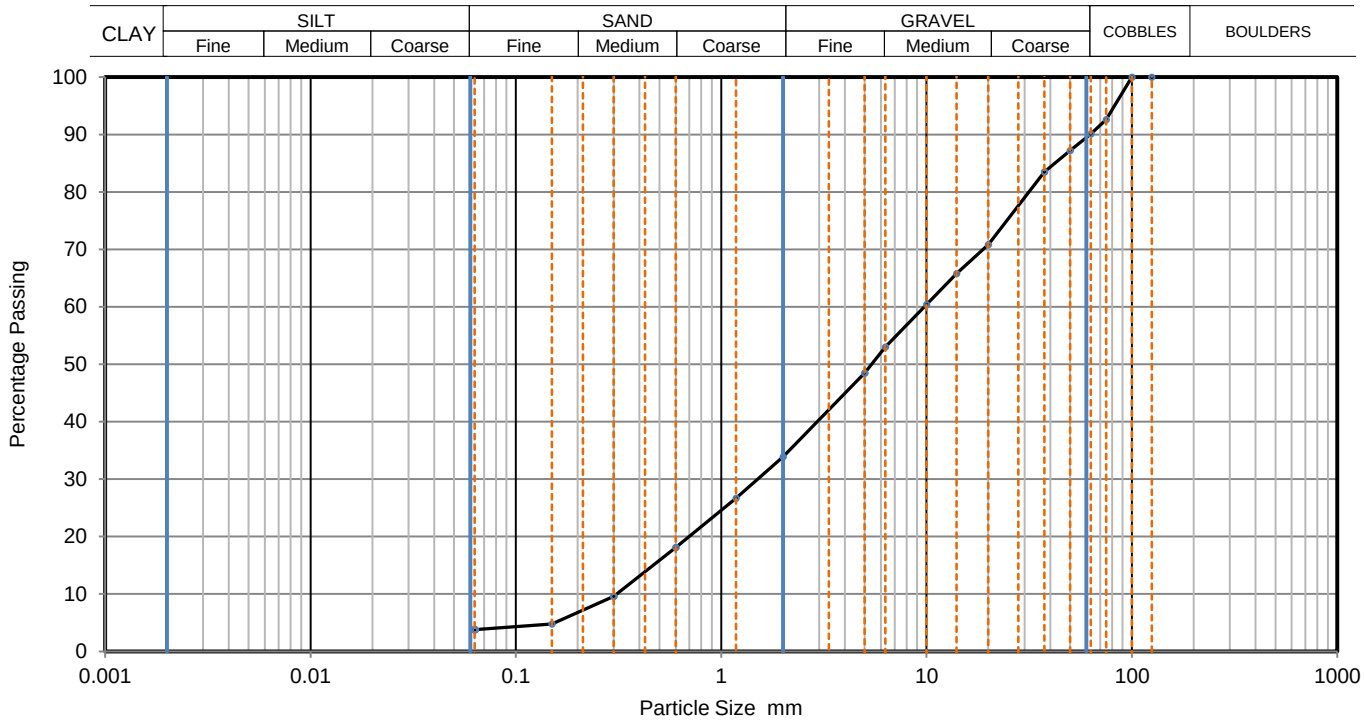
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UKAS TESTING

1365

GEOTECHNICS	PARTICLE SIZE DISTRIBUTION	Hole No.	BH101
		Sample No.	
Project Number:	PC248745	Depth m	6.30 - 7.00
Project Name:	National Grid - Margam FEED Phase 1	Sample Type	B
Specimen Description	Brown very sandy slightly clayey GRAVEL with a medium cobble content.	Specimen Depth m	
Test Method	BS EN ISO 17892 -4:2016, by sieving on as received or wet sample		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	93		
63	90		
50	87		
37.5	84		
20	71		
14	66		
10	60		
6.3	53		
5	49		
2	34		
1.18	27		
0.6	18		
0.3	10		
0.15	5		
0.063	4		

Sample Proportions	% dry mass
Cobbles	10
Gravel	56
Sand	30
Fines <0.063mm	4

Grading Analysis		
D100	mm	100
D60	mm	9.75
D30	mm	1.5
D10	mm	0.309
Uniformity Coefficient		32

Initial sample mass less than BS EN ISO 17892 requirements

Remarks

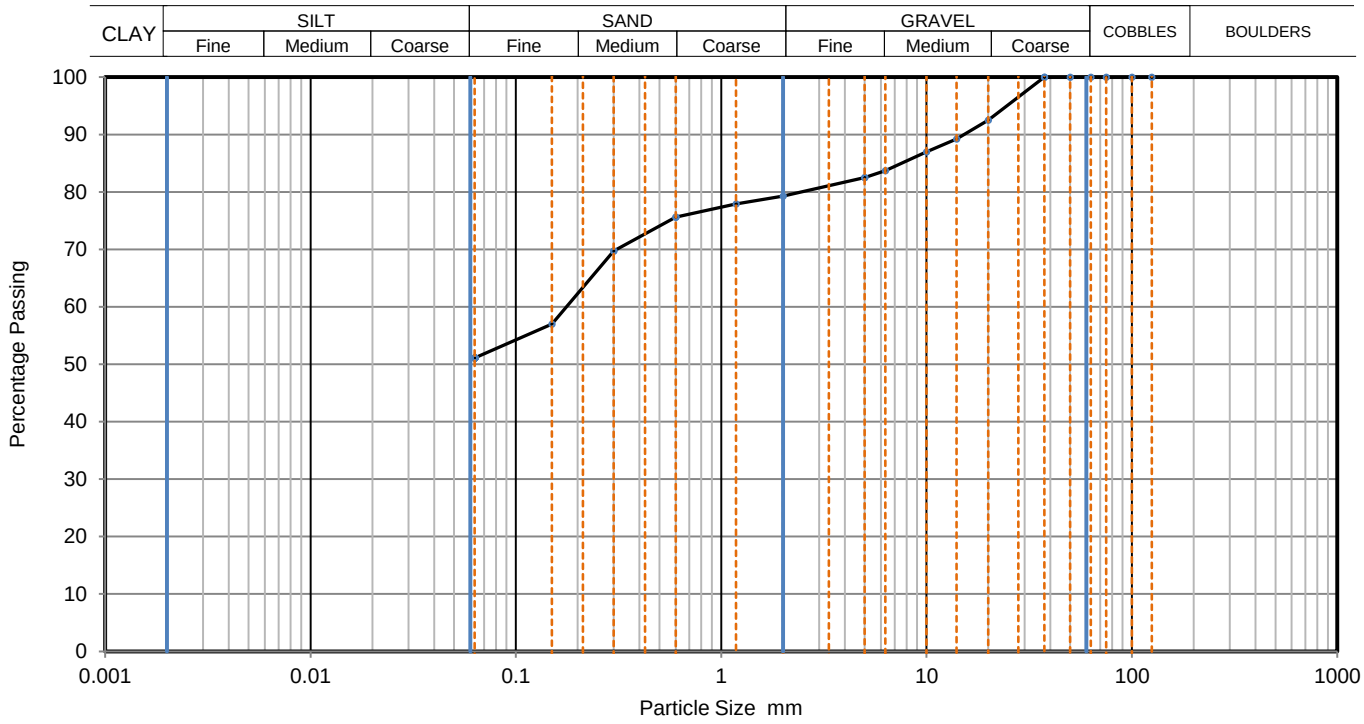
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UKAS TESTING

1365

GEOTECHNICS	PARTICLE SIZE DISTRIBUTION	Hole No.	BH101
		Sample No.	
Project Number:	PC248745	Depth m	10.20 - 11.50
Project Name:	National Grid - Margam FEED Phase 1	Sample Type	B
Specimen Description	Brown slightly sandy slightly gravelly CLAY.	Specimen Depth m	
Test Method	BS EN ISO 17892 -4:2016, by sieving on as received or wet sample		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	100		
63	100		
50	100		
37.5	100		
20	93		
14	89		
10	87		
6.3	84		
5	83		
2	79		
1.18	78		
0.6	76		
0.3	70		
0.15	57		
0.063	51		

Sample Proportions	% dry mass
Cobbles	0
Gravel	21
Sand	28
Fines <0.063mm	51

Grading Analysis		
D100	mm	37.5
D60	mm	0.177
D30	mm	
D10	mm	
Uniformity Coefficient		

Remarks

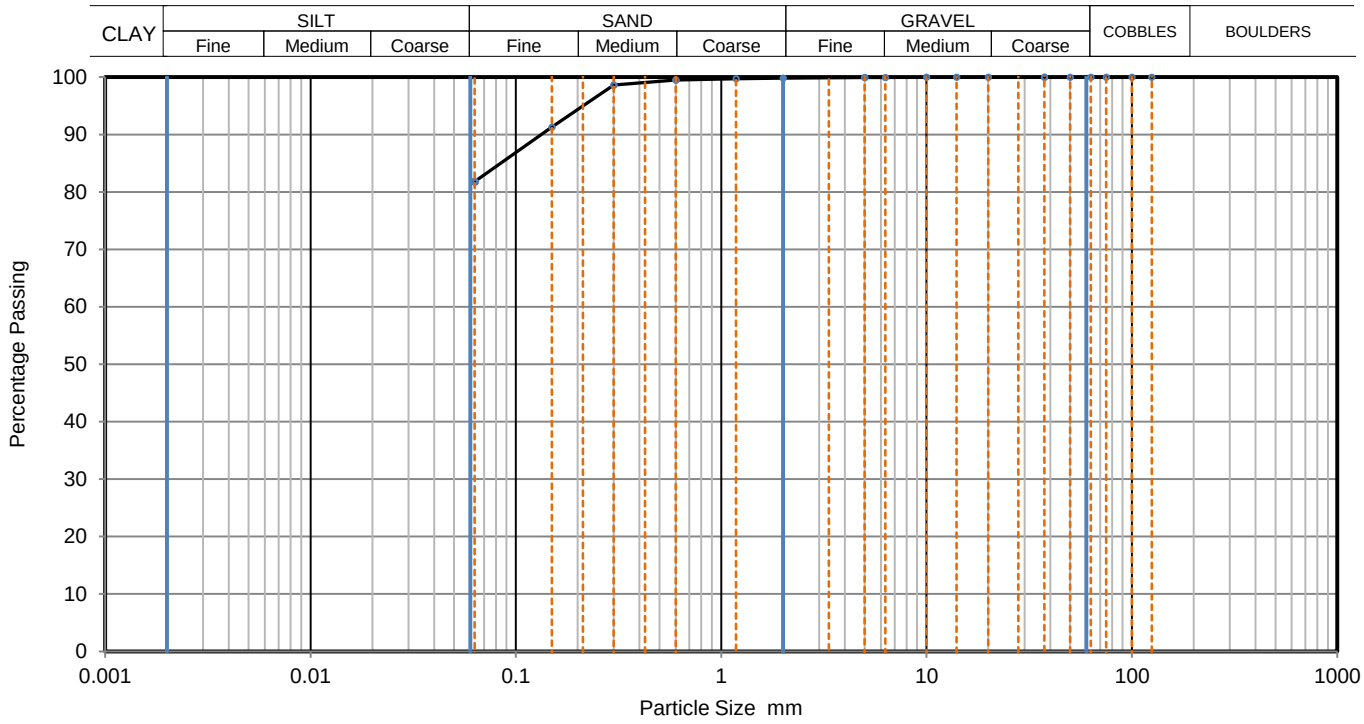
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UKAS TESTING

1365

GEOTECHNICS	PARTICLE SIZE DISTRIBUTION	Hole No.	BH102
		Sample No.	
Project Number:	PC248745	Depth m	1.60 - 2.20
Project Name:	National Grid - Margam FEED Phase 1	Sample Type	B
Specimen Description	Black slightly sandy very clayey PEAT.	Specimen Depth m	
Test Method	BS EN ISO 17892 -4:2016, by sieving on as received or wet sample		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	100		
63	100		
50	100		
37.5	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
2	100		
1.18	100		
0.6	100		
0.3	99		
0.15	91		
0.063	82		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	18
Fines <0.063mm	82

Grading Analysis		
D100	mm	10
D60	mm	
D30	mm	
D10	mm	
Uniformity Coefficient		

Remarks

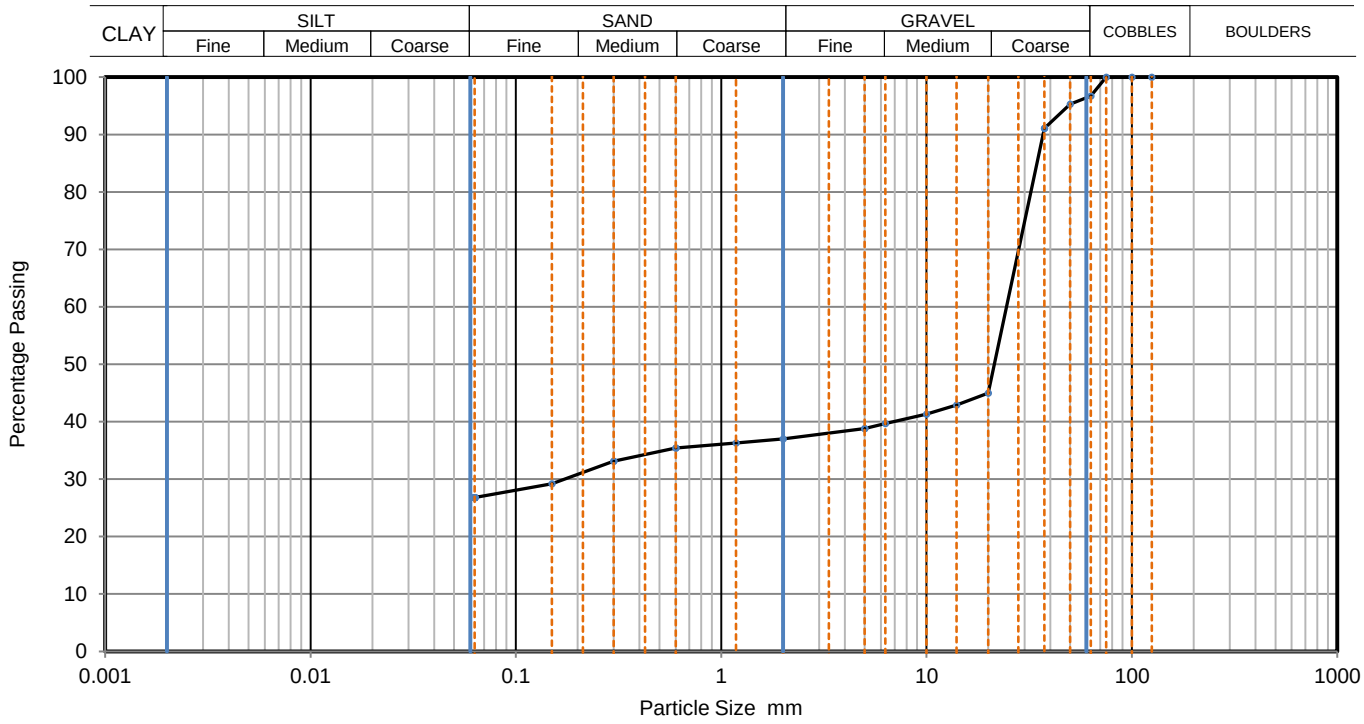
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UKAS TESTING

1365

GEOTECHNICS	PARTICLE SIZE DISTRIBUTION	Hole No.	BH102
		Sample No.	
Project Number:	PC248745	Depth m	3.30 - 4.00
Project Name:	National Grid - Margam FEED Phase 1	Sample Type	B
Specimen Description	Brown mottled grey sandy very clayey GRAVEL with a low cobble content.	Specimen Depth m	
Test Method	BS EN ISO 17892 -4:2016, by sieving on as received or wet sample		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	100		
63	97		
50	95		
37.5	91		
20	45		
14	43		
10	41		
6.3	40		
5	39		
2	37		
1.18	36		
0.6	35		
0.3	33		
0.15	29		
0.063	27		

Sample Proportions	% dry mass
Cobbles	3
Gravel	60
Sand	10
Fines <0.063mm	27

Grading Analysis		
D100	mm	75
D60	mm	24.5
D30	mm	0.173
D10	mm	
Uniformity Coefficient		

Remarks

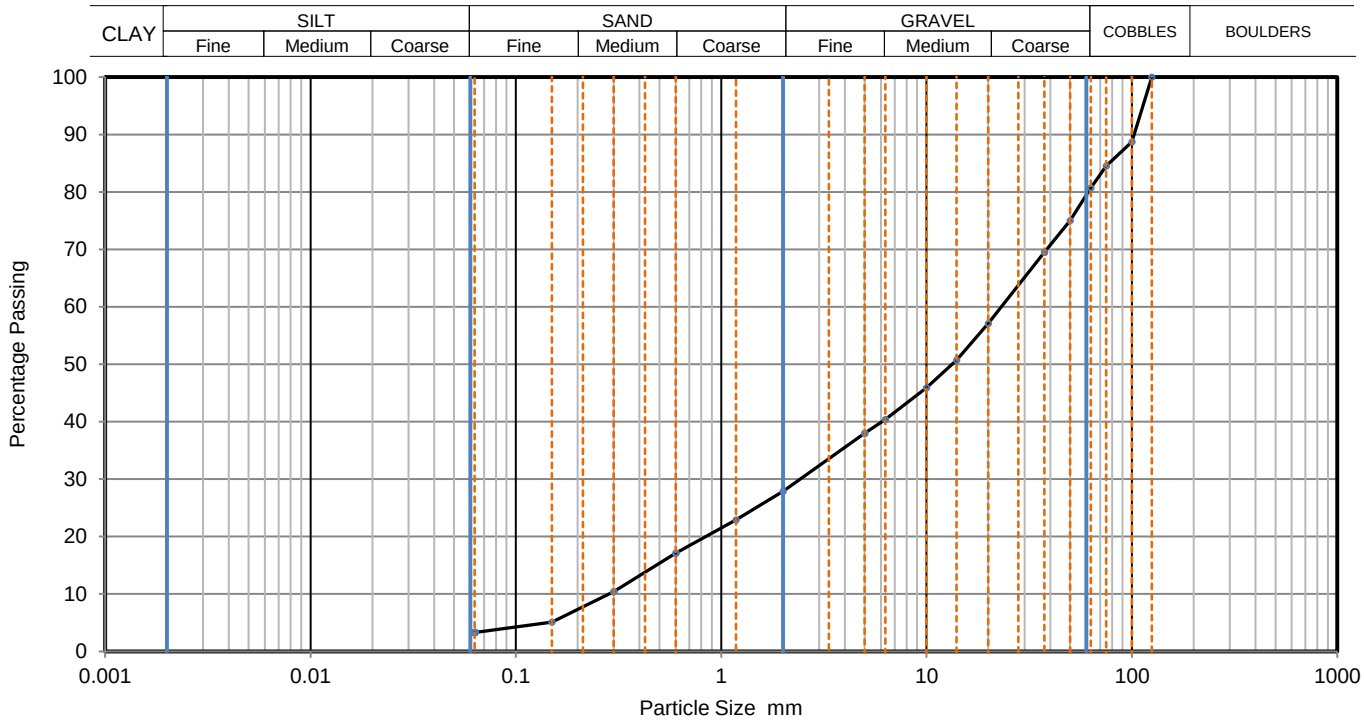
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UKAS TESTING

1365

GEOTECHNICS	PARTICLE SIZE DISTRIBUTION	Hole No.	BH102
		Sample No.	
Project Number:	PC248745	Depth m	6.20 - 7.20
Project Name:	National Grid - Margam FEED Phase 1	Sample Type	B
Specimen Description	Brown very sandy slightly clayey GRAVEL with a medium cobble content.	Specimen Depth m	
Test Method	BS EN ISO 17892 -4:2016, by sieving on as received or wet sample		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	89		
75	85		
63	81		
50	75		
37.5	70		
20	57		
14	51		
10	46		
6.3	40		
5	38		
2	28		
1.18	23		
0.6	17		
0.3	10		
0.15	5		
0.063	3		

Sample Proportions	% dry mass
Cobbles	19
Gravel	53
Sand	25
Fines <0.063mm	3

Grading Analysis		
D100	mm	125
D60	mm	23.2
D30	mm	2.43
D10	mm	0.284
Uniformity Coefficient		82

Initial sample mass less than BS EN ISO 17892 requirements

Remarks

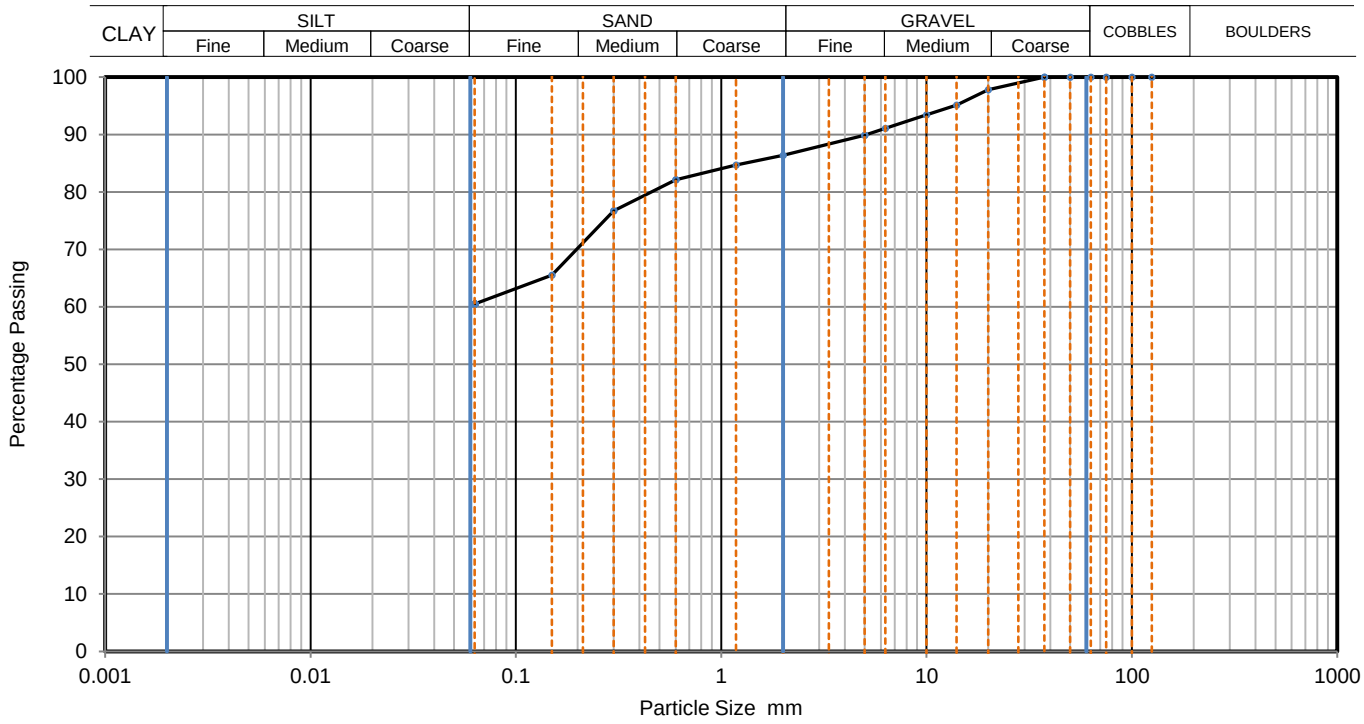
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1365

GEOTECHNICS	PARTICLE SIZE DISTRIBUTION	Hole No.	BH102
		Sample No.	
Project Number:	PC248745	Depth m	8.30 - 9.50
Project Name:	National Grid - Margam FEED Phase 1	Sample Type	B
Specimen Description	Brown slightly sandy slightly gravelly CLAY.	Specimen Depth m	
Test Method	BS EN ISO 17892 -4:2016, by sieving on as received or wet sample		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	100		
63	100		
50	100		
37.5	100		
20	98		
14	95		
10	93		
6.3	91		
5	90		
2	86		
1.18	85		
0.6	82		
0.3	77		
0.15	66		
0.063	61		

Sample Proportions	% dry mass
Cobbles	0
Gravel	14
Sand	25
Fines <0.063mm	61

Grading Analysis		
D100	mm	37.5
D60	mm	
D30	mm	
D10	mm	
Uniformity Coefficient		

Remarks

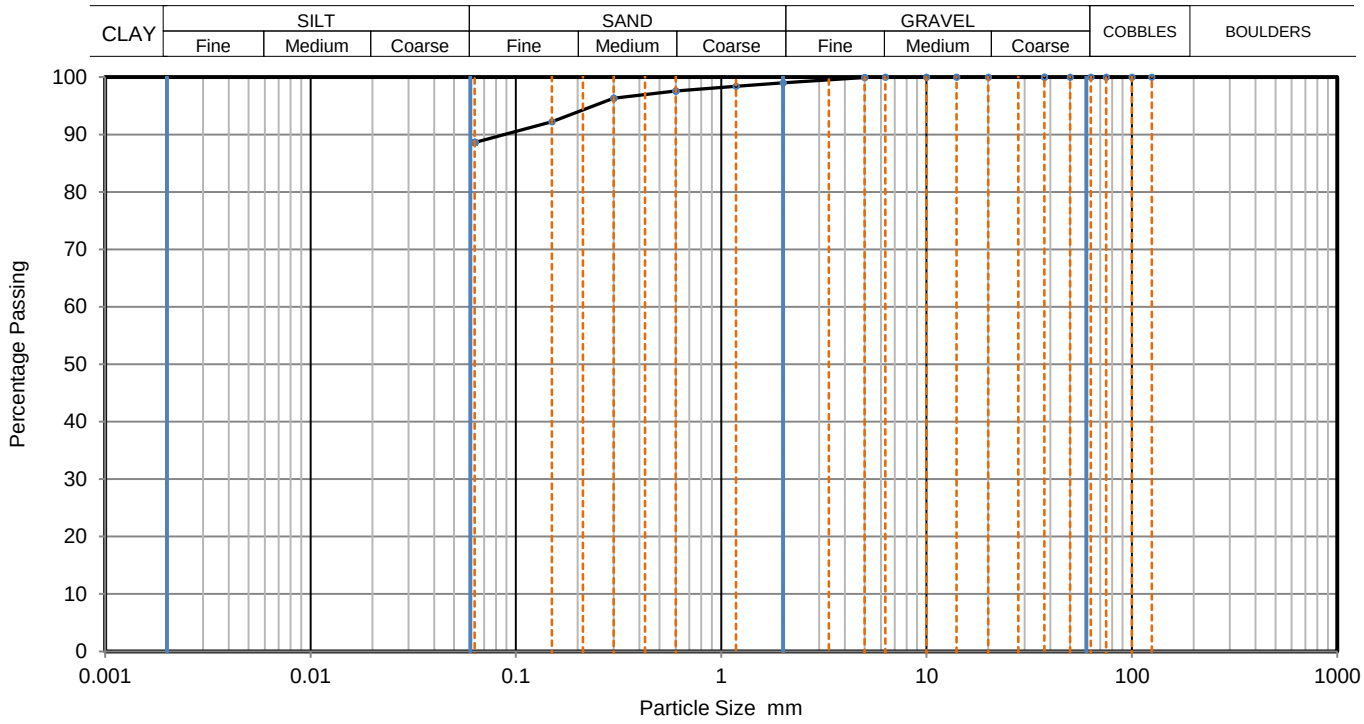
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UKAS TESTING

1365

GEOTECHNICS	PARTICLE SIZE DISTRIBUTION	Hole No.	BH103
		Sample No.	
Project Number:	PC248745	Depth m	1.30 - 2.20
Project Name:	National Grid - Margam FEED Phase 1	Sample Type	B
Specimen Description	Dark grey slightly sandy slightly gravelly CLAY.	Specimen Depth m	
Test Method	BS EN ISO 17892 -4:2016, by sieving on as received or wet sample		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	100		
63	100		
50	100		
37.5	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
2	99		
1.18	98		
0.6	98		
0.3	96		
0.15	92		
0.063	89		

Sample Proportions	% dry mass
Cobbles	0
Gravel	1
Sand	10
Fines <0.063mm	89

Grading Analysis		
D100	mm	6.3
D60	mm	
D30	mm	
D10	mm	
Uniformity Coefficient		

Remarks

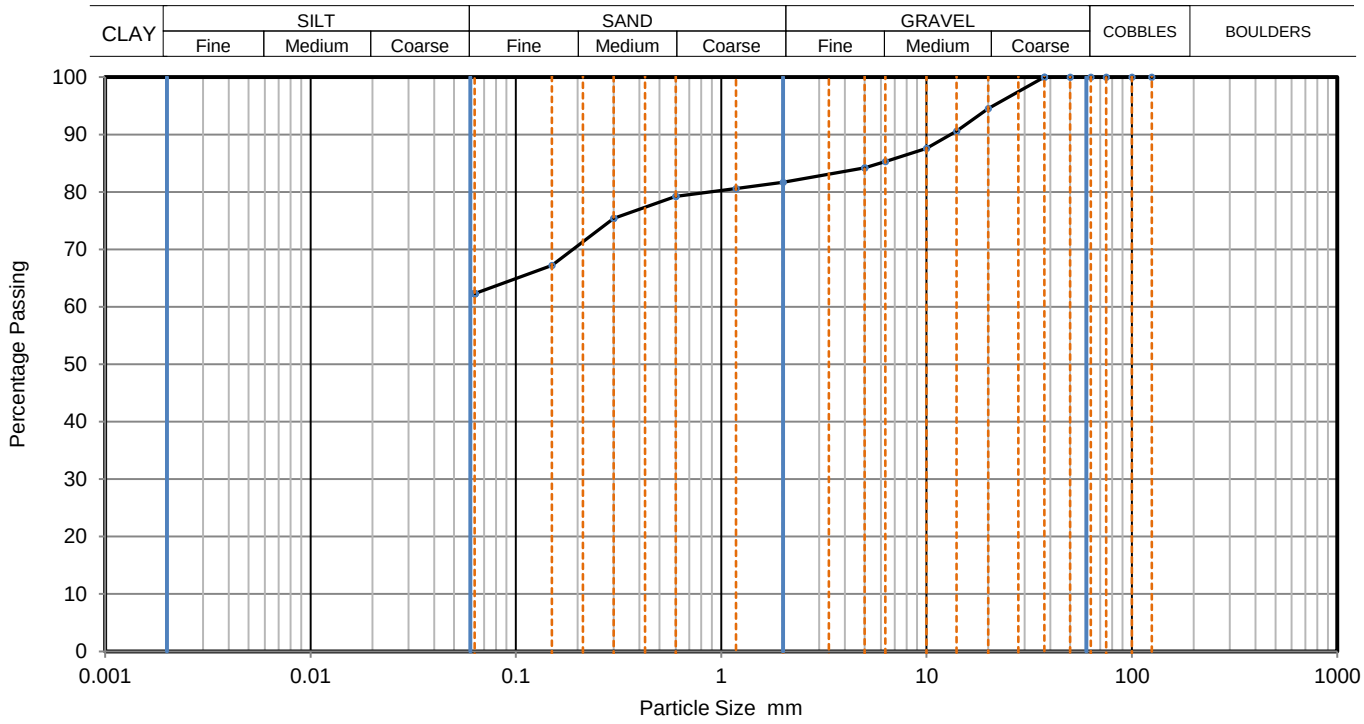
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GEOTECHNICS	PARTICLE SIZE DISTRIBUTION	Hole No.	BH103
		Sample No.	
Project Number:	PC248745	Depth m	3.80 - 4.40
Project Name:	National Grid - Margam FEED Phase 1	Sample Type	B
Specimen Description	Brown mottled grey slightly sandy slightly gravelly CLAY.	Specimen Depth m	
Test Method	BS EN ISO 17892 -4:2016, by sieving on as received or wet sample		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	100		
63	100		
50	100		
37.5	100		
20	95		
14	91		
10	88		
6.3	85		
5	84		
2	82		
1.18	81		
0.6	79		
0.3	75		
0.15	67		
0.063	62		

Sample Proportions	% dry mass
Cobbles	0
Gravel	18
Sand	20
Fines <0.063mm	62

Grading Analysis		
D100	mm	37.5
D60	mm	
D30	mm	
D10	mm	
Uniformity Coefficient		

Remarks

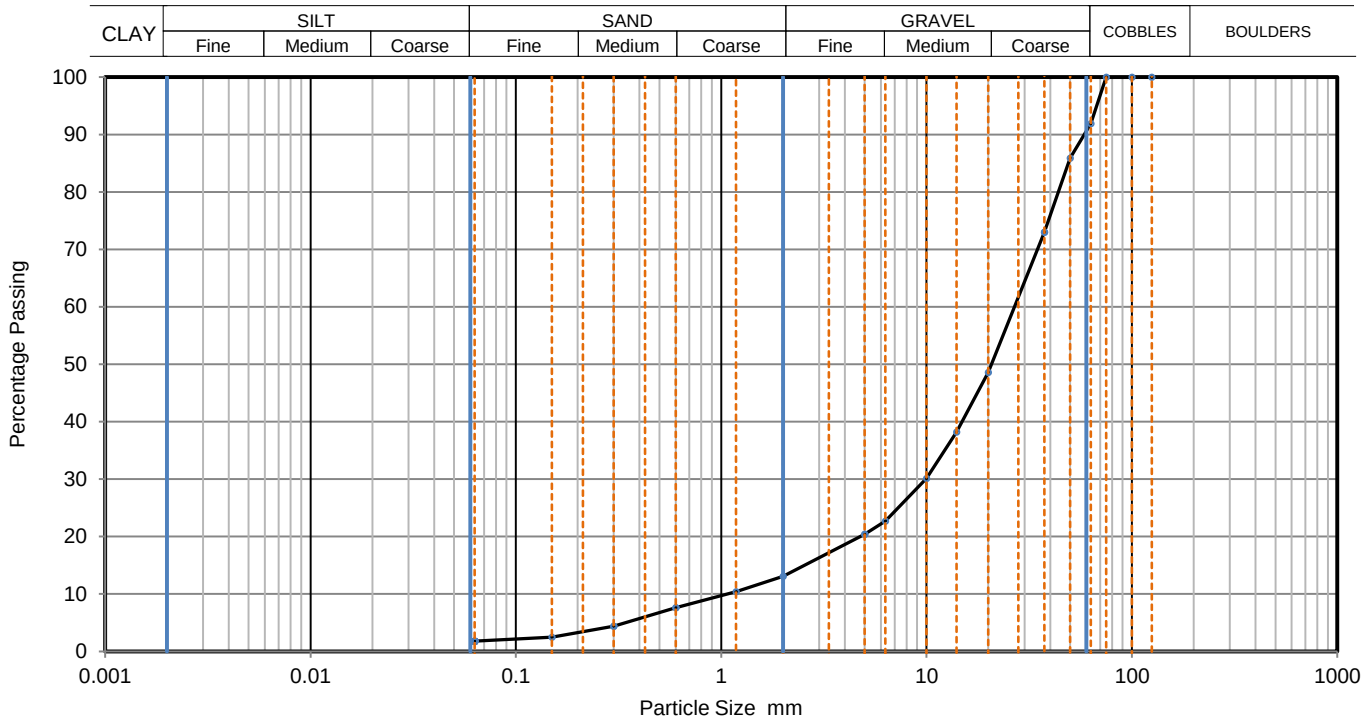
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UKAS TESTING

1365

GEOTECHNICS	PARTICLE SIZE DISTRIBUTION	Hole No.	BH103
		Sample No.	
Project Number:	PC248745	Depth m	5.30 - 6.30
Project Name:	National Grid - Margam FEED Phase 1	Sample Type	B
Specimen Description	Dark grey sandy slightly clayey GRAVEL with a medium cobble content.	Specimen Depth m	
Test Method	BS EN ISO 17892 -4:2016, by sieving on as received or wet sample		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	100		
63	92		
50	86		
37.5	73		
20	49		
14	38		
10	30		
6.3	23		
5	20		
2	13		
1.18	10		
0.6	8		
0.3	4		
0.15	3		
0.063	2		

Sample Proportions	% dry mass
Cobbles	8
Gravel	79
Sand	11
Fines <0.063mm	2

Grading Analysis		
D100	mm	75
D60	mm	26.8
D30	mm	9.92
D10	mm	1.07
Uniformity Coefficient		25

Initial sample mass less than BS EN ISO 17892 requirements

Remarks

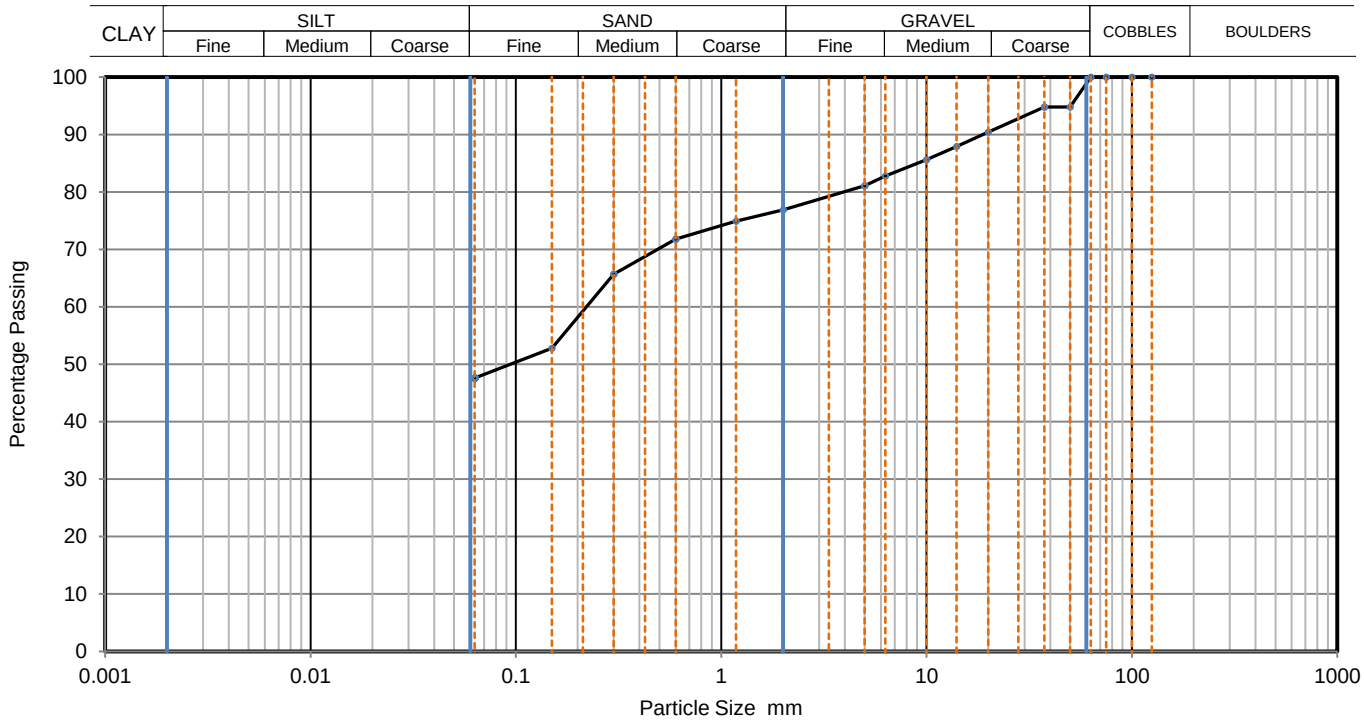
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UKAS TESTING

1365

GEOTECHNICS	PARTICLE SIZE DISTRIBUTION	Hole No.	BH103
		Sample No.	
Project Number:	PC248745	Depth m	8.50 - 9.50
Project Name:	National Grid - Margam FEED Phase 1	Sample Type	B
Specimen Description	Brown slightly sandy slightly gravelly CLAY.	Specimen Depth m	
Test Method	BS EN ISO 17892 -4:2016, by sieving on as received or wet sample		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	100		
63	100		
50	95		
37.5	95		
20	90		
14	88		
10	86		
6.3	83		
5	81		
2	77		
1.18	75		
0.6	72		
0.3	66		
0.15	53		
0.063	48		

Sample Proportions	% dry mass
Cobbles	0
Gravel	23
Sand	29
Fines <0.063mm	48

Grading Analysis		
D100	mm	63
D60	mm	0.221
D30	mm	
D10	mm	
Uniformity Coefficient		

Remarks

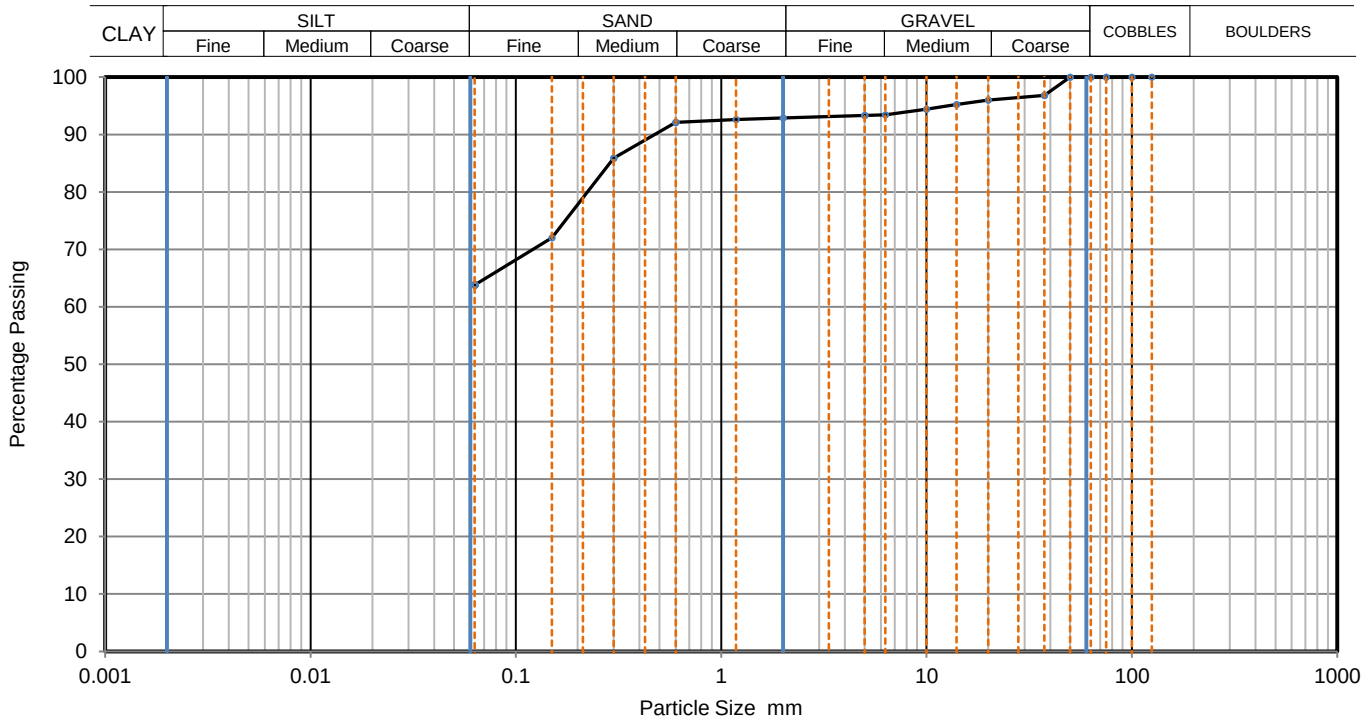
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UKAS TESTING

1365

GEOTECHNICS	PARTICLE SIZE DISTRIBUTION	Hole No.	BH104
		Sample No.	
Project Number:	PC248745	Depth m	3.40 - 4.50
Project Name:	National Grid - Margam FEED Phase 1	Sample Type	B
Specimen Description	Dark grey slightly sandy slightly gravelly CLAY.	Specimen Depth m	
Test Method	BS EN ISO 17892 -4:2016, by sieving on as received or wet sample		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	100		
63	100		
50	100		
37.5	97		
20	96		
14	95		
10	94		
6.3	93		
5	93		
2	93		
1.18	93		
0.6	92		
0.3	86		
0.15	72		
0.063	64		

Sample Proportions	% dry mass
Cobbles	0
Gravel	7
Sand	29
Fines <0.063mm	64

Grading Analysis		
D100	mm	50
D60	mm	
D30	mm	
D10	mm	
Uniformity Coefficient		

Remarks

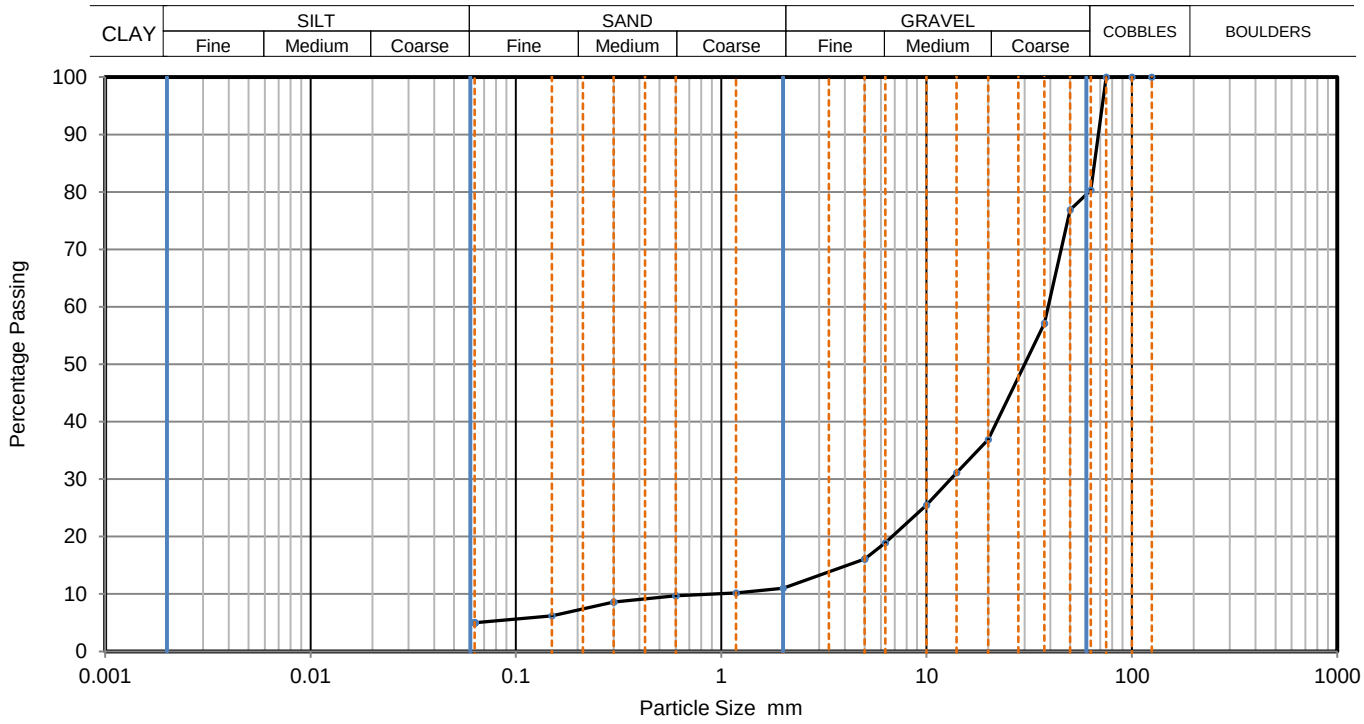
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UKAS TESTING

1365

GEOTECHNICS	PARTICLE SIZE DISTRIBUTION	Hole No.	BH104
		Sample No.	
Project Number:	PC248745	Depth m	5.10 - 6.00
Project Name:	National Grid - Margam FEED Phase 1	Sample Type	B
Specimen Description	Dark grey slightly sandy slightly clayey GRAVEL with a medium cobble content.	Specimen Depth m	
Test Method	BS EN ISO 17892 -4:2016, by sieving on as received or wet sample		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	100		
63	80		
50	77		
37.5	57		
20	37		
14	31		
10	26		
6.3	19		
5	16		
2	11		
1.18	10		
0.6	10		
0.3	9		
0.15	6		
0.063	5		

Sample Proportions	% dry mass
Cobbles	20
Gravel	69
Sand	6
Fines <0.063mm	5

Grading Analysis		
D100	mm	75
D60	mm	39.1
D30	mm	13.1
D10	mm	0.929
Uniformity Coefficient		42

Initial sample mass less than BS EN ISO 17892 requirements

Remarks

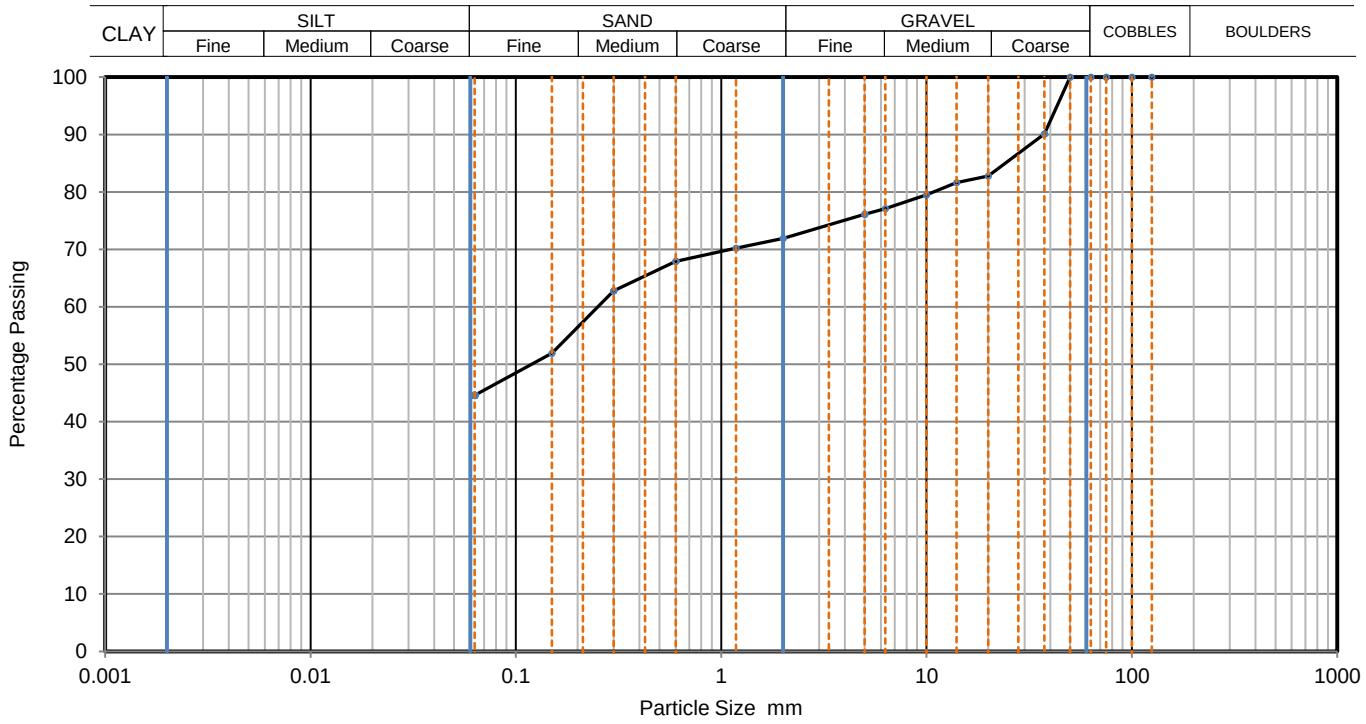
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1365

GEOTECHNICS	PARTICLE SIZE DISTRIBUTION	Hole No.	BH104
		Sample No.	
Project Number:	PC248745	Depth m	7.00 - 8.20
Project Name:	National Grid - Margam FEED Phase 1	Sample Type	B
Specimen Description	Brown slightly sandy slightly gravelly CLAY.	Specimen Depth m	
Test Method	BS EN ISO 17892 -4:2016, by sieving on as received or wet sample		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	100		
63	100		
50	100		
37.5	90		
20	83		
14	82		
10	80		
6.3	77		
5	76		
2	72		
1.18	70		
0.6	68		
0.3	63		
0.15	52		
0.063	45		

Sample Proportions	% dry mass
Cobbles	0
Gravel	28
Sand	27
Fines <0.063mm	45

Grading Analysis		
D100	mm	50
D60	mm	0.251
D30	mm	
D10	mm	
Uniformity Coefficient		

Initial sample mass less than BS EN ISO 17892 requirements

Remarks

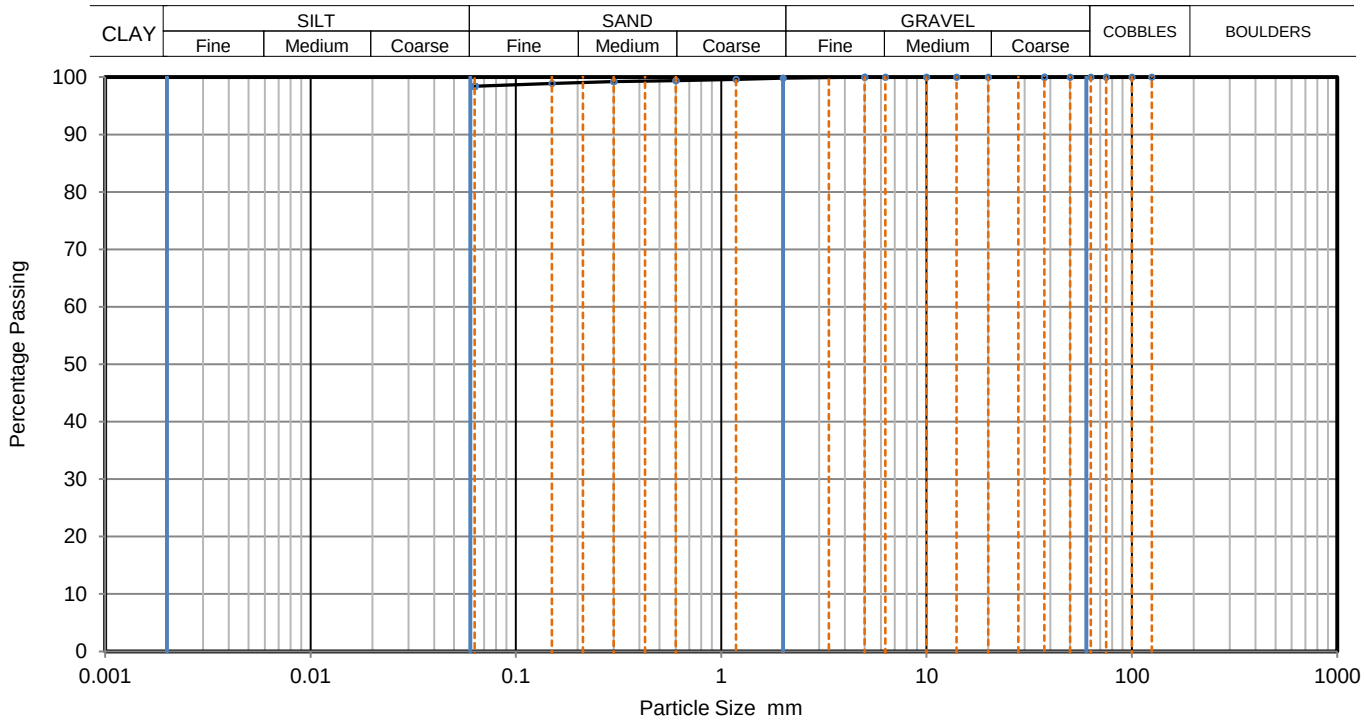
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1365

GEOTECHNICS	PARTICLE SIZE DISTRIBUTION	Hole No.	BH105
		Sample No.	
Project Number:	PC248745	Depth m	2.20 - 3.20
Project Name:	National Grid - Margam FEED Phase 1	Sample Type	B
Specimen Description	Grey slightly sandy CLAY.	Specimen Depth m	
Test Method	BS EN ISO 17892 -4:2016, by sieving on as received or wet sample		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	100		
63	100		
50	100		
37.5	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
2	100		
1.18	100		
0.6	99		
0.3	99		
0.15	99		
0.063	98		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	2
Fines <0.063mm	98

Grading Analysis		
D100	mm	10
D60	mm	
D30	mm	
D10	mm	
Uniformity Coefficient		

Remarks

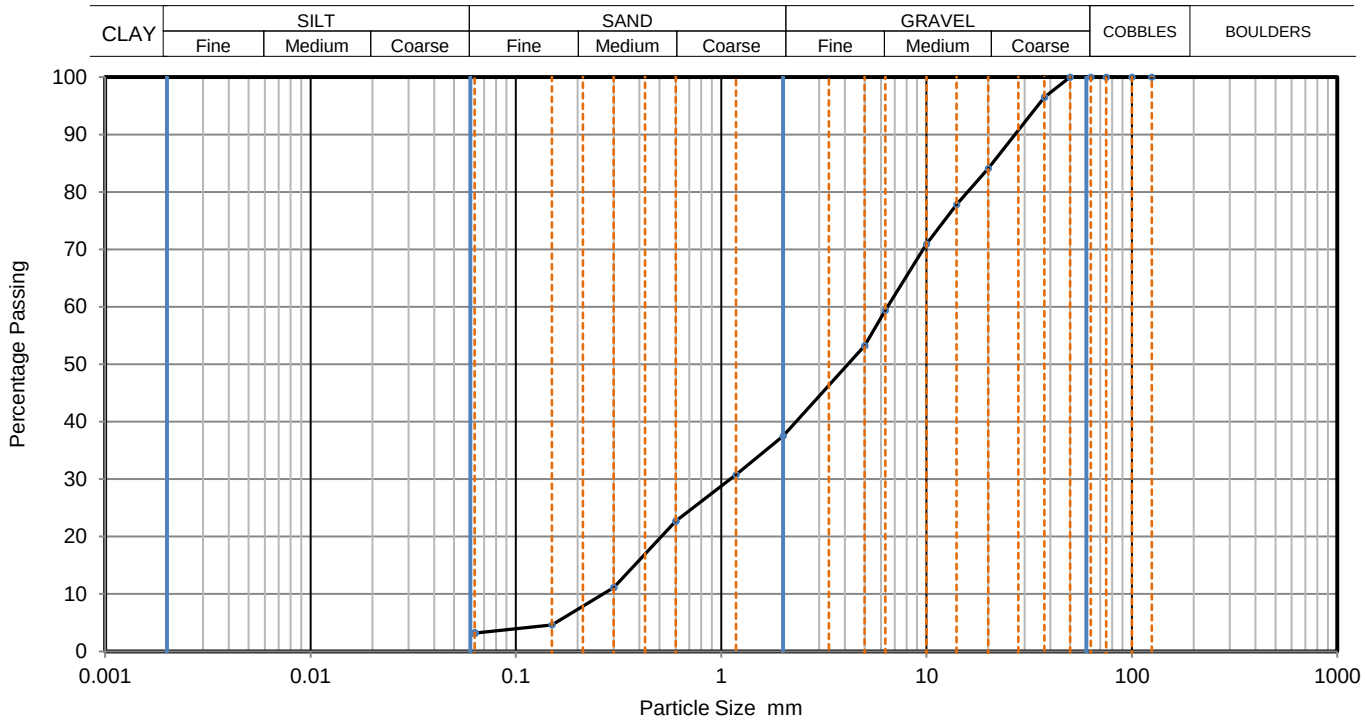
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1365

GEOTECHNICS	PARTICLE SIZE DISTRIBUTION	Hole No.	BH105
		Sample No.	
Project Number:	PC248745	Depth m	5.20 - 6.50
Project Name:	National Grid - Margam FEED Phase 1	Sample Type	B
Specimen Description	Brown very sandy slightly clayey GRAVEL.	Specimen Depth m	
Test Method	BS EN ISO 17892 -4:2016, by sieving on as received or wet sample		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	100		
63	100		
50	100		
37.5	97		
20	84		
14	78		
10	71		
6.3	59		
5	53		
2	38		
1.18	31		
0.6	23		
0.3	11		
0.15	5		
0.063	3		

Sample Proportions	% dry mass
Cobbles	0
Gravel	63
Sand	34
Fines <0.063mm	3

Grading Analysis		
D100	mm	50
D60	mm	6.44
D30	mm	1.1
D10	mm	0.267
Uniformity Coefficient		24

Remarks

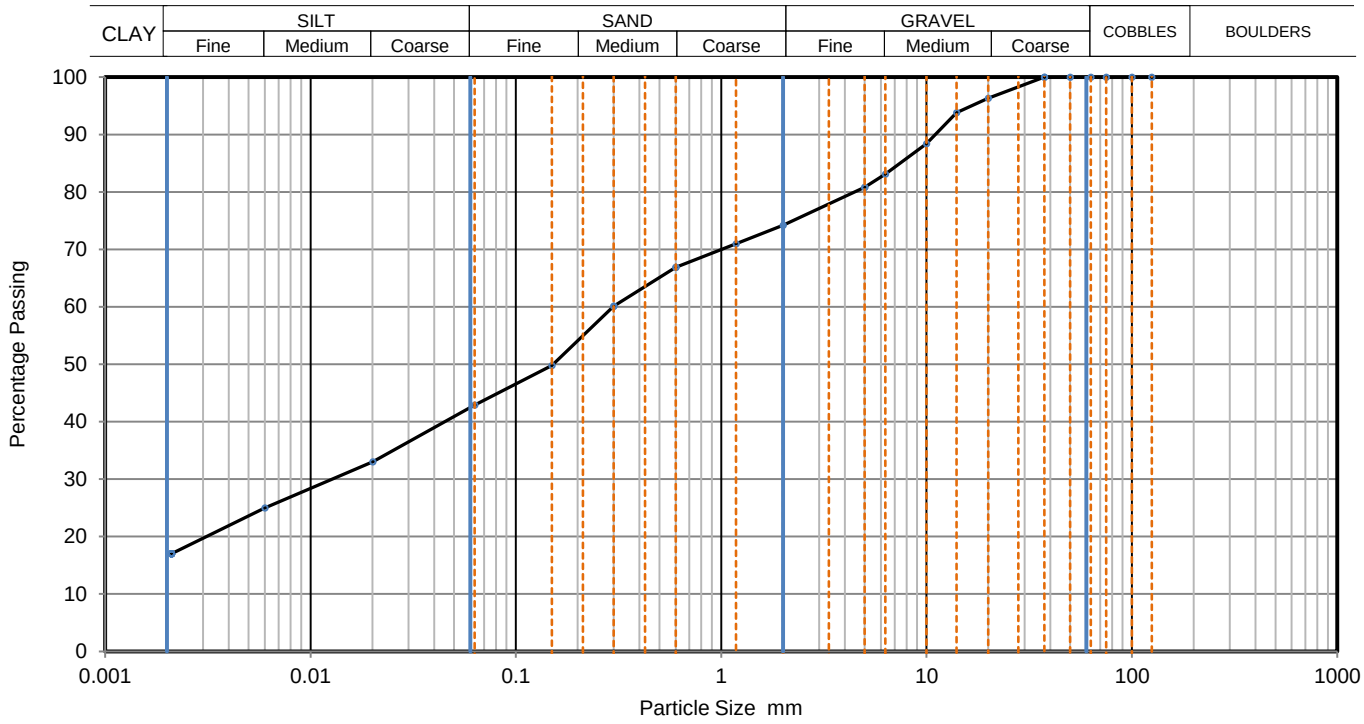
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1365

GEOTECHNICS	PARTICLE SIZE DISTRIBUTION	Hole No.	BH105
		Sample No.	
Project Number:	PC248745	Depth m	8.50 - 9.50
Project Name:	National Grid - Margam FEED Phase 1	Sample Type	B
Specimen Description	Brown slightly sandy slightly gravelly CLAY.	Specimen Depth m	
Test Method	BS EN ISO 17892 -4:2016, by sieving and pipette sedimentation		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.020	33
100	100	0.006	25
75	100	0.002	17
63	100		
50	100		
37.5	100		
20	96		
14	94		
10	88		
6.3	83		
5	81		
2	74		
1.18	71		
0.6	67		
0.3	60		
0.15	50	Particle density	(assumed)
0.063	43	2.65	Mg/m3

Sample Proportions	% dry mass
Cobbles	0
Gravel	26
Sand	31
Silt	26
Clay	17

Grading Analysis		
D100	mm	37.5
D60	mm	0.297
D30	mm	0.0133
D10	mm	
Uniformity Coefficient		

Remarks

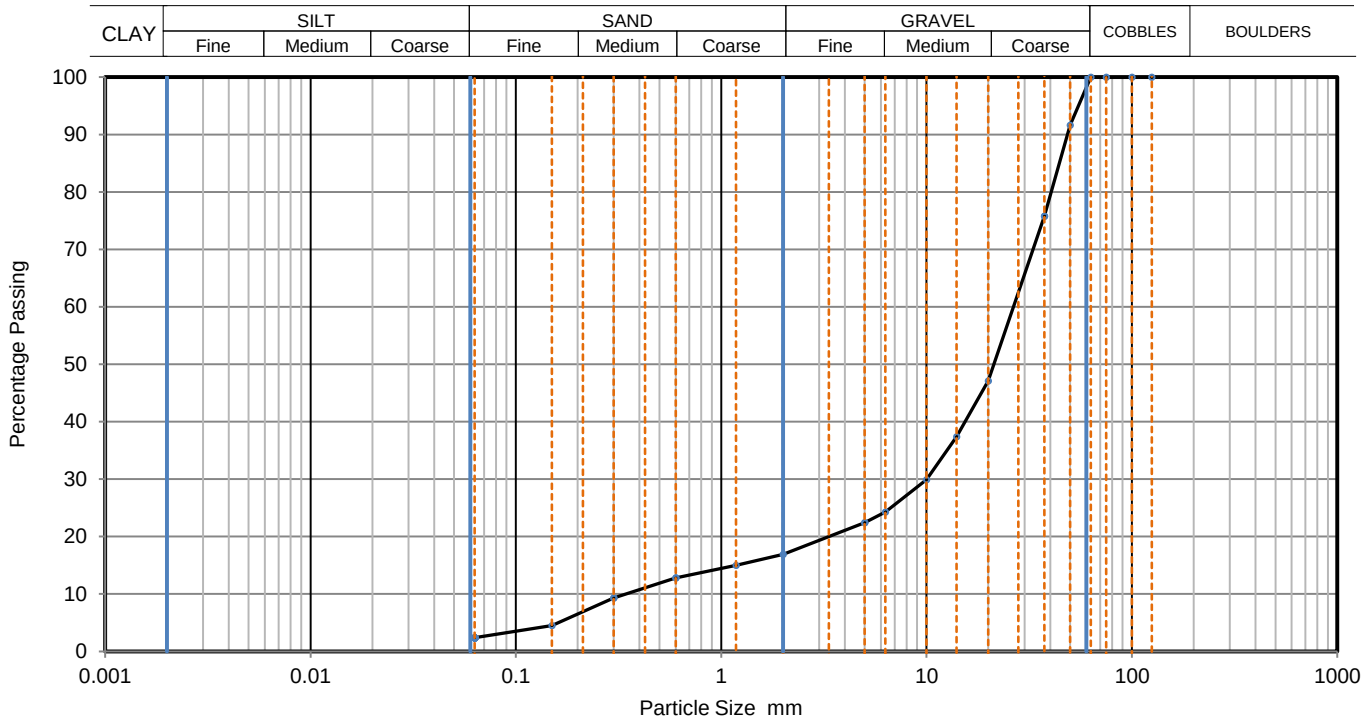
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1365

GEOTECHNICS	PARTICLE SIZE DISTRIBUTION	Hole No.	BH106
		Sample No.	
Project Number:	PC248745	Depth m	4.70 - 5.50
Project Name:	National Grid - Margam FEED Phase 1	Sample Type	B
Specimen Description	Brown sandy slightly clayey GRAVEL.	Specimen Depth m	
Test Method	BS EN ISO 17892 -4:2016, by sieving on as received or wet sample		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	100		
63	100		
50	92		
37.5	76		
20	47		
14	37		
10	30		
6.3	24		
5	22		
2	17		
1.18	15		
0.6	13		
0.3	9		
0.15	5		
0.063	2		

Sample Proportions	% dry mass
Cobbles	0
Gravel	84
Sand	14
Fines <0.063mm	2

Grading Analysis		
D100	mm	63
D60	mm	26.5
D30	mm	10
D10	mm	0.347
Uniformity Coefficient		76

Remarks

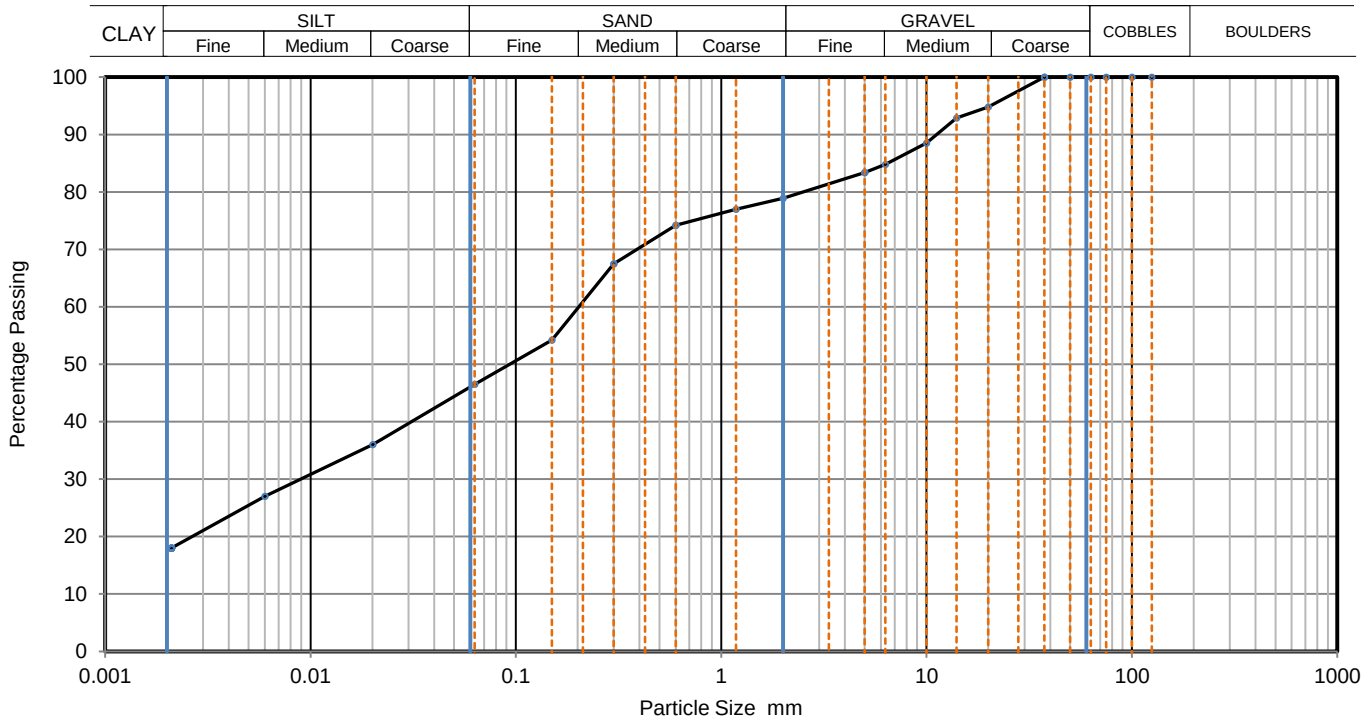
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1365

GEOTECHNICS	PARTICLE SIZE DISTRIBUTION	Hole No.	BH106
		Sample No.	
Project Number:	PC248745	Depth m	7.80 - 8.50
Project Name:	National Grid - Margam FEED Phase 1	Sample Type	B
Specimen Description	Brown slightly sandy slightly gravelly CLAY.	Specimen Depth m	
Test Method	BS EN ISO 17892 -4:2016, by sieving and pipette sedimentation		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.020	36
100	100	0.006	27
75	100	0.002	18
63	100		
50	100		
37.5	100		
20	95		
14	93		
10	89		
6.3	85		
5	83		
2	79		
1.18	77		
0.6	74		
0.3	68		
0.15	54	Particle density	(assumed)
0.063	47	2.65	Mg/m3

Sample Proportions	% dry mass
Cobbles	0
Gravel	21
Sand	32
Silt	29
Clay	18

Grading Analysis		
D100	mm	37.5
D60	mm	0.203
D30	mm	0.009
D10	mm	
Uniformity Coefficient		

Remarks

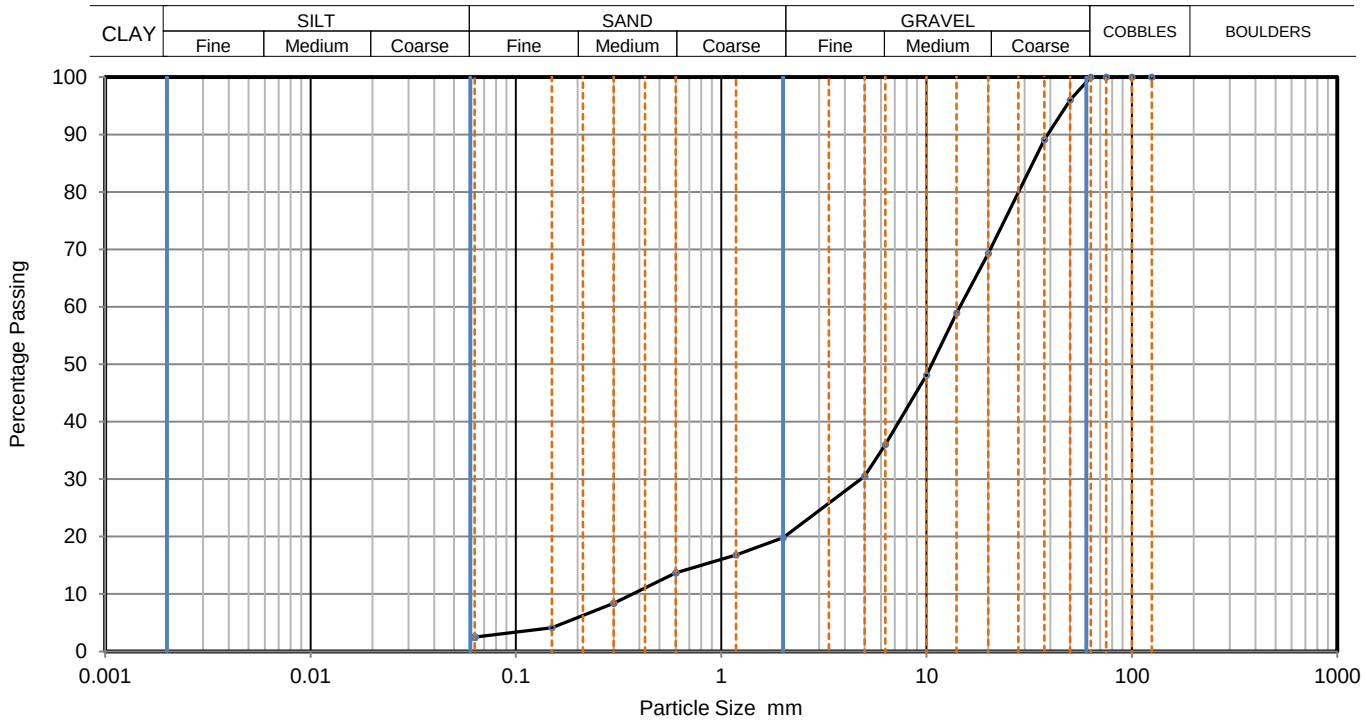
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GEOTECHNICS	PARTICLE SIZE DISTRIBUTION	Hole No.	BH107
		Sample No.	
Project Number:	PC248745	Depth m	6.50 - 7.50
Project Name:	National Grid - Margam FEED Phase 1	Sample Type	B
Specimen Description	Brown sandy slightly clayey GRAVEL.	Specimen Depth m	
Test Method	BS EN ISO 17892 -4:2016, by sieving on as received or wet sample		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	100		
63	100		
50	96		
37.5	89		
20	69		
14	59		
10	48		
6.3	36		
5	31		
2	20		
1.18	17		
0.6	14		
0.3	8		
0.15	4		
0.063	3		

Sample Proportions	% dry mass
Cobbles	0
Gravel	81
Sand	17
Fines <0.063mm	2

Grading Analysis		
D100	mm	63
D60	mm	14.6
D30	mm	4.81
D10	mm	0.369
Uniformity Coefficient		39

Remarks

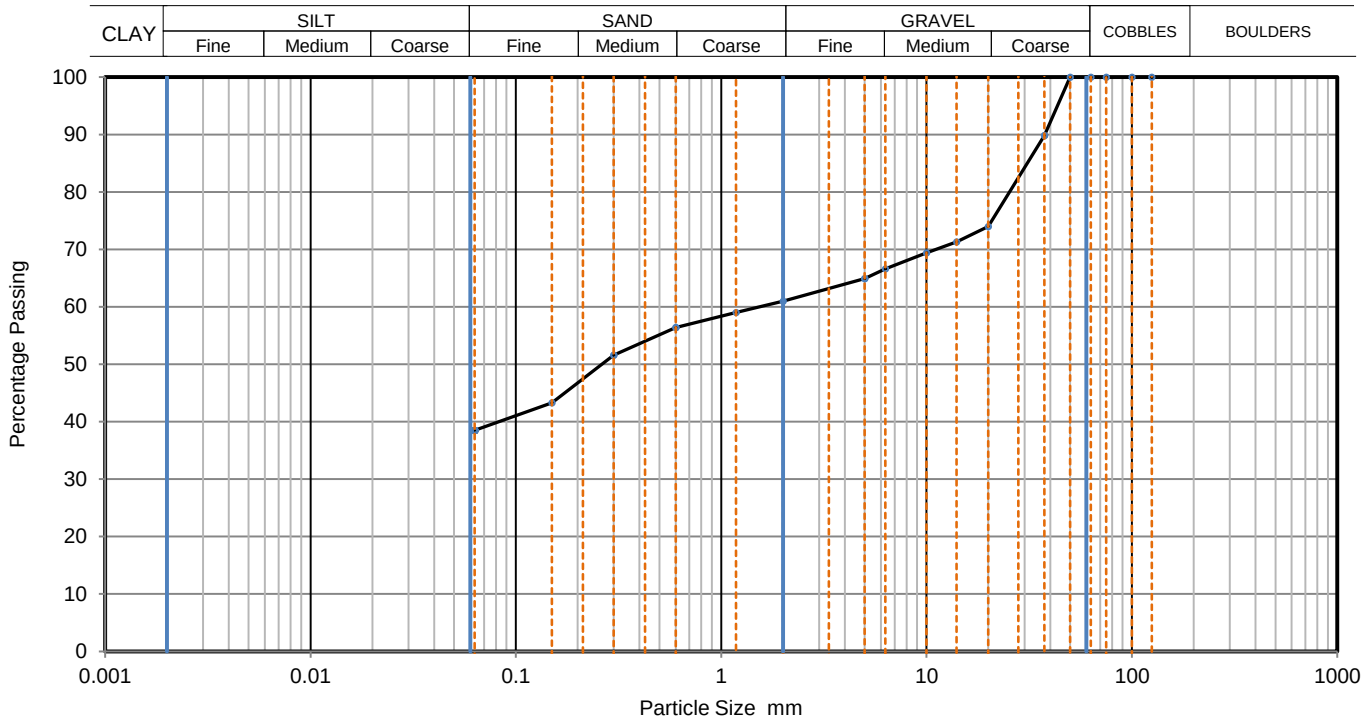
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1365

GEOTECHNICS	PARTICLE SIZE DISTRIBUTION	Hole No.	BH107
		Sample No.	
Project Number:	PC248745	Depth m	9.30 - 10.00
Project Name:	National Grid - Margam FEED Phase 1	Sample Type	B
Specimen Description	Brown slightly sandy gravelly CLAY.	Specimen Depth m	
Test Method	BS EN ISO 17892 -4:2016, by sieving on as received or wet sample		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	100		
63	100		
50	100		
37.5	90		
20	74		
14	71		
10	69		
6.3	67		
5	65		
2	61		
1.18	59		
0.6	56		
0.3	52		
0.15	43		
0.063	39		

Sample Proportions	% dry mass
Cobbles	0
Gravel	40
Sand	22
Fines <0.063mm	38

Grading Analysis		
D100	mm	50
D60	mm	1.55
D30	mm	
D10	mm	
Uniformity Coefficient		

Initial sample mass less than BS EN ISO 17892 requirements

Remarks

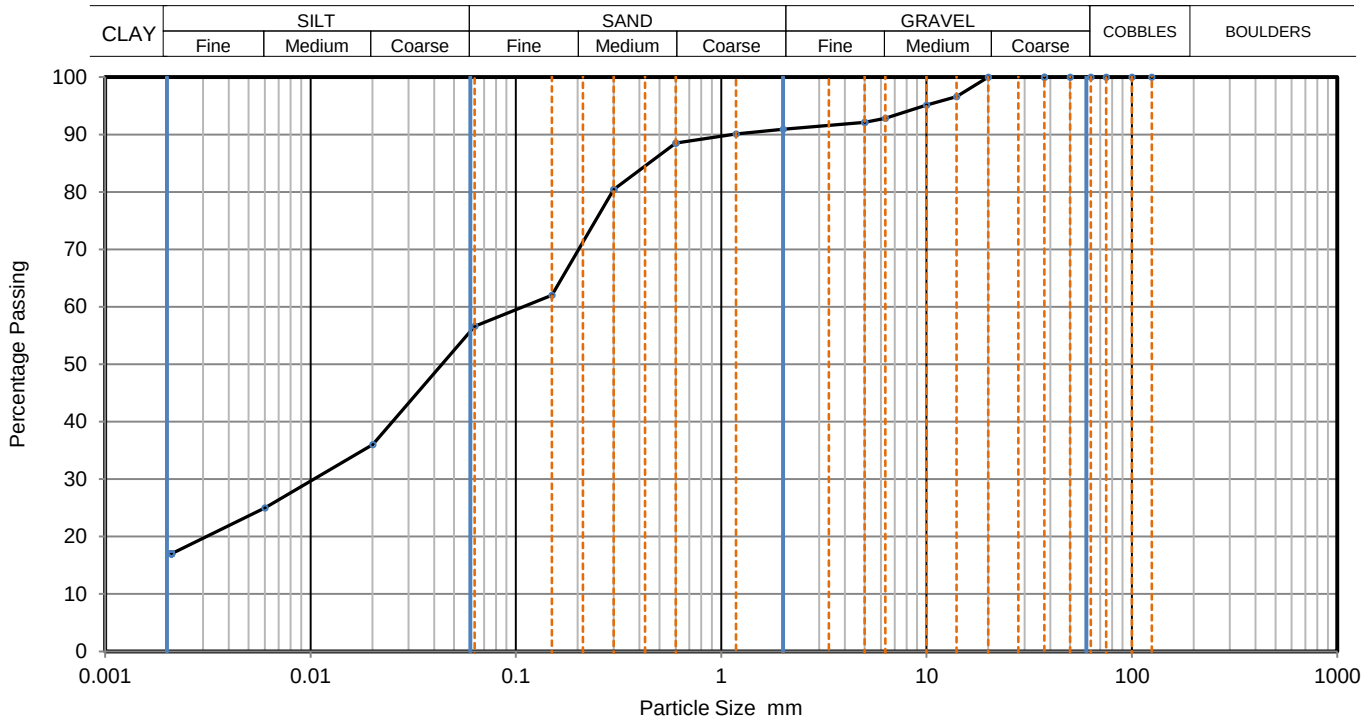
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1365

GEOTECHNICS	PARTICLE SIZE DISTRIBUTION	Hole No.	BH108
		Sample No.	
Project Number:	PC248745	Depth m	4.60 - 5.50
Project Name:	National Grid - Margam FEED Phase 1	Sample Type	B
Specimen Description	Dark grey slightly sandy slightly gravelly CLAY.	Specimen Depth m	
Test Method	BS EN ISO 17892 -4:2016, by sieving and pipette sedimentation		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.020	36
100	100	0.006	25
75	100	0.002	17
63	100		
50	100		
37.5	100		
20	100		
14	97		
10	95		
6.3	93		
5	92		
2	91		
1.18	90		
0.6	89		
0.3	80		
0.15	62	Particle density	(assumed)
0.063	57	2.65	Mg/m3

Sample Proportions	% dry mass
Cobbles	0
Gravel	9
Sand	34
Silt	40
Clay	17

Grading Analysis		
D100	mm	20
D60	mm	0.108
D30	mm	0.0104
D10	mm	
Uniformity Coefficient		

Remarks

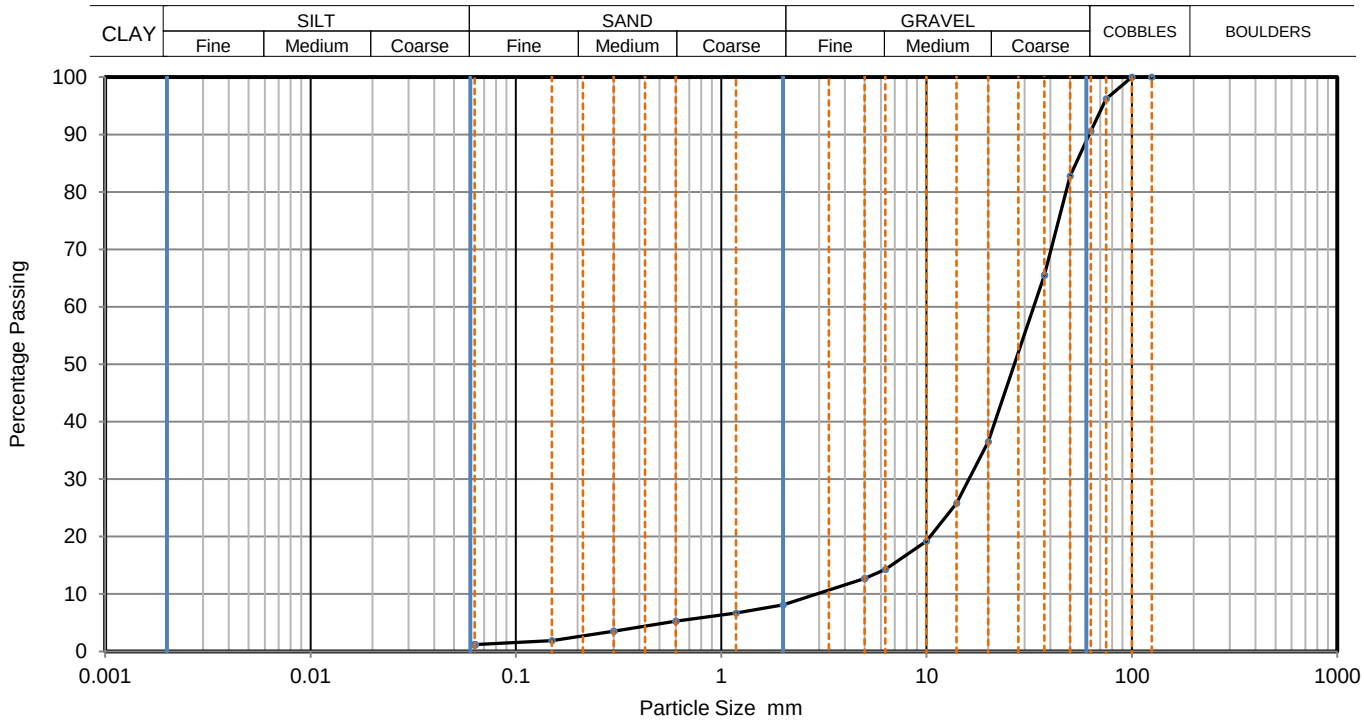
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1365

GEOTECHNICS	PARTICLE SIZE DISTRIBUTION	Hole No.	BH108
		Sample No.	
Project Number:	PC248745	Depth m	5.50 - 6.50
Project Name:	National Grid - Margam FEED Phase 1	Sample Type	B
Specimen Description	Brown sandy slightly clayey GRAVEL with a medium cobble content.	Specimen Depth m	
Test Method	BS EN ISO 17892 -4:2016, by sieving on as received or wet sample		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	96		
63	91		
50	83		
37.5	66		
20	37		
14	26		
10	19		
6.3	14		
5	13		
2	8		
1.18	7		
0.6	5		
0.3	4		
0.15	2		
0.063	1		

Sample Proportions	% dry mass
Cobbles	9
Gravel	83
Sand	7
Fines <0.063mm	1

Grading Analysis		
D100	mm	100
D60	mm	33.3
D30	mm	16.1
D10	mm	2.92
Uniformity Coefficient		11

Initial sample mass less than BS EN ISO 17892 requirements

Remarks

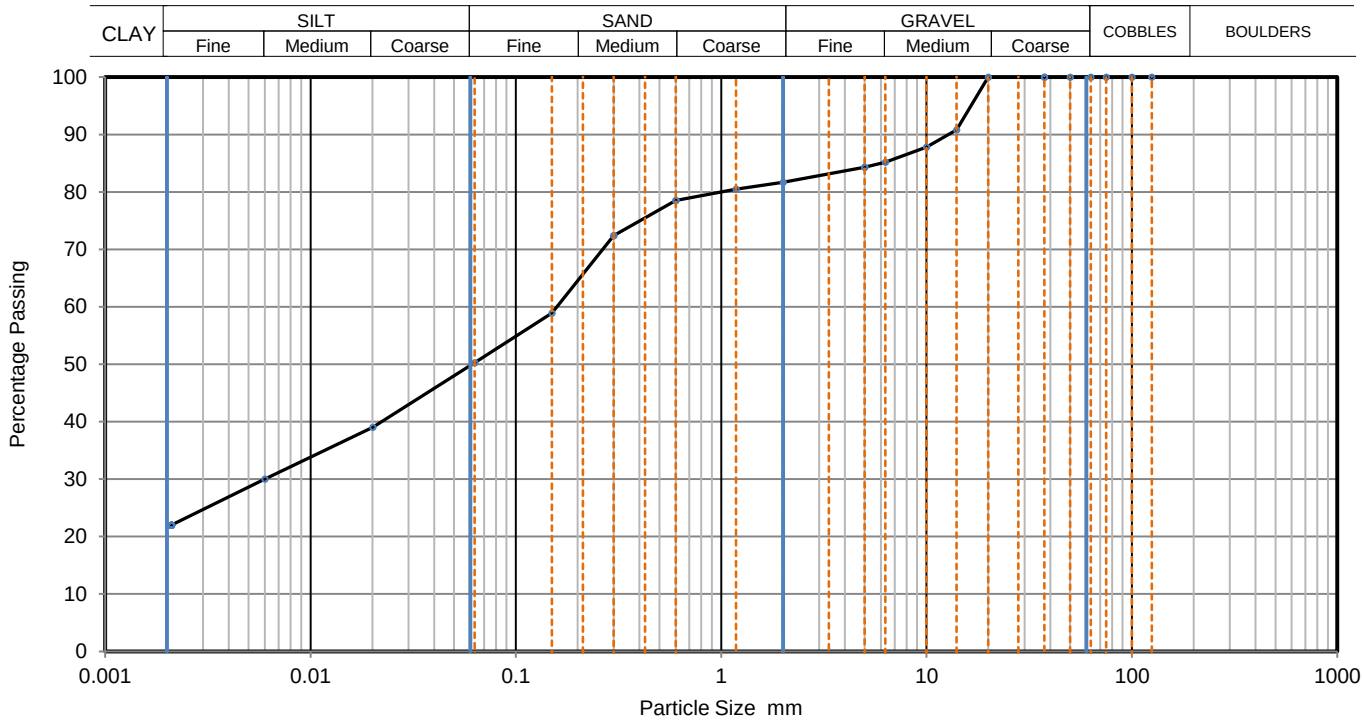
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GEOTECHNICS	PARTICLE SIZE DISTRIBUTION	Hole No.	BH108
		Sample No.	
Project Number:	PC248745	Depth m	7.70 - 8.50
Project Name:	National Grid - Margam FEED Phase 1	Sample Type	B
Specimen Description	Brown slightly sandy slightly gravelly CLAY.	Specimen Depth m	
Test Method	BS EN ISO 17892 -4:2016, by sieving and pipette sedimentation		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.020	39
100	100	0.006	30
75	100	0.002	22
63	100		
50	100		
37.5	100		
20	100		
14	91		
10	88		
6.3	85		
5	84		
2	82		
1.18	81		
0.6	79		
0.3	72		
0.15	59	Particle density	(assumed)
0.063	50	2.65	Mg/m3

Sample Proportions	% dry mass
Cobbles	0
Gravel	18
Sand	31
Silt	29
Clay	22

Grading Analysis		
D100	mm	20
D60	mm	0.158
D30	mm	0.006
D10	mm	
Uniformity Coefficient		

Remarks

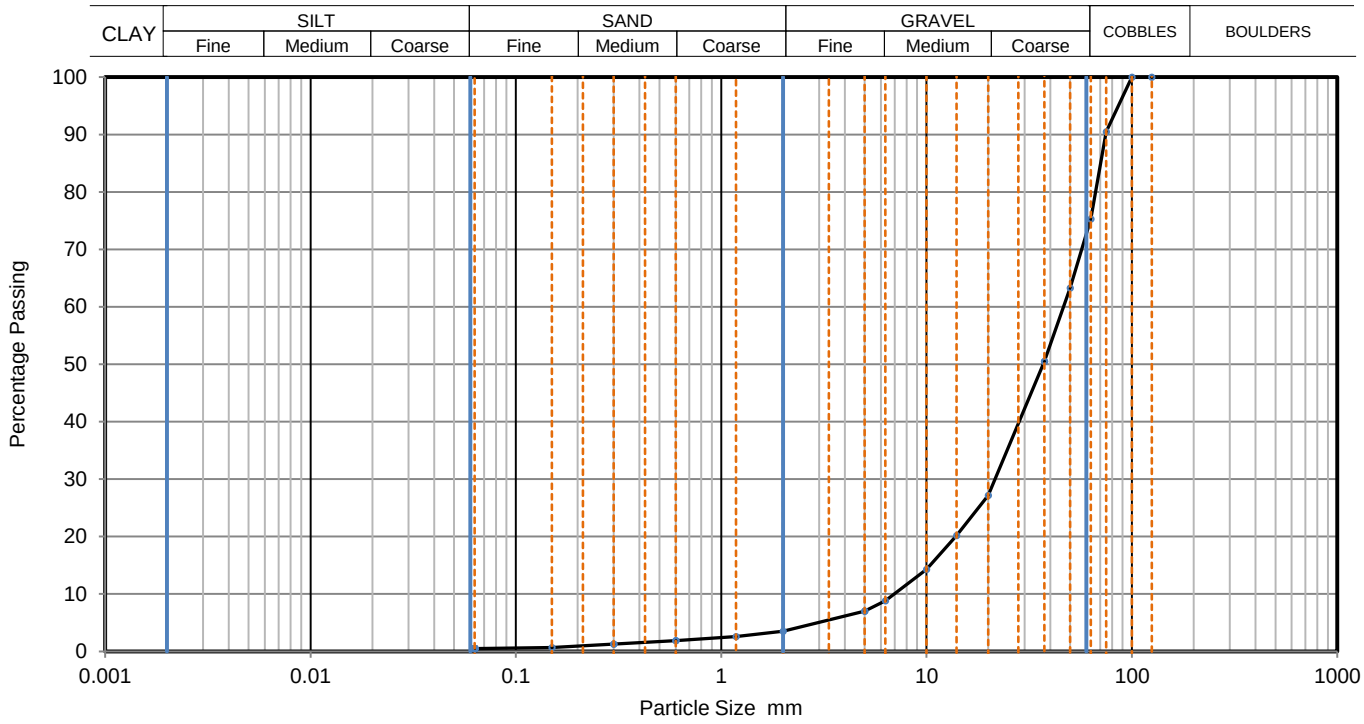
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UKAS TESTING

1365

GEOTECHNICS	PARTICLE SIZE DISTRIBUTION	Hole No.	BH109
		Sample No.	
Project Number:	PC248745	Depth m	6.50 - 7.50
Project Name:	National Grid - Margam FEED Phase 1	Sample Type	B
Specimen Description	Brown sandy GRAVEL with a high cobble content.	Specimen Depth m	
Test Method	BS EN ISO 17892 -4:2016, by sieving on as received or wet sample		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	91		
63	75		
50	63		
37.5	51		
20	27		
14	20		
10	14		
6.3	9		
5	7		
2	4		
1.18	3		
0.6	2		
0.3	1		
0.15	1		
0.063	1		

Sample Proportions	% dry mass
Cobbles	25
Gravel	72
Sand	3
Fines <0.063mm	0

Grading Analysis		
D100	mm	100
D60	mm	46.5
D30	mm	21.6
D10	mm	6.98
Uniformity Coefficient		6.7

Initial sample mass less than BS EN ISO 17892 requirements

Remarks

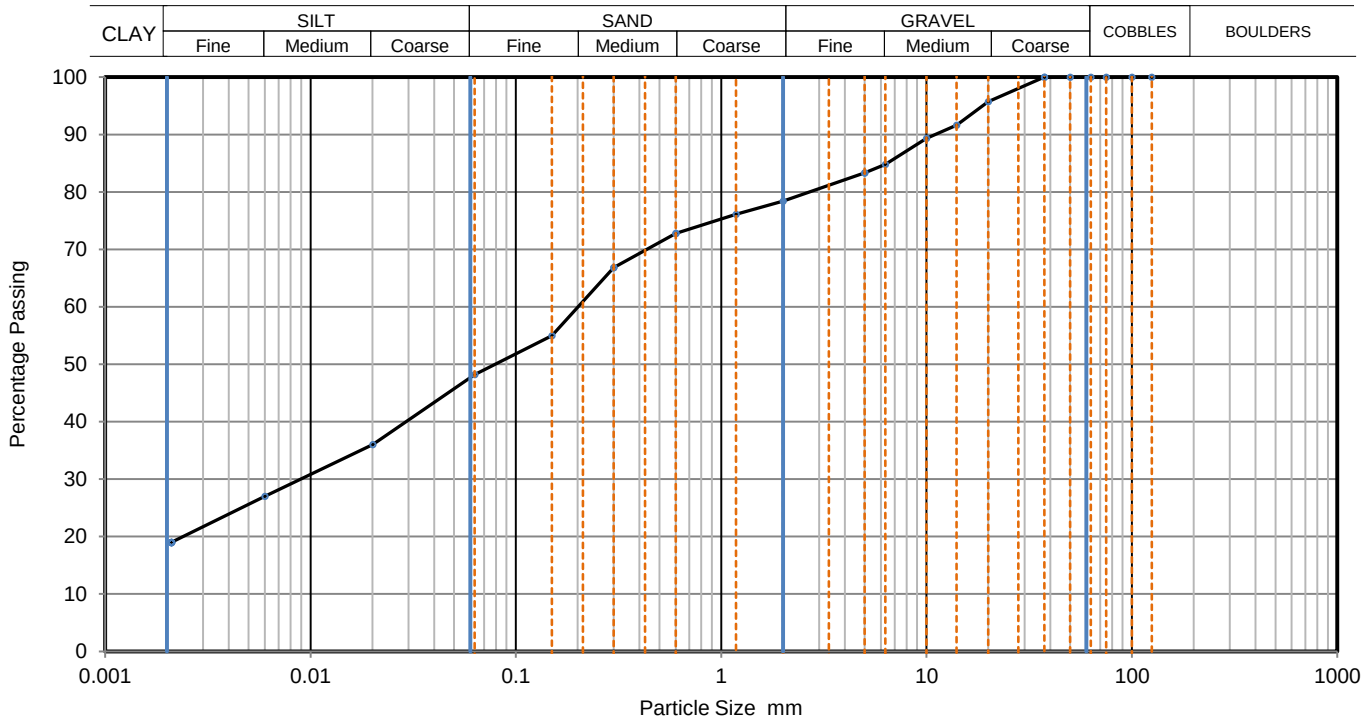
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GEOTECHNICS	PARTICLE SIZE DISTRIBUTION	Hole No.	BH109
		Sample No.	
Project Number:	PC248745	Depth m	10.00 - 11.00
Project Name:	National Grid - Margam FEED Phase 1	Sample Type	B
Specimen Description	Brown slightly sandy slightly gravelly CLAY.	Specimen Depth m	
Test Method	BS EN ISO 17892 -4:2016, by sieving and pipette sedimentation		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.020	36
100	100	0.006	27
75	100	0.002	19
63	100		
50	100		
37.5	100		
20	96		
14	92		
10	89		
6.3	85		
5	83		
2	78		
1.18	76		
0.6	73		
0.3	67		
0.15	55	Particle density	(assumed)
0.063	48	2.65	Mg/m3

Sample Proportions	% dry mass
Cobbles	0
Gravel	22
Sand	30
Silt	29
Clay	19

Grading Analysis		
D100	mm	37.5
D60	mm	0.201
D30	mm	0.00912
D10	mm	
Uniformity Coefficient		

Remarks

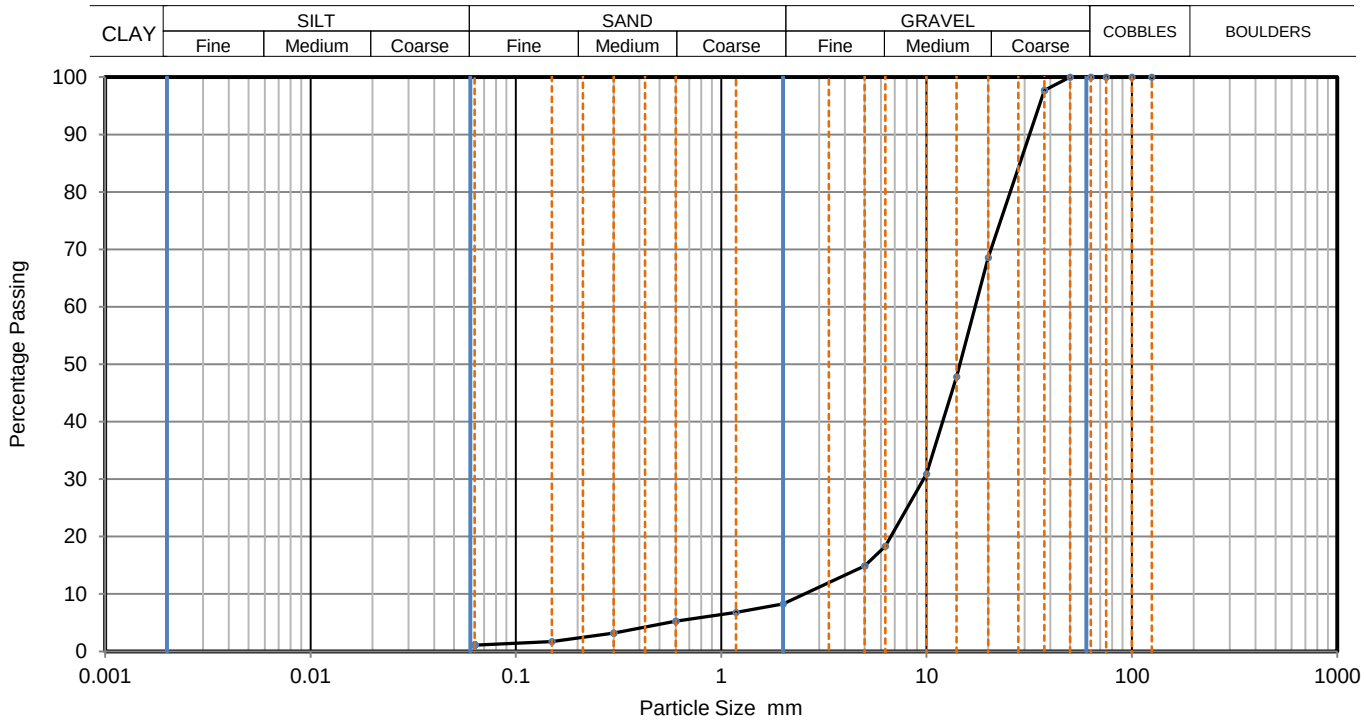
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UKAS TESTING

1365

GEOTECHNICS	PARTICLE SIZE DISTRIBUTION	Hole No.	BH110
		Sample No.	
Project Number:	PC248745	Depth m	6.60 - 7.50
Project Name:	National Grid - Margam FEED Phase 1	Sample Type	B
Specimen Description	Brown sandy slightly clayey GRAVEL.	Specimen Depth m	
Test Method	BS EN ISO 17892 -4:2016, by sieving on as received or wet sample		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	100		
63	100		
50	100		
37.5	98		
20	69		
14	48		
10	31		
6.3	18		
5	15		
2	8		
1.18	7		
0.6	5		
0.3	3		
0.15	2		
0.063	1		

Sample Proportions	% dry mass
Cobbles	0
Gravel	92
Sand	7
Fines <0.063mm	1

Grading Analysis		
D100	mm	50
D60	mm	17.3
D30	mm	9.68
D10	mm	2.54
Uniformity Coefficient		6.8

Remarks

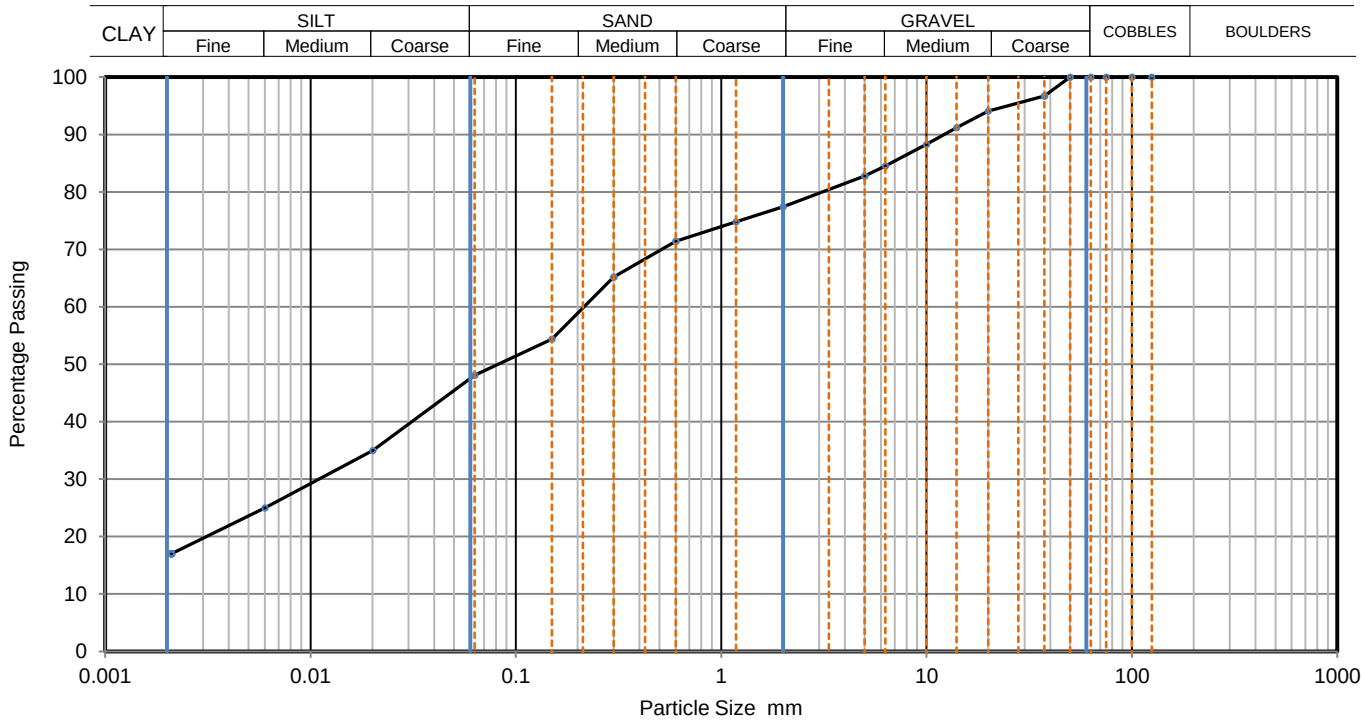
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UKAS TESTING

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GEOTECHNICS	**PARTICLE SIZE DISTRIBUTION**	Hole No.	BH111
		Sample No.	
Project Number:	PC248745	Depth m	7.20 - 8.50
Project Name:	National Grid - Margam FEED Phase 1	Sample Type	B
Specimen Description	Brown slightly sandy slightly gravelly CLAY.	Specimen Depth m	
Test Method	BS EN ISO 17892 -4:2016, by sieving and pipette sedimentation		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.020	35
100	100	0.006	25
75	100	0.002	17
63	100		
50	100		
37.5	97		
20	94		
14	91		
10	88		
6.3	85		
5	83		
2	77		
1.18	75		
0.6	71		
0.3	65		
0.15	54	Particle density	(assumed)
0.063	48	2.65	Mg/m3

Sample Proportions	% dry mass
Cobbles	0
Gravel	23
Sand	29
Silt	31
Clay	17

Grading Analysis		
D100	mm	50
D60	mm	0.215
D30	mm	0.0106
D10	mm	
Uniformity Coefficient		

Remarks

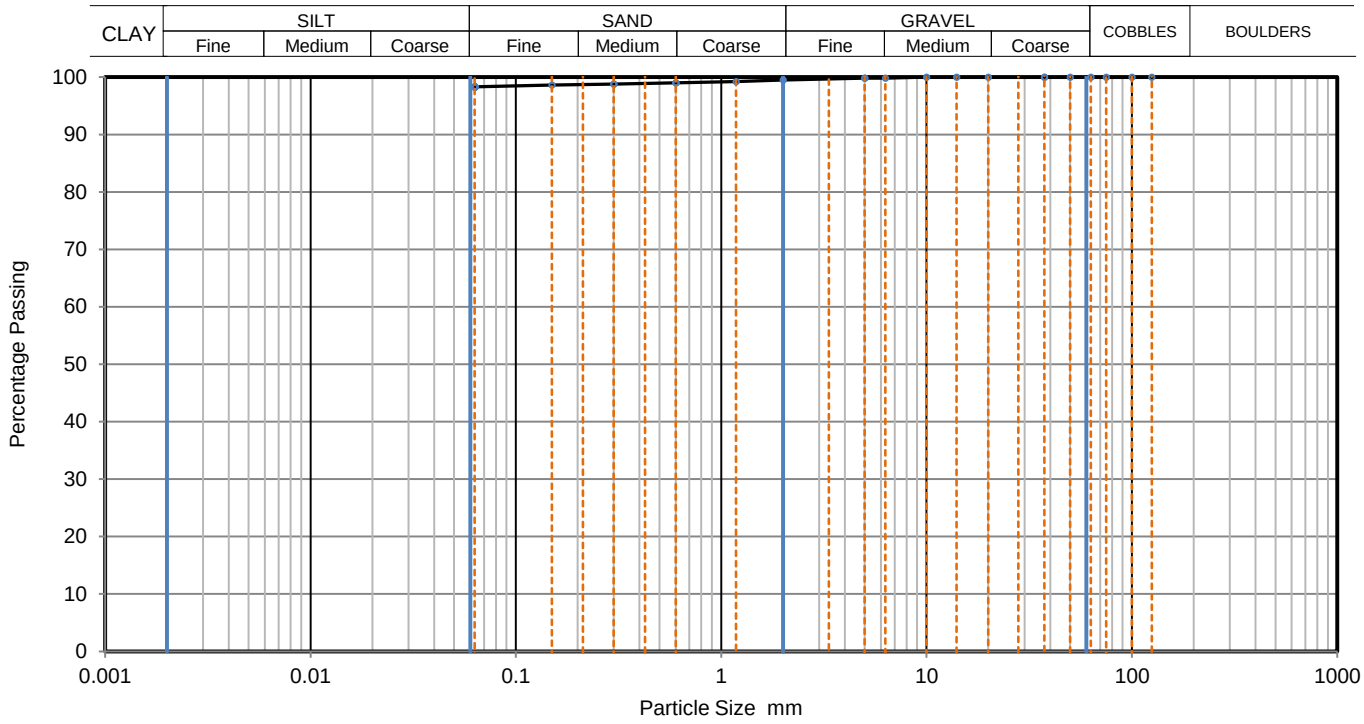
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GEOTECHNICS	PARTICLE SIZE DISTRIBUTION	Hole No.	BH112
		Sample No.	
Project Number:	PC248745	Depth m	1.60 - 2.30
Project Name:	National Grid - Margam FEED Phase 1	Sample Type	B
Specimen Description	Bluish grey slightly sandy slightly gravelly CLAY.	Specimen Depth m	
Test Method	BS EN ISO 17892 -4:2016, by sieving on as received or wet sample		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	100		
63	100		
50	100		
37.5	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
2	100		
1.18	99		
0.6	99		
0.3	99		
0.15	99		
0.063	98		

Sample Proportions	% dry mass
Cobbles	0
Gravel	1
Sand	1
Fines <0.063mm	98

Grading Analysis		
D100	mm	10
D60	mm	
D30	mm	
D10	mm	
Uniformity Coefficient		

Remarks

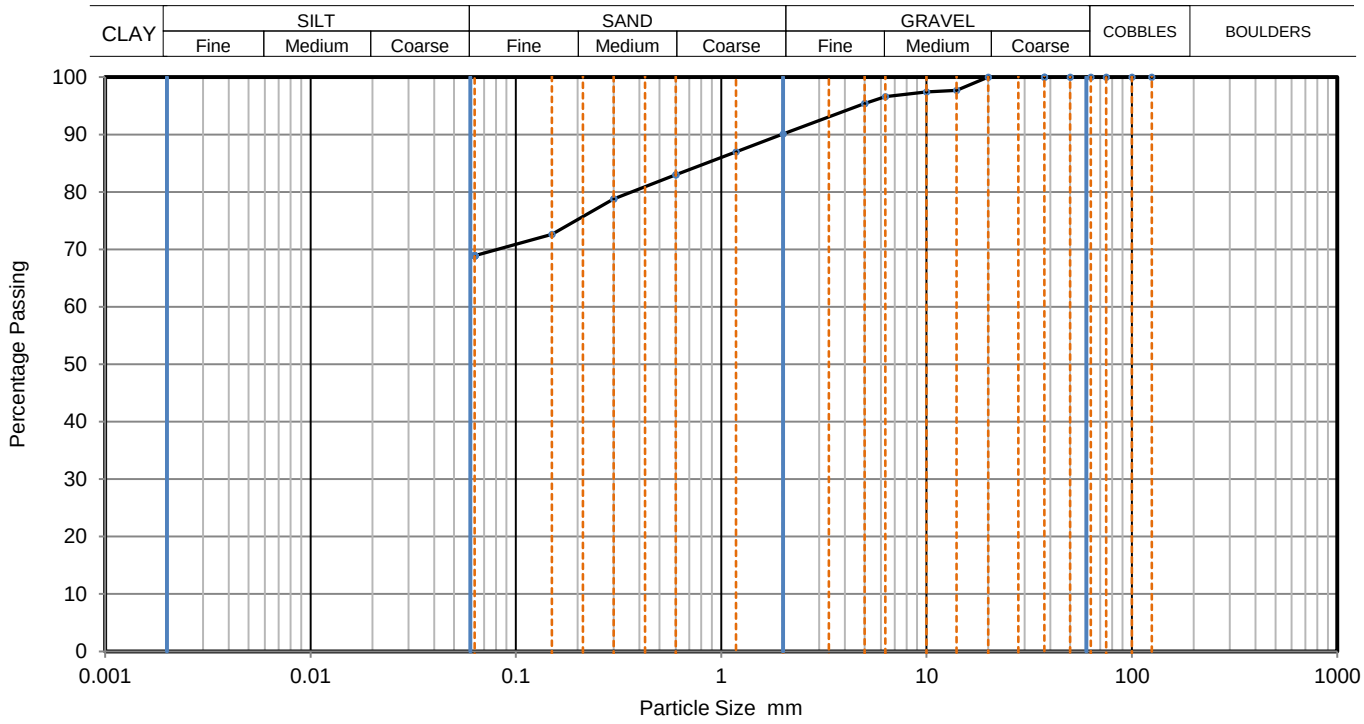
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GEOTECHNICS	PARTICLE SIZE DISTRIBUTION	Hole No.	BH112
		Sample No.	
Project Number:	PC248745	Depth m	4.50 - 5.50
Project Name:	National Grid - Margam FEED Phase 1	Sample Type	B
Specimen Description	Black slightly sandy slightly gravelly PEAT.	Specimen Depth m	
Test Method	BS EN ISO 17892 -4:2016, by sieving on as received or wet sample		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	100		
63	100		
50	100		
37.5	100		
20	100		
14	98		
10	97		
6.3	97		
5	95		
2	90		
1.18	87		
0.6	83		
0.3	79		
0.15	73	Particle density	(assumed)
0.063	69	2.65	Mg/m3

Sample Proportions	% dry mass
Cobbles	0
Gravel	10
Sand	21
Fines <0.063mm	69

Grading Analysis		
D100	mm	20
D60	mm	
D30	mm	
D10	mm	
Uniformity Coefficient		

Remarks

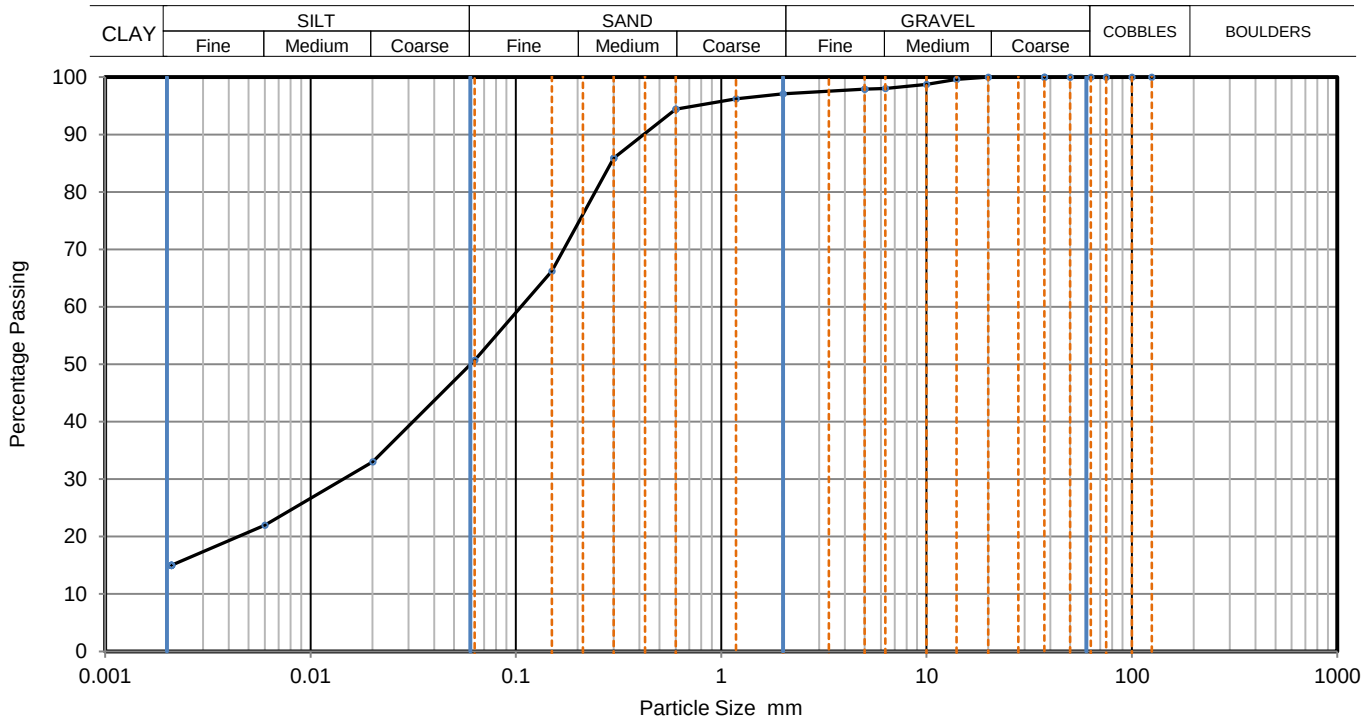
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1365

GEOTECHNICS	**PARTICLE SIZE DISTRIBUTION**	Hole No.	BH112
		Sample No.	
Project Number:	PC248745	Depth m	6.50 - 7.30
Project Name:	National Grid - Margam FEED Phase 1	Sample Type	B
Specimen Description	Brown slightly gravelly sandy CLAY.	Specimen Depth m	
Test Method	BS EN ISO 17892 -4:2016, by sieving and pipette sedimentation		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.020	33
100	100	0.006	22
75	100	0.002	15
63	100		
50	100		
37.5	100		
20	100		
14	100		
10	99		
6.3	98		
5	98		
2	97		
1.18	96		
0.6	94		
0.3	86		
0.15	66	Particle density	(assumed)
0.063	51	2.65	Mg/m3

Sample Proportions	% dry mass
Cobbles	0
Gravel	3
Sand	46
Silt	36
Clay	15

Grading Analysis		
D100	mm	20
D60	mm	0.106
D30	mm	0.0145
D10	mm	
Uniformity Coefficient		

Remarks

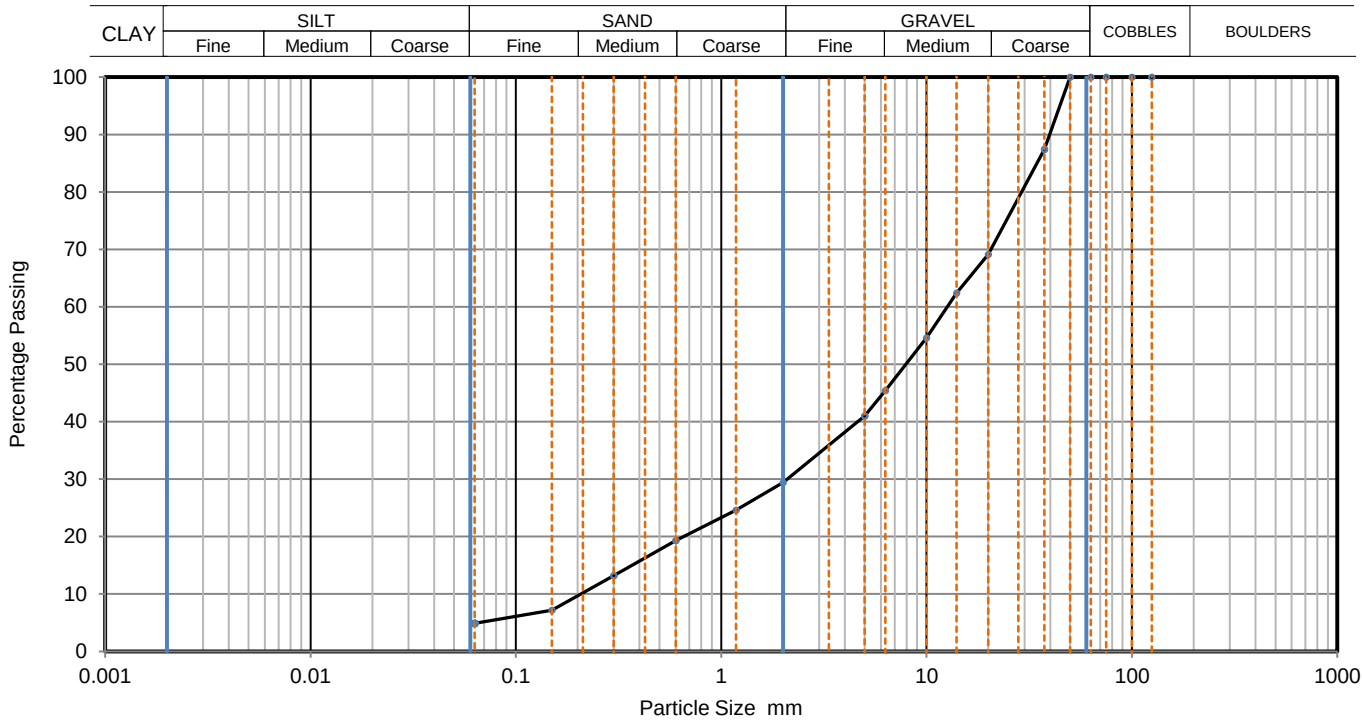
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GEOTECHNICS	PARTICLE SIZE DISTRIBUTION	Hole No.	BH112
		Sample No.	
Project Number:	PC248745	Depth m	8.50 - 9.20
Project Name:	National Grid - Margam FEED Phase 1	Sample Type	B
Specimen Description	Brown very sandy clayey GRAVEL.	Specimen Depth m	
Test Method	BS EN ISO 17892 -4:2016, by sieving on as received or wet sample		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	100		
63	100		
50	100		
37.5	87		
20	69		
14	62		
10	55		
6.3	45		
5	41		
2	29		
1.18	25		
0.6	19		
0.3	13		
0.15	7		
0.063	5		

Sample Proportions	% dry mass
Cobbles	0
Gravel	70
Sand	25
Fines <0.063mm	5

Grading Analysis		
D100	mm	50
D60	mm	12.6
D30	mm	2.09
D10	mm	0.207
Uniformity Coefficient		61

Initial sample mass less than BS EN ISO 17892 requirements

Remarks

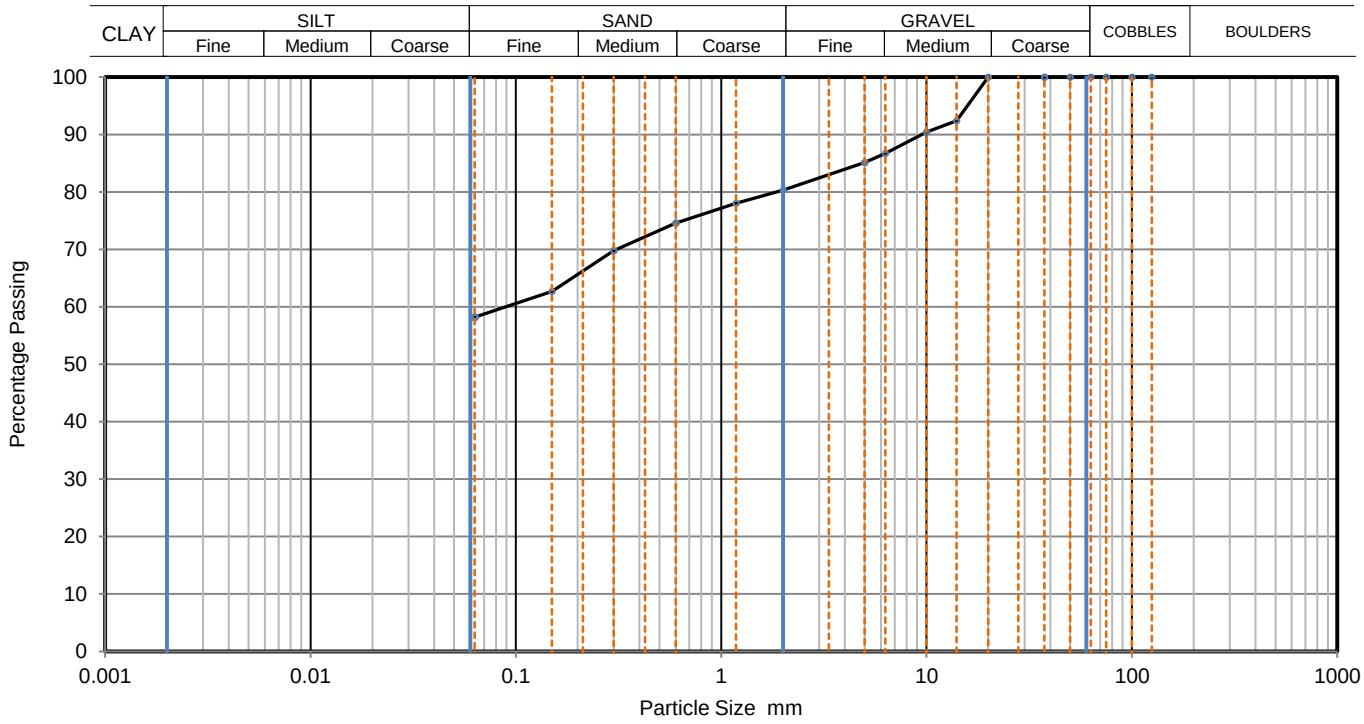
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GEOTECHNICS	PARTICLE SIZE DISTRIBUTION	Hole No.	BH112
		Sample No.	
Project Number:	PC248745	Depth m	11.50 - 12.50
Project Name:	National Grid - Margam FEED Phase 1	Sample Type	B
Specimen Description	Brown slightly sandy slightly gravelly CLAY.	Specimen Depth m	
Test Method	BS EN ISO 17892 -4:2016, by sieving on as received or wet sample		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	100		
63	100		
50	100		
37.5	100		
20	100		
14	92		
10	90		
6.3	87		
5	85		
2	80		
1.18	78		
0.6	75		
0.3	70		
0.15	63		
0.063	58		

Sample Proportions	% dry mass
Cobbles	0
Gravel	20
Sand	22
Fines <0.063mm	58

Grading Analysis		
D100	mm	20
D60	mm	0.0891
D30	mm	
D10	mm	
Uniformity Coefficient		

Remarks

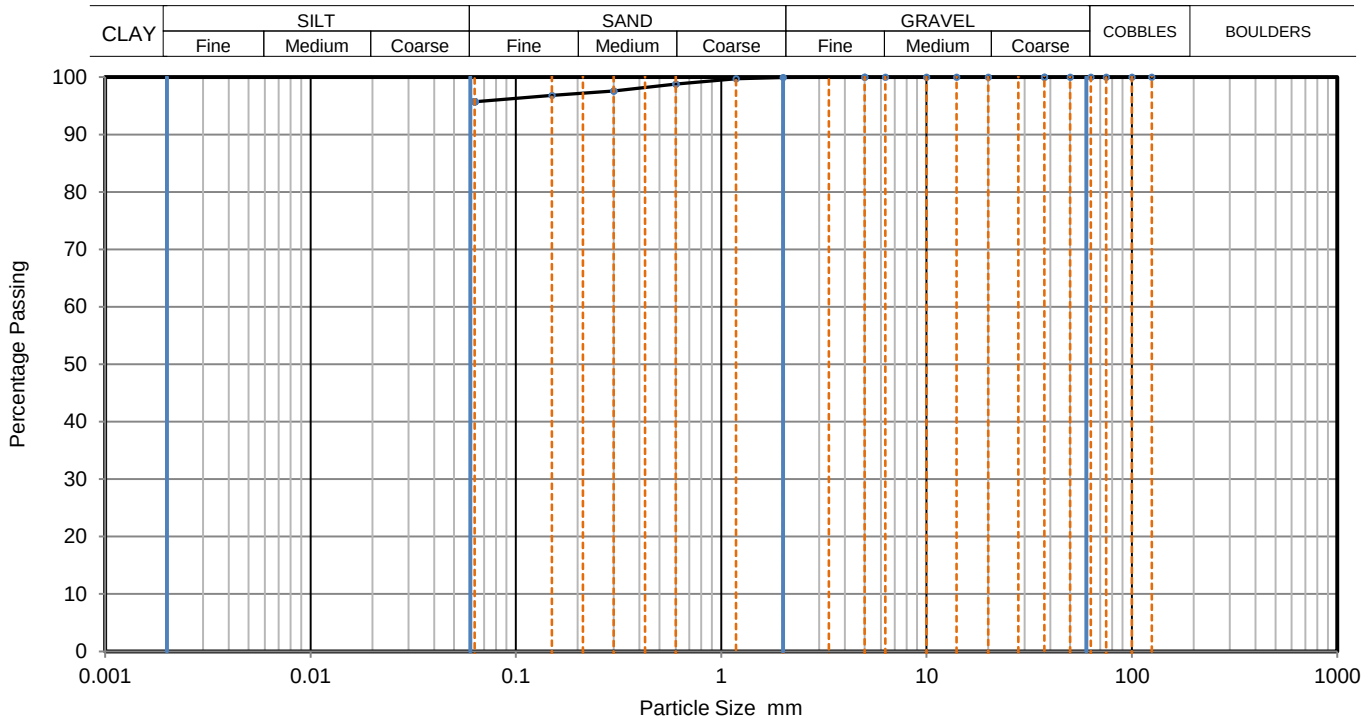
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1365

GEOTECHNICS	PARTICLE SIZE DISTRIBUTION	Hole No.	TP101
		Sample No.	
Project Number:	PC248745	Depth m	1.60 - 2.00
Project Name:	National Grid - Margam FEED Phase 1	Sample Type	B
Specimen Description	Dark grey slightly sandy organic CLAY.	Specimen Depth m	
Test Method	BS EN ISO 17892 -4:2016, by sieving on as received or wet sample		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	100		
63	100		
50	100		
37.5	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
2	100		
1.18	100		
0.6	99		
0.3	98		
0.15	97		
0.063	96		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	4
Fines <0.063mm	96

Grading Analysis		
D100	mm	6.3
D60	mm	
D30	mm	
D10	mm	
Uniformity Coefficient		

Remarks

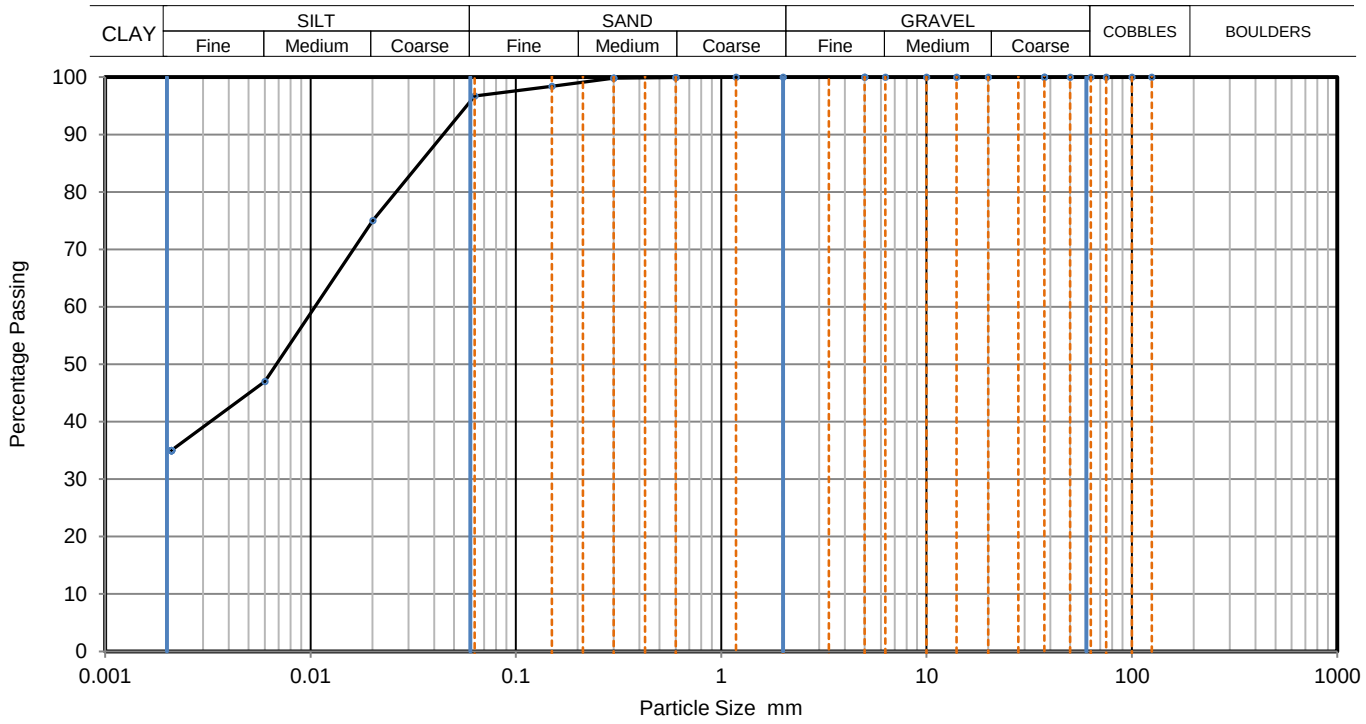
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GEOTECHNICS	PARTICLE SIZE DISTRIBUTION	Hole No.	TP102
		Sample No.	
Project Number:	PC248745	Depth m	1.80 - 2.10
Project Name:	National Grid - Margam FEED Phase 1	Sample Type	B
Specimen Description	Grey slightly sandy organic CLAY.	Specimen Depth m	
Test Method	BS EN ISO 17892 -4:2016, by sieving and pipette sedimentation		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.020	75
100	100	0.006	47
75	100	0.002	35
63	100		
50	100		
37.5	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
2	100		
1.18	100		
0.6	100		
0.3	100		
0.15	98	Particle density	(assumed)
0.063	97	2.65	Mg/m3

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	3
Silt	62
Clay	35

Grading Analysis		
D100	mm	5
D60	mm	0.0107
D30	mm	
D10	mm	
Uniformity Coefficient		

Remarks

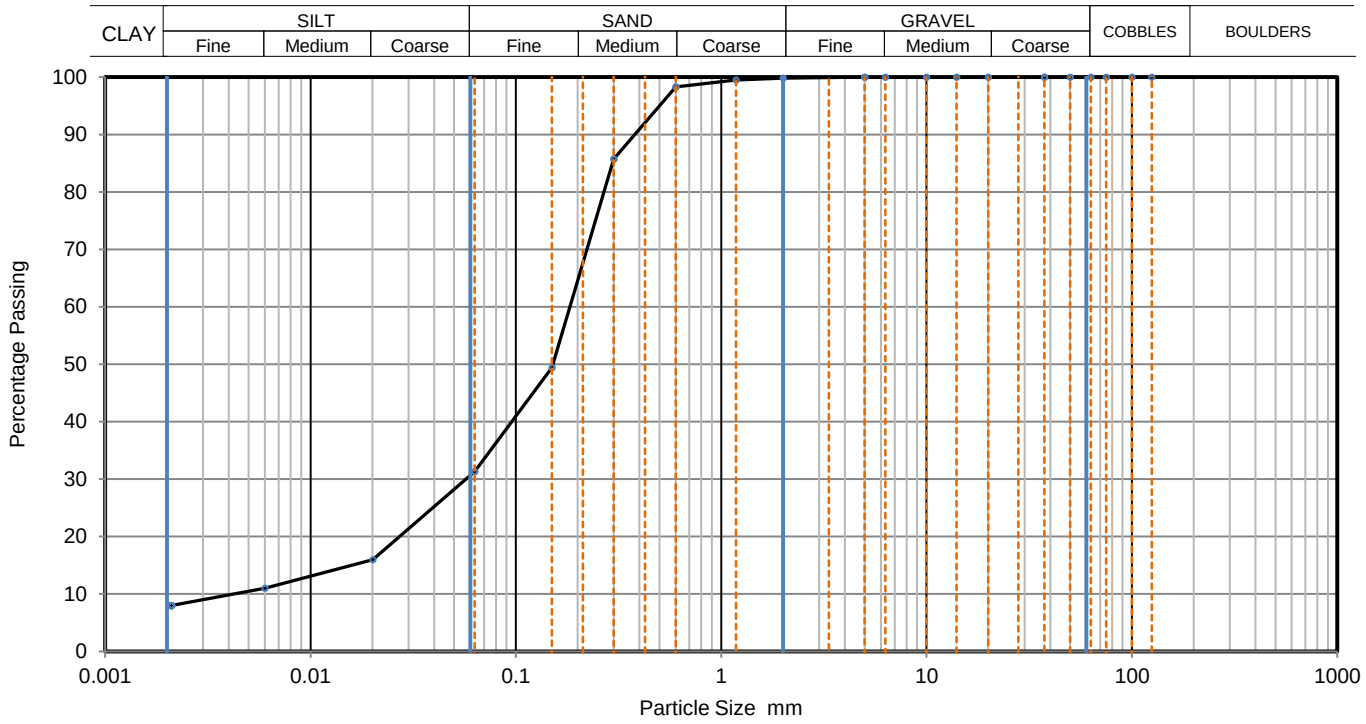
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GEOTECHNICS	PARTICLE SIZE DISTRIBUTION	Hole No.	TP104
		Sample No.	
Project Number:	PC248745	Depth m	2.30 - 2.50
Project Name:	National Grid - Margam FEED Phase 1	Sample Type	B
Specimen Description	Brown very silty organic SAND.	Specimen Depth m	
Test Method	BS EN ISO 17892 -4:2016, by sieving and pipette sedimentation		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.020	16
100	100	0.006	11
75	100	0.002	8
63	100		
50	100		
37.5	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
2	100		
1.18	100		
0.6	98		
0.3	86		
0.15	49	Particle density	(assumed)
0.063	31	2.65	Mg/m3

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	69
Silt	23
Clay	8

Grading Analysis		
D100	mm	6.3
D60	mm	0.184
D30	mm	0.0571
D10	mm	0.00396
Uniformity Coefficient		46

Remarks

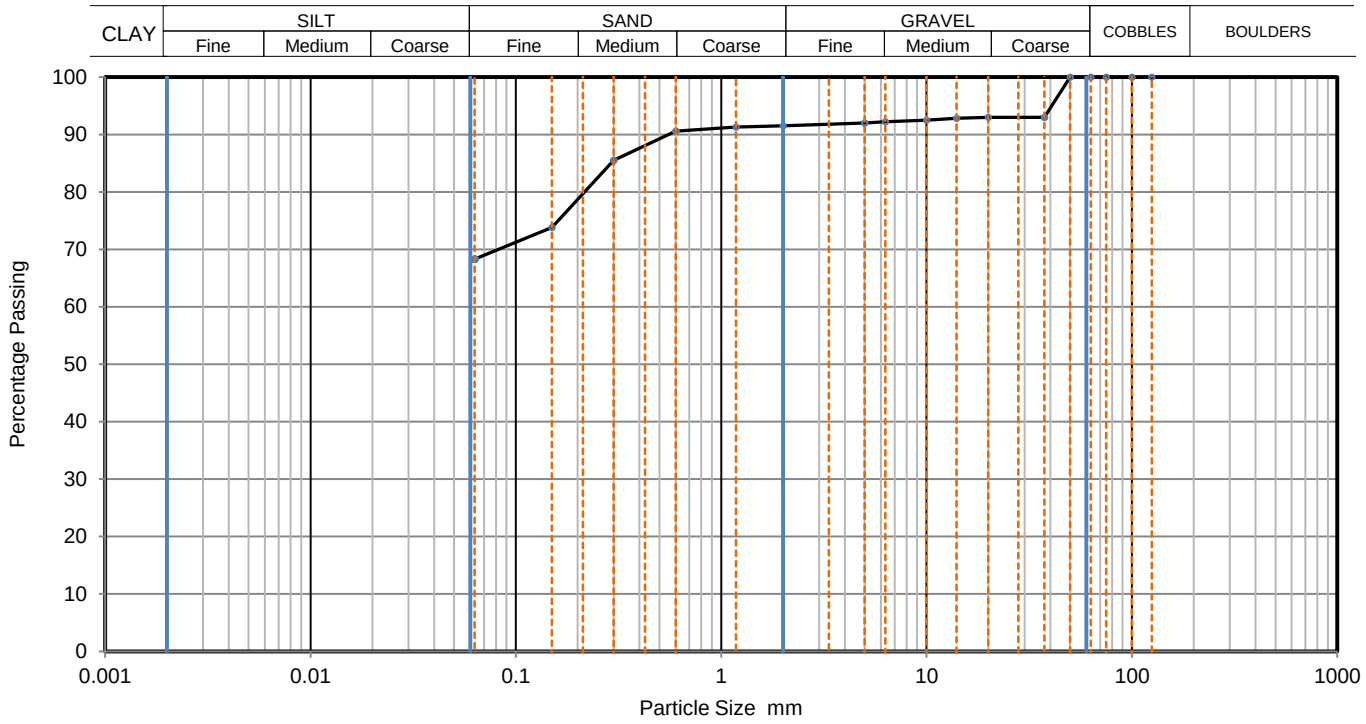
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GEOTECHNICS	PARTICLE SIZE DISTRIBUTION	Hole No.	TP104
		Sample No.	
Project Number:	PC248745	Depth m	2.80 - 3.00
Project Name:	National Grid - Margam FEED Phase 1	Sample Type	B
Specimen Description	Brown mottled grey slightly sandy slightly gravelly CLAY.	Specimen Depth m	
Test Method	BS EN ISO 17892 -4:2016, by sieving on as received or wet sample		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	100		
63	100		
50	100		
37.5	93		
20	93		
14	93		
10	93		
6.3	92		
5	92		
2	92		
1.18	91		
0.6	91		
0.3	86		
0.15	74		
0.063	68		

Sample Proportions	% dry mass
Cobbles	0
Gravel	8
Sand	24
Fines <0.063mm	68

Grading Analysis		
D100	mm	50
D60	mm	
D30	mm	
D10	mm	
Uniformity Coefficient		

Remarks

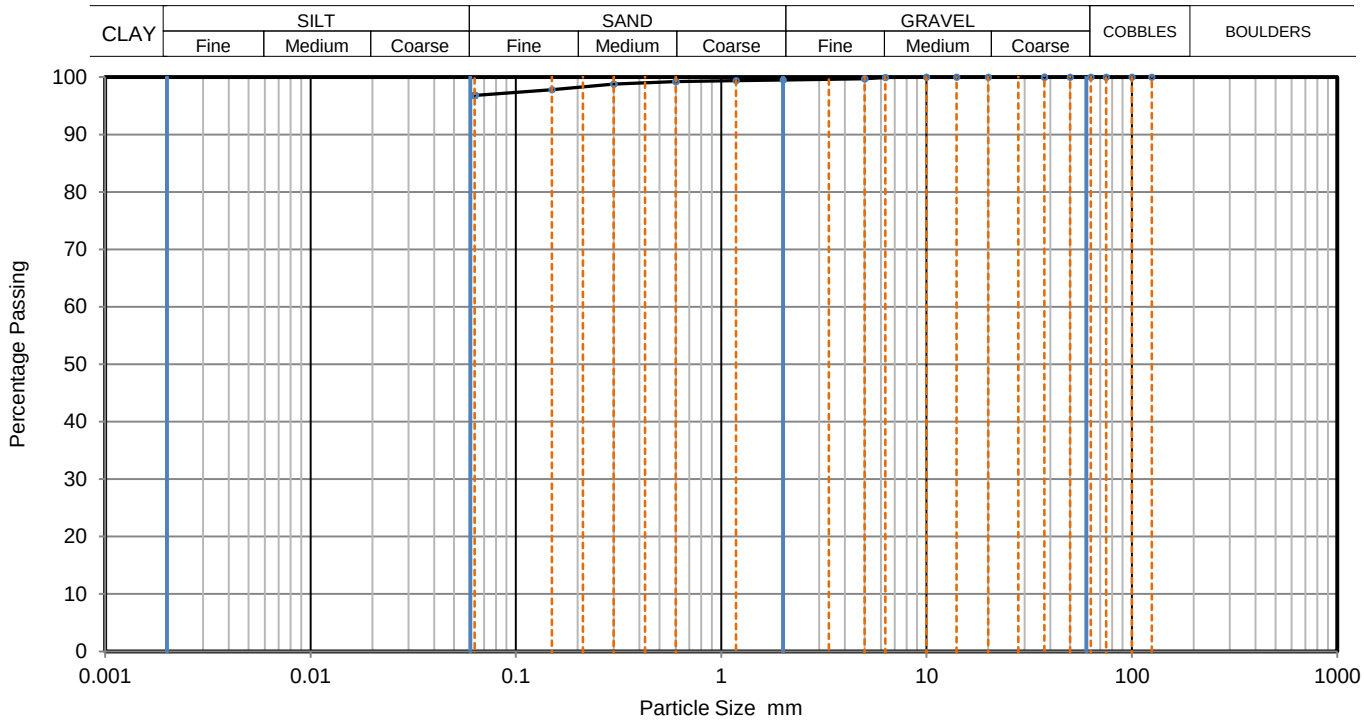
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GEOTECHNICS	PARTICLE SIZE DISTRIBUTION	Hole No.	TP106
		Sample No.	
Project Number:	PC248745	Depth m	0.30 - 0.50
Project Name:	National Grid - Margam FEED Phase 1	Sample Type	B
Specimen Description	Grey mottled brown slightly sandy PEAT.	Specimen Depth m	
Test Method	BS EN ISO 17892 -4:2016, by sieving on as received or wet sample		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	100		
63	100		
50	100		
37.5	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
2	100		
1.18	99		
0.6	99		
0.3	99		
0.15	98		
0.063	97		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	3
Fines <0.063mm	97

Grading Analysis		
D100	mm	10
D60	mm	
D30	mm	
D10	mm	
Uniformity Coefficient		

Remarks

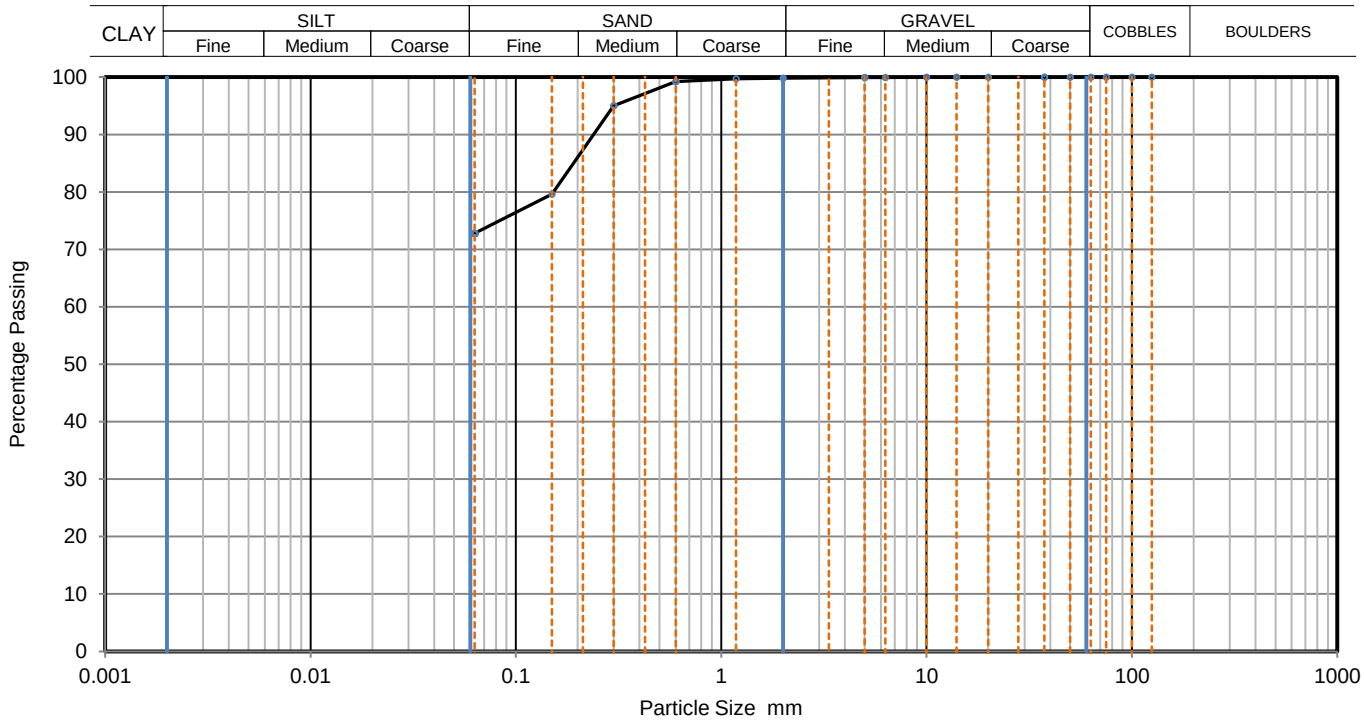
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GEOTECHNICS	PARTICLE SIZE DISTRIBUTION	Hole No.	TP107
		Sample No.	
Project Number:	PC248745	Depth m	2.70 - 3.00
Project Name:	National Grid - Margam FEED Phase 1	Sample Type	B
Specimen Description	Dark grey slightly sandy PEAT.	Specimen Depth m	
Test Method	BS EN ISO 17892 -4:2016, by sieving on as received or wet sample		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	100		
63	100		
50	100		
37.5	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
2	100		
1.18	100		
0.6	99		
0.3	95		
0.15	80		
0.063	73		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	27
Fines <0.063mm	73

Grading Analysis		
D100	mm	10
D60	mm	
D30	mm	
D10	mm	
Uniformity Coefficient		

Remarks

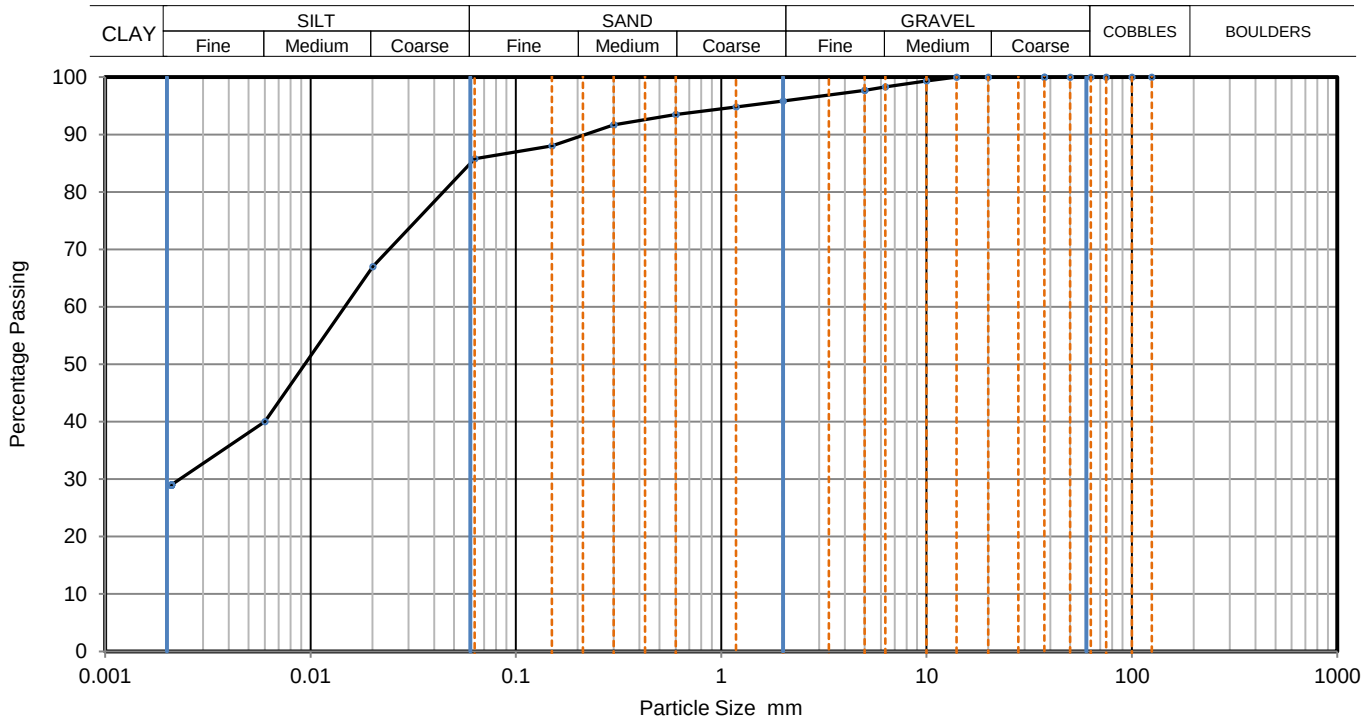
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GEOTECHNICS	PARTICLE SIZE DISTRIBUTION	Hole No.	TP108
		Sample No.	
Project Number:	PC248745	Depth m	1.40 - 2.40
Project Name:	National Grid - Margam FEED Phase 1	Sample Type	B
Specimen Description	Dark grey slightly sandy slightly gravelly PEAT.	Specimen Depth m	
Test Method	BS EN ISO 17892 -4:2016, by sieving and pipette sedimentation		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.020	67
100	100	0.006	40
75	100	0.002	29
63	100		
50	100		
37.5	100		
20	100		
14	100		
10	99		
6.3	98		
5	98		
2	96		
1.18	95		
0.6	94		
0.3	92		
0.15	88	Particle density	(assumed)
0.063	86	2.65	Mg/m3

Sample Proportions	% dry mass
Cobbles	0
Gravel	4
Sand	10
Silt	57
Clay	29

Grading Analysis		
D100	mm	14
D60	mm	0.0148
D30	mm	0.00237
D10	mm	
Uniformity Coefficient		

Remarks

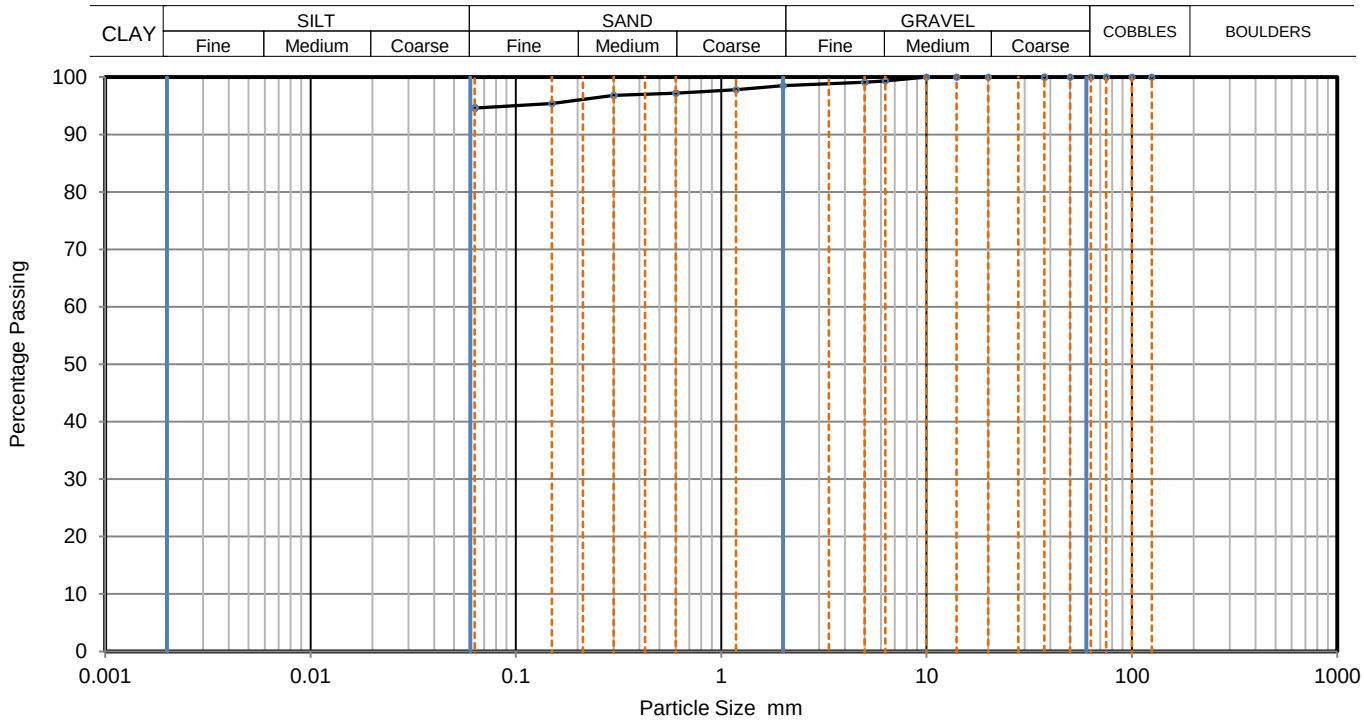
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GEOTECHNICS	PARTICLE SIZE DISTRIBUTION	Hole No.	TP110
		Sample No.	
Project Number:	PC248745	Depth m	0.40 - 1.40
Project Name:	National Grid - Margam FEED Phase 1	Sample Type	B
Specimen Description	Brown mottled bluish grey slightly sandy slightly gravelly CLAY.	Specimen Depth m	
Test Method	BS EN ISO 17892 -4:2016, by sieving on as received or wet sample		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	100		
63	100		
50	100		
37.5	100		
20	100		
14	100		
10	100		
6.3	99		
5	99		
2	99		
1.18	98		
0.6	97		
0.3	97		
0.15	95		
0.063	95		

Sample Proportions	% dry mass
Cobbles	0
Gravel	1
Sand	4
Fines <0.063mm	95

Grading Analysis		
D100	mm	10
D60	mm	
D30	mm	
D10	mm	
Uniformity Coefficient		

Remarks

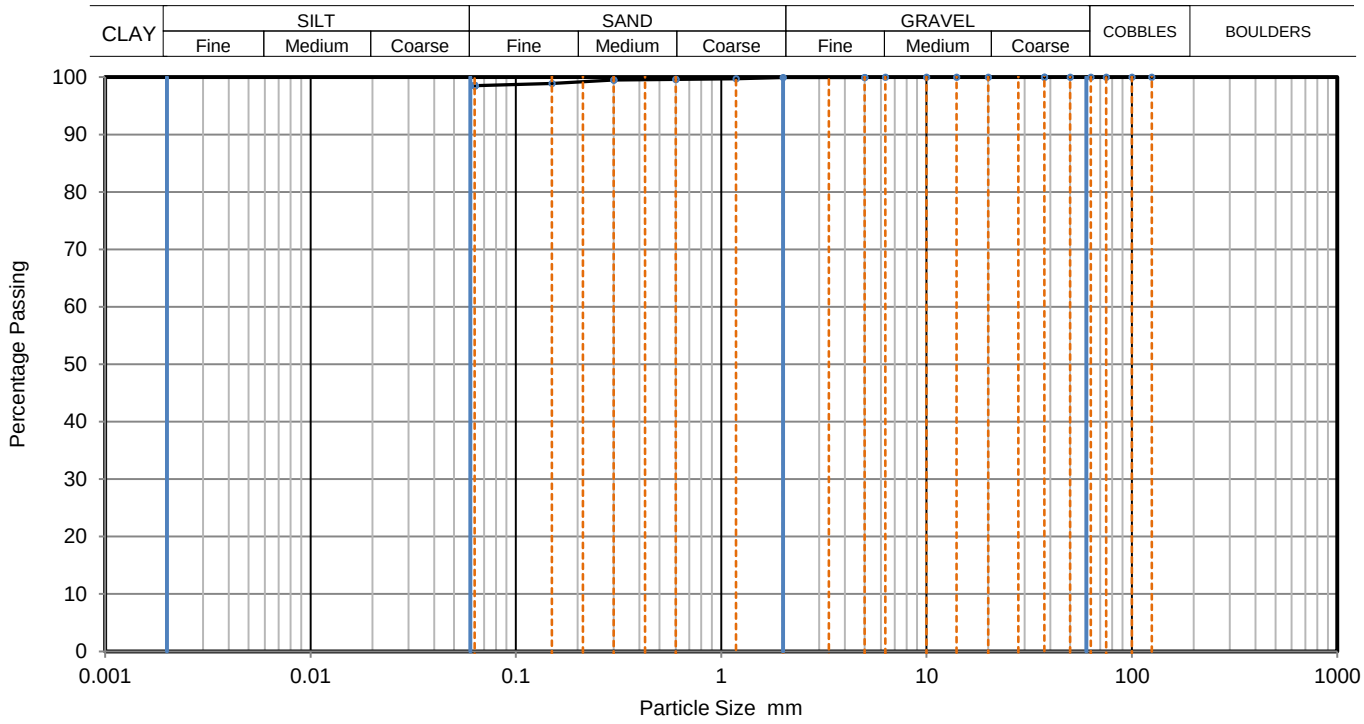
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UKAS TESTING

1365

GEOTECHNICS	PARTICLE SIZE DISTRIBUTION	Hole No.	TP111
		Sample No.	
Project Number:	PC248745	Depth m	0.40 - 1.00
Project Name:	National Grid - Margam FEED Phase 1	Sample Type	B
Specimen Description	Bluish grey mottled brown slightly sandy CLAY.	Specimen Depth m	
Test Method	BS EN ISO 17892 -4:2016, by sieving on as received or wet sample		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	100		
63	100		
50	100		
37.5	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
2	100		
1.18	100		
0.6	100		
0.3	100		
0.15	99		
0.063	99		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	2
Fines <0.063mm	98

Grading Analysis		
D100	mm	10
D60	mm	
D30	mm	
D10	mm	
Uniformity Coefficient		

Remarks

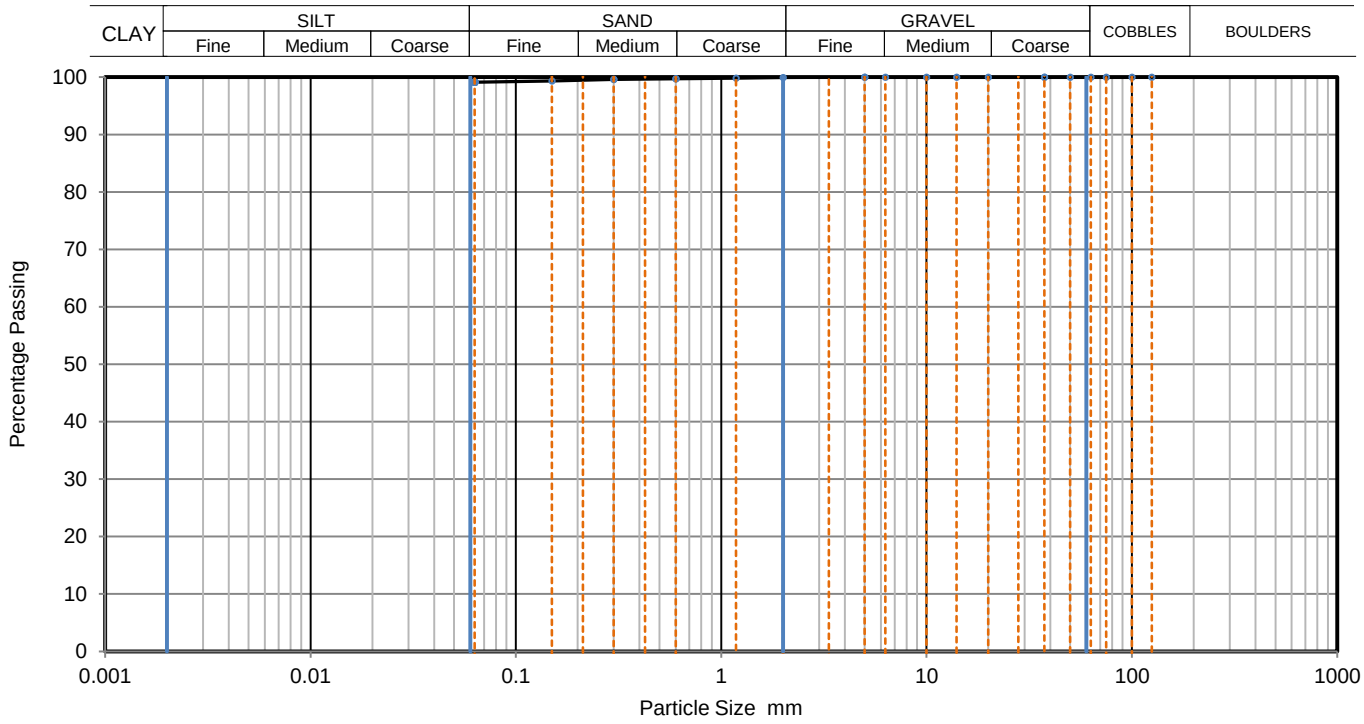
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UKAS TESTING

1365

GEOTECHNICS	PARTICLE SIZE DISTRIBUTION	Hole No.	TP112/SA112
		Sample No.	
Project Number:	PC248745	Depth m	0.70 - 1.30
Project Name:	National Grid - Margam FEED Phase 1	Sample Type	B
Specimen Description	Grey slightly sandy CLAY.	Specimen Depth m	
Test Method	BS EN ISO 17892 -4:2016, by sieving on as received or wet sample		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	100		
63	100		
50	100		
37.5	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
2	100		
1.18	100		
0.6	100		
0.3	100		
0.15	99		
0.063	99		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	1
Fines <0.063mm	99

Grading Analysis		
D100	mm	6.3
D60	mm	
D30	mm	
D10	mm	
Uniformity Coefficient		

Remarks

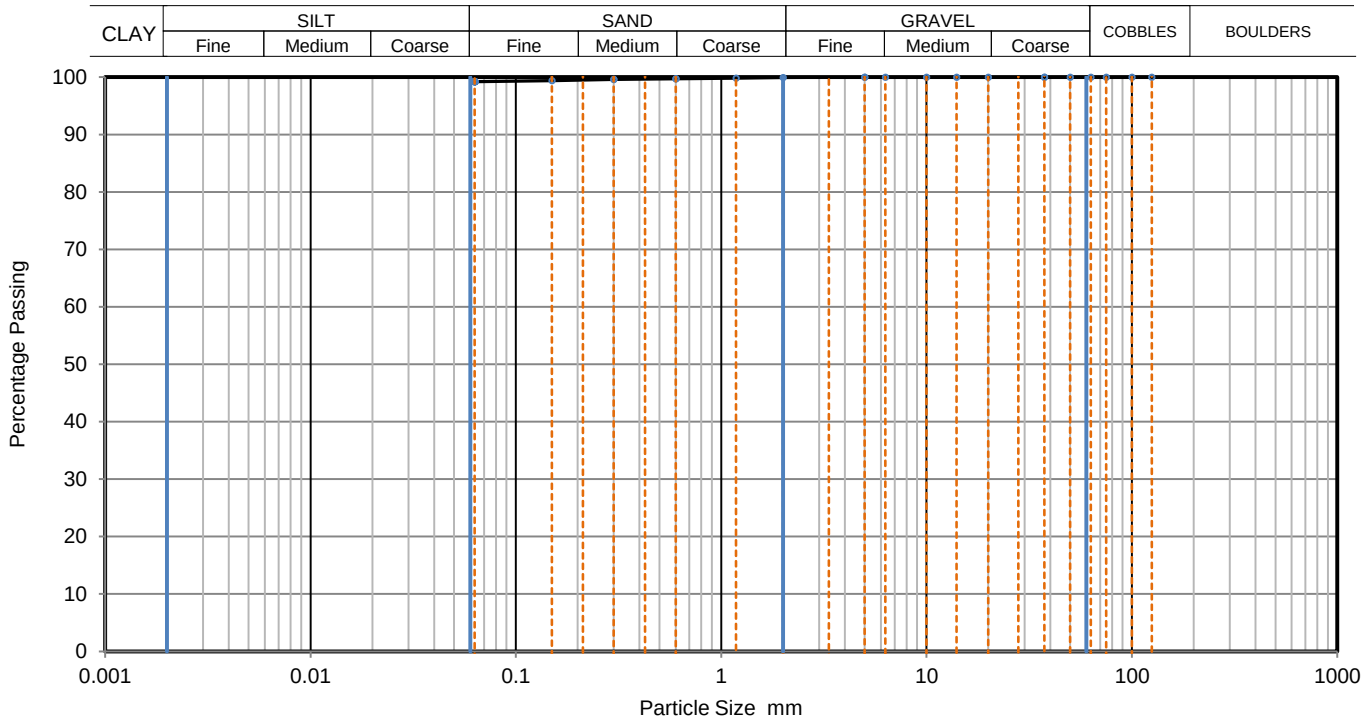
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UKAS TESTING

1365

GEOTECHNICS	PARTICLE SIZE DISTRIBUTION	Hole No.	TP115
		Sample No.	
Project Number:	PC248745	Depth m	0.20 - 1.20
Project Name:	National Grid - Margam FEED Phase 1	Sample Type	B
Specimen Description	Grey slightly sandy CLAY.	Specimen Depth m	
Test Method	BS EN ISO 17892 -4:2016, by sieving on as received or wet sample		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	100		
63	100		
50	100		
37.5	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
2	100		
1.18	100		
0.6	100		
0.3	100		
0.15	99		
0.063	99		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	1
Fines <0.063mm	99

Grading Analysis		
D100	mm	10
D60	mm	
D30	mm	
D10	mm	
Uniformity Coefficient		

Remarks

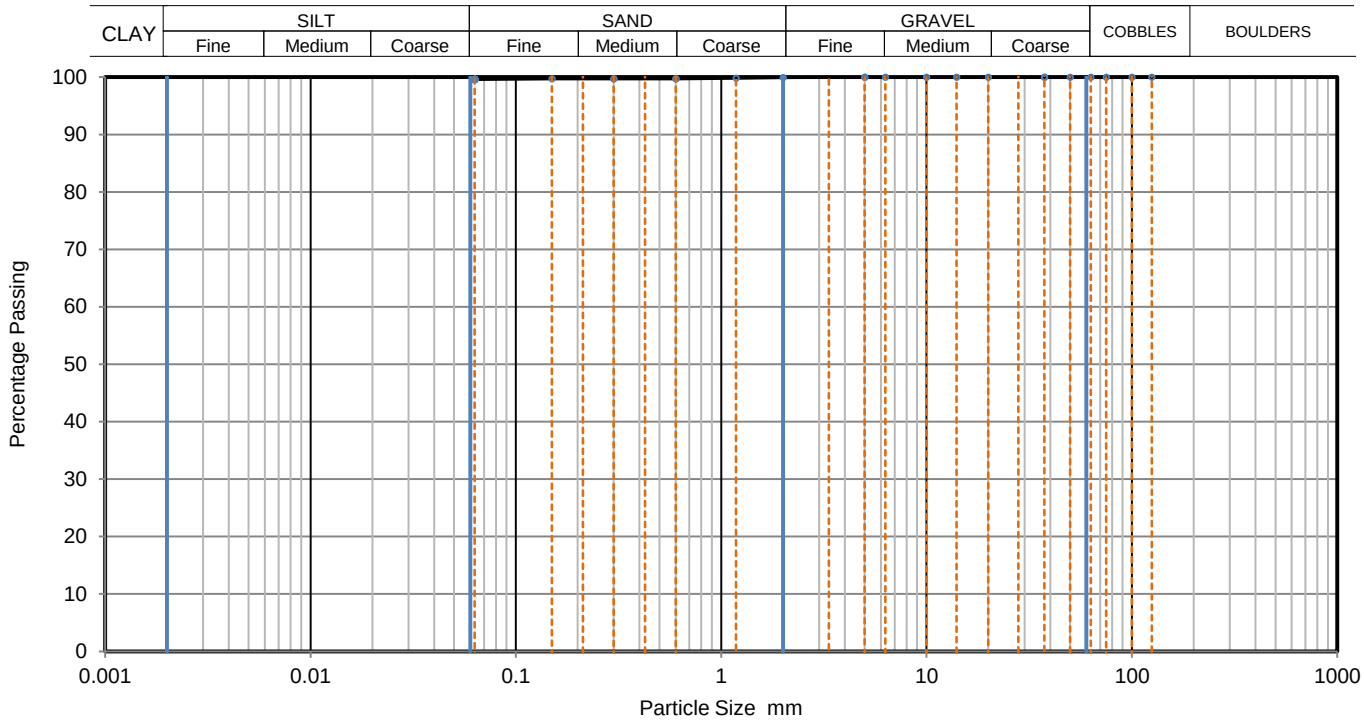
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UKAS TESTING

1365

GEOTECHNICS	PARTICLE SIZE DISTRIBUTION	Hole No.	TP118
		Sample No.	
Project Number:	PC248745	Depth m	1.00 - 2.00
Project Name:	National Grid - Margam FEED Phase 1	Sample Type	B
Specimen Description	Grey CLAY.	Specimen Depth m	
Test Method	BS EN ISO 17892 -4:2016, by sieving on as received or wet sample		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	100		
63	100		
50	100		
37.5	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
2	100		
1.18	100		
0.6	100		
0.3	100		
0.15	100		
0.063	100		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	0
Fines <0.063mm	100

Grading Analysis		
D100	mm	5
D60	mm	
D30	mm	
D10	mm	
Uniformity Coefficient		

Remarks

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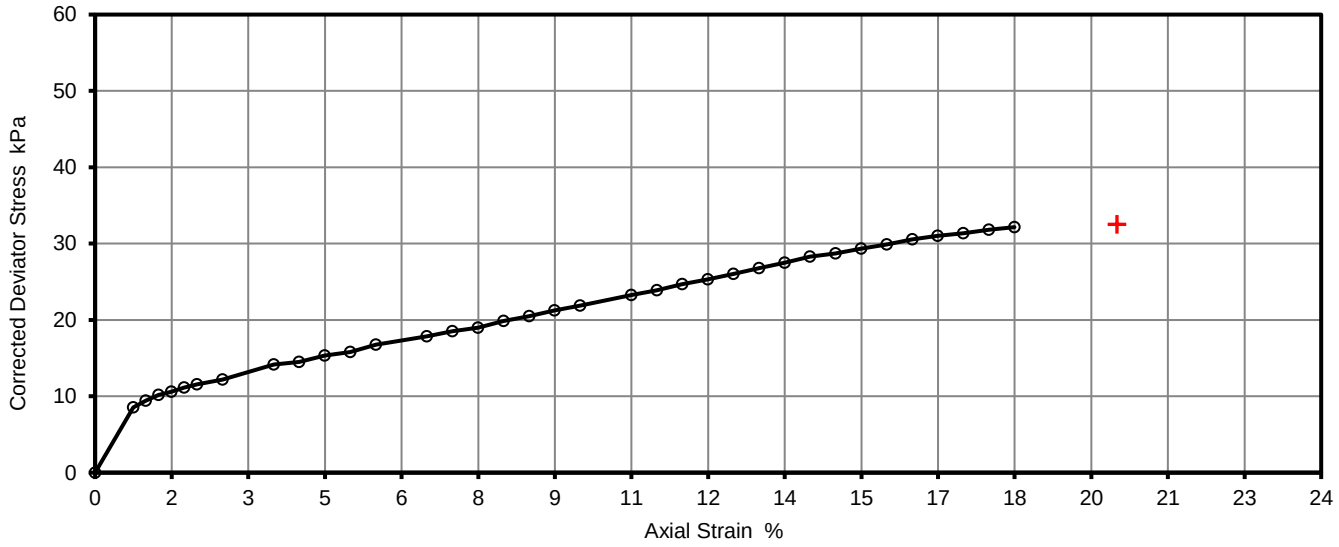
UKAS TESTING

1365

GEOTECHNICS	Unconsolidated Undrained Triaxial Compression Test - single specimen			Project No.	PC248745
				Hole No.	BH101
Project Name	National Grid - Margam FEED Phase 1			Sample ID.	
Specimen Reference	2	Specimen Depth (m)	2.44	Depth m	2.20 - 2.65
Specimen Description	Dark brown and grey clayey PEAT.			Sample Type	UT
Test Method	BS EN ISO 17892-8:2018			Date of Test	06/09/2024

Test Number		1	
Length		210.5	mm
Diameter		102.6	mm
Bulk Density		1.12	Mg/m3
Water Content		454.8	%
Dry Density		0.20	Mg/m3
Rate of Strain		1.5	%/min
Cell Pressure		40	kPa
At failure	Axial Strain	20.0	%
	Deviator Stress, (σ1 - σ3)f	33	kPa
	Undrained Shear Strength cu	16	kPa ½(σ1 - σ3)f
	Mode of Failure	Plastic	

Deviator Stress v Axial Strain







Remarks

WC at failure Zone = 433% Samples dried @ < / = 50°C

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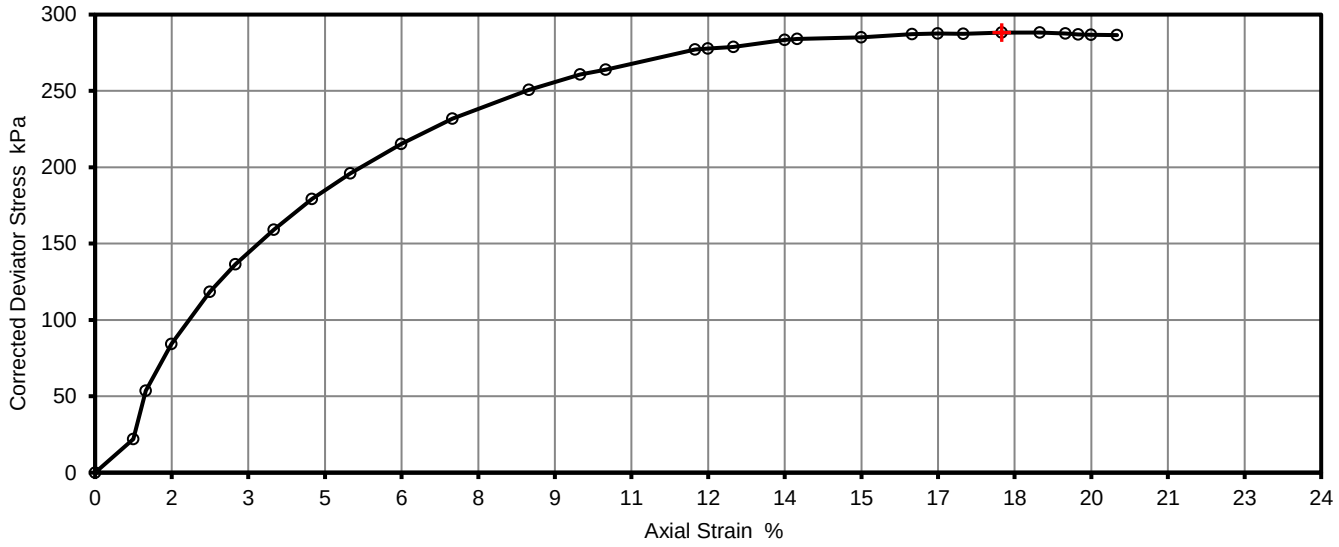
UKAS TESTING

1365

GEOTECHNICS	Unconsolidated Undrained Triaxial Compression Test - single specimen			Project No.	PC248745
				Hole No.	BH103
Project Name	National Grid - Margam FEED Phase 1			Sample ID.	
Specimen Reference	2	Specimen Depth (m)	9.70	Depth m	9.50 - 9.95
Specimen Description	Greyish brown slightly sandy CLAY.			Sample Type	UT
Test Method	BS EN ISO 17892-8:2018			Date of Test	09/09/2024

Test Number		1	
Length		210.3	mm
Diameter		104.2	mm
Bulk Density		2.18	Mg/m3
Water Content		14.2	%
Dry Density		1.91	Mg/m3
Rate of Strain		1.5	%/min
Cell Pressure		180	kPa
At failure	Axial Strain	17.7	%
	Deviator Stress, (σ1 - σ3)f	288	kPa
	Undrained Shear Strength cu	144	kPa ½(σ1 - σ3)f
	Mode of Failure	Plastic	

Deviator Stress v Axial Strain







Remarks

WC at failure Zone = 14.5%

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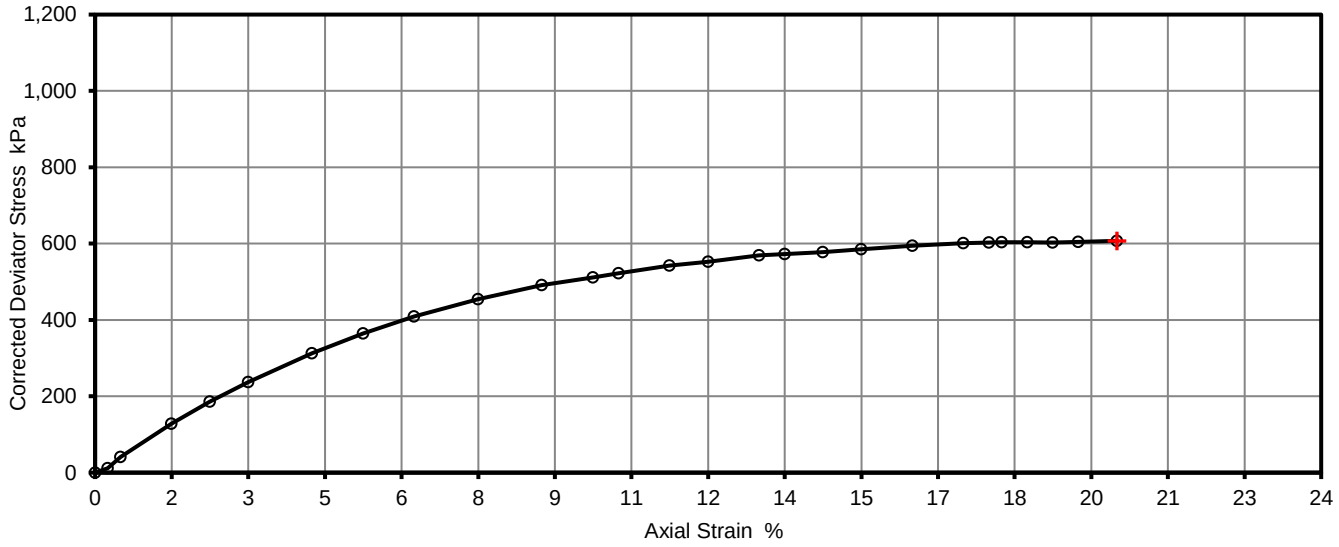
UKAS TESTING

1365

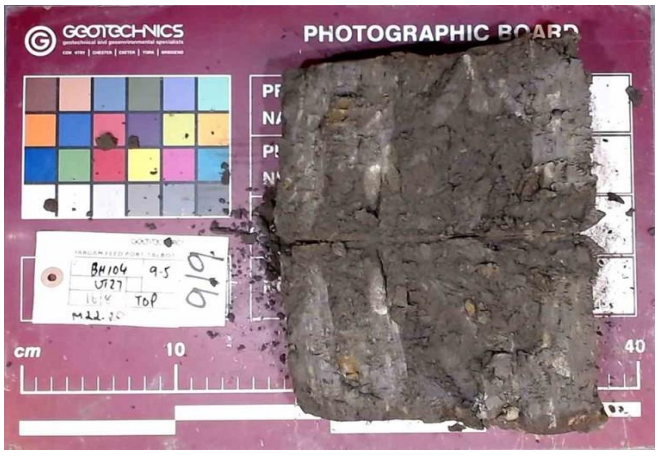
GEOTECHNICS	Unconsolidated Undrained Triaxial Compression Test - single specimen			Project No.	PC248745
				Hole No.	BH104
Project Name	National Grid - Margam FEED Phase 1			Sample ID.	
Specimen Reference	2	Specimen Depth (m)	9.70	Depth m	9.50 - 9.95
Specimen Description	Greyish brown sandy CLAY.			Sample Type	UT
Test Method	BS EN ISO 17892-8:2018			Date of Test	09/09/2024

Test Number		1	
Length		210.6	mm
Diameter		104.0	mm
Bulk Density		2.31	Mg/m3
Water Content		11.7	%
Dry Density		2.07	Mg/m3
Rate of Strain		1.5	%/min
Cell Pressure		180	kPa
At failure	Axial Strain	20.0	%
	Deviator Stress, (σ1 - σ3)f	607	kPa
	Undrained Shear Strength cu	304	kPa ½(σ1 - σ3)f
	Mode of Failure	Plastic	

Deviator Stress v Axial Strain







Remarks

WC at failure Zone = 10.9%

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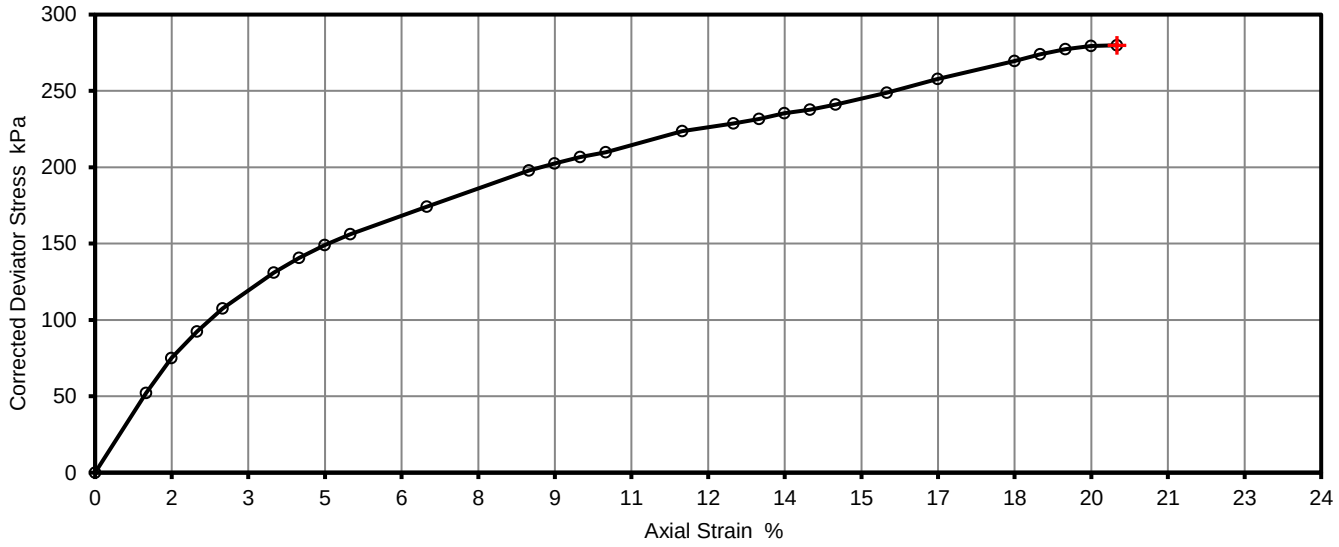
18/11/2024

UKAS TESTING 1365

GEOTECHNICS	Unconsolidated Undrained Triaxial Compression Test - single specimen			Project No.	PC248745
				Hole No.	BH106
Project Name	National Grid - Margam FEED Phase 1			Sample ID.	
Specimen Reference	2	Specimen Depth (m)	8.74	Depth m	8.50
Specimen Description	Dark brown gravelly CLAY.			Sample Type	UT
Test Method	BS EN ISO 17892-8:2018			Date of Test	04/10/2024

Test Number		1	
Length		210.6	mm
Diameter		101.2	mm
Bulk Density		2.15	Mg/m3
Water Content		11.4	%
Dry Density		1.93	Mg/m3
Rate of Strain		1.5	%/min
Cell Pressure		150	kPa
At failure	Axial Strain	20.0	%
	Deviator Stress, (σ1 - σ3)f	280	kPa
	Undrained Shear Strength cu	140	kPa ½(σ1 - σ3)f
	Mode of Failure	Plastic	

Deviator Stress v Axial Strain







Remarks

WC at failure Zone = 12.5% Gravel > one sixth of specimen diameter may affect test results.

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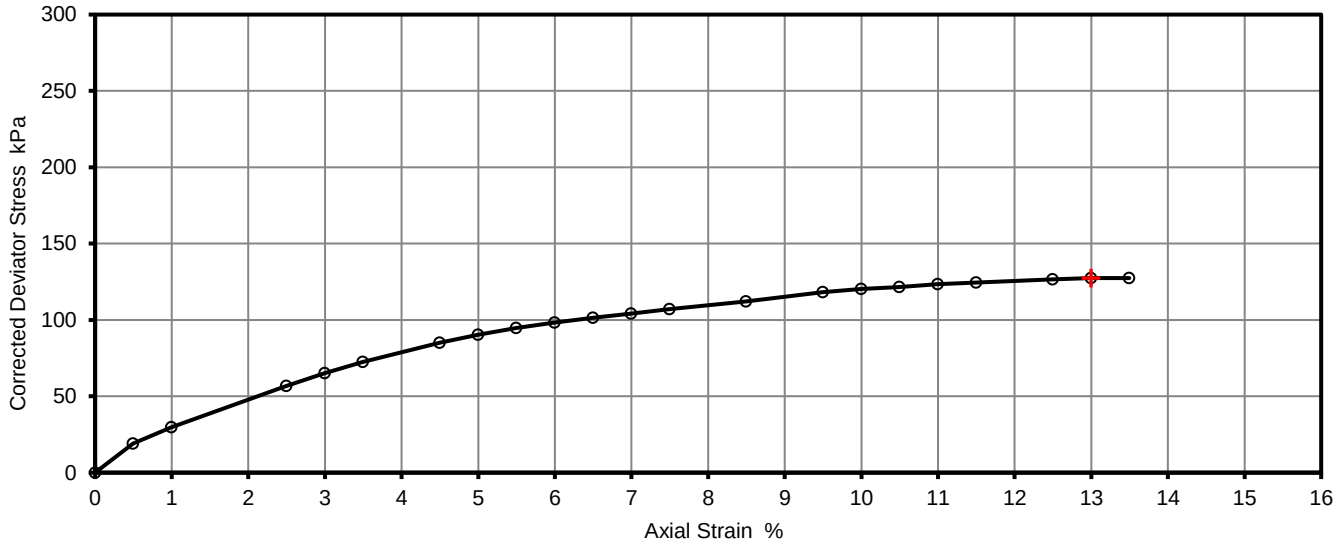
UKAS TESTING

1365

GEOTECHNICS	Unconsolidated Undrained Triaxial Compression Test - single specimen			Project No.	PC248745
				Hole No.	BH107
Project Name	National Grid - Margam FEED Phase 1			Sample ID.	
Specimen Reference	2	Specimen Depth (m)	8.97	Depth m	8.70
Specimen Description	Dark grey slightly gravelly CLAY.			Sample Type	UT
Test Method	BS EN ISO 17892-8:2018			Date of Test	04/10/2024

Test Number		1	
Length		171.6	mm
Diameter		102.4	mm
Bulk Density		2.28	Mg/m3
Water Content		13.0	%
Dry Density		2.02	Mg/m3
Rate of Strain		1.5	%/min
Cell Pressure		160	kPa
At failure	Axial Strain	13.0	%
	Deviator Stress, (σ1 - σ3)f	127	kPa
	Undrained Shear Strength cu	64	kPa ½(σ1 - σ3)f
	Mode of Failure	Compound	

Deviator Stress v Axial Strain







Remarks

WC at failure Zone = 11.4% Gravel > one sixth of specimen diameter may affect test results.

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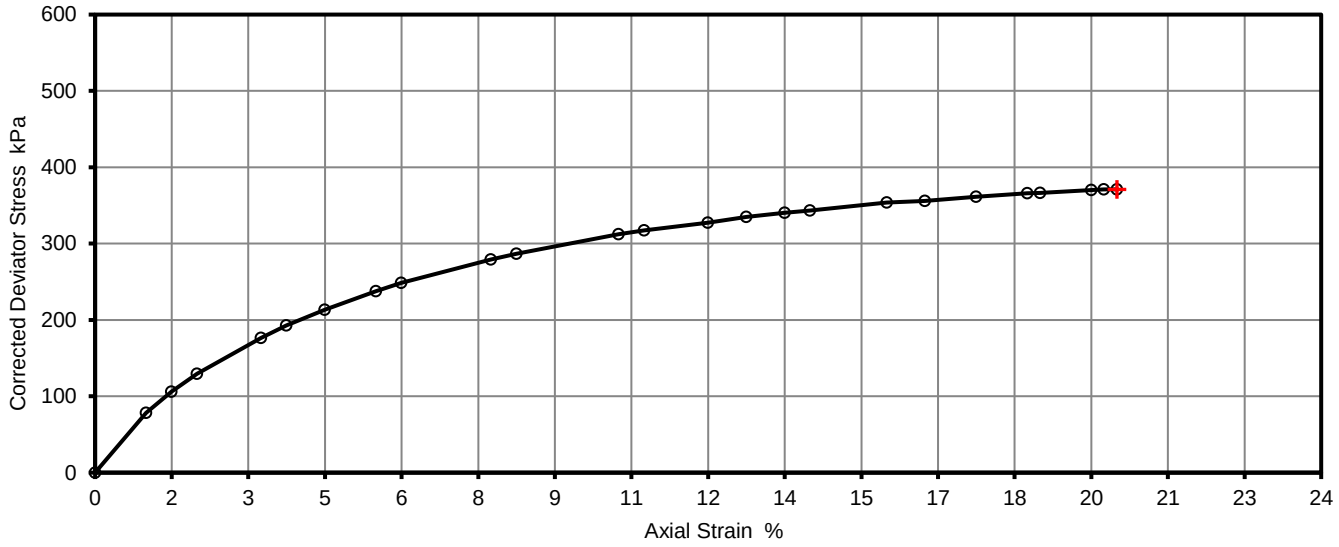
UKAS TESTING

1365

GEOTECHNICS	Unconsolidated Undrained Triaxial Compression Test - single specimen			Project No.	PC248745
				Hole No.	BH109
Project Name	National Grid - Margam FEED Phase 1			Sample ID.	
Specimen Reference	2	Specimen Depth (m)	12.74	Depth m	12.50
Specimen Description	Dark grey gravelly CLAY.			Sample Type	UT
Test Method	BS EN ISO 17892-8:2018			Date of Test	04/10/2024

Test Number		1	
Length		210.5	mm
Diameter		103.2	mm
Bulk Density		2.18	Mg/m3
Water Content		13.4	%
Dry Density		1.92	Mg/m3
Rate of Strain		1.5	%/min
Cell Pressure		225	kPa
At failure	Axial Strain	20.0	%
	Deviator Stress, (σ1 - σ3)f	371	kPa
	Undrained Shear Strength cu	186	kPa ½(σ1 - σ3)f
	Mode of Failure	Plastic	

Deviator Stress v Axial Strain







Remarks

WC at failure Zone = 12.6%

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1365

GEOTECHNICS

Summary of Classification Test Results

Project Number: PC248745

Project Name: National Grid - Margam FEED Phase 1

Hole Number	Sample				Specimen Description	*W* Water Content %	Passing 425µm %	LL Liquid Limit %	PL Plastic Limit %	PI Plasticity Index %	Particle Density Mg/m³	Remarks
	Sample ID	Top (m)	Base (m)	Type								
BH101		0.50		D	Brown slightly sandy slightly gravelly CLAY.	24.3	97	38 4pt	18	20		WC - All Tests Dried at < / = 50°C
BH101		1.80		D	Grey clayey PEAT.	76.6	97	78 4pt	32	46		WC - All Tests Dried at < / = 50°C
BH101		3.00		D	Grey clayey PEAT.	79.9	97	81 4pt	35	46		WC - All Tests Dried at < / = 50°C
BH101		11.00		D	Brown slightly sandy slightly gravelly CLAY.	15.7	70	24 4pt	17	7		
BH102		1.00		D	Black PEAT.	448.0						WC - All Tests Dried at < / = 50°C
BH102		2.00		D	Brown slightly sandy CLAY.	35.5	96	34 4pt	21	13		
BH102		3.80		D	Brown slightly sandy gravelly CLAY.	17.4	48	27 4pt	18	9		
BH102		9.00		D	Brown slightly sandy gravelly CLAY.	5.2	64	40 4pt	21	19		
BH103		0.50		D	Brown CLAY with organic material.	45.3						WC - All Tests Dried at < / = 50°C
BH103		1.80		D	Brown slightly sandy slightly gravelly CLAY.	53.9	91	54 4pt	22	32		WC - All Tests Dried at < / = 50°C
BH103		2.80		D	Brown mottled dark grey CLAY with organic material.	49.0	98	70 4pt	27	43		WC - All Tests Dried at < / = 50°C
BH103		3.20	3.80	B	Dark grey slightly clayey PEAT.	146.0						WC - All Tests Dried at < / = 50°C
BH103		4.00		D	Brown mottled dark grey slightly sandy gravelly CLAY.	24.4	48	32 4pt	21	11		
BH103		8.00		D	Brown slightly sandy slightly gravelly CLAY.	14.6	49	23 4pt	15	8		
BH103		12.00		D	Brown slightly sandy gravelly CLAY.	14.9	58	23 4pt	15	8		
BH104		1.20	2.00	D	Dark grey CLAY with organic material.	52.9	98	61 4pt	31	30		WC - All Tests Dried at < / = 50°C
BH104		2.80		D	Black slightly clayey PEAT.	162.0						WC - All Tests Dried at < / = 50°C
BH104		4.00		D	Brown slightly sandy slightly gravelly CLAY.	16.5	79	22 4pt	15	7		
BH104		6.50		D	Brown slightly sandy slightly gravelly CLAY.	14.7	59	21 4pt	13	8		
BH104		10.80		D	Brown slightly sandy gravelly CLAY.	12.8	18	28 4pt	16	12		
BH105		0.50		D	Brown mottled blue slightly gravelly CLAY with roots.	33.9						WC - All Tests Dried at < / = 50°C
BH105		1.20	1.65	D	Brown mottled blue slightly gravelly CLAY with organic material.	38.3	98	54 4pt	21	33		WC - All Tests Dried at < / = 50°C
BH105		7.40		D	Brown slightly sandy slightly gravelly CLAY.	11.4	66	25 4pt	15	10		
BH105		11.45	11.60	D	Brown slightly sandy slightly gravelly CLAY.	12.4	62	22 4pt	16	6		
BH106		0.50	1.00	B	Dark grey clayey PEAT.	52.8	97	58 4pt	24	34		WC - All Tests Dried at < / = 50°C

All tests performed in accordance with BS EN ISO 17892 unless specified otherwise.

Key:

Liquid Limit

80g / 30deg fall cone with increasing water content unless specified otherwise

Sample washed through 0.425mm sieve unless specified otherwise

1pt - single point test (including factor)

* BS1377 method

Particle density

sp - small pycno

gj - gas jar BS1377

Plastic Limit

NP - Non Plastic

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UKAS TESTING

1365

GEOTECHNICS

Summary of Classification Test Results

Project Number:
PC248745

Project Name:
National Grid - Margam FEED Phase 1

Hole Number	Sample				Specimen Description	*W* Water Content %	Passing 425µm %	LL Liquid Limit %	PL Plastic Limit %	PI Plasticity Index %	Particle Density Mg/m³	Remarks
	Sample ID	Top (m)	Base (m)	Type								
BH106		8.00		D	Brown slightly sandy gravelly CLAY.	12.3	54	25 4pt	16	9		
BH106		11.00		D	Brown slightly sandy gravelly CLAY.	12.8	57	24 4pt	14	10		
BH107		1.20	2.50	D	Black PEAT	271.0						WC - All Tests Dried at < / = 50°C
BH107		4.00		D	Black mottled grey slightly clayey PEAT.	52.6	65	57 4pt	27	30		WC - All Tests Dried at < / = 50°C
BH107		4.50	5.40	B	Brown mottled grey slightly sandy slightly gravelly CLAY.	22.2	65	25 4pt	16	9		
BH107		8.20		D	Brown slightly sandy gravelly CLAY.	13.7	55	23 4pt	14	9		
BH107		11.00		D	Grey slightly sandy slightly gravelly CLAY.	16.7	97	24 4pt	14	10		
BH108		0.50		D	Brown mottled grey PEAT.	54.0	97	65 4pt	26	39		WC - All Tests Dried at < / = 50°C
BH108		4.40		D	Brown mottled grey CLAY with organic material.	25.1	95	36 4pt	17	19		WC - All Tests Dried at < / = 50°C
BH108		4.60		UT	Brown slightly sandy slightly gravelly CLAY.	23.3						WC - Hand Vane = 24 kPa
BH108		8.00		D	Brown slightly sandy slightly gravelly CLAY.	18.8	66	26 4pt	16	10		
BH108		8.50		UT	Grey gravelly CLAY.	20.8						WC - Hand Vane =20 kPa
BH109		0.50		D	Dark grey slightly sandy organic CLAY.	59.6	97	63 4pt	24	39		WC - All Tests Dried at < / = 50°C
BH109		2.00		D	Grey clayey PEAT.	84.2						WC - All Tests Dried at < / = 50°C
BH109		4.50	5.50	D	Dark grey PEAT.	494.0						WC - All Tests Dried at < / = 50°C
BH109		9.00		D	Brown slightly sandy slightly gravelly CLAY.	19.4	70	25 4pt	16	9		
BH109		12.00		D	Brown slightly sandy slightly gravelly CLAY.	13.0	68	34 4pt	17	17		
BH110		3.00		D	Black slightly gravelly PEAT.	473.0						WC - All Tests Dried at < / = 50°C
BH110		3.50	4.50	B	Dark grey organic CLAY	611.0						WC - All Tests Dried at < / = 50°C
BH110		4.30		D	Brown mottled black PEAT.	600.0	61	520 4pt	NP			WC - All Tests Dried at < / = 50°C
BH110		5.30		D	Brown sandy gravelly CLAY.	10.2	21	25 4pt	16	9		
BH110		8.50		D	Brown slightly sandy slightly gravelly CLAY.	16.0	63	21 4pt	13	8		
BH110		10.00		UT	Dark grey gravelly CLAY	17.4						WC - Hand Vane = 32 kPa
BH111		0.50		D	Blue mottled brown slightly gravelly CLAY with organic material.	40.3	98	61 4pt	26	35		WC - All Tests Dried at < / = 50°C
BH111		5.00		D	Brown slightly sandy slightly gravelly CLAY with organic material.	21.6	75	21 4pt	14	7		

All tests performed in accordance with BS EN ISO 17892 unless specified otherwise.

Key:

Liquid Limit
80g / 30deg fall cone with increasing water content unless specified otherwise
Sample washed through 0.425mm sieve unless specified otherwise
1pt - single point test (including factor)
* BS1377 method

Particle density
sp - small pycno
gj - gas jar BS1377

Plastic Limit
NP - Non Plastic

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UKAS TESTING
1365

GEOTECHNICS

Summary of Classification Test Results

Project Number: PC248745

Project Name: National Grid - Margam FEED Phase 1

Hole Number	Sample				Specimen Description	*W* Water Content %	Passing 425µm %	LL Liquid Limit %	PL Plastic Limit %	PI Plasticity Index %	Particle Density Mg/m³	Remarks
	Sample ID	Top (m)	Base (m)	Type								
BH111		8.00		D	Brown slightly sandy gravelly CLAY.	16.6	55	22 4pt	15	7		
BH111		8.50		UT	Dark grey gravelly CLAY	11.4						WC - Hand Vane = 150+ kPa
BH111		11.00		D	Brown slightly sandy gravelly CLAY.	11.3	62	23 4pt	15	8		
BH111		11.50		UT	Dark grey gravelly CLAY	11.0						WC - Hand Vane = 150+ kPa
BH112		1.00		D	Greyish brown slightly gravelly CLAY with roots.	39.2	93	52 4pt	20	32		
BH112		2.00		D	Greyish brown slightly gravelly CLAY with organic material.	56.2	92	56 4pt	23	33		WC - All Tests Dried at < / = 50°C
BH112		5.20		D	Black PEAT.	230.0	86	158 4pt	73	85		WC - All Tests Dried at < / = 50°C
BH112		7.10		D	Brown slightly sandy CLAY with organic material.	31.4	83	32 4pt	19	13		WC - All Tests Dried at < / = 50°C
BH112		12.00		D	Brown slightly sandy slightly gravelly CLAY.	13.6	67	22 4pt	14	8		
TP101		2.00		D	Dark grey CLAY with organic material.	63.0	99	66 4pt	26	40		WC - All Tests Dried at < / = 50°C
TP101		2.80	3.00	B	Black slightly clayey PEAT.	296.0						WC - All Tests Dried at < / = 50°C
TP102		2.00		D	Brown mottled grey organic CLAY with organic material.	51.9	100	57 4pt	22	35		WC - All Tests Dried at < / = 50°C
TP103		1.80	2.00	B	Black PEAT.	241.0						WC - All Tests Dried at < / = 50°C
TP104		1.30	1.50	D	Black PEAT.	484.0						WC - All Tests Dried at < / = 50°C
TP104		3.00		D	Brown mottled grey slightly sandy slightly gravelly CLAY.	27.9	90	41 4pt	19	22		
TP105A		2.00	2.30	D	MADE GROUND: Dark grey slightly gravelly clayey peat.	73.5	55	70 4pt	27	43		WC - All Tests Dried at < / = 50°C
TP106		1.00	1.10	D	Grey mottled brown slightly sandy CLAY.	40.3	99	46 4pt	21	25		WC - All Tests Dried at < / = 50°C
TP106		2.50	2.70	D	Black PEAT.	748.0						WC - All Tests Dried at < / = 50°C
TP107		1.00		D	Brown mottled dark grey organic CLAY.	34.2	99	44 4pt	21	23		WC - All Tests Dried at < / = 50°C
TP107		2.00	2.70	B	Black PEAT.	600.0						WC - All Tests Dried at < / = 50°C
TP107		3.00		D	Brown mottled dark grey slightly sandy organic CLAY.	27.4	86	25 4pt	17	8		WC - All Tests Dried at < / = 50°C
TP108		1.00		D	Brown mottled grey organic CLAY.	40.4	92	64 4pt	24	40		WC - All Tests Dried at < / = 50°C
TP109		1.00		D	Brown mottled grey organic CLAY.	40.0	99	45 4pt	21	24		WC - All Tests Dried at < / = 50°C
TP109		2.50		D	Black PEAT.	786.0						WC - All Tests Dried at < / = 50°C
TP110		1.00		D	Brown mottled bluish grey slightly sandy slightly gravelly CLAY with organic material.	29.9	98	57 4pt	23	34		WC - All Tests Dried at < / = 50°C

All tests performed in accordance with BS EN ISO 17892 unless specified otherwise.

Key:

Liquid Limit

80g / 30deg fall cone with increasing water content unless specified otherwise

Sample washed through 0.425mm sieve unless specified otherwise

1pt - single point test (including factor)

* BS1377 method

Particle density

sp - small pycno

gj - gas jar BS1377

Plastic Limit

NP - Non Plastic

Printed

18/11/2024

UKAS TESTING

1365

GEOTECHNICS

Summary of Classification Test Results

Project Number:
PC248745

Project Name:
National Grid - Margam FEED Phase 1

Hole Number	Sample				Specimen Description	*W* Water Content %	Passing 425µm %	LL Liquid Limit %	PL Plastic Limit %	PI Plasticity Index %	Particle Density Mg/m³	Remarks
	Sample ID	Top (m)	Base (m)	Type								
TP110		2.50		D	Black PEAT.	621.0						WC - All Tests Dried at < / = 50°C
TP111		0.50		D	Brown mottled bluish grey CLAY slightly sandy with organic material.	37.7	98	56 4pt	23	33		WC - All Tests Dried at < / = 50°C
TP111		3.00		D	Black mottled brown PEAT.	785.0						WC - All Tests Dried at < / = 50°C
TP112/SA112		1.20		D	Brown mottled grey CLAY with organic material.	36.8	99	53 4pt	23	30		WC - All Tests Dried at < / = 50°C
TP113		0.50		D	Blue mottled brown slightly gravelly CLAY with organic material.	43.1	98	55 4pt	24	31		WC - All Tests Dried at < / = 50°C
TP113		3.00		D	Black PEAT.	537.0						WC - All Tests Dried at < / = 50°C
TP114		1.50		D	Black PEAT.	707.0	18	744 4pt	NP			WC - All Tests Dried at < / = 50°C
TP115		1.20		D	Brown mottled dark grey CLAY.	41.1	99	54 4pt	22	32		WC - All Tests Dried at < / = 50°C
TP116		0.50		D	Light grey mottled brown CLAY with roots.	27.7	90	47 4pt	21	26		
TP116		1.50		D	Black PEAT.	382.0						WC - All Tests Dried at < / = 50°C
TP117		1.00		D	Grey CLAY with roots.	45.9	100	56 4pt	24	32		
TP117		1.50		D	Black PEAT.	456.0						WC - All Tests Dried at < / = 50°C
TP118		1.20		D	Grey slightly sandy CLAY.	40.3	94	61 4pt	24	37		

All tests performed in accordance with BS EN ISO 17892 unless specified otherwise.

Key:

Liquid Limit
80g / 30deg fall cone with increasing water content unless specified otherwise
Sample washed through 0.425mm sieve unless specified otherwise
1pt - single point test (including factor)

* BS1377 method

Particle density
sp - small pycno
gj - gas jar BS1377

Plastic Limit
NP - Non Plastic

Printed
18/11/2024

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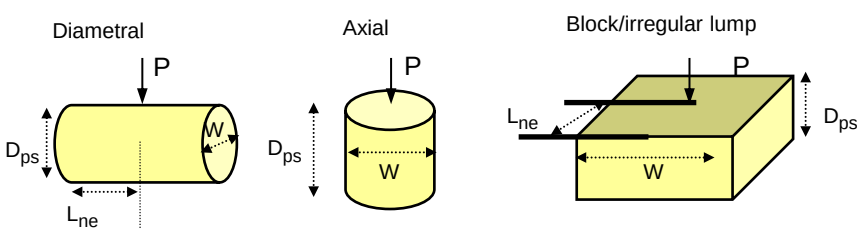
GEOTECHNICS

Point Load Strength Index Tests
Summary of Results

Project No.	Project Name
PC248745	National Grid - Margam FEED Phase 1

Hole No.	Sample			Description and Test Condition	Test Type see ISRM		Failure Valid (Y/N)	Dimensions				Force P	Equivalent diameter De	Point Load Strength Index		Remarks including water content (w) if measured
	Top (m)	Base (m)	Type		Type (D, A, I, B)	Direction (L, P or U)		Lne mm	W mm	Length mm	Dps mm	kN	mm	Is MPa	Is(50) MPa	
BH101	16.28	16.40	C	Grey SILTSTONE.	A	L	YES		85.0	50.0	52.0	0.41	75.0	0.074	0.088	w = 2.8%
BH101	16.90	16.99	C	Grey SILTSTONE.	I	U	YES	35.0	88.0		53.0	2.31	77.1	0.389	0.473	w = 0.8%
BH101	18.81	18.91	C	Grey SILTSTONE.	A	U	YES		85.0	50.0	53.0	6.49	75.7	1.132	1.365	w = 0.8%
BH101	20.10	20.32	C	Grey SILTSTONE.	A	P	YES		85.0	60.0	56.0	10.96	77.8	1.809	2.207	w = 1.1%
BH101	22.68	22.76	C	Grey SILTSTONE.	A	U	YES		85.0	70.0	67.0	6.70	85.2	0.924	1.174	w = 2.0%
BH104	15.47	15.55	C	Grey SILTSTONE.	A	U	YES		85.0	60.0	60.0	11.93	80.6	1.838	2.278	w = 1.3%
BH104	18.00	18.33	C	Grey SILTSTONE.	D	U	YES	50.0	85.0		85.0	3.73	85.0	0.516	0.655	w = 0.9%
BH104	20.00	20.10	C	Grey SILTSTONE.	A	P	YES		85.0	70.0	68.0	4.35	85.8	0.591	0.754	w = 1.9%
BH104	23.55	23.75	C	Grey SILTSTONE.	A	U	YES		85.0	80.0	76.0	6.71	90.7	0.816	1.067	w = 1.6%
BH107	18.95	19.05	C	Grey SILTSTONE.	A	P	YES		85.0	60.0	54.0	0.55	76.4	0.093	0.113	w = 3.6%
BH107	21.35	21.52	C	Grey SILTSTONE.	A	U	YES		85.0	45.0	41.0	0.89	66.6	0.201	0.229	w = 2.4%
BH107	23.15	23.28	C	Grey SILTSTONE.	A	P	YES		85.0	80.0	78.0	3.07	91.9	0.363	0.478	w = 3.1%
BH107	27.40	27.50	C	Light grey ROCK.	A	L	YES		85.0	60.0	62.0	6.87	81.9	1.024	1.279	w = 1.1%
BH107	37.10	37.24	C	Light grey ROCK.	D	U	YES	60.0	85.0		85.0	24.85	85.0	3.439	4.367	w = 0.6%
BH107	38.00	38.25	C	Dark grey SILTSTONE.	A	U	YES		85.0	50.0	53.0	20.78	75.7	3.623	4.367	w = 0.7%
BH107	38.00	38.25	C	Dark grey SILTSTONE.	D	U	YES	50.0	85.0		85.0	15.67	85.0	2.168	2.753	w = 0.7%
BH109	18.20	18.25	C	Light grey ROCK.	A	U	YES		85.0	70.0	67.0	43.94	85.2	6.060	7.701	w = 0.4%
BH109	23.35	23.48	C	Grey SILTSTONE.	A	U	YES		85.0	50.0	50.0	10.20	73.6	1.885	2.242	w = 1.1%
BH109	26.40	26.50	C	Light grey ROCK.	A	U	YES		85.0	50.0	51.0	21.99	74.3	3.985	4.762	w = 0.6%

Test Type
D - Diametral, A - Axial, I - Irregular Lump, B - Block
Direction
L - parallel to planes of weakness
P - perpendicular to planes of weakness
U - unknown or random
Dimensions
Dps - Distance between platens (platen separation)
Lne - Length from platens to nearest free end
W - Width of shortest dimension perpendicular to load, P



Notes

Test performed in accordance with ISRM Suggested Methods : 1985, unless specified otherwise

Detailed legend for test and dimensions, based on ISRM, is shown above.

Water Content In house method based on ISRM

Size factor, F = (De/50)0.45 for all tests.

Date Printed

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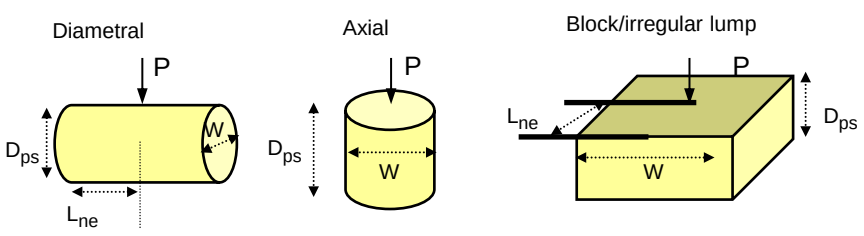
GEOTECHNICS

Point Load Strength Index Tests
Summary of Results

Project No.	Project Name
PC248745	National Grid - Margam FEED Phase 1

Hole No.	Sample			Description and Test Condition	Test Type see ISRM		Failure Valid (Y/N)	Dimensions				Force P	Equivalent diameter De	Point Load Strength Index		Remarks including water content (w) if measured
	Top (m)	Base (m)	Type		Type (D, A, I, B)	Direction (L, P or U)		Lne mm	W mm	Length mm	Dps mm	kN	mm	Is MPa	Is(50) MPa	
BH109	30.40	30.57	C	Dark grey SILTSTONE.	A	U	YES		85.0	60.0	58.0	5.66	79.2	0.902	1.109	w = 1.3%
BH109	34.91	35.00	C	Grey SILTSTONE.	A	U	YES		85.0	60.0	56.0	1.31	77.8	0.216	0.264	w = 2.8%
BH109	38.12	38.24	C	Dark grey SILTSTONE.	I	U	YES	55.0	80.0		59.0	12.32	77.5	2.050	2.497	w = 1.2%
BH109	42.03	42.16	C	Dark grey SILTSTONE.	A	U	YES		85.0	50.0	54.0	5.45	76.4	0.933	1.130	w = 2.2%

Test Type
D - Diametral, A - Axial, I - Irregular Lump, B - Block
Direction
L - parallel to planes of weakness
P - perpendicular to planes of weakness
U - unknown or random
Dimensions
Dps - Distance between platens (platen separation)
Lne - Length from platens to nearest free end
W - Width of shortest dimension perpendicular to load, P



Notes

Test performed in accordance with ISRM Suggested Methods : 1985, unless specified otherwise

Detailed legend for test and dimensions, based on ISRM, is shown above.

Water Content In house method based on ISRM

Size factor, F = (De/50)0.45 for all tests.

Date Printed

18/11/2024

UKAS TESTING

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Laboratory Test Certificate

Issued from:	Geotechnics Ltd The Geotechnical Centre 203 Torrington Avenue Tile Hill Coventry, CV4 9AP	**Date of issue**	18/11/2024
		Issue No.	1
		Client Ref. No.	N/A
		Samples / Material Source	
		Samples Recv'd	27/08/2024
Testing Start Date	09/09/2024	Sample State	As received
Testing Complete	15/11/2024	Sampled by	Geotechnics Limited
Comments	*Specimen descriptions, opinions or interpretations are outside the scope of UKAS accreditation.* *The results within this report(s) relate only to the samples tested as received from the customer.* *The reports shall not be reproduced, except in full, without approval of the laboratory.*		
Project No	PC248745		
Project Name	National Grid - Margam FEED Phase 1		

Summary of Tests

Standard	Test Description	Test Quantity	UKAS
BS EN ISO 17892-1:2014	Water Content	88	Yes
BS EN ISO 17892-12:2018 Cl. 5.3 & 5.5	Liquid Limit and Plastic Limit (4 Points Method)	62	Yes
BS EN ISO 17892-4:2016 Cl. 5.2	Particle Size Distribution by Sieving Method	47	Yes
BS EN ISO 17892-4:2016 Cl. 5.4	Particle Size Distribution by Pipette Method	10	Yes
BS EN ISO 17892-8:2018	Shear Strength by Unconsolidated Undrained Triaxial Test - Single Stage	6	Yes
BS 1377-4:1990 Cl. 3.3	2.5 kg Rammer Dry Density/Moisture Content Relationship (Compaction)	2	Yes
BS 1377-4:1990 Cl. 7.2	California Bearing Ratio (CBR) 2.5kg	3	Yes
BS EN ISO 17892-2:2014 Cl. 5.1	Bulk Density by Linear Measurement	1	Yes
BS1377-4:1990	Extra Over the above Bulk Density by Linear Measurement for recompaction	1	Yes
BS EN ISO 17892-5:2017	Incremental Loading Oedometer	2	Yes
BS EN ISO 17892-5:2017	e/o Oedometer for tests in excess of 7 increments or 7 days (24hours)	2	Yes
BS EN ISO 17892-5:2017	Determination of Swelling Pressure	1	No
Non BS1377 Test	Shear Strength by Hand Vane	5	No
BS EN ISO 17892-10:2018	Shear Strength by Direct Shear (Small Shear Box Apparatus) (Peak and residual)	1	Yes

UKAS TESTING

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Test Results checked and approved for issue.
Signed for, and on behalf of Geotechnics Limited

Paul Smart (Laboratory Manager)



GEOTECHNICS

Laboratory Test Certificate

Issued from:	Geotechnics Ltd The Geotechnical Centre 203 Torrington Avenue Tile Hill Coventry, CV4 9AP	**Date of issue**	18/11/2024
		Issue No.	1
		Client Ref. No.	N/A
		Samples / Material Source	
		Samples Recv'd	27/08/2024
Testing Start Date	09/09/2024	Sample State	As received
Testing Complete	15/11/2024	Sampled by	Geotechnics Limited
Comments	*Specimen descriptions, opinions or interpretations are outside the scope of UKAS accreditation.* *The results within this report(s) relate only to the samples tested as received from the customer.* *The reports shall not be reproduced, except in full, without approval of the laboratory.*		
Project No	PC248745		
Project Name	National Grid - Margam FEED Phase 1		

Summary of Tests

Standard	Test Description	Test Quantity	UKAS
ISRM Suggested Method (1985)	Point Load Strength of Rock (up to 1 Determination)	21	Yes
ISRM Suggested Method (1985)	Point Load Strength of Rock (up to 3 Determination)	1	Yes
ASTM D7012-14 Method C	UCS (Rock)	8	No
ASTM D5334-22a e1	Determination of Thermal Conductivity of Soil and Soft Rock by Thermal Needle Probe - Single Point at NWC	7	No

UKAS TESTING

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Test Results checked and approved for issue.
Signed for, and on behalf of Geotechnics Limited

Paul Smart (Laboratory Manager)



GEOTECHNICS

Laboratory Test Certificate

Issued from:	Geotechnics Ltd The Geotechnical Centre 203 Torrington Avenue Tile Hill Coventry, CV4 9AP	**Date of issue**	14/01/2025
		Issue No.	1
		Client Ref. No.	N/A
		Samples / Material Source	
		Samples Recv'd	28/11/2024
Testing Start Date	28/11/2024	Sample State	As received
Testing Complete	13/01/2025	Sampled by	Geotechnics Limited
Comments	*Specimen descriptions, opinions or interpretations are outside the scope of UKAS accreditation.* *The results within this report(s) relate only to the samples tested as received from the customer.* *The reports shall not be reproduced, except in full, without approval of the laboratory.*		
Project No	PC248745		
Project Name	National Grid - Margam FEED Phase 1 (Additional Testing)		

Summary of Tests

Standard	Test Description	Test Quantity	UKAS
BS EN ISO 17892-1:2014	Water Content	1	Yes
BS EN ISO 17892-12:2018 Cl. 5.3 & 5.5	Liquid Limit and Plastic Limit (4 Points Method)	1	Yes
BS EN ISO 17892-8:2018	Shear Strength by Unconsolidated Undrained Triaxial Test - Single Stage	1	Yes
BS EN ISO 17892-5:2017	Incremental Loading Oedometer	3	Yes
BS EN ISO 17892-5:2017	e/o Oedometer for tests in excess of 7 increments or 7 days (24hours)	16	Yes
BS EN ISO 17892-5:2017	Determination of Swelling Pressure	3	No

UKAS TESTING

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Test Results checked and approved for issue.
Signed for, and on behalf of Geotechnics Limited

Paul Smart (Laboratory Manager)

LAB AWARDS
CATEGORY
Laboratory of the year
WINNER
Geotechnics Ltd

GEOTECHNICS

GEOLABS Limited
Bucknalls Lane
Garston
Watford
Hertfordshire
WD25 9XX

Tel: +44(0) 1923 892 190
Fax: +44(0) 1923 892 191
email: admin@geolabs.co.uk
web: www.geolabs.co.uk

Geotechnics Limited
The Geotechnical Centre
203 Torrington Ave
Tile Hill
Coventry
CV4 9UT

27 January 2025
Report No : GEO/41755/02

For the attention of Mr I Jackson

		Date samples received	19/12/2024
Our ref	**GEO / 41755**	Date written instructions received	18/12/2024
Your ref	**PC248745**	Date testing commenced	20/12/2024
Order ref	**OC42483**	**Date of sample disposal**	**24/02/2025**

Project **MARGAM FEED PHASE 1**

Further to your instructions we have pleasure in enclosing the results of the tests you requested in the attached figures.

LABORATORY TEST REPORT

Item No	Test Quantity	Description
1	3	Constant Head Permeability in a Permeameter BH106 / 5.50-6.50 / B BH108 / 6.50-7.50 / B BH110 / 5.50-6.60 / B
2	6	Constant Head Permeability in a Triaxial Cell BH105 / 2.20-2.65 / UT BH105 / 4.40-4.85 / UT BH105 / 11.00 / UT BH109 / 9.50-9.95 / UT BH111 / 0.40-1.20 / B BH111 / 9.00-10.00 / B

Any opinions or interpretations expressed herein are outside the scope of UKAS accreditation. All results contained in this report are provisional and may be subject to change unless signed by an approved signatory. The results contained in this report relate only to samples received in the laboratory and are tested 'as received' unless otherwise stated. This report should not be reproduced, except in full, without the written approval of the laboratory. The results reported are applicable only to the test items received by the laboratory.

All the necessary data required by the documented test procedures has been recorded and will be stored for a period of not less than 6 years. This data will be issued to yourselves at your request. All samples will be disposed of after the date shown above. Written confirmation will be required to retain the samples beyond this period and a storage charge may be applied.

We trust that the above meets your requirements and should you require any further information or assistance, please do not hesitate to contact us.

Yours faithfully
on behalf of **GEOLABS Limited**

P Heritage

P Heritage
Project Manager

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BS EN ISO 17892-11 : 2019

CONSTANT HEAD PERMEABILITY IN A PERMEAMETER

Location	BH106
Depth (m)	5.50-6.50
Sample Type	B

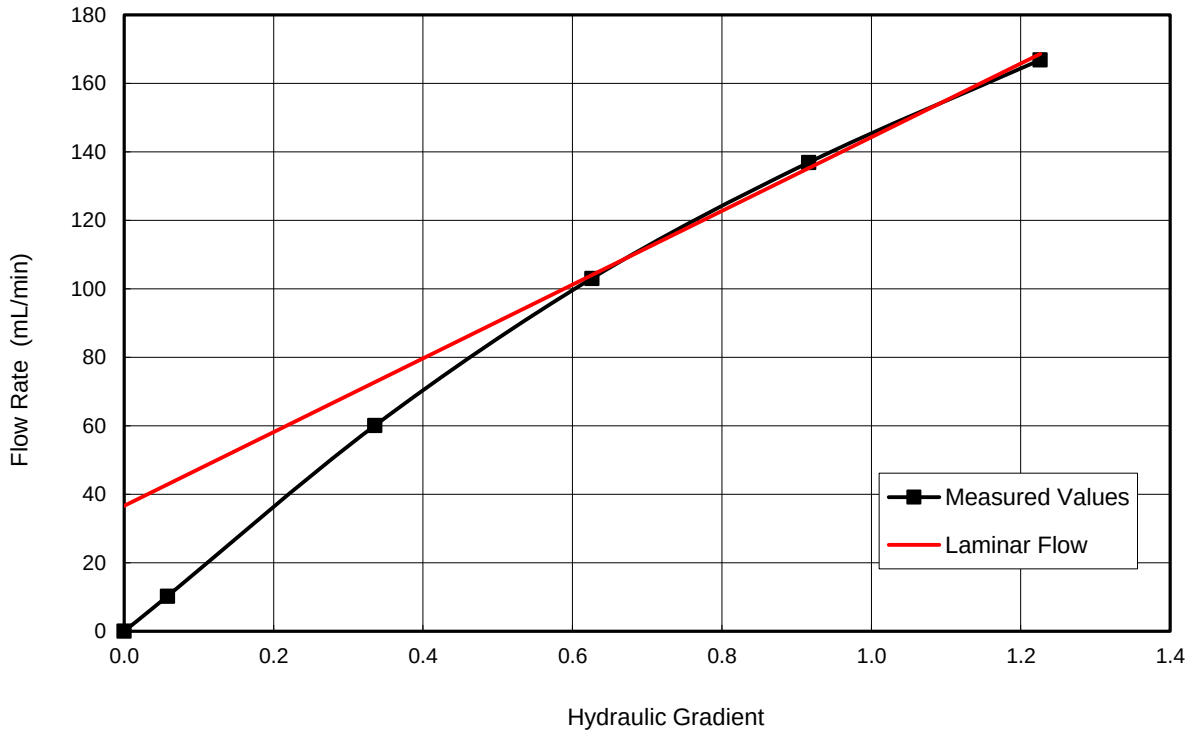
Description:
Dark brown SAND with much fine to coarse gravel.

SPECIMEN DETAILS

Depth within original sample	n/a
Orientation within original sample	n/a
Sample preparation	Hand tamping
Source of permeant water	Tap Water

TEST DETAILS		Initial
Diameter	mm	115.0
Height	mm	219.7
Water content (BS EN ISO 17892-1 : 2014+A1:2022)	%	5.8
Bulk density	Mg/m³	1.83
Dry density	Mg/m³	1.73

Permeability @ 20°C (k)	**m/s**	**1.8E-04**



Tested by DF
Checked and Approved by

J A Reynolds - Director
08/01/2025

Project Number:
GEO / 41755

Project Name:
MARGAM FEED PHASE 1
PC248745

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BS EN ISO 17892-11 : 2019

CONSTANT HEAD PERMEABILITY IN A PERMEAMETER

Location	BH108
Depth (m)	6.50-7.50
Sample Type	B

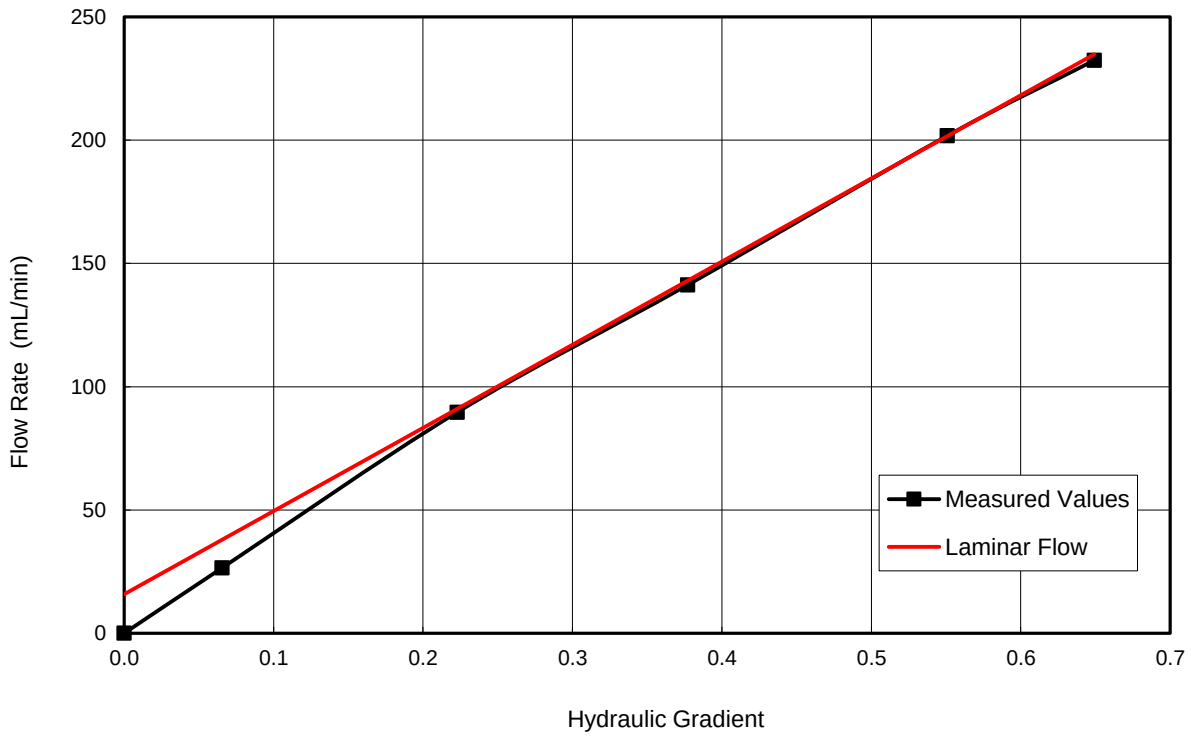
Description:
Dark brown SAND with much fine to coarse gravel.

SPECIMEN DETAILS

Depth within original sample	n/a
Orientation within original sample	n/a
Sample preparation	Hand tamping
Source of permeant water	Tap Water

TEST DETAILS		Initial
Diameter	mm	115.0
Height	mm	354.3
Water content (BS EN ISO 17892-1 : 2014+A1:2022)	%	8.6
Bulk density	Mg/m³	1.90
Dry density	Mg/m³	1.75

Permeability @ 20°C (k)	**m/s**	**5.7E-04**



Tested by DF
Checked and Approved by

J A Reynolds - Director
08/01/2025

Project Number:
GEO / 41755

Project Name:
MARGAM FEED PHASE 1
PC248745

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BS EN ISO 17892-11 : 2019

CONSTANT HEAD PERMEABILITY IN A PERMEAMETER

Location	BH110
Depth (m)	5.50-6.60
Sample Type	B

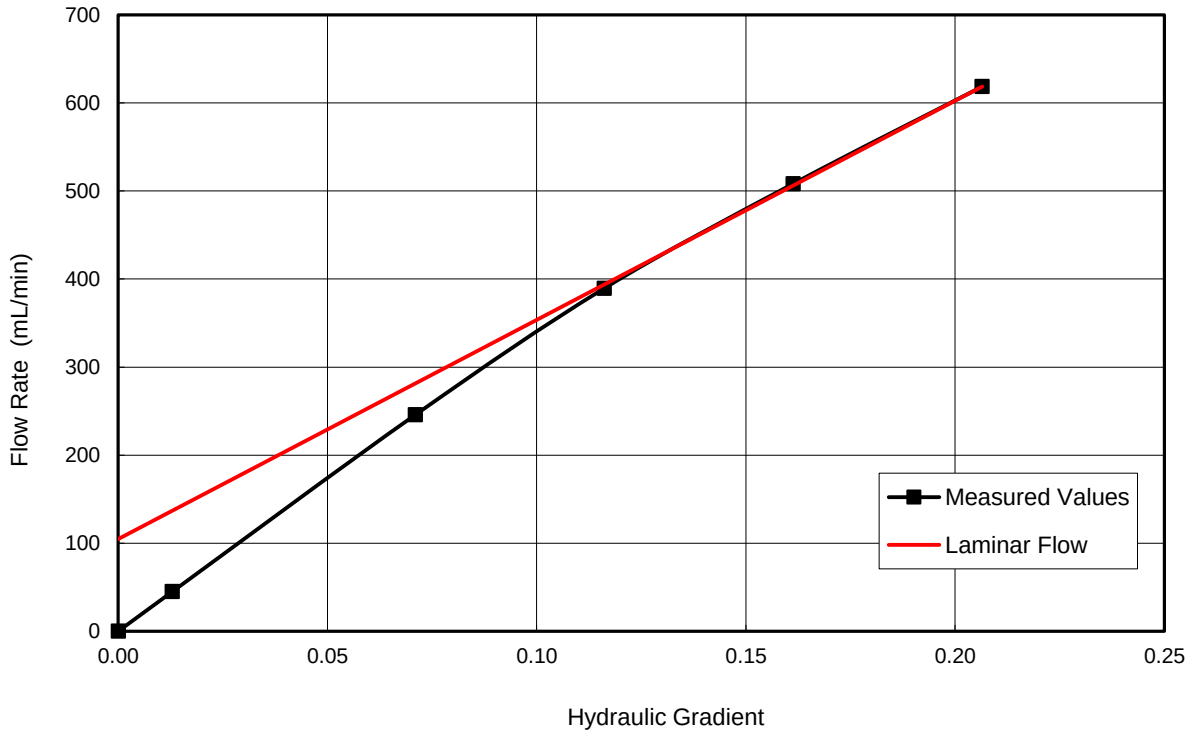
Description:
Dark brown SAND with much fine to coarse gravel.

SPECIMEN DETAILS

Depth within original sample	n/a
Orientation within original sample	n/a
Sample preparation	Hand tamping
Source of permeant water	Tap Water

TEST DETAILS		Initial
Diameter	mm	115.0
Height	mm	205.7
Water content (BS EN ISO 17892-1 : 2014+A1:2022)	%	10.9
Bulk density	Mg/m³	1.99
Dry density	Mg/m³	1.80

Permeability @ 20°C (k)	**m/s**	**4.2E-03**



Tested by DF
Checked and Approved by

J A Reynolds - Director
08/01/2025

Project Number:
GEO / 41755

Project Name:
MARGAM FEED PHASE 1
PC248745

GEOLABS

BS EN ISO 17892-11 : 2019

PERMEABILITY IN A TRIAXIAL CELL

Location	BH105
Sample Depth	2.20-2.65 m
Sample Type	UT

Description:
Soft grey organic CLAY with pockets of dark brown fibrous PEAT.

SPECIMEN DETAILS

Depth within original sample	10mm from base
Orientation within original	Vertical
Specimen preparation	Undisturbed

TEST DETAILS		**INITIAL**	**FINAL**
Diameter	*mm*	101.54	96.24
Height	*mm*	100.46	95.22
Water Content	*%*	73.8	55.5
Bulk Density	*Mg/m³*	1.40	1.48
Dry Density	*Mg/m³*	0.80	0.95
Average Laboratory Temperature	*°C*	20	
Source of Permeant Water		De-aired tap water	

SATURATION STAGE

Saturation initially by constant water content, followed by back-pressure assistance.

Pore pressure coefficient ('B' value)		0.94	0.95

CONSOLIDATION STAGE

Effective pressure	*kPa*	40
Volume change	*mL*	127.2

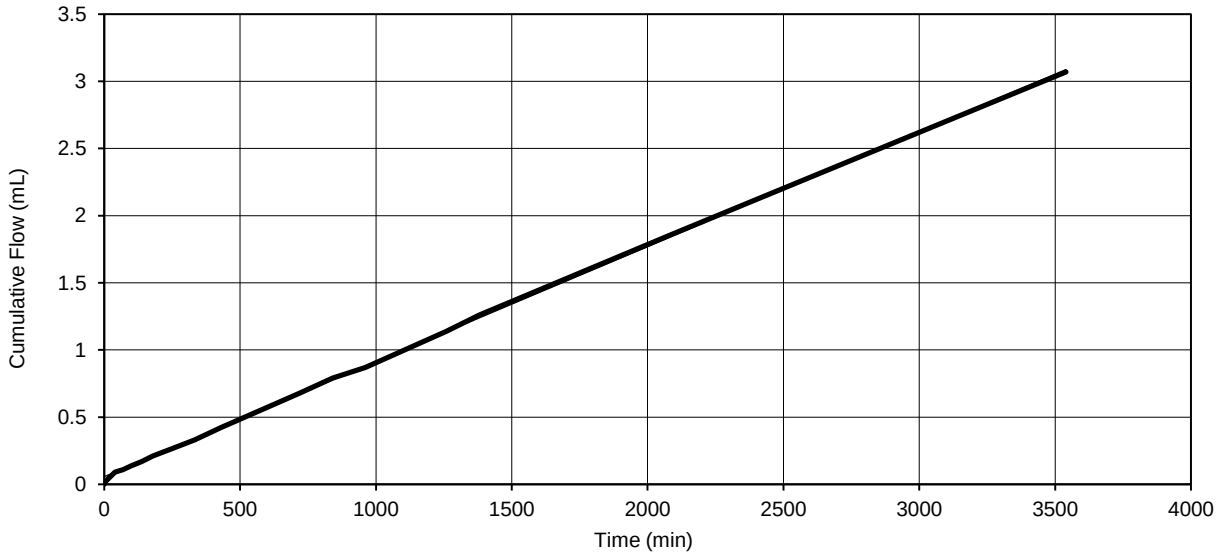
PERMEABILITY STAGE — Measured under constant head conditions in a triaxial cell

Pressure difference across specimen	*kPa*	10
Hydraulic gradient		10.7
Mean effective stress	*kPa*	40
Correction for head loss	*kPa*	0

TEST DURATIONS

Saturation	*days*	1
Consolidation	*days*	7
Flow	*days*	2

Coefficient of Permeability
k_v at 20 °C = 1.8×10^{-10} m/s



Tested by FL
Checked and Approved by

P Heritage - Project Manager
27/01/2025

Project Number:

GEO / 41755

Project Name:

MARGAM FEED PHASE 1
PC248745

GEOLABS®
UKAS TESTING 1982

BS EN ISO 17892-11 : 2019

PERMEABILITY IN A TRIAXIAL CELL

Location	BH105
Sample Depth	4.40-4.85 m
Sample Type	UT

Description:
Dark brown fibrous PEAT becoming firm grey slightly sandy CLAY. Sand is fine to medium.

SPECIMEN DETAILS

Depth within original sample	10mm from base
Orientation within original	Vertical
Specimen preparation	Undisturbed

TEST DETAILS		**INITIAL**	**FINAL**
Diameter	*mm*	100.68	93.07
Height	*mm*	99.77	92.23
Water Content	*%*	103	68.2
Bulk Density	*Mg/m³*	1.42	1.53
Dry Density	*Mg/m³*	0.70	0.91
Average Laboratory Temperature	*°C*	20	
Source of Permeant Water		De-aired tap water	

SATURATION STAGE

Saturation initially by constant water content, followed by back-pressure assistance.

Pore pressure coefficient ('B' value)		0.97	0.98

CONSOLIDATION STAGE

Effective pressure	*kPa*	80
Volume change	*mL*	180.0

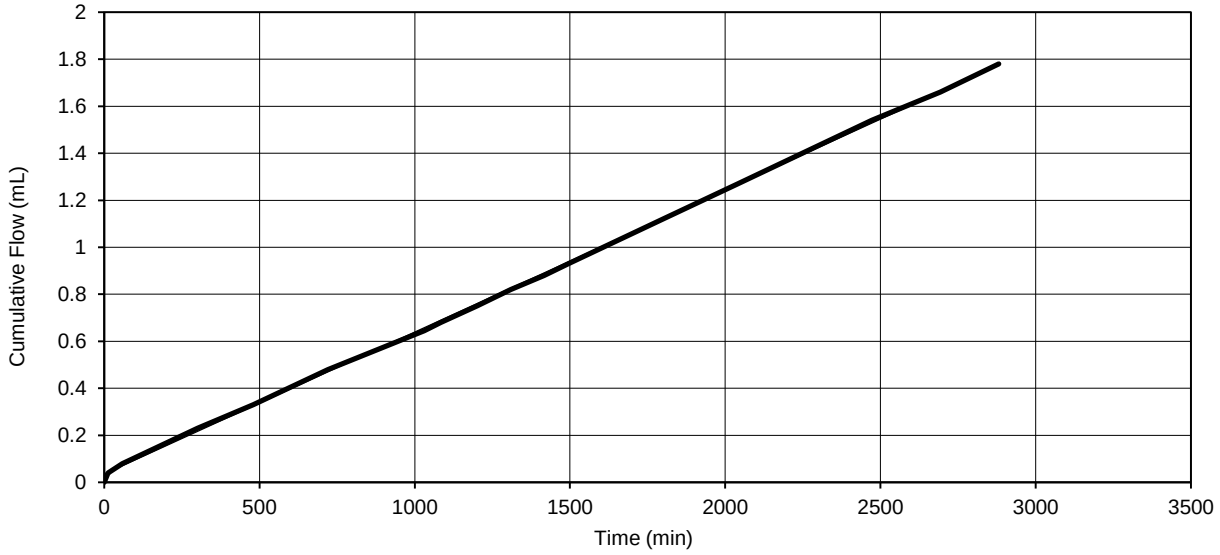
PERMEABILITY STAGE — Measured under constant head conditions in a triaxial cell

Pressure difference across specimen	*kPa*	10
Hydraulic gradient		11.1
Mean effective stress	*kPa*	80
Correction for head loss	*kPa*	0

TEST DURATIONS

Saturation	*days*	1
Consolidation	*days*	7
Flow	*days*	2

Coefficient of Permeability
k_v at 20 °C = 1.3×10^{-10} m/s



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P Heritage

P Heritage - Project Manager
27/01/2025

Project Number:

GEO / 41755

Project Name:

MARGAM FEED PHASE 1
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BS EN ISO 17892-11 : 2019

PERMEABILITY IN A TRIAXIAL CELL

Location	BH105
Sample Depth	11.00 m
Sample Type	UT

Description:
Stiff greyish brown sandy gravelly CLAY. Sand and gravel are fine to medium.

SPECIMEN DETAILS

Depth within original sample	40mm from base
Orientation within original	Vertical
Specimen preparation	Undisturbed

TEST DETAILS		**INITIAL**	**FINAL**
Diameter	*mm*	103.58	102.31
Height	*mm*	100.20	98.98
Water Content	*%*	12.5	12.8
Bulk Density	*Mg/m³*	2.20	2.29
Dry Density	*Mg/m³*	1.96	2.03
Average Laboratory Temperature	*°C*	20	
Source of Permeant Water		De-aired tap water	

SATURATION STAGE

Saturation initially by constant water content, followed by back-pressure assistance.

Pore pressure coefficient ('B' value)		0.00	0.00

CONSOLIDATION STAGE

Effective pressure	*kPa*	200
Volume change	*mL*	31.0

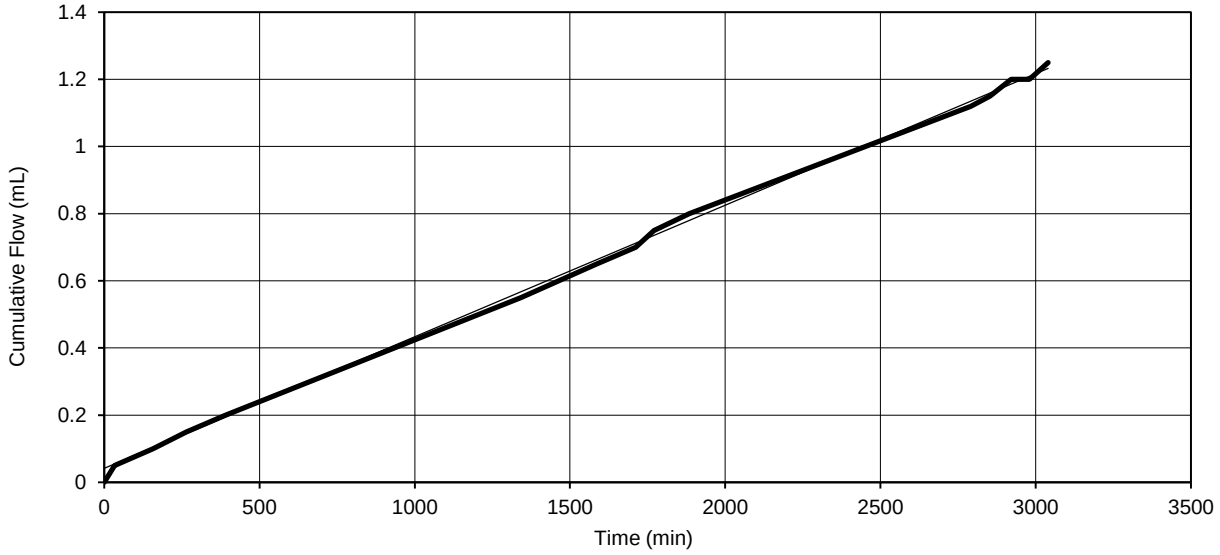
PERMEABILITY STAGE — Measured under constant head conditions in a triaxial cell

Pressure difference across specimen	*kPa*	10
Hydraulic gradient		10.3
Mean effective stress	*kPa*	200
Correction for head loss	*kPa*	0

TEST DURATIONS

Saturation	*days*	3
Consolidation	*days*	4
Flow	*days*	2

Coefficient of Permeability
k_v at 20 °C = 7.7×10^{-11} m/s



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27/01/2025

Project Number:

GEO / 41755

Project Name:

MARGAM FEED PHASE 1
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BS EN ISO 17892-11 : 2019

PERMEABILITY IN A TRIAXIAL CELL

Location	BH109
Sample Depth	9.50-9.95 m
Sample Type	UT

Description:
Firm greyish brown slightly sandy gravelly CLAY. Sand and gravel are fine to medium.

SPECIMEN DETAILS

Depth within original sample	200mm
Orientation within original	Vertical
Specimen preparation	Undisturbed

TEST DETAILS		**INITIAL**	**FINAL**
Diameter	*mm*	103.87	101.22
Height	*mm*	100.31	97.75
Water Content	*%*	21.4	16.5
Bulk Density	*Mg/m³*	2.08	2.16
Dry Density	*Mg/m³*	1.71	1.86
Average Laboratory Temperature	*°C*	20	
Source of Permeant Water		De-aired tap water	

SATURATION STAGE

Saturation initially by constant water content, followed by back-pressure assistance.

Pore pressure coefficient ('B' value)		0.88	0.99

CONSOLIDATION STAGE

Effective pressure	*kPa*	180
Volume change	*mL*	65.0

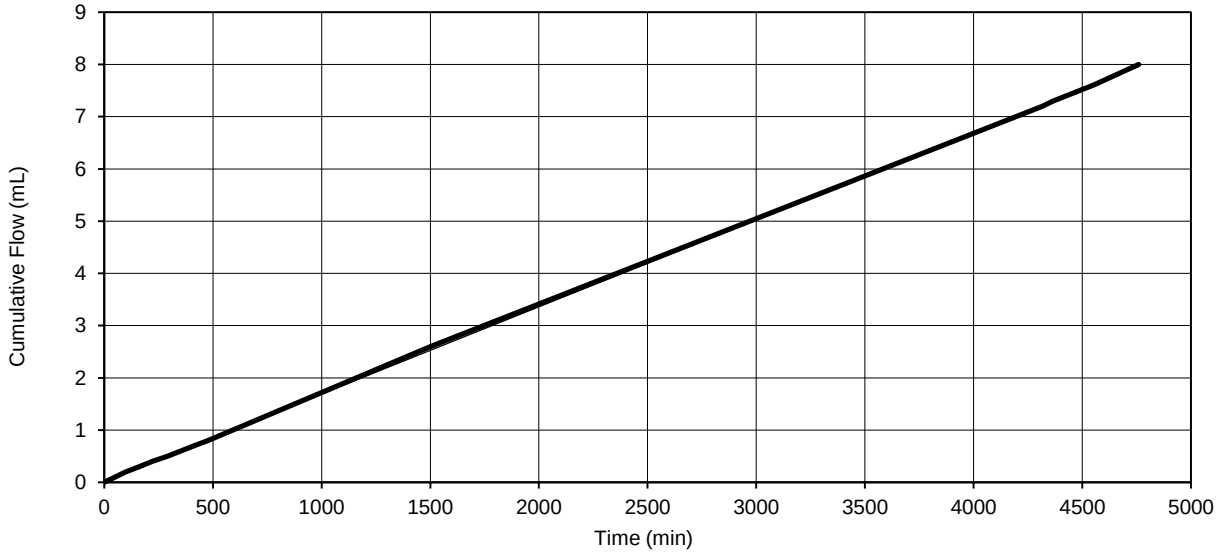
PERMEABILITY STAGE — Measured under constant head conditions in a triaxial cell

Pressure difference across specimen	*kPa*	10
Hydraulic gradient		10.4
Mean effective stress	*kPa*	180
Correction for head loss	*kPa*	0

TEST DURATIONS

Saturation	*days*	2
Consolidation	*days*	2
Flow	*days*	3

Coefficient of Permeability
k_v at 20 °C = 3.3×10^{-10} m/s



Tested by FL
Checked and Approved by

P Heritage - Project Manager
27/01/2025

Project Number:

GEO / 41755

Project Name:

MARGAM FEED PHASE 1
PC248745

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BS EN ISO 17892-11 : 2019

PERMEABILITY IN A TRIAXIAL CELL

Location	BH111
Sample Depth	0.40-1.20 m
Sample Type	B

Description:
Brownish grey mottled grey locally brown organic CLAY with occasional roots and occasional pockets of fibrous PEAT.

SPECIMEN DETAILS

Depth within original sample	n/a
Orientation within original	n/a
Specimen preparation	Remoulded at the as-received moisture using 2.5 kg compactive effort.

TEST DETAILS		**INITIAL**	**FINAL**
Diameter	*mm*	104.89	104.79
Height	*mm*	114.76	114.66
Water Content	*%*	44.2	43.3
Bulk Density	*Mg/m³*	1.71	1.71
Dry Density	*Mg/m³*	1.19	1.19
Average Laboratory Temperature	*°C*	20	
Source of Permeant Water		De-aired tap water	

SATURATION STAGE

Saturation initially by constant water content, followed by back-pressure assistance.

Pore pressure coefficient ('B' value)		0.84	1.00

CONSOLIDATION STAGE

Effective pressure	*kPa*	15
Volume change	*mL*	2.6

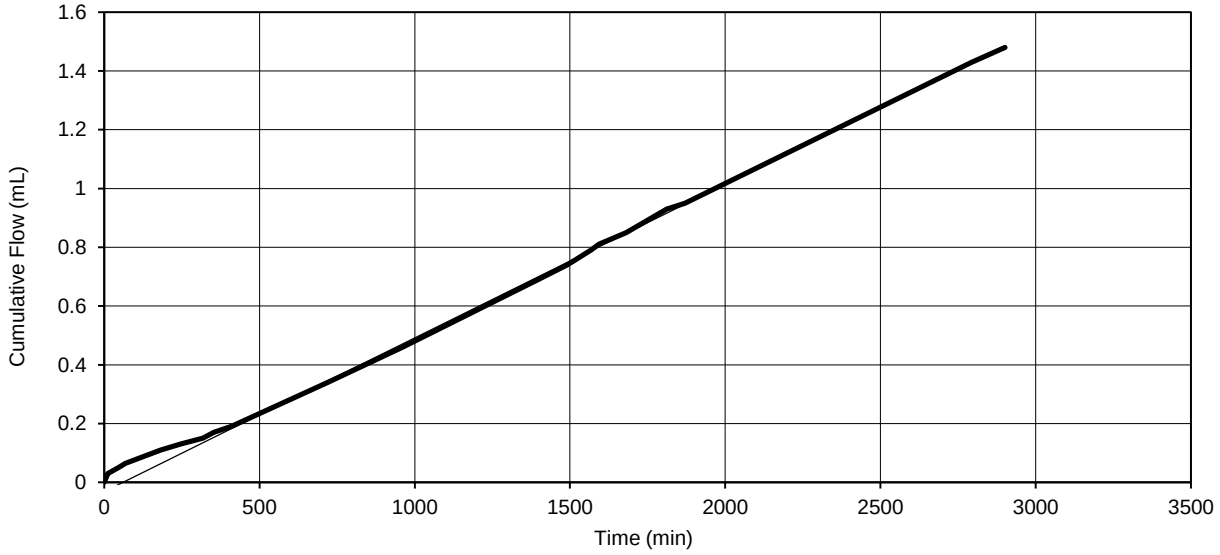
PERMEABILITY STAGE — Measured under constant head conditions in a triaxial cell

Pressure difference across specimen	*kPa*	10
Hydraulic gradient		8.9
Mean effective stress	*kPa*	15
Correction for head loss	*kPa*	0

TEST DURATIONS

Saturation	*days*	1
Consolidation	*days*	2
Flow	*days*	2

Coefficient of Permeability
k_v at 20 °C = 1.1×10^{-10} m/s



Tested by FL
Checked and Approved by

P Heritage - Project Manager
27/01/2025

Project Number:

GEO / 41755

Project Name:

MARGAM FEED PHASE 1
PC248745

GEOLABS
UKAS TESTING 1982

BS EN ISO 17892-11 : 2019

PERMEABILITY IN A TRIAXIAL CELL

Location	BH111
Sample Depth	9.00-10.00 m
Sample Type	B

Description:
Greyish brown slightly sandy gravelly CLAY. Sand and gravel are fine to medium.

SPECIMEN DETAILS

Depth within original sample	n/a
Orientation within original	n/a
Specimen preparation	Remoulded at the as-received moisture using 2.5 kg compactive effort.

TEST DETAILS		**INITIAL**	**FINAL**
Diameter	*mm*	105.05	103.92
Height	*mm*	115.03	113.79
Water Content	*%*	69.8	69.6
Bulk Density	*Mg/m³*	2.20	2.27
Dry Density	*Mg/m³*	1.30	1.34
Average Laboratory Temperature	*°C*	20	
Source of Permeant Water		De-aired tap water	

SATURATION STAGE

Saturation initially by constant water content, followed by back-pressure assistance.

Pore pressure coefficient ('B' value)		0.00	0.00

CONSOLIDATION STAGE

Effective pressure	*kPa*	180
Volume change	*mL*	32.2

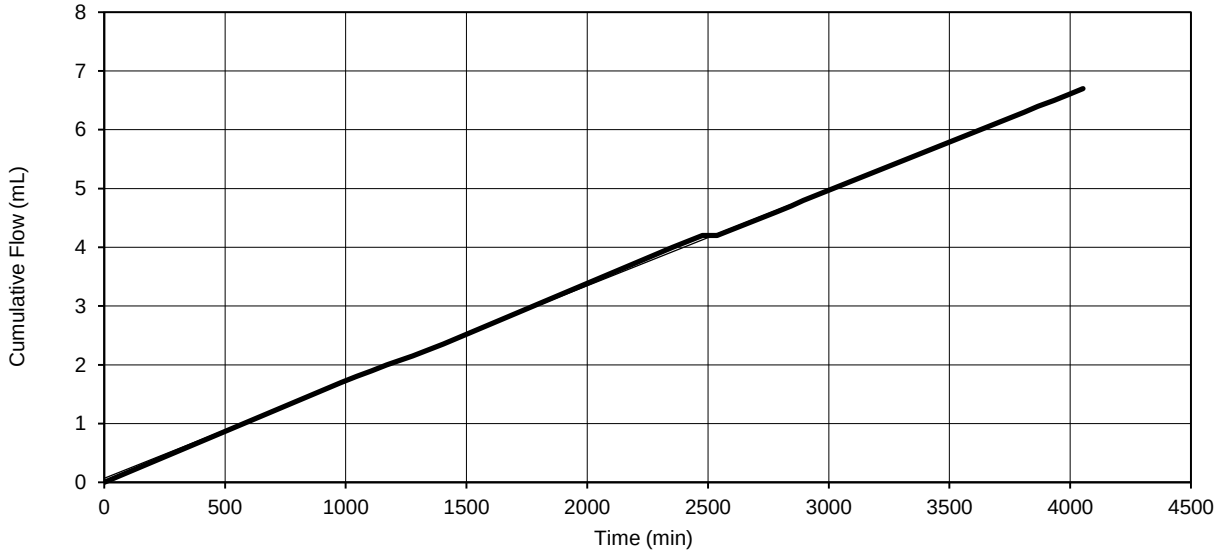
PERMEABILITY STAGE — Measured under constant head conditions in a triaxial cell

Pressure difference across specimen	*kPa*	10
Hydraulic gradient		9.0
Mean effective stress	*kPa*	180
Correction for head loss	*kPa*	0

TEST DURATIONS

Saturation	*days*	2
Consolidation	*days*	2
Flow	*days*	3

Coefficient of Permeability
k_v at 20 °C = 3.6×10^{-10} m/s



Tested by FL
Checked and Approved by

P Heritage

P Heritage - Project Manager
27/01/2025

Project Number:

GEO / 41755

Project Name:

MARGAM FEED PHASE 1
PC248745

GEOLABS®
UKAS TESTING 1982

Certificate of Analysis

Certificate Number	25-00550	*Issued:*	20-Jan-25

Client Geotechnics LTD
203 Torrington Avenue
Tile Hill
Coventry
CV4 9AP

Our Reference	25-00550
Client Reference ~	PC248745
Order No ~	AUTH-OC42495
Contract Title ~	Margam FEED
Description	7 Soil samples.
Date Received	07-Jan-25
Date Started	10-Jan-25
Date Completed	20-Jan-25
Test Procedures	Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. 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 certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Kirk Bridgewood
General Manager

2139

Summary of Chemical Analysis
Soil Samples

Our Ref 25-00550
Client Ref ~ PC248745
Contract Title ~ Margam FEED

	Lab No	2447578	2447579	2447580	2447581	2447582	2447583	2447584
	Sample ID ~	BH105	BH105	BH105	BH108	BH108	BH111	BH111
	Depth ~	3.20-4.40	6.00	11.80	7.00	9.00-10.00	1.30-2.50	9.50
	Other ID ~							
	Sample Type ~	B	D	D	D	B	B	D
	Sampling Date ~	n/s	28/08/2024	28/08/2024	10/09/2024	n/s	n/s	16/09/2024
	Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**					
Metals								
Magnesium Aqueous Extract (2:1)	DETSC 2076*	10	mg/l	67	< 10	< 10	< 10	< 10	64	< 10
Inorganics								
pH	DETSC 2008#		pH	7.8	7.0	6.8	7.9	7.4	6.6	7.5
Chloride Aqueous Extract (2:1)	DETSC 2055	1	mg/l	30	7.1	6.7	5.9	10	200	43
Nitrate Aqueous Extract as NO3 (2:1)	DETSC 2055	1	mg/l	2.1	< 1.0	3.8	< 1.0	< 1.0	< 1.0	< 1.0
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	1300	38	35	17	12	750	20
Sulphur as S, Total	DETSC 2320	0.01	%	1.4	0.02	0.02	< 0.01	0.02	0.99	0.02
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.55	0.03	0.03	0.02	0.01	0.41	0.01

Information in Support of the Analytical Results

Our Ref 25-00550
Client Ref ~ PC248745
Contract ~ Margam FEED

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2447578	BH105 3.20-4.40 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), Metals ICP Prep (182 days), pH + Conductivity (7 days)	
2447579	BH105 6.00 SOIL	28/08/24	PT 1L	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2447580	BH105 11.80 SOIL	28/08/24	PT 1L	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2447581	BH108 7.00 SOIL	10/09/24	PT 1L	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2447582	BH108 9.00-10.00 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), Metals ICP Prep (182 days), pH + Conductivity (7 days)	
2447583	BH111 1.30-2.50 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), Metals ICP Prep (182 days), pH + Conductivity (7 days)	
2447584	BH111 9.50 SOIL	16/09/24	PT 1L	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	

Key: P-Plastic T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.
Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.
The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Key:

~ Sample details are provided by the client and can affect the validity of the results
***** -not accredited.
# -MCERTS (accreditation only applies if report carries the MCERTS logo).
$ -subcontracted.

Information in Support of the Analytical Results

Our Ref 25-00550
Client Ref ~ PC248745
Contract ~ Margam FEED

n/s -not supplied.
I/S -insufficient sample.
U/S -unsuitable sample.
t/f -to follow.
nd -not detected.

End of Report

Certificate of Analysis

Certificate Number	24-20952	*Issued:*	07-Oct-24

Client Geotechnics LTD
203 Torrington Avenue
Tile Hill
Coventry
CV4 9AP

Our Reference	24-20952
Client Reference ~	PC248745
Order No ~	OC41678
Contract Title ~	Margam FEED
Description	13 Soil samples.
Date Received	01-Oct-24
Date Started	01-Oct-24
Date Completed	07-Oct-24
Test Procedures	Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. 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 certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Kirk Bridgewood
General Manager

2139

Summary of Chemical Analysis
Soil Samples

Our Ref 24-20952
Client Ref ~ PC248745
Contract Title ~ Margam FEED

				Lab No	2402370	2402371	2402372	2402373	2402374	2402375	2402376	2402377	2402378	2402379	2402380
				Sample ID ~	BH103	BH103	BH103	BH104	BH104	TP101	TP103	TP104	TP109	TP108	TP109
				Depth ~	1.00	2.20-3.20	3.20-3.80	1.00	2.80	0.50	1.80-2.00	2.00	0.50	2.50	1.40-2.00
				Other ID ~											
				Sample Type ~	D	B	B	D	D	D	B	D	D	D	B
				Sampling Date ~	20/08/2024	20/08/2024	20/08/2024	15/08/2024	15/08/2024	20/08/2024	22/08/2024	22/08/2024	27/08/2024	27/08/2024	27/08/2024
				Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**												
Metals															
Magnesium Aqueous Extract (2:1)	DETSC 2076*	10	mg/l	< 10			< 10		12		48	11		
Inorganics															
pH	DETSC 2008#		pH	8.2			6.6		6.4		6.5	5.9		
Organic matter	DETSC 2002#	0.1	%		5.3	14		24		17			5.8	23
Chloride Aqueous Extract (2:1)	DETSC 2055	1	mg/l	5.6			7.0		11		22	6.7		
Nitrate Aqueous Extract as NO3 (2:1)	DETSC 2055	1	mg/l	< 1.0			< 1.0		32		13	1.5		
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	25			63		150		710	140		
Sulphur as S, Total	DETSC 2320	0.01	%	0.03			0.05		0.09		0.99	0.11		
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.04			0.05		0.12		0.30	0.08		

Summary of Chemical Analysis
Soil Samples

Our Ref 24-20952
Client Ref ~ PC248745
Contract Title ~ Margam FEED

			Lab No	2402381	2402382
			Sample ID ~	TP105A	TP106
			Depth ~	1.40-1.50	2.00-2.20
			Other ID ~		
			Sample Type ~	D	B
			Sampling Date ~	23/08/2024	23/08/2024
			Sampling Time ~	n/s	n/s
Test	**Method**	**LOD**	**Units**		
Metals					
Magnesium Aqueous Extract (2:1)	DETSC 2076*	10	mg/l	14	
Inorganics					
pH	DETSC 2008#		pH	10.0	
Organic matter	DETSC 2002#	0.1	%		25
Chloride Aqueous Extract (2:1)	DETSC 2055	1	mg/l	9.5	
Nitrate Aqueous Extract as NO3 (2:1)	DETSC 2055	1	mg/l	2.0	
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	260	
Sulphur as S, Total	DETSC 2320	0.01	%	0.30	
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.44	

Information in Support of the Analytical Results

Our Ref 24-20952
Client Ref ~ PC248745
Contract ~ Margam FEED

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2402370	BH103 1.00 SOIL	20/08/24	PT 1L	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2402371	BH103 2.20-3.20 SOIL	20/08/24	PT 1L	Organic Matter (Manual) (28 days)	
2402372	BH103 3.20-3.80 SOIL	20/08/24	PT 1L	Organic Matter (Manual) (28 days)	
2402373	BH104 1.00 SOIL	15/08/24	PT 1L	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2402374	BH104 2.80 SOIL	15/08/24	PT 1L	Organic Matter (Manual) (28 days)	
2402375	TP101 0.50 SOIL	20/08/24	PT 1L	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2402376	TP103 1.80-2.00 SOIL	22/08/24	PT 1L	Organic Matter (Manual) (28 days)	
2402377	TP104 2.00 SOIL	22/08/24	PT 1L	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2402378	TP109 0.50 SOIL	27/08/24	GJ 250ml, GJ 60ml x2, PT 1L	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2402379	TP108 2.50 SOIL	27/08/24	PT 1L	Organic Matter (Manual) (28 days)	
2402380	TP109 1.40-2.00 SOIL	27/08/24	PT 1L	Organic Matter (Manual) (28 days)	
2402381	TP105A 1.40-1.50 SOIL	23/08/24	PT 1L	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2402382	TP106 2.00-2.20 SOIL	23/08/24	PT 1L	Organic Matter (Manual) (28 days)	

Key: P-Plastic T-Tub G-Glass J-Jar

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.
Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.
The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Key:

~ Sample details are provided by the client and can affect the validity of the results
***** -not accredited.
# -MCERTS (accreditation only applies if report carries the MCERTS logo).

Information in Support of the Analytical Results

Our Ref 24-20952
Client Ref ~ PC248745
Contract ~ Margam FEED

$ -subcontracted.
n/s -not supplied.
I/S -insufficient sample.
U/S -unsuitable sample.
t/f -to follow.
nd -not detected.

End of Report

Certificate of Analysis

Certificate Number	24-19960	*Issued:*	26-Sep-24

Client Geotechnics LTD
203 Torrington Avenue
Tile Hill
Coventry
CV4 9AP

Our Reference	24-19960
Client Reference ~	PC248745
Order No ~	OC41567
Contract Title ~	Margam FEED
Description	12 Soil samples.
Date Received	19-Sep-24
Date Started	19-Sep-24
Date Completed	26-Sep-24
Test Procedures	Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. 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 certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Kirk Bridgewood
General Manager

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Summary of Chemical Analysis
Soil Samples

Our Ref 24-19960
Client Ref ~ PC248745
Contract Title ~ Margam FEED

			Lab No	2396079	2396080	2396081	2396082	2396083	2396084	2396085	2396086	2396087	2396088	2396089	2396090
			Sample ID ~	BH105	BH112	BH105	BH112	BH112	TP113	BH109	TP118	TP115	TP112/SA1	TP112/SA1	BH107
			Depth ~	1.00	3.00	1.20-2.20	3.20-4.50	6.50-7.30	1.60-3.00	1.00	0.50	1.00	1.00	1.30-1.80	6.00
			Other ID ~												
			Sample Type ~	D	D	B	B	B	B	D	D	D	D	B	D
			Sampling Date ~	27/08/2024	27/08/2024	27/08/2024	27/08/2024	27/08/2024	28/08/2024	29/08/2024	29/08/2024	30/08/2024	29/08/2024	29/08/2024	09/09/2024
			Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**												
Metals															
Magnesium Aqueous Extract (2:1)	DETSC 2076*	10	mg/l	14	56					25	< 10	62	< 10		10
Inorganics															
Loss on Ignition at 440oC	DETSC 2003#	0.01	%						78					74	
pH	DETSC 2008#		pH	7.1	7.4					6.2	6.6	5.7	5.4		7.6
Organic matter	DETSC 2002#	0.1	%			1.6	20	4.6	> 25					> 25	
Chloride Aqueous Extract (2:1)	DETSC 2055	1	mg/l	11	24					18	6.3	110	10		6.8
Nitrate Aqueous Extract as NO3 (2:1)	DETSC 2055	1	mg/l	< 1.0	< 1.0					< 1.0	< 1.0	13	< 1.0		< 1.0
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	47	470					340	120	420	91		77
Sulphur as S, Total	DETSC 2320	0.01	%	0.01	0.63					0.11	0.04	0.25	0.03		< 0.01
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.01	0.26					0.09	0.04	0.37	0.04		< 0.01

Information in Support of the Analytical Results

Our Ref 24-19960
Client Ref ~ PC248745
Contract ~ Margam FEED

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2396079	BH105 1.00 SOIL	27/08/24	PT 1L	Total Sulphur ICP (7 days), pH + Conductivity (7 days)	
2396080	BH112 3.00 SOIL	27/08/24	PT 1L	Total Sulphur ICP (7 days), pH + Conductivity (7 days)	
2396081	BH105 1.20-2.20 SOIL	27/08/24	PT 1L		
2396082	BH112 3.20-4.50 SOIL	27/08/24	PT 1L		
2396083	BH112 6.50-7.30 SOIL	27/08/24	PT 1L		
2396084	TP113 1.60-3.00 SOIL	28/08/24	PT 1L		
2396085	BH109 1.00 SOIL	29/08/24	PT 1L	Total Sulphur ICP (7 days), pH + Conductivity (7 days)	
2396086	TP118 0.50 SOIL	29/08/24	PT 1L	Total Sulphur ICP (7 days), pH + Conductivity (7 days)	
2396087	TP115 1.00 SOIL	30/08/24	PT 1L	Total Sulphur ICP (7 days), pH + Conductivity (7 days)	
2396088	TP112/SA112 1.00 SOIL	29/08/24	PT 1L	Total Sulphur ICP (7 days), pH + Conductivity (7 days)	
2396089	TP112/SA112 1.30-1.80 SOIL	29/08/24	PT 1L		
2396090	BH107 6.00 SOIL	09/09/24	PT 1L	Total Sulphur ICP (7 days), pH + Conductivity (7 days)	

Key: P-Plastic T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.
Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.
The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Key:
~ Sample details are provided by the client and can affect the validity of the results
***** -not accredited.
# -MCERTS (accreditation only applies if report carries the MCERTS logo).
$ -subcontracted.
n/s -not supplied.
I/S -insufficient sample.
U/S -unsuitable sample.
t/f -to follow.
nd -not detected.

End of Report

Certificate of Analysis

Certificate Number 24-27501 *Issued:* 08-Jan-25

Client Geotechnics LTD
203 Torrington Avenue
Tile Hill
Coventry
CV4 9AP

Our Reference 24-27501

Client Reference ~ PC248745

Order No ~ AUTH-OC42473

Contract Title ~ Margham Feed

Description 4 Soil samples.

Date Received 17-Dec-24

Date Started 17-Dec-24

Date Completed 08-Jan-25

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. 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 certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Kirk Bridgewood
General Manager

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Summary of Chemical Analysis
Soil Samples

Our Ref 24-27501
Client Ref ~ PC248745
Contract Title ~ Margham Feed

	Lab No	2441601	2441602	2441603	2441604
	Sample ID ~	BH106	BH108	BH110	BH111
	Depth ~	1.20	5.05-5.20	1.00	4.80-5.50
	Other ID ~				
	Sample Type ~	B	D	D	D
	Sampling Date ~	10/09/2024	10/09/2024	10/09/2024	10/09/2024
	Sampling Time ~	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**		
Metals					
Magnesium Aqueous Extract (2:1)	DETSC 2076*	10	mg/l	91	< 10	15	22
Inorganics					
pH	DETSC 2008#		pH	7.3	12.2	7.1	9.3
Chloride Aqueous Extract (2:1)	DETSC 2055	1	mg/l	45	2600	22	98
Nitrate Aqueous Extract as NO3 (2:1)	DETSC 2055	1	mg/l	< 1.0	< 1.0	< 1.0	< 1.0
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	1100	1400	160	480
Sulphur as S, Total	DETSC 2320	0.01	%	0.89	0.11	0.07	0.08
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.29	1.0	0.05	0.12

Information in Support of the Analytical Results

Our Ref 24-27501
Client Ref ~ PC248745
Contract ~ Margham Feed

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2441601	BH106 1.20 SOIL	10/09/24	PT 1L	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2441602	BH108 5.05-5.20 SOIL	10/09/24	PT 1L	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2441603	BH110 1.00 SOIL	10/09/24	PT 1L	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2441604	BH111 4.80-5.50 SOIL	10/09/24	PT 1L	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	

Key: P-Plastic T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.
Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.
The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Key:

~ Sample details are provided by the client and can affect the validity of the results
***** -not accredited.
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$ -subcontracted.
n/s -not supplied.
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U/S -unsuitable sample.
t/f -to follow.
nd -not detected.

End of Report

APPENDIX 13

Laboratory Test Results - Contamination [Soil]

APPENDIX 13

Certificate of Analysis

Certificate Number 24-17358 *Issued:* 27-Aug-24

Client Geotechnics LTD
203 Torrington Avenue
Tile Hill
Coventry
CV4 9AP

Our Reference 24-17358

Client Reference ~ PC248745

Order No ~ OC41294

Contract Title ~ MARGAM FEED

Description 2 Soil samples.

Date Received 19-Aug-24

Date Started 19-Aug-24

Date Completed 27-Aug-24

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. 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 certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Kirk Bridgewood
General Manager

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Summary of Chemical Analysis
Matrix Descriptions

Our Ref 24-17358
Client Ref ~ PC248745
Contract Title ~ MARGAM FEED

Sample ID	Depth	Lab No	Completed	Matrix Description
BH104	0.25	2380184	27/08/2024	Dark brown slightly gravelly, sandy CLAY including numerous rootlets
BH104	0.5	2380185	27/08/2024	Dark brown slightly gravelly, sandy CLAY including numerous rootlets

Summary of Chemical Analysis
Soil Samples

Our Ref 24-17358
Client Ref ~ PC248745
Contract Title ~ MARGAM FEED

	Lab No	2380184	2380185
	Sample ID ~	BH104	BH104
	Depth ~	0.25	0.50
	Other ID ~		
	Sample Type ~	ES	ES
	Sampling Date ~	15/08/2024	15/08/2024
	Sampling Time ~	n/s	n/s

Test	Method	LOD	Units		
Metals					
Arsenic	DETSC 2301#	0.2	mg/kg	21	18
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	1.7	3.9
Cadmium	DETSC 2301#	0.1	mg/kg	0.5	< 0.1
Chromium	DETSC 2301#	0.15	mg/kg	37	36
Chromium III	DETSC 2301*	0.15	mg/kg	37	36
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	35	9.7
Lead	DETSC 2301#	0.3	mg/kg	55	22
Mercury	DETSC 2325#	0.05	mg/kg	0.07	< 0.05
Nickel	DETSC 2301#	1	mg/kg	23	34
Zinc	DETSC 2301#	1	mg/kg	130	89
Inorganics					
pH	DETSC 2008#		pH	7.0	6.5
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.5	< 0.1
Organic matter	DETSC 2002#	0.1	%	10	1.1
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	120	28
Petroleum Hydrocarbons					
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10
PAHs					
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.04	< 0.03

Summary of Chemical Analysis
Soil Samples

Our Ref 24-17358
Client Ref ~ PC248745
Contract Title ~ MARGAM FEED

	Lab No	2380184	2380185
	Sample ID ~	BH104	BH104
	Depth ~	0.25	0.50
	Other ID ~		
	Sample Type ~	ES	ES
	Sampling Date ~	15/08/2024	15/08/2024
	Sampling Time ~	n/s	n/s
Test	**Method**	**LOD**	**Units**		
Pyrene	DETSC 3303#	0.03	mg/kg	0.03	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.04	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.04	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	< 0.10
Phenols					
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	1.5	< 0.3

Summary of Chemical Analysis
Soil Samples

Our Ref 24-17358
Client Ref ~ PC248745
Contract Title ~ MARGAM FEED

			Lab No	2380184	2380185
			Sample ID ~	BH104	BH104
			Depth ~	0.25	0.50
			Other ID ~		
			Sample Type ~	ES	ES
			Sampling Date ~	15/08/2024	15/08/2024
			Sampling Time ~	n/s	n/s
Test	**Method**	**LOD**	**Units**		
VOCs					
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Benzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	0.07	< 0.01
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01

Summary of Chemical Analysis
Soil Samples

Our Ref 24-17358
Client Ref ~ PC248745
Contract Title ~ MARGAM FEED

	Lab No	2380184	2380185
	Sample ID ~	BH104	BH104
	Depth ~	0.25	0.50
	Other ID ~		
	Sample Type ~	ES	ES
	Sampling Date ~	15/08/2024	15/08/2024
	Sampling Time ~	n/s	n/s

Test	Method	LOD	Units		
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
SVOCs					
Phenol	DETSC 3433	0.1	mg/kg	0.2	< 0.1
Aniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2-Chlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
3&4-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,4-Dimethylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Bis-(dichloroethoxy)methane	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,4-Dichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
1,2,4-Trichlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
4-Chloro-3-methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2-Methylnaphthalene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2,4,6-Trichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2-Chloronaphthalene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Dibenzofuran	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,6-Dinitrotoluene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Diethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1

Summary of Chemical Analysis
Soil Samples

Our Ref 24-17358
Client Ref ~ PC248745
Contract Title ~ MARGAM FEED

	Lab No	2380184	2380185
	Sample ID ~	BH104	BH104
	Depth ~	0.25	0.50
	Other ID ~		
	Sample Type ~	ES	ES
	Sampling Date ~	15/08/2024	15/08/2024
	Sampling Time ~	n/s	n/s

Test	Method	LOD	Units		
Diphenylamine	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
4-Bromophenylphenylether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Di-n-octylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Azobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1

Summary of Asbestos Analysis
Soil Samples

Our Ref 24-17358
Client Ref ~ PC248745
Contract Title ~ MARGAM FEED

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2380184	BH104 0.25	SOIL	NAD	none	D Wilkinson
2380185	BH104 0.50	SOIL	NAD	none	D Wilkinson

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 24-17358
Client Ref ~ PC248745
Contract ~ MARGAM FEED

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2380184	BH104 0.25 SOIL	15/08/24	GJ 250ml, GJ 60ml x2, PT 1L		
2380185	BH104 0.50 SOIL	15/08/24	GJ 250ml, GJ 60ml x2, PT 1L		

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 2002	Organic matter	%	0.1	Air Dried	No	Yes	Yes
DETSC 2003	Loss on ignition	%	0.01	Air Dried	No	Yes	Yes
DETSC 2008	pH	pH Units	1	Air Dried	No	Yes	Yes
DETSC 2076	Sulphate Aqueous Extract as SO4	mg/l	10	Air Dried	No	Yes	Yes
DETSC 2084	Total Organic Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2119	Ammoniacal Nitrogen as N	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide free	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide total	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Phenol - Monohydric	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC 2130	Thiocyanate	mg/kg	0.6	Air Dried	No	Yes	Yes
DETSC 2301	Arsenic	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC 2301	Barium	mg/kg	1.5	Air Dried	No	Yes	Yes
DETSC 2301	Beryllium	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC 2301	Cadmium Available	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2301	Cadmium	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2301	Cobalt	mg/kg	0.7	Air Dried	No	Yes	Yes
DETSC 2301	Chromium	mg/kg	0.15	Air Dried	No	Yes	Yes
DETSC 2301	Copper	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC 2301	Manganese	mg/kg	20	Air Dried	No	Yes	Yes
DETSC 2301	Molybdenum	mg/kg	0.4	Air Dried	No	Yes	Yes
DETSC 2301	Nickel	mg/kg	1	Air Dried	No	Yes	Yes
DETSC 2301	Lead	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC 2301	Selenium	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC 2301	Zinc	mg/kg	1	Air Dried	No	Yes	Yes
DETSC 2311	Boron (water soluble)	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC 2321	Total Sulphate as SO4	%	0.01	Air Dried	No	Yes	Yes
DETSC 2325	Mercury	mg/kg	0.05	Air Dried	No	Yes	Yes
DETSC 3049	Sulphur (free)	mg/kg	0.75	As Received	No	Yes	Yes
DETSC 3072	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETSC 3303	Acenaphthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Acenaphthylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(b)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(k)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(g,h,i)perylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Dibenzo(a,h)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 3303	Indeno(1,2,3-c,d)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Naphthalene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Phenanthrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3311	C10-C24 Diesel Range Organics (DRO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	C24-C40 Lube Oil Range Organics (LORO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	EPH (C10-C40)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3321	Benzene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	Ethylbenzene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	Toluene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	m+p Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	o Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 28 + PCB 31	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 52	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 101	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 118	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 153	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 138	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 180	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB Total	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3521	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3521	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETSC 3521	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3521	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETSC 3521	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETSC 3521	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes

Method details are shown only for those determinands listed in Annex A of the MCERTS standard. Anything not included on this list falls outside the scope of MCERTS. No Recovery Factors are used in the determination of results. Results reported assume 100% recovery. Full method statements are available on request.

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS

Key:
~ Sample details are provided by the client and can affect the validity of the results
***** -not accredited.
# -MCERTS (accreditation only applies if report carries the MCERTS logo).
$ -subcontracted.
n/s -not supplied.
I/S -insufficient sample.
U/S -unsuitable sample.
t/f -to follow.
nd -not detected.

End of Report

Certificate of Analysis

Certificate Number 24-17359 *Issued:* 27-Aug-24

Client Geotechnics LTD
203 Torrington Avenue
Tile Hill
Coventry
CV4 9AP

Our Reference 24-17359

Client Reference ~ PC248745

Order No ~ OC41294

Contract Title ~ MARGAM FEED

Description One Soil sample.

Date Received 19-Aug-24

Date Started 19-Aug-24

Date Completed 27-Aug-24

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. 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 certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Kirk Bridgewood
General Manager

mCERTS THE ENVIRONMENT AGENCY'S MONITORING CERTIFICATION SCHEME

ilac-MRA UKAS TESTING 2139

Summary of Chemical Analysis
Matrix Descriptions

Our Ref 24-17359
Client Ref ~ PC248745
Contract Title ~ MARGAM FEED

Sample ID	Depth	Lab No	Completed	Matrix Description
BH102	0.5	2380186	27/08/2024	Dark brown slightly gravelly, sandy CLAY including odd rootlets

Summary of Chemical Analysis
Soil Samples

Our Ref 24-17359
Client Ref ~ PC248745
Contract Title ~ MARGAM FEED

Lab No	2380186
Sample ID ~	BH102
Depth ~	0.50
Other ID ~	
Sample Type ~	ES
Sampling Date ~	14/08/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Metals				
Arsenic	DETSC 2301#	0.2	mg/kg	21
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	0.9
Cadmium	DETSC 2301#	0.1	mg/kg	< 0.1
Chromium	DETSC 2301#	0.15	mg/kg	37
Chromium III	DETSC 2301*	0.15	mg/kg	37
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	18
Lead	DETSC 2301#	0.3	mg/kg	27
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05
Nickel	DETSC 2301#	1	mg/kg	33
Zinc	DETSC 2301#	1	mg/kg	100
Inorganics				
pH	DETSC 2008#		pH	7.7
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1
Organic matter	DETSC 2002#	0.1	%	6.8
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	100
Petroleum Hydrocarbons				
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10
PAHs				
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03

Summary of Chemical Analysis
Soil Samples

Our Ref 24-17359
Client Ref ~ PC248745
Contract Title ~ MARGAM FEED

Lab No	2380186
Sample ID ~	BH102
Depth ~	0.50
Other ID ~	
Sample Type ~	ES
Sampling Date ~	14/08/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10
Phenols				
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3

Summary of Chemical Analysis
Soil Samples

Our Ref 24-17359
Client Ref ~ PC248745
Contract Title ~ MARGAM FEED

Lab No	2380186
Sample ID ~	BH102
Depth ~	0.50
Other ID ~	
Sample Type ~	ES
Sampling Date ~	14/08/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
VOCs				
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.01
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01
Benzene	DETSC 3431	0.01	mg/kg	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	< 0.01
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01

Summary of Chemical Analysis
Soil Samples

Our Ref 24-17359
Client Ref ~ PC248745
Contract Title ~ MARGAM FEED

Lab No	2380186
Sample ID ~	BH102
Depth ~	0.50
Other ID ~	
Sample Type ~	ES
Sampling Date ~	14/08/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01
SVOCs				
Phenol	DETSC 3433	0.1	mg/kg	< 0.1
Aniline	DETSC 3433*	0.1	mg/kg	< 0.1
2-Chlorophenol	DETSC 3433	0.1	mg/kg	< 0.1
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	< 0.1
2-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	< 0.1
3&4-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1
2,4-Dimethylphenol	DETSC 3433	0.1	mg/kg	< 0.1
Bis-(dichloroethoxy)methane	DETSC 3433	0.1	mg/kg	< 0.1
2,4-Dichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1
1,2,4-Trichlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1
4-Chloro-3-methylphenol	DETSC 3433	0.1	mg/kg	< 0.1
2-Methylnaphthalene	DETSC 3433	0.1	mg/kg	< 0.1
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 0.1
2,4,6-Trichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1
2-Chloronaphthalene	DETSC 3433	0.1	mg/kg	< 0.1
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1
Dibenzofuran	DETSC 3433	0.1	mg/kg	< 0.1
2,6-Dinitrotoluene	DETSC 3433	0.1	mg/kg	< 0.1
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1
Diethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1

Summary of Chemical Analysis
Soil Samples

Our Ref 24-17359
Client Ref ~ PC248745
Contract Title ~ MARGAM FEED

Lab No	2380186
Sample ID ~	BH102
Depth ~	0.50
Other ID ~	
Sample Type ~	ES
Sampling Date ~	14/08/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Diphenylamine	DETSC 3433	0.1	mg/kg	< 0.1
4-Bromophenylphenylether	DETSC 3433	0.1	mg/kg	< 0.1
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	< 0.1
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg	< 0.1
Di-n-octylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1
Azobenzene	DETSC 3433	0.1	mg/kg	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	< 0.1

Summary of Asbestos Analysis
Soil Samples

Our Ref 24-17359
Client Ref ~ PC248745
Contract Title ~ MARGAM FEED

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2380186	BH102 0.50	SOIL	NAD	none	Keith Wilson

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 24-17359
Client Ref ~ PC248745
Contract ~ MARGAM FEED

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2380186	BH102 0.50 SOIL	14/08/24	GJ 250ml, GJ 60ml x2, PT 1L		

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 2002	Organic matter	%	0.1	Air Dried	No	Yes	Yes
DETSC 2003	Loss on ignition	%	0.01	Air Dried	No	Yes	Yes
DETSC 2008	pH	pH Units	1	Air Dried	No	Yes	Yes
DETSC 2076	Sulphate Aqueous Extract as SO4	mg/l	10	Air Dried	No	Yes	Yes
DETSC 2084	Total Organic Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2119	Ammoniacal Nitrogen as N	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide free	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide total	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Phenol - Monohydric	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC 2130	Thiocyanate	mg/kg	0.6	Air Dried	No	Yes	Yes
DETSC 2301	Arsenic	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC 2301	Barium	mg/kg	1.5	Air Dried	No	Yes	Yes
DETSC 2301	Beryllium	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC 2301	Cadmium Available	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2301	Cadmium	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2301	Cobalt	mg/kg	0.7	Air Dried	No	Yes	Yes
DETSC 2301	Chromium	mg/kg	0.15	Air Dried	No	Yes	Yes
DETSC 2301	Copper	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC 2301	Manganese	mg/kg	20	Air Dried	No	Yes	Yes
DETSC 2301	Molybdenum	mg/kg	0.4	Air Dried	No	Yes	Yes
DETSC 2301	Nickel	mg/kg	1	Air Dried	No	Yes	Yes
DETSC 2301	Lead	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC 2301	Selenium	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC 2301	Zinc	mg/kg	1	Air Dried	No	Yes	Yes
DETSC 2311	Boron (water soluble)	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC 2321	Total Sulphate as SO4	%	0.01	Air Dried	No	Yes	Yes
DETSC 2325	Mercury	mg/kg	0.05	Air Dried	No	Yes	Yes
DETSC 3049	Sulphur (free)	mg/kg	0.75	As Received	No	Yes	Yes
DETSC 3072	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETSC 3303	Acenaphthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Acenaphthylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(b)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(k)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(g,h,i)perylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Dibenzo(a,h)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 3303	Indeno(1,2,3-c,d)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Naphthalene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Phenanthrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3311	C10-C24 Diesel Range Organics (DRO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	C24-C40 Lube Oil Range Organics (LORO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	EPH (C10-C40)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3321	Benzene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	Ethylbenzene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	Toluene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	m+p Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	o Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 28 + PCB 31	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 52	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 101	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 118	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 153	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 138	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 180	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB Total	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3521	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3521	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETSC 3521	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3521	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETSC 3521	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETSC 3521	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes

Method details are shown only for those determinands listed in Annex A of the MCERTS standard. Anything not included on this list falls outside the scope of MCERTS. No Recovery Factors are used in the determination of results. Results reported assume 100% recovery. Full method statements are available on request.

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS

Key:
~ Sample details are provided by the client and can affect the validity of the results
***** -not accredited.
# -MCERTS (accreditation only applies if report carries the MCERTS logo).
$ -subcontracted.
n/s -not supplied.
I/S -insufficient sample.
U/S -unsuitable sample.
t/f -to follow.
nd -not detected.

End of Report

Certificate of Analysis

Certificate Number	24-17554	*Issued:*	27-Aug-24

Client Geotechnics LTD
203 Torrington Avenue
Tile Hill
Coventry
CV4 9AP

Our Reference	24-17554
Client Reference ~	PC248745
Order No ~	OC41294
Contract Title ~	Margam Feed
Description	One Soil sample.
Date Received	20-Aug-24
Date Started	21-Aug-24
Date Completed	27-Aug-24
Test Procedures	Identified by prefix DETSn (details on request).
Notes	Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. 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 certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Kirk Bridgewood
General Manager

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Summary of Chemical Analysis
Soil Samples

Our Ref 24-17554
Client Ref ~ PC248745
Contract Title ~ Margam Feed

Lab No	2381265
Sample ID ~	BH101
Depth ~	0.50
Other ID ~	
Sample Type ~	ES
Sampling Date ~	12/08/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Metals				
Arsenic	DETSC 2301#	0.2	mg/kg	25
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	2.2
Cadmium	DETSC 2301#	0.1	mg/kg	< 0.1
Chromium	DETSC 2301#	0.15	mg/kg	36
Chromium III	DETSC 2301*	0.15	mg/kg	36
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	13
Lead	DETSC 2301#	0.3	mg/kg	22
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05
Nickel	DETSC 2301#	1	mg/kg	30
Zinc	DETSC 2301#	1	mg/kg	93
Inorganics				
pH	DETSC 2008#		pH	7.3
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.6
Organic matter	DETSC 2002#	0.1	%	1.2
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	13
Petroleum Hydrocarbons				
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10
PAHs				
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03

Summary of Chemical Analysis
Soil Samples

Our Ref 24-17554
Client Ref ~ PC248745
Contract Title ~ Margam Feed

Lab No	2381265
Sample ID ~	BH101
Depth ~	0.50
Other ID ~	
Sample Type ~	ES
Sampling Date ~	12/08/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10
Phenols				
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3

Summary of Chemical Analysis
Soil Samples

Our Ref 24-17554
Client Ref ~ PC248745
Contract Title ~ Margam Feed

Lab No	2381265
Sample ID ~	BH101
Depth ~	0.50
Other ID ~	
Sample Type ~	ES
Sampling Date ~	12/08/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
VOCs				
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.01
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01
Benzene	DETSC 3431	0.01	mg/kg	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	< 0.01
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01

Summary of Chemical Analysis
Soil Samples

Our Ref 24-17554
Client Ref ~ PC248745
Contract Title ~ Margam Feed

Lab No	2381265
Sample ID ~	BH101
Depth ~	0.50
Other ID ~	
Sample Type ~	ES
Sampling Date ~	12/08/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01
SVOCs				
Phenol	DETSC 3433	0.1	mg/kg	< 0.1
Aniline	DETSC 3433*	0.1	mg/kg	< 0.1
2-Chlorophenol	DETSC 3433	0.1	mg/kg	< 0.1
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	< 0.1
2-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	< 0.1
3&4-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1
2,4-Dimethylphenol	DETSC 3433	0.1	mg/kg	< 0.1
Bis-(dichloroethoxy)methane	DETSC 3433	0.1	mg/kg	< 0.1
2,4-Dichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1
1,2,4-Trichlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1
4-Chloro-3-methylphenol	DETSC 3433	0.1	mg/kg	< 0.1
2-Methylnaphthalene	DETSC 3433	0.1	mg/kg	< 0.1
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 0.1
2,4,6-Trichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1
2-Chloronaphthalene	DETSC 3433	0.1	mg/kg	< 0.1
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1
Dibenzofuran	DETSC 3433	0.1	mg/kg	< 0.1
2,6-Dinitrotoluene	DETSC 3433	0.1	mg/kg	< 0.1
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1
Diethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1

Summary of Chemical Analysis
Soil Samples

Our Ref 24-17554
Client Ref ~ PC248745
Contract Title ~ Margam Feed

Lab No	2381265
Sample ID ~	BH101
Depth ~	0.50
Other ID ~	
Sample Type ~	ES
Sampling Date ~	12/08/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Diphenylamine	DETSC 3433	0.1	mg/kg	< 0.1
4-Bromophenylphenylether	DETSC 3433	0.1	mg/kg	< 0.1
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	< 0.1
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg	< 0.1
Di-n-octylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1
Azobenzene	DETSC 3433	0.1	mg/kg	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	< 0.1

Summary of Asbestos Analysis
Soil Samples

Our Ref 24-17554
Client Ref ~ PC248745
Contract Title ~ Margam Feed

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2381265	BH101 0.50	SOIL	NAD	none	Michael Kay

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 24-17554
Client Ref ~ PC248745
Contract ~ Margam Feed

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2381265	BH101 0.50 SOIL	12/08/24	GJ 250ml, GJ 60ml x2, PT 1L	pH + Conductivity (7 days), VOC (7 days)	

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Key:

~ Sample details are provided by the client and can affect the validity of the results

***** -not accredited.

-MCERTS (accreditation only applies if report carries the MCERTS logo).

$ -subcontracted.

n/s -not supplied.

I/S -insufficient sample.

U/S -unsuitable sample.

t/f -to follow.

nd -not detected.

End of Report

Certificate of Analysis

Certificate Number	24-17820	*Issued:*	06-Sep-24

Client Geotechnics LTD
203 Torrington Avenue
Tile Hill
Coventry
CV4 9AP

Our Reference	24-17820
Client Reference ~	PC248745
Order No ~	OC41294
Contract Title ~	Margam FEED
Description	1 Soil sample, 1 Leachate prepared by DETS sample.
Date Received	23-Aug-24
Date Started	23-Aug-24
Date Completed	06-Sep-24
Test Procedures	Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. 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 certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Kirk Bridgewood
General Manager

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Summary of Chemical Analysis
Soil Samples

Our Ref 24-17820
Client Ref ~ PC248745
Contract Title ~ Margam FEED

Lab No	2383146
Sample ID ~	BH103
Depth ~	0.50
Other ID ~	
Sample Type ~	ES
Sampling Date ~	20/08/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Metals				
Arsenic	DETSC 2301#	0.2	mg/kg	21
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	1.4
Cadmium	DETSC 2301#	0.1	mg/kg	< 0.1
Chromium	DETSC 2301#	0.15	mg/kg	31
Chromium III	DETSC 2301*	0.15	mg/kg	31
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	26
Lead	DETSC 2301#	0.3	mg/kg	22
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05
Nickel	DETSC 2301#	1	mg/kg	33
Zinc	DETSC 2301#	1	mg/kg	96
Inorganics				
pH	DETSC 2008#		pH	8.3
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1
Organic matter	DETSC 2002#	0.1	%	1.3
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	22
Petroleum Hydrocarbons				
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10
PAHs				
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03

Summary of Chemical Analysis
Soil Samples

Our Ref 24-17820
Client Ref ~ PC248745
Contract Title ~ Margam FEED

Lab No	2383146
Sample ID ~	BH103
Depth ~	0.50
Other ID ~	
Sample Type ~	ES
Sampling Date ~	20/08/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10
Phenols				
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3

Summary of Chemical Analysis
Soil Samples

Our Ref 24-17820
Client Ref ~ PC248745
Contract Title ~ Margam FEED

Lab No	2383146
Sample ID ~	BH103
Depth ~	0.50
Other ID ~	
Sample Type ~	ES
Sampling Date ~	20/08/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
VOCs				
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.01
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01
Benzene	DETSC 3431	0.01	mg/kg	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	< 0.01
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01

Summary of Chemical Analysis
Soil Samples

Our Ref 24-17820
Client Ref ~ PC248745
Contract Title ~ Margam FEED

Lab No	2383146
Sample ID ~	BH103
Depth ~	0.50
Other ID ~	
Sample Type ~	ES
Sampling Date ~	20/08/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01
SVOCs				
Phenol	DETSC 3433	0.1	mg/kg	< 0.1
Aniline	DETSC 3433*	0.1	mg/kg	< 0.1
2-Chlorophenol	DETSC 3433	0.1	mg/kg	< 0.1
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	< 0.1
2-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	< 0.1
3&4-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1
2,4-Dimethylphenol	DETSC 3433	0.1	mg/kg	< 0.1
Bis-(dichloroethoxy)methane	DETSC 3433	0.1	mg/kg	< 0.1
2,4-Dichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1
1,2,4-Trichlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1
4-Chloro-3-methylphenol	DETSC 3433	0.1	mg/kg	< 0.1
2-Methylnaphthalene	DETSC 3433	0.1	mg/kg	< 0.1
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 0.1
2,4,6-Trichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1
2-Chloronaphthalene	DETSC 3433	0.1	mg/kg	< 0.1
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1
Dibenzofuran	DETSC 3433	0.1	mg/kg	< 0.1
2,6-Dinitrotoluene	DETSC 3433	0.1	mg/kg	< 0.1
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1
Diethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1
Diphenylamine	DETSC 3433	0.1	mg/kg	< 0.1
4-Bromophenylphenylether	DETSC 3433	0.1	mg/kg	< 0.1

Summary of Chemical Analysis
Soil Samples

Our Ref 24-17820
Client Ref ~ PC248745
Contract Title ~ Margam FEED

Lab No	2383146
Sample ID ~	BH103
Depth ~	0.50
Other ID ~	
Sample Type ~	ES
Sampling Date ~	20/08/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	< 0.1
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	0.1
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg	< 0.1
Di-n-octylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1
Azobenzene	DETSC 3433	0.1	mg/kg	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	< 0.1

WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 24-17820
Client Ref PC248745
Contract Title Margam FEED
Sample Id BH103 0.50

Sample Numbers 2383146 2383147
Date Analysed 06/09/2024

Test Results On Waste

Determinand and Method Reference	Units	Result	WAC Limit Values: Inert Waste	SNRHW	Hazardous Waste
DETSC 2084# Total Organic Carbon	%	1.0	3	5	6
DETSC 2003# Loss On Ignition	%	5.5	n/a	n/a	10
DETSC3321# BTEX	mg/kg		6	n/a	n/a
DETSC3401# PCB's (7 congeners)	mg/kg		1	n/a	n/a
DETSC3311# TPH (C10 - C40)	mg/kg		500	n/a	n/a
DETSC3301/DETSC3303 PAH's	mg/kg		100	n/a	n/a
DETSC2008# pH	pH Units		n/a	>6	n/a
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1.0	n/a	TBE	TBE
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0	n/a	TBE	TBE

Test Results On Leachate

Determinand and Method Reference	Conc in Eluate ug/l 10:1	Amount Leached* mg/kg LS10	WAC Limit Values (Limit values for LS10 Leachate): Inert Waste	SNRHW	Hazardous Waste
DETSC 2306 Arsenic as As	0.2	< 0.01	0.5	2	25
DETSC 2306 Barium as Ba	4.4	< 0.1	20	100	300
DETSC 2306 Cadmium as Cd	< 0.030	< 0.02	0.04	1	5
DETSC 2306 Chromium as Cr	< 0.25	< 0.1	0.5	10	70
DETSC 2306 Copper as Cu	< 0.40	< 0.02	2	50	100
DETSC 2306 Mercury as Hg	< 0.010	< 0.002	0.01	0.2	2
DETSC 2306 Molybdenum as Mo	< 1.1	< 0.1	0.5	10	30
DETSC 2306 Nickel as Ni	< 0.50	< 0.1	0.4	10	40
DETSC 2306 Lead as Pb	< 0.090	< 0.05	0.5	10	50
DETSC 2306 Antimony as Sb	< 0.17	< 0.05	0.06	0.7	5
DETSC 2306 Selenium as Se	< 0.25	< 0.03	0.1	0.5	7
DETSC 2306 Zinc as Zn	< 1.3	< 0.01	4	50	200
DETSC 2055 Chloride as Cl	1000	< 100	800	15,000	25,000
DETSC 2055* Fluoride as F	350	3.5	10	150	500
DETSC 2055 Sulphate as SO4	1800	< 100	1000	20,000	50,000
DETSC 2009* Total Dissolved Solids	32000	320	4000	60,000	100,000
DETSC 2130 Phenol Index	< 100	< 1	1	n/a	n/a
DETSC 2085 Dissolved Organic Carbon	< 2000	< 50	500	800	1000

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive Hazardous Waste

Additional Information

DETSC 2008 pH	6.6
DETSC 2009 Conductivity uS/cm	45.8
* Temperature*	19.0

Mass of Sample Kg*	0.140
Mass of dry Sample Kg*	0.101

Stage 1

Volume of Leachant L2*	0.974
Volume of Eluate VE1*	0.92

Disclaimer: *The WAC limit values are provided for guidance only. DETS does not accept responsibility for errors or omissions. Values are correct at time of issue.*

V.2.06 ** DETS are accredited for the testing of leachates and not the leachate preparation stage which is unaccredited.*

Summary of Asbestos Analysis
Soil Samples

Our Ref 24-17820
Client Ref ~ PC248745
Contract Title ~ Margam FEED

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2383146	BH103 0.50	SOIL	NAD	none	Pierce Booth

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 24-17820
Client Ref ~ PC248745
Contract ~ Margam FEED

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2383146	BH103 0.50 SOIL	20/08/24	GJ 250ml, GJ 60ml x2, PT 1L		
2383147	BH103 0.50 LEACHATE	20/08/24	GJ 250ml, GJ 60ml x2, PT 1L		

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Key:

~ Sample details are provided by the client and can affect the validity of the results

***** -not accredited.

-MCERTS (accreditation only applies if report carries the MCERTS logo).

$ -subcontracted.

n/s -not supplied.

I/S -insufficient sample.

U/S -unsuitable sample.

t/f -to follow.

nd -not detected.

End of Report

Certificate of Analysis

Certificate Number	24-17822	*Issued:*	06-Sep-24

Client Geotechnics LTD
203 Torrington Avenue
Tile Hill
Coventry
CV4 9AP

Our Reference	24-17822
Client Reference ~	PC248745
Order No ~	OC41294
Contract Title ~	Margam FEED
Description	2 Soil samples, 2 Leachate prepared by DETS samples.
Date Received	23-Aug-24
Date Started	23-Aug-24
Date Completed	06-Sep-24
Test Procedures	Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. 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 certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Kirk Bridgewood
General Manager

ilac-MRA UKAS TESTING 2139

Summary of Chemical Analysis
Soil Samples

Our Ref 24-17822
Client Ref ~ PC248745
Contract Title ~ Margam FEED

			Lab No	2383149	2383150
			Sample ID ~	TP101	TP101
			Depth ~	0.25	0.50
			Other ID ~		
			Sample Type ~	ES	ES
			Sampling Date ~	20/08/2024	20/08/2024
			Sampling Time ~	n/s	n/s
Test	**Method**	**LOD**	**Units**		
Metals					
Arsenic	DETSC 2301#	0.2	mg/kg	3.6	37
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	< 0.2	1.0
Cadmium	DETSC 2301#	0.1	mg/kg	1.0	0.7
Chromium	DETSC 2301#	0.15	mg/kg	8.0	32
Chromium III	DETSC 2301*	0.15	mg/kg	8.0	32
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	66	54
Lead	DETSC 2301#	0.3	mg/kg	46	69
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	0.06
Nickel	DETSC 2301#	1	mg/kg	6.1	24
Zinc	DETSC 2301#	1	mg/kg	86	180
Inorganics					
pH	DETSC 2008#		pH	8.5	7.0
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	0.5
Organic matter	DETSC 2002#	0.1	%	0.9	5.2
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	16	26
Petroleum Hydrocarbons					
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10
PAHs					
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03

Summary of Chemical Analysis
Soil Samples

Our Ref 24-17822
Client Ref ~ PC248745
Contract Title ~ Margam FEED

			Lab No	2383149	2383150
			Sample ID ~	TP101	TP101
			Depth ~	0.25	0.50
			Other ID ~		
			Sample Type ~	ES	ES
			Sampling Date ~	20/08/2024	20/08/2024
			Sampling Time ~	n/s	n/s
Test	**Method**	**LOD**	**Units**		
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	< 0.10
Phenols					
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	0.9

Summary of Chemical Analysis
Soil Samples

Our Ref 24-17822
Client Ref ~ PC248745
Contract Title ~ Margam FEED

			Lab No	2383149	2383150
			Sample ID ~	TP101	TP101
			Depth ~	0.25	0.50
			Other ID ~		
			Sample Type ~	ES	ES
			Sampling Date ~	20/08/2024	20/08/2024
			Sampling Time ~	n/s	n/s
Test	**Method**	**LOD**	**Units**		
VOCs					
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Benzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01

Summary of Chemical Analysis
Soil Samples

Our Ref 24-17822
Client Ref ~ PC248745
Contract Title ~ Margam FEED

			Lab No	2383149	2383150
			Sample ID ~	TP101	TP101
			Depth ~	0.25	0.50
			Other ID ~		
			Sample Type ~	ES	ES
			Sampling Date ~	20/08/2024	20/08/2024
			Sampling Time ~	n/s	n/s
Test	**Method**	**LOD**	**Units**		
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
SVOCs					
Phenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Aniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2-Chlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
3&4-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,4-Dimethylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Bis-(dichloroethoxy)methane	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,4-Dichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
1,2,4-Trichlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
4-Chloro-3-methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2-Methylnaphthalene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2,4,6-Trichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2-Chloronaphthalene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Dibenzofuran	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,6-Dinitrotoluene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Diethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Diphenylamine	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
4-Bromophenylphenylether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1

Summary of Chemical Analysis
Soil Samples

Our Ref 24-17822
Client Ref ~ PC248745
Contract Title ~ Margam FEED

			Lab No	2383149	2383150
			Sample ID ~	TP101	TP101
			Depth ~	0.25	0.50
			Other ID ~		
			Sample Type ~	ES	ES
			Sampling Date ~	20/08/2024	20/08/2024
			Sampling Time ~	n/s	n/s
Test	**Method**	**LOD**	**Units**		
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg	1.3	< 0.1
Di-n-octylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Azobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1

Summary of Chemical Analysis
Leachate Samples

Our Ref 24-17822
Client Ref ~ PC248745
Contract Title ~ Margam FEED

Lab No	2383152
Sample ID ~	TP101
Depth ~	0.50
Other ID ~	
Sample Type ~	ES
Sampling Date ~	20/08/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Preparation				
BS EN 12457 10:1	DETSC 1009*			Y
Metals				
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	1.3
Boron, Dissolved	DETSC 2306*	12	ug/l	< 12
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03
Calcium, Dissolved	DETSC 2306	0.09	mg/l	0.96
Chromium, Dissolved	DETSC 2306	0.25	ug/l	< 0.25
Chromium III, Dissolved	DETSC 2306*	1	ug/l	< 1.0
Chromium, Hexavalent	DETSC 2203	7	ug/l	< 7.0
Copper, Dissolved	DETSC 2306	0.4	ug/l	0.5
Lead, Dissolved	DETSC 2306	0.09	ug/l	< 0.09
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	< 0.5
Selenium, Dissolved	DETSC 2306	0.25	ug/l	< 0.25
Vanadium, Dissolved	DETSC 2306	0.6	ug/l	0.7
Zinc, Dissolved	DETSC 2306	1.3	ug/l	1.9
Inorganics				
pH	DETSC 2008		pH	6.8
Cyanide, Total Low Level	DETSC 2131	0.1	ug/l	< 0.1
Cyanide, Free Low Level	DETSC 2131	0.1	ug/l	< 0.1
Cyanide, Complex Low Level	DETSC 2131	0.1	ug/l	< 0.1
Dissolved Organic Carbon	DETSC 2085	2	mg/l	< 2.0
Ammoniacal Nitrogen as NH4	DETSC 2207	0.0193	mg/l	< 0.02
Ammoniacal Nitrogen as NH3	DETSC 2207	0.0183	mg/l	< 0.018
Ammoniacal Nitrogen as N	DETSC 2207	0.015	mg/l	< 0.015
Nitrate as NO3	DETSC 2055	0.1	mg/l	1.3
Nitrate as N	*	0.1	mg/l	< 0.10
Nitrite as NO2	DETSC 2055	0.1	mg/l	0.27
Nitrite as N	DETSC 2201	0.035	mg/l	< 0.035
Sulphate as SO4	DETSC 2055	0.1	mg/l	1.7
PAHs				
Naphthalene	DETSC 3304	0.05	ug/l	< 0.05
Acenaphthylene	DETSC 3304	0.01	ug/l	< 0.01
Acenaphthene	DETSC 3304	0.01	ug/l	< 0.01
Fluorene	DETSC 3304	0.01	ug/l	< 0.01
Phenanthrene	DETSC 3304	0.01	ug/l	< 0.01
Anthracene	DETSC 3304	0.01	ug/l	< 0.01
Fluoranthene	DETSC 3304	0.01	ug/l	< 0.01
Pyrene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(a)anthracene	DETSC 3304*	0.01	ug/l	< 0.01
Chrysene	DETSC 3304	0.01	ug/l	< 0.01

Summary of Chemical Analysis
Leachate Samples

Our Ref 24-17822
Client Ref ~ PC248745
Contract Title ~ Margam FEED

Lab No	2383152
Sample ID ~	TP101
Depth ~	0.50
Other ID ~	
Sample Type ~	ES
Sampling Date ~	20/08/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	< 0.01
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l	< 0.01
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l	< 0.01
PAH Total	DETSC 3304	0.2	ug/l	< 0.20

Summary of Chemical Analysis
Leachate VOC/SVOC Samples

Our Ref 24-17822
Client Ref ~ PC248745
Contract Title ~ Margam FEED

Lab No	2383152
Sample ID ~	TP101
Depth ~	0.50
Other ID ~	
Sample Type ~	ES
Sampling Date ~	20/08/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
VOCs				
Dichlorodifluoromethane	DETSC 3432	1	ug/l	< 1
Chloromethane	DETSC 3432	1	ug/l	< 1
Vinyl Chloride	DETSC 3432	1	ug/l	< 1
Bromomethane	DETSC 3432	1	ug/l	< 1
Chloroethane	DETSC 3432	1	ug/l	< 1
Trichlorofluoromethane	DETSC 3432*	1	ug/l	< 1
1,1-dichloroethylene	DETSC 3432	1	ug/l	< 1
Methylene Chloride	DETSC 3432*	27	ug/l	< 27
Trans-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1
1,1-dichloroethane	DETSC 3432	1	ug/l	< 1
Cis-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1
2,2-dichloropropane	DETSC 3432*	2	ug/l	< 2
Bromochloromethane	DETSC 3432	4	ug/l	< 4
Chloroform	DETSC 3432	1	ug/l	< 1
1,1,1-trichloroethane	DETSC 3432	1	ug/l	< 1
1,1-dichloropropene	DETSC 3432	1	ug/l	< 1
Carbon tetrachloride	DETSC 3432	1	ug/l	< 1
Benzene	DETSC 3432	1	ug/l	< 1
1,2-dichloroethane	DETSC 3432	1	ug/l	< 1
Trichloroethylene	DETSC 3432*	1	ug/l	< 1
1,2-dichloropropane	DETSC 3432	1	ug/l	< 1
Dibromomethane	DETSC 3432	1	ug/l	< 1
Bromodichloromethane	DETSC 3432	4	ug/l	< 4
cis-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1
Toluene	DETSC 3432	1	ug/l	< 1
trans-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1
1,1,2-trichloroethane	DETSC 3432	1	ug/l	< 1
Tetrachloroethylene	DETSC 3432	1	ug/l	< 1
1,3-dichloropropane	DETSC 3432	1	ug/l	< 1
Dibromochloromethane	DETSC 3432	1	ug/l	< 1
1,2-dibromoethane	DETSC 3432	1	ug/l	< 1
Chlorobenzene	DETSC 3432	1	ug/l	< 1
1,1,1,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1
Ethylbenzene	DETSC 3432	1	ug/l	< 1
m+p-Xylene	DETSC 3432	2	ug/l	< 2
o-Xylene	DETSC 3432	1	ug/l	< 1
Styrene	DETSC 3432	1	ug/l	< 1
Bromoform	DETSC 3432	1	ug/l	< 1
Isopropylbenzene	DETSC 3432	1	ug/l	< 1
1,1,2,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1
Bromobenzene	DETSC 3432	1	ug/l	< 1

Summary of Chemical Analysis
Leachate VOC/SVOC Samples

Our Ref 24-17822
Client Ref ~ PC248745
Contract Title ~ Margam FEED

Lab No	2383152
Sample ID ~	TP101
Depth ~	0.50
Other ID ~	
Sample Type ~	ES
Sampling Date ~	20/08/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
1,2,3-trichloropropane	DETSC 3432	1	ug/l	< 1
n-propylbenzene	DETSC 3432	1	ug/l	< 1
2-chlorotoluene	DETSC 3432	1	ug/l	< 1
1,3,5-trimethylbenzene	DETSC 3432	1	ug/l	< 1
4-chlorotoluene	DETSC 3432	1	ug/l	< 1
Tert-butylbenzene	DETSC 3432	1	ug/l	< 1
1,2,4-trimethylbenzene	DETSC 3432	1	ug/l	< 1
sec-butylbenzene	DETSC 3432	1	ug/l	< 1
p-isopropyltoluene	DETSC 3432	1	ug/l	< 1
1,3-dichlorobenzene	DETSC 3432	2	ug/l	< 2
1,4-dichlorobenzene	DETSC 3432	1	ug/l	< 1
n-butylbenzene	DETSC 3432	1	ug/l	< 1
1,2-dichlorobenzene	DETSC 3432	1	ug/l	< 1
1,2-dibromo-3-chloropropane	DETSC 3432	1	ug/l	< 1
1,2,4-trichlorobenzene	DETSC 3432	1	ug/l	< 1
Hexachlorobutadiene	DETSC 3432	1	ug/l	< 1
1,2,3-trichlorobenzene	DETSC 3432	1	ug/l	< 1
MTBE	DETSC 3432*	1	ug/l	< 1
SVOCs				
Phenol	DETSC 3434*	1	ug/l	< 1.0
Aniline	DETSC 3434*	1	ug/l	< 1.0
2-Chlorophenol	DETSC 3434*	1	ug/l	< 1.0
Benzyl Alcohol	DETSC 3434*	1	ug/l	< 1.0
2-Methylphenol	DETSC 3434*	1	ug/l	< 1.0
Bis(2-chloroisopropyl)ether	DETSC 3434*	1	ug/l	< 1.0
3&4-Methylphenol	DETSC 3434*	1	ug/l	< 1.0
Bis(2-chloroethoxy)methane	DETSC 3434*	1	ug/l	< 1.0
2,4-Dimethylphenol	DETSC 3434*	1	ug/l	< 1.0
2,4-Dichlorophenol	DETSC 3434*	1	ug/l	< 1.0
1,2,4-Trichlorobenzene	DETSC 3434*	1	ug/l	< 1.0
4-Chloro-3-methylphenol	DETSC 3434*	1	ug/l	< 1.0
2-Methylnaphthalene	DETSC 3434*	1	ug/l	< 1.0
Hexachlorocyclopentadiene	DETSC 3434*	1	ug/l	< 1.0
2,4,6-Trichlorophenol	DETSC 3434*	1	ug/l	< 1.0
2,4,5-Trichlorophenol	DETSC 3434*	1	ug/l	< 1.0
2-Chloronaphthalene	DETSC 3434*	1	ug/l	< 1.0
2-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0
2,4-Dinitrotoluene	DETSC 3434*	1	ug/l	< 1.0
3-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0
4-Nitrophenol	DETSC 3434*	1	ug/l	< 1.0
Dibenzofuran	DETSC 3434*	1	ug/l	< 1.0
2,6-Dinitrotoluene	DETSC 3434*	1	ug/l	< 1.0

Summary of Chemical Analysis
Leachate VOC/SVOC Samples

Our Ref 24-17822
Client Ref ~ PC248745
Contract Title ~ Margam FEED

Lab No	2383152
Sample ID ~	TP101
Depth ~	0.50
Other ID ~	
Sample Type ~	ES
Sampling Date ~	20/08/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
2,3,4,6-Tetrachlorophenol	DETSC 3434*	1	ug/l	< 1.0
Diethylphthalate	DETSC 3434*	1	ug/l	< 1.0
4-Chlorophenylphenylether	DETSC 3434*	1	ug/l	< 1.0
4-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0
Diphenylamine	DETSC 3434*	1	ug/l	< 1.0
4-Bromophenylphenylether	DETSC 3434*	1	ug/l	< 1.0
Hexachlorobenzene	DETSC 3434*	1	ug/l	< 1.0
Bis(2-ethylhexyl)ester	DETSC 3434*	1	ug/l	< 1.0
Pentachlorophenol	DETSC 3434*	1	ug/l	< 1.0
Di-n-butylphthalate	DETSC 3434*	1	ug/l	< 1.0
Butylbenzylphthalate	DETSC 3434*	1	ug/l	< 1.0
Bis(2-ethylhexyl)phthalate	DETSC 3434*	1	ug/l	< 1.0
Di-n-octylphthalate	DETSC 3434*	1	ug/l	< 1.0
1,4-Dinitrobenzene	DETSC 3434*	1	ug/l	< 1.0
Dimethylphthalate	DETSC 3434*	1	ug/l	< 1.0
1,3-Dinitrobenzene	DETSC 3434*	1	ug/l	< 1.0
2,3,5,6-Tetrachlorophenol	DETSC 3434*	1	ug/l	< 1.0
Azobenzene	DETSC 3434*	1	ug/l	< 1.0
Carbazole	DETSC 3434*	1	ug/l	< 1.0
1-Methylnaphthalene	DETSC 3434*	1	ug/l	< 1.0

WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 24-17822
Client Ref PC248745
Contract Title Margam FEED
Sample Id TP101 0.25

Sample Numbers 2383149 2383151
Date Analysed 06/09/2024

Test Results On Waste

Determinand and Method Reference	Units	Result	WAC Limit Values: Inert Waste	SNRHW	Hazardous Waste
DETSC 2084# Total Organic Carbon	%	3.7	3	5	6
DETSC 2003# Loss On Ignition	%	1.1	n/a	n/a	10
DETSC3321# BTEX	mg/kg		6	n/a	n/a
DETSC3401# PCB's (7 congeners)	mg/kg		1	n/a	n/a
DETSC3311# TPH (C10 - C40)	mg/kg		500	n/a	n/a
DETSC3301/DETSC3303 PAH's	mg/kg		100	n/a	n/a
DETSC2008# pH	pH Units		n/a	>6	n/a
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	6.1	n/a	TBE	TBE
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0	n/a	TBE	TBE

Test Results On Leachate

Determinand and Method Reference	Conc in Eluate ug/l 10:1	Amount Leached* mg/kg LS10	WAC Limit Values (Limit values for LS10 Leachate): Inert Waste	SNRHW	Hazardous Waste
DETSC 2306 Arsenic as As	0.29	< 0.01	0.5	2	25
DETSC 2306 Barium as Ba	41	0.41	20	100	300
DETSC 2306 Cadmium as Cd	< 0.030	< 0.02	0.04	1	5
DETSC 2306 Chromium as Cr	< 0.25	< 0.1	0.5	10	70
DETSC 2306 Copper as Cu	2.3	0.023	2	50	100
DETSC 2306 Mercury as Hg	< 0.010	< 0.002	0.01	0.2	2
DETSC 2306 Molybdenum as Mo	< 1.1	< 0.1	0.5	10	30
DETSC 2306 Nickel as Ni	< 0.50	< 0.1	0.4	10	40
DETSC 2306 Lead as Pb	< 0.090	< 0.05	0.5	10	50
DETSC 2306 Antimony as Sb	< 0.17	< 0.05	0.06	0.7	5
DETSC 2306 Selenium as Se	< 0.25	< 0.03	0.1	0.5	7
DETSC 2306 Zinc as Zn	< 1.3	< 0.01	4	50	200
DETSC 2055 Chloride as Cl	1100	< 100	800	15,000	25,000
DETSC 2055* Fluoride as F	390	3.9	10	150	500
DETSC 2055 Sulphate as SO4	1900	< 100	1000	20,000	50,000
DETSC 2009* Total Dissolved Solids	38000	380	4000	60,000	100,000
DETSC 2130 Phenol Index	< 100	< 1	1	n/a	n/a
DETSC 2085 Dissolved Organic Carbon	< 2000	< 50	500	800	1000

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive Hazardous Waste

Additional Information

DETSC 2008 pH	6.6
DETSC 2009 Conductivity uS/cm	53.9
* Temperature*	19.0

Mass of Sample Kg*	0.100
Mass of dry Sample Kg*	0.095

Stage 1

Volume of Leachant L2*	0.949
Volume of Eluate VE1*	0.897

Disclaimer: *The WAC limit values are provided for guidance only. DETS does not accept responsibility for errors or omissions. Values are correct at time of issue.*

V.2.06 ** DETS are accredited for the testing of leachates and not the leachate preparation stage which is unaccredited.*

Summary of Asbestos Analysis
Soil Samples

Our Ref 24-17822
Client Ref ~ PC248745
Contract Title ~ Margam FEED

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2383149	TP101 0.25	SOIL	NAD	none	Pierce Booth
2383150	TP101 0.50	SOIL	NAD	none	Pierce Booth

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 24-17822
Client Ref ~ PC248745
Contract ~ Margam FEED

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2383149	TP101 0.25 SOIL	20/08/24	GJ 250ml, GJ 60ml x2, PT 1L		
2383150	TP101 0.50 SOIL	20/08/24	GJ 250ml, GJ 60ml x2, PT 1L		
2383151	TP101 0.25 LEACHATE	20/08/24	GJ 250ml, GJ 60ml x2, PT 1L		
2383152	TP101 0.50 LEACHATE	20/08/24	GJ 250ml, GJ 60ml x2, PT 1L		VOC

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Key:

~ Sample details are provided by the client and can affect the validity of the results

***** -not accredited.

-MCERTS (accreditation only applies if report carries the MCERTS logo).

$ -subcontracted.

n/s -not supplied.

I/S -insufficient sample.

U/S -unsuitable sample.

t/f -to follow.

nd -not detected.

End of Report

Certificate of Analysis

Certificate Number	24-18033	*Issued:*	06-Sep-24

Client Geotechnics LTD
203 Torrington Avenue
Tile Hill
Coventry
CV4 9AP

Our Reference	24-18033
Client Reference ~	PC248745
Order No ~	OC41294
Contract Title ~	Margam FEED
Description	4 Soil samples, 3 Leachate prepared by DETS samples.
Date Received	28-Aug-24
Date Started	28-Aug-24
Date Completed	06-Sep-24
Test Procedures	Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. 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 certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Kirk Bridgewood
General Manager

ilac-MRA UKAS TESTING 2139

Summary of Chemical Analysis
Soil Samples

Our Ref 24-18033
Client Ref ~ PC248745
Contract Title ~ Margam FEED

			Lab No	2384251	2384252	2384253	2384254
			Sample ID ~	BH112	TP102	TP103	TP104
			Depth ~	0.50	0.50	0.50	0.50
			Other ID ~				
			Sample Type ~	ES	ES	ES	ES
			Sampling Date ~	23/08/2024	22/08/2024	22/08/2024	22/08/2024
			Sampling Time ~	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
Metals							
Arsenic	DETSC 2301#	0.2	mg/kg	16	20	18	21
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	0.8	0.9	< 0.2	< 0.2
Cadmium	DETSC 2301#	0.1	mg/kg	0.2	0.1	0.1	0.2
Chromium	DETSC 2301#	0.15	mg/kg	37	35	35	44
Chromium III	DETSC 2301*	0.15	mg/kg	37	35	35	44
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	12	13	14	19
Lead	DETSC 2301#	0.3	mg/kg	24	23	21	26
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	33	32	33	38
Zinc	DETSC 2301#	1	mg/kg	110	120	330	130
Inorganics							
pH	DETSC 2008#		pH	7.1	7.4	7.6	7.5
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.2	< 0.1	< 0.1	< 0.1
Organic matter	DETSC 2002#	0.1	%	1.1	1.6	1.3	1.0
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	32	19	24	15
Petroleum Hydrocarbons							
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10
PAHs							
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03

Summary of Chemical Analysis
Soil Samples

Our Ref 24-18033
Client Ref ~ PC248745
Contract Title ~ Margam FEED

			Lab No	2384251	2384252	2384253	2384254
			Sample ID ~	BH112	TP102	TP103	TP104
			Depth ~	0.50	0.50	0.50	0.50
			Other ID ~				
			Sample Type ~	ES	ES	ES	ES
			Sampling Date ~	23/08/2024	22/08/2024	22/08/2024	22/08/2024
			Sampling Time ~	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10
Phenols							
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3

Summary of Chemical Analysis
Soil Samples

Our Ref 24-18033
Client Ref ~ PC248745
Contract Title ~ Margam FEED

			Lab No	2384251	2384252	2384253	2384254
			Sample ID ~	BH112	TP102	TP103	TP104
			Depth ~	0.50	0.50	0.50	0.50
			Other ID ~				
			Sample Type ~	ES	ES	ES	ES
			Sampling Date ~	23/08/2024	22/08/2024	22/08/2024	22/08/2024
			Sampling Time ~	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
VOCs							
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Benzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01

Summary of Chemical Analysis
Soil Samples

Our Ref 24-18033
Client Ref ~ PC248745
Contract Title ~ Margam FEED

			Lab No	2384251	2384252	2384253	2384254
			Sample ID ~	BH112	TP102	TP103	TP104
			Depth ~	0.50	0.50	0.50	0.50
			Other ID ~				
			Sample Type ~	ES	ES	ES	ES
			Sampling Date ~	23/08/2024	22/08/2024	22/08/2024	22/08/2024
			Sampling Time ~	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
SVOCs							
Phenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2-Chlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
3&4-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dimethylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Bis-(dichloroethoxy)methane	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
1,2,4-Trichlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4-Chloro-3-methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylnaphthalene	DETSC 3433	0.1	mg/kg	0.2	< 0.1	< 0.1	< 0.1
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2,4,6-Trichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2-Chloronaphthalene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzofuran	DETSC 3433	0.1	mg/kg	0.2	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Diethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Diphenylamine	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4-Bromophenylphenylether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1

Summary of Chemical Analysis
Soil Samples

Our Ref 24-18033
Client Ref ~ PC248745
Contract Title ~ Margam FEED

			Lab No	2384251	2384252	2384253	2384254
			Sample ID ~	BH112	TP102	TP103	TP104
			Depth ~	0.50	0.50	0.50	0.50
			Other ID ~				
			Sample Type ~	ES	ES	ES	ES
			Sampling Date ~	23/08/2024	22/08/2024	22/08/2024	22/08/2024
			Sampling Time ~	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Di-n-octylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Azobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1

WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 24-18033
Client Ref PC248745
Contract Title Margam FEED
Sample Id BH112 0.50

Sample Numbers 2384251 2384255
Date Analysed 06/09/2024

Test Results On Waste

Determinand and Method Reference	Units	Result	WAC Limit Values: Inert Waste	SNRHW	Hazardous Waste
DETSC 2084# Total Organic Carbon	%	0.8	3	5	6
DETSC 2003# Loss On Ignition	%	5.1	n/a	n/a	10
DETSC3321# BTEX	mg/kg		6	n/a	n/a
DETSC3401# PCB's (7 congeners)	mg/kg		1	n/a	n/a
DETSC3311# TPH (C10 - C40)	mg/kg		500	n/a	n/a
DETSC3301/DETSC3303 PAH's	mg/kg		100	n/a	n/a
DETSC2008# pH	pH Units		n/a	>6	n/a
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1.0	n/a	TBE	TBE
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0	n/a	TBE	TBE

Test Results On Leachate

Determinand and Method Reference	Conc in Eluate ug/l 10:1	Amount Leached* mg/kg LS10	WAC Limit Values (Limit values for LS10 Leachate): Inert Waste	SNRHW	Hazardous Waste
DETSC 2306 Arsenic as As	0.65	< 0.01	0.5	2	25
DETSC 2306 Barium as Ba	2	< 0.1	20	100	300
DETSC 2306 Cadmium as Cd	< 0.030	< 0.02	0.04	1	5
DETSC 2306 Chromium as Cr	1.3	< 0.1	0.5	10	70
DETSC 2306 Copper as Cu	0.76	< 0.02	2	50	100
DETSC 2306 Mercury as Hg	< 0.010	< 0.002	0.01	0.2	2
DETSC 2306 Molybdenum as Mo	< 1.1	< 0.1	0.5	10	30
DETSC 2306 Nickel as Ni	< 0.50	< 0.1	0.4	10	40
DETSC 2306 Lead as Pb	0.41	< 0.05	0.5	10	50
DETSC 2306 Antimony as Sb	< 0.17	< 0.05	0.06	0.7	5
DETSC 2306 Selenium as Se	< 0.25	< 0.03	0.1	0.5	7
DETSC 2306 Zinc as Zn	2	0.02	4	50	200
DETSC 2055 Chloride as Cl	1100	< 100	800	15,000	25,000
DETSC 2055* Fluoride as F	250	2.5	10	150	500
DETSC 2055 Sulphate as SO4	2200	< 100	1000	20,000	50,000
DETSC 2009* Total Dissolved Solids	17000	170	4000	60,000	100,000
DETSC 2130 Phenol Index	< 100	< 1	1	n/a	n/a
DETSC 2085 Dissolved Organic Carbon	2400	< 50	500	800	1000

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive Hazardous Waste

Additional Information

DETSC 2008 pH	6.9
DETSC 2009 Conductivity uS/cm	23.7
* Temperature*	19.0

Mass of Sample Kg*	0.130
Mass of dry Sample Kg*	0.099

Stage 1

Volume of Leachant L2*	0.962
Volume of Eluate VE1*	0.91

Disclaimer: *The WAC limit values are provided for guidance only. DETS does not accept responsibility for errors or omissions. Values are correct at time of issue.*

V.2.06 ** DETS are accredited for the testing of leachates and not the leachate preparation stage which is unaccredited.*

WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 24-18033
Client Ref PC248745
Contract Title Margam FEED
Sample Id TP103 0.50

Sample Numbers 2384253 2384256
Date Analysed 06/09/2024

Test Results On Waste

Determinand and Method Reference	Units	Result	WAC Limit Values: Inert Waste	SNRHW	Hazardous Waste
DETSC 2084# Total Organic Carbon	%	0.7	3	5	6
DETSC 2003# Loss On Ignition	%	7.3	n/a	n/a	10
DETSC3321# BTEX	mg/kg		6	n/a	n/a
DETSC3401# PCB's (7 congeners)	mg/kg		1	n/a	n/a
DETSC3311# TPH (C10 - C40)	mg/kg		500	n/a	n/a
DETSC3301/DETSC3303 PAH's	mg/kg		100	n/a	n/a
DETSC2008# pH	pH Units		n/a	>6	n/a
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1.0	n/a	TBE	TBE
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0	n/a	TBE	TBE

Test Results On Leachate

Determinand and Method Reference	Conc in Eluate ug/l 10:1	Amount Leached* mg/kg LS10	WAC Limit Values (Limit values for LS10 Leachate): Inert Waste	SNRHW	Hazardous Waste
DETSC 2306 Arsenic as As	0.29	< 0.01	0.5	2	25
DETSC 2306 Barium as Ba	1.1	< 0.1	20	100	300
DETSC 2306 Cadmium as Cd	< 0.030	< 0.02	0.04	1	5
DETSC 2306 Chromium as Cr	0.81	< 0.1	0.5	10	70
DETSC 2306 Copper as Cu	< 0.40	< 0.02	2	50	100
DETSC 2306 Mercury as Hg	< 0.010	< 0.002	0.01	0.2	2
DETSC 2306 Molybdenum as Mo	< 1.1	< 0.1	0.5	10	30
DETSC 2306 Nickel as Ni	< 0.50	< 0.1	0.4	10	40
DETSC 2306 Lead as Pb	0.12	< 0.05	0.5	10	50
DETSC 2306 Antimony as Sb	< 0.17	< 0.05	0.06	0.7	5
DETSC 2306 Selenium as Se	< 0.25	< 0.03	0.1	0.5	7
DETSC 2306 Zinc as Zn	1.3	0.013	4	50	200
DETSC 2055 Chloride as Cl	1000	< 100	800	15,000	25,000
DETSC 2055* Fluoride as F	190	1.9	10	150	500
DETSC 2055 Sulphate as SO4	1200	< 100	1000	20,000	50,000
DETSC 2009* Total Dissolved Solids	15000	150	4000	60,000	100,000
DETSC 2130 Phenol Index	< 100	< 1	1	n/a	n/a
DETSC 2085 Dissolved Organic Carbon	2200	< 50	500	800	1000

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive Hazardous Waste

Additional Information

DETSC 2008 pH	6.7
DETSC 2009 Conductivity uS/cm	20.7
* Temperature*	19.0

Mass of Sample Kg*	0.140
Mass of dry Sample Kg*	0.102

Stage 1

Volume of Leachant L2*	0.982
Volume of Eluate VE1*	0.938

Disclaimer: *The WAC limit values are provided for guidance only. DETS does not accept responsibility for errors or omissions. Values are correct at time of issue.*

V.2.06 ** DETS are accredited for the testing of leachates and not the leachate preparation stage which is unaccredited.*

WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 24-18033
Client Ref PC248745
Contract Title Margam FEED
Sample Id TP104 0.50

Sample Numbers 2384254 2384257
Date Analysed 06/09/2024

Test Results On Waste

Determinand and Method Reference	Units	Result	WAC Limit Values: Inert Waste	SNRHW	Hazardous Waste
DETSC 2084# Total Organic Carbon	%	0.8	3	5	6
DETSC 2003# Loss On Ignition	%	6.2	n/a	n/a	10
DETSC3321# BTEX	mg/kg		6	n/a	n/a
DETSC3401# PCB's (7 congeners)	mg/kg		1	n/a	n/a
DETSC3311# TPH (C10 - C40)	mg/kg		500	n/a	n/a
DETSC3301/DETSC3303 PAH's	mg/kg		100	n/a	n/a
DETSC2008# pH	pH Units		n/a	>6	n/a
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1.0	n/a	TBE	TBE
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0	n/a	TBE	TBE

Test Results On Leachate

Determinand and Method Reference	Conc in Eluate ug/l 10:1	Amount Leached* mg/kg LS10	WAC Limit Values (Limit values for LS10 Leachate): Inert Waste	SNRHW	Hazardous Waste
DETSC 2306 Arsenic as As	1.3	0.013	0.5	2	25
DETSC 2306 Barium as Ba	16	0.16	20	100	300
DETSC 2306 Cadmium as Cd	0.3	< 0.02	0.04	1	5
DETSC 2306 Chromium as Cr	5.1	< 0.1	0.5	10	70
DETSC 2306 Copper as Cu	4.2	0.042	2	50	100
DETSC 2306 Mercury as Hg	0.041	< 0.002	0.01	0.2	2
DETSC 2306 Molybdenum as Mo	11	0.11	0.5	10	30
DETSC 2306 Nickel as Ni	3.7	< 0.1	0.4	10	40
DETSC 2306 Lead as Pb	3.5	< 0.05	0.5	10	50
DETSC 2306 Antimony as Sb	0.84	< 0.05	0.06	0.7	5
DETSC 2306 Selenium as Se	1.9	< 0.03	0.1	0.5	7
DETSC 2306 Zinc as Zn	7.2	0.072	4	50	200
DETSC 2055 Chloride as Cl	990	< 100	800	15,000	25,000
DETSC 2055* Fluoride as F	310	3.1	10	150	500
DETSC 2055 Sulphate as SO4	1900	< 100	1000	20,000	50,000
DETSC 2009* Total Dissolved Solids	19000	190	4000	60,000	100,000
DETSC 2130 Phenol Index	< 100	< 1	1	n/a	n/a
DETSC 2085 Dissolved Organic Carbon	2100	< 50	500	800	1000

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive Hazardous Waste

Additional Information

DETSC 2008 pH	6.5
DETSC 2009 Conductivity uS/cm	26.4
* Temperature*	19.0

Mass of Sample Kg*	0.130
Mass of dry Sample Kg*	0.097

Stage 1

Volume of Leachant L2*	0.934
Volume of Eluate VE1*	0.89

Disclaimer: *The WAC limit values are provided for guidance only. DETS does not accept responsibility for errors or omissions. Values are correct at time of issue.*

V.2.06 ** DETS are accredited for the testing of leachates and not the leachate preparation stage which is unaccredited.*

Summary of Asbestos Analysis
Soil Samples

Our Ref 24-18033
Client Ref ~ PC248745
Contract Title ~ Margam FEED

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2384251	BH112 0.50	SOIL	NAD	none	Pierce Booth
2384252	TP102 0.50	SOIL	NAD	none	Pierce Booth
2384253	TP103 0.50	SOIL	NAD	none	Pierce Booth
2384254	TP104 0.50	SOIL	NAD	none	Pierce Booth

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 24-18033
Client Ref ~ PC248745
Contract ~ Margam FEED

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2384251	BH112 0.50 SOIL	23/08/24	GJ 250ml, GJ 60ml x2, PT 1L		
2384252	TP102 0.50 SOIL	22/08/24	GJ 250ml, GJ 60ml x2, PT 1L		
2384253	TP103 0.50 SOIL	22/08/24	GJ 250ml, GJ 60ml x2, PT 1L		
2384254	TP104 0.50 SOIL	22/08/24	GJ 250ml, GJ 60ml x2, PT 1L		
2384255	BH112 0.50 LEACHATE	23/08/24	GJ 250ml, GJ 60ml x2, PT 1L		
2384256	TP103 0.50 LEACHATE	22/08/24	GJ 250ml, GJ 60ml x2, PT 1L		
2384257	TP104 0.50 LEACHATE	22/08/24	GJ 250ml, GJ 60ml x2, PT 1L		

Key: G-Glass P-Plastic J-Jar T-Tub

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Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Key:

~ Sample details are provided by the client and can affect the validity of the results

***** -not accredited.

-MCERTS (accreditation only applies if report carries the MCERTS logo).

$ -subcontracted.

n/s -not supplied.

I/S -insufficient sample.

U/S -unsuitable sample.

t/f -to follow.

nd -not detected.

End of Report

Certificate of Analysis

Certificate Number	24-18137	*Issued:*	04-Sep-24

Client Geotechnics LTD
203 Torrington Avenue
Tile Hill
Coventry
CV4 9AP

Our Reference	24-18137
Client Reference ~	PC248745
Order No ~	OC41389
Contract Title ~	Margam FEED
Description	4 Soil samples.
Date Received	29-Aug-24
Date Started	29-Aug-24
Date Completed	04-Sep-24
Test Procedures	Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. 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 certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Kirk Bridgewood
General Manager

2139

Summary of Chemical Analysis
Soil Samples

Our Ref 24-18137
Client Ref ~ PC248745
Contract Title ~ Margam FEED

			Lab No	2384821	2384822	2384823	2384824
			Sample ID ~	BH101	BH102	BH101	BH102
			Depth ~	2.50-3.20	0.50	1.20-2.20	3.00
			Other ID ~				
			Sample Type ~	D	D	B	D
			Sampling Date ~	22/08/2024	14/08/2024	22/08/2024	14/08/2024
			Sampling Time ~	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
Metals							
Magnesium Aqueous Extract (2:1)	DETSC 2076*	10	mg/l			23	10
Inorganics							
pH	DETSC 2008#		pH			7.3	7.1
Organic matter	DETSC 2002#	0.1	%	5.0	2.2		
Chloride Aqueous Extract (2:1)	DETSC 2055	1	mg/l			19	9.1
Nitrate Aqueous Extract as NO3 (2:1)	DETSC 2055	1	mg/l			< 1.0	< 1.0
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l			290	61
Sulphur as S, Total	DETSC 2320	0.01	%			0.72	0.12
Sulphate as SO4, Total	DETSC 2321#	0.01	%			0.22	0.05

Information in Support of the Analytical Results

Our Ref 24-18137
Client Ref ~ PC248745
Contract ~ Margam FEED

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2384821	BH101 2.50-3.20 SOIL	22/08/24	PT 1L		
2384822	BH102 0.50 SOIL	14/08/24	PT 1L		
2384823	BH101 1.20-2.20 SOIL	22/08/24	PT 1L		
2384824	BH102 3.00 SOIL	14/08/24	PT 1L	Total Sulphur ICP (7 days), pH + Conductivity (7 days)	

Key: P-Plastic T-Tub

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Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Key:

~ Sample details are provided by the client and can affect the validity of the results

***** -not accredited.

-MCERTS (accreditation only applies if report carries the MCERTS logo).

$ -subcontracted.

n/s -not supplied.

I/S -insufficient sample.

U/S -unsuitable sample.

t/f -to follow.

nd -not detected.

End of Report

Certificate of Analysis

Certificate Number	24-18684	*Issued:*	13-Sep-24

Client Geotechnics LTD
203 Torrington Avenue
Tile Hill
Coventry
CV4 9AP

Our Reference	24-18684
Client Reference ~	PC248745
Order No ~	OC41465
Contract Title ~	Margam FEED
Description	5 Soil samples, 4 Leachate prepared by DETS samples.
Date Received	04-Sep-24
Date Started	04-Sep-24
Date Completed	13-Sep-24
Test Procedures	Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. 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 certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Kirk Bridgewood
General Manager

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Summary of Chemical Analysis
Soil Samples

Our Ref 24-18684
Client Ref ~ PC248745
Contract Title ~ Margam FEED

			Lab No	2387870	2387871	2387872	2387873	2387874
			Sample ID ~	TP105	TP105	TP105A	TP105A	TP106
			Depth ~	0.15	0.40	0.15	1.40	0.50
			Other ID ~					
			Sample Type ~	ES	ES	ES	ES	ES
			Sampling Date ~	23/08/2024	23/08/2024	23/08/2024	23/08/2024	23/08/2024
			Sampling Time ~	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**					
Metals								
Arsenic	DETSC 2301#	0.2	mg/kg	7.3	20	13	28	24
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	0.5	1.3	1.1	2.7	1.5
Cadmium	DETSC 2301#	0.1	mg/kg	0.5	0.3	0.8	0.9	0.9
Chromium	DETSC 2301#	0.15	mg/kg	250	48	490	55	57
Chromium III	DETSC 2301*	0.15	mg/kg	250	48	490	55	57
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	31	30	50	47	45
Lead	DETSC 2301#	0.3	mg/kg	25	28	60	32	120
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	0.06	< 0.05	0.15
Nickel	DETSC 2301#	1	mg/kg	10	21	28	17	16
Zinc	DETSC 2301#	1	mg/kg	550	230	200	200	150
Inorganics								
pH	DETSC 2008#		pH	10.6	9.8	10.0	9.2	7.0
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.4	0.3	0.2	0.8	0.1
Organic matter	DETSC 2002#	0.1	%	2.2	1.7	9.9	11	0.1
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	110	110	230	780	54
Petroleum Hydrocarbons								
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10
PAHs								
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.04	< 0.03	0.10	0.04	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03

Summary of Chemical Analysis
Soil Samples

Our Ref 24-18684
Client Ref ~ PC248745
Contract Title ~ Margam FEED

			Lab No	2387870	2387871	2387872	2387873	2387874
			Sample ID ~	TP105	TP105	TP105A	TP105A	TP106
			Depth ~	0.15	0.40	0.15	1.40	0.50
			Other ID ~					
			Sample Type ~	ES	ES	ES	ES	ES
			Sampling Date ~	23/08/2024	23/08/2024	23/08/2024	23/08/2024	23/08/2024
			Sampling Time ~	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**					
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.07	< 0.03	0.06	0.06	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	0.08	< 0.03	0.05	0.05	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.05	< 0.03	0.03	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	0.04	< 0.03	0.04	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.07	< 0.03	0.05	0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	0.33	< 0.10	0.33	< 0.10	< 0.10
Phenols								
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	0.3	< 0.3	< 0.3	4.8	< 0.3

Summary of Chemical Analysis
Soil Samples

Our Ref 24-18684
Client Ref ~ PC248745
Contract Title ~ Margam FEED

				Lab No	2387870	2387871	2387872	2387873	2387874
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				Depth ~	0.15	0.40	0.15	1.40	0.50
				Other ID ~					
				Sample Type ~	ES	ES	ES	ES	ES
				Sampling Date ~	23/08/2024	23/08/2024	23/08/2024	23/08/2024	23/08/2024
				Sampling Time ~	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**						
VOCs									
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Summary of Chemical Analysis
Soil Samples

Our Ref 24-18684
Client Ref ~ PC248745
Contract Title ~ Margam FEED

			Lab No	2387870	2387871	2387872	2387873	2387874
			Sample ID ~	TP105	TP105	TP105A	TP105A	TP106
			Depth ~	0.15	0.40	0.15	1.40	0.50
			Other ID ~					
			Sample Type ~	ES	ES	ES	ES	ES
			Sampling Date ~	23/08/2024	23/08/2024	23/08/2024	23/08/2024	23/08/2024
			Sampling Time ~	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**					
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
SVOCs								
Phenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Chlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
3&4-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dimethylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bis-(dichloroethoxy)methane	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,2,4-Trichlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Chloro-3-methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylnaphthalene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	0.1	< 0.1	< 0.1
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4,6-Trichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Chloronaphthalene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzofuran	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Diethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Diphenylamine	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Bromophenylphenylether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

Summary of Chemical Analysis
Soil Samples

Our Ref 24-18684
Client Ref ~ PC248745
Contract Title ~ Margam FEED

			Lab No	2387870	2387871	2387872	2387873	2387874
			Sample ID ~	TP105	TP105	TP105A	TP105A	TP106
			Depth ~	0.15	0.40	0.15	1.40	0.50
			Other ID ~					
			Sample Type ~	ES	ES	ES	ES	ES
			Sampling Date ~	23/08/2024	23/08/2024	23/08/2024	23/08/2024	23/08/2024
			Sampling Time ~	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**					
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Di-n-octylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	0.3	< 0.1	< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Azobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

Summary of Chemical Analysis
Leachate Samples

Our Ref 24-18684
Client Ref ~ PC248745
Contract Title ~ Margam FEED

			Lab No	2387875	2387876
			Sample ID ~	TP105A	TP105
			Depth ~	1.40	0.40
			Other ID ~		
			Sample Type ~	ES	ES
			Sampling Date ~	23/08/2024	23/08/2024
			Sampling Time ~	n/s	n/s
Test	**Method**	**LOD**	**Units**		
Preparation					
BS EN 12457 10:1	DETSC 1009*			Y	Y
Metals					
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	5.9	2.2
Boron, Dissolved	DETSC 2306*	12	ug/l	31	14
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03	< 0.03
Calcium, Dissolved	DETSC 2306	0.09	mg/l	5.8	6.7
Chromium, Dissolved	DETSC 2306	0.25	ug/l	< 0.25	< 0.25
Chromium III, Dissolved	DETSC 2306*	1	ug/l	< 1.0	< 1.0
Chromium, Hexavalent	DETSC 2203	7	ug/l	< 7.0	< 7.0
Copper, Dissolved	DETSC 2306	0.4	ug/l	0.8	0.9
Lead, Dissolved	DETSC 2306	0.09	ug/l	< 0.09	0.19
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	< 0.5	< 0.5
Selenium, Dissolved	DETSC 2306	0.25	ug/l	0.56	< 0.25
Vanadium, Dissolved	DETSC 2306	0.6	ug/l	1.4	8.4
Zinc, Dissolved	DETSC 2306	1.3	ug/l	2.3	< 1.3
Inorganics					
pH	DETSC 2008		pH	8.0	7.7
Cyanide, Total Low Level	DETSC 2131	0.1	ug/l	0.3	0.2
Cyanide, Free Low Level	DETSC 2131	0.1	ug/l	< 0.1	< 0.1
Cyanide, Complex Low Level	DETSC 2131	0.1	ug/l	0.3	0.2
Dissolved Organic Carbon	DETSC 2085	2	mg/l	< 2.0	< 2.0
Ammoniacal Nitrogen as NH4	DETSC 2207	0.0193	mg/l	< 0.02	< 0.02
Ammoniacal Nitrogen as NH3	DETSC 2207	0.0183	mg/l	< 0.018	< 0.018
Ammoniacal Nitrogen as N	DETSC 2207	0.015	mg/l	< 0.015	< 0.015
Nitrate as NO3	DETSC 2055	0.1	mg/l	1.7	1.2
Nitrate as N	*	0.1	mg/l	< 0.10	< 0.10
Nitrite as NO2	DETSC 2055	0.1	mg/l	0.86	0.52
Nitrite as N	DETSC 2201	0.035	mg/l	< 0.035	< 0.035
Sulphate as SO4	DETSC 2055	0.1	mg/l	9.5	7.2
PAHs					
Naphthalene	DETSC 3304	0.05	ug/l	< 0.05	< 0.05
Acenaphthylene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01
Acenaphthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01
Fluorene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01
Phenanthrene	DETSC 3304	0.01	ug/l	0.01	< 0.01
Anthracene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01
Fluoranthene	DETSC 3304	0.01	ug/l	0.02	< 0.01
Pyrene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01
Benzo(a)anthracene	DETSC 3304*	0.01	ug/l	< 0.01	< 0.01
Chrysene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Leachate Samples

Our Ref 24-18684
Client Ref ~ PC248745
Contract Title ~ Margam FEED

	Lab No	2387875	2387876
	Sample ID ~	TP105A	TP105
	Depth ~	1.40	0.40
	Other ID ~		
	Sample Type ~	ES	ES
	Sampling Date ~	23/08/2024	23/08/2024
	Sampling Time ~	n/s	n/s

Test	Method	LOD	Units		
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01
PAH Total	DETSC 3304	0.2	ug/l	< 0.20	< 0.20

Summary of Chemical Analysis
Leachate VOC/SVOC Samples

Our Ref 24-18684
Client Ref ~ PC248745
Contract Title ~ Margam FEED

			Lab No	2387875	2387876
			Sample ID ~	TP105A	TP105
			Depth ~	1.40	0.40
			Other ID ~		
			Sample Type ~	ES	ES
			Sampling Date ~	23/08/2024	23/08/2024
			Sampling Time ~	n/s	n/s
Test	**Method**	**LOD**	**Units**		
VOCs					
Dichlorodifluoromethane	DETSC 3432	1	ug/l	< 1	< 1
Chloromethane	DETSC 3432	1	ug/l	< 1	< 1
Vinyl Chloride	DETSC 3432	1	ug/l	< 1	< 1
Bromomethane	DETSC 3432	1	ug/l	< 1	< 1
Chloroethane	DETSC 3432	1	ug/l	< 1	< 1
Trichlorofluoromethane	DETSC 3432*	1	ug/l	< 1	< 1
1,1-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1
Methylene Chloride	DETSC 3432*	27	ug/l	< 27	< 27
Trans-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1
1,1-dichloroethane	DETSC 3432	1	ug/l	< 1	< 1
Cis-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1
2,2-dichloropropane	DETSC 3432*	2	ug/l	< 2	< 2
Bromochloromethane	DETSC 3432	4	ug/l	< 4	< 4
Chloroform	DETSC 3432	1	ug/l	< 1	< 1
1,1,1-trichloroethane	DETSC 3432	1	ug/l	< 1	< 1
1,1-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1
Carbon tetrachloride	DETSC 3432	1	ug/l	< 1	< 1
Benzene	DETSC 3432	1	ug/l	< 1	< 1
1,2-dichloroethane	DETSC 3432	1	ug/l	< 1	< 1
Trichloroethylene	DETSC 3432*	1	ug/l	< 1	< 1
1,2-dichloropropane	DETSC 3432	1	ug/l	< 1	< 1
Dibromomethane	DETSC 3432	1	ug/l	< 1	< 1
Bromodichloromethane	DETSC 3432	4	ug/l	< 4	< 4
cis-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1
Toluene	DETSC 3432	1	ug/l	< 1	< 1
trans-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1
1,1,2-trichloroethane	DETSC 3432	1	ug/l	< 1	< 1
Tetrachloroethylene	DETSC 3432	1	ug/l	< 1	< 1
1,3-dichloropropane	DETSC 3432	1	ug/l	< 1	< 1
Dibromochloromethane	DETSC 3432	1	ug/l	< 1	< 1
1,2-dibromoethane	DETSC 3432	1	ug/l	< 1	< 1
Chlorobenzene	DETSC 3432	1	ug/l	< 1	< 1
1,1,1,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1	< 1
Ethylbenzene	DETSC 3432	1	ug/l	< 1	< 1
m+p-Xylene	DETSC 3432	2	ug/l	< 2	< 2
o-Xylene	DETSC 3432	1	ug/l	< 1	< 1
Styrene	DETSC 3432	1	ug/l	< 1	< 1
Bromoform	DETSC 3432	1	ug/l	< 1	< 1
Isopropylbenzene	DETSC 3432	1	ug/l	< 1	< 1
1,1,2,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1	< 1
Bromobenzene	DETSC 3432	1	ug/l	< 1	< 1

Summary of Chemical Analysis
Leachate VOC/SVOC Samples

Our Ref 24-18684
Client Ref ~ PC248745
Contract Title ~ Margam FEED

			Lab No	2387875	2387876
			Sample ID ~	TP105A	TP105
			Depth ~	1.40	0.40
			Other ID ~		
			Sample Type ~	ES	ES
			Sampling Date ~	23/08/2024	23/08/2024
			Sampling Time ~	n/s	n/s
Test	**Method**	**LOD**	**Units**		
1,2,3-trichloropropane	DETSC 3432	1	ug/l	< 1	< 1
n-propylbenzene	DETSC 3432	1	ug/l	< 1	< 1
2-chlorotoluene	DETSC 3432	1	ug/l	< 1	< 1
1,3,5-trimethylbenzene	DETSC 3432	1	ug/l	< 1	< 1
4-chlorotoluene	DETSC 3432	1	ug/l	< 1	< 1
Tert-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1
1,2,4-trimethylbenzene	DETSC 3432	1	ug/l	< 1	< 1
sec-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1
p-isopropyltoluene	DETSC 3432	1	ug/l	< 1	< 1
1,3-dichlorobenzene	DETSC 3432	2	ug/l	< 2	< 2
1,4-dichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1
n-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1
1,2-dichlorobenzene	DETSC 3432	1	ug/l	4	< 1
1,2-dibromo-3-chloropropane	DETSC 3432	1	ug/l	< 1	< 1
1,2,4-trichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1
Hexachlorobutadiene	DETSC 3432	1	ug/l	< 1	< 1
1,2,3-trichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1
MTBE	DETSC 3432*	1	ug/l	< 1	< 1
SVOCs					
Phenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0
Aniline	DETSC 3434*	1	ug/l	< 1.0	< 1.0
2-Chlorophenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0
Benzyl Alcohol	DETSC 3434*	1	ug/l	< 1.0	< 1.0
2-Methylphenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0
Bis(2-chloroisopropyl)ether	DETSC 3434*	1	ug/l	< 1.0	< 1.0
3&4-Methylphenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0
Bis(2-chloroethoxy)methane	DETSC 3434*	1	ug/l	< 1.0	< 1.0
2,4-Dimethylphenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0
2,4-Dichlorophenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0
1,2,4-Trichlorobenzene	DETSC 3434*	1	ug/l	< 1.0	< 1.0
4-Chloro-3-methylphenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0
2-Methylnaphthalene	DETSC 3434*	1	ug/l	< 1.0	< 1.0
Hexachlorocyclopentadiene	DETSC 3434*	1	ug/l	< 1.0	< 1.0
2,4,6-Trichlorophenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0
2,4,5-Trichlorophenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0
2-Chloronaphthalene	DETSC 3434*	1	ug/l	< 1.0	< 1.0
2-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0	< 1.0
2,4-Dinitrotoluene	DETSC 3434*	1	ug/l	< 1.0	< 1.0
3-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0	< 1.0
4-Nitrophenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0
Dibenzofuran	DETSC 3434*	1	ug/l	< 1.0	< 1.0
2,6-Dinitrotoluene	DETSC 3434*	1	ug/l	< 1.0	< 1.0

Summary of Chemical Analysis
Leachate VOC/SVOC Samples

Our Ref 24-18684
Client Ref ~ PC248745
Contract Title ~ Margam FEED

	Lab No	2387875	2387876
	Sample ID ~	TP105A	TP105
	Depth ~	1.40	0.40
	Other ID ~		
	Sample Type ~	ES	ES
	Sampling Date ~	23/08/2024	23/08/2024
	Sampling Time ~	n/s	n/s
Test	**Method**	**LOD**	**Units**		
2,3,4,6-Tetrachlorophenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0
Diethylphthalate	DETSC 3434*	1	ug/l	< 1.0	< 1.0
4-Chlorophenylphenylether	DETSC 3434*	1	ug/l	< 1.0	< 1.0
4-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0	< 1.0
Diphenylamine	DETSC 3434*	1	ug/l	< 1.0	< 1.0
4-Bromophenylphenylether	DETSC 3434*	1	ug/l	< 1.0	< 1.0
Hexachlorobenzene	DETSC 3434*	1	ug/l	< 1.0	< 1.0
Bis(2-ethylhexyl)ester	DETSC 3434*	1	ug/l	< 1.0	< 1.0
Pentachlorophenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0
Di-n-butylphthalate	DETSC 3434*	1	ug/l	< 1.0	< 1.0
Butylbenzylphthalate	DETSC 3434*	1	ug/l	< 1.0	< 1.0
Bis(2-ethylhexyl)phthalate	DETSC 3434*	1	ug/l	< 1.0	< 1.0
Di-n-octylphthalate	DETSC 3434*	1	ug/l	< 1.0	< 1.0
1,4-Dinitrobenzene	DETSC 3434*	1	ug/l	< 1.0	< 1.0
Dimethylphthalate	DETSC 3434*	1	ug/l	< 1.0	< 1.0
1,3-Dinitrobenzene	DETSC 3434*	1	ug/l	< 1.0	< 1.0
2,3,5,6-Tetrachlorophenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0
Azobenzene	DETSC 3434*	1	ug/l	< 1.0	< 1.0
Carbazole	DETSC 3434*	1	ug/l	< 1.0	< 1.0
1-Methylnaphthalene	DETSC 3434*	1	ug/l	< 1.0	< 1.0

WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 24-18684
Client Ref PC248745
Contract Title Margam FEED
Sample Id TP105 0.40

Sample Numbers 2387871 2387877
Date Analysed 13/09/2024

Test Results On Waste

Determinand and Method Reference	Units	Result	WAC Limit Values: Inert Waste	SNRHW	Hazardous Waste
DETSC 2084# Total Organic Carbon	%	1.6	3	5	6
DETSC 2003# Loss On Ignition	%	5.6	n/a	n/a	10
DETSC3321# BTEX	mg/kg		6	n/a	n/a
DETSC3401# PCB's (7 congeners)	mg/kg		1	n/a	n/a
DETSC3311# TPH (C10 - C40)	mg/kg		500	n/a	n/a
DETSC3301/DETSC3303 PAH's	mg/kg		100	n/a	n/a
DETSC2008# pH	pH Units		n/a	>6	n/a
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1.0	n/a	TBE	TBE
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0	n/a	TBE	TBE

Test Results On Leachate

Determinand and Method Reference	Conc in Eluate ug/l 10:1	Amount Leached* mg/kg LS10	WAC Limit Values (Limit values for LS10 Leachate): Inert Waste	SNRHW	Hazardous Waste
DETSC 2306 Arsenic as As	2.9	0.029	0.5	2	25
DETSC 2306 Barium as Ba	12	0.12	20	100	300
DETSC 2306 Cadmium as Cd	< 0.030	< 0.02	0.04	1	5
DETSC 2306 Chromium as Cr	< 0.25	< 0.1	0.5	10	70
DETSC 2306 Copper as Cu	1.5	< 0.02	2	50	100
DETSC 2306 Mercury as Hg	< 0.010	< 0.002	0.01	0.2	2
DETSC 2306 Molybdenum as Mo	< 1.1	< 0.1	0.5	10	30
DETSC 2306 Nickel as Ni	< 0.50	< 0.1	0.4	10	40
DETSC 2306 Lead as Pb	0.13	< 0.05	0.5	10	50
DETSC 2306 Antimony as Sb	0.18	< 0.05	0.06	0.7	5
DETSC 2306 Selenium as Se	0.58	< 0.03	0.1	0.5	7
DETSC 2306 Zinc as Zn	< 1.3	< 0.01	4	50	200
DETSC 2055 Chloride as Cl	1300	< 100	800	15,000	25,000
DETSC 2055* Fluoride as F	850	8.5	10	150	500
DETSC 2055 Sulphate as SO4	13000	130	1000	20,000	50,000
DETSC 2009* Total Dissolved Solids	51000	510	4000	60,000	100,000
DETSC 2130 Phenol Index	< 100	< 1	1	n/a	n/a
DETSC 2085 Dissolved Organic Carbon	< 2000	< 50	500	800	1000

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive Hazardous Waste

Additional Information

DETSC 2008 pH	7.5
DETSC 2009 Conductivity uS/cm	72.7
* Temperature*	19.0

Mass of Sample Kg*	0.130
Mass of dry Sample Kg*	0.099

Stage 1

Volume of Leachant L2*	0.955
Volume of Eluate VE1*	0.904

Disclaimer: *The WAC limit values are provided for guidance only. DETS does not accept responsibility for errors or omissions. Values are correct at time of issue.*

V.2.06 ** DETS are accredited for the testing of leachates and not the leachate preparation stage which is unaccredited.*

WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 24-18684
Client Ref PC248745
Contract Title Margam FEED
Sample Id TP105A 0.15

Sample Numbers 2387872 2387878
Date Analysed 13/09/2024

Test Results On Waste

Determinand and Method Reference	Units	Result	WAC Limit Values: Inert Waste	SNRHW	Hazardous Waste
DETSC 2084# Total Organic Carbon	%	5.1	3	5	6
DETSC 2003# Loss On Ignition	%	9.5	n/a	n/a	10
DETSC3321# BTEX	mg/kg		6	n/a	n/a
DETSC3401# PCB's (7 congeners)	mg/kg		1	n/a	n/a
DETSC3311# TPH (C10 - C40)	mg/kg		500	n/a	n/a
DETSC3301/DETSC3303 PAH's	mg/kg		100	n/a	n/a
DETSC2008# pH	pH Units		n/a	>6	n/a
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1.0	n/a	TBE	TBE
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0	n/a	TBE	TBE

Test Results On Leachate

Determinand and Method Reference	Conc in Eluate ug/l 10:1	Amount Leached* mg/kg LS10	WAC Limit Values (Limit values for LS10 Leachate): Inert Waste	SNRHW	Hazardous Waste
DETSC 2306 Arsenic as As	1.5	0.015	0.5	2	25
DETSC 2306 Barium as Ba	15	0.15	20	100	300
DETSC 2306 Cadmium as Cd	< 0.030	< 0.02	0.04	1	5
DETSC 2306 Chromium as Cr	0.33	< 0.1	0.5	10	70
DETSC 2306 Copper as Cu	1.8	< 0.02	2	50	100
DETSC 2306 Mercury as Hg	< 0.010	< 0.002	0.01	0.2	2
DETSC 2306 Molybdenum as Mo	< 1.1	< 0.1	0.5	10	30
DETSC 2306 Nickel as Ni	< 0.50	< 0.1	0.4	10	40
DETSC 2306 Lead as Pb	0.41	< 0.05	0.5	10	50
DETSC 2306 Antimony as Sb	< 0.17	< 0.05	0.06	0.7	5
DETSC 2306 Selenium as Se	0.27	< 0.03	0.1	0.5	7
DETSC 2306 Zinc as Zn	< 1.3	< 0.01	4	50	200
DETSC 2055 Chloride as Cl	910	< 100	800	15,000	25,000
DETSC 2055* Fluoride as F	350	3.5	10	150	500
DETSC 2055 Sulphate as SO4	5800	< 100	1000	20,000	50,000
DETSC 2009* Total Dissolved Solids	42000	420	4000	60,000	100,000
DETSC 2130 Phenol Index	< 100	< 1	1	n/a	n/a
DETSC 2085 Dissolved Organic Carbon	< 2000	< 50	500	800	1000

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive Hazardous Waste

Additional Information

DETSC 2008 pH	7.4
DETSC 2009 Conductivity uS/cm	60.2
* Temperature*	19.0
Mass of Sample Kg*	0.110
Mass of dry Sample Kg*	0.101
Stage 1	
Volume of Leachant L2*	0.999
Volume of Eluate VE1*	0.94

Disclaimer: *The WAC limit values are provided for guidance only. DETS does not accept responsibility for errors or omissions. Values are correct at time of issue.*

V.2.06 ** DETS are accredited for the testing of leachates and not the leachate preparation stage which is unaccredited.*

Summary of Asbestos Analysis
Soil Samples

Our Ref 24-18684
Client Ref ~ PC248745
Contract Title ~ Margam FEED

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2387870	TP105 0.15	SOIL	NAD	none	Pierce Booth
2387871	TP105 0.40	SOIL	NAD	none	Pierce Booth
2387872	TP105A 0.15	SOIL	NAD	none	Pierce Booth
2387873	TP105A 1.40	SOIL	NAD	none	Pierce Booth
2387874	TP106 0.50	SOIL	NAD	none	Pierce Booth

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 24-18684
Client Ref ~ PC248745
Contract ~ Margam FEED

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2387870	TP105 0.15 SOIL	23/08/24	GJ 250ml, GJ 60ml x2, PT 1L	pH + Conductivity (7 days), VOC (7 days)	
2387871	TP105 0.40 SOIL	23/08/24	GJ 250ml, GJ 60ml x2, PT 1L	pH + Conductivity (7 days), VOC (7 days)	
2387872	TP105A 0.15 SOIL	23/08/24	GJ 250ml, GJ 60ml x2, PT 1L	pH + Conductivity (7 days), VOC (7 days)	
2387873	TP105A 1.40 SOIL	23/08/24	GJ 250ml, GJ 60ml x2, PT 1L	pH + Conductivity (7 days), VOC (7 days)	
2387874	TP106 0.50 SOIL	23/08/24	GJ 250ml, GJ 60ml x2, PT 1L	pH + Conductivity (7 days), VOC (7 days)	
2387875	TP105A 1.40 LEACHATE	23/08/24	GJ 250ml, GJ 60ml x2, PT 1L	Chromium, Hexavalent (4 days), Kone (4 days), pH/Cond (1 days), Ammoniacal Nitrogen as NH4 (10 days), Ammoniacal Nitrogen as NH3 (10 days), Nitrite as NO2 (5 days), PAH MS (4 days), SVOC (7 days)	VOC
2387876	TP105 0.40 LEACHATE	23/08/24	GJ 250ml, GJ 60ml x2, PT 1L	Chromium, Hexavalent (4 days), Kone (4 days), pH/Cond (1 days), Ammoniacal Nitrogen as NH4 (10 days), Ammoniacal Nitrogen as NH3 (10 days), Nitrite as NO2 (5 days), PAH MS (4 days), SVOC (7 days)	VOC
2387877	TP105 0.40 LEACHATE	23/08/24	GJ 250ml, GJ 60ml x2, PT 1L	pH/Cond (1 days)	
2387878	TP105A 0.15 LEACHATE	23/08/24	GJ 250ml, GJ 60ml x2, PT 1L	pH/Cond (1 days)	

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.
Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.
The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Information in Support of the Analytical Results

Our Ref 24-18684
Client Ref ~ PC248745
Contract ~ Margam FEED

Key:

~ Sample details are provided by the client and can affect the validity of the results
***** -not accredited.
# -MCERTS (accreditation only applies if report carries the MCERTS logo).
$ -subcontracted.
n/s -not supplied.
I/S -insufficient sample.
U/S -unsuitable sample.
t/f -to follow.
nd -not detected.

End of Report

Certificate of Analysis

Certificate Number	24-18685	*Issued:*	13-Sep-24
Client	Geotechnics LTD 203 Torrington Avenue Tile Hill Coventry CV4 9AP		

Our Reference	24-18685
Client Reference ~	PC248745
Order No ~	OC41465
Contract Title ~	Margam FEED
Description	4 Soil samples.
Date Received	04-Sep-24
Date Started	04-Sep-24
Date Completed	13-Sep-24
Test Procedures	Identified by prefix DETSn (details on request).
Notes	Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. 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 certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Kirk Bridgewood
General Manager

2139

Summary of Chemical Analysis
Soil Samples

Our Ref 24-18685
Client Ref ~ PC248745
Contract Title ~ Margam FEED

			Lab No	2387879	2387880	2387881	2387882
			Sample ID ~	BH105	TP107	TP108	TP109
			Depth ~	0.25	0.25	0.20	0.20
			Other ID ~				
			Sample Type ~	ES	ES	ES	ES
			Sampling Date ~	23/08/2024	23/08/2024	23/08/2024	23/08/2024
			Sampling Time ~	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
Metals							
Arsenic	DETSC 2301#	0.2	mg/kg	29	43	86	28
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	2.6	4.3	13	11
Cadmium	DETSC 2301#	0.1	mg/kg	0.7	0.3	4.1	1.0
Chromium	DETSC 2301#	0.15	mg/kg	30	21	94	43
Chromium III	DETSC 2301*	0.15	mg/kg	30	21	94	43
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	58	120	100	70
Lead	DETSC 2301#	0.3	mg/kg	64	110	240	110
Mercury	DETSC 2325#	0.05	mg/kg	0.06	0.08	0.22	0.11
Nickel	DETSC 2301#	1	mg/kg	23	19	44	21
Zinc	DETSC 2301#	1	mg/kg	220	160	520	310
Inorganics							
pH	DETSC 2008#		pH	6.4	7.1	5.9	5.8
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.6	0.6	0.6	0.5
Organic matter	DETSC 2002#	0.1	%	10	8.4	24	24
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	110	320	140	210
Petroleum Hydrocarbons							
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10
PAHs							
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.13	0.15	0.11

Summary of Chemical Analysis
Soil Samples

Our Ref 24-18685
Client Ref ~ PC248745
Contract Title ~ Margam FEED

			Lab No	2387879	2387880	2387881	2387882
			Sample ID ~	BH105	TP107	TP108	TP109
			Depth ~	0.25	0.25	0.20	0.20
			Other ID ~				
			Sample Type ~	ES	ES	ES	ES
			Sampling Date ~	23/08/2024	23/08/2024	23/08/2024	23/08/2024
			Sampling Time ~	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.21	0.22	0.14
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.15	0.17	0.11
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.04	0.07	0.12	0.12
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	0.11	0.19	0.07
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.03	0.13	0.17	0.11
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.04	0.07	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.05	0.07	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.04	0.06	0.05	0.10
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.03	< 0.03	< 0.03	0.08
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	0.06	0.07	0.04
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	0.21	< 0.10	< 0.10
Phenols							
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	1.9	1.9	3.8	0.4

Summary of Chemical Analysis
Soil Samples

Our Ref 24-18685
Client Ref ~ PC248745
Contract Title ~ Margam FEED

			Lab No	2387879	2387880	2387881	2387882
			Sample ID ~	BH105	TP107	TP108	TP109
			Depth ~	0.25	0.25	0.20	0.20
			Other ID ~				
			Sample Type ~	ES	ES	ES	ES
			Sampling Date ~	23/08/2024	23/08/2024	23/08/2024	23/08/2024
			Sampling Time ~	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
VOCs							
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Benzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01

Summary of Chemical Analysis
Soil Samples

Our Ref 24-18685
Client Ref ~ PC248745
Contract Title ~ Margam FEED

				Lab No	2387879	2387880	2387881	2387882
				Sample ID ~	BH105	TP107	TP108	TP109
				Depth ~	0.25	0.25	0.20	0.20
				Other ID ~				
				Sample Type ~	ES	ES	ES	ES
				Sampling Date ~	23/08/2024	23/08/2024	23/08/2024	23/08/2024
				Sampling Time ~	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**					
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
SVOCs							
Phenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2-Chlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
3&4-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dimethylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Bis-(dichloroethoxy)methane	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
1,2,4-Trichlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4-Chloro-3-methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylnaphthalene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2,4,6-Trichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2-Chloronaphthalene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzofuran	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Diethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1

Summary of Chemical Analysis
Soil Samples

Our Ref 24-18685
Client Ref ~ PC248745
Contract Title ~ Margam FEED

				Lab No	2387879	2387880	2387881	2387882
				Sample ID ~	BH105	TP107	TP108	TP109
				Depth ~	0.25	0.25	0.20	0.20
				Other ID ~				
				Sample Type ~	ES	ES	ES	ES
				Sampling Date ~	23/08/2024	23/08/2024	23/08/2024	23/08/2024
				Sampling Time ~	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**					
Diphenylamine	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4-Bromophenylphenylether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	0.2	0.3	< 0.1	< 0.1
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg	1.6	0.3	0.6	0.4
Di-n-octylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Azobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1

Summary of Asbestos Analysis
Soil Samples

Our Ref 24-18685
Client Ref ~ PC248745
Contract Title ~ Margam FEED

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2387879	BH105 0.25	SOIL	NAD	none	Keith Wilson
2387880	TP107 0.25	SOIL	NAD	none	Keith Wilson
2387881	TP108 0.20	SOIL	NAD	none	Keith Wilson
2387882	TP109 0.20	SOIL	NAD	none	Keith Wilson

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 24-18685
Client Ref ~ PC248745
Contract ~ Margam FEED

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2387879	BH105 0.25 SOIL	23/08/24	GJ 250ml, GJ 60ml x2, PT 1L	pH + Conductivity (7 days), VOC (7 days)	
2387880	TP107 0.25 SOIL	23/08/24	GJ 250ml, GJ 60ml x2, PT 1L	pH + Conductivity (7 days), VOC (7 days)	
2387881	TP108 0.20 SOIL	23/08/24	GJ 250ml, GJ 60ml x2, PT 1L	pH + Conductivity (7 days), VOC (7 days)	
2387882	TP109 0.20 SOIL	23/08/24	GJ 250ml, GJ 60ml x2, PT 1L	pH + Conductivity (7 days), VOC (7 days)	

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.
Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.
The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Key:
~ Sample details are provided by the client and can affect the validity of the results
***** -not accredited.
# -MCERTS (accreditation only applies if report carries the MCERTS logo).
$ -subcontracted.
n/s -not supplied.
I/S -insufficient sample.
U/S -unsuitable sample.
t/f -to follow.
nd -not detected.

End of Report

Certificate of Analysis

Certificate Number	24-18686	*Issued:*	13-Sep-24

Client Geotechnics LTD
203 Torrington Avenue
Tile Hill
Coventry
CV4 9AP

Our Reference	24-18686
Client Reference ~	PC248745
Order No ~	OC41465
Contract Title ~	Margam FEED
Description	3 Soil samples.
Date Received	04-Sep-24
Date Started	04-Sep-24
Date Completed	13-Sep-24
Test Procedures	Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. 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 certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Kirk Bridgewood
General Manager

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Summary of Chemical Analysis
Soil Samples

Our Ref 24-18686
Client Ref ~ PC248745
Contract Title ~ Margam FEED

			Lab No	2387883	2387884	2387885
			Sample ID ~	TP110	TP111	TP113
			Depth ~	0.25	0.25	0.25
			Other ID ~			
			Sample Type ~	SOIL	SOIL	SOIL
			Sampling Date ~	28/08/2024	28/08/2024	28/08/2024
			Sampling Time ~	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**			
Metals						
Arsenic	DETSC 2301#	0.2	mg/kg	11	12	12
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	2.4	2.7	1.0
Cadmium	DETSC 2301#	0.1	mg/kg	0.5	0.4	0.7
Chromium	DETSC 2301#	0.15	mg/kg	22	26	28
Chromium III	DETSC 2301*	0.15	mg/kg	22	26	28
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	48	31	24
Lead	DETSC 2301#	0.3	mg/kg	76	83	41
Mercury	DETSC 2325#	0.05	mg/kg	0.09	0.23	0.08
Nickel	DETSC 2301#	1	mg/kg	16	12	9.4
Zinc	DETSC 2301#	1	mg/kg	140	1100	150
Inorganics						
pH	DETSC 2008#		pH	6.3	8.0	6.7
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.6	1.2	0.2
Organic matter	DETSC 2002#	0.1	%	8.2	9.7	0.4
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	120	1600	120
Petroleum Hydrocarbons						
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10
PAHs						
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	0.04	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.06
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	0.07
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.06	0.06	0.37
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	0.13

Summary of Chemical Analysis
Soil Samples

Our Ref 24-18686
Client Ref ~ PC248745
Contract Title ~ Margam FEED

			Lab No	2387883	2387884	2387885
			Sample ID ~	TP110	TP111	TP113
			Depth ~	0.25	0.25	0.25
			Other ID ~			
			Sample Type ~	SOIL	SOIL	SOIL
			Sampling Date ~	28/08/2024	28/08/2024	28/08/2024
			Sampling Time ~	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**			
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.06	0.06	0.70
Pyrene	DETSC 3303#	0.03	mg/kg	0.05	0.03	0.51
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.29	0.29	0.31
Chrysene	DETSC 3303	0.03	mg/kg	0.12	0.18	0.29
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.06	0.44	0.27
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.10	0.15
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.04	0.18
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.09	0.11	0.12
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.10	0.13	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	0.07	0.12
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	0.29	0.73	2.5
Phenols						
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	2.2	1.4

Summary of Chemical Analysis
Soil Samples

Our Ref 24-18686
Client Ref ~ PC248745
Contract Title ~ Margam FEED

			Lab No	2387883	2387884	2387885
			Sample ID ~	TP110	TP111	TP113
			Depth ~	0.25	0.25	0.25
			Other ID ~			
			Sample Type ~	SOIL	SOIL	SOIL
			Sampling Date ~	28/08/2024	28/08/2024	28/08/2024
			Sampling Time ~	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**			
VOCs						
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Benzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01

Summary of Chemical Analysis
Soil Samples

Our Ref 24-18686
Client Ref ~ PC248745
Contract Title ~ Margam FEED

			Lab No	2387883	2387884	2387885
			Sample ID ~	TP110	TP111	TP113
			Depth ~	0.25	0.25	0.25
			Other ID ~			
			Sample Type ~	SOIL	SOIL	SOIL
			Sampling Date ~	28/08/2024	28/08/2024	28/08/2024
			Sampling Time ~	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**			
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
SVOCs						
Phenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Aniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Chlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
3&4-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,4-Dimethylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Bis-(dichloroethoxy)methane	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,4-Dichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,2,4-Trichlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Chloro-3-methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Methylnaphthalene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,4,6-Trichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Chloronaphthalene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Dibenzofuran	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Diethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Diphenylamine	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Bromophenylphenylether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1

Summary of Chemical Analysis
Soil Samples

Our Ref 24-18686
Client Ref ~ PC248745
Contract Title ~ Margam FEED

			Lab No	2387883	2387884	2387885
			Sample ID ~	TP110	TP111	TP113
			Depth ~	0.25	0.25	0.25
			Other ID ~			
			Sample Type ~	SOIL	SOIL	SOIL
			Sampling Date ~	28/08/2024	28/08/2024	28/08/2024
			Sampling Time ~	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**			
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	0.4	0.4	< 0.1
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Di-n-octylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Azobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1

Summary of Asbestos Analysis
Soil Samples

Our Ref 24-18686
Client Ref ~ PC248745
Contract Title ~ Margam FEED

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2387883	TP110 0.25	SOIL	NAD	none	Pierce Booth
2387884	TP111 0.25	SOIL	NAD	none	Pierce Booth
2387885	TP113 0.25	SOIL	NAD	none	Pierce Booth

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 24-18686
Client Ref ~ PC248745
Contract ~ Margam FEED

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2387883	TP110 0.25 SOIL	28/08/24	GJ 250ml, GJ 60ml x2, PT 1L		
2387884	TP111 0.25 SOIL	28/08/24	GJ 250ml, GJ 60ml x2, PT 1L x2		
2387885	TP113 0.25 SOIL	28/08/24	GJ 250ml, GJ 60ml x2, PT 1L		

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.
Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.
The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Key:

~ Sample details are provided by the client and can affect the validity of the results
***** -not accredited.
# -MCERTS (accreditation only applies if report carries the MCERTS logo).
$ -subcontracted.
n/s -not supplied.
I/S -insufficient sample.
U/S -unsuitable sample.
t/f -to follow.
nd -not detected.

End of Report

Certificate of Analysis

Certificate Number	24-18687	*Issued:*	18-Sep-24

Client Geotechnics LTD
203 Torrington Avenue
Tile Hill
Coventry
CV4 9AP

Our Reference	24-18687
Client Reference ~	PC248745
Order No ~	OC41465
Contract Title ~	Margam FEED
Description	8 Soil samples, 1 Leachate prepared by DETS sample.
Date Received	04-Sep-24
Date Started	04-Sep-24
Date Completed	18-Sep-24
Test Procedures	Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. 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 certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Kirk Bridgewood
General Manager

ilac-MRA UKAS TESTING 2139

Summary of Chemical Analysis
Soil Samples

Our Ref 24-18687
Client Ref ~ PC248745
Contract Title ~ Margam FEED

	Lab No	2387886	2387887	2387888	2387889	2387890	2387891
	Sample ID ~	TP116	TP117	TP118	TP114	TP114	BH109
	Depth ~	0.50	0.20	0.25	0.15	0.50	0.25
	Other ID ~						
	Sample Type ~	ES	ES	ES	ES	ES	ES
	Sampling Date ~	29/08/2024	29/08/2024	29/08/2024	30/08/2024	30/08/2024	29/08/2024
	Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
Metals							
Arsenic	DETSC 2301#	0.2	mg/kg	17	19	22	58	29	47
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	1.0	3.5	3.4	4.4	0.9	12
Cadmium	DETSC 2301#	0.1	mg/kg	< 0.1	0.8	1.4	1.2	< 0.1	2.4
Chromium	DETSC 2301#	0.15	mg/kg	35	35	41	68	33	32
Chromium III	DETSC 2301*	0.15	mg/kg	35	35	41	68	33	32
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	12	38	58	65	11	64
Lead	DETSC 2301#	0.3	mg/kg	23	60	69	130	19	81
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	0.07	0.12	0.15	< 0.05	0.11
Nickel	DETSC 2301#	1	mg/kg	31	19	21	25	26	20
Zinc	DETSC 2301#	1	mg/kg	110	180	220	300	100	260
Inorganics									
pH	DETSC 2008#		pH	7.8	7.0	5.9	5.4	6.6	5.7
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.1	< 0.1	0.9	0.7	< 0.1	0.6
Organic matter	DETSC 2002#	0.1	%	0.5	1.8	7.3	9.0	1.3	12
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	22	210	55	130	17	130
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	11	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	25	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	41	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	52	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	130	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	130	< 10	< 10
PAHs									
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.03	0.06	< 0.03	0.06
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03

Summary of Chemical Analysis
Soil Samples

Our Ref 24-18687
Client Ref ~ PC248745
Contract Title ~ Margam FEED

			Lab No	2387886	2387887	2387888	2387889	2387890	2387891
			Sample ID ~	TP116	TP117	TP118	TP114	TP114	BH109
			Depth ~	0.50	0.20	0.25	0.15	0.50	0.25
			Other ID ~						
			Sample Type ~	ES	ES	ES	ES	ES	ES
			Sampling Date ~	29/08/2024	29/08/2024	29/08/2024	30/08/2024	30/08/2024	29/08/2024
			Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**						
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.04	0.07	< 0.03	0.08
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.05	< 0.03	0.06
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.03	< 0.03	0.04
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	3.5	3.1	< 0.3	2.3

Summary of Chemical Analysis
Soil Samples

Our Ref 24-18687
Client Ref ~ PC248745
Contract Title ~ Margam FEED

			Lab No	2387886	2387887	2387888	2387889	2387890	2387891
			Sample ID ~	TP116	TP117	TP118	TP114	TP114	BH109
			Depth ~	0.50	0.20	0.25	0.15	0.50	0.25
			Other ID ~						
			Sample Type ~	ES	ES	ES	ES	ES	ES
			Sampling Date ~	29/08/2024	29/08/2024	29/08/2024	30/08/2024	30/08/2024	29/08/2024
			Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**						
VOCs									
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	0.01	0.02	0.02	< 0.01	0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	0.01	0.02	0.03	0.03	0.01	0.02
Benzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	0.09	0.13	0.15	< 0.01	< 0.01	0.20
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Summary of Chemical Analysis
Soil Samples

Our Ref 24-18687
Client Ref ~ PC248745
Contract Title ~ Margam FEED

			Lab No	2387886	2387887	2387888	2387889	2387890	2387891
			Sample ID ~	TP116	TP117	TP118	TP114	TP114	BH109
			Depth ~	0.50	0.20	0.25	0.15	0.50	0.25
			Other ID ~						
			Sample Type ~	ES	ES	ES	ES	ES	ES
			Sampling Date ~	29/08/2024	29/08/2024	29/08/2024	30/08/2024	30/08/2024	29/08/2024
			Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**						
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
SVOCs									
Phenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Chlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
3&4-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dimethylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bis-(dichloroethoxy)methane	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,2,4-Trichlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Chloro-3-methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylnaphthalene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4,6-Trichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Chloronaphthalene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzofuran	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Diethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Diphenylamine	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Bromophenylphenylether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

Summary of Chemical Analysis
Soil Samples

Our Ref 24-18687
Client Ref ~ PC248745
Contract Title ~ Margam FEED

			Lab No	2387886	2387887	2387888	2387889	2387890	2387891
			Sample ID ~	TP116	TP117	TP118	TP114	TP114	BH109
			Depth ~	0.50	0.20	0.25	0.15	0.50	0.25
			Other ID ~						
			Sample Type ~	ES	ES	ES	ES	ES	ES
			Sampling Date ~	29/08/2024	29/08/2024	29/08/2024	30/08/2024	30/08/2024	29/08/2024
			Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**						
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	0.1	< 0.1
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Di-n-octylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Azobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

Summary of Chemical Analysis
Soil Samples

Our Ref 24-18687
Client Ref ~ PC248745
Contract Title ~ Margam FEED

			Lab No	2387892	2390356
			Sample ID ~	BH109	TP112
			Depth ~	0.50	0.25
			Other ID ~		
			Sample Type ~	ES	ES
			Sampling Date ~	29/08/2024	29/08/2024
			Sampling Time ~	n/s	n/s
Test	**Method**	**LOD**	**Units**		
Metals					
Arsenic	DETSC 2301#	0.2	mg/kg	21	17
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	3.4	1.5
Cadmium	DETSC 2301#	0.1	mg/kg	< 0.1	0.7
Chromium	DETSC 2301#	0.15	mg/kg	31	21
Chromium III	DETSC 2301*	0.15	mg/kg	31	21
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	11	23
Lead	DETSC 2301#	0.3	mg/kg	20	23
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	27	8.9
Zinc	DETSC 2301#	1	mg/kg	100	130
Inorganics					
pH	DETSC 2008#		pH	7.4	5.9
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.1	1.8
Organic matter	DETSC 2002#	0.1	%	2.6	6.3
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	50	150
Petroleum Hydrocarbons					
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10
PAHs					
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	0.06
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.14
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	0.03

Summary of Chemical Analysis
Soil Samples

Our Ref 24-18687
Client Ref ~ PC248745
Contract Title ~ Margam FEED

			Lab No	2387892	2390356
			Sample ID ~	BH109	TP112
			Depth ~	0.50	0.25
			Other ID ~		
			Sample Type ~	ES	ES
			Sampling Date ~	29/08/2024	29/08/2024
			Sampling Time ~	n/s	n/s
Test	**Method**	**LOD**	**Units**		
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.17
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.10
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	0.09
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	0.06
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.09
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.08
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	0.05
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	0.04
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	< 0.10
Phenols					
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	0.4	21

Summary of Chemical Analysis
Soil Samples

Our Ref 24-18687
Client Ref ~ PC248745
Contract Title ~ Margam FEED

	Lab No	2387892	2390356
	Sample ID ~	BH109	TP112
	Depth ~	0.50	0.25
	Other ID ~		
	Sample Type ~	ES	ES
	Sampling Date ~	29/08/2024	29/08/2024
	Sampling Time ~	n/s	n/s

Test	Method	LOD	Units		
VOCs					
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.01	0.02
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	0.01	< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	0.02	< 0.01
Benzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01

Summary of Chemical Analysis
Soil Samples

Our Ref 24-18687
Client Ref ~ PC248745
Contract Title ~ Margam FEED

			Lab No	2387892	2390356
			Sample ID ~	BH109	TP112
			Depth ~	0.50	0.25
			Other ID ~		
			Sample Type ~	ES	ES
			Sampling Date ~	29/08/2024	29/08/2024
			Sampling Time ~	n/s	n/s
Test	**Method**	**LOD**	**Units**		
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
SVOCs					
Phenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Aniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2-Chlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
3&4-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,4-Dimethylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Bis-(dichloroethoxy)methane	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,4-Dichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
1,2,4-Trichlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
4-Chloro-3-methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2-Methylnaphthalene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2,4,6-Trichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2-Chloronaphthalene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Dibenzofuran	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,6-Dinitrotoluene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Diethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Diphenylamine	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
4-Bromophenylphenylether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1

Summary of Chemical Analysis
Soil Samples

Our Ref 24-18687
Client Ref ~ PC248745
Contract Title ~ Margam FEED

			Lab No	2387892	2390356
			Sample ID ~	BH109	TP112
			Depth ~	0.50	0.25
			Other ID ~		
			Sample Type ~	ES	ES
			Sampling Date ~	29/08/2024	29/08/2024
			Sampling Time ~	n/s	n/s
Test	**Method**	**LOD**	**Units**		
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	0.5
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Di-n-octylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Azobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1

WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 24-18687
Client Ref PC248745
Contract Title Margam FEED
Sample Id TP118 0.25

Sample Numbers 2387888 2387893
Date Analysed 17/09/2024

Test Results On Waste

Determinand and Method Reference	Units	Result	WAC Limit Values: Inert Waste	SNRHW	Hazardous Waste
DETSC 2084# Total Organic Carbon	%	14.0	3	5	6
DETSC 2003# Loss On Ignition	%	23.0	n/a	n/a	10
DETSC3321# BTEX	mg/kg		6	n/a	n/a
DETSC3401# PCB's (7 congeners)	mg/kg		1	n/a	n/a
DETSC3311# TPH (C10 - C40)	mg/kg		500	n/a	n/a
DETSC3301/DETSC3303 PAH's	mg/kg		100	n/a	n/a
DETSC2008# pH	pH Units		n/a	>6	n/a
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1.0	n/a	TBE	TBE
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0	n/a	TBE	TBE

Test Results On Leachate

Determinand and Method Reference	Conc in Eluate ug/l 10:1	Amount Leached* mg/kg LS10	WAC Limit Values (Limit values for LS10 Leachate): Inert Waste	SNRHW	Hazardous Waste
DETSC 2306 Arsenic as As	1.9	0.019	0.5	2	25
DETSC 2306 Barium as Ba	7.2	< 0.1	20	100	300
DETSC 2306 Cadmium as Cd	< 0.030	< 0.02	0.04	1	5
DETSC 2306 Chromium as Cr	0.3	< 0.1	0.5	10	70
DETSC 2306 Copper as Cu	1.8	< 0.02	2	50	100
DETSC 2306 Mercury as Hg	< 0.010	< 0.002	0.01	0.2	2
DETSC 2306 Molybdenum as Mo	< 1.1	< 0.1	0.5	10	30
DETSC 2306 Nickel as Ni	< 0.50	< 0.1	0.4	10	40
DETSC 2306 Lead as Pb	0.22	< 0.05	0.5	10	50
DETSC 2306 Antimony as Sb	0.22	< 0.05	0.06	0.7	5
DETSC 2306 Selenium as Se	< 0.25	< 0.03	0.1	0.5	7
DETSC 2306 Zinc as Zn	1.7	0.017	4	50	200
DETSC 2055 Chloride as Cl	3700	< 100	800	15,000	25,000
DETSC 2055* Fluoride as F	450	4.5	10	150	500
DETSC 2055 Sulphate as SO4	3800	< 100	1000	20,000	50,000
DETSC 2009* Total Dissolved Solids	27000	270	4000	60,000	100,000
DETSC 2130 Phenol Index	< 100	< 1	1	n/a	n/a
DETSC 2085 Dissolved Organic Carbon	3900	< 50	500	800	1000

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive Hazardous Waste

Additional Information

DETSC 2008 pH	7.4
DETSC 2009 Conductivity uS/cm	38.0
* Temperature*	19.0
Mass of Sample Kg*	0.140
Mass of dry Sample Kg*	0.070
Stage 1	
Volume of Leachant L2*	0.628
Volume of Eluate VE1*	0.58

Disclaimer: *The WAC limit values are provided for guidance only. DETS does not accept responsibility for errors or omissions. Values are correct at time of issue.*

V.2.06 ** DETS are accredited for the testing of leachates and not the leachate preparation stage which is unaccredited.*

Summary of Asbestos Analysis
Soil Samples

Our Ref 24-18687
Client Ref ~ PC248745
Contract Title ~ Margam FEED

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2387886	TP116 0.50	SOIL	NAD	none	Darryl Fletcher
2387887	TP117 0.20	SOIL	NAD	none	Darryl Fletcher
2387888	TP118 0.25	SOIL	NAD	none	Darryl Fletcher
2387889	TP114 0.15	SOIL	NAD	none	Darryl Fletcher
2387890	TP114 0.50	SOIL	NAD	none	Darryl Fletcher
2387891	BH109 0.25	SOIL	NAD	none	Darryl Fletcher
2387892	BH109 0.50	SOIL	NAD	none	Darryl Fletcher
2390356	TP112 0.25	SOIL	NAD	none	Darryl Fletcher

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 24-18687
Client Ref ~ PC248745
Contract ~ Margam FEED

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2387886	TP116 0.50 SOIL	29/08/24	GJ 250ml, GJ 60ml, PT 1L		
2387887	TP117 0.20 SOIL	29/08/24	GJ 250ml, GJ 60ml, PT 1L		
2387888	TP118 0.25 SOIL	29/08/24	GJ 250ml, GJ 60ml, PT 1L		
2387889	TP114 0.15 SOIL	30/08/24	GJ 250ml, GJ 60ml, PT 1L		
2387890	TP114 0.50 SOIL	30/08/24	GJ 250ml, GJ 60ml, PT 1L		
2387891	BH109 0.25 SOIL	29/08/24	GJ 250ml, GJ 60ml, PT 1L		
2387892	BH109 0.50 SOIL	29/08/24	GJ 250ml, GJ 60ml, PT 1L		
2387893	TP118 0.25 LEACHATE	29/08/24	GJ 250ml, GJ 60ml, PT 1L		
2390356	TP112 0.25 SOIL	29/08/24	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days), VOC (7 days)	

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.
Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.
The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Key:

~ Sample details are provided by the client and can affect the validity of the results
***** -not accredited.
# -MCERTS (accreditation only applies if report carries the MCERTS logo).
$ -subcontracted.
n/s -not supplied.
I/S -insufficient sample.
U/S -unsuitable sample.
t/f -to follow.
nd -not detected.

End of Report

Certificate of Analysis

Certificate Number	24-19046	*Issued:*	17-Sep-24

Client Geotechnics LTD
203 Torrington Avenue
Tile Hill
Coventry
CV4 9AP

Our Reference	24-19046
Client Reference ~	PC248745
Order No ~	OC41465
Contract Title ~	Margam FEED
Description	2 Soil samples, 2 Leachate prepared by DETS samples.
Date Received	09-Sep-24
Date Started	09-Sep-24
Date Completed	17-Sep-24
Test Procedures	Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. 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 certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Kirk Bridgewood
General Manager

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Summary of Chemical Analysis
Soil Samples

Our Ref 24-19046
Client Ref ~ PC248745
Contract Title ~ Margam FEED

Lab No	2390358
Sample ID ~	TP115
Depth ~	0.20
Other ID ~	
Sample Type ~	ES
Sampling Date ~	02/09/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Metals				
Arsenic	DETSC 2301#	0.2	mg/kg	64
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	3.0
Cadmium	DETSC 2301#	0.1	mg/kg	1.6
Chromium	DETSC 2301#	0.15	mg/kg	38
Chromium III	DETSC 2301*	0.15	mg/kg	38
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	35
Lead	DETSC 2301#	0.3	mg/kg	53
Mercury	DETSC 2325#	0.05	mg/kg	0.14
Nickel	DETSC 2301#	1	mg/kg	21
Zinc	DETSC 2301#	1	mg/kg	750
Inorganics				
pH	DETSC 2008#		pH	6.1
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.2
Organic matter	DETSC 2002#	0.1	%	16
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	82
Petroleum Hydrocarbons				
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	2.4
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	21
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	73
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	730
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	820
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	14
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	58
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	250
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	1400
Aromatic C5-C35	DETSC 3072*	10	mg/kg	1800
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	2600
PAHs				
Naphthalene	DETSC 3303#	0.03	mg/kg	0.12
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.14

Summary of Chemical Analysis
Soil Samples

Our Ref 24-19046
Client Ref ~ PC248745
Contract Title ~ Margam FEED

Lab No	2390358
Sample ID ~	TP115
Depth ~	0.20
Other ID ~	
Sample Type ~	ES
Sampling Date ~	02/09/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.13
Pyrene	DETSC 3303#	0.03	mg/kg	0.08
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.03
Chrysene	DETSC 3303	0.03	mg/kg	0.05
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.05
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	0.48
Phenols				
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	1.4

Summary of Chemical Analysis
Soil VOC/SVOC Samples

Our Ref 24-19046
Client Ref ~ PC248745
Contract Title ~ Margam FEED

Lab No	2390358
Sample ID ~	TP115
Depth ~	0.20
Other ID ~	
Sample Type ~	ES
Sampling Date ~	02/09/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
VOCs				
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.01
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01
Benzene	DETSC 3431	0.01	mg/kg	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	< 0.01
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01

Summary of Chemical Analysis
Soil VOC/SVOC Samples

Our Ref 24-19046
Client Ref ~ PC248745
Contract Title ~ Margam FEED

Lab No	2390358
Sample ID ~	TP115
Depth ~	0.20
Other ID ~	
Sample Type ~	ES
Sampling Date ~	02/09/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01
SVOCs				
Phenol	DETSC 3433	0.1	mg/kg	< 0.1
Aniline	DETSC 3433*	0.1	mg/kg	< 0.1
2-Chlorophenol	DETSC 3433	0.1	mg/kg	< 0.1
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	< 0.1
2-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	< 0.1
3&4-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1
2,4-Dimethylphenol	DETSC 3433	0.1	mg/kg	< 0.1
Bis-(dichloroethoxy)methane	DETSC 3433	0.1	mg/kg	< 0.1
2,4-Dichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1
1,2,4-Trichlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1
4-Chloro-3-methylphenol	DETSC 3433	0.1	mg/kg	< 0.1
2-Methylnaphthalene	DETSC 3433	0.1	mg/kg	< 0.1
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 0.1
2,4,6-Trichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1
2-Chloronaphthalene	DETSC 3433	0.1	mg/kg	< 0.1
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1
Dibenzofuran	DETSC 3433	0.1	mg/kg	< 0.1
2,6-Dinitrotoluene	DETSC 3433	0.1	mg/kg	< 0.1
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1
Diethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1

Summary of Chemical Analysis
Soil VOC/SVOC Samples

Our Ref 24-19046
Client Ref ~ PC248745
Contract Title ~ Margam FEED

Lab No	2390358
Sample ID ~	TP115
Depth ~	0.20
Other ID ~	
Sample Type ~	ES
Sampling Date ~	02/09/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Diphenylamine	DETSC 3433	0.1	mg/kg	< 0.1
4-Bromophenylphenylether	DETSC 3433	0.1	mg/kg	< 0.1
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	< 0.1
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg	< 0.1
Di-n-octylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1
Azobenzene	DETSC 3433	0.1	mg/kg	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	< 0.1

Summary of Chemical Analysis
Leachate Samples

Our Ref 24-19046
Client Ref ~ PC248745
Contract Title ~ Margam FEED

			Lab No	2390360	2390361
			Sample ID ~	TP115	TP115
			Depth ~	0.20	0.50
			Other ID ~		
			Sample Type ~	ES	ES
			Sampling Date ~	02/09/2024	02/09/2024
			Sampling Time ~	n/s	n/s
Test	**Method**	**LOD**	**Units**		
Preparation					
BS EN 12457 10:1	DETSC 1009*			Y	
BS EN 12457 10:1	DETSC 1009*				Y
Metals					
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	2.6	
Boron, Dissolved	DETSC 2306*	12	ug/l	27	
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03	
Calcium, Dissolved	DETSC 2306	0.09	mg/l	2.2	
Chromium, Dissolved	DETSC 2306	0.25	ug/l	0.46	
Chromium III, Dissolved	DETSC 2306*	1	ug/l	< 1.0	
Chromium, Hexavalent	DETSC 2203	7	ug/l	< 7.0	
Copper, Dissolved	DETSC 2306	0.4	ug/l	3.7	
Lead, Dissolved	DETSC 2306	0.09	ug/l	2.3	
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01	
Nickel, Dissolved	DETSC 2306	0.5	ug/l	1.0	
Selenium, Dissolved	DETSC 2306	0.25	ug/l	< 0.25	
Vanadium, Dissolved	DETSC 2306	0.6	ug/l	2.1	
Zinc, Dissolved	DETSC 2306	1.3	ug/l	14	
Inorganics					
pH	DETSC 2008		pH	6.7	
Cyanide, Total Low Level	DETSC 2131	0.1	ug/l	0.4	
Cyanide, Free Low Level	DETSC 2131	0.1	ug/l	< 0.1	
Cyanide, Complex Low Level	DETSC 2131	0.1	ug/l	0.4	
Dissolved Organic Carbon	DETSC 2085	2	mg/l	7.0	
Ammoniacal Nitrogen as NH4	DETSC 2207	0.0193	mg/l	< 0.02	
Ammoniacal Nitrogen as NH3	DETSC 2207	0.0183	mg/l	< 0.018	
Ammoniacal Nitrogen as N	DETSC 2207	0.015	mg/l	< 0.015	
Nitrate as NO3	DETSC 2055	0.1	mg/l	1.5	
Nitrate as N	*	0.1	mg/l	< 0.10	
Nitrite as NO2	DETSC 2055	0.1	mg/l	0.72	
Nitrite as N	DETSC 2201	0.035	mg/l	< 0.035	
Sulphate as SO4	DETSC 2055	0.1	mg/l	4.3	
PAHs					
Naphthalene	DETSC 3304	0.05	ug/l	0.08	
Acenaphthylene	DETSC 3304	0.01	ug/l	< 0.01	
Acenaphthene	DETSC 3304	0.01	ug/l	< 0.01	
Fluorene	DETSC 3304	0.01	ug/l	< 0.01	
Phenanthrene	DETSC 3304	0.01	ug/l	< 0.01	
Anthracene	DETSC 3304	0.01	ug/l	< 0.01	
Fluoranthene	DETSC 3304	0.01	ug/l	< 0.01	
Pyrene	DETSC 3304	0.01	ug/l	< 0.01	

Summary of Chemical Analysis
Leachate Samples

Our Ref 24-19046
Client Ref ~ PC248745
Contract Title ~ Margam FEED

Lab No	2390360	2390361
Sample ID ~	TP115	TP115
Depth ~	0.20	0.50
Other ID ~		
Sample Type ~	ES	ES
Sampling Date ~	02/09/2024	02/09/2024
Sampling Time ~	n/s	n/s

Test	Method	LOD	Units		
Benzo(a)anthracene	DETSC 3304*	0.01	ug/l	< 0.01	
Chrysene	DETSC 3304	0.01	ug/l	< 0.01	
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01	
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01	
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	< 0.01	
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l	< 0.01	
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	< 0.01	
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l	< 0.01	
PAH Total	DETSC 3304	0.2	ug/l	< 0.20	

Summary of Chemical Analysis
Leachate VOC/SVOC Samples

Our Ref 24-19046
Client Ref ~ PC248745
Contract Title ~ Margam FEED

Lab No	2390360
Sample ID ~	TP115
Depth ~	0.20
Other ID ~	
Sample Type ~	ES
Sampling Date ~	02/09/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
VOCs				
Dichlorodifluoromethane	DETSC 3432	1	ug/l	< 1
Chloromethane	DETSC 3432	1	ug/l	< 1
Vinyl Chloride	DETSC 3432	1	ug/l	< 1
Bromomethane	DETSC 3432	1	ug/l	< 1
Chloroethane	DETSC 3432	1	ug/l	< 1
Trichlorofluoromethane	DETSC 3432*	1	ug/l	< 1
1,1-dichloroethylene	DETSC 3432	1	ug/l	< 1
Methylene Chloride	DETSC 3432*	27	ug/l	< 27
Trans-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1
1,1-dichloroethane	DETSC 3432	1	ug/l	< 1
Cis-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1
2,2-dichloropropane	DETSC 3432*	2	ug/l	< 2
Bromochloromethane	DETSC 3432	4	ug/l	< 4
Chloroform	DETSC 3432	1	ug/l	< 1
1,1,1-trichloroethane	DETSC 3432	1	ug/l	< 1
1,1-dichloropropene	DETSC 3432	1	ug/l	< 1
Carbon tetrachloride	DETSC 3432	1	ug/l	< 1
Benzene	DETSC 3432	1	ug/l	< 1
1,2-dichloroethane	DETSC 3432	1	ug/l	< 1
Trichloroethylene	DETSC 3432*	1	ug/l	< 1
1,2-dichloropropane	DETSC 3432	1	ug/l	< 1
Dibromomethane	DETSC 3432	1	ug/l	< 1
Bromodichloromethane	DETSC 3432	4	ug/l	< 4
cis-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1
Toluene	DETSC 3432	1	ug/l	< 1
trans-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1
1,1,2-trichloroethane	DETSC 3432	1	ug/l	< 1
Tetrachloroethylene	DETSC 3432	1	ug/l	< 1
1,3-dichloropropane	DETSC 3432	1	ug/l	< 1
Dibromochloromethane	DETSC 3432	1	ug/l	< 1
1,2-dibromoethane	DETSC 3432	1	ug/l	< 1
Chlorobenzene	DETSC 3432	1	ug/l	< 1
1,1,1,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1
Ethylbenzene	DETSC 3432	1	ug/l	< 1
m+p-Xylene	DETSC 3432	2	ug/l	< 2
o-Xylene	DETSC 3432	1	ug/l	< 1
Styrene	DETSC 3432	1	ug/l	< 1
Bromoform	DETSC 3432	1	ug/l	< 1
Isopropylbenzene	DETSC 3432	1	ug/l	< 1
1,1,2,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1

Summary of Chemical Analysis
Leachate VOC/SVOC Samples

Our Ref 24-19046
Client Ref ~ PC248745
Contract Title ~ Margam FEED

Lab No	2390360
Sample ID ~	TP115
Depth ~	0.20
Other ID ~	
Sample Type ~	ES
Sampling Date ~	02/09/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Bromobenzene	DETSC 3432	1	ug/l	< 1
1,2,3-trichloropropane	DETSC 3432	1	ug/l	< 1
n-propylbenzene	DETSC 3432	1	ug/l	< 1
2-chlorotoluene	DETSC 3432	1	ug/l	< 1
1,3,5-trimethylbenzene	DETSC 3432	1	ug/l	< 1
4-chlorotoluene	DETSC 3432	1	ug/l	< 1
Tert-butylbenzene	DETSC 3432	1	ug/l	< 1
1,2,4-trimethylbenzene	DETSC 3432	1	ug/l	< 1
sec-butylbenzene	DETSC 3432	1	ug/l	< 1
p-isopropyltoluene	DETSC 3432	1	ug/l	< 1
1,3-dichlorobenzene	DETSC 3432	2	ug/l	< 2
1,4-dichlorobenzene	DETSC 3432	1	ug/l	< 1
n-butylbenzene	DETSC 3432	1	ug/l	< 1
1,2-dichlorobenzene	DETSC 3432	1	ug/l	< 1
1,2-dibromo-3-chloropropane	DETSC 3432	1	ug/l	< 1
1,2,4-trichlorobenzene	DETSC 3432	1	ug/l	< 1
Hexachlorobutadiene	DETSC 3432	1	ug/l	< 1
1,2,3-trichlorobenzene	DETSC 3432	1	ug/l	< 1
MTBE	DETSC 3432*	1	ug/l	< 1
SVOCs				
Phenol	DETSC 3434*	1	ug/l	< 1.0
Aniline	DETSC 3434*	1	ug/l	< 1.0
2-Chlorophenol	DETSC 3434*	1	ug/l	< 1.0
Benzyl Alcohol	DETSC 3434*	1	ug/l	< 1.0
2-Methylphenol	DETSC 3434*	1	ug/l	< 1.0
Bis(2-chloroisopropyl)ether	DETSC 3434*	1	ug/l	< 1.0
3&4-Methylphenol	DETSC 3434*	1	ug/l	< 1.0
Bis(2-chloroethoxy)methane	DETSC 3434*	1	ug/l	< 1.0
2,4-Dimethylphenol	DETSC 3434*	1	ug/l	< 1.0
2,4-Dichlorophenol	DETSC 3434*	1	ug/l	< 1.0
1,2,4-Trichlorobenzene	DETSC 3434*	1	ug/l	< 1.0
4-Chloro-3-methylphenol	DETSC 3434*	1	ug/l	< 1.0
2-Methylnaphthalene	DETSC 3434*	1	ug/l	< 1.0
Hexachlorocyclopentadiene	DETSC 3434*	1	ug/l	< 1.0
2,4,6-Trichlorophenol	DETSC 3434*	1	ug/l	< 1.0
2,4,5-Trichlorophenol	DETSC 3434*	1	ug/l	< 1.0
2-Chloronaphthalene	DETSC 3434*	1	ug/l	< 1.0
2-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0
2,4-Dinitrotoluene	DETSC 3434*	1	ug/l	< 1.0
3-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0
4-Nitrophenol	DETSC 3434*	1	ug/l	< 1.0

Summary of Chemical Analysis
Leachate VOC/SVOC Samples

Our Ref 24-19046
Client Ref ~ PC248745
Contract Title ~ Margam FEED

Lab No	2390360
Sample ID ~	TP115
Depth ~	0.20
Other ID ~	
Sample Type ~	ES
Sampling Date ~	02/09/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Dibenzofuran	DETSC 3434*	1	ug/l	< 1.0
2,6-Dinitrotoluene	DETSC 3434*	1	ug/l	< 1.0
2,3,4,6-Tetrachlorophenol	DETSC 3434*	1	ug/l	< 1.0
Diethylphthalate	DETSC 3434*	1	ug/l	< 1.0
4-Chlorophenylphenylether	DETSC 3434*	1	ug/l	< 1.0
4-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0
Diphenylamine	DETSC 3434*	1	ug/l	< 1.0
4-Bromophenylphenylether	DETSC 3434*	1	ug/l	< 1.0
Hexachlorobenzene	DETSC 3434*	1	ug/l	< 1.0
Bis(2-ethylhexyl)ester	DETSC 3434*	1	ug/l	< 1.0
Pentachlorophenol	DETSC 3434*	1	ug/l	< 1.0
Di-n-butylphthalate	DETSC 3434*	1	ug/l	< 1.0
Butylbenzylphthalate	DETSC 3434*	1	ug/l	< 1.0
Bis(2-ethylhexyl)phthalate	DETSC 3434*	1	ug/l	< 1.0
Di-n-octylphthalate	DETSC 3434*	1	ug/l	< 1.0
1,4-Dinitrobenzene	DETSC 3434*	1	ug/l	< 1.0
Dimethylphthalate	DETSC 3434*	1	ug/l	< 1.0
1,3-Dinitrobenzene	DETSC 3434*	1	ug/l	< 1.0
2,3,5,6-Tetrachlorophenol	DETSC 3434*	1	ug/l	< 1.0
Azobenzene	DETSC 3434*	1	ug/l	< 1.0
Carbazole	DETSC 3434*	1	ug/l	< 1.0
1-Methylnaphthalene	DETSC 3434*	1	ug/l	< 1.0

WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 24-19046
Client Ref PC248745
Contract Title Margam FEED
Sample Id TP115 0.50

Sample Numbers 2390359 2390361
Date Analysed 16/09/2024

Test Results On Waste

Determinand and Method Reference	Units	Result	WAC Limit Values: Inert Waste	SNRHW	Hazardous Waste
DETSC 2084# Total Organic Carbon	%	1.0	3	5	6
DETSC 2003# Loss On Ignition	%	2.7	n/a	n/a	10
DETSC3321# BTEX	mg/kg		6	n/a	n/a
DETSC3401# PCB's (7 congeners)	mg/kg		1	n/a	n/a
DETSC3311# TPH (C10 - C40)	mg/kg		500	n/a	n/a
DETSC3301/DETSC3303 PAH's	mg/kg		100	n/a	n/a
DETSC2008# pH	pH Units		n/a	>6	n/a
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1.0	n/a	TBE	TBE
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0	n/a	TBE	TBE

Test Results On Leachate

Determinand and Method Reference	Conc in Eluate ug/l 10:1	Amount Leached* mg/kg LS10	WAC Limit Values (Limit values for LS10 Leachate): Inert Waste	SNRHW	Hazardous Waste
DETSC 2306 Arsenic as As	0.48	< 0.01	0.5	2	25
DETSC 2306 Barium as Ba	17	0.17	20	100	300
DETSC 2306 Cadmium as Cd	< 0.030	< 0.02	0.04	1	5
DETSC 2306 Chromium as Cr	< 0.25	< 0.1	0.5	10	70
DETSC 2306 Copper as Cu	< 0.40	< 0.02	2	50	100
DETSC 2306 Mercury as Hg	< 0.010	< 0.002	0.01	0.2	2
DETSC 2306 Molybdenum as Mo	< 1.1	< 0.1	0.5	10	30
DETSC 2306 Nickel as Ni	< 0.50	< 0.1	0.4	10	40
DETSC 2306 Lead as Pb	< 0.090	< 0.05	0.5	10	50
DETSC 2306 Antimony as Sb	0.18	< 0.05	0.06	0.7	5
DETSC 2306 Selenium as Se	< 0.25	< 0.03	0.1	0.5	7
DETSC 2306 Zinc as Zn	< 1.3	< 0.01	4	50	200
DETSC 2055 Chloride as Cl	2200	< 100	800	15,000	25,000
DETSC 2055* Fluoride as F	380	3.8	10	150	500
DETSC 2055 Sulphate as SO4	2200	< 100	1000	20,000	50,000
DETSC 2009* Total Dissolved Solids	41000	410	4000	60,000	100,000
DETSC 2130 Phenol Index	< 100	< 1	1	n/a	n/a
DETSC 2085 Dissolved Organic Carbon	3100	< 50	500	800	1000

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive Hazardous Waste

Additional Information

DETSC 2008 pH	7.2
DETSC 2009 Conductivity uS/cm	58.3
* Temperature*	18.0

Mass of Sample Kg*	0.140
Mass of dry Sample Kg*	0.097

Stage 1

Volume of Leachant L2*	0.924
Volume of Eluate VE1*	0.881

Disclaimer: *The WAC limit values are provided for guidance only. DETS does not accept responsibility for errors or omissions. Values are correct at time of issue.*

V.2.06 ** DETS are accredited for the testing of leachates and not the leachate preparation stage which is unaccredited.*

Summary of Asbestos Analysis
Soil Samples

Our Ref 24-19046
Client Ref ~ PC248745
Contract Title ~ Margam FEED

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2390358	TP115 0.20	SOIL	NAD	none	Lee Kerridge

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 24-19046
Client Ref ~ PC248745
Contract ~ Margam FEED

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2390358	TP115 0.20 SOIL	02/09/24	GJ 250ml, GJ 60ml x2, PT 1L		
2390359	TP115 0.50 SOIL	02/09/24	GJ 250ml, GJ 60ml x2, PT 1L		
2390360	TP115 0.20 LEACHATE	02/09/24	GJ 250ml, GJ 60ml x2, PT 1L		VOC
2390361	TP115 0.50 LEACHATE	02/09/24	GJ 250ml, GJ 60ml x2, PT 1L		

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.
Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.
The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Key:
~ Sample details are provided by the client and can affect the validity of the results
***** -not accredited.
# -MCERTS (accreditation only applies if report carries the MCERTS logo).
$ -subcontracted.
n/s -not supplied.
I/S -insufficient sample.
U/S -unsuitable sample.
t/f -to follow.
nd -not detected.

End of Report

Certificate of Analysis

Certificate Number 24-19443 *Issued:* 23-Sep-24

Client Geotechnics LTD
203 Torrington Avenue
Tile Hill
Coventry
CV4 9AP

Our Reference 24-19443

Client Reference ~ PC248745

Order No ~ OC41544

Contract Title ~ MARGAM FEED

Description One Soil sample.

Date Received 12-Sep-24

Date Started 12-Sep-24

Date Completed 23-Sep-24

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. 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 certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Kirk Bridgewood
General Manager

2139

Summary of Chemical Analysis
Soil Samples

Our Ref 24-19443
Client Ref ~ PC248745
Contract Title ~ MARGAM FEED

Lab No	2392554
Sample ID ~	BH107
Depth ~	0.50
Other ID ~	
Sample Type ~	ES
Sampling Date ~	09/09/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Metals				
Arsenic	DETSC 2301#	0.2	mg/kg	13
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	5.4
Cadmium	DETSC 2301#	0.1	mg/kg	1.5
Chromium	DETSC 2301#	0.15	mg/kg	29
Chromium III	DETSC 2301*	0.15	mg/kg	29
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	250
Lead	DETSC 2301#	0.3	mg/kg	92
Mercury	DETSC 2325#	0.05	mg/kg	0.13
Nickel	DETSC 2301#	1	mg/kg	25
Zinc	DETSC 2301#	1	mg/kg	310
Inorganics				
pH	DETSC 2008#		pH	8.9
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.2
Organic matter	DETSC 2002#	0.1	%	5.9
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	1200
Petroleum Hydrocarbons				
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10
PAHs				
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03

Summary of Chemical Analysis
Soil Samples

Our Ref 24-19443
Client Ref ~ PC248745
Contract Title ~ MARGAM FEED

Lab No	2392554
Sample ID ~	BH107
Depth ~	0.50
Other ID ~	
Sample Type ~	ES
Sampling Date ~	09/09/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10
Phenols				
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	1.4

Summary of Chemical Analysis
Soil Samples

Our Ref 24-19443
Client Ref ~ PC248745
Contract Title ~ MARGAM FEED

Lab No	2392554
Sample ID ~	BH107
Depth ~	0.50
Other ID ~	
Sample Type ~	ES
Sampling Date ~	09/09/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
VOCs				
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.01
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01
Benzene	DETSC 3431	0.01	mg/kg	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	< 0.01
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01

Summary of Chemical Analysis
Soil Samples

Our Ref 24-19443
Client Ref ~ PC248745
Contract Title ~ MARGAM FEED

Lab No	2392554
Sample ID ~	BH107
Depth ~	0.50
Other ID ~	
Sample Type ~	ES
Sampling Date ~	09/09/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01
SVOCs				
Phenol	DETSC 3433	0.1	mg/kg	< 0.1
Aniline	DETSC 3433*	0.1	mg/kg	< 0.1
2-Chlorophenol	DETSC 3433	0.1	mg/kg	< 0.1
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	< 0.1
2-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	< 0.1
3&4-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1
2,4-Dimethylphenol	DETSC 3433	0.1	mg/kg	< 0.1
Bis-(dichloroethoxy)methane	DETSC 3433	0.1	mg/kg	< 0.1
2,4-Dichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1
1,2,4-Trichlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1
4-Chloro-3-methylphenol	DETSC 3433	0.1	mg/kg	< 0.1
2-Methylnaphthalene	DETSC 3433	0.1	mg/kg	< 0.1
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 0.1
2,4,6-Trichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1
2-Chloronaphthalene	DETSC 3433	0.1	mg/kg	< 0.1
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1
Dibenzofuran	DETSC 3433	0.1	mg/kg	< 0.1
2,6-Dinitrotoluene	DETSC 3433	0.1	mg/kg	< 0.1
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1
Diethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1
Diphenylamine	DETSC 3433	0.1	mg/kg	< 0.1
4-Bromophenylphenylether	DETSC 3433	0.1	mg/kg	< 0.1

Summary of Chemical Analysis
Soil Samples

Our Ref 24-19443
Client Ref ~ PC248745
Contract Title ~ MARGAM FEED

Lab No	2392554
Sample ID ~	BH107
Depth ~	0.50
Other ID ~	
Sample Type ~	ES
Sampling Date ~	09/09/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	< 0.1
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg	< 0.1
Di-n-octylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1
Azobenzene	DETSC 3433	0.1	mg/kg	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	< 0.1

Summary of Asbestos Analysis
Soil Samples

Our Ref 24-19443
Client Ref ~ PC248745
Contract Title ~ MARGAM FEED

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2392554	BH107 0.50	SOIL	NAD	none	Michael Kay

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 24-19443
Client Ref ~ PC248745
Contract ~ MARGAM FEED

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2392554	BH107 0.50 SOIL	09/09/24	GJ 250ml, GJ 60ml x2, PT 1L		

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.
Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.
The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Key:

~ Sample details are provided by the client and can affect the validity of the results
***** -not accredited.
# -MCERTS (accreditation only applies if report carries the MCERTS logo).
$ -subcontracted.
n/s -not supplied.
I/S -insufficient sample.
U/S -unsuitable sample.
t/f -to follow.
nd -not detected.

End of Report

Certificate of Analysis

Certificate Number	24-19556	*Issued:*	24-Sep-24

Client Geotechnics LTD
203 Torrington Avenue
Tile Hill
Coventry
CV4 9AP

Our Reference	24-19556
Client Reference ~	PC248745
Order No ~	PC248745
Contract Title ~	Margam FEED
Description	3 Soil samples, 1 Leachate prepared by DETS sample.
Date Received	13-Sep-24
Date Started	13-Sep-24
Date Completed	24-Sep-24
Test Procedures	Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. 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 certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Kirk Bridgewood
General Manager

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Summary of Chemical Analysis
Soil Samples

Our Ref 24-19556
Client Ref ~ PC248745
Contract Title ~ Margam FEED

				Lab No	2393816	2393817	2393818
				Sample ID ~	TP105B	BH110	BH110
				Depth ~	0.70	0.25	1.00
				Other ID ~			
				Sample Type ~	ES	ES	ES
				Sampling Date ~	11/09/2024	11/09/2024	11/09/2024
				Sampling Time ~	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
Metals							
Arsenic	DETSC 2301#	0.2	mg/kg	5.2	33	8.3
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	2.4	2.0	1.2
Cadmium	DETSC 2301#	0.1	mg/kg	< 0.1	1.1	0.2
Chromium	DETSC 2301#	0.15	mg/kg	26	44	39
Chromium III	DETSC 2301*	0.15	mg/kg	26	44	39
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	4.2	47	17
Lead	DETSC 2301#	0.3	mg/kg	1.4	74	24
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	0.07	< 0.05
Nickel	DETSC 2301#	1	mg/kg	1.3	17	31
Zinc	DETSC 2301#	1	mg/kg	20	130	120
Inorganics							
pH	DETSC 2008#		pH	10.3	6.3	7.4
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.2	1.8	0.1
Organic matter	DETSC 2002#	0.1	%	0.7	3.5	1.9
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	720	110	43
Petroleum Hydrocarbons							
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10
PAHs							
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.10	< 0.03

Summary of Chemical Analysis
Soil Samples

Our Ref 24-19556
Client Ref ~ PC248745
Contract Title ~ Margam FEED

	Lab No	2393816	2393817	2393818
	Sample ID ~	TP105B	BH110	BH110
	Depth ~	0.70	0.25	1.00
	Other ID ~			
	Sample Type ~	ES	ES	ES
	Sampling Date ~	11/09/2024	11/09/2024	11/09/2024
	Sampling Time ~	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**	
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.12	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.08	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	0.07	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	0.04	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.06	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.05	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	0.04	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	< 0.10	< 0.10
Phenols						
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	7.3	0.6

Summary of Chemical Analysis
Soil Samples

Our Ref 24-19556
Client Ref ~ PC248745
Contract Title ~ Margam FEED

			Lab No	2393816	2393817	2393818
			Sample ID ~	TP105B	BH110	BH110
			Depth ~	0.70	0.25	1.00
			Other ID ~			
			Sample Type ~	ES	ES	ES
			Sampling Date ~	11/09/2024	11/09/2024	11/09/2024
			Sampling Time ~	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**			
VOCs						
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Benzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01

Summary of Chemical Analysis
Soil Samples

Our Ref 24-19556
Client Ref ~ PC248745
Contract Title ~ Margam FEED

	Lab No	2393816	2393817	2393818
	Sample ID ~	TP105B	BH110	BH110
	Depth ~	0.70	0.25	1.00
	Other ID ~			
	Sample Type ~	ES	ES	ES
	Sampling Date ~	11/09/2024	11/09/2024	11/09/2024
	Sampling Time ~	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**	
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
SVOCs						
Phenol	DETSC 3433	0.1	mg/kg	< 0.1	2.2	< 0.1
Aniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Chlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
3&4-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	1.4	< 0.1
2,4-Dimethylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Bis-(dichloroethoxy)methane	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,4-Dichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,2,4-Trichlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Chloro-3-methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Methylnaphthalene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,4,6-Trichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Chloronaphthalene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Dibenzofuran	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Diethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1

Summary of Chemical Analysis
Soil Samples

Our Ref 24-19556
Client Ref ~ PC248745
Contract Title ~ Margam FEED

			Lab No	2393816	2393817	2393818
			Sample ID ~	TP105B	BH110	BH110
			Depth ~	0.70	0.25	1.00
			Other ID ~			
			Sample Type ~	ES	ES	ES
			Sampling Date ~	11/09/2024	11/09/2024	11/09/2024
			Sampling Time ~	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**			
Diphenylamine	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Bromophenylphenylether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Di-n-octylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Azobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1

WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 24-19556
Client Ref PC248745
Contract Title Margam FEED
Sample Id TP105B 0.70

Sample Numbers 2393816 2393819
Date Analysed 24/09/2024

Test Results On Waste

Determinand and Method Reference	Units	Result	WAC Limit Values: Inert Waste	SNRHW	Hazardous Waste
DETSC 2084# Total Organic Carbon	%	< 0.5	3	5	6
DETSC 2003# Loss On Ignition	%	2.7	n/a	n/a	10
DETSC 3321# BTEX	mg/kg	< 0.04	6	n/a	n/a
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01	1	n/a	n/a
DETSC 3311# TPH (C10 - C40)	mg/kg	< 10	500	n/a	n/a
DETSC 3301 PAHs	mg/kg	< 1.6	100	n/a	n/a
DETSC 2008# pH	pH Units	10.3	n/a	>6	n/a
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1.0	n/a	TBE	TBE
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0	n/a	TBE	TBE

Test Results On Leachate

Determinand and Method Reference	Conc in Eluate ug/l 10:1	Amount Leached* mg/kg LS10	WAC Limit Values (Limit values for LS10 Leachate): Inert Waste	SNRHW	Hazardous Waste
DETSC 2306 Arsenic as As	0.91	< 0.01	0.5	2	25
DETSC 2306 Barium as Ba	6.5	< 0.1	20	100	300
DETSC 2306 Cadmium as Cd	< 0.030	< 0.02	0.04	1	5
DETSC 2306 Chromium as Cr	< 0.25	< 0.1	0.5	10	70
DETSC 2306 Copper as Cu	0.8	< 0.02	2	50	100
DETSC 2306 Mercury as Hg	< 0.010	< 0.002	0.01	0.2	2
DETSC 2306 Molybdenum as Mo	< 1.1	< 0.1	0.5	10	30
DETSC 2306 Nickel as Ni	< 0.50	< 0.1	0.4	10	40
DETSC 2306 Lead as Pb	0.16	< 0.05	0.5	10	50
DETSC 2306 Antimony as Sb	< 0.17	< 0.05	0.06	0.7	5
DETSC 2306 Selenium as Se	0.32	< 0.03	0.1	0.5	7
DETSC 2306 Zinc as Zn	1.5	0.02	4	50	200
DETSC 2055 Chloride as Cl	1500	< 100	800	15,000	25,000
DETSC 2055* Fluoride as F	610	6.1	10	150	500
DETSC 2055 Sulphate as SO4	8500	< 100	1000	20,000	50,000
DETSC 2009* Total Dissolved Solids	42000	420	4000	60,000	100,000
DETSC 2130 Phenol Index	< 100	< 1	1	n/a	n/a
DETSC 2085 Dissolved Organic Carbon	< 2000	< 50	500	800	1000

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive Hazardous Waste

Additional Information

DETSC 2008 pH	8.7
DETSC 2009 Conductivity uS/cm	60.4
* Temperature*	19.0

Mass of Sample Kg*	0.110
Mass of dry Sample Kg*	0.097

Stage 1

Volume of Leachant L2*	0.952
Volume of Eluate VE1*	0.91

Disclaimer: *The WAC limit values are provided for guidance only. DETS does not accept responsibility for errors or omissions. Values are correct at time of issue.*

V.2.06 ** DETS are accredited for the testing of leachates and not the leachate preparation stage which is unaccredited.*

Summary of Asbestos Analysis
Soil Samples

Our Ref 24-19556
Client Ref ~ PC248745
Contract Title ~ Margam FEED

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2393816	TP105B 0.70	SOIL	NAD	none	Keith Wilson
2393817	BH110 0.25	SOIL	NAD	none	Keith Wilson
2393818	BH110 1.00	SOIL	NAD	none	Keith Wilson

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 24-19556
Client Ref ~ PC248745
Contract ~ Margam FEED

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2393816	TP105B 0.70 SOIL	11/09/24	GJ 250ml, GJ 60ml x2, PT 1L		
2393817	BH110 0.25 SOIL	11/09/24	GJ 250ml, GJ 60ml x2, PT 1L		
2393818	BH110 1.00 SOIL	11/09/24	GJ 250ml, GJ 60ml x2, PT 1L		
2393819	TP105B 0.70 LEACHATE	11/09/24	GJ 250ml, GJ 60ml x2, PT 1L		

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.
Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.
The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Key:
~ Sample details are provided by the client and can affect the validity of the results
***** -not accredited.
# -MCERTS (accreditation only applies if report carries the MCERTS logo).
$ -subcontracted.
n/s -not supplied.
I/S -insufficient sample.
U/S -unsuitable sample.
t/f -to follow.
nd -not detected.

End of Report

Certificate of Analysis

Certificate Number	24-19951	*Issued:*	30-Sep-24

Client Geotechnics LTD
203 Torrington Avenue
Tile Hill
Coventry
CV4 9AP

Our Reference	24-19951
Client Reference ~	PC248745
Order No ~	PC248745
Contract Title ~	Margam FEED
Description	3 Soil samples, 1 Leachate prepared by DETS sample.
Date Received	18-Sep-24
Date Started	18-Sep-24
Date Completed	30-Sep-24
Test Procedures	Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. 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 certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Kirk Bridgewood
General Manager

ilac-MRA UKAS TESTING 2139

Summary of Chemical Analysis
Soil Samples

Our Ref 24-19951
Client Ref ~ PC248745
Contract Title ~ Margam FEED

	Lab No	2396035	2396036	2396037
	Sample ID ~	BH106	BH108	BH108
	Depth ~	0.25	0.25	0.50
	Other ID ~			
	Sample Type ~	ES	ES	ES
	Sampling Date ~	11/09/2024	11/09/2024	11/09/2024
	Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
Metals						
Arsenic	DETSC 2301#	0.2	mg/kg	16	42	18
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	2.3	3.1	4.7
Cadmium	DETSC 2301#	0.1	mg/kg	0.5	0.6	0.2
Chromium	DETSC 2301#	0.15	mg/kg	35	44	36
Chromium III	DETSC 2301*	0.15	mg/kg	35	44	36
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	29	35	14
Lead	DETSC 2301#	0.3	mg/kg	21	25	24
Mercury	DETSC 2325#	0.05	mg/kg	0.05	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	37	46	44
Zinc	DETSC 2301#	1	mg/kg	100	130	120
Inorganics						
Loss on Ignition at 440oC	DETSC 2003#	0.01	%		35	
pH	DETSC 2008#		pH	6.4	6.8	6.2
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.9	1.3	0.2
Organic matter	DETSC 2002#	0.1	%	24	> 25	2.5
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	150	67	150
Petroleum Hydrocarbons						
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	39	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	30	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	69	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	69	< 10
PAHs						
Naphthalene	DETSC 3303#	0.03	mg/kg	0.06	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.03	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	0.05	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.28	0.08	< 0.03

Summary of Chemical Analysis
Soil Samples

Our Ref 24-19951
Client Ref ~ PC248745
Contract Title ~ Margam FEED

	Lab No	2396035	2396036	2396037
	Sample ID ~	BH106	BH108	BH108
	Depth ~	0.25	0.25	0.50
	Other ID ~			
	Sample Type ~	ES	ES	ES
	Sampling Date ~	11/09/2024	11/09/2024	11/09/2024
	Sampling Time ~	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**	
Anthracene	DETSC 3303	0.03	mg/kg	0.04	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.28	0.08	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	0.21	0.06	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.12	0.12	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	0.17	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.14	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.05	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.06	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.03	< 0.03	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.05	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	0.57	< 0.10	< 0.10
Phenols						
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	13	14	0.7

Summary of Chemical Analysis
Soil Samples

Our Ref 24-19951
Client Ref ~ PC248745
Contract Title ~ Margam FEED

			Lab No	2396035	2396036	2396037
			Sample ID ~	BH106	BH108	BH108
			Depth ~	0.25	0.25	0.50
			Other ID ~			
			Sample Type ~	ES	ES	ES
			Sampling Date ~	11/09/2024	11/09/2024	11/09/2024
			Sampling Time ~	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**			
VOCs						
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.10	< 0.10	< 0.01
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.10	< 0.10	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.10	< 0.10	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.10	< 0.10	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.10	< 0.10	< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.10	< 0.10	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.10	< 0.10	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.10	< 0.10	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.10	< 0.10	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.10	< 0.10	< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.10	< 0.10	< 0.01
Benzene	DETSC 3431	0.01	mg/kg	< 0.10	< 0.10	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.10	< 0.10	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.10	< 0.10	< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.10	< 0.10	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.10	< 0.10	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.10	< 0.10	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.10	< 0.10	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	< 0.10	< 0.10	< 0.01
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.10	< 0.10	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.10	< 0.10	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.10	< 0.10	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.10	< 0.10	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.10	< 0.10	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.10	< 0.10	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.10	< 0.10	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.10	< 0.10	< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.10	< 0.10	< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.10	< 0.10	< 0.01
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.10	< 0.10	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.10	< 0.10	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 0.10	< 0.10	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.10	< 0.10	< 0.01
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.10	< 0.10	< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.10	< 0.10	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.10	< 0.10	< 0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.10	< 0.10	< 0.01
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.10	< 0.10	< 0.01
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.10	< 0.10	< 0.01
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.10	< 0.10	< 0.01
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.10	< 0.10	< 0.01

Summary of Chemical Analysis
Soil Samples

Our Ref 24-19951
Client Ref ~ PC248745
Contract Title ~ Margam FEED

			Lab No	2396035	2396036	2396037
			Sample ID ~	BH106	BH108	BH108
			Depth ~	0.25	0.25	0.50
			Other ID ~			
			Sample Type ~	ES	ES	ES
			Sampling Date ~	11/09/2024	11/09/2024	11/09/2024
			Sampling Time ~	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**			
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.10	< 0.10	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.10	< 0.10	< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.10	< 0.10	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.10	< 0.10	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.10	< 0.10	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.10	< 0.10	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.10	< 0.10	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.10	< 0.10	< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.10	< 0.10	< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.10	< 0.10	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.10	< 0.10	< 0.01
SVOCs						
Phenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Aniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Chlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
3&4-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,4-Dimethylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Bis-(dichloroethoxy)methane	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,4-Dichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,2,4-Trichlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Chloro-3-methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Methylnaphthalene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,4,6-Trichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Chloronaphthalene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Dibenzofuran	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Diethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Diphenylamine	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Bromophenylphenylether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1

Summary of Chemical Analysis
Soil Samples

Our Ref 24-19951
Client Ref ~ PC248745
Contract Title ~ Margam FEED

			Lab No	2396035	2396036	2396037
			Sample ID ~	BH106	BH108	BH108
			Depth ~	0.25	0.25	0.50
			Other ID ~			
			Sample Type ~	ES	ES	ES
			Sampling Date ~	11/09/2024	11/09/2024	11/09/2024
			Sampling Time ~	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**			
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	0.8	< 0.1	< 0.1
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	0.1
Di-n-octylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Azobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1

Summary of Chemical Analysis
Leachate Samples

Our Ref 24-19951
Client Ref ~ PC248745
Contract Title ~ Margam FEED

Lab No	2396038
Sample ID ~	BH106
Depth ~	0.25
Other ID ~	
Sample Type ~	ES
Sampling Date ~	11/09/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Preparation				
BS EN 12457 10:1	DETSC 1009*			Y
Metals				
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	0.61
Boron, Dissolved	DETSC 2306*	12	ug/l	< 12
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	0.63
Calcium, Dissolved	DETSC 2306	0.09	mg/l	5.0
Chromium, Dissolved	DETSC 2306	0.25	ug/l	0.26
Chromium III, Dissolved	DETSC 2306*	1	ug/l	< 1.0
Chromium, Hexavalent	DETSC 2203	7	ug/l	< 7.0
Copper, Dissolved	DETSC 2306	0.4	ug/l	1.2
Lead, Dissolved	DETSC 2306	0.09	ug/l	0.16
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	< 0.5
Selenium, Dissolved	DETSC 2306	0.25	ug/l	< 0.25
Vanadium, Dissolved	DETSC 2306	0.6	ug/l	1.3
Zinc, Dissolved	DETSC 2306	1.3	ug/l	69
Inorganics				
pH	DETSC 2008		pH	8.0
Cyanide, Total Low Level	DETSC 2131	0.1	ug/l	< 0.1
Cyanide, Free Low Level	DETSC 2131	0.1	ug/l	< 0.1
Cyanide, Complex Low Level	DETSC 2131	0.1	ug/l	< 0.1
Dissolved Organic Carbon	DETSC 2085	2	mg/l	6.3
Ammoniacal Nitrogen as NH4	DETSC 2207	0.0193	mg/l	< 0.02
Ammoniacal Nitrogen as NH3	DETSC 2207	0.0183	mg/l	< 0.018
Ammoniacal Nitrogen as N	DETSC 2207	0.015	mg/l	< 0.015
Nitrate as NO3	DETSC 2055	0.1	mg/l	1.5
Nitrate as N	*	0.1	mg/l	< 0.10
Nitrite as NO2	DETSC 2055	0.1	mg/l	0.46
Nitrite as N	DETSC 2201	0.035	mg/l	< 0.035
Sulphate as SO4	DETSC 2055	0.1	mg/l	3.0
PAHs				
Naphthalene	DETSC 3304	0.05	ug/l	< 0.05
Acenaphthylene	DETSC 3304	0.01	ug/l	< 0.01
Acenaphthene	DETSC 3304	0.01	ug/l	< 0.01
Fluorene	DETSC 3304	0.01	ug/l	< 0.01
Phenanthrene	DETSC 3304	0.01	ug/l	0.01
Anthracene	DETSC 3304	0.01	ug/l	< 0.01
Fluoranthene	DETSC 3304	0.01	ug/l	< 0.01
Pyrene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(a)anthracene	DETSC 3304*	0.01	ug/l	< 0.01
Chrysene	DETSC 3304	0.01	ug/l	< 0.01

Summary of Chemical Analysis
Leachate Samples

Our Ref 24-19951
Client Ref ~ PC248745
Contract Title ~ Margam FEED

Lab No	2396038
Sample ID ~	BH106
Depth ~	0.25
Other ID ~	
Sample Type ~	ES
Sampling Date ~	11/09/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	< 0.01
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l	< 0.01
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l	< 0.01
PAH Total	DETSC 3304	0.2	ug/l	< 0.20

Summary of Chemical Analysis
Leachate Samples

Our Ref 24-19951
Client Ref ~ PC248745
Contract Title ~ Margam FEED

Lab No	2396038
Sample ID ~	BH106
Depth ~	0.25
Other ID ~	
Sample Type ~	ES
Sampling Date ~	11/09/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
VOCs				
Dichlorodifluoromethane	DETSC 3432	1	ug/l	< 1
Chloromethane	DETSC 3432	1	ug/l	< 1
Vinyl Chloride	DETSC 3432	1	ug/l	< 1
Bromomethane	DETSC 3432	1	ug/l	< 1
Chloroethane	DETSC 3432	1	ug/l	< 1
Trichlorofluoromethane	DETSC 3432*	1	ug/l	< 1
1,1-dichloroethylene	DETSC 3432	1	ug/l	< 1
Methylene Chloride	DETSC 3432*	27	ug/l	< 27
Trans-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1
1,1-dichloroethane	DETSC 3432	1	ug/l	< 1
Cis-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1
2,2-dichloropropane	DETSC 3432*	2	ug/l	< 2
Bromochloromethane	DETSC 3432	4	ug/l	< 4
Chloroform	DETSC 3432	1	ug/l	< 1
1,1,1-trichloroethane	DETSC 3432	1	ug/l	< 1
1,1-dichloropropene	DETSC 3432	1	ug/l	< 1
Carbon tetrachloride	DETSC 3432	1	ug/l	< 1
Benzene	DETSC 3432	1	ug/l	< 1
1,2-dichloroethane	DETSC 3432	1	ug/l	< 1
Trichloroethylene	DETSC 3432*	1	ug/l	< 1
1,2-dichloropropane	DETSC 3432	1	ug/l	< 1
Dibromomethane	DETSC 3432	1	ug/l	< 1
Bromodichloromethane	DETSC 3432	4	ug/l	< 4
cis-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1
Toluene	DETSC 3432	1	ug/l	< 1
trans-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1
1,1,2-trichloroethane	DETSC 3432	1	ug/l	< 1
Tetrachloroethylene	DETSC 3432	1	ug/l	< 1
1,3-dichloropropane	DETSC 3432	1	ug/l	< 1
Dibromochloromethane	DETSC 3432	1	ug/l	< 1
1,2-dibromoethane	DETSC 3432	1	ug/l	< 1
Chlorobenzene	DETSC 3432	1	ug/l	< 1
1,1,1,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1
Ethylbenzene	DETSC 3432	1	ug/l	< 1
m+p-Xylene	DETSC 3432	2	ug/l	< 2
o-Xylene	DETSC 3432	1	ug/l	< 1
Styrene	DETSC 3432	1	ug/l	< 1
Bromoform	DETSC 3432	1	ug/l	< 1
Isopropylbenzene	DETSC 3432	1	ug/l	< 1
1,1,2,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1
Bromobenzene	DETSC 3432	1	ug/l	< 1

Summary of Chemical Analysis
Leachate Samples

Our Ref 24-19951
Client Ref ~ PC248745
Contract Title ~ Margam FEED

Lab No	2396038
Sample ID ~	BH106
Depth ~	0.25
Other ID ~	
Sample Type ~	ES
Sampling Date ~	11/09/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
1,2,3-trichloropropane	DETSC 3432	1	ug/l	< 1
n-propylbenzene	DETSC 3432	1	ug/l	< 1
2-chlorotoluene	DETSC 3432	1	ug/l	< 1
1,3,5-trimethylbenzene	DETSC 3432	1	ug/l	< 1
4-chlorotoluene	DETSC 3432	1	ug/l	< 1
Tert-butylbenzene	DETSC 3432	1	ug/l	< 1
1,2,4-trimethylbenzene	DETSC 3432	1	ug/l	< 1
sec-butylbenzene	DETSC 3432	1	ug/l	< 1
p-isopropyltoluene	DETSC 3432	1	ug/l	< 1
1,3-dichlorobenzene	DETSC 3432	2	ug/l	< 2
1,4-dichlorobenzene	DETSC 3432	1	ug/l	< 1
n-butylbenzene	DETSC 3432	1	ug/l	< 1
1,2-dichlorobenzene	DETSC 3432	1	ug/l	< 1
1,2-dibromo-3-chloropropane	DETSC 3432	1	ug/l	< 1
1,2,4-trichlorobenzene	DETSC 3432	1	ug/l	< 1
Hexachlorobutadiene	DETSC 3432	1	ug/l	< 1
1,2,3-trichlorobenzene	DETSC 3432	1	ug/l	< 1
MTBE	DETSC 3432*	1	ug/l	< 1
SVOCs				
Phenol	DETSC 3434*	1	ug/l	< 1.0
Aniline	DETSC 3434*	1	ug/l	< 1.0
2-Chlorophenol	DETSC 3434*	1	ug/l	< 1.0
Benzyl Alcohol	DETSC 3434*	1	ug/l	3.6
2-Methylphenol	DETSC 3434*	1	ug/l	< 1.0
Bis(2-chloroisopropyl)ether	DETSC 3434*	1	ug/l	< 1.0
3&4-Methylphenol	DETSC 3434*	1	ug/l	< 1.0
Bis(2-chloroethoxy)methane	DETSC 3434*	1	ug/l	< 1.0
2,4-Dimethylphenol	DETSC 3434*	1	ug/l	< 1.0
2,4-Dichlorophenol	DETSC 3434*	1	ug/l	< 1.0
1,2,4-Trichlorobenzene	DETSC 3434*	1	ug/l	< 1.0
4-Chloro-3-methylphenol	DETSC 3434*	1	ug/l	< 1.0
2-Methylnaphthalene	DETSC 3434*	1	ug/l	< 1.0
Hexachlorocyclopentadiene	DETSC 3434*	1	ug/l	< 1.0
2,4,6-Trichlorophenol	DETSC 3434*	1	ug/l	< 1.0
2,4,5-Trichlorophenol	DETSC 3434*	1	ug/l	< 1.0
2-Chloronaphthalene	DETSC 3434*	1	ug/l	< 1.0
2-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0
2,4-Dinitrotoluene	DETSC 3434*	1	ug/l	< 1.0
3-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0
4-Nitrophenol	DETSC 3434*	1	ug/l	< 1.0
Dibenzofuran	DETSC 3434*	1	ug/l	< 1.0
2,6-Dinitrotoluene	DETSC 3434*	1	ug/l	< 1.0

Summary of Chemical Analysis
Leachate Samples

Our Ref 24-19951
Client Ref ~ PC248745
Contract Title ~ Margam FEED

Lab No	2396038
Sample ID ~	BH106
Depth ~	0.25
Other ID ~	
Sample Type ~	ES
Sampling Date ~	11/09/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
2,3,4,6-Tetrachlorophenol	DETSC 3434*	1	ug/l	< 1.0
Diethylphthalate	DETSC 3434*	1	ug/l	< 1.0
4-Chlorophenylphenylether	DETSC 3434*	1	ug/l	< 1.0
4-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0
Diphenylamine	DETSC 3434*	1	ug/l	< 1.0
4-Bromophenylphenylether	DETSC 3434*	1	ug/l	< 1.0
Hexachlorobenzene	DETSC 3434*	1	ug/l	< 1.0
Bis(2-ethylhexyl)ester	DETSC 3434*	1	ug/l	< 1.0
Pentachlorophenol	DETSC 3434*	1	ug/l	< 1.0
Di-n-butylphthalate	DETSC 3434*	1	ug/l	< 1.0
Butylbenzylphthalate	DETSC 3434*	1	ug/l	< 1.0
Bis(2-ethylhexyl)phthalate	DETSC 3434*	1	ug/l	< 1.0
Di-n-octylphthalate	DETSC 3434*	1	ug/l	< 1.0
1,4-Dinitrobenzene	DETSC 3434*	1	ug/l	< 1.0
Dimethylphthalate	DETSC 3434*	1	ug/l	< 1.0
1,3-Dinitrobenzene	DETSC 3434*	1	ug/l	< 1.0
2,3,5,6-Tetrachlorophenol	DETSC 3434*	1	ug/l	< 1.0
Azobenzene	DETSC 3434*	1	ug/l	< 1.0
Carbazole	DETSC 3434*	1	ug/l	< 1.0
1-Methylnaphthalene	DETSC 3434*	1	ug/l	< 1.0

Summary of Asbestos Analysis
Soil Samples

Our Ref 24-19951
Client Ref ~ PC248745
Contract Title ~ Margam FEED

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2396035	BH106 0.25	SOIL	NAD	none	Ben Barsby
2396036	BH108 0.25	SOIL	NAD	none	Ben Barsby
2396037	BH108 0.50	SOIL	NAD	none	Ben Barsby

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 24-19951
Client Ref ~ PC248745
Contract ~ Margam FEED

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2396035	BH106 0.25 SOIL	11/09/24	GJ 250ml, GJ 60ml x2, PT 1L		
2396036	BH108 0.25 SOIL	11/09/24	GJ 250ml, GJ 60ml x2, PT 1L		
2396037	BH108 0.50 SOIL	11/09/24	GJ 250ml, GJ 60ml x2, PT 1L		
2396038	BH106 0.25 LEACHATE	11/09/24	GJ 250ml, GJ 60ml x2, PT 1L		VOC

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.
Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.
The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Key:

~ Sample details are provided by the client and can affect the validity of the results
***** -not accredited.
# -MCERTS (accreditation only applies if report carries the MCERTS logo).
$ -subcontracted.
n/s -not supplied.
I/S -insufficient sample.
U/S -unsuitable sample.
t/f -to follow.
nd -not detected.

End of Report

Certificate of Analysis

Certificate Number	24-20360	*Issued:*	03-Oct-24
Client	Geotechnics LTD 203 Torrington Avenue Tile Hill Coventry CV4 9AP		

Our Reference	24-20360
Client Reference ~	PC248745
Order No ~	OC41659
Contract Title ~	MARGAM FEED
Description	2 Soil samples, 1 Leachate prepared by DETS sample.
Date Received	24-Sep-24
Date Started	24-Sep-24
Date Completed	03-Oct-24
Test Procedures	Identified by prefix DETSn (details on request).
Notes	Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. 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 certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Kirk Bridgewood
General Manager

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Summary of Chemical Analysis
Soil Samples

Our Ref 24-20360
Client Ref ~ PC248745
Contract Title ~ MARGAM FEED

			Lab No	2398860	2398861
			Sample ID ~	BH111	BH111
			Depth ~	0.25	0.50
			Other ID ~		
			Sample Type ~	ES	ES
			Sampling Date ~	16/09/2024	16/09/2024
			Sampling Time ~	n/s	n/s
Test	**Method**	**LOD**	**Units**		
Metals					
Arsenic	DETSC 2301#	0.2	mg/kg	13	26
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	4.0	0.9
Cadmium	DETSC 2301#	0.1	mg/kg	< 0.1	1.4
Chromium	DETSC 2301#	0.15	mg/kg	34	83
Chromium III	DETSC 2301*	0.15	mg/kg	34	83
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	14	65
Lead	DETSC 2301#	0.3	mg/kg	22	150
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	0.21
Nickel	DETSC 2301#	1	mg/kg	30	28
Zinc	DETSC 2301#	1	mg/kg	93	250
Inorganics					
Loss on Ignition at 440oC	DETSC 2003#	0.01	%		44
pH	DETSC 2008#		pH	6.6	6.6
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	0.6
Organic matter	DETSC 2002#	0.1	%	1.0	> 25
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	140	110
Petroleum Hydrocarbons					
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10
PAHs					
Naphthalene	DETSC 3303#	0.03	mg/kg	0.07	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03

Summary of Chemical Analysis
Soil Samples

Our Ref 24-20360
Client Ref ~ PC248745
Contract Title ~ MARGAM FEED

	Lab No	2398860	2398861
	Sample ID ~	BH111	BH111
	Depth ~	0.25	0.50
	Other ID ~		
	Sample Type ~	ES	ES
	Sampling Date ~	16/09/2024	16/09/2024
	Sampling Time ~	n/s	n/s

Test	Method	LOD	Units		
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.20	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.16	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	0.11	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.20	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	0.07	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.10	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.08	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.05	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.10	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	< 0.10
Phenols					
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	0.5	3.7

Summary of Chemical Analysis
Soil Samples

Our Ref 24-20360
Client Ref ~ PC248745
Contract Title ~ MARGAM FEED

Lab No	2398860	2398861
Sample ID ~	BH111	BH111
Depth ~	0.25	0.50
Other ID ~		
Sample Type ~	ES	ES
Sampling Date ~	16/09/2024	16/09/2024
Sampling Time ~	n/s	n/s

Test	Method	LOD	Units		
VOCs					
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Benzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	< 0.01	0.03
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01

Summary of Chemical Analysis
Soil Samples

Our Ref 24-20360
Client Ref ~ PC248745
Contract Title ~ MARGAM FEED

			Lab No	2398860	2398861
			Sample ID ~	BH111	BH111
			Depth ~	0.25	0.50
			Other ID ~		
			Sample Type ~	ES	ES
			Sampling Date ~	16/09/2024	16/09/2024
			Sampling Time ~	n/s	n/s
Test	**Method**	**LOD**	**Units**		
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
SVOCs					
Phenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Aniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2-Chlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
3&4-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,4-Dimethylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Bis-(dichloroethoxy)methane	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,4-Dichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
1,2,4-Trichlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
4-Chloro-3-methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2-Methylnaphthalene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2,4,6-Trichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2-Chloronaphthalene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Dibenzofuran	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,6-Dinitrotoluene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Diethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1

Summary of Chemical Analysis
Soil Samples

Our Ref 24-20360
Client Ref ~ PC248745
Contract Title ~ MARGAM FEED

			Lab No	2398860	2398861
			Sample ID ~	BH111	BH111
			Depth ~	0.25	0.50
			Other ID ~		
			Sample Type ~	ES	ES
			Sampling Date ~	16/09/2024	16/09/2024
			Sampling Time ~	n/s	n/s
Test	**Method**	**LOD**	**Units**		
Diphenylamine	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
4-Bromophenylphenylether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	0.8	< 0.1
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Di-n-octylphthalate	DETSC 3433*	0.1	mg/kg	0.2	< 0.1
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Azobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1

Summary of Chemical Analysis
Leachate Samples

Our Ref 24-20360
Client Ref ~ PC248745
Contract Title ~ MARGAM FEED

Lab No	2398862
Sample ID ~	BH111
Depth ~	0.25
Other ID ~	
Sample Type ~	ES
Sampling Date ~	16/09/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Preparation				
BS EN 12457 10:1	DETSC 1009*			Y
Metals				
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	3.6
Boron, Dissolved	DETSC 2306*	12	ug/l	54
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03
Calcium, Dissolved	DETSC 2306	0.09	mg/l	2.6
Chromium, Dissolved	DETSC 2306	0.25	ug/l	0.40
Chromium III, Dissolved	DETSC 2306*	1	ug/l	< 1.0
Chromium, Hexavalent	DETSC 2203	7	ug/l	< 7.0
Copper, Dissolved	DETSC 2306	0.4	ug/l	2.4
Lead, Dissolved	DETSC 2306	0.09	ug/l	0.50
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	< 0.5
Selenium, Dissolved	DETSC 2306	0.25	ug/l	< 0.25
Vanadium, Dissolved	DETSC 2306	0.6	ug/l	3.3
Zinc, Dissolved	DETSC 2306	1.3	ug/l	6.0
Inorganics				
pH	DETSC 2008		pH	7.1
Cyanide, Total Low Level	DETSC 2131	0.1	ug/l	< 0.1
Cyanide, Free Low Level	DETSC 2131	0.1	ug/l	< 0.1
Cyanide, Complex Low Level	DETSC 2131	0.1	ug/l	< 0.1
Dissolved Organic Carbon	DETSC 2085	2	mg/l	9.3
Ammoniacal Nitrogen as NH4	DETSC 2207	0.0193	mg/l	0.33
Ammoniacal Nitrogen as NH3	DETSC 2207	0.0183	mg/l	0.31
Ammoniacal Nitrogen as N	DETSC 2207	0.015	mg/l	0.26
Nitrate as NO3	DETSC 2055	0.1	mg/l	0.43
Nitrate as N	*	0.1	mg/l	< 0.10
Nitrite as NO2	DETSC 2055	0.1	mg/l	< 0.10
Nitrite as N	DETSC 2201	0.035	mg/l	< 0.035
Sulphate as SO4	DETSC 2055	0.1	mg/l	4.0
PAHs				
Naphthalene	DETSC 3304	0.05	ug/l	< 0.05
Acenaphthylene	DETSC 3304	0.01	ug/l	< 0.01
Acenaphthene	DETSC 3304	0.01	ug/l	< 0.01
Fluorene	DETSC 3304	0.01	ug/l	< 0.01
Phenanthrene	DETSC 3304	0.01	ug/l	< 0.01
Anthracene	DETSC 3304	0.01	ug/l	< 0.01
Fluoranthene	DETSC 3304	0.01	ug/l	< 0.01
Pyrene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(a)anthracene	DETSC 3304*	0.01	ug/l	< 0.01

Summary of Chemical Analysis
Leachate Samples

Our Ref 24-20360
Client Ref ~ PC248745
Contract Title ~ MARGAM FEED

Lab No	2398862
Sample ID ~	BH111
Depth ~	0.25
Other ID ~	
Sample Type ~	ES
Sampling Date ~	16/09/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Chrysene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	< 0.01
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l	< 0.01
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l	< 0.01
PAH Total	DETSC 3304	0.2	ug/l	< 0.20

Summary of Chemical Analysis
Leachate Samples

Our Ref 24-20360
Client Ref ~ PC248745
Contract Title ~ MARGAM FEED

Lab No	2398862
Sample ID ~	BH111
Depth ~	0.25
Other ID ~	
Sample Type ~	ES
Sampling Date ~	16/09/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
VOCs				
Dichlorodifluoromethane	DETSC 3432	1	ug/l	< 1
Chloromethane	DETSC 3432	1	ug/l	< 1
Vinyl Chloride	DETSC 3432	1	ug/l	< 1
Bromomethane	DETSC 3432	1	ug/l	< 1
Chloroethane	DETSC 3432	1	ug/l	< 1
Trichlorofluoromethane	DETSC 3432*	1	ug/l	< 1
1,1-dichloroethylene	DETSC 3432	1	ug/l	< 1
Methylene Chloride	DETSC 3432*	27	ug/l	< 27
Trans-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1
1,1-dichloroethane	DETSC 3432	1	ug/l	< 1
Cis-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1
2,2-dichloropropane	DETSC 3432*	2	ug/l	< 2
Bromochloromethane	DETSC 3432	4	ug/l	< 4
Chloroform	DETSC 3432	1	ug/l	< 1
1,1,1-trichloroethane	DETSC 3432	1	ug/l	< 1
1,1-dichloropropene	DETSC 3432	1	ug/l	< 1
Carbon tetrachloride	DETSC 3432	1	ug/l	< 1
Benzene	DETSC 3432	1	ug/l	< 1
1,2-dichloroethane	DETSC 3432	1	ug/l	< 1
Trichloroethylene	DETSC 3432*	1	ug/l	< 1
1,2-dichloropropane	DETSC 3432	1	ug/l	< 1
Dibromomethane	DETSC 3432	1	ug/l	< 1
Bromodichloromethane	DETSC 3432	4	ug/l	< 4
cis-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1
Toluene	DETSC 3432	1	ug/l	< 1
trans-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1
1,1,2-trichloroethane	DETSC 3432	1	ug/l	< 1
Tetrachloroethylene	DETSC 3432	1	ug/l	< 1
1,3-dichloropropane	DETSC 3432	1	ug/l	< 1
Dibromochloromethane	DETSC 3432	1	ug/l	< 1
1,2-dibromoethane	DETSC 3432	1	ug/l	< 1
Chlorobenzene	DETSC 3432	1	ug/l	< 1
1,1,1,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1
Ethylbenzene	DETSC 3432	1	ug/l	< 1
m+p-Xylene	DETSC 3432	2	ug/l	< 2
o-Xylene	DETSC 3432	1	ug/l	< 1
Styrene	DETSC 3432	1	ug/l	< 1
Bromoform	DETSC 3432	1	ug/l	< 1
Isopropylbenzene	DETSC 3432	1	ug/l	< 1
1,1,2,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1

Summary of Chemical Analysis
Leachate Samples

Our Ref 24-20360
Client Ref ~ PC248745
Contract Title ~ MARGAM FEED

Lab No	2398862
Sample ID ~	BH111
Depth ~	0.25
Other ID ~	
Sample Type ~	ES
Sampling Date ~	16/09/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Bromobenzene	DETSC 3432	1	ug/l	< 1
1,2,3-trichloropropane	DETSC 3432	1	ug/l	< 1
n-propylbenzene	DETSC 3432	1	ug/l	< 1
2-chlorotoluene	DETSC 3432	1	ug/l	< 1
1,3,5-trimethylbenzene	DETSC 3432	1	ug/l	< 1
4-chlorotoluene	DETSC 3432	1	ug/l	< 1
Tert-butylbenzene	DETSC 3432	1	ug/l	< 1
1,2,4-trimethylbenzene	DETSC 3432	1	ug/l	< 1
sec-butylbenzene	DETSC 3432	1	ug/l	< 1
p-isopropyltoluene	DETSC 3432	1	ug/l	< 1
1,3-dichlorobenzene	DETSC 3432	2	ug/l	< 2
1,4-dichlorobenzene	DETSC 3432	1	ug/l	< 1
n-butylbenzene	DETSC 3432	1	ug/l	< 1
1,2-dichlorobenzene	DETSC 3432	1	ug/l	< 1
1,2-dibromo-3-chloropropane	DETSC 3432	1	ug/l	< 1
1,2,4-trichlorobenzene	DETSC 3432	1	ug/l	< 1
Hexachlorobutadiene	DETSC 3432	1	ug/l	< 1
1,2,3-trichlorobenzene	DETSC 3432	1	ug/l	< 1
MTBE	DETSC 3432*	1	ug/l	< 1
SVOCs				
Phenol	DETSC 3434*	1	ug/l	< 1.0
Aniline	DETSC 3434*	1	ug/l	< 1.0
2-Chlorophenol	DETSC 3434*	1	ug/l	< 1.0
Benzyl Alcohol	DETSC 3434*	1	ug/l	1.2
2-Methylphenol	DETSC 3434*	1	ug/l	< 1.0
Bis(2-chloroisopropyl)ether	DETSC 3434*	1	ug/l	< 1.0
3&4-Methylphenol	DETSC 3434*	1	ug/l	< 1.0
Bis(2-chloroethoxy)methane	DETSC 3434*	1	ug/l	< 1.0
2,4-Dimethylphenol	DETSC 3434*	1	ug/l	< 1.0
2,4-Dichlorophenol	DETSC 3434*	1	ug/l	< 1.0
1,2,4-Trichlorobenzene	DETSC 3434*	1	ug/l	< 1.0
4-Chloro-3-methylphenol	DETSC 3434*	1	ug/l	< 1.0
2-Methylnaphthalene	DETSC 3434*	1	ug/l	< 1.0
Hexachlorocyclopentadiene	DETSC 3434*	1	ug/l	< 1.0
2,4,6-Trichlorophenol	DETSC 3434*	1	ug/l	< 1.0
2,4,5-Trichlorophenol	DETSC 3434*	1	ug/l	< 1.0
2-Chloronaphthalene	DETSC 3434*	1	ug/l	< 1.0
2-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0
2,4-Dinitrotoluene	DETSC 3434*	1	ug/l	< 1.0
3-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0
4-Nitrophenol	DETSC 3434*	1	ug/l	< 1.0

Summary of Chemical Analysis
Leachate Samples

Our Ref 24-20360
Client Ref ~ PC248745
Contract Title ~ MARGAM FEED

Lab No	2398862
Sample ID ~	BH111
Depth ~	0.25
Other ID ~	
Sample Type ~	ES
Sampling Date ~	16/09/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Dibenzofuran	DETSC 3434*	1	ug/l	< 1.0
2,6-Dinitrotoluene	DETSC 3434*	1	ug/l	< 1.0
2,3,4,6-Tetrachlorophenol	DETSC 3434*	1	ug/l	< 1.0
Diethylphthalate	DETSC 3434*	1	ug/l	< 1.0
4-Chlorophenylphenylether	DETSC 3434*	1	ug/l	< 1.0
4-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0
Diphenylamine	DETSC 3434*	1	ug/l	< 1.0
4-Bromophenylphenylether	DETSC 3434*	1	ug/l	< 1.0
Hexachlorobenzene	DETSC 3434*	1	ug/l	< 1.0
Bis(2-ethylhexyl)ester	DETSC 3434*	1	ug/l	< 1.0
Pentachlorophenol	DETSC 3434*	1	ug/l	< 1.0
Di-n-butylphthalate	DETSC 3434*	1	ug/l	< 1.0
Butylbenzylphthalate	DETSC 3434*	1	ug/l	< 1.0
Bis(2-ethylhexyl)phthalate	DETSC 3434*	1	ug/l	< 1.0
Di-n-octylphthalate	DETSC 3434*	1	ug/l	< 1.0
1,4-Dinitrobenzene	DETSC 3434*	1	ug/l	< 1.0
Dimethylphthalate	DETSC 3434*	1	ug/l	< 1.0
1,3-Dinitrobenzene	DETSC 3434*	1	ug/l	< 1.0
2,3,5,6-Tetrachlorophenol	DETSC 3434*	1	ug/l	< 1.0
Azobenzene	DETSC 3434*	1	ug/l	< 1.0
Carbazole	DETSC 3434*	1	ug/l	< 1.0
1-Methylnaphthalene	DETSC 3434*	1	ug/l	< 1.0

Summary of Asbestos Analysis
Soil Samples

Our Ref 24-20360
Client Ref ~ PC248745
Contract Title ~ MARGAM FEED

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2398860	BH111 0.25	SOIL	NAD	none	Keith Wilson
2398861	BH111 0.50	SOIL	NAD	none	Keith Wilson

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 24-20360
Client Ref ~ PC248745
Contract ~ MARGAM FEED

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2398860	BH111 0.25 SOIL	16/09/24	GJ 250ml, GJ 60ml x2, PT 1L	pH + Conductivity (7 days), VOC (7 days)	
2398861	BH111 0.50 SOIL	16/09/24	GJ 250ml, GJ 60ml x2, PT 1L	pH + Conductivity (7 days), VOC (7 days)	
2398862	BH111 0.25 LEACHATE	16/09/24	GJ 250ml, GJ 60ml x2, PT 1L	Chromium, Hexavalent (4 days), Kone (4 days), pH/Cond (1 days), Nitrite as NO2 (5 days), PAH MS (4 days), SVOC (7 days)	VOC

Key: G-Glass P-Plastic J-Jar T-Tub
DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.
Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.
The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Key:
~ Sample details are provided by the client and can affect the validity of the results
***** -not accredited.
# -MCERTS (accreditation only applies if report carries the MCERTS logo).
$ -subcontracted.
n/s -not supplied.
I/S -insufficient sample.
U/S -unsuitable sample.
t/f -to follow.
nd -not detected.

End of Report

Certificate of Analysis

Certificate Number 24-27209 *Issued:* 02-Jan-25

Client Geotechnics LTD
203 Torrington Avenue
Tile Hill
Coventry
CV4 9AP

Our Reference 24-27209

Client Reference ~ PC248745

Order No ~ OC42450

Contract Title ~ Margam Feed Phase 1

Description One Ground Water sample.

Date Received 13-Dec-24

Date Started 13-Dec-24

Date Completed 02-Jan-25

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. 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 certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Kirk Bridgewood
General Manager

2139

Summary of Chemical Analysis
Water Samples

Our Ref 24-27209
Client Ref ~ PC248745
Contract Title ~ Margam Feed Phase 1

Lab No	2439958
Sample ID ~	BH112
Depth ~	4.50
Other ID ~	
Sample Type ~	GROUND WATER
Sampling Date ~	10/12/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Metals				
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	0.62
Boron, Dissolved	DETSC 2306*	12	ug/l	280
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l	< 0.25
Copper, Dissolved	DETSC 2306	0.4	ug/l	< 0.4
Lead, Dissolved	DETSC 2306	0.09	ug/l	< 0.09
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	2.8
Zinc, Dissolved	DETSC 2306	1.3	ug/l	100
Inorganics				
pH	DETSC 2008		pH	7.1
Cyanide, Total Low Level	DETSC 2131	0.1	ug/l	1.0
Phenol - Monohydric Low Level	DETSC 2131	1.5	ug/l	4.1
Sulphate as SO4	DETSC 2055	0.1	mg/l	140
Petroleum Hydrocarbons				
Aliphatic C5-C6	DETSC 3322	0.1	ug/l	< 0.1
Aliphatic C6-C8	DETSC 3322	0.1	ug/l	< 0.1
Aliphatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1
Aliphatic C10-C12	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C12-C16	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C16-C21	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C21-C35	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C5-C35	DETSC 3072*	10	ug/l	< 10
Aromatic C5-C7	DETSC 3322	0.1	ug/l	< 0.1
Aromatic C7-C8	DETSC 3322	0.1	ug/l	< 0.1
Aromatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1
Aromatic C10-C12	DETSC 3072*	1	ug/l	< 1.0
Aromatic C12-C16	DETSC 3072*	1	ug/l	< 1.0
Aromatic C16-C21	DETSC 3072*	1	ug/l	< 1.0
Aromatic C21-C35	DETSC 3072*	1	ug/l	< 1.0
Aromatic C5-C35	DETSC 3072*	10	ug/l	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	ug/l	< 10
PAHs				
Naphthalene	DETSC 3304	0.05	ug/l	0.06
Acenaphthylene	DETSC 3304	0.01	ug/l	< 0.01
Acenaphthene	DETSC 3304	0.01	ug/l	< 0.01
Fluorene	DETSC 3304	0.01	ug/l	< 0.01
Phenanthrene	DETSC 3304	0.01	ug/l	0.03
Anthracene	DETSC 3304	0.01	ug/l	< 0.01
Fluoranthene	DETSC 3304	0.01	ug/l	< 0.01
Pyrene	DETSC 3304	0.01	ug/l	< 0.01

Summary of Chemical Analysis
Water Samples

Our Ref 24-27209
Client Ref ~ PC248745
Contract Title ~ Margam Feed Phase 1

Lab No	2439958
Sample ID ~	BH112
Depth ~	4.50
Other ID ~	
Sample Type ~	GROUND WATER
Sampling Date ~	10/12/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Benzo(a)anthracene	DETSC 3304*	0.01	ug/l	< 0.01
Chrysene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	< 0.01
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l	< 0.01
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l	< 0.01
PAH Total	DETSC 3304	0.2	ug/l	< 0.20
VOCs				
Dichlorodifluoromethane	DETSC 3432	1	ug/l	< 1
Chloromethane	DETSC 3432	1	ug/l	< 1
Vinyl Chloride	DETSC 3432	1	ug/l	< 1
Bromomethane	DETSC 3432	1	ug/l	< 1
Chloroethane	DETSC 3432	1	ug/l	< 1
Trichlorofluoromethane	DETSC 3432*	1	ug/l	< 1
1,1-dichloroethylene	DETSC 3432	1	ug/l	< 1
Methylene Chloride	DETSC 3432*	27	ug/l	< 27
Trans-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1
1,1-dichloroethane	DETSC 3432	1	ug/l	< 1
Cis-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1
2,2-dichloropropane	DETSC 3432*	2	ug/l	< 2
Bromochloromethane	DETSC 3432	4	ug/l	< 4
Chloroform	DETSC 3432	1	ug/l	< 1
1,1,1-trichloroethane	DETSC 3432	1	ug/l	< 1
1,1-dichloropropene	DETSC 3432	1	ug/l	< 1
Carbon tetrachloride	DETSC 3432	1	ug/l	< 1
Benzene	DETSC 3432	1	ug/l	< 1
1,2-dichloroethane	DETSC 3432	1	ug/l	< 1
Trichloroethylene	DETSC 3432*	1	ug/l	< 1
1,2-dichloropropane	DETSC 3432	1	ug/l	< 1
Dibromomethane	DETSC 3432	1	ug/l	< 1
Bromodichloromethane	DETSC 3432	4	ug/l	< 4
cis-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1
Toluene	DETSC 3432	1	ug/l	< 1
trans-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1
1,1,2-trichloroethane	DETSC 3432	1	ug/l	< 1
Tetrachloroethylene	DETSC 3432	1	ug/l	< 1
1,3-dichloropropane	DETSC 3432	1	ug/l	< 1
Dibromochloromethane	DETSC 3432	1	ug/l	< 1
1,2-dibromoethane	DETSC 3432	1	ug/l	< 1
Chlorobenzene	DETSC 3432	1	ug/l	< 1

Summary of Chemical Analysis
Water Samples

Our Ref 24-27209
Client Ref ~ PC248745
Contract Title ~ Margam Feed Phase 1

Lab No	2439958
Sample ID ~	BH112
Depth ~	4.50
Other ID ~	
Sample Type ~	GROUND WATER
Sampling Date ~	10/12/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
1,1,1,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1
Ethylbenzene	DETSC 3432	1	ug/l	< 1
m+p-Xylene	DETSC 3432	2	ug/l	< 2
o-Xylene	DETSC 3432	1	ug/l	< 1
Styrene	DETSC 3432	1	ug/l	< 1
Bromoform	DETSC 3432	1	ug/l	< 1
Isopropylbenzene	DETSC 3432	1	ug/l	< 1
1,1,2,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1
Bromobenzene	DETSC 3432	1	ug/l	< 1
1,2,3-trichloropropane	DETSC 3432	1	ug/l	< 1
n-propylbenzene	DETSC 3432	1	ug/l	< 1
2-chlorotoluene	DETSC 3432	1	ug/l	< 1
1,3,5-trimethylbenzene	DETSC 3432	1	ug/l	< 1
4-chlorotoluene	DETSC 3432	1	ug/l	< 1
Tert-butylbenzene	DETSC 3432	1	ug/l	< 1
1,2,4-trimethylbenzene	DETSC 3432	1	ug/l	< 1
sec-butylbenzene	DETSC 3432	1	ug/l	< 1
p-isopropyltoluene	DETSC 3432	1	ug/l	< 1
1,3-dichlorobenzene	DETSC 3432	2	ug/l	< 2
1,4-dichlorobenzene	DETSC 3432	1	ug/l	< 1
n-butylbenzene	DETSC 3432	1	ug/l	< 1
1,2-dichlorobenzene	DETSC 3432	1	ug/l	< 1
1,2-dibromo-3-chloropropane	DETSC 3432	1	ug/l	< 1
1,2,4-trichlorobenzene	DETSC 3432	1	ug/l	< 1
Hexachlorobutadiene	DETSC 3432	1	ug/l	< 1
1,2,3-trichlorobenzene	DETSC 3432	1	ug/l	< 1
MTBE	DETSC 3432*	1	ug/l	< 1

Information in Support of the Analytical Results

Our Ref 24-27209
Client Ref ~ PC248745
Contract ~ Margam Feed Phase 1

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2439958	BH112 4.50 GROUND WATER	10/12/24	GB 1L x2, GV x2, PB 1L	pH/Cond (1 days)	

Key: G-Glass P-Plastic B-Bottle V-Vial

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Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Key:

~ Sample details are provided by the client and can affect the validity of the results
***** -not accredited.
# -MCERTS (accreditation only applies if report carries the MCERTS logo).
$ -subcontracted.
n/s -not supplied.
I/S -insufficient sample.
U/S -unsuitable sample.
t/f -to follow.
nd -not detected.

End of Report

Certificate of Analysis

Certificate Number 24-27519 *Issued:* 07-Jan-25

Client Geotechnics LTD
203 Torrington Avenue
Tile Hill
Coventry
CV4 9AP

Our Reference 24-27519

Client Reference ~ PC248745

Order No ~ OC42474

Contract Title ~ Margam FEED (Phase 4 BOC)

Description 4 Soil samples, 2 Leachate prepared by DETS samples.

Date Received 17-Dec-24

Date Started 17-Dec-24

Date Completed 07-Jan-25

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. 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 certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Kirk Bridgewood
General Manager

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Summary of Chemical Analysis
Soil Samples

Our Ref 24-27519
Client Ref ~ PC248745
Contract Title ~ Margam FEED (Phase 4 BOC)

			Lab No	2441742	2441743	2441744	2441745
			Sample ID ~	BH401A	BH402	BH402	BH403
			Depth ~	0.25	0.15	1.00	0.25
			Other ID ~				
			Sample Type ~	ES	ES	ES	ES
			Sampling Date ~	12/12/2024	12/12/2024	12/12/2024	12/12/2024
			Sampling Time ~	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
Metals							
Arsenic	DETSC 2301#	0.2	mg/kg	9.8	30	15	25
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	0.7	1.0	1.6	1.8
Cadmium	DETSC 2301#	0.1	mg/kg	0.4	0.4	< 0.1	1.3
Chromium	DETSC 2301#	0.15	mg/kg	16	35	29	57
Chromium III	DETSC 2301*	0.15	mg/kg	16	35	29	57
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	14	32	9.4	79
Lead	DETSC 2301#	0.3	mg/kg	25	42	17	87
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	0.05	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	10	22	30	33
Zinc	DETSC 2301#	1	mg/kg	84	120	72	140
Inorganics							
pH	DETSC 2008#		pH	7.8	6.1	7.5	6.0
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.4	0.5	< 0.1	0.8
Organic matter	DETSC 2002#	0.1	%	5.7	4.3	1.0	5.9
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	190	58	12	110
Petroleum Hydrocarbons							
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10
PAHs							
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.03

Summary of Chemical Analysis
Soil Samples

Our Ref 24-27519
Client Ref ~ PC248745
Contract Title ~ Margam FEED (Phase 4 BOC)

			Lab No	2441742	2441743	2441744	2441745
			Sample ID ~	BH401A	BH402	BH402	BH403
			Depth ~	0.25	0.15	1.00	0.25
			Other ID ~				
			Sample Type ~	ES	ES	ES	ES
			Sampling Date ~	12/12/2024	12/12/2024	12/12/2024	12/12/2024
			Sampling Time ~	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.03
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10
Phenols							
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	1.8	1.2	< 0.3	5.1

Summary of Chemical Analysis
Soil Samples

Our Ref 24-27519
Client Ref ~ PC248745
Contract Title ~ Margam FEED (Phase 4 BOC)

			Lab No	2441742	2441743	2441744	2441745
			Sample ID ~	BH401A	BH402	BH402	BH403
			Depth ~	0.25	0.15	1.00	0.25
			Other ID ~				
			Sample Type ~	ES	ES	ES	ES
			Sampling Date ~	12/12/2024	12/12/2024	12/12/2024	12/12/2024
			Sampling Time ~	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
VOCs							
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Benzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01

Summary of Chemical Analysis
Soil Samples

Our Ref 24-27519
Client Ref ~ PC248745
Contract Title ~ Margam FEED (Phase 4 BOC)

			Lab No	2441742	2441743	2441744	2441745
			Sample ID ~	BH401A	BH402	BH402	BH403
			Depth ~	0.25	0.15	1.00	0.25
			Other ID ~				
			Sample Type ~	ES	ES	ES	ES
			Sampling Date ~	12/12/2024	12/12/2024	12/12/2024	12/12/2024
			Sampling Time ~	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
SVOCs							
Phenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aniline	DETSC 3433*	0.1	mg/kg	0.1	0.1	0.1	0.2
2-Chlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
3&4-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dimethylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Bis-(dichloroethoxy)methane	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
1,2,4-Trichlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4-Chloro-3-methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylnaphthalene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2,4,6-Trichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2-Chloronaphthalene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzofuran	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Diethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Diphenylamine	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4-Bromophenylphenylether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1

Summary of Chemical Analysis
Soil Samples

Our Ref 24-27519
Client Ref ~ PC248745
Contract Title ~ Margam FEED (Phase 4 BOC)

			Lab No	2441742	2441743	2441744	2441745
			Sample ID ~	BH401A	BH402	BH402	BH403
			Depth ~	0.25	0.15	1.00	0.25
			Other ID ~				
			Sample Type ~	ES	ES	ES	ES
			Sampling Date ~	12/12/2024	12/12/2024	12/12/2024	12/12/2024
			Sampling Time ~	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Di-n-octylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Azobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1

Summary of Chemical Analysis
Leachate Samples

Our Ref 24-27519
Client Ref ~ PC248745
Contract Title ~ Margam FEED (Phase 4 BOC)

Lab No	2441747
Sample ID ~	BH402
Depth ~	1.00
Other ID ~	
Sample Type ~	ES
Sampling Date ~	12/12/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Preparation				
BS EN 12457 10:1	DETSC 1009*			Y
BS EN 12457 10:1	DETSC 1009*			
Metals				
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	0.34
Boron, Dissolved	DETSC 2306*	12	ug/l	19
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03
Calcium, Dissolved	DETSC 2306	0.09	mg/l	1.1
Chromium, Dissolved	DETSC 2306	0.25	ug/l	0.40
Chromium III, Dissolved	DETSC 2306*	1	ug/l	< 1.0
Chromium, Hexavalent	DETSC 2203	7	ug/l	< 7.0
Copper, Dissolved	DETSC 2306	0.4	ug/l	0.4
Lead, Dissolved	DETSC 2306	0.09	ug/l	0.35
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	< 0.5
Selenium, Dissolved	DETSC 2306	0.25	ug/l	< 0.25
Vanadium, Dissolved	DETSC 2306	0.6	ug/l	1.2
Zinc, Dissolved	DETSC 2306	1.3	ug/l	1.6
Inorganics				
pH	DETSC 2008		pH	7.3
Cyanide, Total Low Level	DETSC 2131	0.1	ug/l	0.1
Cyanide, Free Low Level	DETSC 2131	0.1	ug/l	< 0.1
Cyanide, Complex Low Level	DETSC 2131	0.1	ug/l	0.1
Dissolved Organic Carbon	DETSC 2085	2	mg/l	< 2.0
Ammoniacal Nitrogen as NH4	DETSC 2207	0.0193	mg/l	< 0.02
Ammoniacal Nitrogen as NH3	DETSC 2207	0.0183	mg/l	< 0.018
Ammoniacal Nitrogen as N	DETSC 2207	0.015	mg/l	< 0.015
Nitrate as NO3	DETSC 2055	0.1	mg/l	0.88
Nitrate as N	*	0.1	mg/l	0.19
Nitrite as NO2	DETSC 2055	0.1	mg/l	0.25
Nitrite as N	DETSC 2201	0.035	mg/l	< 0.035
Sulphate as SO4	DETSC 2055	0.1	mg/l	3.7
PAHs				
Naphthalene	DETSC 3304	0.05	ug/l	< 0.05
Acenaphthylene	DETSC 3304	0.01	ug/l	< 0.01
Acenaphthene	DETSC 3304	0.01	ug/l	< 0.01
Fluorene	DETSC 3304	0.01	ug/l	< 0.01
Phenanthrene	DETSC 3304	0.01	ug/l	< 0.01
Anthracene	DETSC 3304	0.01	ug/l	< 0.01
Fluoranthene	DETSC 3304	0.01	ug/l	< 0.01
Pyrene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(a)anthracene	DETSC 3304*	0.01	ug/l	< 0.01

Summary of Chemical Analysis
Leachate Samples

Our Ref 24-27519
Client Ref ~ PC248745
Contract Title ~ Margam FEED (Phase 4 BOC)

Lab No	2441747
Sample ID ~	BH402
Depth ~	1.00
Other ID ~	
Sample Type ~	ES
Sampling Date ~	12/12/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Chrysene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	< 0.01
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l	< 0.01
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l	< 0.01
PAH Total	DETSC 3304	0.2	ug/l	< 0.20

Summary of Chemical Analysis
Leachate VOC/SVOC Samples

Our Ref 24-27519
Client Ref ~ PC248745
Contract Title ~ Margam FEED (Phase 4 BOC)

Lab No	2441747
Sample ID ~	BH402
Depth ~	1.00
Other ID ~	
Sample Type ~	ES
Sampling Date ~	12/12/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
VOCs				
Dichlorodifluoromethane	DETSC 3432	1	ug/l	< 1
Chloromethane	DETSC 3432	1	ug/l	< 1
Vinyl Chloride	DETSC 3432	1	ug/l	< 1
Bromomethane	DETSC 3432	1	ug/l	< 1
Chloroethane	DETSC 3432	1	ug/l	< 1
Trichlorofluoromethane	DETSC 3432*	1	ug/l	< 1
1,1-dichloroethylene	DETSC 3432	1	ug/l	< 1
Methylene Chloride	DETSC 3432*	27	ug/l	< 27
Trans-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1
1,1-dichloroethane	DETSC 3432	1	ug/l	< 1
Cis-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1
2,2-dichloropropane	DETSC 3432*	2	ug/l	< 2
Bromochloromethane	DETSC 3432	4	ug/l	< 4
Chloroform	DETSC 3432	1	ug/l	< 1
1,1,1-trichloroethane	DETSC 3432	1	ug/l	< 1
1,1-dichloropropene	DETSC 3432	1	ug/l	< 1
Carbon tetrachloride	DETSC 3432	1	ug/l	< 1
Benzene	DETSC 3432	1	ug/l	< 1
1,2-dichloroethane	DETSC 3432	1	ug/l	< 1
Trichloroethylene	DETSC 3432*	1	ug/l	< 1
1,2-dichloropropane	DETSC 3432	1	ug/l	< 1
Dibromomethane	DETSC 3432	1	ug/l	< 1
Bromodichloromethane	DETSC 3432	4	ug/l	< 4
cis-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1
Toluene	DETSC 3432	1	ug/l	< 1
trans-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1
1,1,2-trichloroethane	DETSC 3432	1	ug/l	< 1
Tetrachloroethylene	DETSC 3432	1	ug/l	< 1
1,3-dichloropropane	DETSC 3432	1	ug/l	< 1
Dibromochloromethane	DETSC 3432	1	ug/l	< 1
1,2-dibromoethane	DETSC 3432	1	ug/l	< 1
Chlorobenzene	DETSC 3432	1	ug/l	< 1
1,1,1,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1
Ethylbenzene	DETSC 3432	1	ug/l	< 1
m+p-Xylene	DETSC 3432	2	ug/l	< 2
o-Xylene	DETSC 3432	1	ug/l	< 1
Styrene	DETSC 3432	1	ug/l	< 1
Bromoform	DETSC 3432	1	ug/l	< 1
Isopropylbenzene	DETSC 3432	1	ug/l	< 1
1,1,2,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1
Bromobenzene	DETSC 3432	1	ug/l	< 1

Summary of Chemical Analysis
Leachate VOC/SVOC Samples

Our Ref 24-27519
Client Ref ~ PC248745
Contract Title ~ Margam FEED (Phase 4 BOC)

Lab No	2441747
Sample ID ~	BH402
Depth ~	1.00
Other ID ~	
Sample Type ~	ES
Sampling Date ~	12/12/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
1,2,3-trichloropropane	DETSC 3432	1	ug/l	< 1
n-propylbenzene	DETSC 3432	1	ug/l	< 1
2-chlorotoluene	DETSC 3432	1	ug/l	< 1
1,3,5-trimethylbenzene	DETSC 3432	1	ug/l	< 1
4-chlorotoluene	DETSC 3432	1	ug/l	< 1
Tert-butylbenzene	DETSC 3432	1	ug/l	< 1
1,2,4-trimethylbenzene	DETSC 3432	1	ug/l	< 1
sec-butylbenzene	DETSC 3432	1	ug/l	< 1
p-isopropyltoluene	DETSC 3432	1	ug/l	< 1
1,3-dichlorobenzene	DETSC 3432	2	ug/l	< 2
1,4-dichlorobenzene	DETSC 3432	1	ug/l	< 1
n-butylbenzene	DETSC 3432	1	ug/l	< 1
1,2-dichlorobenzene	DETSC 3432	1	ug/l	< 1
1,2-dibromo-3-chloropropane	DETSC 3432	1	ug/l	< 1
1,2,4-trichlorobenzene	DETSC 3432	1	ug/l	< 1
Hexachlorobutadiene	DETSC 3432	1	ug/l	< 1
1,2,3-trichlorobenzene	DETSC 3432	1	ug/l	< 1
MTBE	DETSC 3432*	1	ug/l	< 1
SVOCs				
Phenol	DETSC 3434*	1	ug/l	< 1.0
Aniline	DETSC 3434*	1	ug/l	< 1.0
2-Chlorophenol	DETSC 3434*	1	ug/l	< 1.0
Benzyl Alcohol	DETSC 3434*	1	ug/l	< 1.0
2-Methylphenol	DETSC 3434*	1	ug/l	< 1.0
Bis(2-chloroisopropyl)ether	DETSC 3434*	1	ug/l	< 1.0
3&4-Methylphenol	DETSC 3434*	1	ug/l	< 1.0
Bis(2-chloroethoxy)methane	DETSC 3434*	1	ug/l	< 1.0
2,4-Dimethylphenol	DETSC 3434*	1	ug/l	< 1.0
2,4-Dichlorophenol	DETSC 3434*	1	ug/l	< 1.0
1,2,4-Trichlorobenzene	DETSC 3434*	1	ug/l	< 1.0
4-Chloro-3-methylphenol	DETSC 3434*	1	ug/l	< 1.0
2-Methylnaphthalene	DETSC 3434*	1	ug/l	< 1.0
Hexachlorocyclopentadiene	DETSC 3434*	1	ug/l	< 1.0
2,4,6-Trichlorophenol	DETSC 3434*	1	ug/l	< 1.0
2,4,5-Trichlorophenol	DETSC 3434*	1	ug/l	< 1.0
2-Chloronaphthalene	DETSC 3434*	1	ug/l	< 1.0
2-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0
2,4-Dinitrotoluene	DETSC 3434*	1	ug/l	< 1.0
3-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0
4-Nitrophenol	DETSC 3434*	1	ug/l	< 1.0
Dibenzofuran	DETSC 3434*	1	ug/l	< 1.0
2,6-Dinitrotoluene	DETSC 3434*	1	ug/l	< 1.0

Summary of Chemical Analysis
Leachate VOC/SVOC Samples

Our Ref 24-27519
Client Ref ~ PC248745
Contract Title ~ Margam FEED (Phase 4 BOC)

Lab No	2441747
Sample ID ~	BH402
Depth ~	1.00
Other ID ~	
Sample Type ~	ES
Sampling Date ~	12/12/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
2,3,4,6-Tetrachlorophenol	DETSC 3434*	1	ug/l	< 1.0
Diethylphthalate	DETSC 3434*	1	ug/l	< 1.0
4-Chlorophenylphenylether	DETSC 3434*	1	ug/l	< 1.0
4-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0
Diphenylamine	DETSC 3434*	1	ug/l	< 1.0
4-Bromophenylphenylether	DETSC 3434*	1	ug/l	< 1.0
Hexachlorobenzene	DETSC 3434*	1	ug/l	< 1.0
Bis(2-ethylhexyl)ester	DETSC 3434*	1	ug/l	< 1.0
Pentachlorophenol	DETSC 3434*	1	ug/l	< 1.0
Di-n-butylphthalate	DETSC 3434*	1	ug/l	< 1.0
Butylbenzylphthalate	DETSC 3434*	1	ug/l	< 1.0
Bis(2-ethylhexyl)phthalate	DETSC 3434*	1	ug/l	< 1.0
Di-n-octylphthalate	DETSC 3434*	1	ug/l	< 1.0
1,4-Dinitrobenzene	DETSC 3434*	1	ug/l	< 1.0
Dimethylphthalate	DETSC 3434*	1	ug/l	< 1.0
1,3-Dinitrobenzene	DETSC 3434*	1	ug/l	< 1.0
2,3,5,6-Tetrachlorophenol	DETSC 3434*	1	ug/l	< 1.0
Azobenzene	DETSC 3434*	1	ug/l	< 1.0
Carbazole	DETSC 3434*	1	ug/l	< 1.0
1-Methylnaphthalene	DETSC 3434*	1	ug/l	< 1.0

WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 24-27519
Client Ref PC248745
Contract Title Margam FEED (Phase 4 BOC)
Sample Id BH401A 0.25

Sample Numbers 2441742 2441746
Date Analysed 03/01/2025

Test Results On Waste

Determinand and Method Reference	Units	Result	WAC Limit Values Inert Waste	SNRHW	Hazardous Waste
DETSC 2084# Total Organic Carbon	%	6.3	3	5	6
DETSC 2003# Loss On Ignition	%	10.0	n/a	n/a	10
DETSC3321# BTEX	mg/kg		6	n/a	n/a
DETSC3401# PCB's (7 congeners)	mg/kg		1	n/a	n/a
DETSC 3311# Mineral Oil	mg/kg		500	n/a	n/a
DETSC3301/DETSC3303 PAH's	mg/kg		100	n/a	n/a
DETSC2008# pH	pH Units		n/a	>6	n/a
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	1.2	n/a	TBE	TBE
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0	n/a	TBE	TBE

Test Results On Leachate

Determinand and Method Reference	Conc in Eluate ug/l 10:1	Amount Leached* mg/kg LS10	WAC Limit Values (Limit values for LS10 Leachate) Inert Waste	SNRHW	Hazardous Waste
DETSC 2306 Arsenic as As	1.3	0.01	0.5	2	25
DETSC 2306 Barium as Ba	6.4	< 0.1	20	100	300
DETSC 2306 Cadmium as Cd	< 0.030	< 0.02	0.04	1	5
DETSC 2306 Chromium as Cr	0.69	< 0.1	0.5	10	70
DETSC 2306 Copper as Cu	1.8	< 0.02	2	50	100
DETSC 2306 Mercury as Hg	< 0.010	< 0.002	0.01	0.2	2
DETSC 2306 Molybdenum as Mo	< 1.1	< 0.1	0.5	10	30
DETSC 2306 Nickel as Ni	< 0.50	< 0.1	0.4	10	40
DETSC 2306 Lead as Pb	9.1	0.09	0.5	10	50
DETSC 2306 Antimony as Sb	< 0.17	< 0.05	0.06	0.7	5
DETSC 2306 Selenium as Se	< 0.25	< 0.03	0.1	0.5	7
DETSC 2306 Zinc as Zn	7.9	0.08	4	50	200
DETSC 2055 Chloride as Cl	5000	< 100	800	15,000	25,000
DETSC 2055* Fluoride as F	< 100	< 0.1	10	150	500
DETSC 2055 Sulphate as SO4	4200	< 100	1000	20,000	50,000
DETSC 2009* Total Dissolved Solids	50000	500	4000	60,000	100,000
DETSC 2130 Phenol Index	< 100	< 1	1	n/a	n/a
DETSC 2085 Dissolved Organic Carbon	< 2000	< 50	500	800	1000

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive Hazardous Waste

Additional Information

DETSC 2008 pH	6.9
DETSC 2009 Conductivity uS/cm	71.9
* Temperature*	17.0

Mass of Sample Kg*	0.120
Mass of dry Sample Kg*	0.096

Stage 1

Volume of Leachant L2*	0.937
Volume of Eluate VE1*	0.889

Disclaimer: *The WAC limit values are provided for guidance only. DETS does not accept responsibility for errors or omissions. Values are correct at time of issue.*

V.2.06 ** DETS are accredited for the testing of leachates and not the leachate preparation stage which is unaccredited.*

Summary of Asbestos Analysis
Soil Samples

Our Ref 24-27519
Client Ref ~ PC248745
Contract Title ~ Margam FEED (Phase 4 BOC)

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2441742	BH401A 0.25	SOIL	NAD	none	Keith Wilson
2441743	BH402 0.15	SOIL	NAD	none	Keith Wilson
2441744	BH402 1.00	SOIL	NAD	none	Keith Wilson
2441745	BH403 0.25	SOIL	NAD	none	Keith Wilson

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 24-27519
Client Ref ~ PC248745
Contract ~ Margam FEED (Phase 4 BOC)

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2441742	BH401A 0.25 SOIL	12/12/24	GJ 250ml, GJ 60ml x2, PT 1L		
2441743	BH402 0.15 SOIL	12/12/24	GJ 250ml, GJ 60ml x2, PT 1L		
2441744	BH402 1.00 SOIL	12/12/24	GJ 250ml, GJ 60ml x2, PT 1L		
2441745	BH403 0.25 SOIL	12/12/24	GJ 250ml, GJ 60ml x2, PT 1L		
2441746	BH401A 0.25 LEACHATE	12/12/24	GJ 250ml, GJ 60ml x2, PT 1L		
2441747	BH402 1.00 LEACHATE	12/12/24	GJ 250ml, GJ 60ml x2, PT 1L		VOC

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.
Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.
The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Key:

~ Sample details are provided by the client and can affect the validity of the results
***** -not accredited.
# -MCERTS (accreditation only applies if report carries the MCERTS logo).
$ -subcontracted.
n/s -not supplied.
I/S -insufficient sample.
U/S -unsuitable sample.
t/f -to follow.
nd -not detected.

End of Report

APPENDIX 14

Investigation Techniques and General Notes

INVESTIGATION TECHNIQUES

INTRODUCTION

The following brief review of Ground Investigation techniques, generally used as part of most Site Investigations in the UK, summarises their methodology, advantages and limitations. Detailed descriptions of the techniques are available and can be provided on request. This review should be read in conjunction with the accompanying General Notes.

TRIAL PITS

The trial pit is amongst the simplest yet most effective means of identifying shallow ground conditions on a site. Its advantages include simplicity, speed, potential accuracy and cost-effectiveness. The trial pit is most commonly formed using a back-acting excavator which can typically determine ground conditions to some 4 metres below ground level. Hand excavation is often used to locate, expose and detail existing foundations, features or services. In general, it is difficult to extend pits significantly below the water table in predominantly granular soils, where flows can cause instability. Unless otherwise stated, the trial pits will not have been provided with temporary side support during their construction. Under such circumstances, entrance into the pit is not permitted and hence observations will have been made from the ground surface and samples taken from the excavator bucket.

Where access for personnel is required to allow close observation of the exposed strata, the taking of samples and the carrying out of in situ tests, the sides of the trial pits (Observation Pits in BS 5930:2015) will be made safe using temporary supports or the sides battered back to a stable angle. Some limited access to such Trial Pits (Observation Pits) at depths less than 1m may be allowed in stable conditions or where the sides are benched or battered back to a safe angle.

Trends in strata type, level and thickness can be determined, shear surfaces identified and the behaviour of plant, excavation sides and excavated materials can be related to the construction process. They are particularly valuable in land slip investigations. Some types of in situ test can be undertaken in such pits and large disturbed or block samples obtained.

CABLE PERCUSSION BORING

The light Cable Percussion technique of soft ground boring, typically at a diameter of 150mm, is a well-established simple and flexible method of boring vertical holes and generally allows data to be obtained in respect of strata conditions other than rock. A tubular cutter (for cohesive soils) or shell with a flap valve (for granular soils) is repeatedly lifted and dropped using a winch and rope operating from an "A" frame. Soil which enters these tools is regularly removed and either sampled for subsequent examination or test, or laid to one side for later removal off site and licensed disposal or, if permitted by the Client, use as backfill. Steel casing will have been used to prevent collapse of the borehole sides where necessary. A degree of disturbance of soil and mixing of layers is inevitable and the presence of very thin layers of different soils within a particular stratum may not be identified. Changes in strata type can only be detected on recognition of a change in soil samples at the surface, after the interface has been passed. For the foregoing reasons, depth measurements should not be considered to be more accurate than 0.10 metre. The technique can determine ground conditions to depths in excess of 30 metres under suitable circumstances and usually causes less surface disturbance than trial pitting.

In cohesive soils cylindrical samples are retrieved by driving or pushing in 100mm nominal diameter tubes. In soft soils, piston sampling or vane testing may be undertaken. In granular soils and often in cohesive materials, in situ Standard Penetration Tests (SPT's) are performed. The SPT records the number of standard blows required to drive a 50mm diameter open or cone ended probe for 300mm after an initial 150mm penetration. A modified method of recording is used in denser strata. Small disturbed samples are obtained throughout.

ROTARY DRILLING

Rotary Drilling to produce cores by rotating an annular diamond-impregnated tube or barrel into the ground is the technique most appropriate to the forming of site investigation boreholes through rock or other hard strata. It has the advantage of being able to be used vertically or at an angle. Core diameters of less than 100mm are most common for site investigation purposes. Core is normally retrieved in plastic lining tubes. A flushing fluid such as air, water or foam is used to cool the bit and carry cuttings to the surface. Depths in excess of 60 metres can be achieved under suitable circumstances using rotary techniques, with minimal surface disturbance.

Examination of cores allows detailed rock description and generally enables angled discontinuity surfaces to be observed. However, vertical holes do not necessarily reveal the presence of vertical or near-vertical fissures or joint discontinuities. The core type and/or techniques used will depend on the ground conditions. Where open hole rotary drilling is employed, descriptions of strata result from examination at the surface of small particles ejected from the borehole in the flushing medium. In consequence, no indication of fissuring, bedding, consistency or degree of weathering can be obtained.

DYNAMIC SAMPLING

This technique involves the driving of an open-ended tube into the ground and retrieval of the soil which enters the tube. It was previously called window or windowless sampling. The term "window sample" arose from the original device which had a "window" or slot cut into the side of the tube through which samples were taken. This was superseded by the use of a thin-walled plastic liner to retrieve the soil sample from within a sampler (windowless sampling) which has a solid wall. Line diameters range from 36 to 86mm. Such samples can be used for qualitative logging, selection of samples for classification and chemical analysis and for obtaining a rudimentary assessment of strength.

Driving devices can be hand-held or machine mounted and the drive tubes are typically in 1m lengths. Depending on the type of rig used, the hole formed can be cased to prevent collapse of the borehole sides. Where the type of rig does not allow the insertion of casing, the success of this technique can be limited when soils and groundwater conditions are such that the sides of the hole collapse on withdrawal of the sampler. Obstructions within the ground, the density of the material or its strength can also limit the depth and rate of penetration of this light-weight investigation technique. Nevertheless, it is a valuable tool where access is constrained such as within buildings or on embankments. Depths of up to 10m can be achieved in suitable circumstances depending on the rig type but depths of 5m to 6m are more common.

EXPLORATORY HOLE RECORDS

The data obtained by these techniques are generally presented on Trial Pit, Borehole, Drillhole or Dynamic Sample Records. The descriptions of strata result from information gathered from a number of sources which may include published geological data, preliminary field observations and descriptions, in situ test results, laboratory test results and specimen descriptions. A key to the symbols and abbreviations used accompanies the records. The descriptions on the exploratory hole records accommodate but may not necessarily be identical to those on any preliminary records or the laboratory summaries.

The records show ground conditions at the exploratory hole locations. The degree to which they can be used to represent conditions between or beyond such holes, however, is a matter for geological interpretation rather than factual reporting and the associated uncertainties must be recognised.

DYNAMIC PROBING

This technique typically measures the number of blows of a standard weight falling over a standard height to advance a cone-ended rod over sequential standard distances (typically 100mm). Some devices measure the penetration of the probe per standard blow. It is essentially a profiling tool and is best used in conjunction with other investigation techniques where site-specific correlation can be used to delineate the distribution of soft or loose soils or the upper horizon of a dense or strong layer such as rock.

Both machine-driven and hand-driven equipment is available, the selection depending upon access restrictions and the depth of penetration required. It is particularly useful where access for larger equipment is not available, disturbance is to be minimised or where there are cost constraints. No samples are recovered and some techniques leave a sacrificial cone head in the ground. As with other lightweight techniques, progress is limited in strong or dense soils. The results are presented both numerically and graphically. Depths of up to 10m are commonly achieved in suitable circumstances.

The hand-driven DCP probing device has been calibrated by the Highways Agency to provide a profile of CBR values over a range of depths.

INSTRUMENTATION

The most common form of instrument used in site investigation is either the standpipe or else the standpipe piezometer which can be installed in investigation holes. They are used to facilitate monitoring of groundwater levels and water sampling over a period of time following site work. Normally a standpipe would be formed using rigid plastic tubing which has been perforated or slotted over much of its length whilst a standpipe piezometer would have a filter tip which would be placed at a selected level and the hole sealed above and sometimes below to isolate the zone of interest. Groundwater levels are determined using an electronic "dip meter" to measure the depth to the water surface from ground level. Piezometers can also be used to measure permeability. They are simple and inexpensive instruments for long term monitoring but response times can limit their use in tidal areas and access to the ground surface at each instrument is necessary. Remote reading requires more sophisticated hydraulic, electronic or pneumatic equipment.

Settlement can be monitored using surface or buried target plates whilst lateral movement over a range of depths is monitored using slip indicator or inclinometer equipment.

GENERAL NOTES

1. *The report is prepared for the exclusive use of the Client named in the document and copyright subsists with Geotechnics Limited. Prior written permission must be obtained to reproduce all or part of the report. It is prepared on the understanding that its contents are only disclosed to parties directly involved in the current investigation, preparation and development of the site.*

2. *Further copies may be obtained with the Client's written permission, from Geotechnics Limited with whom the master copy of the document will be retained.*

3. *The report and/or opinion is prepared for the specific purpose stated in the document and in relation to the nature and extent of proposals made available to Geotechnics Limited at that time. Re-consideration will be necessary should those details change. The recommendations should not be used for other schemes on or adjacent to the site without further reference to Geotechnics Limited.*

4. *The assessment of the significance of the factual data, where called for, is provided to assist the Client and their Engineer and/or Advisers in the preparation of their designs.*

5. *The report is based on the ground conditions encountered in the exploratory holes together with the results of field and laboratory testing in the context of the proposed development. The data from any commissioned desk study and site reconnaissance are also drawn upon. There may be special conditions appertaining to the site, however, which are not revealed by the investigation and which may not be taken into account in the report.*

6. *Methods of construction and/or design other than those proposed by the designers or referred to in the report may require consideration during the evolution of the proposals and further assessment of the geotechnical and any geoenvironmental data would be required to provide discussion and evaluations appropriate to these methods.*

7. *The accuracy of results reported depends upon the technique of measurement, investigation and test used and these values should not be regarded necessarily as characteristics of the strata as a whole (see accompanying notes on Investigation Techniques). Where such measurements are critical, the technique of investigation will need to be reviewed and supplementary investigation undertaken in accordance with the advice of the Company where necessary.*

8. *The samples selected for laboratory test are prepared and tested in accordance with the relevant Clauses and Parts of BS EN ISO 17892 and BS 1377 Parts 1 to 8, where appropriate, in Geotechnics Limited's UKAS accredited Laboratory, where possible. A list of tests is given.*

9. *Tests requiring the use of another laboratory having UKAS accreditation where possible are identified.*

10. *Any unavoidable variations from specified procedures are identified in the report.*

11. *Specimens are cut vertically, where this is relevant and can be identified, unless otherwise stated*

12. *All the data required by the test procedures are recorded on individual test sheets but the results in the report are presented in summary form to aid understanding and assimilation for design purposes. Where all details are required, these can be made available.*

13. *Whilst the report may express an opinion on possible configurations of strata between or beyond exploratory holes, or on the possible presence of features based on either visual, verbal, written, cartographical, photographic or published evidence, this is for guidance only and no liability can be accepted for its accuracy.*

14. *The Code of Practice for Ground Investigations – BS 5930:2015 calls for man-made soils to be described as Anthropogenic Ground with soils placed in an un-controlled manner classified as Made Ground and soils placed in a controlled manner as Fill. In view of the difficulty in always accurately determining the origin of man-made soils in exploratory holes, Geotechnics Limited classify such materials as Made Ground. Where soils can be clearly identified as being placed in a controlled manner then further classification of the soils as Fill has been added to the Exploratory Hole Records.*

15. *Classification of man-made soils is based on the inspection of retrieved samples or exposed excavations. Where it is obvious that foreign matter such as paper, plastic or metal is present, classification is clear. Frequently, however, for man-made soils that arise from the adjacent ground or from the backfilling of excavations, their visual characteristics can closely resemble those of undisturbed ground. Other evidence such as site history, exploratory hole location or other tests may need to be drawn upon to provide clarification. For these reasons, classification of soils on the exploratory hole records as either Made Ground or naturally occurring strata, the boundary between them and any interpretation that this gives rise to should be regarded as provisional and subject to re-evaluation in the light of further data.*

16. *The classification of materials as Topsoil is generally based on visual description and should not be interpreted to mean that the material so described complies with the criteria for Topsoil used in BS 3882:2015. Specific testing would be necessary where such a definition is a requirement.*

17. *Ground conditions should be monitored during the construction of the works and the report should be re-evaluated in the light of these data by the supervising geotechnical engineers.*

18. *Any comments on groundwater conditions are based on observations made at the time of the investigation, unless specifically stated otherwise. It should be noted, however, that the observations are subject to the method and speed of boring, drilling or excavation and that groundwater levels will vary due to seasonal or other effects.*

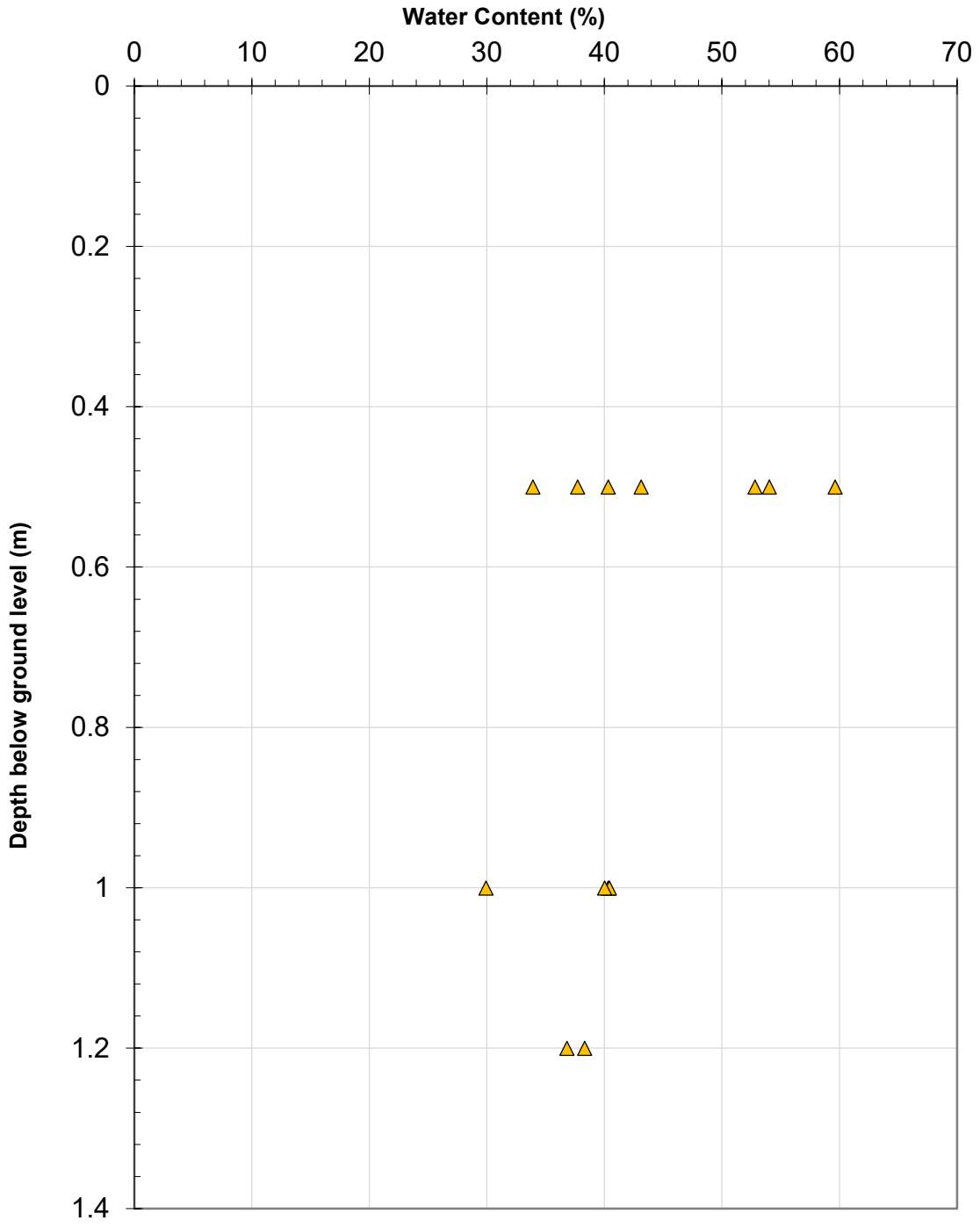
19. *Any bearing capacities for conventional spread foundations which are given in the report and interpreted from the investigation are for bases at a minimum depth of 1m below finished ground level in naturally occurring strata and at broadly similar levels throughout individual structures, unless otherwise stated. Typically they are based on serviceability criteria taking account of an assessment of the shear strength and/or density data obtained by the investigation. The foundations should be designed in accordance with the good practice embodied in BS 8004:2015 - Foundations, supplemented for housing by NHBC Standards. Foundation design is an iterative process and bearing pressures may need adjustment or other measures may need to be taken in the context of final layouts and levels prior to finalisation of proposals.*

20. *Unless specifically stated, the investigation does not take account of the possible effects of mineral extraction or of gases from fill or natural sources within, below or outside the site.*

21. *The costs or economic viability of the proposals referred to in the report, or of the solutions put forward to any problems encountered, will depend on very many factors in addition to geotechnical or geoenvironmental considerations and hence their evaluation is outside the scope of the report.*

Appendix B. Graphical Plots

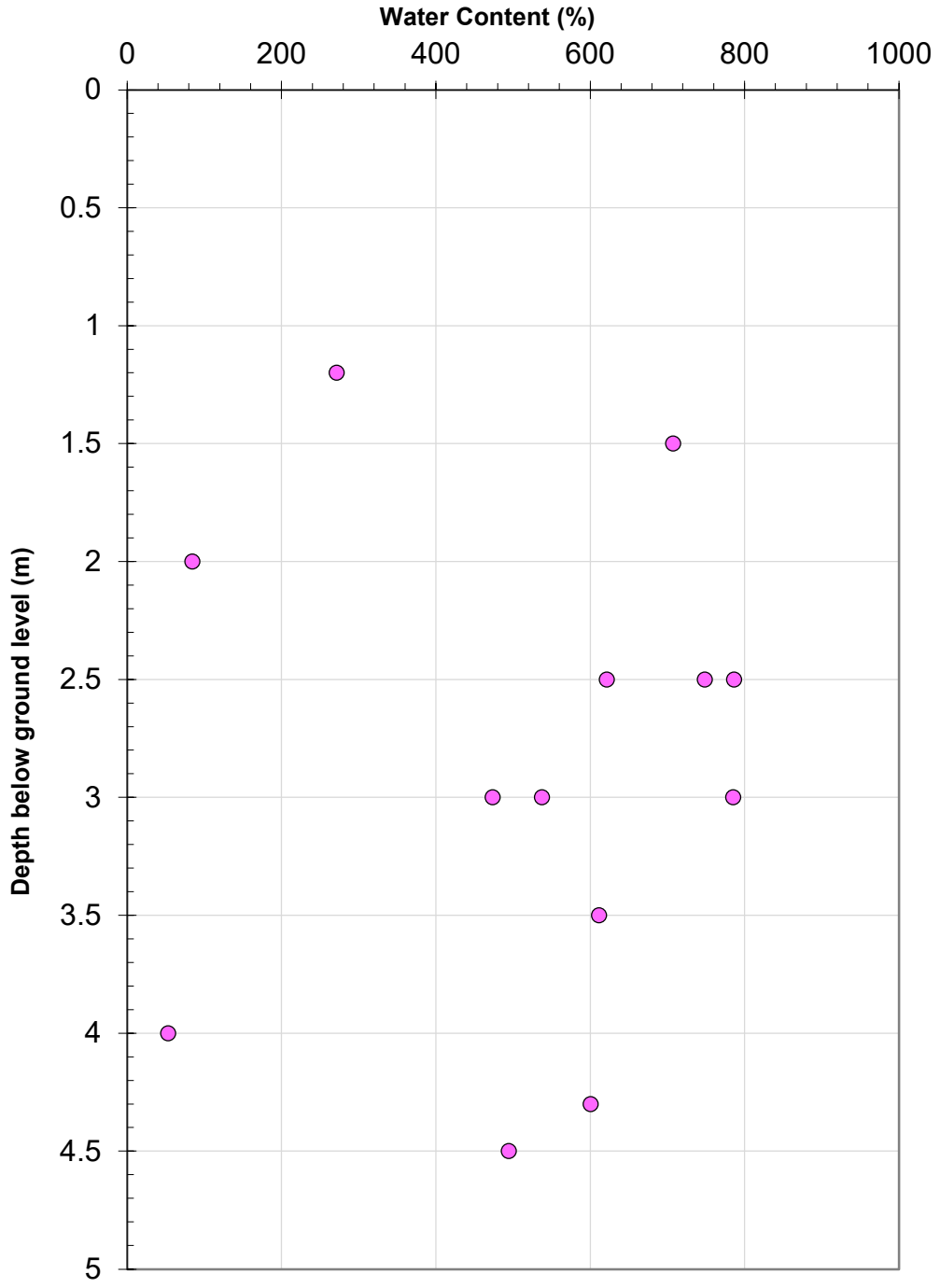
Client	Laing O'Rourke
Project	Margam Substation - LoR
Title	Moisture Content (%) vs Depth (m) - TFD Cohesive



BakerHicks

PREPARED BY	JT	JOB No.	30004595
CHECKED	VB	Fig No.	B.1
APPROVED	PDH	DATE	Jan-25

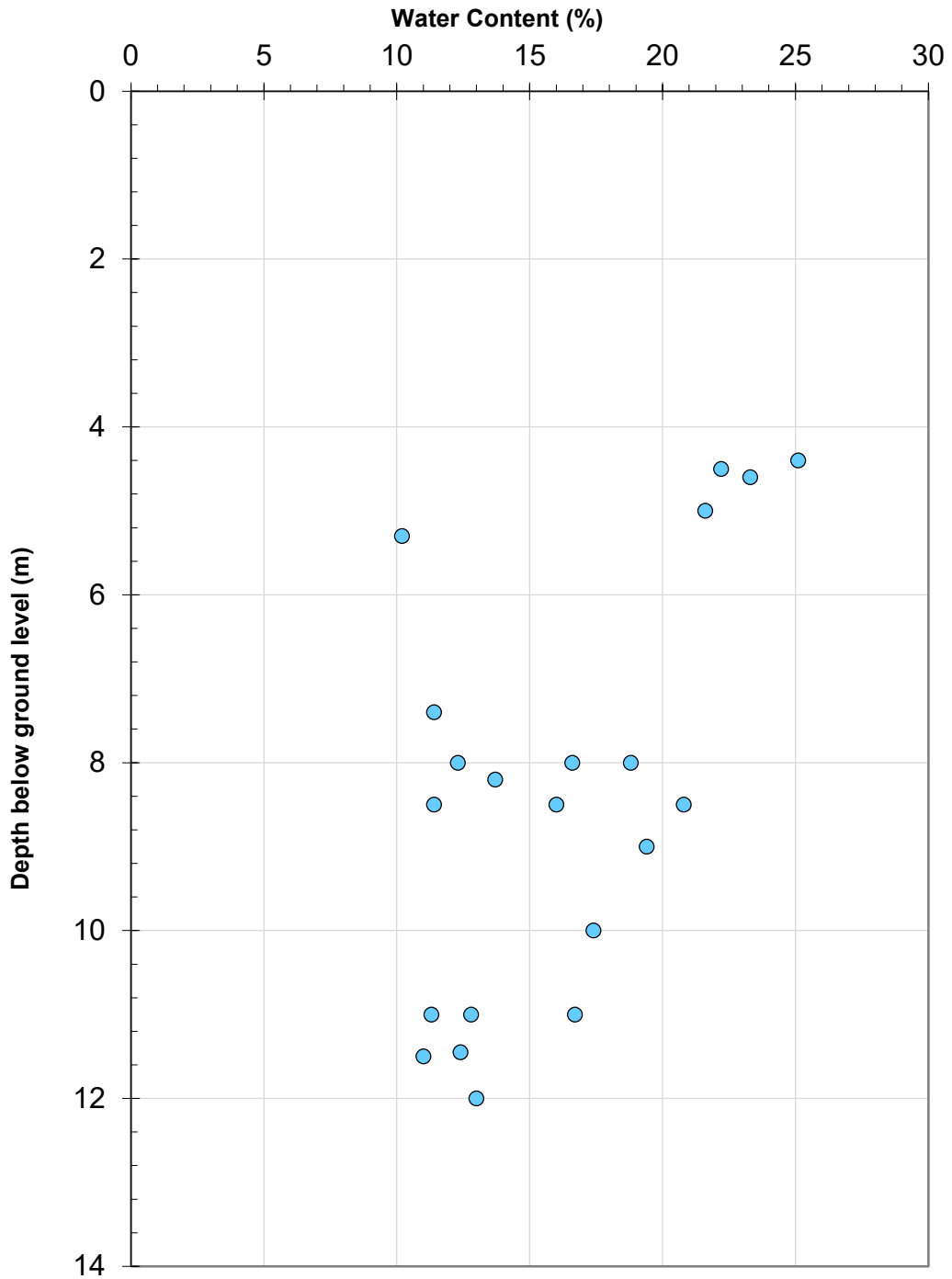
Client	Laing O'Rourke
Project	Margam Substation - LoR
Title	Moisture Content (%) vs Depth (m) - Peat



BakerHicks

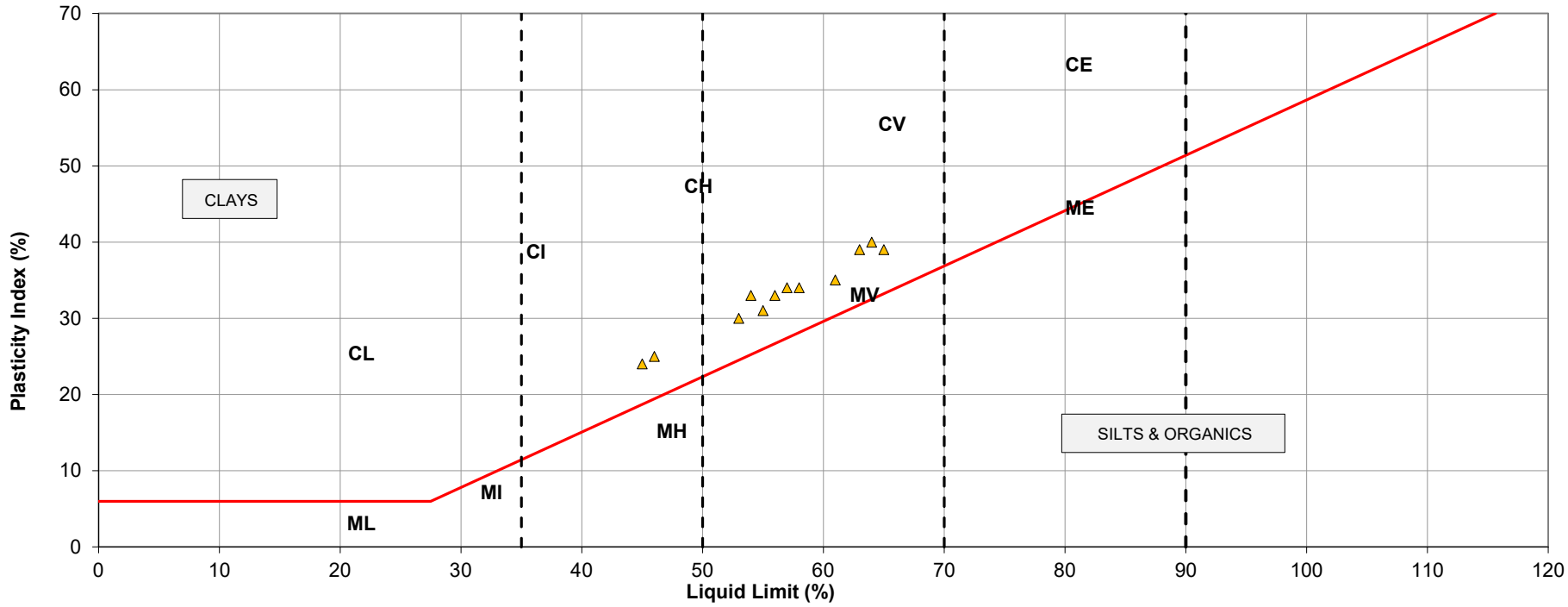
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CHECKED	VB	Fig No.	B.2
APPROVED	PDH	DATE	Jan-25

Client	Laing O'Rourke
Project	Margam Substation - LoR
Title	Moisture Content (%) vs Depth (m) - Glacial Deposits Cohesive



BakerHicks.	PREPARED BY	JT	JOB No.	30004595
	CHECKED	VB	Fig No.	B.3
	APPROVED	PDH	DATE	Jan-25

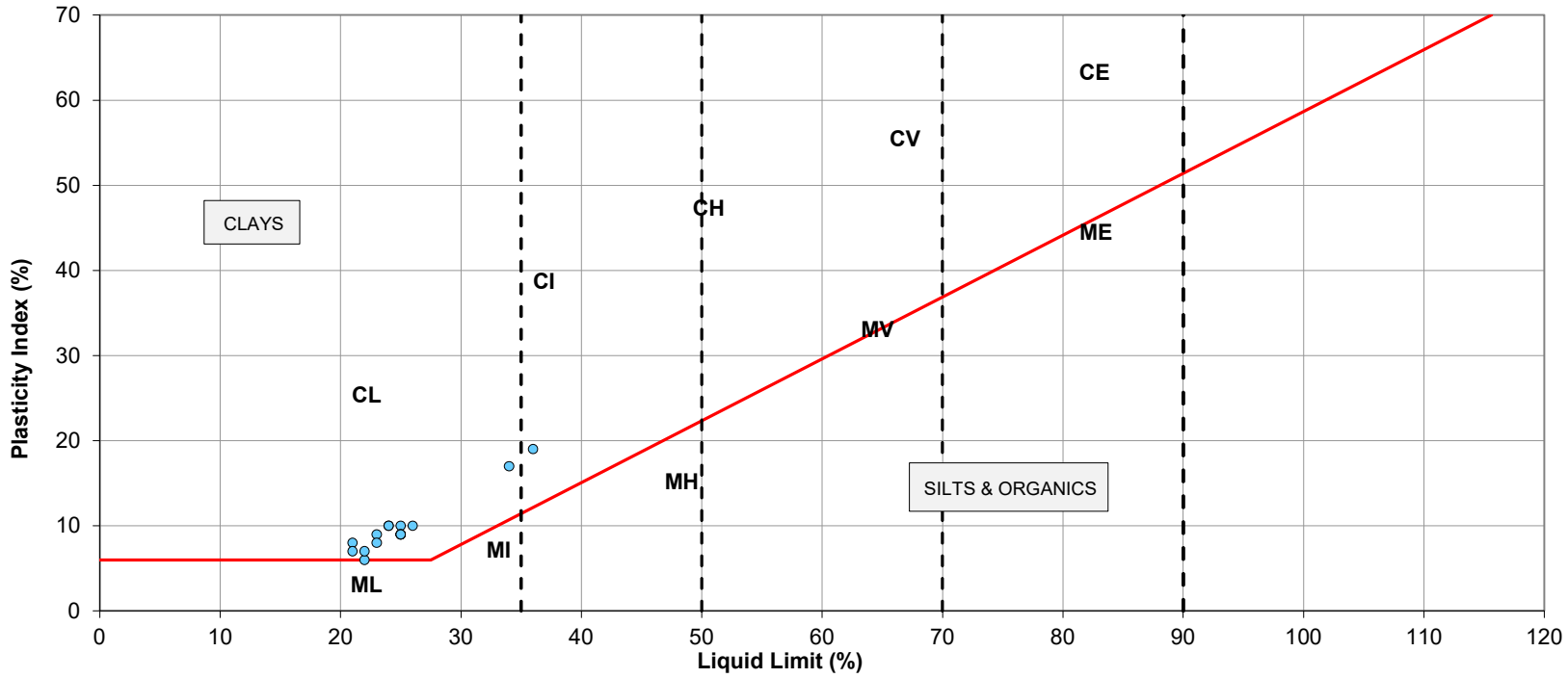
Client	Laing O'Rourke
Job	Margam Substation - LoR
Title	Liquid Limit (%) vs Plasticity Index (%) - TFD Cohesive



BakerHicks.

PREPARED BY	JT	JOB No.	30004595
CHECKED	VB	Fig No.	B.4
APPROVED	PDH	DATE	Jan-25

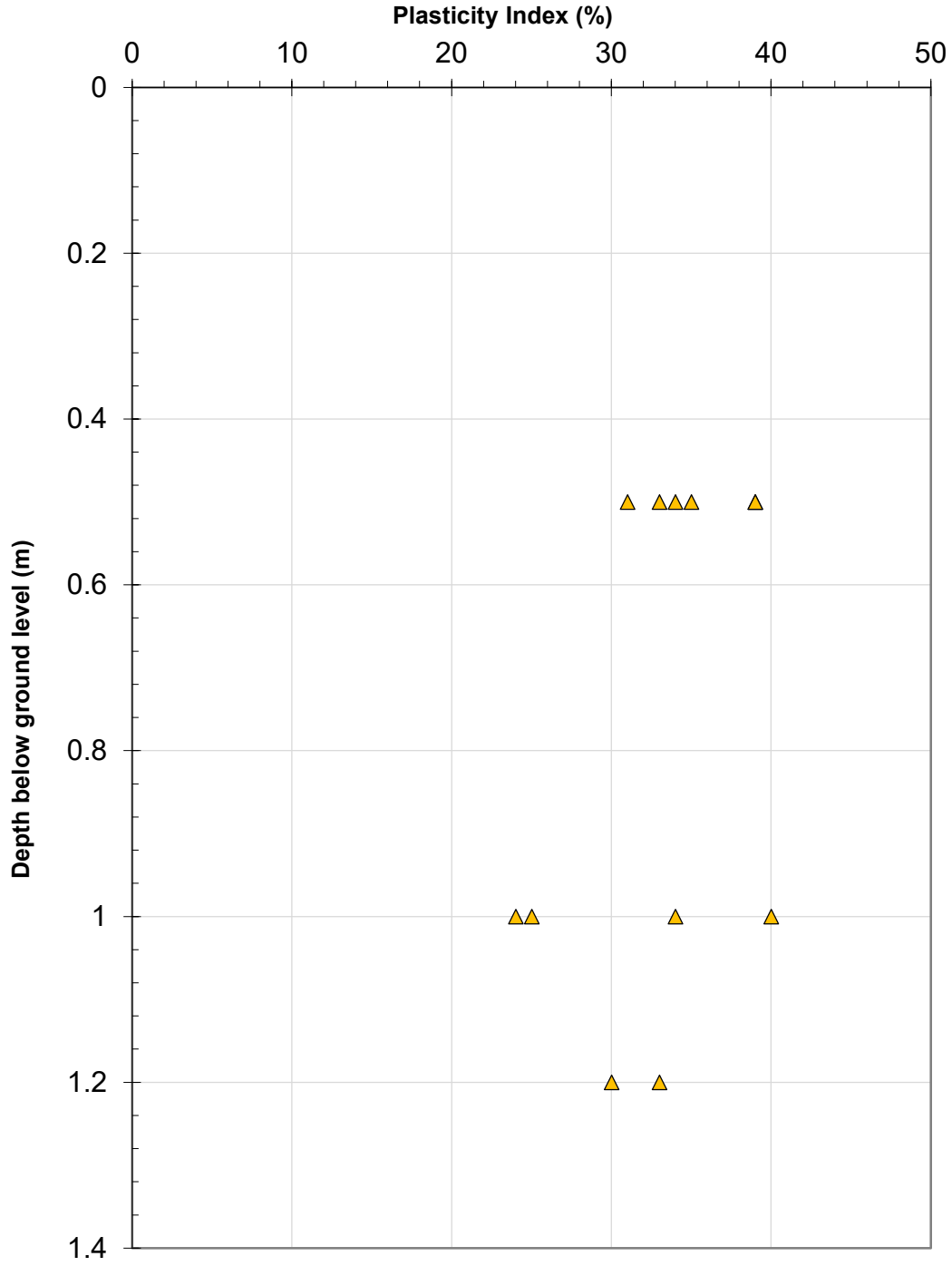
Client	Laing O'Rourke
Job	Margam Substation - LoR
Title	Liquid Limit (%) vs Plasticity Index (%) - Glacial Deposits Cohesive



BakerHicks

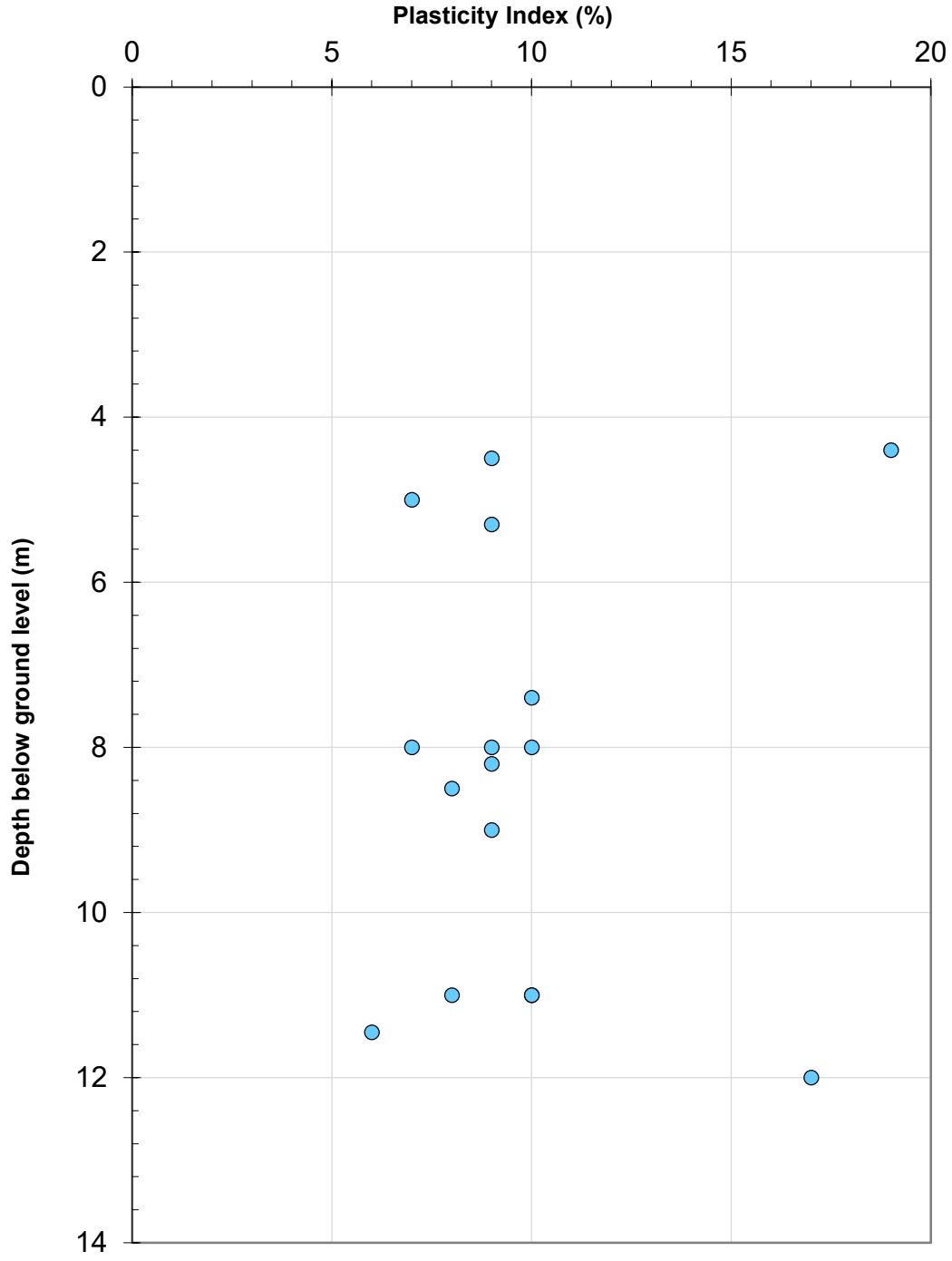
PREPARED BY	JT	JOB No.	30004595
CHECKED	VB	Fig No.	B.5
APPROVED	PDH	DATE	Jan-25

Client	Laing O'Rourke
Project	Margam Substation - LoR
Title	Plasticity index (%) vs Depth (m) - TFD Cohesive



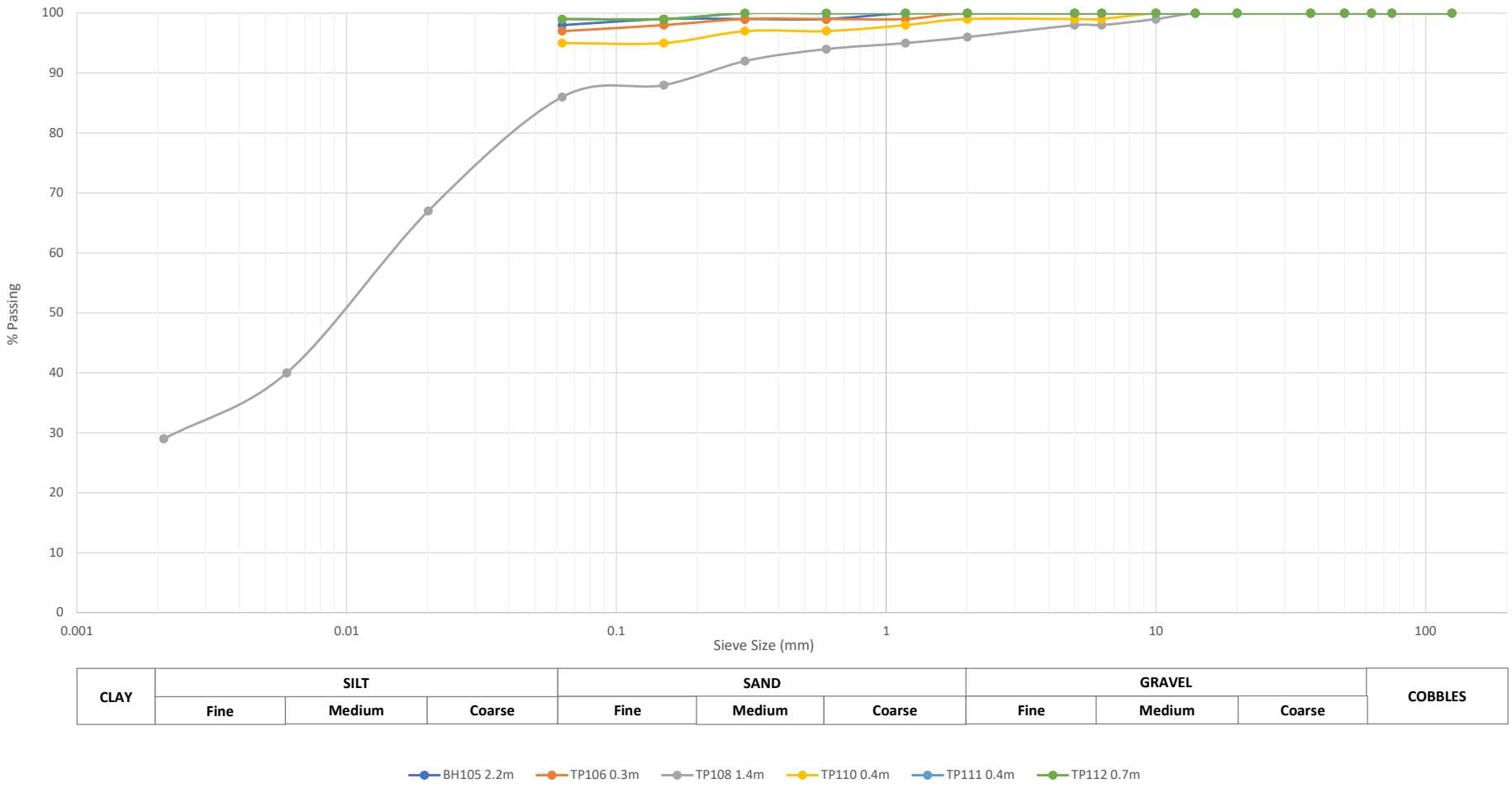
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	CHECKED	VB	Fig No.	B.6
	APPROVED	PDH	DATE	Jan-25

Client	Laing O'Rourke
Project	Margam Substation - LoR
Title	Plasticity index (%) vs Depth (m) - Glacial Deposits Cohesive



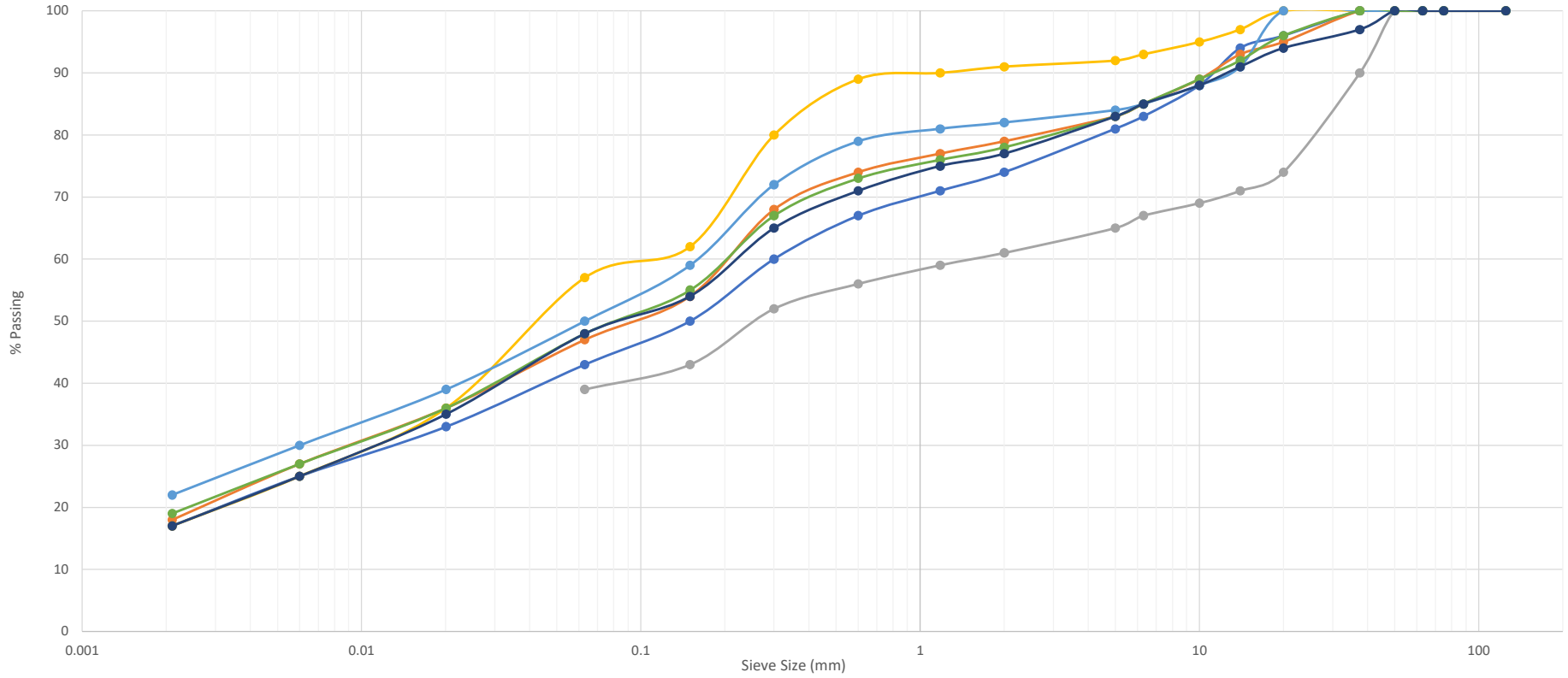
BakerHicks.	PREPARED BY	JT	JOB No.	30004595
	CHECKED	VB	Fig No.	B.7
	APPROVED	PDH	DATE	Jan-25

Client	Laing O'Rourke
Job	Margam Substation - LoR
Title	PSD Plot - TFD Cohesive



BakerHicks.	PREPARED BY	JT	Job No.	30004595
	CHECKED	VB	Fig No.	B.8
	APPROVED	PDH	DATE	Jan-25

Client	Laing O'Rourke
Job	Margam Substation - LoR
Title	PSD Plot - Glacial Deposits Cohesive



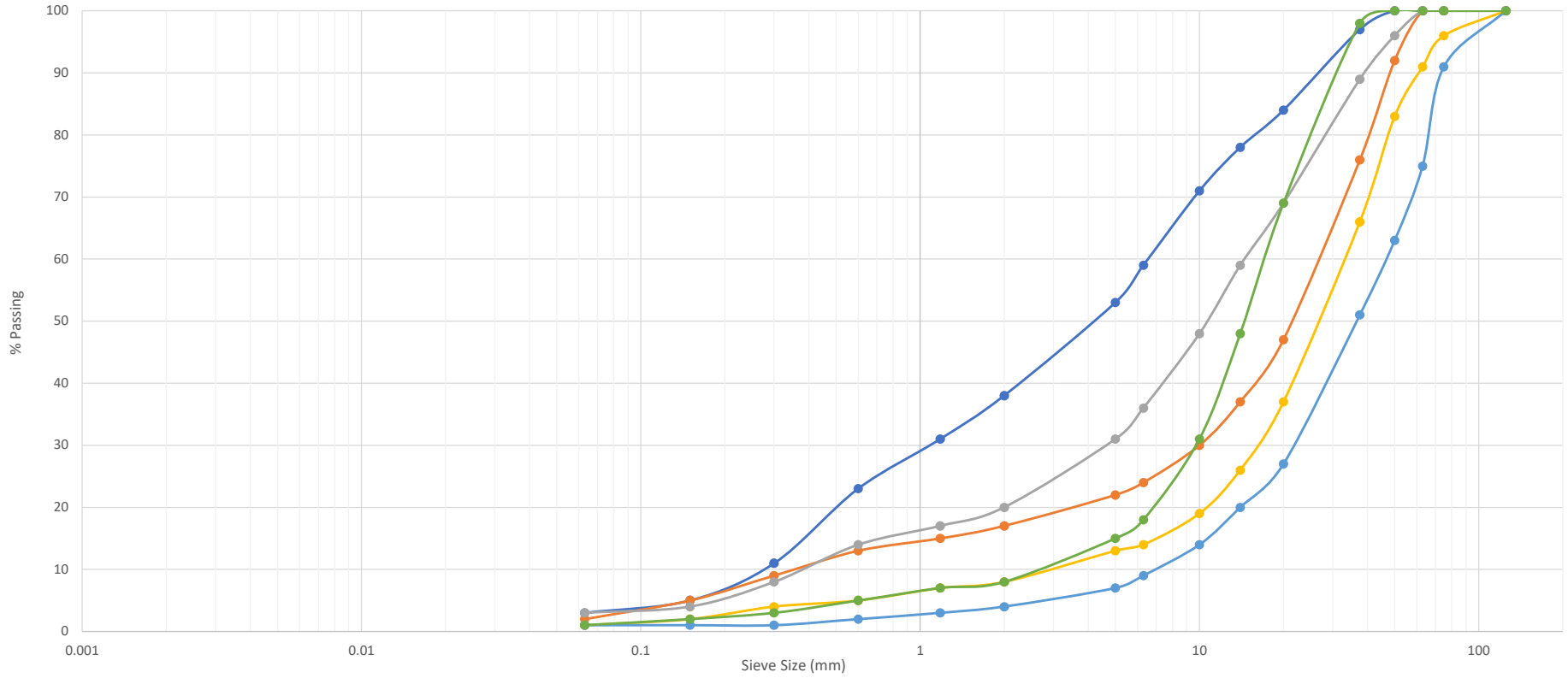
CLAY	SILT			SAND			GRAVEL			COBBLES
	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	

BH105 8.5m, BH106 7.8m, BH107 9.3m, BH108 4.6m, BH108 7.7m, BH109 10m, BH111 7.2m

BakerHicks.

PREPARED BY	JT	Job No.	30004595
CHECKED	VB	Fig No.	B.9
APPROVED	PDH	DATE	Jan-25

Client	Laing O'Rourke
Job	Margam Substation - LoR
Title	PSD Plot - Glacial Deposits Granular



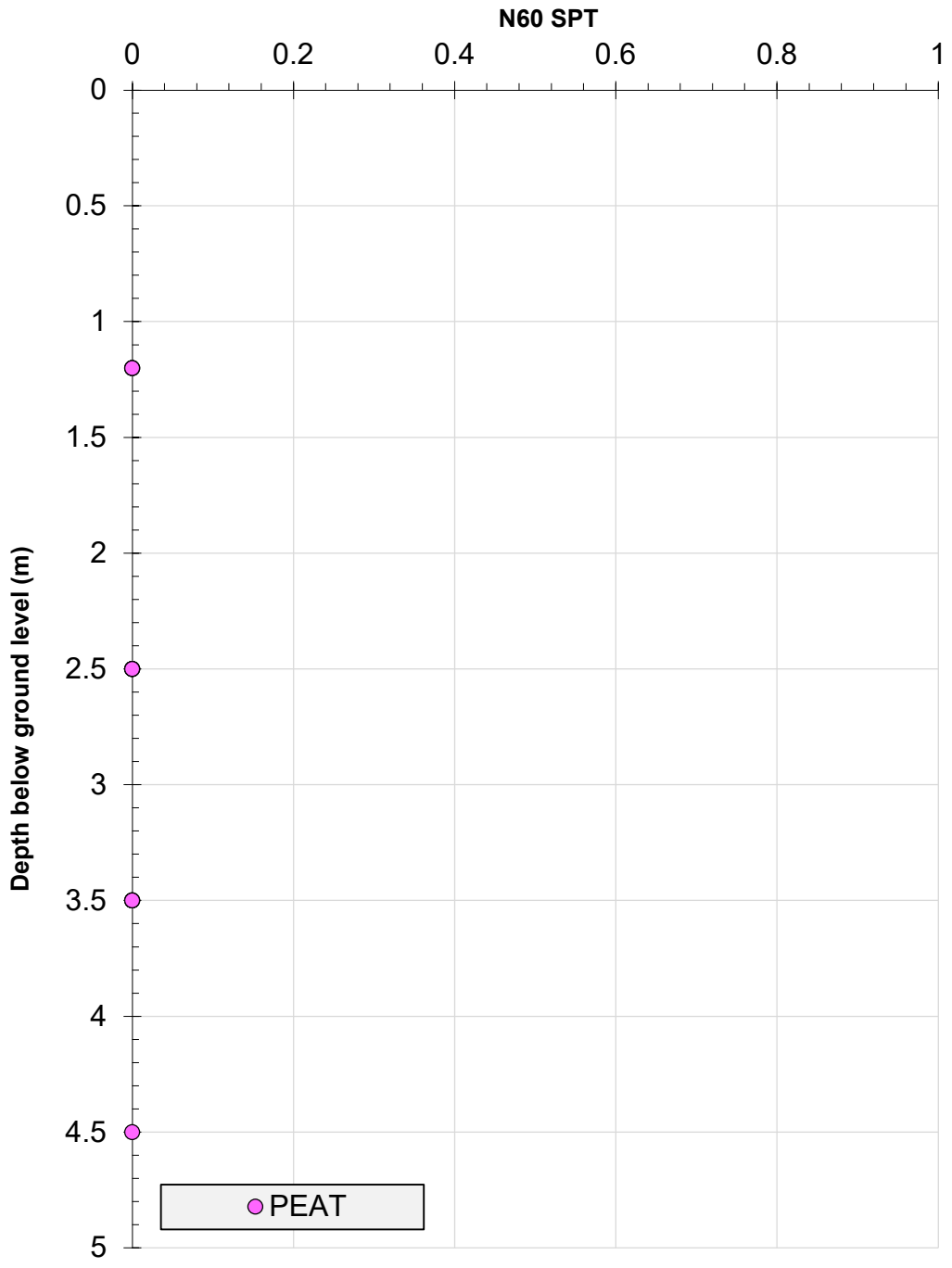
CLAY	SILT			SAND			GRAVEL			COBBLES
	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	

BH105 5.2m BH106 4.7m BH107 6.5m BH108 5.5m BH109 6.5m BH110 6.6m

BakerHicks.

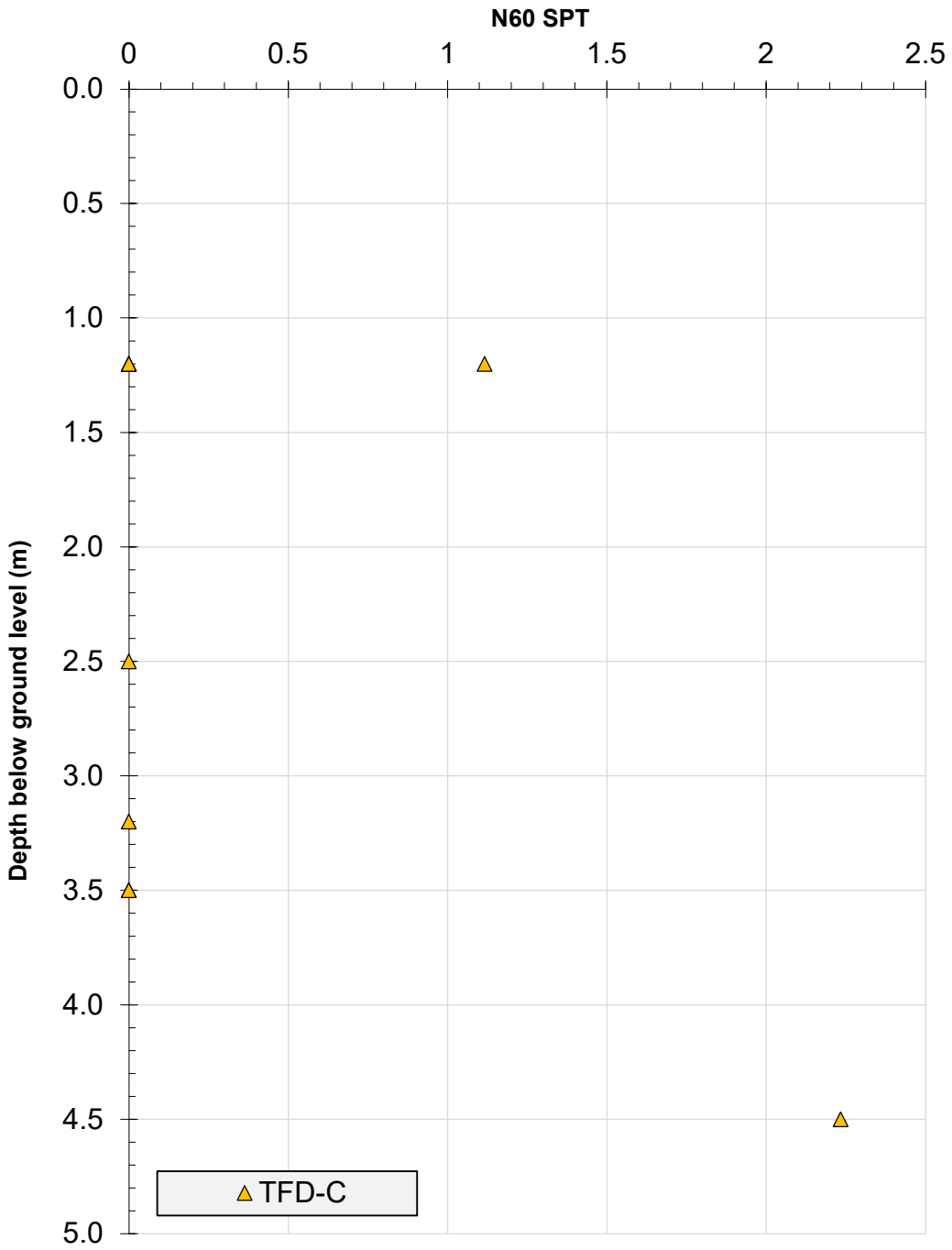
PREPARED BY	JT	Job No.	30004595
CHECKED	VB	Fig No.	B.10
APPROVED	PDH	DATE	Jan-25

Client	Laing O'Rourke
Project	Margam Substation - LoR
Title	N60 SPT vs Depth (m) - Peat



BakerHicks.	PREPARED BY	JT	JOB No.	30004595
	CHECKED	VB	Fig No.	B.11
	APPROVED	PDH	DATE	Jan-25

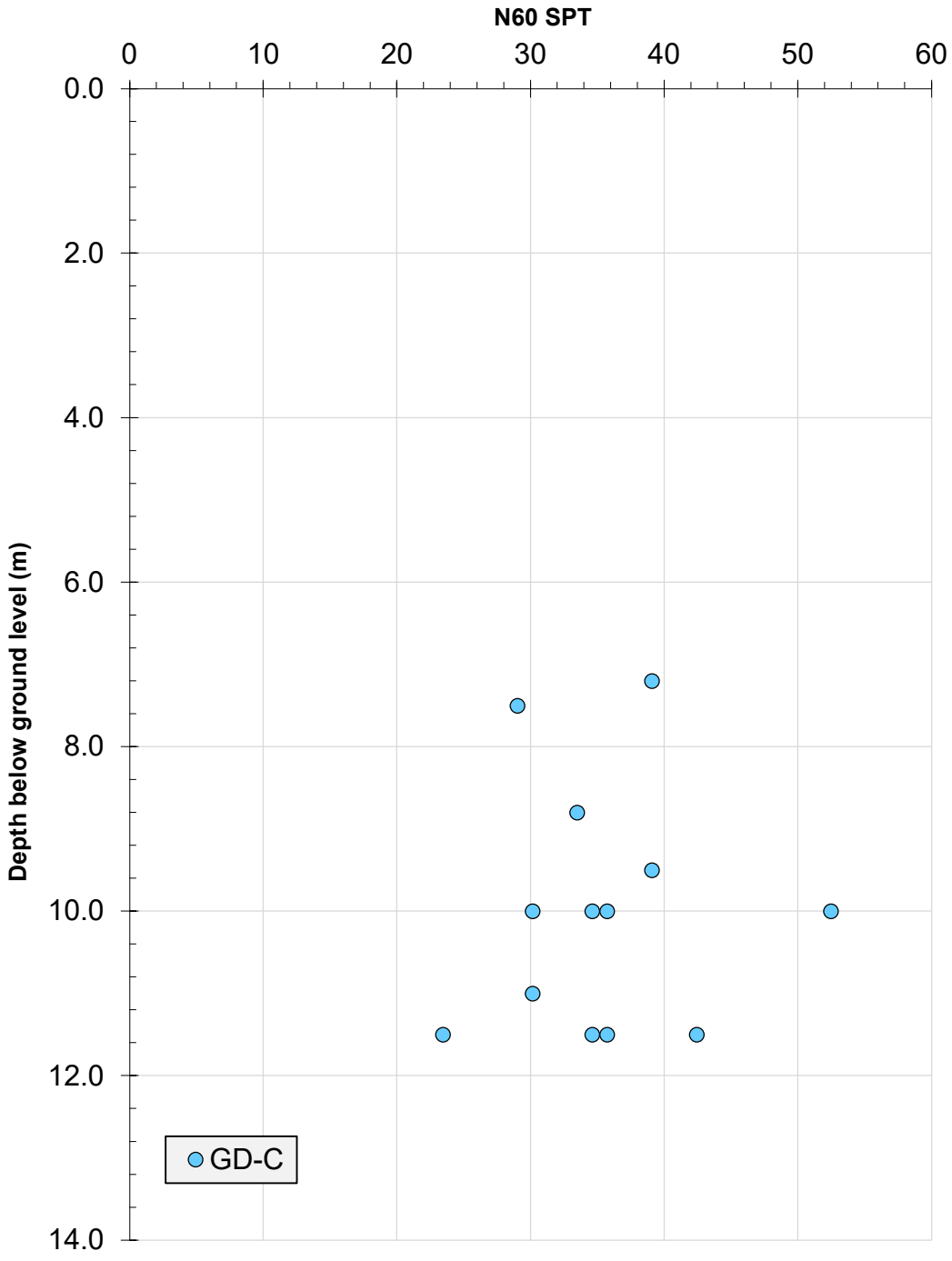
Client	Laing O'Rourke
Project	Margam Substation - LoR
Title	N60 SPT vs Depth (m) - TFD Cohesive



BakerHicks

PREPARED BY	JT	JOB No.	30004595
CHECKED	VB	Fig No.	B.12
APPROVED	PDH	DATE	Jan-25

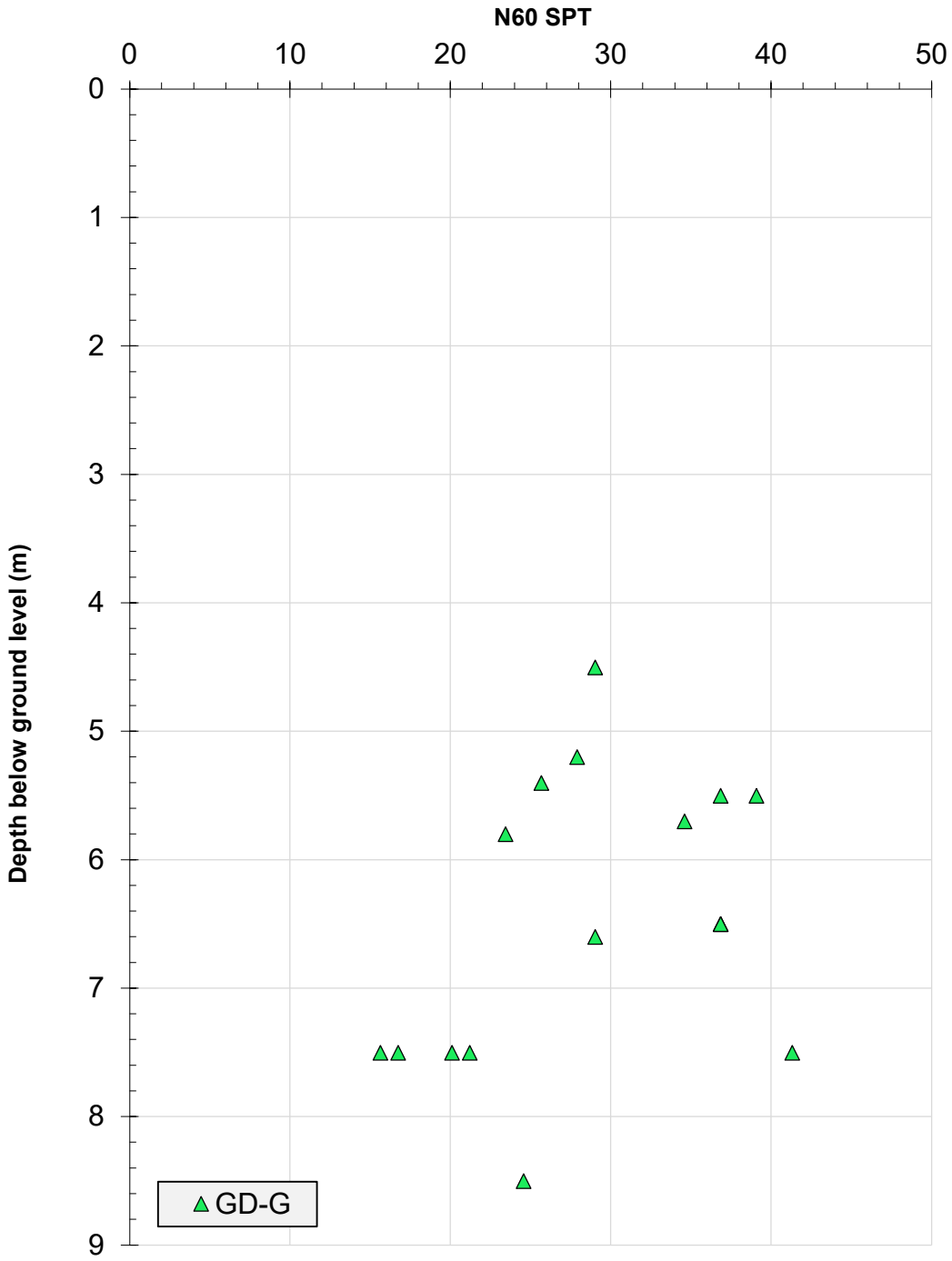
Client	Laing O'Rourke
Project	Margam Substation - LoR
Title	N60 SPT vs Depth (m) - Glacial Deposits Cohesive



BakerHicks.

PREPARED BY	JT	JOB No.	30004595
CHECKED	VB	Fig No.	B.13
APPROVED	PDH	DATE	Jan-25

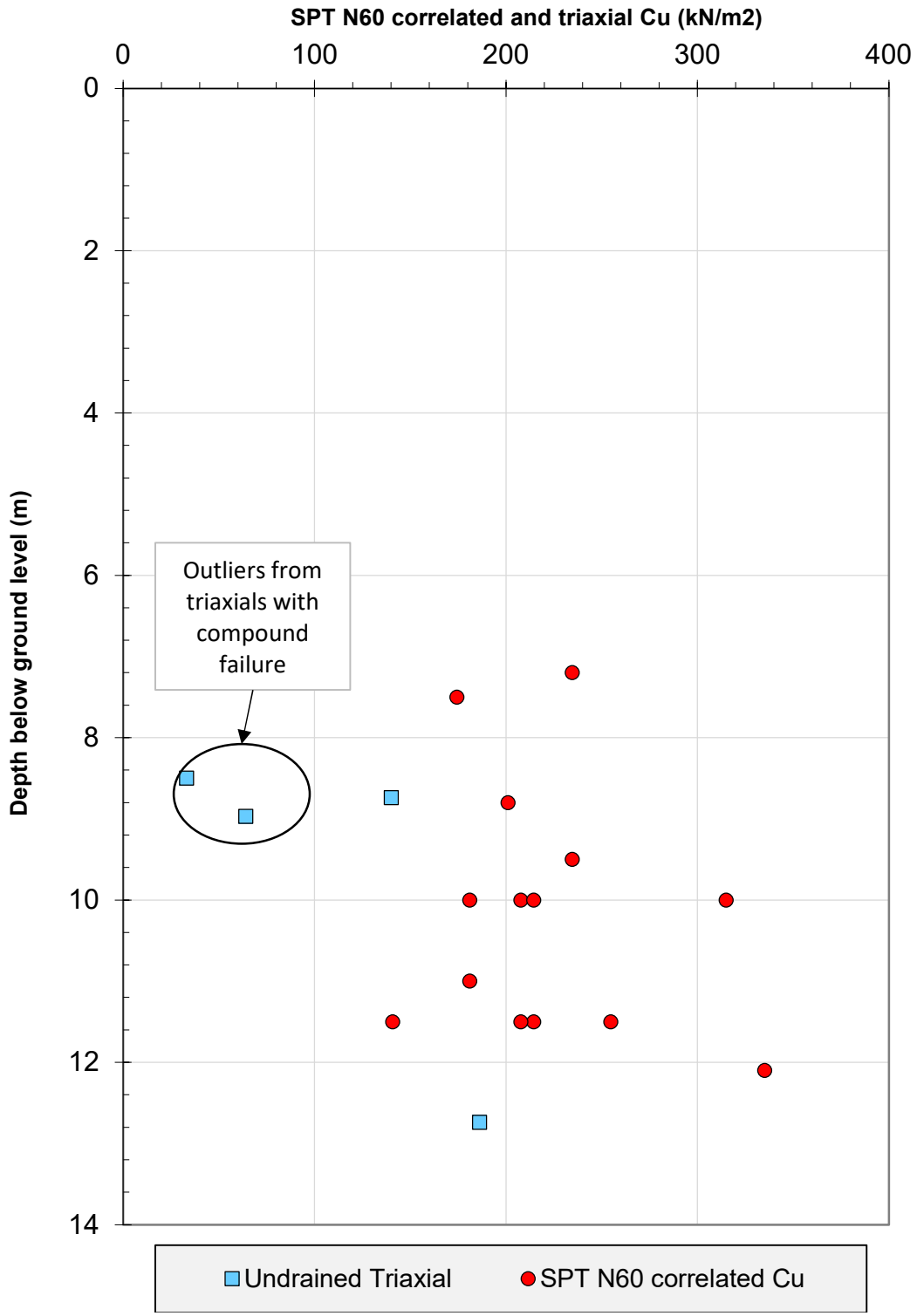
Client	Laing O'Rourke
Project	Margam Substation - LoR
Title	N60 SPT vs Depth (m) - Glacial Deposits Granular



BakerHicks.

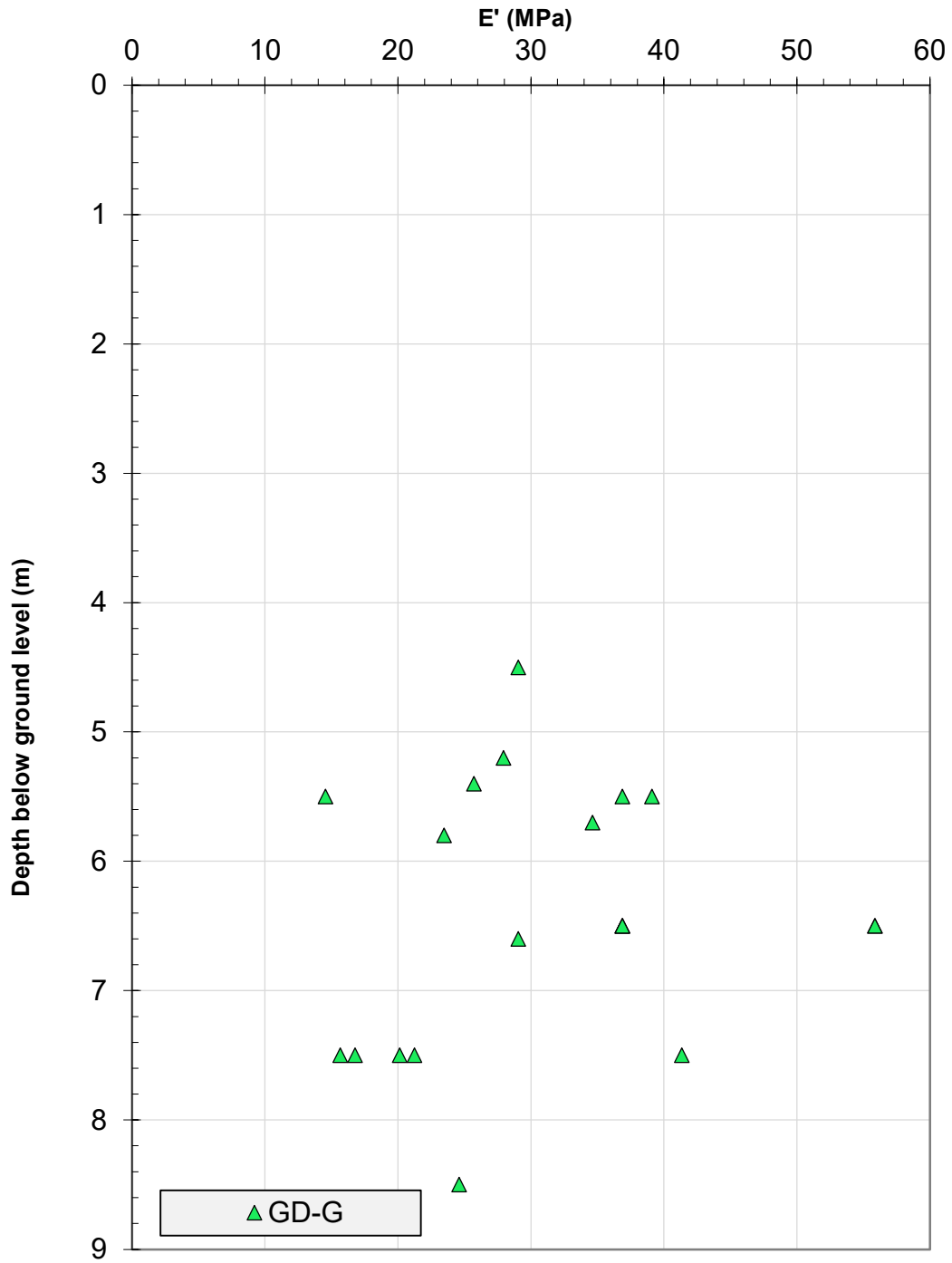
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CHECKED	VB	Fig No.	B.14
APPROVED	PDH	DATE	Jan-25

Client	Laing O'Rourke
Project	Margam Substation - LoR
Title	Undrained Shear Strength vs Depth (m) - Glacial Deposits Cohesive



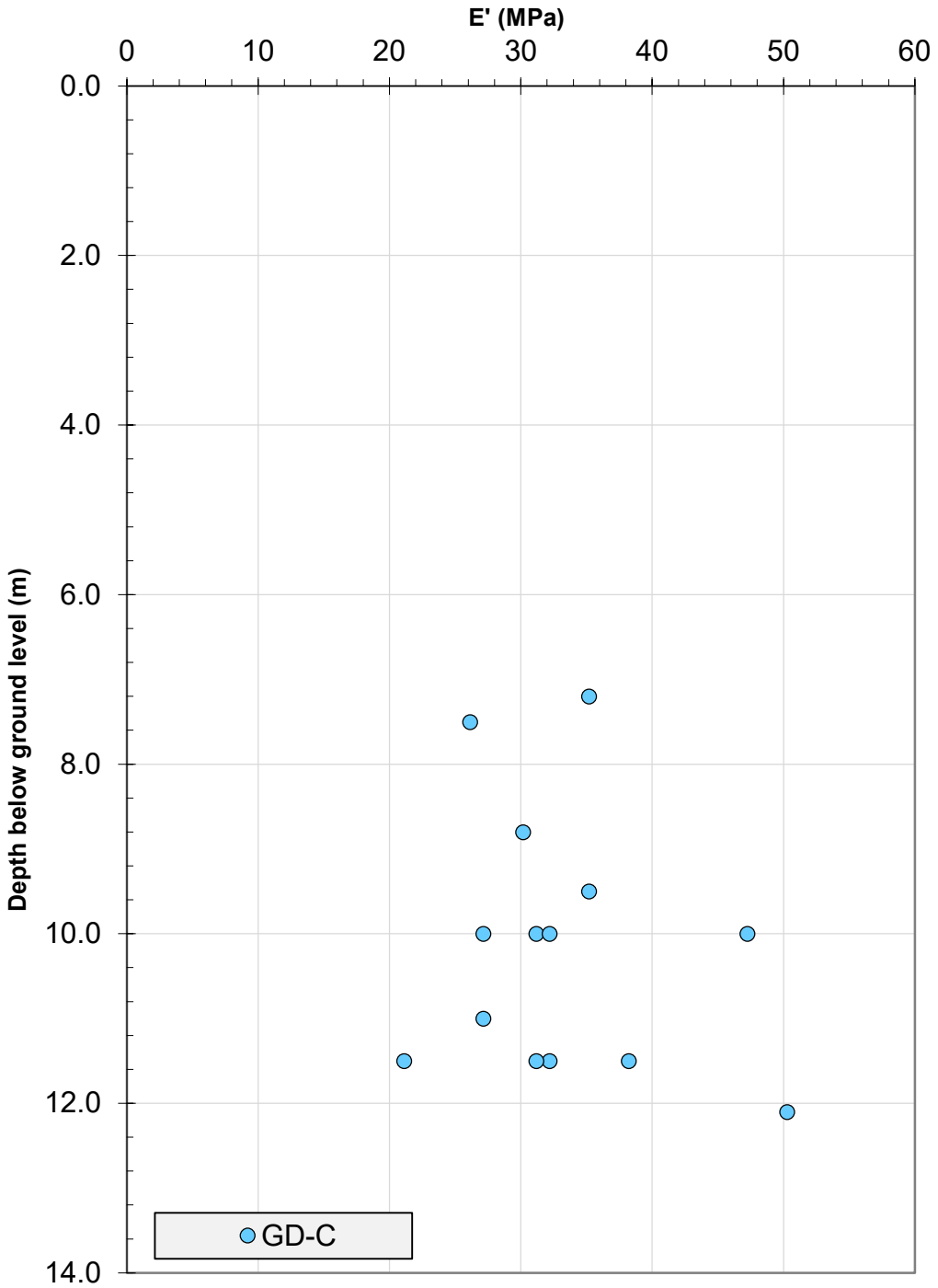
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	CHECKED	VB	Fig No.	B.15
	APPROVED	PDH	DATE	Jan-25

Client	Laing O'Rourke
Project	Margam Substation - LoR
Title	SPT N60 Correlated E' vs Depth (m) - Glacial Deposits Granular



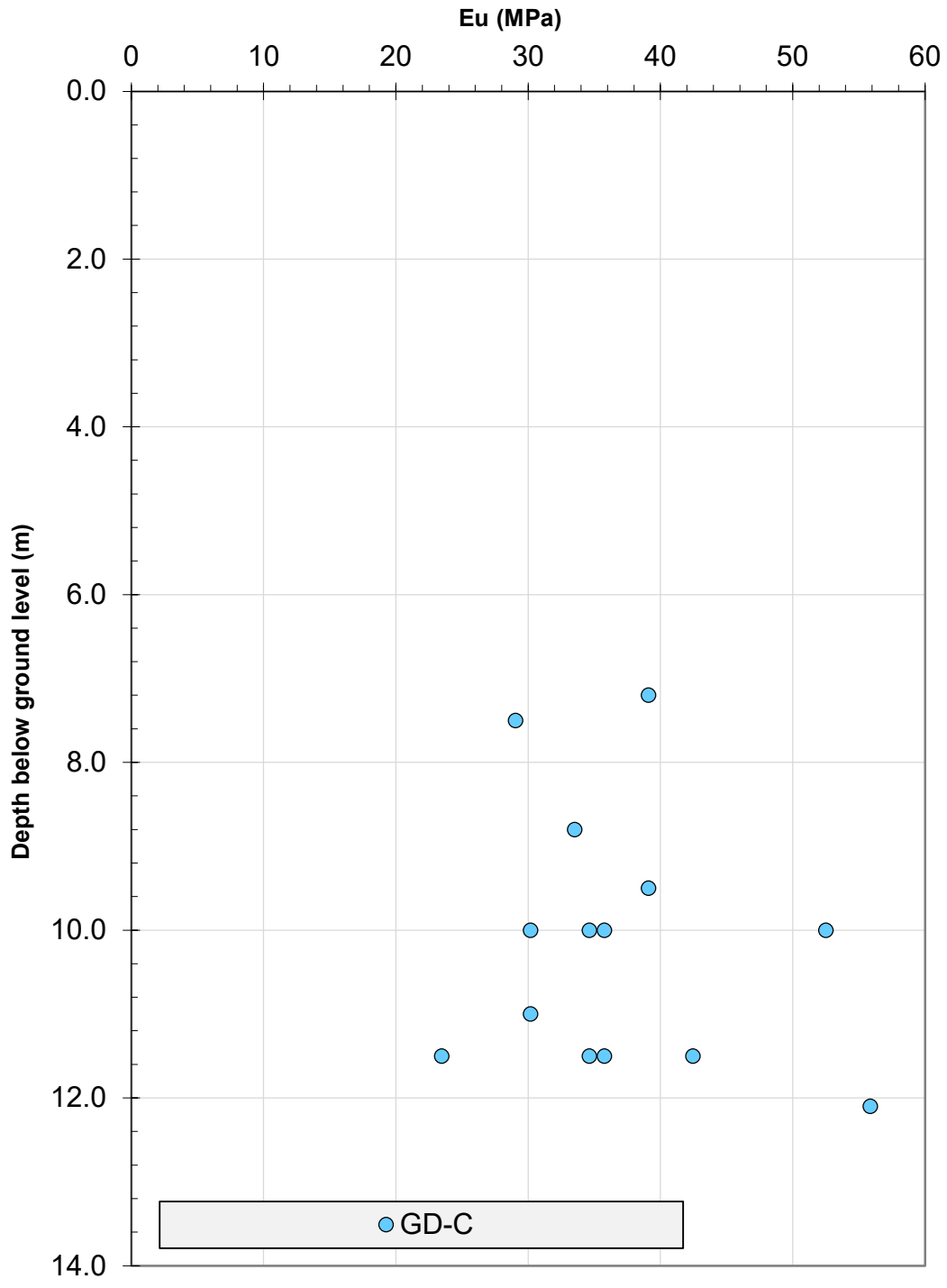
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	APPROVED	PDH	DATE	Jan-25

Client	Laing O'Rourke
Project	Margam Substation - LoR
Title	SPT N60 Correlated Eu vs Depth (m) - Glacial Deposits Cohesive



BakerHicks.	PREPARED BY	JT	JOB No.	30004595
	CHECKED	VB	Fig No.	B.17
	APPROVED	PDH	DATE	Jan-25

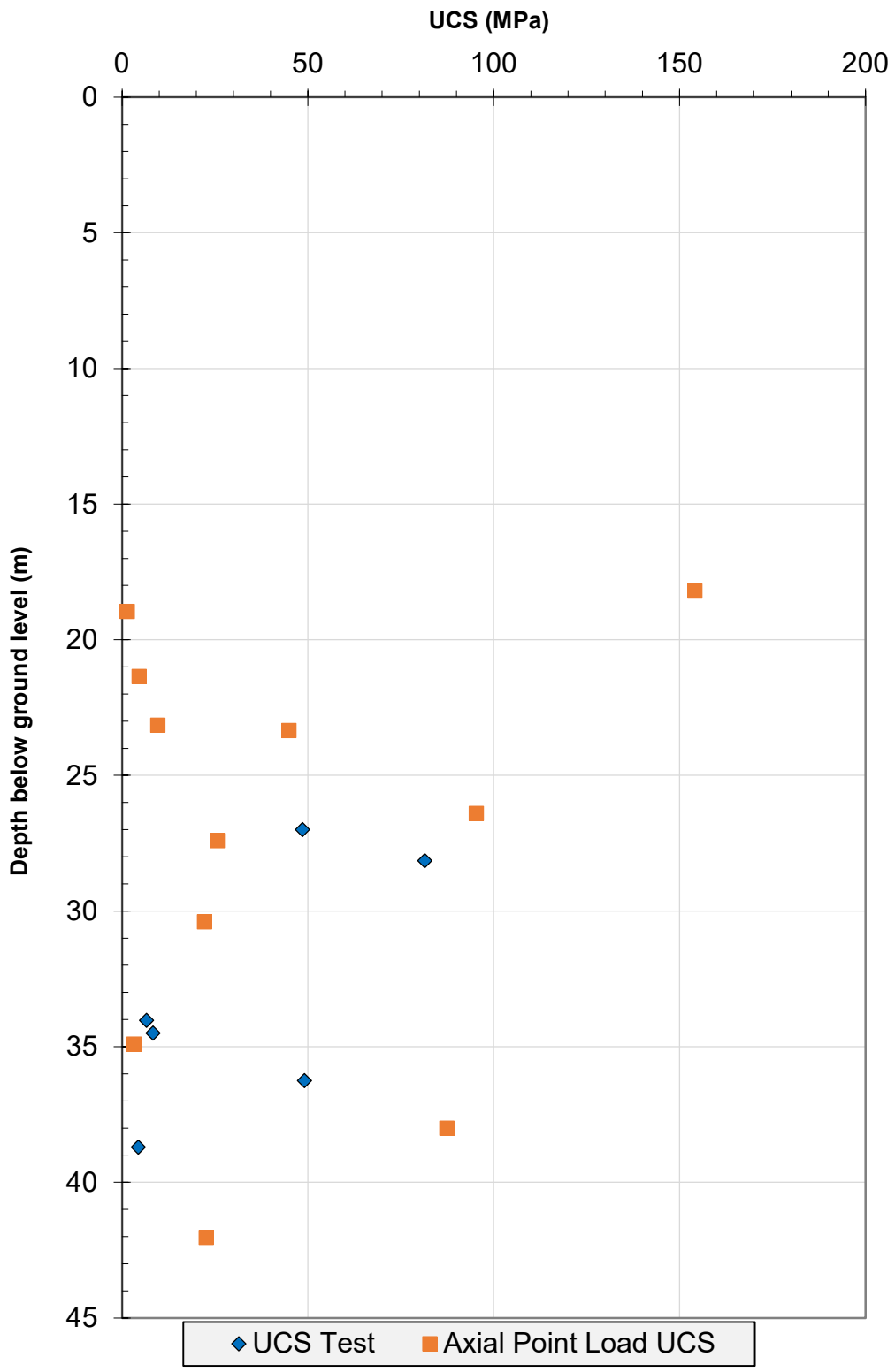
Client	Laing O'Rourke
Project	Margam Substation - LoR
Title	SPT N60 Correlated Eu vs Depth (m) - Glacial Deposits Cohesive



BakerHicks.

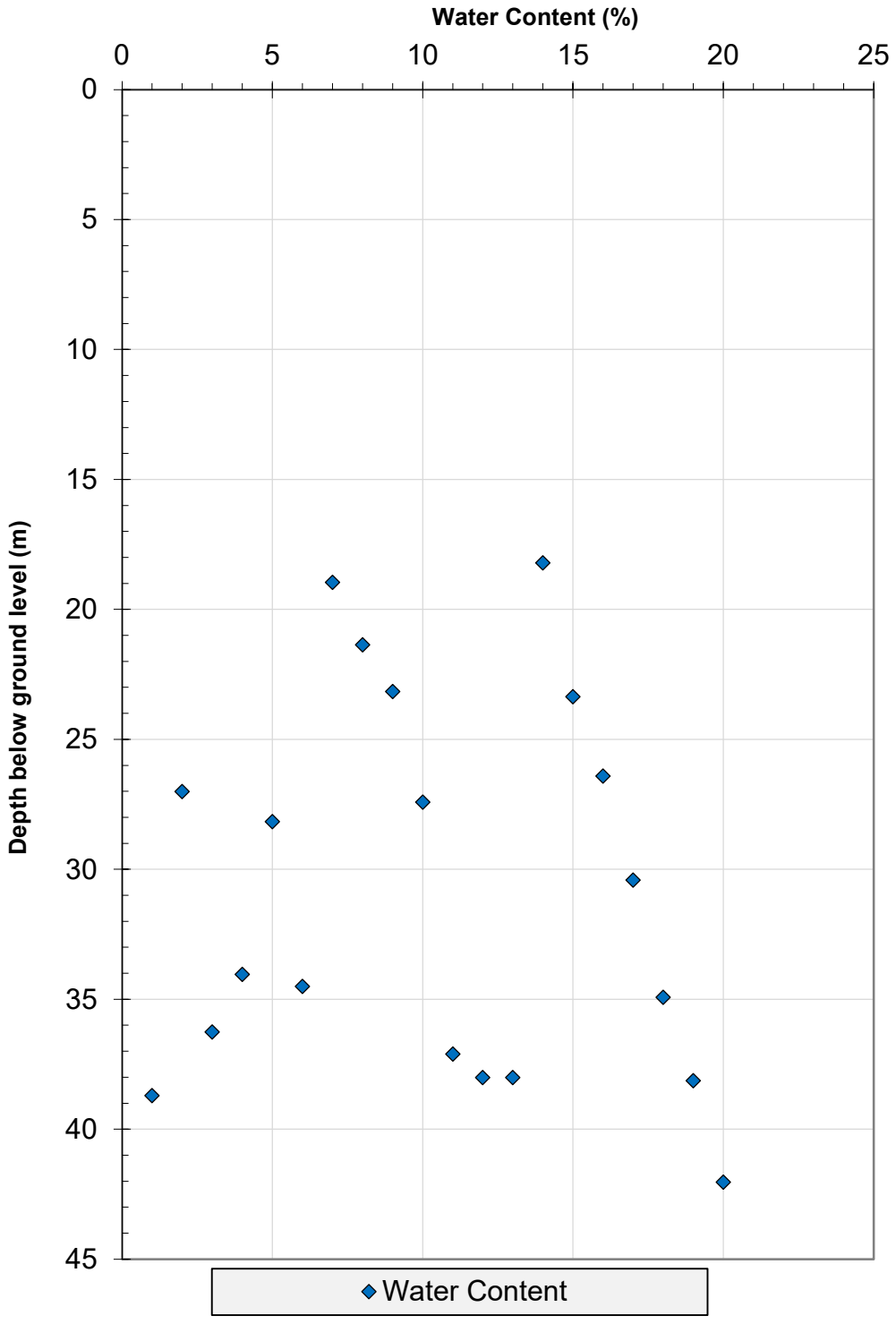
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CHECKED	VB	Fig No.	B.18
APPROVED	PDH	DATE	Jan-25

Client	Laing O'Rourke
Project	Margam Substation - LoR
Title	UCS vs Depth (m) - Coal Measures Formation



BakerHicks	PREPARED BY	JT	JOB No.	30004595
	CHECKED	VB	Fig No.	B.19
	APPROVED	PDH	DATE	Jan-25

Client	Laing O'Rourke
Project	Margam Substation - LoR
Title	Rock Water Content vs Depth (m) - Coal Measures Formation



BakerHicks.	PREPARED BY	JT	JOB No.	30004595
	CHECKED	VB	Fig No.	B.20
	APPROVED	PDH	DATE	Jan-25

Appendix C. Contamination Assessment

Summary Results Sheet

Job Name Margam Substation - LOR
Job Number 30004595
Assessment Threshold Used Commercial

Determinant	Units	GAC	n	Max Conc	Exceedance Location	Pathway	Assessment
pH	pH		43	pH 5.4-10.6			
Sulphate (water sol 2:1) (mg/l)	mg/l		-	0.00			
Arsenic	mg/kg	640	42	86.00	N/A	1	
Boron	mg/kg	240000	42	13.00	N/A	1	
Cadmium	mg/kg	190	42	4.10	N/A	2	
Copper	mg/kg	68000	42	250.00	N/A	2	
Chromium (Total)	mg/kg	8600	42	490.00	N/A	3	
Chromium (Hexavalent)	mg/kg	33	42	<1	N/A	3	
Cyanide, Free	mg/kg	24	42	1.80	N/A	1	
Lead	mg/kg	2300	42	240.00	N/A	1	
Mercury, Total	mg/kg	58	42	0.23	N/A	4	
Nickel	mg/kg	980	42	46.00	N/A	1,2	
Zinc	mg/kg	73000	42	1100.00	N/A	2	
Asbestos in Soil	%	NAD	42	NAD	N/A	6	
Acenaphthene	mg/kg	84000.0	42	0.06	N/A	1	
Acenaphthylene	mg/kg	83000.0	42	<0.03	N/A	1	
Anthracene	mg/kg	520000.0	42	0.13	N/A	1	
Benzo(a)anthracene	mg/kg	170.0	42	0.31	N/A	1	
Benzo(a)pyrene	mg/kg	35.00	42	0.18	N/A	1	
Benzo(b)fluoranthene	mg/kg	44.00	42	0.44	N/A	1	
Benzo(ghi)perylene	mg/kg	3900.00	42	0.12	N/A	1	
Benzo(k)fluoranthene	mg/kg	1200.00	42	0.15	N/A	1	
Chrysene	mg/kg	350.00	42	0.29	N/A	1	
Dibenzo(ah)anthracene	mg/kg	3.50	42	0.13	N/A	1	
Fluoranthene	mg/kg	23000.0	42	0.70	N/A	1	
Fluorene	mg/kg	63000.0	42	0.07	N/A	1	
Indeno(123-cd)pyrene	mg/kg	500.0	42	0.12	N/A	1	
Naphthalene	mg/kg	190.0	42	0.12	N/A	4	
Phenanthrene	mg/kg	22000.0	42	0.37	N/A	1	
Pyrene	mg/kg	54000.0	42	0.51	N/A	1	
Ali >C5-C6	mg/kg	3200.00	42	<0.01	N/A	4	
Ali >C6-C8	mg/kg	7800.00	42	<0.01	N/A	4	
Ali >C8-C10	mg/kg	2000.00	42	<0.01	N/A	4	
Ali >C10-C12	mg/kg	9700.00	42	11.00	N/A	4	
Ali >C12-C16	mg/kg	59000.00	42	25.00	N/A	4	
Ali >C16-C35	mg/kg	16000.00	42	803.00	N/A	1	
Aro >C5-C7	mg/kg	26000.00	42	<0.01	N/A	4	
Aro >C7-C8	mg/kg	56000.00	42	<0.01	N/A	4	
Aro >C8-C10	mg/kg	3500.00	42	<0.01	N/A	4	
Aro >C10-C12	mg/kg	16000.00	42	14.00	N/A	4	
Aro >C12-C16	mg/kg	36000.00	42	58.00	N/A	1	
Aro >C16-C21	mg/kg	28000.00	42	250.00	N/A	1	
Aro >C21-C35	mg/kg	28000.00	42	1400.00	N/A	1	
BTEX - Benzene	mg/kg	27.00	42	<0.01	N/A	4	
BTEX - Toluene	mg/kg	56000.00	42	0.07	N/A	4	
BTEX - Ethyl Benzene	mg/kg	5700.00	42	<0.01	N/A	4	
BTEX - o Xylene	mg/kg	5900.00	42	<0.01	N/A	4	
BTEX - p & m Xylene	mg/kg	5900.00	42	<0.01	N/A	4	
MTBE	mg/kg	7900.00	42	<0.01	N/A	4	
Phenol	mg/kg	760.00	42	21.00	N/A	2	

BakerHicks.

Summary Results Sheet - Leachates

Project Name Margam Substation - LOR
Project No 30004595
Date 14/01/2025

SAMPLE TYPE	WATER	WATER	WATER	WATER	WATER	WATER	GAC	Source	n	MAX	No. of Samples Exceeding Threshold
SAMPLE LOCATION	BH111	TP101	TP105A	TP105	TP115	BH106	ug/l				
DEPTH (m)	0.25	0.50	1.40	0.40	0.20	0.25					
pH	7.1	6.8	8	7.7	6.7	8	6.5-9.5	UKDWS	6	8	0
Total Cyanide	< 0.1	< 0.1	0.3	0.2	0.4	< 0.1	50	UKDWS	6	0.4	0
Sulphate as SO4 (mg/l)	4	1.7	9.5	7.2	4.3	3	250	UKDWS	6	9.5	0
Total Phenols	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	7.7	EQS (FW)		<1.0	0
Anthracene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	100	Inland EQS	6	< 0.01	0
Benzo(a)anthracene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	See BaP	6	< 0.01	0
Benzo(a)pyrene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.17	Inland EQS	6	< 0.01	0
Benzo(b)fluoranthene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	-	PAH sum4	6	< 0.01	0
Benzo(ghi)perylene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	-	PAH sum4	6	< 0.01	0
Benzo(k)fluoranthene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	-	PAH sum4	6	< 0.01	0
Fluoranthene	< 0.01	< 0.01	0.02	< 0.01	< 0.01	< 0.01	6.3	Inland EQS	6	0.02	0
Indeno(123-cd)pyrene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	-	PAH sum 4	6	< 0.01	0
Naphthalene	< 0.05	< 0.05	< 0.05	< 0.05	0.08	< 0.05	2	Inland EQS	6	0.08	0
Arsenic	3.6	1.3	5.9	2.2	2.6	0.61	10	UKDWS	6	5.9	0
Boron	54	< 12	31	14	27	< 12	1000	UKDWS	6	54	0
Cadmium	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.63	50	UKDWS	6	0.63	0
Copper	2.4	0.5	0.8	0.9	3.7	1.2	2000	UKDWS	6	3.7	0
Chromium (total)	0.4	< 0.25	< 0.25	< 0.25	0.46	0.26	50	UKDWS	6	0.46	0
Lead	0.5	< 0.09	< 0.09	0.19	2.3	0.16	10	UKDWS	6	2.3	0
Mercury	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	1	UKDWS	6	<0.01	0
Nickel	< 0.5	< 0.5	< 0.5	< 0.5	1	< 0.5	20	UKDWS	6	1	0
Zinc	6	1.9	2.3	< 1.3	14	69	5000	UKDWS	6	69	0
BTEX - Benzene	< 1	< 1	< 1	< 1	< 1	< 1	1	UKDWS	6	<1	0
BTEX - Toluene	< 1	< 1	< 1	< 1	< 1	< 1	74	EQS (FW)	6	<1	0
BTEX - Ethyl Benzene	< 1	< 1	< 1	< 1	< 1	< 1	20	EA R&D P2-115	6	<1	0
BTEX - o Xylene	< 1	< 1	< 1	< 1	< 1	< 1	30	EQS Total Xylene	6	<1	0
MTBE	< 1	< 1	< 1	< 1	< 1	< 1	15	WHO	6	<1	0

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Summary Results Sheet - Waters

Project Name Margam Substation - LOR
Project No 30004595
Date 14/01/2025

SAMPLE TYPE	WATER	GAC	Source		MAX	No. of Samples Exceeding Threshold
SAMPLE LOCATION	BH112	ug/l				
DEPTH (m)	4.50					
pH	7.1	6.5-9.5	UKDWS		7.1	0
Total Cyanide	1	50	UKDWS		1	0
Sulphate as SO4 (mg/l)	140	250	UKDWS		140	0
Total Phenols	4.1	7.7	EQS (FW)		4.1	0
Anthracene	< 0.01	100	Inland EQS		<0.01	0
Benzo(a)pyrene	< 0.01	0.17	Inland EQS		<0.01	0
Benzo(b)fluoranthene	< 0.01	-	PAH sum4		<0.01	0
Benzo(ghi)perylene	< 0.01	-	PAH sum4		<0.01	0
Benzo(k)fluoranthene	< 0.01	-	PAH sum4		<0.01	0
Fluoranthene	< 0.01	6.3	Inland EQS		<0.01	0
Indeno(123-cd)pyrene	< 0.01	-	PAH sum 4		<0.01	0
Naphthalene	0.06	2	Inland EQS		0.06	0
Arsenic	0.62	10	UKDWS		0.62	0
Boron	280	1000	UKDWS		280	0
Cadmium	< 0.03	50	UKDWS		<0.03	0
Copper	< 0.4	2000	UKDWS		<0.4	0
Chromium (total)	< 0.25	50	UKDWS		<0.25	0
Lead	< 0.09	10	UKDWS		<0.09	0
Mercury	< 0.01	1	UKDWS		<0.01	0
Nickel	2.8	20	UKDWS		2.8	0
Zinc	100	5000	UKDWS		100	0
Ali >C5-C6	< 0.1	10	UKDWS		<0.1	0
Ali >C6-C8	< 0.1	10	UKDWS		<0.1	0
Ali >C8-C10	< 0.1	10	UKDWS		<0.1	0
Ali >C10-C12	< 1.0	10	UKDWS		<1.0	0
Ali >C12-C16	< 1.0	10	UKDWS		<1.0	0
Ali >C16-C21	< 1.0	10	UKDWS		<1.0	0
Ali >C21-C35	< 1.0	10	UKDWS		<1.0	0
Aro >C5-C7	< 0.1	10	UKDWS		<0.1	0
Aro >C7-C8	< 0.1	10	UKDWS		<0.1	0
Aro >C8-C10	< 0.1	10	UKDWS		<0.1	0
Aro >C10-C12	< 1.0	10	UKDWS		<1.0	0
Aro >C12-C16	< 1.0	10	UKDWS		<1.0	0
Aro >C16-C21	< 1.0	10	UKDWS		<1.0	0
Aro >C21-C35	< 1.0	10	UKDWS		<1.0	0
BTEX - Benzene	< 1	1	UKDWS		<1	0
BTEX - Toluene	< 1	74	EQS (FW)		<1	0
BTEX - Ethyl Benzene	< 1	20	EA R&D P2-115		<1	0
BTEX - o Xylene	< 1	30	EQS Total Xylene		<1	0
BTEX - m Xylene	<2	30	EQS Total Xylene		<2	0
MTBE	< 1	15	DWS		<1	0

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.

XVN11-6JED2-R3NLZ

Report is invalid if pages are removed.

Job name

Sample Selection

Description/Comments

Classification of soil waste comprising near surface soils including localised made ground (TP05, TP05A and TP05B) which may be surplus following excavation for foundation. The site comprises undeveloped, heavily vegetated open ground. Adjacent to existing substation.

Hexavalent Chromium screening on all 42no. samples tested returned results below the LoD of 1.0mg/kg. Chromate compounds have therefore been excluded from the assessment.

Hydrocarbon values above the LoD recorded in 3no. locations (TP114 0.15m,TP115 0.2m, BH108 0.25m) from a total of 42no.

Asbestos was not detected within any of the 42no. samples screened.

Project

Margam Phase 1

Site

Margam, Port Talbot

Classified by

Name:
Tim Mitchell
Date:
17 Jan 2025 15:11 GMT
Telephone:
+447823367803

Company:
BakerHicks
Kent House, 14-17 Market Place
London
W1W 8AJ

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	05 Dec 2024

Next 3 year Refresher due by Dec 2027

Purpose of classification

2 - Material Characterisation

Address of the waste

Proposed Substation, Margam, Port Talbot **Post Code** N/A

SIC for the process giving rise to the waste

42220 Construction of utility projects for electricity and telecommunications

Description of industry/producer giving rise to the waste

Construction of new substation and associated infrastructure on current open land to east of existing Margam Substation. Excavations to comprise foundations for new structures and near surface formation.

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

Excess arisings created during excavation of building foundations and near surface formation.

Description of the waste

Topsoil - soft dark brown slightly sandy organic clay
Made ground (TP05, TP05A and TP05B) - 1. granular and cohesive material - light brown clay bound sandy gravel with a high cobble content of concrete and slag), 2. black slightly clayey gravelly sand with some ash, 3. soft dark grey slightly sandy gravelly clay.

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	BH103[3]	0.5	Non Hazardous		3
2	TP101[3]	0.25	Non Hazardous		5
3	BH112[2]	0.5	Non Hazardous		7
4	TP103[2]	0.5	Non Hazardous		9
5	TP104[2]	0.5	Non Hazardous		11
6	TP105[3]	0.15	Non Hazardous		13
7	TP105A[3]	0.15	Non Hazardous		15
8	TP105A[4]	1.4	Non Hazardous		17
9	TP111[2]	0.25	Non Hazardous		19
10	TP118[2]	0.25	Non Hazardous		21
11	TP115[2]	0.2	Hazardous	HP 3(i), HP 7, HP 11	23

Related documents

#	Name	Description
1	Example waste stream template for contaminated soils	waste stream template used to create this Job

Report

Created by: Tim Mitchell

Created date: 17 Jan 2025 15:11 GMT

Appendices	Page
Appendix A: Classifier defined and non GB MCL determinands	26
Appendix B: Rationale for selection of metal species	27
Appendix C: Version	28

Classification of sample: BH103[3]

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

Sample details

Sample name:	LoW Code:	
BH103[3]	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:		
0.5 m	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No 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 compounds, with the exception of those specified elsewhere in this Annex	033-002-00-5			1	21	mg/kg		21	mg/kg	0.0021 %		
2	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		1.4	mg/kg	3.22	4.508	mg/kg	0.000451 %		
3	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
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		31	mg/kg	1.462	45.308	mg/kg	0.00453 %		
5	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1	mg/kg	2.27	<2.27	mg/kg	<0.000227 %		<LOD
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		26	mg/kg	1.126	29.273	mg/kg	0.00293 %		
7	lead compounds with the exception of those specified elsewhere in this Annex	082-001-00-6			1	22	mg/kg		22	mg/kg	0.0022 %		
8	mercury(II) sulfide		215-696-3	1344-48-5		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
9	nickel(II) oxide (nickel monoxide)	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		33	mg/kg		33	mg/kg	0.0033 %		
10	trizinc bis(orthophosphate)	030-011-00-6	231-944-3	7779-90-0		96	mg/kg		96	mg/kg	0.0096 %		
11	pH			PH		8.3	pH		8.3	pH	8.3 pH		
12	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				<0.1	mg/kg	1.884	<0.188	mg/kg	<0.0000188 %		<LOD
13	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
14	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
15	acenaphthylene		205-917-1	208-96-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<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									
16	●	acenaphthene	201-469-6	83-32-9		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
17	●	phenanthrene	201-581-5	85-01-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
18	●	anthracene	204-371-1	120-12-7		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
19	●	fluoranthene	205-912-4	206-44-0		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
20	●	pyrene	204-927-3	129-00-0		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
21		benzo[a]anthracene	200-280-6	56-55-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-033-00-9											
22		chrysene	205-923-4	218-01-9		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-048-00-0											
23		benzo[b]fluoranthene	205-911-9	205-99-2		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-034-00-4											
24		benzo[k]fluoranthene	205-916-6	207-08-9		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-036-00-5											
25		benzo[a]pyrene; benzo[def]chrysene	200-028-5	50-32-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-032-00-3											
26	●	indeno[123-cd]pyrene	205-893-2	193-39-5		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
27		dibenz[a,h]anthracene	200-181-8	53-70-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-041-00-2											
28	●	benzo[ghi]perylene	205-883-8	191-24-2		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
29		phenol	203-632-7	108-95-2		<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		<LOD
		604-001-00-2											
30		benzene	200-753-7	71-43-2		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-020-00-8											
31		toluene	203-625-9	108-88-3		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-021-00-3											
32	●	ethylbenzene	202-849-4	100-41-4		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-023-00-4											
33		xylene	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]		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-022-00-9											
34		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	216-653-1	1634-04-4		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		603-181-00-X											
										Total:	0.0265 %		

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: TP101[3]

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

Sample details

Sample name:	LoW Code:	
TP101[3]	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:		
0.25 m	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No 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 compounds, with the exception of those specified elsewhere in this Annex	033-002-00-5			1	3.6 mg/kg		3.6 mg/kg	0.00036 %		
2	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		<0.2 mg/kg	3.22	<0.644 mg/kg	<0.0000644 %		<LOD
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1 mg/kg	1.142	1.142 mg/kg	0.000114 %		
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		8 mg/kg	1.462	11.692 mg/kg	0.00117 %		
5	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1 mg/kg	2.27	<2.27 mg/kg	<0.000227 %		<LOD
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		66 mg/kg	1.126	74.309 mg/kg	0.00743 %		
7	lead compounds with the exception of those specified elsewhere in this Annex	082-001-00-6			1	46 mg/kg		46 mg/kg	0.0046 %		
8	mercury(II) sulfide		215-696-3	1344-48-5		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
9	nickel(II) oxide (nickel monoxide)	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		6.1 mg/kg		6.1 mg/kg	0.00061 %		
10	trizinc bis(orthophosphate)	030-011-00-6	231-944-3	7779-90-0		86 mg/kg		86 mg/kg	0.0086 %		
11	pH			PH		8.5 pH		8.5 pH	8.5 pH		
12	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				<0.1 mg/kg	1.884	<0.188 mg/kg	<0.0000188 %		<LOD
13	TPH (C6 to C40) petroleum group			TPH		<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
14	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
15	acenaphthylene		205-917-1	208-96-8		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<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									
16		acenaphthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-469-6	83-32-9									
17		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-581-5	85-01-8									
18		anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-371-1	120-12-7									
19		fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-912-4	206-44-0									
20		pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-927-3	129-00-0									
21		benzo[a]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
22		chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
23		benzo[b]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
24		benzo[k]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
25		benzo[a]pyrene; benzo[def]chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
26		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-893-2	193-39-5									
27		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
28		benzo[ghi]perylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-883-8	191-24-2									
29		phenol				<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		<LOD
		604-001-00-2	203-632-7	108-95-2									
30		benzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
31		toluene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
32		ethylbenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
33		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<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]									
34		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		603-181-00-X	216-653-1	1634-04-4									
										Total:	0.0243 %		

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: BH112[2]

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

Sample details

Sample name:	LoW Code:	
BH112[2]	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:		
0.5 m	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No 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 compounds, with the exception of those specified elsewhere in this Annex	033-002-00-5			1	16 mg/kg		16 mg/kg	0.0016 %		
2	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		0.8 mg/kg	3.22	2.576 mg/kg	0.000258 %		
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.2 mg/kg	1.142	0.228 mg/kg	0.0000228 %		
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		37 mg/kg	1.462	54.078 mg/kg	0.00541 %		
5	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1 mg/kg	2.27	<2.27 mg/kg	<0.000227 %		**<LOD**
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		12 mg/kg	1.126	13.511 mg/kg	0.00135 %		
7	lead compounds with the exception of those specified elsewhere in this Annex	082-001-00-6			1	24 mg/kg		24 mg/kg	0.0024 %		
8	mercury(II) sulfide		215-696-3	1344-48-5		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		**<LOD**
9	nickel(II) oxide (nickel monoxide)	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		33 mg/kg		33 mg/kg	0.0033 %		
10	trizinc bis(orthophosphate)	030-011-00-6	231-944-3	7779-90-0		110 mg/kg		110 mg/kg	0.011 %		
11	pH			PH		7.1 pH		7.1 pH	7.1 pH		
12	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				0.2 mg/kg	1.884	0.377 mg/kg	0.0000377 %		
13	TPH (C6 to C40) petroleum group			TPH		<10 mg/kg		<10 mg/kg	<0.001 %		**<LOD**
14	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		**<LOD**
15	acenaphthylene		205-917-1	208-96-8		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		**<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									
16		acenaphthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-469-6	83-32-9									
17		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-581-5	85-01-8									
18		anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-371-1	120-12-7									
19		fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-912-4	206-44-0									
20		pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-927-3	129-00-0									
21		benzo[a]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
22		chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
23		benzo[b]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
24		benzo[k]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
25		benzo[a]pyrene; benzo[def]chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
26		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-893-2	193-39-5									
27		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
28		benzo[ghi]perylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-883-8	191-24-2									
29		phenol				<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		<LOD
		604-001-00-2	203-632-7	108-95-2									
30		benzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
31		toluene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
32		ethylbenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
33		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<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]									
34		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		603-181-00-X	216-653-1	1634-04-4									
										Total:	0.0267 %		

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: TP103[2]

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

Sample details

Sample name:	LoW Code:	
TP103[2]	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:		
0.5 m	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No 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 compounds, with the exception of those specified elsewhere in this Annex	033-002-00-5			1	18	mg/kg		18	mg/kg	0.0018 %		
2	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		<0.2	mg/kg	3.22	<0.644	mg/kg	<0.0000644 %		<LOD
3	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 %		
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		35	mg/kg	1.462	51.154	mg/kg	0.00512 %		
5	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1	mg/kg	2.27	<2.27	mg/kg	<0.000227 %		<LOD
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		14	mg/kg	1.126	15.762	mg/kg	0.00158 %		
7	lead compounds with the exception of those specified elsewhere in this Annex	082-001-00-6			1	21	mg/kg		21	mg/kg	0.0021 %		
8	mercury(II) sulfide		215-696-3	1344-48-5		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
9	nickel(II) oxide (nickel monoxide)	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		33	mg/kg		33	mg/kg	0.0033 %		
10	trizinc bis(orthophosphate)	030-011-00-6	231-944-3	7779-90-0		330	mg/kg		330	mg/kg	0.033 %		
11	pH			PH		7.6	pH		7.6	pH	7.6 pH		
12	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				<0.1	mg/kg	1.884	<0.188	mg/kg	<0.0000188 %		<LOD
13	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
14	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
15	acenaphthylene		205-917-1	208-96-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<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									
16	●	acenaphthene	201-469-6	83-32-9		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
17	●	phenanthrene	201-581-5	85-01-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
18	●	anthracene	204-371-1	120-12-7		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
19	●	fluoranthene	205-912-4	206-44-0		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
20	●	pyrene	204-927-3	129-00-0		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
21		benzo[a]anthracene	200-280-6	56-55-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-033-00-9											
22		chrysene	205-923-4	218-01-9		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-048-00-0											
23		benzo[b]fluoranthene	205-911-9	205-99-2		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-034-00-4											
24		benzo[k]fluoranthene	205-916-6	207-08-9		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-036-00-5											
25		benzo[a]pyrene; benzo[def]chrysene	200-028-5	50-32-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-032-00-3											
26	●	indeno[123-cd]pyrene	205-893-2	193-39-5		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
27		dibenz[a,h]anthracene	200-181-8	53-70-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-041-00-2											
28	●	benzo[ghi]perylene	205-883-8	191-24-2		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
29		phenol	203-632-7	108-95-2		<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		<LOD
		604-001-00-2											
30		benzene	200-753-7	71-43-2		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-020-00-8											
31		toluene	203-625-9	108-88-3		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-021-00-3											
32	●	ethylbenzene	202-849-4	100-41-4		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-023-00-4											
33		xylene	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]		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-022-00-9											
34		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	216-653-1	1634-04-4		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		603-181-00-X											
										Total:	0.0483 %		

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: TP104[2]

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

Sample details

Sample name:	LoW Code:	
TP104[2]	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:		
0.5 m	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No 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 compounds, with the exception of those specified elsewhere in this Annex	033-002-00-5			1	21	mg/kg		21	mg/kg	0.0021 %		
2	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		<0.2	mg/kg	3.22	<0.644	mg/kg	<0.0000644 %		**<LOD**
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.2	mg/kg	1.142	0.228	mg/kg	0.0000228 %		
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		44	mg/kg	1.462	64.308	mg/kg	0.00643 %		
5	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1	mg/kg	2.27	<2.27	mg/kg	<0.000227 %		**<LOD**
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		19	mg/kg	1.126	21.392	mg/kg	0.00214 %		
7	lead compounds with the exception of those specified elsewhere in this Annex	082-001-00-6			1	26	mg/kg		26	mg/kg	0.0026 %		
8	mercury(II) sulfide		215-696-3	1344-48-5		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
9	nickel(II) oxide (nickel monoxide)	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		38	mg/kg		38	mg/kg	0.0038 %		
10	trizinc bis(orthophosphate)	030-011-00-6	231-944-3	7779-90-0		130	mg/kg		130	mg/kg	0.013 %		
11	pH			PH		7.5	pH		7.5	pH	7.5 pH		
12	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				<0.1	mg/kg	1.884	<0.188	mg/kg	<0.0000188 %		**<LOD**
13	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		**<LOD**
14	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**
15	acenaphthylene		205-917-1	208-96-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<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									
16		acenaphthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-469-6	83-32-9									
17		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-581-5	85-01-8									
18		anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-371-1	120-12-7									
19		fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-912-4	206-44-0									
20		pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-927-3	129-00-0									
21		benzo[a]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
22		chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
23		benzo[b]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
24		benzo[k]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
25		benzo[a]pyrene; benzo[def]chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
26		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-893-2	193-39-5									
27		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
28		benzo[ghi]perylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-883-8	191-24-2									
29		phenol				<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		<LOD
		604-001-00-2	203-632-7	108-95-2									
30		benzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
31		toluene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
32		ethylbenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
33		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<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]									
34		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		603-181-00-X	216-653-1	1634-04-4									
										Total:	0.0315 %		

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: TP105[3]

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

Sample details

Sample name:
TP105[3]
Sample Depth:
0.15 m

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% No 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 compounds, with the exception of those specified elsewhere in this Annex	033-002-00-5			1	7.3	mg/kg		7.3	mg/kg	0.00073 %		
2	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		0.5	mg/kg	3.22	1.61	mg/kg	0.000161 %		
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.5	mg/kg	1.142	0.571	mg/kg	0.0000571 %		
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		250	mg/kg	1.462	365.389	mg/kg	0.0365 %		
5	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1	mg/kg	2.27	<2.27	mg/kg	<0.000227 %		**<LOD**
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		31	mg/kg	1.126	34.903	mg/kg	0.00349 %		
7	lead compounds with the exception of those specified elsewhere in this Annex	082-001-00-6			1	25	mg/kg		25	mg/kg	0.0025 %		
8	mercury(II) sulfide		215-696-3	1344-48-5		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
9	nickel(II) oxide (nickel monoxide)	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		10	mg/kg		10	mg/kg	0.001 %		
10	trizinc bis(orthophosphate)	030-011-00-6	231-944-3	7779-90-0		550	mg/kg		550	mg/kg	0.055 %		
11	pH			PH		10.6	pH		10.6	pH	10.6 pH		
12	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				0.4	mg/kg	1.884	0.754	mg/kg	0.0000754 %		
13	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		**<LOD**
14	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**
15	acenaphthylene		205-917-1	208-96-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<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									
16		acenaphthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-469-6	83-32-9									
17		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-581-5	85-01-8									
18		anthracene				0.04	mg/kg		0.04	mg/kg	0.000004 %		
			204-371-1	120-12-7									
19		fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-912-4	206-44-0									
20		pyrene				0.07	mg/kg		0.07	mg/kg	0.000007 %		
			204-927-3	129-00-0									
21		benzo[a]anthracene				0.08	mg/kg		0.08	mg/kg	0.000008 %		
		601-033-00-9	200-280-6	56-55-3									
22		chrysene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
		601-048-00-0	205-923-4	218-01-9									
23		benzo[b]fluoranthene				0.04	mg/kg		0.04	mg/kg	0.000004 %		
		601-034-00-4	205-911-9	205-99-2									
24		benzo[k]fluoranthene				0.07	mg/kg		0.07	mg/kg	0.000007 %		
		601-036-00-5	205-916-6	207-08-9									
25		benzo[a]pyrene; benzo[def]chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
26		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-893-2	193-39-5									
27		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
28		benzo[ghi]perylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-883-8	191-24-2									
29		phenol				0.3	mg/kg		0.3	mg/kg	0.00003 %		
		604-001-00-2	203-632-7	108-95-2									
30		benzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
31		toluene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
32		ethylbenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
33		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<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]									
34		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		603-181-00-X	216-653-1	1634-04-4									
										Total:	0.101 %		

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: TP105A[3]

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

Sample details

Sample name:
TP105A[3]
Sample Depth:
0.15 m

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% No 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 compounds, with the exception of those specified elsewhere in this Annex	033-002-00-5			1	13 mg/kg		13 mg/kg	0.0013 %		
2	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		1.1 mg/kg	3.22	3.542 mg/kg	0.000354 %		
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.8 mg/kg	1.142	0.914 mg/kg	0.0000914 %		
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		490 mg/kg	1.462	716.162 mg/kg	0.0716 %		
5	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1 mg/kg	2.27	<2.27 mg/kg	<0.000227 %		<LOD
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		50 mg/kg	1.126	56.294 mg/kg	0.00563 %		
7	lead compounds with the exception of those specified elsewhere in this Annex	082-001-00-6			1	60 mg/kg		60 mg/kg	0.006 %		
8	mercury(II) sulfide		215-696-3	1344-48-5		0.06 mg/kg		0.06 mg/kg	0.000006 %		
9	nickel(II) oxide (nickel monoxide)	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		28 mg/kg		28 mg/kg	0.0028 %		
10	trizinc bis(orthophosphate)	030-011-00-6	231-944-3	7779-90-0		200 mg/kg		200 mg/kg	0.02 %		
11	pH			PH		10 pH		10 pH	10pH		
12	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				0.2 mg/kg	1.884	0.377 mg/kg	0.0000377 %		
13	TPH (C6 to C40) petroleum group			TPH		<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
14	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
15	acenaphthylene		205-917-1	208-96-8		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<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									
16		acenaphthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-469-6	83-32-9									
17		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-581-5	85-01-8									
18		anthracene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
			204-371-1	120-12-7									
19		fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-912-4	206-44-0									
20		pyrene				0.06	mg/kg		0.06	mg/kg	0.000006 %		
			204-927-3	129-00-0									
21		benzo[a]anthracene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
		601-033-00-9	200-280-6	56-55-3									
22		chrysene				0.03	mg/kg		0.03	mg/kg	0.000003 %		
		601-048-00-0	205-923-4	218-01-9									
23		benzo[b]fluoranthene				0.04	mg/kg		0.04	mg/kg	0.000004 %		
		601-034-00-4	205-911-9	205-99-2									
24		benzo[k]fluoranthene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
		601-036-00-5	205-916-6	207-08-9									
25		benzo[a]pyrene; benzo[def]chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
26		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-893-2	193-39-5									
27		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
28		benzo[ghi]perylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-883-8	191-24-2									
29		phenol				<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		<LOD
		604-001-00-2	203-632-7	108-95-2									
30		benzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
31		toluene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
32		ethylbenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
33		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<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]									
34		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		603-181-00-X	216-653-1	1634-04-4									
										Total:	0.109 %		

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: TP105A[4]

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

Sample details

Sample name:	LoW Code:	
TP105A[4]	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:		
1.4 m	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No 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 compounds, with the exception of those specified elsewhere in this Annex	033-002-00-5			1	28	mg/kg		28	mg/kg	0.0028 %		
2	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		2.7	mg/kg	3.22	8.694	mg/kg	0.000869 %		
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.9	mg/kg	1.142	1.028	mg/kg	0.000103 %		
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		55	mg/kg	1.462	80.386	mg/kg	0.00804 %		
5	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1	mg/kg	2.27	<2.27	mg/kg	<0.000227 %		<LOD
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		47	mg/kg	1.126	52.917	mg/kg	0.00529 %		
7	lead compounds with the exception of those specified elsewhere in this Annex	082-001-00-6			1	32	mg/kg		32	mg/kg	0.0032 %		
8	mercury(II) sulfide		215-696-3	1344-48-5		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
9	nickel(II) oxide (nickel monoxide)	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		17	mg/kg		17	mg/kg	0.0017 %		
10	trizinc bis(orthophosphate)	030-011-00-6	231-944-3	7779-90-0		200	mg/kg		200	mg/kg	0.02 %		
11	pH			PH		9.2	pH		9.2	pH	9.2 pH		
12	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				0.8	mg/kg	1.884	1.507	mg/kg	0.000151 %		
13	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
14	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
15	acenaphthylene		205-917-1	208-96-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<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									
16		acenaphthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-469-6	83-32-9									
17		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-581-5	85-01-8									
18		anthracene				0.04	mg/kg		0.04	mg/kg	0.000004 %		
			204-371-1	120-12-7									
19		fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-912-4	206-44-0									
20		pyrene				0.06	mg/kg		0.06	mg/kg	0.000006 %		
			204-927-3	129-00-0									
21		benzo[a]anthracene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
		601-033-00-9	200-280-6	56-55-3									
22		chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
23		benzo[b]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
24		benzo[k]fluoranthene				0.03	mg/kg		0.03	mg/kg	0.000003 %		
		601-036-00-5	205-916-6	207-08-9									
25		benzo[a]pyrene; benzo[def]chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
26		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-893-2	193-39-5									
27		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
28		benzo[ghi]perylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-883-8	191-24-2									
29		phenol				4.8	mg/kg		4.8	mg/kg	0.00048 %		
		604-001-00-2	203-632-7	108-95-2									
30		benzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
31		toluene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
32		ethylbenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
33		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<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]									
34		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		603-181-00-X	216-653-1	1634-04-4									
										Total:	0.0439 %		

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: TP111[2]

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

Sample details

Sample name:	LoW Code:	
TP111[2]	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:		
0.25 m	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No 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 compounds, with the exception of those specified elsewhere in this Annex	033-002-00-5			1	12 mg/kg		12 mg/kg	0.0012 %		
2	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		2.7 mg/kg	3.22	8.694 mg/kg	0.000869 %		
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.4 mg/kg	1.142	0.457 mg/kg	0.0000457 %		
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		26 mg/kg	1.462	38 mg/kg	0.0038 %		
5	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1 mg/kg	2.27	<2.27 mg/kg	<0.000227 %		**<LOD**
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		31 mg/kg	1.126	34.903 mg/kg	0.00349 %		
7	lead compounds with the exception of those specified elsewhere in this Annex	082-001-00-6			1	83 mg/kg		83 mg/kg	0.0083 %		
8	mercury(II) sulfide		215-696-3	1344-48-5		0.23 mg/kg		0.23 mg/kg	0.000023 %		
9	nickel(II) oxide (nickel monoxide)	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		12 mg/kg		12 mg/kg	0.0012 %		
10	trizinc bis(orthophosphate)	030-011-00-6	231-944-3	7779-90-0		1100 mg/kg		1100 mg/kg	0.11 %		
11	pH			PH		8 pH		8 pH	8pH		
12	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				1.2 mg/kg	1.884	2.261 mg/kg	0.000226 %		
13	TPH (C6 to C40) petroleum group			TPH		<10 mg/kg		<10 mg/kg	<0.001 %		**<LOD**
14	naphthalene	601-052-00-2	202-049-5	91-20-3		0.04 mg/kg		0.04 mg/kg	0.000004 %		
15	acenaphthylene		205-917-1	208-96-8		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		**<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									
16		acenaphthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-469-6	83-32-9									
17		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-581-5	85-01-8									
18		anthracene				0.06	mg/kg		0.06	mg/kg	0.000006 %		
			204-371-1	120-12-7									
19		fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-912-4	206-44-0									
20		pyrene				0.06	mg/kg		0.06	mg/kg	0.000006 %		
			204-927-3	129-00-0									
21		benzo[a]anthracene				0.03	mg/kg		0.03	mg/kg	0.000003 %		
		601-033-00-9	200-280-6	56-55-3									
22		chrysene				0.29	mg/kg		0.29	mg/kg	0.000029 %		
		601-048-00-0	205-923-4	218-01-9									
23		benzo[b]fluoranthene				0.18	mg/kg		0.18	mg/kg	0.000018 %		
		601-034-00-4	205-911-9	205-99-2									
24		benzo[k]fluoranthene				0.44	mg/kg		0.44	mg/kg	0.000044 %		
		601-036-00-5	205-916-6	207-08-9									
25		benzo[a]pyrene; benzo[def]chrysene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
		601-032-00-3	200-028-5	50-32-8									
26		indeno[123-cd]pyrene				0.04	mg/kg		0.04	mg/kg	0.000004 %		
			205-893-2	193-39-5									
27		dibenz[a,h]anthracene				0.11	mg/kg		0.11	mg/kg	0.000011 %		
		601-041-00-2	200-181-8	53-70-3									
28		benzo[ghi]perylene				0.13	mg/kg		0.13	mg/kg	0.000013 %		
			205-883-8	191-24-2									
29		phenol				2.2	mg/kg		2.2	mg/kg	0.00022 %		
		604-001-00-2	203-632-7	108-95-2									
30		benzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
31		toluene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
32		ethylbenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
33		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<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]									
34		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		603-181-00-X	216-653-1	1634-04-4									
										Total:	0.131 %		

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: TP118[2]

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

Sample details

Sample name:	LoW Code:	
TP118[2]	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:		
0.25 m	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No 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 compounds, with the exception of those specified elsewhere in this Annex	033-002-00-5			1	22	mg/kg		22	mg/kg	0.0022 %		
2	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		3.4	mg/kg	3.22	10.948	mg/kg	0.00109 %		
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1.4	mg/kg	1.142	1.599	mg/kg	0.00016 %		
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		41	mg/kg	1.462	59.924	mg/kg	0.00599 %		
5	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1	mg/kg	2.27	<2.27	mg/kg	<0.000227 %		<LOD
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		58	mg/kg	1.126	65.302	mg/kg	0.00653 %		
7	lead compounds with the exception of those specified elsewhere in this Annex	082-001-00-6			1	69	mg/kg		69	mg/kg	0.0069 %		
8	mercury(II) sulfide		215-696-3	1344-48-5		0.12	mg/kg		0.12	mg/kg	0.000012 %		
9	nickel(II) oxide (nickel monoxide)	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		21	mg/kg		21	mg/kg	0.0021 %		
10	trizinc bis(orthophosphate)	030-011-00-6	231-944-3	7779-90-0		220	mg/kg		220	mg/kg	0.022 %		
11	pH			PH		5.9	pH		5.9	pH	5.9 pH		
12	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				0.9	mg/kg	1.884	1.696	mg/kg	0.00017 %		
13	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
14	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
15	acenaphthylene		205-917-1	208-96-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<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									
16		acenaphthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-469-6	83-32-9									
17		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-581-5	85-01-8									
18		anthracene				0.03	mg/kg		0.03	mg/kg	0.000003 %		
			204-371-1	120-12-7									
19		fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-912-4	206-44-0									
20		pyrene				0.04	mg/kg		0.04	mg/kg	0.000004 %		
			204-927-3	129-00-0									
21		benzo[a]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
22		chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
23		benzo[b]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
24		benzo[k]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
25		benzo[a]pyrene; benzo[def]chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
26		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-893-2	193-39-5									
27		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
28		benzo[ghi]perylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-883-8	191-24-2									
29		phenol				3.5	mg/kg		3.5	mg/kg	0.00035 %		
		604-001-00-2	203-632-7	108-95-2									
30		benzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
31		toluene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
32		ethylbenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
33		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<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]									
34		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		603-181-00-X	216-653-1	1634-04-4									
										Total:	0.0488 %		

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: TP115[2]

Hazardous Waste
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample name:	LoW Code:	
TP115[2]	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:		
0.2 m	Entry:	17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

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"

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group (conc.: 0.26%)

HP 7: Carcinogenic "waste which induces cancer or increases its incidence"

Hazard Statements hit:

Carc. 1B; H350 "May cause cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group (conc.: 0.26%)

HP 11: Mutagenic "waste which may cause a mutation, that is a permanent change in the amount or structure of the genetic material in a cell"

Hazard Statements hit:

Muta. 1B; H340 "May cause genetic defects [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group (conc.: 0.26%)

Determinands

Moisture content: 0% No 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 compounds, with the exception of those specified elsewhere in this Annex	033-002-00-5			1	64 mg/kg		64 mg/kg	0.0064 %		
2	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		3 mg/kg	3.22	9.66 mg/kg	0.000966 %		
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1.6 mg/kg	1.142	1.828 mg/kg	0.000183 %		
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		38 mg/kg	1.462	55.539 mg/kg	0.00555 %		
5	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1 mg/kg	2.27	<2.27 mg/kg	<0.000227 %		**<LOD**
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		35 mg/kg	1.126	39.406 mg/kg	0.00394 %		

#		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									
7		lead compounds with the exception of those specified elsewhere in this Annex			1	53	mg/kg		53	mg/kg	0.0053 %		
		082-001-00-6											
8		mercury(II) sulfide				0.14	mg/kg		0.14	mg/kg	0.000014 %		
			215-696-3	1344-48-5									
9		nickel(II) oxide (nickel monoxide)				21	mg/kg		21	mg/kg	0.0021 %		
		028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]									
10		trizinc bis(orthophosphate)				750	mg/kg		750	mg/kg	0.075 %		
		030-011-00-6	231-944-3	7779-90-0									
11		pH				6.1	pH		6.1	pH	6.1 pH		
				PH									
12		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 }				0.2	mg/kg	1.884	0.377	mg/kg	0.0000377 %		
		006-007-00-5											
13		TPH (C6 to C40) petroleum group				2600	mg/kg		2600	mg/kg	0.26 %		
				TPH									
14		naphthalene				0.12	mg/kg		0.12	mg/kg	0.000012 %		
		601-052-00-2	202-049-5	91-20-3									
15		acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-917-1	208-96-8									
16		acenaphthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-469-6	83-32-9									
17		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-581-5	85-01-8									
18		anthracene				0.14	mg/kg		0.14	mg/kg	0.000014 %		
			204-371-1	120-12-7									
19		fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-912-4	206-44-0									
20		pyrene				0.13	mg/kg		0.13	mg/kg	0.000013 %		
			204-927-3	129-00-0									
21		benzo[a]anthracene				0.08	mg/kg		0.08	mg/kg	0.000008 %		
		601-033-00-9	200-280-6	56-55-3									
22		chrysene				0.03	mg/kg		0.03	mg/kg	0.000003 %		
		601-048-00-0	205-923-4	218-01-9									
23		benzo[b]fluoranthene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
		601-034-00-4	205-911-9	205-99-2									
24		benzo[k]fluoranthene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
		601-036-00-5	205-916-6	207-08-9									
25		benzo[a]pyrene; benzo[def]chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
26		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-893-2	193-39-5									
27		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
28		benzo[ghi]perylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-883-8	191-24-2									
29		phenol				1.4	mg/kg		1.4	mg/kg	0.00014 %		
		604-001-00-2	203-632-7	108-95-2									
30		benzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
31		toluene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
32		ethylbenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
33		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<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]									

#		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							
34		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
		603-181-00-X	216-653-1	1634-04-4							
								Total:	0.36 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
	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: Assumed HP3 >0.1%

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group (conc.: 0.26%)

Appendix A: Classifier defined and non GB MCL determinands

- **arsenic compounds, with the exception of those specified elsewhere in this Annex**

GB MCL index number: 033-002-00-5
Description/Comments: Worst Case: IARC considers arsenic compounds Group 1; Carcinogenic to humans
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 1 (23, Sup 7, 100C) 2012

- **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**

GB MCL index number: 082-001-00-6
Description/Comments: Least-worst case: IARC considers lead compounds Group 2A; Probably carcinogenic to humans; Lead REACH Consortium, following MCL protocols, considers many simple lead compounds to be Carcinogenic category 2
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 2A (Sup 7, 87) 2006; Lead REACH Consortium www.reach-lead.eu/substanceinformation.html. Review date 29/09/2015

- **mercury(II) sulfide** (EC Number: 215-696-3, CAS Number: 1344-48-5)

Description/Comments: Data from ECHA's C&L and SDS Sigma Aldrich V6 dated 17/9/2019

Threshold for EUH031 based on calculation method in WM3 Box C12.1
Data source: https://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/8530
Data source date: 14 May 2020
Hazard Statements: EUH031 >= 1 % , EUH031 , Skin Sens. 1; H317 , STOT RE 2; H373

- **pH** (CAS Number: PH)

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

- **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

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

Description/Comments: Hazard statements taken from WM3 1st Edition 2015; Risk phrases: WM2 3rd Edition 2013
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

- **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

- **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

- **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

Appendix B: Rationale for selection of metal species

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 (edit as required)

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. (edit as required) 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 (edit as required)

chromium in chromium(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 (edit as required)

chromium in chromium(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 (edit as required)

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. (edit as required) Worse case copper sulphate is very soluble and likely to have been leached away if ever present and/or not enough soluble sulphate detected. (edit as required)

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}

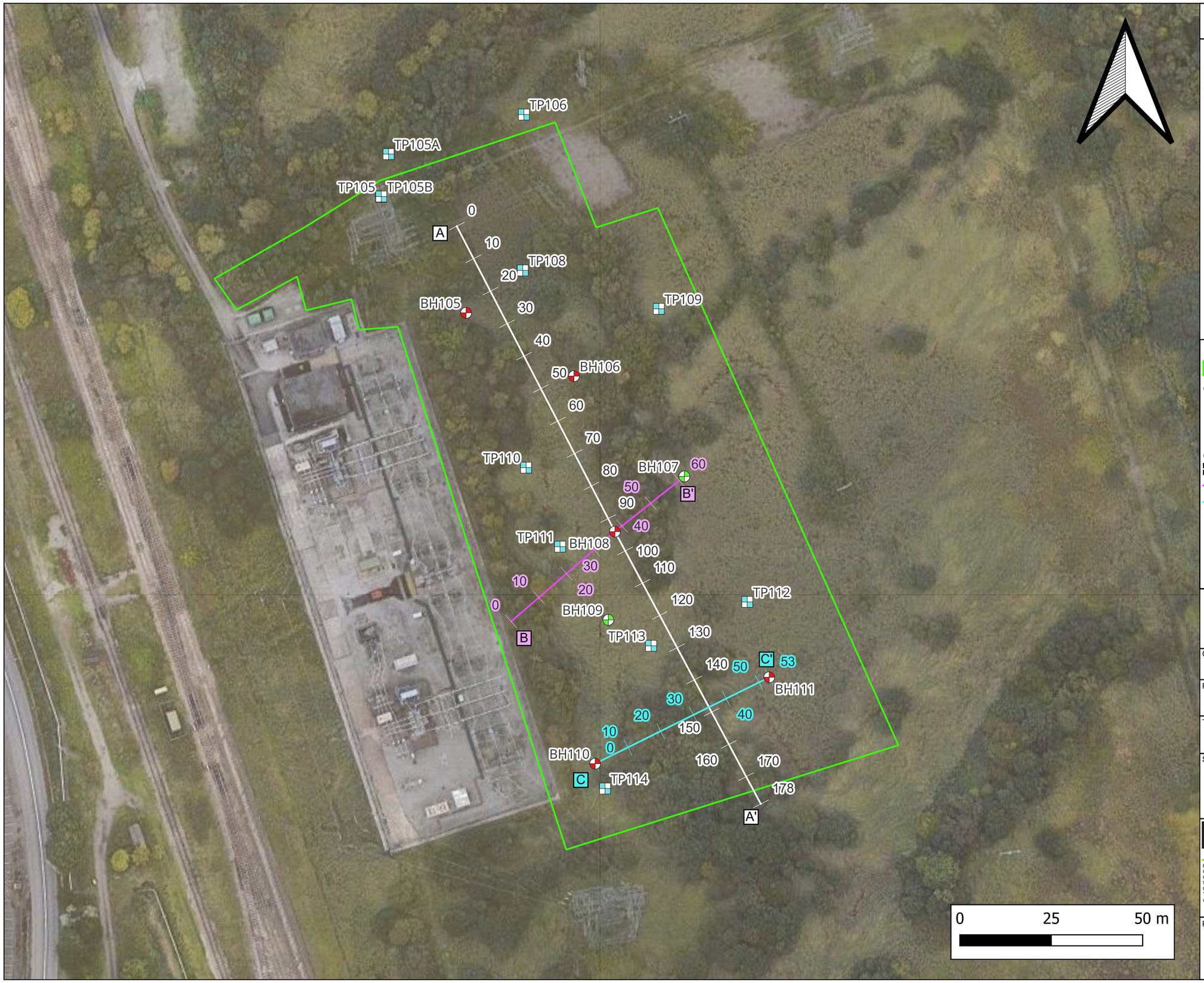
Harmonised group entry used as most reasonable case as complex cyanides and those specified elsewhere in the annex are not likely to be present in this soil: [Note conversion factor based on a worst case compound: sodium cyanide] (edit as required)

Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition v1.2.GB - Oct 2021
HazWasteOnline Classification Engine Version: 2025.7.6439.11737 (07 Jan 2025)
HazWasteOnline Database: 2025.7.6439.11737 (07 Jan 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

Appendix D. Geological Cross Sections



REFERENCE SHOULD BE MADE TO GEOLOGICAL CROSS SECTIONS:
CROSS SECTION A-A'
CROSS SECTION B-B'
CROSS SECTION C-C'

LEGEND

MARGAM SUBSTATION BOUNDARY

COMPLETED GROUND INVESTIGATION

- CABLE PERCUSSIVE BOREHOLE
- CABLE PERCUSSIVE & RC BOREHOLE
- MACHINE EXCAVATED TRIAL PIT

GEOLOGICAL CROSS SECTIONS (Ch. M)

- SECTION A - A'
- SECTION B - B'
- SECTION C - C'

LAING O'ROURKE

Client: LAING O' ROURKE

Project: MARGAM SUBSTATION - LoR

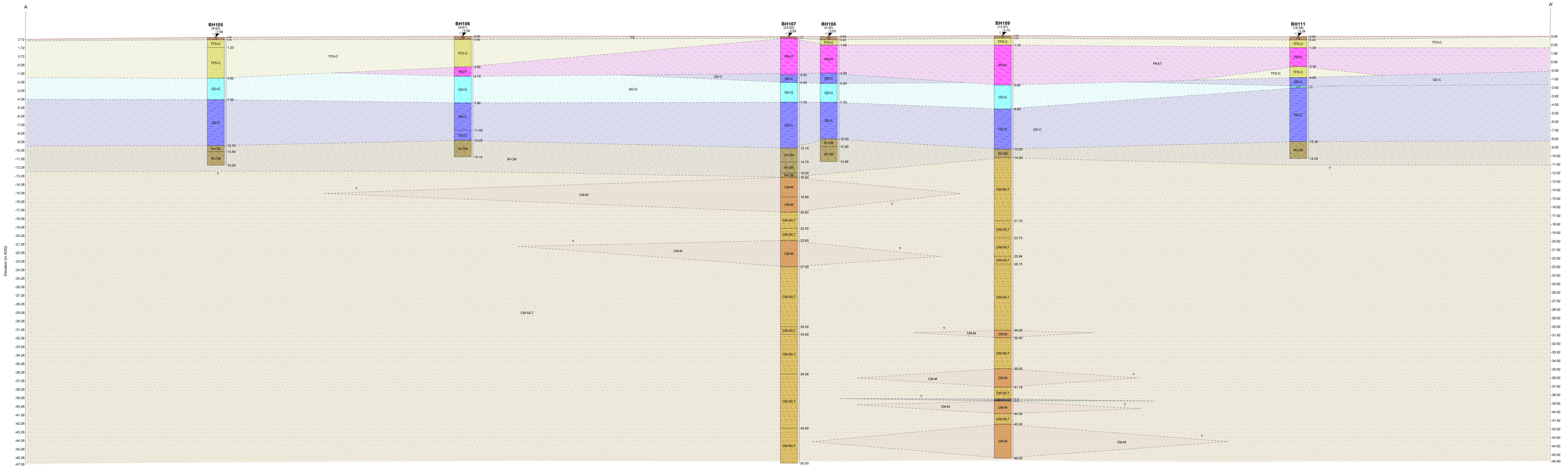
Title: MARGAM SUBSTATION CROSS SECTION LOCATION PLAN

Scale	Drawn	Checked	Approved
1:1000 (A3)	JT	VB	PDH
	Date 20/12/24	Date 20/12/24	Date 15/01/25

BakerHicks.

BakerHicks
One Warwick Technology Park
Gallows Hill
Warwick
CV34 6YL
T. +44 (0)1926 567800
www.bakerhicks.com

Project Number	Drawing Number	Rev
30004595	APPENDIX D	P01



GEOLOGICAL SECTION A-A' S 1:100/100

Legend
Geotechnics and Other

Project number:	30004595
Project name:	Morgan Sulvester - Lot5
Document name:	Morgan Sulvester Lot5
Drawing name:	Cross Section A - A'

BakerHicks

[GEOS - Stratigraphy (64 bit) | version 5.2024.118.0] hardware key 108197 1 | Morgan Sindall Group | Copyright © 2024 Fine spot, s.r.o. All Rights Reserved | www.finesoftware.eu]

B

B'

BH109
(17.05)
3.05

BH108
(0.00)
3.05

BH107
(0.00)
2.95

TS
TFD-C
PEAT
GD-G
GD-C
W-CM
CM-SILT
CM-M
C

0.00
0.30
1.10
5.80
8.60
13.30
14.30
21.70
23.70
25.84
26.75
34.50
35.40
39.00
41.18
42.55
42.90
44.30
45.50
49.50

0.00
0.40
1.00
4.30
5.50
7.70
12.00
12.90
14.66

0.00
0.20
4.50
5.40
7.70
13.10
14.70
16.00
16.50
18.80
20.60
22.50
23.90
27.00
34.00
34.90
39.56
45.90
50.00

?

Elevation (mAOD)

Reference level -51.00

Chainage [m] 0.0 1.5 3.0 4.5 6.0 7.5 9.0 10.5 12.0 13.5 15.0 16.5 18.0 19.5 21.0 22.5 24.0 25.5 27.0 28.5 30.0 31.5 33.0 34.5 36.0 37.5 39.0 40.5 42.0 43.5 45.0 46.5 48.0 49.5 51.0 52.5 54.0 55.5 57.0 58.5 60.0 61.5

GEOLOGICAL SECTION B-B' S 1:100/100

Legend

Superficial
- Topsoil (TS)
- Tidal Flat Deposits – Cohesive (TFD-C)
- Tidal Flat Deposits – Peat (PEAT)
- Glacial Deposits – Granular (GD-G)
- Glacial Deposits – Cohesive (GD-C)

Bedrock
- Weathered Coal Measures Formation (W-CM)
- Coal Measures Formation – Mudstone (CM-M)
- Coal Measures Formation – Siltstone (CM-SILT)
- Coal Measures Formation – Coal (C)

Boundaries and Other
- Conjectured Boundary

BH111 (18.36) 3.04 — Borehole ID; Distance of borehole from cross section line (m); Level (AOD)
TS 0.00 / 0.40 — Topsoil
TFD-C 1.30 — Depth of interface (metres below ground level)
PEAT — Lithological Unit Code

Project number:	30004595
Project name:	Margam Substation - LoR
Document name:	Margam Substation GIR
Drawing name:	Cross Section B - B'

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C

C'

BH110
(0.00)
3.07

BH111
(0.00)
3.03

BH110		BH111	
TS	0.00	TS	0.00
TFD-C	0.40	TFD-C	0.40
PEAT	1.30	PEAT	1.30
GD-C	5.10	TFD-C	3.50
GD-G	5.60	GD-C	4.80
GD-C	7.60	GD-G	5.80
W-CM	11.90	GD-C	6.00
	12.20	W-CM	12.30
			14.29

TS
TFD-C
PEAT
TFD-C
GD-C
GD-G
GD-C
W-CM
?
?
CM-SILT

Elevation (mAOD)

Elevation (m)AOD

Reference level -51.10

Chainage [m] 0.0 1.5 3.0 4.5 6.0 7.5 9.0 10.5 12.0 13.5 15.0 16.5 18.0 19.5 21.0 22.5 24.0 25.5 27.0 28.5 30.0 31.5 33.0 34.5 36.0 37.5 39.0 40.5 42.0 43.5 45.0 46.5 48.0 49.5 51.0 52.5

GEOLOGICAL SECTION C-C' S 1:100/100

Legend

Superficial
- Topsoil (TS)
- Tidal Flat Deposits – Cohesive (TFD-C)
- Tidal Flat Deposits – Peat (PEAT)
- Glacial Deposits – Granular (GD-G)
- Glacial Deposits – Cohesive (GD-C)

Bedrock
- Weathered Coal Measures Formation (W-CM)
- Coal Measures Formation – Mudstone (CM-M)
- Coal Measures Formation – Siltstone (CM-SILT)
- Coal Measures Formation – Coal (C)

Boundaries and Other
- Conjectured Boundary

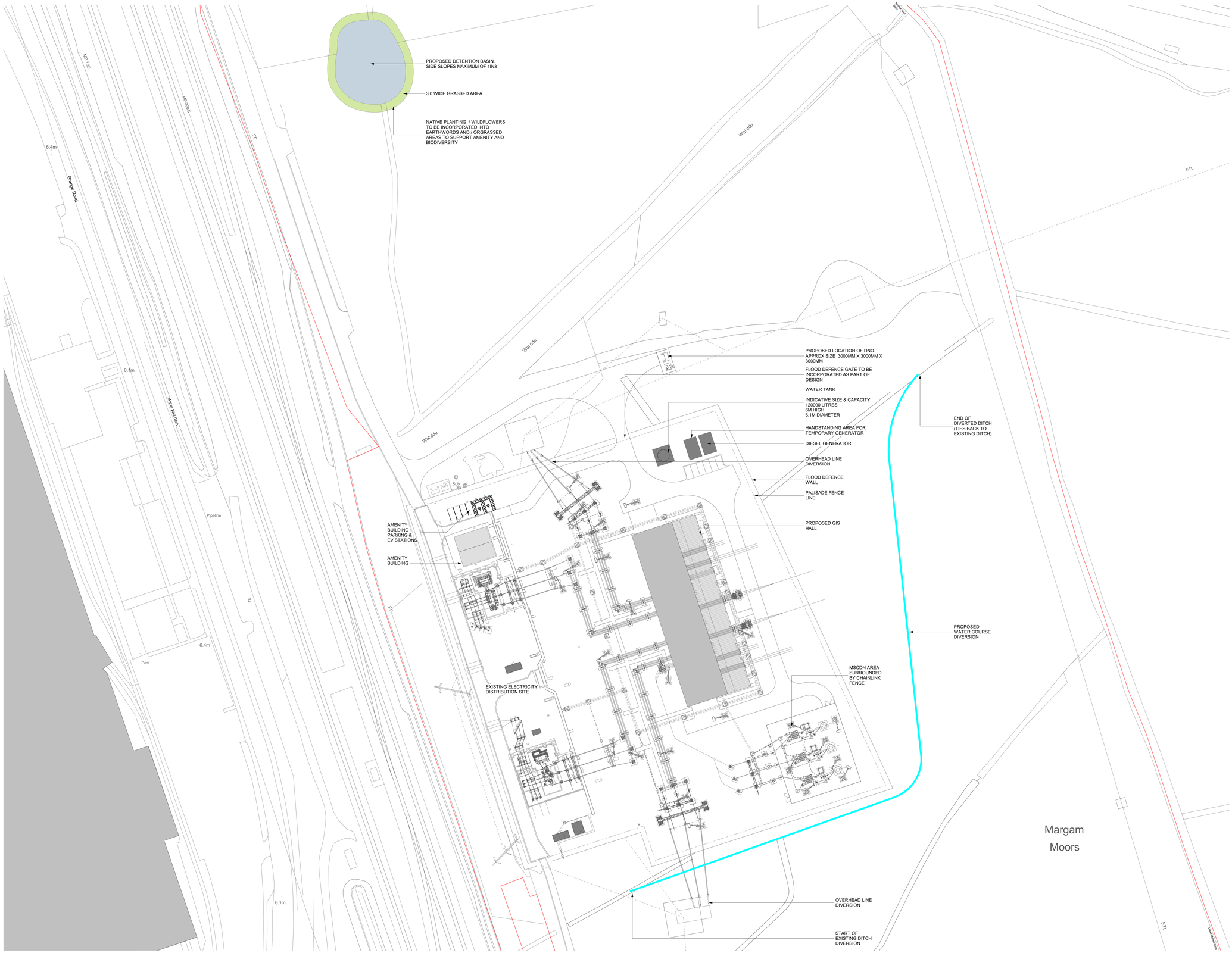
BH111 (16.38) 3.04 ← Borehole ID; Distance of borehole from cross section line (m); Level (AOD)
TS 0.00 / TFD-C 0.40 / -1.30 Depth of interface (metres below ground level) / PEAT — Lithological Unit Code

Project number:	30004595
Project name:	Margam Substation - LoR
Document name:	Margam Substation GIR
Drawing name:	Cross Section C - C'

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Appendix E. Site Layout Drawing



1 Margam Site Plan - Proposed
Scale: 1 : 500

SCALE 1:500 (5 0 5 10 15 20 25 m)

For Planning

GENERAL NOTES

ALL BAKERHICKS DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE GENERAL NOTES DRAWINGS, THE RELEVANT BAKERHICKS SPECIFICATIONS AND ALL RELEVANT ARCHITECTS AND SERVICE ENGINEER'S DRAWINGS AND SPECIFICATION.

ALL LEVELS ARE IN METRES ABOVE ORDINANCE DATUM.

ALL DIMENSIONS ARE IN MILLIMETRES (U.N.O)

DO NOT SCALE ANY ENGINEERING DRAWINGS OR DIGITAL DATA. IF IN DOUBT ASK. WORK TO FIGURED DIMENSIONS ONLY. ANY DISCREPANCIES IN DIMENSIONS ARE TO BE REFERRED TO ENGINEER BEFORE WORK IS PUT TO HAND.

THE CONTRACTOR MUST ADVISE THE ARCHITECT AND ENGINEER OF ANY DISCREPANCIES BETWEEN THE CONTRACT DRAWINGS AND/OR SITE CONDITIONS / DIMENSIONS AT THE EARLIEST POSSIBLE OPPORTUNITY.

REVISION NOTES ARE FOR GUIDANCE ONLY. FOR SPECIFIC DETAILS, REFER TO CLOUDED AREA ON DRAWINGS FOR MOST RECENT AMENDMENTS.

ALL DIMENSIONS AND LEVELS ARE TO BE CHECKED ON SITE BY THE CONTRACTOR OR HIS SUBCONTRACTOR PRIOR TO PREPARING ANY WORKING DRAWINGS OR COMMENCING ON SITE.

ALL WORK HAS TO BE CARRIED OUT WITH THE REQUIREMENTS OF THE RELEVANT STATUTORY AUTHORITIES AND REGULATIONS.

ALL METHOD STATEMENTS SHOULD BE SUBMITTED TO THE ARCHITECT / CDM PRINCIPAL DESIGNER AND ENGINEER FOR REVIEW AT LEAST TWO WEEKS BEFORE CARRYING OUT THE SAID WORKS.

ALL PROPRIETARY PRODUCTS TO BE AS SPECIFIED OR EQUAL APPROVED.



KEYPLAN

SITE KEY

SITE BOUNDARY

SITE AREA: (154648.052 m2) (15.46 Hectares) (38.20 Acres)

BUILDINGS

PROPOSED WATERCOURSE DIVERSION

NOTE:

DRAWING TO BE PRINTED IN COLOUR

REFER TO PEAT MANAGEMENT STRATEGY FOR AREAS OF PEAT BURIAL LOCATIONS

P05	S3 For Review and Comment: Planning drawings updated following feedback with NPT on 24/07/25	MY	OTr / PC	29/07/25
P04	S3 - For Review & Comment. Updated Proposed Site Layout following Planning Consultant Feedback	OTr	OT/RC	30/06/25
P03	Issued for planning, comments incorporated following client feedback	GP	OTr / RC	24/04/25
P02	Issued For Planning	DSB	OTr / RW	10/02/25
P01	First Issue	DSB	RW / JK	03/02/25
Rev.	Description	Cre'd	Chk'd / Appr'd	Date

nationalgrid

Master Scheme No:	Sub-Scheme No:	Site:
101677		MARGAM

Scheme Name: Margam Substation

Document Title: Margam GIS Hall - Proposed Site Plan

Created by:	Date:	Checked by:	Date:	Approved by:	Date:
DSB	30/01/25	RW	30/01/25	JK	30/01/25

Development Eng:	Document Type:	Scale:	Format:	Sheet(s):	Rev:
	DWG	1 : 500	A0		P05

National Grid Document Number: 13_LOR_0066

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United Kingdom

- Motherwell (Eurocentral) +44 (0)1698 756100
- Manchester +44 (0)161 873 2500
- Derby +44 (0)1332 974398
- Warwick +44 (0)1926 567800
- London +44 (0)20 7549 1300
- York +44 (0)1904 231858

Europe

- Basel +41 61 335 30 30
- Zurich +41 61 335 30 30
- Lausanne +41 61 335 30 30
- Karlsruhe +49 721 9099 75 95
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