Phase II Geo-Environmental Assessment

University of Huddersfield
Queensgate
Huddersfield
HD1 3DH

Prepared for:

University of Huddersfield
Lockside
Queensgate
Huddersfield
HD1 3DH

EPS Project Reference:	UK26.7777
Date Issued:	1st April 2026
Report Status:	Issue 1

NOTE TO COUNCIL'S WHEN UPLOADING THIS REPORT TO PLANNING PORTALS: There is no personal data in this report which requires redaction.
If applied, certain Content Redaction Software (excluding Adobe Acrobat) will distort formatting, text, images and figures unnecessarily.

UNIVERSITY OF HUDDERSFIELD

NON-TECHNICAL CLIENT SUMMARY

This report presents the findings of a Phase II Intrusive Investigation undertaken to determine ground conditions, establish if there are any environmental risks associated with the site and its development. Pertinent findings and conclusions may be summarised as follows:

- The site comprises undeveloped brownfield land with marginal areas of hardstanding and no vegetation present. Proposed development plans include the construction of an area of public open space / landscaping.

- A total of four boreholes were drilled to a maximum depth of 3.5m. These generally found an initial layer of made ground, overlying superficial deposits of clay, sand and gravel, which in turn is underlain by weathered siltstone of the Pennine Lower Coal Measures.

- No significant visible evidence of contamination was encountered during intrusive works and chemical analysis of soil samples did not identify any exceedances regarding human health.

- Chemical analysis of soil samples did identify contaminant exceedances relating controlled waters, although after review the risk is considered to be low, when considering the existing proposed development does not currently include and buildings or infrastructure.

- No further action is deemed necessary in respect of contamination. However, should the proposed development change to include buildings / infrastructure, further data would be recommended to refine the delineation contaminant exceedances regarding controlled waters and to confirm that higher concentrations are not present in areas of the site that have not been investigated.

The above points represent a simplified summary of the findings of this assessment and must not form the basis for key decisions for the proposed development. A thorough review of the details is contained within the following report, or alternatively get in touch and we'll talk you through it.

Project Reference:	UK26.7777
Title:	Phase II Geo-Environmental Assessment – University of Huddersfield, Lockside, Queensgate, Huddersfield, HD1 3DH
Client:	University of Huddersfield
Date:	1st April 2026
EPS Contact Details:	7B Caxton House Broad Street Cambourne Cambridge CB23 6JN T: 01954 710666 E: info@epstrategies.co.uk W: www.epstrategies.co.uk
Status:	Issue 1

Author:	**Reviewed:**	**Authorised:**
Harrison Evans	Ashleigh Watson	Steve Bullock
Consultant	Senior Consultant	Director

This report has been prepared for the client(s) listed on the report title page. EPS accepts no liability or responsibility for use of, or reliance upon, this report and / or the information contained within it by third parties.

If third parties have been contracted / consulted during compilation of this report, the validity of any data they may have supplied, and which are included in the report, have been assessed as far as possible by EPS however, EPS cannot guarantee the validity of these data.

No part of this report, or references to it, may be included in published documents of any kind without approval from EPS.

This report and its contents, together with any supporting correspondence or other documentation, remain the property of Environmental Protection Strategies Ltd until paid for in full.

Where ground investigations have been conducted, these have been limited to the level of detail required for the site in order to achieve the objectives of the investigation.

The report has been written, reviewed and authorised by the persons listed above. It has also undergone EPS' quality management inspection. Should you require any further assistance regarding the information provided within the report, please do not hesitate to contact us.

The National Planning Policy Framework requires a competent person to prepare site investigation information, which is defined as a person with a recognised relevant qualification, sufficient experience in dealing with the type(s) of pollution or land instability, and membership of a relevant professional organisation. EPS considers that it fulfils these criteria and would welcome any request for staff CVs or case studies to demonstrate it.

As stated within DEFRA's Contaminated Land Statutory Guidance, with any complex risk assessment it is possible that different suitably qualified people may reach slightly different conclusions when interpreting the same information. EPS recognises this and considers the conclusions presented within this report to be robust and appropriate but input from the Local Authority and their judgement in line with this guidance would still be welcomed.

TABLE OF CONTENTS

TABLE OF CONTENTS (CONTINUED)

Figures

Tables

Appendices

1 INTRODUCTION

In February 2026, Environmental Protection Strategies Ltd (EPS) was commissioned by GSS Architecture, on behalf of the University of Huddersfield, to complete a Phase II Geo-Environmental Assessment Report at the University of Huddersfield, Queensgate, Huddersfield, HD1 3DH ('the site'); see Figure 1.

The work was commissioned in order to support planning for the development of an area of public open space / landscaping on the site.

A previous Phase I Preliminary Contamination Risk Assessment was provided by the client, completed by Geol Consultants Ltd and issued 12th January 2026, which should be read in conjunction with this report.

This report presents the findings, conclusions, and recommendations of the Phase II Intrusive Investigation undertaken.

1.1 Objectives

The objectives of this investigation were as follows:

a) Determine the potential risks posed by the site and make recommendations for further work that may be required, to ensure safe development in accordance the Environment Agency's *Land Contamination: Risk Management* guidance (LC:RM) and the *National Planning Policy Framework.*
b) Collect information on ground conditions and strength.

1.2 Scope of Work

To perform an exploratory assessment of the site in accordance with the principles and requirements of DEFRAs '*Contaminated Land Statutory Guidance'* (2012), BS10175:2026 –'*Investigation of Potentially Contaminated Sites'*, BS 5930:2015+A1:2020 '*Code of practice for ground investigations*' the following tasks were undertaken:

Intrusive Investigation:

- Site walkover, inspection of any visual evidence of contamination at the site, obtaining photographic records.
- Health and safety briefing / site supervision.
- Drilling of four window sample boreholes to a max depth of 3.5m below ground level (bgl) using a track-mounted percussive rig.
- Continual logging of ground conditions including inspection of samples for visual and olfactory contamination, and laboratory analysis of selected representative samples.
- Collect information on ground conditions and strength to provide factual geotechnical data.

Reporting:

- Data collection
- Interpretation of data including completion of Generic Quantitative Risk Assessment

The findings and conclusions of these investigations are presented in the following sections.

1.3 Limitations and Constraints

The purpose of this report is to present the findings of a soil sampling investigation conducted at the location(s) specified. When examining the data collected from the investigations made during the assessment, Environmental Protection Strategies Ltd (EPS) makes the following statements:

No investigation method is capable of completely identifying all ground conditions that might be present in the soil or groundwater under a site. Where outlined in our report, we have examined the ground beneath a site by constructing a number of boreholes and / or trial pits to recover soil and / or groundwater samples. The locations of these excavations and sampling points are considered representative of the condition of the whole site subsurface however, ground conditions are naturally variable, and it may be possible that the conditions encountered may differ to those found during the investigation.

No visible evidence of Japanese Knotweed was identified during the site walkover. However, this plant can be difficult to identify in the early stages of growth and therefore it is not always possible to identify its' presence at certain times of the year. For this reason, EPS cannot confirm that Japanese Knotweed rhizomes do not exist, and it is recommended that if it is suspected that this species, or other similarly invasive plants are present at the site, a specialist contractor should be commissioned to make a detailed assessment.

This report does not include specific investigation for the presence of Potential Asbestos Containing Material (PACM). Specialist contractors should be commissioned to make detailed assessments and recommendations if these materials are suspected.

The investigation was carried out to assess the significance of contamination resulting from the use of the site as identified in this report. Unless EPS has otherwise indicated, no assessment of potential impact of any other previous uses has been made.

2 GEO-ENVIRONMENTAL SETTING

The following section provides a summary of the information collected in relation to the site location and history.

2.1 Previous Report

A previous Phase I Preliminary Contamination Risk Assessment has been completed for the site, undertaken by Geol Consultants Ltd in January 2026. For background information, it is recommended that the reader reviews the following report made available by Geol Consultants Ltd:

- Geol Consultants Ltd, 2026. *Phase I Preliminary Contamination Risk Assessment – Site 3, University of Huddersfield, Huddersfield, West Yorkshire, HD1 3DH* (dated 12th January 2026, Report Ref: GEOL25-6220)

The above report provided a review of the historical activities at the site, the geological and hydrological settings and then presented a Conceptual Site Model (CSM). Pertinent details from these documents are included and summarised in the sections below.

2.2 Site & Location Description

Detail	Description
Location	The site is located east of Queen Street South, approximately 650m southeast of Huddersfield City centre.
National Grid Reference	414621, 416194
Topographic Elevation	Approximately 84m Above Ordnance Datum (AOD) to the northwest and 82m AOD to the southeast.
Site Description	The site is rectangular in shape, occupying an area of roughly 0.18Ha. At the time of the intrusive investigation (27th February 2026) the site comprised undeveloped land with marginal areas of mixed hardstanding, with the majority of the site being what appeared to be flatted made ground associated with previous demolition works. No vegetation was present. All utilities were notes to be located within the periphery of the site, with an electrical substation is present within the western corner. Several vehicles were parked on the site during the intrusive works within the southwest boundary.
Surrounding Land Use	The site is situated within the grounds of the University of Huddersfield. The immediate surrounding area comprises predominately of commercial land use, associated with the University of Huddersfield.

Detail	Description
Geology and Coal Risk	Geological mapping indicates that the site is directly underlain by bedrock of the Pennine Lower Coal Measures Formation, comprising of alternating mudstone, siltstone, sandstone and coal. Approximately 140m north and 110m southeast are superficial Head Deposits and Alluvium respectively, comprising clay, silt, sand and gravel. These materials have the potential to encroach onto the site. Although made ground has not been mapped, it is anticipated to be present beneath the site due to former use. Approximately 170m south is a coal seam, identified as the Soft Bed within the Geol Consulting Ltd Report. This seam has been noted to have a northeastern dip and anticipated to be present within 30.0m beneath the site, contributing to the site being located within a Development High Risk Area, as per the MRA (Mining Remediation Authority) Map Viewer. As per the previous Phase I Report, given the minimal intrusive nature of the proposed development, the risk posed to the site from potentially unrecorded coal workings within the Soft Bed coal seam beneath the site is considered low. Should the proposed land use change, this risk must be reviewed.
Hydrogeology	Groundwater vulnerability maps for the area show that the underlying bedrock of the Pennine Lower Coal Measures classified as a Secondary 'A' Aquifer.
Summary of Site History	Historical mapping indicates that the site has experienced numerous phases of development and demolition during the 1900's and 2000's. The site has historically comprised predominately small buildings and most recently comprised a government office. As of the present day (2026) the site is currently undeveloped, however, an electrical substation is present within the western corner. The surrounding area has comprised residential, commercial and industrial (including iron works, mills, faraday works) land use from the late 1800's through to the present day. During the 2000's, the University of Huddersfield expanded to surround the site.

A plan showing the site location is provided as Figure 1, and an aerial photograph is included as Figure 2. Selected site photographs are included as Appendix A, and a proposed development plan is included as Appendix B.

2.3 Phase I Findings and Conclusions

The Preliminary Contamination Risk Assessment developed a Conceptual Site Model (CSM), taking into account the potential sources at the site and in the surrounding area, to identify the plausible contaminant linkages that are either already active or have the potential to become active as a result of the proposed development/change of land use.

The potential concerns identified were associated with potential made ground on site, and the presence of potential sources of contamination from the nearby commercial / industrial historical uses of the surrounding local area. The contaminant linkages considered to carry the greatest potential risks therefore comprised the following:

- Human health risks associated with potential exposure of site workers during the proposed redevelopment and end users to contaminated soils.
- Human health risks from the ingress / diffusion through permeable potable supply pipes.
- Risk to controlled waters (localised shallow perched water / deep groundwater within the solid geology) from surface run-off, vertical and lateral infiltration / leaching of mobile contaminants
- Risk to Flora and Fauna in landscaped areas from contaminated soils

It was therefore recommended that the identified plausible contaminant linkages should be further investigated by means of an exploratory intrusive investigation.

3 SUMMARY OF INTRUSIVE INVESTIGATIONS

Intrusive ground investigations were undertaken on the 27th of February 2026 in accordance with EPS standard operating procedures, copies of which will be made available on request. A summary of all site activities is presented in the following sections:

3.1 Exploratory Hole Locations

Exploratory hole locations were selected through consideration of the potential contaminant linkages identified through the Phase I Preliminary Contamination Risk Assessment, the proposed development layout, the location of below ground utilities as well as operational and health & safety considerations.

Four window sample boreholes (WS01 – WS04) were formed at the site to a maximum depth of 3.5m using a track-mounted percussive drilling rig.

The overall objective in terms of exploratory hole locations was to provide an appropriate lateral and vertical coverage of the soils underlying the site in order to offer information relating to their quality and nature.

A borehole location plan is presented as Figure 3.

3.2 In-Situ Testing & Soil Sampling

Each borehole was logged for ground conditions encountered and inspected for any physical evidence of contamination, such as soil staining, odour and the presence of separate phase liquids on a precautionary basis. Borehole logs are presented in Appendix C.

Standard or cone penetration tests (SPT / CPT) were carried out in all materials using an automatic trip hammer. The number of blows required to advance a standard split spoon, (or solid 60° nose cone for the CPT test) over the final 300mm of a 450mm total drive was recorded, and is shown on the borehole records at the penetration resistance ("N" value).

A Dynamic Cone Penetrometer (DCP) was used to estimate in-situ CBR value for up to 900mm depth of subgrade in a number of locations. The unit consists of two shafts that are connected around the midpoint, and one of these is used to drive an anvil which contains a pointed tip by sliding a hammer or weight on the upper portion of the shaft. The strength of the underlying soil is determined through measuring the penetration of the lower shaft (in mm per blow), which is then used to calculate an equivalent CBR value.

Where potentially volatile organic compounds are suspected, a Photoionisation Detector (PID) is used to measure the relative concentrations of vapour associated with soil samples collected from different depths and locations at the site. PID readings are only used to provide EPS with a basic means to quantify areas of volatile organic compound in the field to help guide the investigation. As potentially volatile organic compounds, specifically including petroleum hydrocarbons, were identified in the conceptual site model, PID readings were collected during this intrusive investigation. These readings are included within borehole logs presented as Appendix C and the results are discussed further in later sections.

3.3 Laboratory Testing

Samples obtained for analysis of identified contaminants of concern were submitted to Element Materials Technology, who hold appropriate UKAS / MCERT accreditation for the required testing. Samples were transported in laboratory supplied containers and delivered to the laboratory by approved courier.

Geotechnical testing was undertaken by Soil Engineering, Leeds, a UKAS accredited laboratory. Copies of chain of custody documentation are held by EPS and will be made available on request.

Laboratory testing schedules are included as Table 1 and Table 2.

4 FINDINGS OF THE INVESTIGATION

This section of the report provides a summary of the findings of the various aspects of the ground investigation.

4.1 Ground Conditions

A total of four window sample boreholes were formed at the site and the ground conditions encountered, from surface level, have been interpreted to comprise:

- Made Ground
- Alluvium
- Pennine Lower Coal Measures (PLCM)

Site specific borehole logs are included as Appendix C and give descriptions and depths of strata encountered. A summary of the general strata encountered across the site is provided in the table below, with more detailed description given in the following sub sections.

Geological Strata	Maximum Depth to Base of Strata (m bgl)	Strata Thickness (m)
Made Ground	2.80	0.90 - 2.80
Alluvium	2.10	0.10 - 1.00
PLCM	>3.5 (not proven)	>0.50 - >2.00 (not proven)

4.1.1 Made Ground

Made ground was encountered from the surface in all locations. These materials were variable, comprising a mix of dark grey clayey, sandy gravel with yellow brown angular stone, with concrete, ash, coal and brick fragments throughout. A slight organic / hydrocarbon odour was noted in WS01 between 0.60 – 1.10m.

4.1.2 Alluvium

Underlying the Made Ground in WS01 and WS03 were soils interpreted as Alluvium. These soils were an orangish brown silty, gravelly clay. In WS01 this unit was 1.00m thick, extending to 2.10m, while in WS03 it was only 0.10m thick, extending to 1.00.

4.1.3 PLCM

Directly underlying the made ground / superficial deposits were soils interpreted as the Pennine Lower Coal Measures, predominantly weathered siltstone recovered as an orangish brown sandy, gravelly, clay / clayey gravel.

4.2 Groundwater

Groundwater strikes were only encountered within WS01 and WS02, at 2.45m and 3.00m respectively. Upon completion of the drilling, all locations were dipped to determine resting groundwater levels. WS01 remained at 2.45m, while WS02 had risen to 2.70m. WS03 and WS04 remained dry.

4.3 Physical Evidence of Contamination

Despite the presence of made ground, and the slight organic / hydrocarbon odour noted in WS01 between 0.60 – 1.10m, there was no other palpable evidence of contamination, waste or putrefiable material encountered in any of the sampling locations during the investigation including any visual evidence of hydrocarbon staining

Although an odour was noted, none of the headspace (PID) testing undertaken at regular intervals during the field works identified any concentrations of organic vapours above instrument detection levels, this suggests that the odour was not hydrocarbon related, but possibly decaying organic material.

4.4 Laboratory Analysis – Soil

A laboratory analysis testing schedule is presented as Table 1 and all environmental sample results obtained from the laboratory are included as Appendix D. The key results of laboratory testing on environmental soil samples are summarised below.

Contaminant	No. of Samples	No. of Detections	Range of Detections (mg/kg)		Highest Location & Depth (mbgl)
			Min	Max	
Arsenic	7	7	4.4	62.5	WS03 (0.20-0.50)
Cadmium	7	0	-		-
Chromium III	7	7	47.9	109.8	WS03 (0.20-0.50)
Chromium VI	7	0	-		-
Copper	7	7	30	253	WS03 (0.20-0.50)
Lead	7	7	22	139	
Mercury	7	6	0.1	0.5	WS02 (1.00-1.50)
Nickel	7	7	16.3	78.2	
Selenium	7	0	-		-
Zinc	7	7	40	176	WS02 (1.00-1.50)
Naphthalene	7	5	0.17	1.32	WS03 (0.20-0.50)
Benzo[a]pyrene	7	6	0.11	13.9	
Dibenz(ah)anthracene	7	5	0.10	1.60	
PAH (16 Total)	7	6	1.9	168	
PCBs (7 Total)	2	0	-		-

Contaminant	No. of Samples	No. of Detections	Range of Detections (mg/kg)		Highest Location & Depth (mbgl)
			Min	Max	
Total Cyanide	5	0	-		-
MTBE	2	0	-		-
Benzene	2	0	-		-
Toluene	2	1	0.007		WS03 (0.20-0.50)
Ethylbenzene	2	0	-		-
m/p - Xylene	2	1	0.007		WS03 (0.20-0.50)
TPH CWG – Aliphatics					
C5-C6	2	0	-		-
C6-C8	2	0	-		-
C8-C10	2	0	-		-
C10-C12	2	0	-		-
C12-C16	2	0	-		-
C16-C21	2	0	-		-
C21-C35	2	0	-		-
C35-C40	2	0	-		-
TPH CWG – Aromatics					
C5-EC7	2	0	-		-
EC7-EC8	2	0	-		-
EC8-EC10	2	0	-		-
EC10-EC12	2	0	-		-
EC12-EC16	2	1	29		WS03 (0.20-0.50)
EC16-EC21	2	2	43	227	
EC21-EC35	2	2	96	463	
EC35-EC40	2	2	18	66	
Asbestos (%)		0	NAD		-

Notes:
- Contaminant not found above laboratory detection limits
PAH Polycyclic Aromatic Hydrocarbons
PBCs Polychlorinated Biphenyl's
MTBE Methyl Tertiary Butyl Ether
TPH CWG Total Petroleum Hydrocarbon (Criteria Working Group)
NAD No Asbestos Detected

4.5 Waste Classification

Waste classification (i.e. hazardous or non-hazardous) was undertaken on samples of both made ground and natural soils, which included total concentrations of metals and hydrocarbons, using computer software provided by HazWaste Online™. The outputs from the software are included in a Waste Classification Report in Appendix E.

Waste Acceptance Criteria was subsequently undertaken on two samples of made ground. The results of the WAC analysis are included within Appendix D. These results, together with those of the waste classification above are summarised in the following table:

Strata	Typical Depth (m bgl) and Description	Is it Hazardous or Non-Hazardous? (number of hazardous samples)	Waste Acceptance Criteria
Made Ground	0.00 - 2.80: Variable mix of dark grey clayey, sandy gravel / yellow brown sandy gravel, with concrete, ash, coal and brick fragments throughout	Non-Hazardous* (0 of 6)	Fails Inert Criteria
PLCM	1.00 - > 3.50M: weathered siltstone recovered as an orangish brown sandy, gravelly, clay / clayey gravel.	Non-Hazardous (0 of 1)	-

Based on the above assessment, both the made ground and natural soils at the site are **Non-Hazardous** waste, under the waste code **17 05 04**, with the waste acceptance criteria testing indicating that the made ground is not suitable for disposal to an inert landfill.

* For made ground present on a brownfield site such as this, although the soil sampling process did not identify potentially hazardous concentrations of Asbestos Containing Material (ACM) within the soil, it must be acknowledged that the material may exist within areas which were not sampled or accessible during the investigation. Any visually identifiable fragments of ACM can invalidate any non-hazardous waste classification, as such, the above waste classifications are made on the proviso that any visually identifiable fragments of ACM are removed from the material prior to its disposal off-site. The subsequent ACM must then be disposed of in accordance with the Control of Asbestos Regulations 2012.

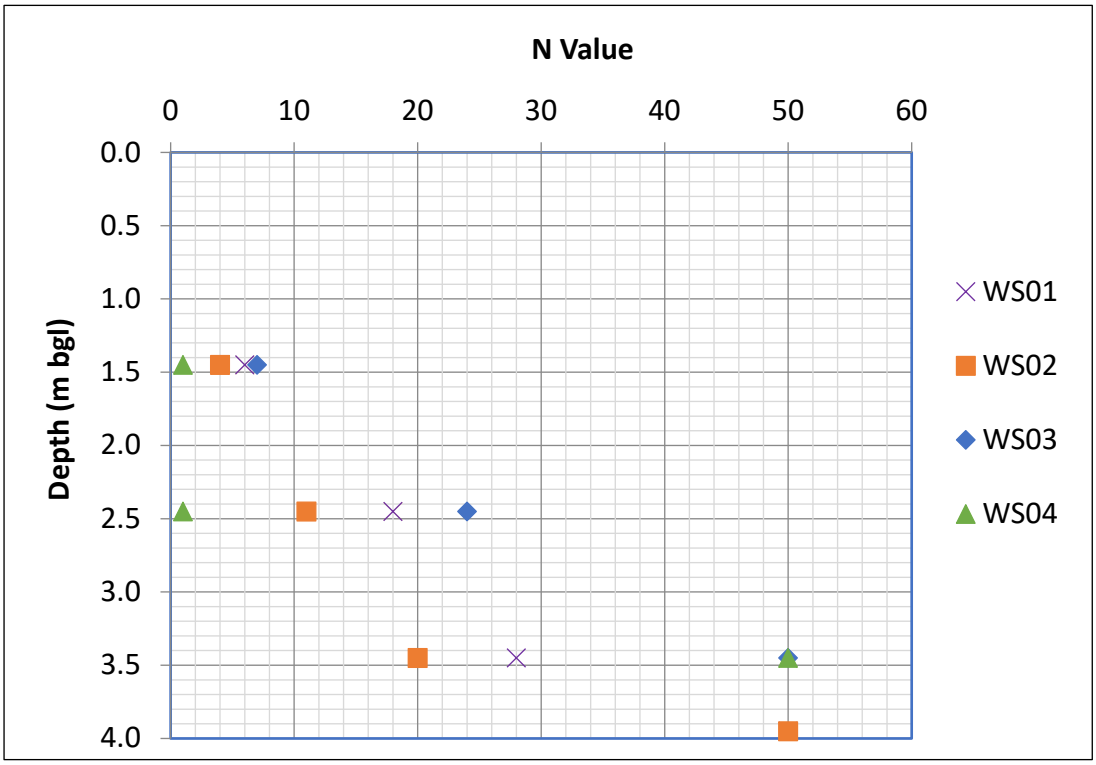
Input from the waste haulier should always be obtained to confirm the appropriate facility for disposal.

4.6 Geotechnical Testing

As no buildings / infrastructure are proposed a formal geotechnical appraisal hasn't been included within this report. However, to accommodate for any potential changes to development plans, in situ and laboratory geotechnical data has been collected, presented below.

4.6.1 In-Situ Geotechnical Testing

The results of in-situ strength testing conducted via standard penetration tests (SPTs) completed at regular intervals within the windowless sampler boreholes are displayed on the graph below. These show an increase in strength with depth, especially once within the natural materials, and into the weathered bedrock.



The results of in-situ dynamic cone penetration tests (DCPs), are presented in Appendix F. The results of which indicate that CBR values range between 16% – 122%.

4.6.2 Laboratory Geotechnical Testing

The key results of laboratory testing on geotechnical soil samples are summarised below. All geotechnical sample results obtained from the laboratory are included as Appendix G.

Strata	Range of Parameters				
	Moisture Content (%)		Plasticity Index (%)		CBR (%)
	Min	Max	Min	Max	
Alluvium	23.8	29.4	20 (19.80)	29 (28.42)	-

Strata	Range of Parameters				
	Moisture Content (%)		Plasticity Index (%)		CBR (%)
	Min	Max	Min	Max	
PLCM	20.2		24 (23.76)		4.1

***Notes**: () Indicates plasticity adjusted for granular content*

The moisture content, liquid and plastic limits and plasticity and liquidity indexes were established for three samples of predominantly cohesive soils, tested in line with BS EN ISO: 17892-1: 2014 & BS 1377: Part 2:1990:3.2, 4.4, 5.3 and 5.4.

A laboratory California Bearing Ratio (CBR) test was scheduled for one sample of shallow soil, tested in accordance with BS1377: Part 4: 1990: 7.

A geotechnical laboratory analysis testing schedule is presented as Table 2 and all geotechnical sample results obtained from the laboratory are included as Appendix G.

A laboratory analysis testing schedule is presented as Table 2.

5 ENVIRONMENTAL APPRAISAL

The following section outlines the approach applied to assessing the risks posed to human health and controlled waters, then identifies any sample results found by this investigation which warrant further consideration. In accordance with the Environment Agency's Land Contamination: Risk Management, this section represents the second tier of Stage 1, the Generic Quantitative Risk Assessment.

5.1 Human Health

5.1.1 Land Use Setting

It is understood that development proposals for the site includes construction of an area of public open space / landscaping on the site. In order to screen laboratory data for concentrations of contaminants in soil with potential to cause harm to human health in these soft landscaped areas, relevant generic screening values most applicable to this land use have been utilised. A land-use setting of **Public Open Space (Parks)**, abbreviated to 'POS_{PARKS}', has been adopted as it is considered the most representative.

The technical framework used to derive DEFRA's Category 4 Screening Levels (Policy Companion Document *'SP1010: Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination')* outlines the relevant factors for determining land use selection in the application of the screening levels and the following key considerations have been taken into account.

5.1.2 Generic Screening – Soils

The technical framework used to derive the assessment criteria and the documents in which they are published are summarised as follows:

- *EA Science Reports* (SC050021/SR2, SC050021/SR3, and SC050021/SR7)
- *EA Soil Guideline Value Science Reports*
- *Suitable For Use Levels (S4ULs) for Human Health Risk Assessment* – LQM & CIEH (2015)
- *Soil Generic Assessment Criteria for Human Health Risk Assessment* - EIC/AGS/CL:AIRE (2010)

Category 4 Screening Levels (C4SLs) provide generic suitable for use screening values for common contaminants in a variety of land uses and are also utilised as appropriate generic screening criteria.

Where assessment of the risk to human health from asbestos in soil is concerned there is no nationally recognised suitable for use /generic screening value commonly referred to through the planning system. Due to this, it is necessary to take a more qualitative approach to the risks posed to future site users from asbestos on a site-specific basis.

5.1.3 Generic Screening – Groundwater

The technical framework used to derive the assessment criteria and the documents in which they are published are summarised as follows, in addition to those list above:

- *The VOCs Handbook. Investigating, assessing and managing risks from inhalation of VOCs at land affected by contamination (C682),* CIRIA, London 2009
- *Society of Brownfield Risk Assessment (SoBRA) 'Development of Generic Assessment Criteria for Assessing Vapour Risks to Human Health from Volatile Contaminants in Groundwater'* - Version 1.0, February 2017

SoBRA groundwater vapour GAC were derived for two types of land uses, namely generic residential and generic commercial land use. They are intended as a conservative screening tool in the assessment for long-term (chronic) risks to human health from inhalation of vapours arising from groundwater. For other land uses (public open space, and allotment), these typically do not include building and as such pathway of vapour intrusion is generally not recognised.

A summary of the screening criteria and the methodology used to derive them is included in Appendix H.

5.1.4 Assessment of Results - Soil

The results of the screening process for on-site human receptors showed that generic screening criteria representative of risks to future site users were not exceeded for any contaminant at any location.

5.2 Controlled Waters

5.2.1 Generic Screening

In addition to screening the recorded concentrations of contaminants to pose risks to human health, EPS has also screened the results of soil analysis for potential to cause harm to water resources.

The criteria used for this process were derived by EPS using the following technical guidance

- *Environment Agency Remedial Targets Methodology: Hydrogeological Risk Assessment for Land Contamination.*

Primary Receptor Associated with Site	Basis of Tier 1 Criteria
Groundwater	UK Drinking Water Standards (UKDWS)
Surface Water	UK Environmental Quality Standards (EQS)

The site is underlain by Secondary A Aquifer. In the absence of surface water in close proximity of the site the primary receptor associated with the site is groundwater. As such, groundwater screening criteria have been selected in the assessment of risks to water resource receptors.

5.2.2 Assessment of Results - Soil

The screening process has shown that screening criteria representative of suitability of soil concentrations as applicable to controlled waters have been exceeded by three contaminants, but solely from one location and one sample, WS03 (0.20 – 0.50m).

Contaminant	Screening Criteria (mg/kg)	Detection (mg/kg)	Location (Depth m bgl)
Aromatic Group EC12-16	11.3	29	WS03 (0.20 – 0.50)
Aromatic Group EC16-21	35.6	227	
Aromatic Group EC21-35	284	463	

These screening criteria are by definition very conservative, meaning an exceedance doesn't automatically determine that an unacceptable risk to controlled waters exist.

It is noted that the concentration of Aromatic EC16-21 and EC21-35 is considerably higher than the screening criteria protective of controlled waters, however, the mobility and volatility of these particular fractions is considered relatively low. Whilst EC12-16 may exhibit slightly higher mobility and volatility, they are still not particularly mobile and the exceedances are considered minor, remaining within the same order of magnitude of the relevant screening criteria.

When this is considered alongside the predominantly cohesive nature of the underlying Alluvium and weathered Pennine Lower Coal Measures, the risk of these contaminants migrating vertically into groundwater is considered low.

To further explore the nature of these exceedances, EPS have reviewed the distribution of PAH compounds in relation to the TPH. It is noted that in the shallow made ground at WS03, the concentration of Total PAH is relatively high (168.0mg/kg) and in particular Benzo(a)Pyrene is present at an elevated concentration (13.9mg/kg). In addition, the ratios of key indicator compounds Fluoranthene / pyrene and Benzo(a)anthracene / Chrysene indicate the source is likely to be pyrogenic (ie. coal tar), rather than petrogenic (fuel based). Based on the observations in engineer logs, there was a record the made ground having a black colouration and ashy composition.

Based on the above, the results do not appear to be indicative of a fuel release, but the presence of potentially coal tar (or other pyrogenic material) containing material, with the risks to controlled waters being considered low, considering the existing proposed use of this site.

Should the proposed development change to include buildings / infrastructure, further data would be recommended to refine the delineation of the extent of potential coal tar containing made ground and to confirm that higher concentrations are not present in areas of the site that have not been investigated.

A summary of the screening criteria and the methodology used to derive them in included in Appendix H.

5.3 Summary of Findings

Laboratory analysis of shallow soils across the site have identified that the adopted screening criteria protective of future site users have not been exceeded in regards to human health, and therefore no further action is required.

However, laboratory analysis did identify that the adopted screening criteria protective of controlled waters have been exceeded by contaminants aromatic hydrocarbons (from EC12-EC35) in WS03. Through detailed qualitative review of the constituents within that sample (and other made ground samples), it is suggested that the contamination may be due to coal tar containing materials in the made ground rather than a fuel source.

Considering the existing proposed development of this site, no further action is deemed necessary. However, should the proposed development change to include buildings / infrastructure, further data would be recommended to refine the delineation of the extent of potential coal tar containing made ground and to confirm that higher concentrations are not present in areas of the site that have not been investigated.

5.4 Recommendations

No remedial works are considered required at this site considering the current proposal.

Should the proposal change, the findings from this report should be reviewed and conclusions / recommendations updated accordingly.

Precautionary measures are recommended to ensure safe development, as follows:

a) All construction workers operating at the site should be advised of the potential for contact with made ground material within shallow soils, particularly beneath the existing buildings and hardstanding. Appropriate health and safety precautions should be adopted during any excavation works to avoid exposure to infilled soils. Reference should be made to relevant health & safety guidance including the following CIRIA document: *R132 Guide to Safe Working on Contaminated Sites.*

b) Although the findings of the investigation would suggest that no significant quantities of asbestos are unlikely to be encountered, the possibility of discrete pockets of this material existing within the made ground remains. If any evidence of visually

identifiable ACM is suspected and is to be disturbed during the site development it is recommended that all works are postponed until suitable assessment and control measures (including a Safe Working Method (SWM)) are created. This SWM should be prepared in accordance with guidance from CIRIA as well as CL:AIRE and it will support the principal contractor in their duties under *The Contraction (Design & Management) Regulations 2015* (CDM). EPS can assist with this SWM if required.

c) Should any palpable evidence of unexpected contamination be encountered during the redevelopment work, it should be reported to EPS so that an inspection can be made and appropriate sampling and assessment work carried out, a method statement for this is provided as Appendix I.

It is recommended that a copy of this report be provided to the Environmental Health Department of Huddersfield City Council so that the information may be incorporated into their land quality records and used to support the current planning application. This report should satisfy the pre-commencement requirements of the planning process relating to contamination.

FIGURES

KEY:

N

Rev	Date	Drawn	Description	Ch'k'd

The Geotechnical and Environmental Engineers
www.epstrategies.co.uk

Site
University of Huddersfield
Queensgate, Huddersfield, HD1 3DH

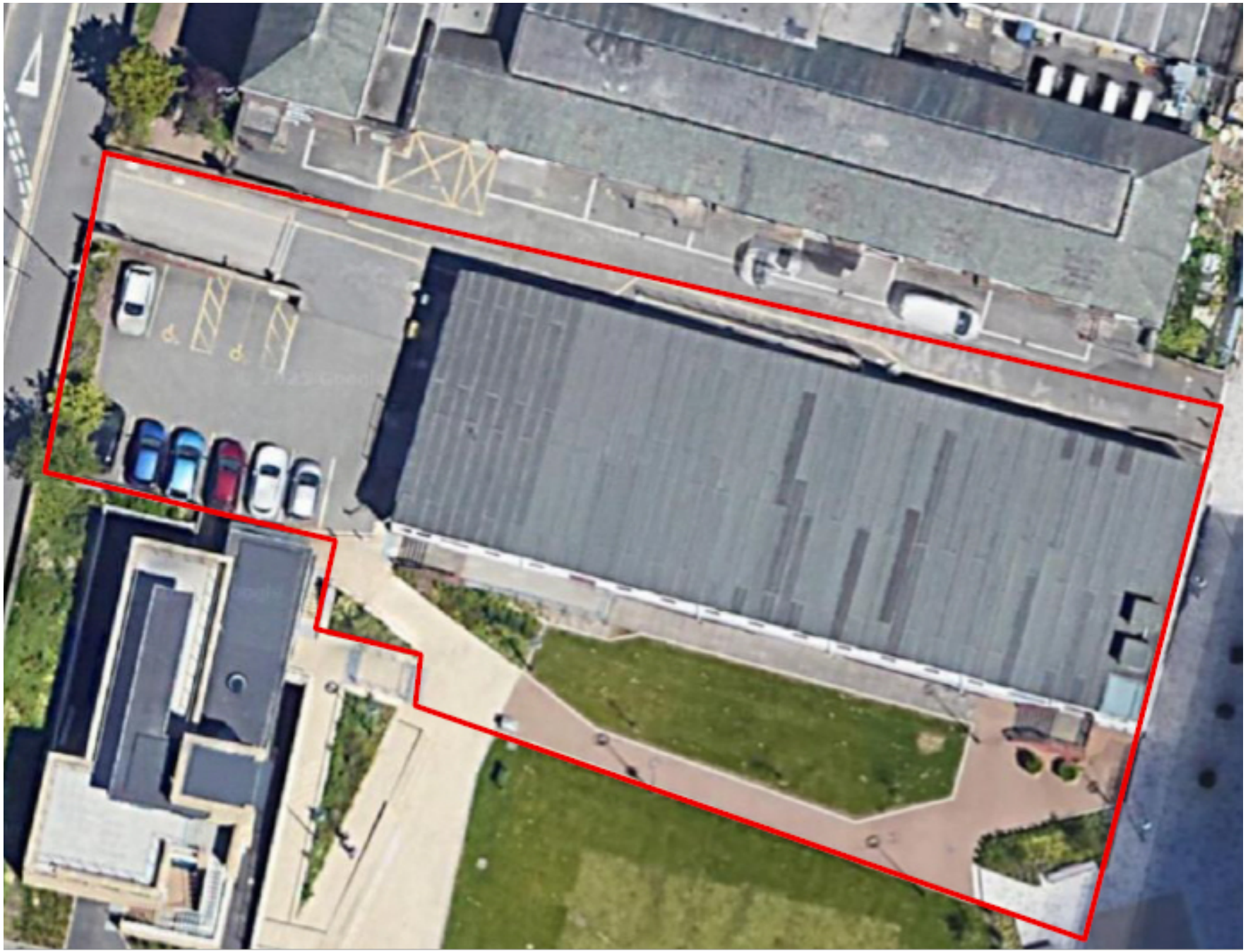
Client
GSS Architecture

Title
Figure 01 - Site Location Plan

Surveyed:	LA	Drawn by:	HE
Checked by:	AW	Date:	04.03.2026

Scale	[A4 Sheet] Drawing Reference
NTS	UK26.7777_01

Job No	Rev
UK26.7777	00



KEY:

SITE BOUNDARY

N

Rev	Date	Drawn	Description	Ch'k'd

The Geotechnical and Environmental Engineers
www.epstrategies.co.uk

Site
University of Huddersfield
Queensgate, Huddersfield, HD1 3DH

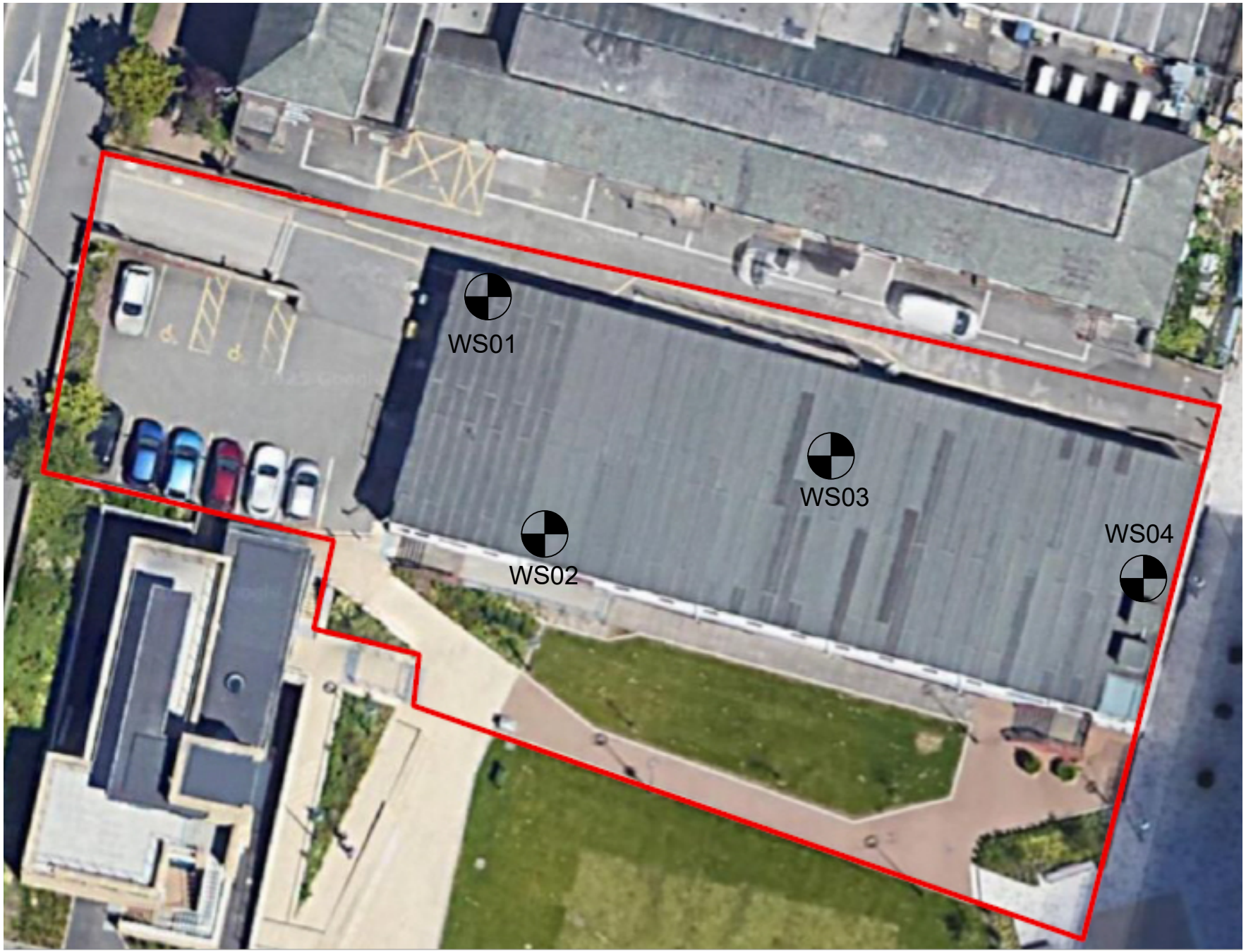
Client
GSS Architecture

Title
Figure 02 - Current Site Layout

Surveyed:	LA	Drawn by:	HE
Checked by:	AW	Date:	04.03.2026

Scale [A4 Sheet]	Drawing Reference
NTS	UK26.7777_02

Job No	Rev
UK26.7777	00



KEY:

SITE BOUNDARY

EPS WINDOWLESS SAMPLE BOREHOLE

N

Rev	Date	Drawn	Description	Ch'k'd

The Geotechnical and Environmental Engineers
www.epstrategies.co.uk

Site
University of Huddersfield
Queensgate, Huddersfield, HD1 3DH

Client
GSS Architecture

Title
Figure 03 - Borehole Location Plan

Surveyed:	LA	Drawn by:	HE
Checked by:	AW	Date:	04.03.2026

Scale [A4 Sheet]	Drawing Reference
NTS	UK26.7777_03

Job No	Rev
UK26.7777	00

TABLES

Table 1 – Laboratory Testing Schedule (Environmental)

Sample ID	Sample Depth (m bgl)	EPS Waste Suite	EPS Mini Suite	EPS Geotech Suite
WS01 ES1	0.10 - 0.40	-	X	-
WS01 ES2	0.60 - 1.00	-	X	-
WS01 ES3	1.60 - 2.50	-	X	-
WS02 ES1	0.70 - 1.00	-	X	-
WS02 ES2	1.00 - 1.50	-	X	-
WS03 ES1	0.20 - 0.50	X	-	-
WS03 ES2	1.20	-	-	X
WS04 ES1	0.30 - 0.60	X	-	-

Notes:

m bgl	meters below ground level
X	Sample Taken
-	Sample Not Analysed
Waste Acceptance Criteria	Metals, PAH's, MTBE, BTEX, TPH, PCB's and Inert WAC
EPS Mini Suite	Organic Matter, Cyanide, Metals, PAH's, Phenols and Asbestos Screen
EPS Geotech Suite	Sulphates and pH

Table 2 – Laboratory Testing Schedule (Geotechnical)

Sample ID	Sample Depth (m bgl)	Moisture Content	Liquid/ Plastic Limits	CBR
WS01 D1	1.50-1.60	X	X	-
WS03 D1	0.90-1.00	X	X	-
WS03 B1	1.10-2.00	X	X	X

Notes:

mbgl	meters below ground level
X	Sample Taken
-	Sample Not Analysed
CBR	California Bearing Ratio

APPENDICES

APPENDIX A

Selected Site Photographs & Site Walkover Notes

Photo 1: *A photo of the site looking from east to west*

Photo 2: *A photo of the drilling rig set up at the location of WS04*

Photo 3: *A photo of the site access to the west*

Photo 4: *A photo of the site looking from west to east*

Photo 5: *A photo of the ground conditions within the site area*

Photo 6: *A photo of the arisings from WS01*

APPENDIX B

Proposed Development Plan

1. Proposed GA Plan (Site 03)

SCALE - 1 : 200@A1

1:200 Scale 0 2m 4m 10m 20m

Legend

- Site Boundaries
- Existing Tactile Paving
- Existing Grass Areas
- Existing Balustrade
- Existing Buildings
- Existing Seating
- Existing Lighting
- Battery storage
- Existing Ornamental Planting
- Existing Marshals Modal Paving Slabs 300/200 X 200 X 80mm Colour: 80% Light Granite, 20% Mid Grey Granite
- Existing Paving
- Existing Conservation Kerb - Flush Type: Marshalls Conservation Kerb. Size: 255 x 145 X915mm Finish: Silver Grey, Textured
- Existing Timber Fence Retained and Enhanced
- Existing Wall Retained
- Existing Johnsons of Wellfield Classic Buff Sandstone Paving Planks 75 x 150 x length (300-750mm), Joints: Steintec Tuffrop natural Grey, 5mm
- Existing Streetlife Mobile Green Isle Module IV Planter
- Exiting Tree
- Existing Artform Urban Stone Bench
- Exiting DW Windsor Sephora Radius Halo Light Column
- Existing Streetlife Podium Isle
- Proposed Raingardens
- Proposed Wildflower Mix
- Proposed Hedge
- Proposed Topography/ Contours
- 10 x Proposed Trees
- Concrete Kerb with Bullnose 125mm upstand with transitions Size: 125 x 255 x 915mm
- Proposed Bonded Resin
- Red Brick Edging
- Proposed Stone Wall
- Relocated planter
- Proposed Marshals Paving Slabs to match existing
- Proposed Tarmac
- 01 Composite Bench
- 02 Outdoor Play Equipment

Key Plan

Rev	Date	Drn	Chk	Description
P04	19.12.25	CJPW	ADP	Planning Issue
P03	17.12.25	CJPW	ADP	Wall removed, paving areas updated
P02	09.12.25	CJPW	ADP	Design updates
P01	02.12.25	SR	CJPW	Preliminary Issue

This drawing is purely for discussion purposes only. It is not to be taken as a proposal for construction detailing, and instead it is primarily intended to convey the overall spatial layout of the building or parts of it. Please refer to the developed production information drawings for detail, construction and measurement purposes. Do not scale from this drawing for construction or acquisition purposes. Responsibility is not accepted for errors made by others in scaling from this drawing. All construction information must be taken from figured dimensions only. All dimensions and levels must be checked on site and discrepancies between drawings and specification must be reported to GSSArchitecture. © Copyright GSSArchitecture. Ordnance Survey © Crown Copyright 2024. All rights reserved. Licence number GSS 100017356. Map Data Copyright 2024 Google. Registered Office: 35 Headlands, Kettering, Northants, NN15 7ES. Tel: 01536 513 165. Email: studio@gssarchitecture.com

GSSarchitecture
KETTERING | GLOUCESTER | HARROGATE | LEEDS | MILTON KEYNES | NEWCASTLE

Project Title: Campus Landscaping Schemes

Client: University of Huddersfield

Drawing Title: Proposed GA Plan (Site 03)

Drawn By:	Checked By:	Scale @A1:	Date:
YR	CJPW	As indicated	02.01.2025

Status: Preliminary Issue

File No: UNI049H

Drwg No: (00)300

Rev: P04

APPENDIX C

Site Specific Borehole Logs

Key to exploratory hole symbols and abbreviations

SAMPLE TYPES

ACM - Asbestos sample
AMAL - Amalgamated sample
B - Bulk disturbed sample
BLK - Block sample
C - Core sample
CBR - CBR test sample
D - Disturbed sample
ES - Environmental sample
EW - Environmental water sample
G - Gas sample
J - Jar sample
L - Liner sample
TW - Pushed thin wall sample
U - Undisturbed sample
UT - Undisturbed thin wall sample
W - Water sample

IN-SITU TESTS

HV - Hand shear vane
HV(r) - Hand shear vane residual
PID - Photo ionisation detector
PP - Hand penetrometer
SPT - Standard penetration test
SPT(C) - SPT using cone

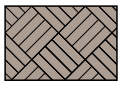
GROUNDWATER

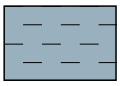
Groundwater strike
Groundwater rest level

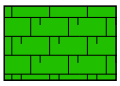
ROTARY CORE DETAILS

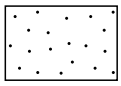
TCR - Total core recovery (%)
SCR - Solid core recovery (%)
RQD - Rock quality designation (%)
FI - Fracture index
NI - Non-intact core
AZCL - Assumed zone of core loss

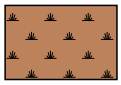
LEGEND

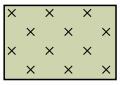

Topsoil

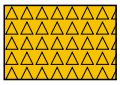

Clay

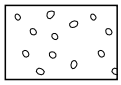

Chalk

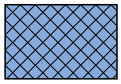

Sand backfill

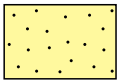

Peat

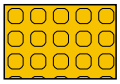

Silt

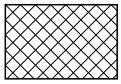

Breccia

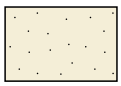

Gravel backfill

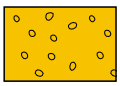

Made ground


Sand

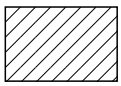

Conglomerate

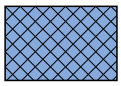

Arisings

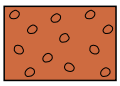

Concrete

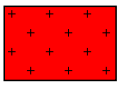

Gravel

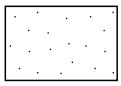

Metamorphic

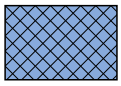

Bentonite

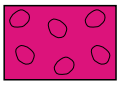

Wood


Cobbles


Igneous

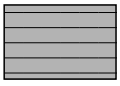

Concrete


Brick


Boulders

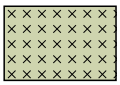

Grout


Bituminous material

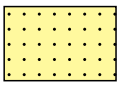

Mudstone


Plain pipe

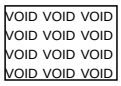

Gypsum


Siltstone

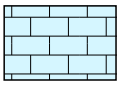

Coal


Sandstone


Slotted pipe



Void


Limestone

Created using Pebble Geo

Window Sampler

WS01

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
WS	414615.00	416201.00	83.00	1:20

Project Name	Project No.	Start Date	End Date
University of Huddersfield	UK26.7777	27.02.2026	27.02.2026

Client
GSS Architecture

Consultant
EPS

Contractor
Taylor Drilling Services

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Type/ Ref	Results	Level (m)	Depth (thickness) (m)	Strata: Legend	Description
		0.10-0.40	ES 1			(0.40)		MADE GROUND: Dark grey slightly clayey, sandy GRAVEL. Gravel is medium / coarse, sub-angular / rounded. Concrete brick fragments / stones present.
		0.40	PID	0.00 (ppmv)	82.60	0.40		
						(0.20)		MADE GROUND: Yellowish brown sandy, GRAVEL. Gravel is medium / coarse, sub-angular / rounded. Blue visqueen at base.
		0.60-1.00	ES 2		82.40	0.60		MADE GROUND: Soft dark grey/ black slighlty sandy, slightly gravelly CLAY. Slighlt occurance of limestone and concrete stones/ gravels. Slight Hydrocarbon odour
						(0.50)		
		1.00 1.00	SPT(C) PID	N=6 (1,1/1,2,2,1) 0.00 (ppmv)				
					81.90	1.10		Soft becoming very stiff, orangish brown silty, slighlty gravelly CLAY. Gravel is medium / coarse, sub-angular / rounded. [Alluvium]
		1.50-1.60	D 1					
		1.60-2.00	ES 3			(1.00)		
		2.00 2.00	SPT(C) PID	N=18 (5,8/6,4,4,4) 0.00 (ppmv)				
					80.90	2.10		Very stiff, orangish brown weathered SILTSTONE recovered as sandy, very gravelly CLAY. [Pennine Lower Coal Measures]
	▽							
						(1.40)		
		3.00	SPT(C)	N=28 (9,8/6,6,6,10)				
		3.50	SPT(C)	N=50 for 180mm (21,4/18,22,10 for 30mm)	79.50	3.50		*End of Borehole at 3.50m*

Remarks
Termination Reason: SPT Refusal. Groundwater struck and remained at 2.45m bgl.

Method, Plant, Stability, Dimensions
0.00 - 3.50m WLS

Logger
LA

Checked By: AW **Approved By:** SB

SPT N60 = N(raw) * (Hammer Energy Ratio / 60) to nearest whole number

Window Sampler

WS02

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
WS	414616.00	416186.00	83.00	1:20

Project Name	Project No.	Start Date	End Date
University of Huddersfield	UK26.7777	27.02.2026	27.02.2026

Client
GSS Architecture

Consultant
EPS

Contractor
Taylor Drilling Services

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Type/ Ref	Results	Level (m)	Depth (thickness) (m)	Strata: Legend	Description
						(0.30)		MADE GROUND: Grey slighlty clayey, slighlty sandy GRAVEL. Gravel is medium / coarse, sub-angular / rounded.
					82.70	0.30		
						(0.40)		MADE GROUND: Yellowish brown sandy GRAVEL. Gravel is medium / coarse sub-rounded sandtone.
		0.70-1.00	ES 1		82.30	0.70		
						(0.30)		MADE GROUND: Dark grey, black, silty, slighlty gravelly CLAY. Inclusions of brick, coal and ash.
		1.00 1.00 1.00-1.50	SPT(C) PID ES 2	N=4 (1,1/1,1,1,1) 0.00 (ppmv)	82.00	1.00		MADE GROUND: Dark grey, black, slighlty clayey, slighlty sandy, ashy GRAVEL.
		1.50	PID	0.00 (ppmv)				
						(1.80)		
		2.00	SPT(C)	N=11 (1,1/2,3,3,3)				
					80.20	2.80		Very stiff, light brown weathered SILTSTONE recovered as sandy, gravelly CLAY. Gravel is fine. [Pennine Lower Coal Measures]
		3.00	SPT(C)	N=20 (5,5/5,5,5,5)				
						(0.70)		
		3.50	SPT(C)	N=50 for 137mm (14,11/30,20 for 62mm)	79.50	3.50		*End of Borehole at 3.50m*

Remarks
Termination Reason: SPT Refusal. Groundwater struck at 3.00m bgl, rising to 2.70m bgl.

Method, Plant, Stability, Dimensions
0.00 - 3.50m WLS

Logger
LA

Checked By: AW **Approved By:** SB

SPT N60 = N(raw) * (Hammer Energy Ratio / 60) to nearest whole number

Created using Pebble Geo

Window Sampler

WS03

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
WS	414632.00	416193.00	83.00	1:20

Project Name	Project No.	Start Date	End Date
University of Huddersfield	UK26.7777	27.02.2026	27.02.2026

Client
GSS Architecture

Consultant
EPS

Contractor
Taylor Drilling Services

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Type/ Ref	Results	Level (m)	Depth (thickness) (m)	Strata: Legend	Description
						(0.20)		MADE GROUND: Grey slightly clayey, sandy GRAVEL. Gravel is medium / coarse, sub-angular / rounded. Fragments of brick, concrete and small to large stones present.
		0.20-0.50	ES 1		82.80	0.20		
						(0.50)		MADE GROUND: Black ashy GRAVEL
		0.50	PID	0.00 (ppmv)				
					82.30	0.70		
						(0.20)		MADE GROUND: Dark grey, silty, slighlty gravelly CLAY. Fragments of coal and concrete present.
		0.90-1.00	D 1		82.10	0.90		
						(0.10)		Brown silty, slighlty sandy CLAY. [Alluvium]
		1.00	SPT(C)	N=7 (1,1/1,2,2,2)	82.00	1.00		
		1.00	PID	0.00 (ppmv)				Firm to very stiff, light orangish brown weathered SILTSTONE recovered as slightly sandy, gravelly, CLAY. Gravel content increasing with depth. [Pennine Lower Coal Measures]
		1.10-2.00	B 1					
		1.20	PID	0.00 (ppmv)				
		2.00	SPT(C)	N=24 (3,4/6,6,6,6)		(2.00)		
		2.00	PID	0.00 (ppmv)				
		3.00	SPT(C)	N=50 for 264mm (16,9/13,13,13,11 for 39mm)	80.00	3.00		*End of Borehole at 3.00m*

0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0

Remarks
Termination Reason: SPT Refusal. No groundwater.

Method, Plant, Stability, Dimensions
0.00 - 3.00m WLS

Logger
LA

Checked By: AW **Approved By:** SB

SPT N60 = N(raw) * (Hammer Energy Ratio / 60) to nearest whole number

Window Sampler

WS04

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
WS	414648.00	416184.00	83.00	1:20

Project Name	Project No.	Start Date	End Date
University of Huddersfield	UK26.7777	27.02.2026	27.02.2026

Client
GSS Architecture

Consultant
EPS

Contractor
Taylor Drilling Services

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Type/ Ref	Results	Level (m)	Depth (thickness) (m)	Strata: Legend	Description
						(0.30)		MADE GROUND: Grey slighlty sandy, slighlty clayey GRAVEL. Gravel is medium / coarse, sub-angular / rounded. Fragments of concrete brick and stone present.
		0.30-0.60	ES 1		82.70	0.30		MADE GROUND: Dark grey mottled orange / black, silty, gravelly CLAY. Gravel is fine. Rare fragments of stones and coal, with some ash present.
		0.60	PID	0.00 (ppmv)		(0.80)		
		1.00	SPT(C)	N=1 (1,0/0,0,1,0)				
					81.90	1.10		MADE GROUND: Light brown, silty slighlty gravelly CLAY.
		2.00	SPT(C)	N=1 (0,0/0,0,1,0)		(1.30)		
					80.60	2.40		MADE GROUND: Black ashy GRAVEL.
						(0.10)		
					80.50	2.50		Very siff, orangish brown weathered SILTSTONE recovered as slightly clayey, sandy GRAVEL. [Pennine Lower Coal Measures]
						(0.50)		
		3.00	SPT(C)	N=50 for 243mm (8,9/10,13,20,7 for 18mm)	80.00	3.00		*End of Borehole at 3.00m*

Remarks
Termination Reason: SPT Refusal. No groundwater.

Method, Plant, Stability, Dimensions
0.00 - 3.00m WLS

Logger
LA

Checked By: AW **Approved By:** SB

SPT N60 = N(raw) * (Hammer Energy Ratio / 60) to nearest whole number

Created using Pebble Geo

APPENDIX D

Laboratory Results – Environmental

Element Materials Technology
Unit 3 Deeside Point
Zone 3
Deeside Industrial Park
Deeside
CH5 2UA

P: +44 (0) 1244 833780
F: +44 (0) 1244 833781
W: www.element.com

EPS Ltd
7B Caxton House
Broad Street
Cambourne
Cambridgeshire
United Kingdom
CB23 6JN

Attention :	Lee Anderson
Date :	11th March, 2026
Your reference :	UK26.7777
Our reference :	Test Report 26/3185 Batch 1
Location :	University of Huddersfield
Date samples received :	28th February, 2026
Status :	Final Report
Issue :	202603111330

Eight samples were received for analysis on 28th February, 2026 of which eight were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

The greenhouse gas emissions generated (in Carbon – Co2e) to obtain the results in this report are estimated as:

Scope 1&2 emissions - 27.802 kg of CO2

Scope 1&2&3 emissions - 65.702 kg of CO2

Authorised By:

Sean Anglish
Project Coordinator

Please include all sections of this report if it is reproduced

Element Materials Technology

Client Name: EPS Ltd
Reference: UK26.7777
Location: University of Huddersfield
Contact: Lee Anderson
EMT Job No: 26/3185

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Sample No.	1-4	5-7	8-10	11-13	14-16	17-19	20	21-23			LOD/LOR	Units	Method No.
Sample ID	WS01 ES1	WS01 ES2	WS01 ES3	WS02 ES1	WS02 ES2	WS03 ES1	WS03 ES1	WS04 ES1					
Depth	0.10-0.40	0.60-1.00	1.60-2.50	0.70-1.00	1.00-1.50	0.20-0.50	1.20	0.30-0.60					
COC No / misc													
Containers	V J T B	V J T	V J T	V J B	V J B	V J B	B	V J B					
Sample Date	27/02/2026	27/02/2026	27/02/2026	27/02/2026	27/02/2026	27/02/2026	27/02/2026	27/02/2026					
Sample Type	Sandy Clay	Sandy Clay	Clay	Clay	Sandy Clay	Sandy Clay	Clayey Sand	Clay					
Batch Number	1	1	1	1	1	1	1	1					
Date of Receipt	28/02/2026	28/02/2026	28/02/2026	28/02/2026	28/02/2026	28/02/2026	28/02/2026	28/02/2026					
Arsenic #M	4.4	29.6	8.1	27.6	35.1	62.5	-	10.6			<0.5	mg/kg	TM30/PM15
Cadmium #M	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	-	<0.3			<0.3	mg/kg	TM30/PM15
Chromium #M	48.7	61.6	47.9	56.6	63.8	109.8	-	69.5			<0.5	mg/kg	TM30/PM15
Copper #M	30	133	37	55	135	253$_{AA}$	-	97			<1	mg/kg	TM30/PM15
Lead #M	38	130	22	132	114	139	-	88			<5	mg/kg	TM30/PM15
Mercury #M	<0.1	0.2	0.1	0.4	0.5	0.3	-	0.2			<0.1	mg/kg	TM30/PM15
Nickel #M	18.4	61.6	16.3	31.3	78.2	62.6	-	29.0			<0.7	mg/kg	TM30/PM15
Selenium #M	<1	<1	<1	<1	<1	<1	-	<1			<1	mg/kg	TM30/PM15
Sulphur as S	-	-	-	-	-	-	<0.01	-			<0.01	%	TM30/PM15
Total Sulphate as SO4 #M	4292	1660	417	559	514	-	155	-			<50	mg/kg	TM50/PM29
Zinc #M	109	99	40	79	176	165	-	80			<5	mg/kg	TM30/PM15
PAH MS													
Naphthalene #M	0.17	0.22	<0.04	<0.04	0.19	1.32	-	0.24			<0.04	mg/kg	TM4/PM8
Acenaphthylene	<0.03	0.07	<0.03	<0.03	<0.03	0.28	-	0.08			<0.03	mg/kg	TM4/PM8
Acenaphthene #M	0.14	0.34	<0.05	<0.05	0.28	3.01	-	0.66			<0.05	mg/kg	TM4/PM8
Fluorene #M	0.10	0.24	<0.04	<0.04	0.21	2.13	-	0.47			<0.04	mg/kg	TM4/PM8
Phenanthrene #M	1.08	2.65	<0.03	0.33	2.01	21.69	-	4.24			<0.03	mg/kg	TM4/PM8
Anthracene #	0.22	0.62	<0.04	0.05	0.42	5.42	-	0.90			<0.04	mg/kg	TM4/PM8
Fluoranthene #M	1.57	4.51	<0.03	0.34	2.34	>>29.50	-	5.75			<0.03	mg/kg	TM4/PM8
Pyrene #	1.32	3.93	<0.03	0.31	1.90	>>25.27	-	4.94			<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	0.63	1.94	<0.06	0.17	0.91	13.10	-	2.33			<0.06	mg/kg	TM4/PM8
Chrysene #M	0.83	2.35	<0.02	0.24	1.04	13.99	-	2.68			<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #M	1.09	3.69	<0.07	0.20	1.47	21.22	-	3.57			<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	0.70	2.40	<0.04	0.11	0.93	13.90	-	2.48			<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #M	0.41	1.37	<0.04	0.06	0.48	8.01	-	1.26			<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	0.10	0.30	<0.04	<0.04	0.13	1.60	-	0.24			<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	0.38	1.37	<0.04	0.06	0.44	7.53	-	1.07			<0.04	mg/kg	TM4/PM8
Coronene	-	-	-	-	-	1.10	-	0.13			<0.04	mg/kg	TM4/PM8
PAH 16 Total	8.7	26.0	<0.6	1.9	12.8	168.0	-	30.9			<0.6	mg/kg	TM4/PM8
PAH 17 Total	-	-	-	-	-	169.07	-	31.04			<0.64	mg/kg	TM4/PM8
Benzo(b)fluoranthene	0.78	2.66	<0.05	0.14	1.06	15.28	-	2.57			<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	0.31	1.03	<0.02	0.06	0.41	5.94	-	1.00			<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	100	99	102	98	98	76	-	82			<0	%	TM4/PM8
Mineral Oil (C10-C40) (EH_CU_1D_AL)	-	-	-	-	-	<30	-	<30			<30	mg/kg	TM5/PM8/PM16

Please see attached notes for all abbreviations and acronyms

Client Name: EPS Ltd
Reference: UK26.7777
Location: University of Huddersfield
Contact: Lee Anderson
EMT Job No: 26/3185

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Sample No.	1-4	5-7	8-10	11-13	14-16	17-19	20	21-23			LOD/LOR	Units	Method No.
Sample ID	WS01 ES1	WS01 ES2	WS01 ES3	WS02 ES1	WS02 ES2	WS03 ES1	WS03 ES1	WS04 ES1					
Depth	0.10-0.40	0.60-1.00	1.60-2.50	0.70-1.00	1.00-1.50	0.20-0.50	1.20	0.30-0.60					
COC No / misc													
Containers	V J T B	V J T	V J T	V J B	V J B	V J B	B	V J B					
Sample Date	27/02/2026	27/02/2026	27/02/2026	27/02/2026	27/02/2026	27/02/2026	27/02/2026	27/02/2026					
Sample Type	Sandy Clay	Sandy Clay	Clay	Clay	Sandy Clay	Sandy Clay	Clayey Sand	Clay					
Batch Number	1	1	1	1	1	1	1	1					
Date of Receipt	28/02/2026	28/02/2026	28/02/2026	28/02/2026	28/02/2026	28/02/2026	28/02/2026	28/02/2026					
TPH CWG													
Aliphatics													
>C5-C6 (HS_1D_AL) #M	-	-	-	-	-	<0.1 SV	-	<0.1			<0.1	mg/kg	TM36/PM12
>C6-C8 (HS_1D_AL) #M	-	-	-	-	-	<0.1 SV	-	<0.1			<0.1	mg/kg	TM36/PM12
>C8-C10 (HS_1D_AL) #M	-	-	-	-	-	<0.1 SV	-	<0.1			<0.1	mg/kg	TM36/PM12
>C10-C12 (EH_CU_1D_AL) #M	-	-	-	-	-	<0.2	-	<0.2			<0.2	mg/kg	TM5/PM8/PM16
>C12-C16 (EH_CU_1D_AL) #M	-	-	-	-	-	<4	-	<4			<4	mg/kg	TM5/PM8/PM16
>C16-C21 (EH_CU_1D_AL) #M	-	-	-	-	-	<7	-	<7			<7	mg/kg	TM5/PM8/PM16
>C21-C35 (EH_CU_1D_AL) #M	-	-	-	-	-	<7	-	<7			<7	mg/kg	TM5/PM8/PM16
>C35-C40 (EH_CU_1D_AL)	-	-	-	-	-	<7	-	<7			<7	mg/kg	TM5/PM8/PM16
Total aliphatics C5-40 (EH_CU+HS_1D_AL)	-	-	-	-	-	<26	-	<26			<26	mg/kg	TM5/TM36/PM8/PM12/PM16
Aromatics													
>C5-EC7 (HS_1D_AR) #M	-	-	-	-	-	<0.1 SV	-	<0.1			<0.1	mg/kg	TM36/PM12
>EC7-EC8 (HS_1D_AR) #M	-	-	-	-	-	<0.1 SV	-	<0.1			<0.1	mg/kg	TM36/PM12
>EC8-EC10 (HS_1D_AR) #M	-	-	-	-	-	<0.1 SV	-	<0.1			<0.1	mg/kg	TM36/PM12
>EC10-EC12 (EH_CU_1D_AR) #	-	-	-	-	-	<0.2	-	<0.2			<0.2	mg/kg	TM5/PM8/PM16
>EC12-EC16 (EH_CU_1D_AR) #	-	-	-	-	-	29	-	<4			<4	mg/kg	TM5/PM8/PM16
>EC16-EC21 (EH_CU_1D_AR) #	-	-	-	-	-	227	-	43			<7	mg/kg	TM5/PM8/PM16
>EC21-EC35 (EH_CU_1D_AR) #	-	-	-	-	-	463	-	96			<7	mg/kg	TM5/PM8/PM16
>EC35-EC40 (EH_CU_1D_AR)	-	-	-	-	-	66	-	18			<7	mg/kg	TM5/PM8/PM16
Total aromatics C5-40 (EH_CU+HS_1D_AR)	-	-	-	-	-	785	-	157			<26	mg/kg	TM5/TM36/PM8/PM12/PM16
Total aliphatics and aromatics(C5-40) (EH_CU+HS_1D_Total)	-	-	-	-	-	785	-	157			<52	mg/kg	TM5/TM36/PM8/PM12/PM16
MTBE #M	-	-	-	-	-	<5 SV	-	<5			<5	ug/kg	TM36/PM12
Benzene #M	-	-	-	-	-	<5 SV	-	<5			<5	ug/kg	TM36/PM12
Toluene #M	-	-	-	-	-	7 SV	-	<5			<5	ug/kg	TM36/PM12
Ethylbenzene #M	-	-	-	-	-	<5 SV	-	<5			<5	ug/kg	TM36/PM12
m/p-Xylene #M	-	-	-	-	-	7 SV	-	<5			<5	ug/kg	TM36/PM12
o-Xylene #M	-	-	-	-	-	<5 SV	-	<5			<5	ug/kg	TM36/PM12
PCB 28 #	-	-	-	-	-	<5	-	<5			<5	ug/kg	TM17/PM8
PCB 52 #	-	-	-	-	-	<5	-	<5			<5	ug/kg	TM17/PM8
PCB 101 #	-	-	-	-	-	<5	-	<5			<5	ug/kg	TM17/PM8
PCB 118 #	-	-	-	-	-	<5	-	<5			<5	ug/kg	TM17/PM8
PCB 138 #	-	-	-	-	-	<5	-	<5			<5	ug/kg	TM17/PM8
PCB 153 #	-	-	-	-	-	<5	-	<5			<5	ug/kg	TM17/PM8
PCB 180 #	-	-	-	-	-	<5	-	<5			<5	ug/kg	TM17/PM8
Total 7 PCBs #	-	-	-	-	-	<35	-	<35			<35	ug/kg	TM17/PM8
Total Phenols HPLC	<0.15	<0.15	<0.15	<0.15	<0.15	-	-	-			<0.15	mg/kg	TM26/PM21B
Natural Moisture Content	14.7	24.5	14.9	27.7	28.7	12.7	-	17.5			<0.1	%	PM4/PM0
Hexavalent Chromium #	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	-	<0.3			<0.3	mg/kg	TM38/PM20

Please see attached notes for all abbreviations and acronyms

Element Materials Technology

Client Name: EPS Ltd
Reference: UK26.7777
Location: University of Huddersfield
Contact: Lee Anderson
EMT Job No: 26/3185

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Sample No.	1-4	5-7	8-10	11-13	14-16	17-19	20	21-23			LOD/LOR	Units	Method No.
Sample ID	WS01 ES1	WS01 ES2	WS01 ES3	WS02 ES1	WS02 ES2	WS03 ES1	WS03 ES1	WS04 ES1					
Depth	0.10-0.40	0.60-1.00	1.60-2.50	0.70-1.00	1.00-1.50	0.20-0.50	1.20	0.30-0.60					
COC No / misc													
Containers	V J T B	V J T	V J T	V J B	V J B	V J B	B	V J B					
Sample Date	27/02/2026	27/02/2026	27/02/2026	27/02/2026	27/02/2026	27/02/2026	27/02/2026	27/02/2026					
Sample Type	Sandy Clay	Sandy Clay	Clay	Clay	Sandy Clay	Sandy Clay	Clayey Sand	Clay					
Batch Number	1	1	1	1	1	1	1	1					
Date of Receipt	28/02/2026	28/02/2026	28/02/2026	28/02/2026	28/02/2026	28/02/2026	28/02/2026	28/02/2026					
Sulphate as SO4 (2:1 Ext) #M	1.3990	0.4410	0.0496	0.0854	0.0737	-	0.0262	-			<0.0015	g/l	TM38/PM20
Chromium III	48.7	61.6	47.9	56.6	63.8	109.8	-	69.5			<0.5	mg/kg	NONE/NONE
Total Cyanide #M	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-			<0.5	mg/kg	TM89/PM45
Total Organic Carbon #	-	-	-	-	-	20.10	-	3.18			<0.02	%	TM21/PM24
Organic Matter	2.3	8.5	1.6	12.2	12.8	-	-	-			<0.2	%	TM21/PM24
Loss on Ignition #	-	-	-	-	-	5.0	-	5.1			<1.0	%	TM22/PM0
pH #M	8.43	7.94	4.87	7.16	7.74	7.82	5.22	8.09			<0.01	pH units	TM73/PM11
Sample Type	Sandy Clay	Sandy Clay	Clay	Clay	Sandy Clay	Sandy Clay	Clayey Sand	Clay				None	PM13/PM0
Sample Colour	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown				None	PM13/PM0
Other Items	Stones	Stones	Stones	Stones	Stones	Stones	stones	Stones				None	PM13/PM0

Please see attached notes for all abbreviations and acronyms

Element Materials Technology

Client Name: EPS Ltd
Reference: UK26.7777
Location: University of Huddersfield
Contact: Lee Anderson
EMT Job No: 26/3185

Report : CEN 10:1 1 Batch

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Sample No.	17-19	21-23									LOD/LOR	Units	Method No.
Sample ID	WS03 ES1	WS04 ES1											
Depth	0.20-0.50	0.30-0.60											
COC No / misc													
Containers	V J B	V J B											
Sample Date	27/02/2026	27/02/2026											
Sample Type	Sandy Clay	Clay											
Batch Number	1	1											
Date of Receipt	28/02/2026	28/02/2026											
Mass of raw test portion	0.1031	0.1037										kg	NONE/PM17
Mass of dried test portion	0.09	0.09										kg	NONE/PM17

Please see attached notes for all abbreviations and acronyms

CEN 10:1 LEACHATE RESULTS BS EN 12547-2

Mass of sample taken (kg)	0.1031	Moisture Content Ratio (%) =	15.0
Mass of dry sample (kg) =	0.09	Dry Matter Content Ratio (%) =	87.0
Particle Size <4mm =	>95%		

		Landfill Waste Acceptance Criteria Limits		
EMT Job No	**26/3185**			
Sample No	**18**			
Client Sample No	**WS03 ES1**	**Inert Waste Landfill**	**Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill**	**Hazardous Waste Landfill**
Depth/Other	**0.20-0.50**			
Sample Date	**27/02/2026**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	20.10	3	5	6
Loss on Ignition (%)	5.0	-	-	10
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg) (EH_CU_1D_AL)	<30	500	-	-
PAH Sum of 17(mg/kg)	169.07	100	-	-
pH (pH Units)	7.82	-	>6	-
ANC to pH 7 (mol/kg)	-	-	to be evaluated	to be evaluated
ANC to pH 4 (mol/kg)	-	-	to be evaluated	to be evaluated

Eluate Analysis	**10:1 conc^{n} leached**		**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	C_{10}	**A_{10}**			
	mg/l	**mg/kg**	**mg/kg**		
Arsenic	<0.0025	<0.025	0.5	2	25
Barium	0.033	0.33	20	100	300
Cadmium	<0.0005	<0.005	0.04	1	5
Chromium	<0.0015	<0.015	0.5	10	70
Copper	<0.007	<0.07	2	50	100
Mercury	<0.001	<0.01	0.01	0.2	2
Molybdenum	<0.002	<0.02	0.5	10	30
Nickel	<0.002	<0.02	0.4	10	40
Lead	<0.005	<0.05	0.5	10	50
Antimony	<0.002	<0.02	0.06	0.7	5
Selenium	<0.003	<0.03	0.1	0.5	7
Zinc	0.004	0.04	4	50	200
Chloride	2.0	20	800	15000	25000
Fluoride	<0.3	<3	10	150	500
Sulphate as SO4	152.1	1522	1000	20000	50000
Total Dissolved Solids	301	3012	4000	60000	100000
Phenol	<0.01	<0.1	1	-	-
Dissolved Organic Carbon	<2	<20	500	800	1000

Please include all sections of this report if it is reproduced

All solid results are expressed on a dry weight basis unless stated otherwise.

CEN 10:1 LEACHATE RESULTS BS EN 12547-2

Mass of sample taken (kg)	0.1037	Moisture Content Ratio (%) =	15.0
Mass of dry sample (kg) =	0.09	Dry Matter Content Ratio (%) =	86.9
Particle Size <4mm =	>95%		

		Landfill Waste Acceptance Criteria Limits		
		Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
EMT Job No	**26/3185**			
Sample No	**22**			
Client Sample No	**WS04 ES1**			
Depth/Other	**0.30-0.60**			
Sample Date	**27/02/2026**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	3.18	3	5	6
Loss on Ignition (%)	5.1	-	-	10
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg) (EH_CU_1D_AL)	<30	500	-	-
PAH Sum of 17(mg/kg)	31.04	100	-	-
pH (pH Units)	8.09	-	>6	-
ANC to pH 7 (mol/kg)	-	-	to be evaluated	to be evaluated
ANC to pH 4 (mol/kg)	-	-	to be evaluated	to be evaluated

Eluate Analysis	**10:1 conc^{n} leached**		**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	C_{10}	**A_{10}**			
	mg/l	**mg/kg**	**mg/kg**		
Arsenic	<0.0025	<0.025	0.5	2	25
Barium	0.016	0.16	20	100	300
Cadmium	<0.0005	<0.005	0.04	1	5
Chromium	<0.0015	<0.015	0.5	10	70
Copper	<0.007	<0.07	2	50	100
Mercury	<0.001	<0.01	0.01	0.2	2
Molybdenum	0.004	0.04	0.5	10	30
Nickel	<0.002	<0.02	0.4	10	40
Lead	<0.005	<0.05	0.5	10	50
Antimony	<0.002	<0.02	0.06	0.7	5
Selenium	<0.003	<0.03	0.1	0.5	7
Zinc	<0.003	<0.03	4	50	200
Chloride	2.0	20	800	15000	25000
Fluoride	0.7	7	10	150	500
Sulphate as SO4	1.7	17	1000	20000	50000
Total Dissolved Solids	83	830	4000	60000	100000
Phenol	<0.01	<0.1	1	-	-
Dissolved Organic Carbon	3	30	500	800	1000

Please include all sections of this report if it is reproduced

All solid results are expressed on a dry weight basis unless stated otherwise.

Client Name: EPS Ltd

Reference: UK26.7777

Location: University of Huddersfield

Contact: Lee Anderson

Matrix : Solid

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	EPH Interpretation
26/3185	1	WS03 ES1	0.20-0.50	17-19	PAHs
26/3185	1	WS04 ES1	0.30-0.60	21-23	PAHs

Client Name: EPS Ltd
Reference: UK26.7777
Location: University of Huddersfield
Contact: Lee Anderson

Note:

Asbestos Screen analysis is carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Detailed Gravimetric Quantification and PCOM Fibre Analysis is carried out in accordance with our documented in-house methods PM042 and TM131 and HSG 248 using Stereo and Polarised Light Microscopy and Phase Contrast Optical Microscopy (PCOM). Asbestos sub-samples are retained for not less than 6 months from the date of analysis unless specifically requested.

The LOQ of the Asbestos Quantification is 0.001% dry fibre of dry mass of sample.

Where the sample is not taken by a Element Materials Technology consultant, Element Materials Technology cannot be responsible for inaccurate or unrepresentative sampling.

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Analyst Name	Date Of Analysis	Analysis	Result
26/3185	1	WS01 ES1	0.10-0.40	3	Kieran Hubbard	05/03/2026	**General Description (Bulk Analysis)**	brown soil n
					Kieran Hubbard	05/03/2026	**Asbestos Fibres**	NAD
					Kieran Hubbard	05/03/2026	**Asbestos Fibres (2)**	NAD
					Kieran Hubbard	05/03/2026	**Asbestos ACM**	NAD
					Kieran Hubbard	05/03/2026	**Asbestos ACM (2)**	NAD
					Kieran Hubbard	05/03/2026	**Asbestos Type**	NAD
					Kieran Hubbard	05/03/2026	**Asbestos Type (2)**	NAD
26/3185	1	WS01 ES2	0.60-1.00	7	Kieran Hubbard	05/03/2026	**General Description (Bulk Analysis)**	brown soil
					Kieran Hubbard	05/03/2026	**Asbestos Fibres**	NAD
					Kieran Hubbard	05/03/2026	**Asbestos Fibres (2)**	NAD
					Kieran Hubbard	05/03/2026	**Asbestos ACM**	NAD
					Kieran Hubbard	05/03/2026	**Asbestos ACM (2)**	NAD
					Kieran Hubbard	05/03/2026	**Asbestos Type**	NAD
					Kieran Hubbard	05/03/2026	**Asbestos Type (2)**	NAD
26/3185	1	WS01 ES3	1.60-2.50	10	Charlotte Taylor	04/03/2026	**General Description (Bulk Analysis)**	brown orange soil/stones
					Charlotte Taylor	04/03/2026	**Asbestos Fibres**	NAD
					Charlotte Taylor	04/03/2026	**Asbestos Fibres (2)**	NAD
					Charlotte Taylor	04/03/2026	**Asbestos ACM**	NAD
					Charlotte Taylor	04/03/2026	**Asbestos ACM (2)**	NAD
					Charlotte Taylor	04/03/2026	**Asbestos Type**	NAD
					Charlotte Taylor	04/03/2026	**Asbestos Type (2)**	NAD
26/3185	1	WS02 ES1	0.70-1.00	13	Kieran Hubbard	05/03/2026	**General Description (Bulk Analysis)**	Brown soil
					Kieran Hubbard	05/03/2026	**Asbestos Fibres**	NAD
					Kieran Hubbard	05/03/2026	**Asbestos Fibres (2)**	NAD
					Kieran Hubbard	05/03/2026	**Asbestos ACM**	NAD
					Kieran Hubbard	05/03/2026	**Asbestos ACM (2)**	NAD
					Kieran Hubbard	05/03/2026	**Asbestos Type**	NAD
					Kieran Hubbard	05/03/2026	**Asbestos Type (2)**	NAD
26/3185	1	WS02 ES2	1.00-1.50	16	Simon Postlewhite	05/03/2026	**General Description (Bulk Analysis)**	Brown soil/stones
					Simon Postlewhite	05/03/2026	**Asbestos Fibres**	NAD
					Simon Postlewhite	05/03/2026	**Asbestos Fibres (2)**	NAD
					Simon Postlewhite	05/03/2026	**Asbestos ACM**	NAD
					Simon Postlewhite	05/03/2026	**Asbestos ACM (2)**	NAD
					Simon Postlewhite	05/03/2026	**Asbestos Type**	NAD
					Simon Postlewhite	05/03/2026	**Asbestos Type (2)**	NAD

Client Name: EPS Ltd
Reference: UK26.7777
Location: University of Huddersfield
Contact: Lee Anderson

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Analyst Name	Date Of Analysis	Analysis	Result
26/3185	1	WS03 ES1	0.20-0.50	19	Caoimhe Anders	05/03/2026	**General Description (Bulk Analysis)**	Brown soil, stones
					Caoimhe Anders	05/03/2026	**Asbestos Fibres**	NAD
					Caoimhe Anders	05/03/2026	**Asbestos ACM**	NAD
					Caoimhe Anders	05/03/2026	**Asbestos Type**	NAD
26/3185	1	WS04 ES1	0.30-0.60	23	Caoimhe Anders	05/03/2026	**General Description (Bulk Analysis)**	Brown soil, stones
					Caoimhe Anders	05/03/2026	**Asbestos Fibres**	NAD
					Caoimhe Anders	05/03/2026	**Asbestos ACM**	NAD
					Caoimhe Anders	05/03/2026	**Asbestos Type**	NAD

Client Name: EPS Ltd
Reference: UK26.7777
Location: University of Huddersfield
Contact: Lee Anderson

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Analysis	Reason
No deviating sample report results for job 26/3185						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating. Only analyses which are accredited are recorded as deviating if set criteria are not met.
It is a requirement under ISO 17025 that we inform clients if samples are deviating i.e. outside what is expected. A deviating sample indicates that the sample 'may' be compromised but not necessarily will be compromised. The result is still accredited and our analytical reports will still show accreditation on the relevant analytes.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

EMT Job No.: 26/3185

SOILS and ASH

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary. Asbestos samples are retained for 6 months.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Limits of detection for analyses carried out on as received samples are not moisture content corrected. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C. Ash samples are dried at 35°C ±5°C.

Where Mineral Oil is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Sufficient amount of sample must be received to carry out the testing specified. Where an insufficient amount of sample has been received the testing may not meet the requirements of our accredited methods, as such accreditation may be removed.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil is quoted, this refers to Total Aliphatics C10-C40.

STACK EMISSIONS

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation for Dioxins and Furans and Dioxin like PCBs has been performed on XAD-2 Resin, only samples which use this resin will be within our MCERTS scope.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

DEVIATING SAMPLES

All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. The temperature of sample receipt is recorded on the confirmation schedules in order that the client can make an informed decision as to whether testing should still be undertaken.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a requirement of our Accreditation Body for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.
Laboratory records are kept for a period of no less than 6 years.

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

Measurement Uncertainty

Measurement uncertainty defines the range of values that could reasonably be attributed to the measured quantity. This range of values has not been included within the reported results. Uncertainty expressed as a percentage can be provided upon request.

Customer Provided Information

Sample ID and depth is information provided by the customer.

Age of Diesel

The age of release estimation is based on the nC17/pristane ratio only as prescribed by Christensen and Larsen (1993) and Kaplan, Galperin, Alimi et al., (1996).
Age estimation should be treated with caution as it can be influenced by site specific factors of which the laboratory are not aware.

Tentatively Identified Compounds (TICs)

Where Tentatively Identified Compounds (TICs) are reported, up to 10 Tentatively Identified Compounds will be listed where there is found to be a greater than 80% match with the NIST library. The reported concentration is determined semi-quantitively, with a matrix specific limit of detection. Note, other compounds may be present but are not reported.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) accredited - South Africa
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
>>	Results above quantitative calibration range. The result should be considered the minimum value and is indicative only. The actual result could be significantly higher.
*	Analysis subcontracted to an Element Materials Technology approved laboratory.
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range
AA	x5 Dilution

HWOL ACRONYMS AND OPERATORS USED

HS	Headspace Analysis.
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent.
CU	Clean-up - e.g. by florisil, silica gel.
1D	GC - Single coil gas chromatography.
Total	Aliphatics & Aromatics.
AL	Aliphatics only.
AR	Aromatics only.
2D	GC-GC - Double coil gas chromatography.
#1	EH_Total but with humics mathematically subtracted
#2	EU_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +).
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total
MS	Mass Spectrometry.

EMT Job No: 26/3185

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35 degrees Celsius or 105 degrees Celsius. Calculation based on ISO 11465:1993(E) and BS1377-2:1990.	PM0	No preparation is required.			AR	
TM4	Modified USEPA 8270D v5:2014 method for the solvent extraction and determination of PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270D v5:2014 method for the solvent extraction and determination of PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM4	Modified USEPA 8270D v5:2014 method for the solvent extraction and determination of PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes	Yes	AR	Yes
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM8/PM16	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required/Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM8/PM16	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required/Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM8/PM16	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required/Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes	Yes	AR	Yes
TM5/TM36	please refer to TM5 and TM36 for method details	PM8/PM12/PM16	please refer to PM8/PM16 and PM12 for method details			AR	Yes
PM13	A visual examination of the solid sample is carried out to ascertain sample make up, colour and any other inclusions. This is not a geotechnical description.	PM0	No preparation is required.			AR	No

EMT Job No: 26/3185

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM17	Modified US EPA method 8270D v5:2014. Determination of specific Polychlorinated Biphenyl congeners by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM20	Modified BS 1377-3:1990/USEPA 160.1/3 (TDS/TS: 1971) Gravimetric determination of Total Dissolved Solids/Total Solids	PM0	No preparation is required.			AR	Yes
TM21	Modified BS 7755-3:1995, ISO10694:1995 Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection. Organic Matter (SOM) calculated as per EA MCERTS Chemical Testing of Soil.	PM24	Preparation of Soil and Marine Sediment Samples for Total Organic Carbon.			AD	Yes
TM21	Modified BS 7755-3:1995, ISO10694:1995 Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection. Organic Matter (SOM) calculated as per EA MCERTS Chemical Testing of Soil.	PM24	Preparation of Soil and Marine Sediment Samples for Total Organic Carbon.	Yes		AD	Yes
TM22	Modified BS1377-3:1990 Gravimetric determination of Loss on Ignition by temperature controlled Muffle Furnace (35C-440C). On request modified ASTM D2974-00 LOI (105C-440C)	PM0	No preparation is required.	Yes		AD	Yes
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM0	No preparation is required.			AR	Yes
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM21B	As Received samples are extracted in Methanol: Water (60:40) by reciprocal shaker.			AR	Yes
TM30	Determination of Trace Metals by ICP-OES (Inductively Coupled Plasma-Optical Emission Spectrometry): WATERS by Modified USEPA Method 200.7, Rev. 4.4, 1994; Modified EPA Method 6010B, Rev.2, Dec 1996; Modified BS EN ISO 11885:2009: SOILS by Modified USEP 6010B, Rev.2, Dec.1996; Modified EPA Method 3050B, Rev.2, Dec.1996	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 degrees Celsius. Samples containing asbestos are not dried and ground.			AD	Yes
TM30	Determination of Trace Metals by ICP-OES (Inductively Coupled Plasma-Optical Emission Spectrometry): WATERS by Modified USEPA Method 200.7, Rev. 4.4, 1994; Modified EPA Method 6010B, Rev.2, Dec 1996; Modified BS EN ISO 11885:2009: SOILS by Modified USEP 6010B, Rev.2, Dec.1996; Modified EPA Method 3050B, Rev.2, Dec.1996	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 degrees Celsius. Samples containing asbestos are not dried and ground.	Yes	Yes	AD	Yes
TM30	Determination of Trace Metals by ICP-OES (Inductively Coupled Plasma-Optical Emission Spectrometry): WATERS by Modified USEPA Method 200.7, Rev. 4.4, 1994; Modified EPA Method 6010B, Rev.2, Dec 1996; Modified BS EN ISO 11885:2009: SOILS by Modified USEP 6010B, Rev.2, Dec.1996; Modified EPA Method 3050B, Rev.2, Dec.1996	PM17	Modified method BS EN12457-2:2002 As received solid samples are leached with water in a 10:1 water to soil ratio for 24 hours, the moisture content of the sample is included in the ratio.	Yes		AR	Yes

EMT Job No: 26/3185

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM36	Modified US EPA method 8015B v2:1996. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GCFID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results will be re-run using GC-MS to double check, when requested.	PM12	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM36	Modified US EPA method 8015B v2:1996. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GCFID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results will be re-run using GC-MS to double check, when requested.	PM12	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.	Yes	Yes	AR	Yes
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) - All anions comparable to BS ISO 15923-1: 2013I	PM0	No preparation is required.	Yes		AR	Yes
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) - All anions comparable to BS ISO 15923-1: 2013I	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes	Yes	AD	Yes
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) - All anions comparable to BS ISO 15923-1: 2013I	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AR	Yes
TM50	Acid soluble sulphate (Total Sulphate) analysed by ICP-OES	PM29	A hot hydrochloric acid digest is performed on a dried and ground sample, and the resulting liquor is analysed.	Yes	Yes	AD	Yes
TM60	TC/TOC analysis of Waters by High Temperature Combustion followed by NDIR detection. Based on the following modified standard methods: USEPA 9060A (2002), APHA SMEWW 5310B:1999 22nd Edition, ASTM D 7573, and USEPA 415.1.	PM0	No preparation is required.			AR	Yes
TM65	Asbestos Bulk Identification method based on HSG 248 Second edition (2021)	PM42	Modified SCA Blue Book V.12 draft 2017 and WM3 1st Edition v1.1:2018. Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.	Yes		AR	
TM73	Modified US EPA methods 150.1 (1982) and 9045D Rev. 4 - 2004) and BS1377-3:1990. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes	Yes	AR	No
TM89	Modified USEPA method OIA-1667 (1999). Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide, Sulphide and Thiocyanate analysis.	Yes	Yes	AR	Yes

EMT Job No: 26/3185

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM173	Analysis of fluoride by ISE (Ion Selective Electrode) using modified ISE method 9214 - 340.2 (EPA 1998)	PM0	No preparation is required.			AR	Yes
NONE	No Method Code	NONE	No Method Code			AD	Yes
NONE	No Method Code	PM17	Modified method BS EN12457-2:2002 As received solid samples are leached with water in a 10:1 water to soil ratio for 24 hours, the moisture content of the sample is included in the ratio.				
NONE	No Method Code	PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35 degrees Celsius or 105 degrees Celsius. Calculation based on ISO 11465:1993(E) and BS1377-2:1990.			AR	

APPENDIX E

Waste Classification Report

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.

MURC1-C7PIC-71E6T

Report is invalid if pages are removed.

Job name

University of Huddersfield

Description/Comments

Project

UK26.7777

Site

University of Huddersfield

Classified by

Name:
Michael Judson
Date:
18 Mar 2026 15:47 GMT
Telephone:
01954 710 666

Company:
Environmental Strategies Ltd EPS
7B Caxton House, Broad Street, Cambourne
Cambridge
CB23 6JN

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	08 Dec 2016
Most recent 3 year Refresher	03 Dec 2024

Next 3 year Refresher due by Dec 2027

Purpose of classification

2 - Material Characterisation

Address of the waste

University of Huddersfield Queensgate Huddersfield HD1 3DH **Post Code** HD1 3DH

SIC for the process giving rise to the waste

42990 Construction of other civil engineering projects n.e.c.

Description of industry/producer giving rise to the waste

University Land

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

Waste soils created during redevelopment of the site to create an area of public open space.

Description of the waste

Waste soils comprising made ground and reworked natural soils.

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	WS01 ES1-27/02/2026-0.10-0.40m		Non Hazardous		3
2	WS01 ES2-27/02/2026-0.60-1.00m		Non Hazardous		5
3	WS01 ES3-27/02/2026-1.60-2.50m		Non Hazardous		7
4	WS02 ES1-27/02/2026-0.70-1.00m		Non Hazardous		9
5	WS02 ES2-27/02/2026-1.00-1.50m		Non Hazardous		11
6	WS03 ES1-27/02/2026-0.20-0.50m		Non Hazardous		13
7	WS04 ES1-27/02/2026-0.30-0.60m		Non Hazardous		16

Related documents

#	Name	Description
1	EMT-26-3185-Batch-1-202603111330.HWOL	Element .hwol file used to populate the Job
2	EPS Waste Stream	waste stream template used to create this Job

Report

Created by: Michael Judson

Created date: 18 Mar 2026 15:47 GMT

Classification of sample: WS01 ES1-27/02/2026-0.10-0.40m

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

Sample details

Sample name:
WS01 ES1-27/02/2026-0.10-0.40m
Moisture content:
14.7%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 14.7% Dry Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic pentoxide }	033-004-00-6	215-116-9	1303-28-2		4.4 mg/kg	1.534	5.884 mg/kg	0.000588 %	✓	
2	cadmium { cadmium compounds, with the exception of cadmium sulphoselenide (xCdS.yCdSe), reaction mass of cadmium sulphide with zinc sulphide (xCdS.yZnS), reaction mass of cadmium sulphide with mercury sulphide (xCdS.yHgS), and those specified elsewhere in this Annex }	048-001-00-5			1	<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<**LOD**
3	chromium in Cr(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		48.7 mg/kg	1.462	62.056 mg/kg	0.00621 %	✓	
4	copper { copper sulphate }	029-004-00-0	231-847-6	7758-98-7		30 mg/kg	2.512	65.694 mg/kg	0.00657 %	✓	
5	lead { lead di(acetate) }	082-005-00-8	206-104-4	301-04-2	1	38 mg/kg	1.57	52.01 mg/kg	0.00331 %	✓	
6	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.1 mg/kg	1.353	<0.135 mg/kg	<0.0000135 %		<**LOD**
7	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		18.4 mg/kg	2.637	42.297 mg/kg	0.00423 %	✓	
8	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<**LOD**
9	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		109 mg/kg	1.245	118.286 mg/kg	0.0118 %	✓	
10	naphthalene	601-052-00-2	202-049-5	91-20-3		0.17 mg/kg		0.148 mg/kg	0.0000148 %	✓	
11	acenaphthylene		205-917-1	208-96-8		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<**LOD**
12	acenaphthene		201-469-6	83-32-9		0.14 mg/kg		0.122 mg/kg	0.0000122 %	✓	
13	fluorene		201-695-5	86-73-7		0.1 mg/kg		0.0872 mg/kg	0.00000872 %	✓	
14	phenanthrene		201-581-5	85-01-8		1.08 mg/kg		0.942 mg/kg	0.0000942 %	✓	
15	anthracene		204-371-1	120-12-7		0.22 mg/kg		0.192 mg/kg	0.0000192 %	✓	

#		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		fluoranthene				1.57	mg/kg		1.369	mg/kg	0.000137 %	✓	
			205-912-4	206-44-0									
17		pyrene				1.32	mg/kg		1.151	mg/kg	0.000115 %	✓	
			204-927-3	129-00-0									
18		benzo[a]anthracene				0.63	mg/kg		0.549	mg/kg	0.0000549 %	✓	
		601-033-00-9	200-280-6	56-55-3									
19		chrysene				0.83	mg/kg		0.724	mg/kg	0.0000724 %	✓	
		601-048-00-0	205-923-4	218-01-9									
20		benzo[a]pyrene; benzo[def]chrysene				0.7	mg/kg		0.61	mg/kg	0.000061 %	✓	
		601-032-00-3	200-028-5	50-32-8									
21		indeno[123-cd]pyrene				0.41	mg/kg		0.357	mg/kg	0.0000357 %	✓	
			205-893-2	193-39-5									
22		dibenz[a,h]anthracene				0.1	mg/kg		0.0872	mg/kg	0.00000872 %	✓	
		601-041-00-2	200-181-8	53-70-3									
23		benzo[ghi]perylene				0.38	mg/kg		0.331	mg/kg	0.0000331 %	✓	
			205-883-8	191-24-2									
24		benzo[b]fluoranthene				0.78	mg/kg		0.68	mg/kg	0.000068 %	✓	
		601-034-00-4	205-911-9	205-99-2									
25		benzo[k]fluoranthene				0.31	mg/kg		0.27	mg/kg	0.000027 %	✓	
		601-036-00-5	205-916-6	207-08-9									
26		chromium in Cr(VI) compounds { chromium(VI) oxide }				<0.3	mg/kg	1.923	<0.577	mg/kg	<0.0000577 %		<**LOD**
		024-001-00-0	215-607-8	1333-82-0									
27		pH				8.43	pH		8.43	pH	8.43 pH		
				PH									
28		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		<**LOD**
		006-007-00-5											
										Total:	0.0335 %		

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: WS01 ES2-27/02/2026-0.60-1.00m

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

Sample details

Sample name:
WS01 ES2-27/02/2026-0.60-1.00m
Moisture content:
24.5%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 24.5% Dry Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic pentoxide }	033-004-00-6	215-116-9	1303-28-2		29.6 mg/kg	1.534	36.468 mg/kg	0.00365 %	✓	
2	cadmium { cadmium compounds, with the exception of cadmium sulphoselenide (xCdS.yCdSe), reaction mass of cadmium sulphide with zinc sulphide (xCdS.yZnS), reaction mass of cadmium sulphide with mercury sulphide (xCdS.yHgS), and those specified elsewhere in this Annex }	048-001-00-5			1	<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<**LOD**
3	chromium in Cr(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		61.6 mg/kg	1.462	72.315 mg/kg	0.00723 %	✓	
4	copper { copper sulphate }	029-004-00-0	231-847-6	7758-98-7		133 mg/kg	2.512	268.318 mg/kg	0.0268 %	✓	
5	lead { lead di(acetate) }	082-005-00-8	206-104-4	301-04-2	1	130 mg/kg	1.57	163.925 mg/kg	0.0104 %	✓	
6	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.2 mg/kg	1.353	0.217 mg/kg	0.0000217 %	✓	
7	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		61.6 mg/kg	2.637	130.458 mg/kg	0.013 %	✓	
8	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<**LOD**
9	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		99 mg/kg	1.245	98.977 mg/kg	0.0099 %	✓	
10	naphthalene	601-052-00-2	202-049-5	91-20-3		0.22 mg/kg		0.177 mg/kg	0.0000177 %	✓	
11	acenaphthylene		205-917-1	208-96-8		0.07 mg/kg		0.0562 mg/kg	0.00000562 %	✓	
12	acenaphthene		201-469-6	83-32-9		0.34 mg/kg		0.273 mg/kg	0.0000273 %	✓	
13	fluorene		201-695-5	86-73-7		0.24 mg/kg		0.193 mg/kg	0.0000193 %	✓	
14	phenanthrene		201-581-5	85-01-8		2.65 mg/kg		2.129 mg/kg	0.000213 %	✓	
15	anthracene		204-371-1	120-12-7		0.62 mg/kg		0.498 mg/kg	0.0000498 %	✓	

#		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		fluoranthene				4.51	mg/kg		3.622	mg/kg	0.000362 %	✓	
			205-912-4	206-44-0									
17		pyrene				3.93	mg/kg		3.157	mg/kg	0.000316 %	✓	
			204-927-3	129-00-0									
18		benzo[a]anthracene				1.94	mg/kg		1.558	mg/kg	0.000156 %	✓	
		601-033-00-9	200-280-6	56-55-3									
19		chrysene				2.35	mg/kg		1.888	mg/kg	0.000189 %	✓	
		601-048-00-0	205-923-4	218-01-9									
20		benzo[a]pyrene; benzo[def]chrysene				2.4	mg/kg		1.928	mg/kg	0.000193 %	✓	
		601-032-00-3	200-028-5	50-32-8									
21		indeno[123-cd]pyrene				1.37	mg/kg		1.1	mg/kg	0.00011 %	✓	
			205-893-2	193-39-5									
22		dibenz[a,h]anthracene				0.3	mg/kg		0.241	mg/kg	0.0000241 %	✓	
		601-041-00-2	200-181-8	53-70-3									
23		benzo[ghi]perylene				1.37	mg/kg		1.1	mg/kg	0.00011 %	✓	
			205-883-8	191-24-2									
24		benzo[b]fluoranthene				2.66	mg/kg		2.137	mg/kg	0.000214 %	✓	
		601-034-00-4	205-911-9	205-99-2									
25		benzo[k]fluoranthene				1.03	mg/kg		0.827	mg/kg	0.0000827 %	✓	
		601-036-00-5	205-916-6	207-08-9									
26		chromium in Cr(VI) compounds { chromium(VI) oxide }				<0.3	mg/kg	1.923	<0.577	mg/kg	<0.0000577 %		<**LOD**
		024-001-00-0	215-607-8	1333-82-0									
27		pH				7.94	pH		7.94	pH	7.94 pH		
				PH									
28		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		<**LOD**
		006-007-00-5											
										Total:	0.0732 %		

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: WS01 ES3-27/02/2026-1.60-2.50m

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

Sample details

Sample name:
WS01 ES3-27/02/2026-1.60-2.50m
Moisture content:
14.9%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 14.9% Dry Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic pentoxide }	033-004-00-6	215-116-9	1303-28-2		8.1 mg/kg	1.534	10.813 mg/kg	0.00108 %	✓	
2	cadmium { cadmium compounds, with the exception of cadmium sulphoselenide (xCdS.yCdSe), reaction mass of cadmium sulphide with zinc sulphide (xCdS.yZnS), reaction mass of cadmium sulphide with mercury sulphide (xCdS.yHgS), and those specified elsewhere in this Annex }	048-001-00-5			1	<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<**LOD**
3	chromium in Cr(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		47.9 mg/kg	1.462	60.93 mg/kg	0.00609 %	✓	
4	copper { copper sulphate }	029-004-00-0	231-847-6	7758-98-7		37 mg/kg	2.512	80.882 mg/kg	0.00809 %	✓	
5	lead { lead di(acetate) }	082-005-00-8	206-104-4	301-04-2	1	22 mg/kg	1.57	30.059 mg/kg	0.00191 %	✓	
6	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.1 mg/kg	1.353	0.118 mg/kg	0.0000118 %	✓	
7	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		16.3 mg/kg	2.637	37.405 mg/kg	0.00374 %	✓	
8	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<**LOD**
9	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		40 mg/kg	1.245	43.332 mg/kg	0.00433 %	✓	
10	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<**LOD**
11	acenaphthylene		205-917-1	208-96-8		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<**LOD**
12	acenaphthene		201-469-6	83-32-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<**LOD**
13	fluorene		201-695-5	86-73-7		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<**LOD**
14	phenanthrene		201-581-5	85-01-8		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<**LOD**
15	anthracene		204-371-1	120-12-7		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<**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		fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-912-4	206-44-0									
17		pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			204-927-3	129-00-0									
18		benzo[a]anthracene				<0.06	mg/kg		<0.06	mg/kg	<0.000006 %		<**LOD**
		601-033-00-9	200-280-6	56-55-3									
19		chrysene				<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<**LOD**
		601-048-00-0	205-923-4	218-01-9									
20		benzo[a]pyrene; benzo[def]chrysene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
		601-032-00-3	200-028-5	50-32-8									
21		indeno[123-cd]pyrene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
			205-893-2	193-39-5									
22		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
23		benzo[ghi]perylene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
			205-883-8	191-24-2									
24		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-034-00-4	205-911-9	205-99-2									
25		benzo[k]fluoranthene				<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<**LOD**
		601-036-00-5	205-916-6	207-08-9									
26		chromium in Cr(VI) compounds { chromium(VI) oxide }				<0.3	mg/kg	1.923	<0.577	mg/kg	<0.0000577 %		<**LOD**
		024-001-00-0	215-607-8	1333-82-0									
27		pH				4.87	pH		4.87	pH	4.87 pH		
				PH									
28		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		<**LOD**
		006-007-00-5											
										Total:	0.0253 %		

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: WS02 ES1-27/02/2026-0.70-1.00m

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

Sample details

Sample name:
WS02 ES1-27/02/2026-0.70-1.00m
Moisture content:
27.7%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 27.7% Dry Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic pentoxide }	033-004-00-6	215-116-9	1303-28-2		27.6 mg/kg	1.534	33.152 mg/kg	0.00332 %	✓	
2	cadmium { cadmium compounds, with the exception of cadmium sulphoselenide (xCdS.yCdSe), reaction mass of cadmium sulphide with zinc sulphide (xCdS.yZnS), reaction mass of cadmium sulphide with mercury sulphide (xCdS.yHgS), and those specified elsewhere in this Annex }	048-001-00-5			1	<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<**LOD**
3	chromium in Cr(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		56.6 mg/kg	1.462	64.78 mg/kg	0.00648 %	✓	
4	copper { copper sulphate }	029-004-00-0	231-847-6	7758-98-7		55 mg/kg	2.512	108.178 mg/kg	0.0108 %	✓	
5	lead { lead di(acetate) }	082-005-00-8	206-104-4	301-04-2	1	132 mg/kg	1.57	162.276 mg/kg	0.0103 %	✓	
6	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.4 mg/kg	1.353	0.424 mg/kg	0.0000424 %	✓	
7	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		31.3 mg/kg	2.637	64.627 mg/kg	0.00646 %	✓	
8	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<**LOD**
9	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		79 mg/kg	1.245	77.003 mg/kg	0.0077 %	✓	
10	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<**LOD**
11	acenaphthylene		205-917-1	208-96-8		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<**LOD**
12	acenaphthene		201-469-6	83-32-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<**LOD**
13	fluorene		201-695-5	86-73-7		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<**LOD**
14	phenanthrene		201-581-5	85-01-8		0.33 mg/kg		0.258 mg/kg	0.0000258 %	✓	
15	anthracene		204-371-1	120-12-7		0.05 mg/kg		0.0392 mg/kg	0.00000392 %	✓	

#		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		fluoranthene				0.34	mg/kg		0.266	mg/kg	0.0000266 %	✓	
			205-912-4	206-44-0									
17		pyrene				0.31	mg/kg		0.243	mg/kg	0.0000243 %	✓	
			204-927-3	129-00-0									
18		benzo[a]anthracene				0.17	mg/kg		0.133	mg/kg	0.0000133 %	✓	
		601-033-00-9	200-280-6	56-55-3									
19		chrysene				0.24	mg/kg		0.188	mg/kg	0.0000188 %	✓	
		601-048-00-0	205-923-4	218-01-9									
20		benzo[a]pyrene; benzo[def]chrysene				0.11	mg/kg		0.0861	mg/kg	0.00000861 %	✓	
		601-032-00-3	200-028-5	50-32-8									
21		indeno[123-cd]pyrene				0.06	mg/kg		0.047	mg/kg	0.0000047 %	✓	
			205-893-2	193-39-5									
22		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
23		benzo[ghi]perylene				0.06	mg/kg		0.047	mg/kg	0.0000047 %	✓	
			205-883-8	191-24-2									
24		benzo[b]fluoranthene				0.14	mg/kg		0.11	mg/kg	0.000011 %	✓	
		601-034-00-4	205-911-9	205-99-2									
25		benzo[k]fluoranthene				0.06	mg/kg		0.047	mg/kg	0.0000047 %	✓	
		601-036-00-5	205-916-6	207-08-9									
26		chromium in Cr(VI) compounds { chromium(VI) oxide }				<0.3	mg/kg	1.923	<0.577	mg/kg	<0.0000577 %		<**LOD**
		024-001-00-0	215-607-8	1333-82-0									
27		pH				7.16	pH		7.16	pH	7.16 pH		
				PH									
28		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		<**LOD**
		006-007-00-5											
										Total:	0.0453 %		

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: WS02 ES2-27/02/2026-1.00-1.50m

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

Sample details

Sample name:
WS02 ES2-27/02/2026-1.00-1.50m
Moisture content:
28.7%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 28.7% Dry Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic pentoxide }	033-004-00-6	215-116-9	1303-28-2		35.1 mg/kg	1.534	41.833 mg/kg	0.00418 %	✓	
2	cadmium { cadmium compounds, with the exception of cadmium sulphoselenide (xCdS.yCdSe), reaction mass of cadmium sulphide with zinc sulphide (xCdS.yZnS), reaction mass of cadmium sulphide with mercury sulphide (xCdS.yHgS), and those specified elsewhere in this Annex }	048-001-00-5			1	<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<**LOD**
3	chromium in Cr(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		63.8 mg/kg	1.462	72.453 mg/kg	0.00725 %	✓	
4	copper { copper sulphate }	029-004-00-0	231-847-6	7758-98-7		135 mg/kg	2.512	263.465 mg/kg	0.0263 %	✓	
5	lead { lead di(acetate) }	082-005-00-8	206-104-4	301-04-2	1	114 mg/kg	1.57	139.058 mg/kg	0.00886 %	✓	
6	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.5 mg/kg	1.353	0.526 mg/kg	0.0000526 %	✓	
7	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		78.2 mg/kg	2.637	160.209 mg/kg	0.016 %	✓	
8	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<**LOD**
9	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		176 mg/kg	1.245	170.217 mg/kg	0.017 %	✓	
10	naphthalene	601-052-00-2	202-049-5	91-20-3		0.19 mg/kg		0.148 mg/kg	0.0000148 %	✓	
11	acenaphthylene		205-917-1	208-96-8		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<**LOD**
12	acenaphthene		201-469-6	83-32-9		0.28 mg/kg		0.218 mg/kg	0.0000218 %	✓	
13	fluorene		201-695-5	86-73-7		0.21 mg/kg		0.163 mg/kg	0.0000163 %	✓	
14	phenanthrene		201-581-5	85-01-8		2.01 mg/kg		1.562 mg/kg	0.000156 %	✓	
15	anthracene		204-371-1	120-12-7		0.42 mg/kg		0.326 mg/kg	0.0000326 %	✓	

#		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		fluoranthene				2.34	mg/kg		1.818	mg/kg	0.000182 %	✓	
			205-912-4	206-44-0									
17		pyrene				1.9	mg/kg		1.476	mg/kg	0.000148 %	✓	
			204-927-3	129-00-0									
18		benzo[a]anthracene				0.91	mg/kg		0.707	mg/kg	0.0000707 %	✓	
		601-033-00-9	200-280-6	56-55-3									
19		chrysene				1.04	mg/kg		0.808	mg/kg	0.0000808 %	✓	
		601-048-00-0	205-923-4	218-01-9									
20		benzo[a]pyrene; benzo[def]chrysene				0.93	mg/kg		0.723	mg/kg	0.0000723 %	✓	
		601-032-00-3	200-028-5	50-32-8									
21		indeno[123-cd]pyrene				0.48	mg/kg		0.373	mg/kg	0.0000373 %	✓	
			205-893-2	193-39-5									
22		dibenz[a,h]anthracene				0.13	mg/kg		0.101	mg/kg	0.0000101 %	✓	
		601-041-00-2	200-181-8	53-70-3									
23		benzo[ghi]perylene				0.44	mg/kg		0.342	mg/kg	0.0000342 %	✓	
			205-883-8	191-24-2									
24		benzo[b]fluoranthene				1.06	mg/kg		0.824	mg/kg	0.0000824 %	✓	
		601-034-00-4	205-911-9	205-99-2									
25		benzo[k]fluoranthene				0.41	mg/kg		0.319	mg/kg	0.0000319 %	✓	
		601-036-00-5	205-916-6	207-08-9									
26		chromium in Cr(VI) compounds { chromium(VI) oxide }				<0.3	mg/kg	1.923	<0.577	mg/kg	<0.0000577 %		<**LOD**
		024-001-00-0	215-607-8	1333-82-0									
27		pH				7.74	pH		7.74	pH	7.74 pH		
				PH									
28		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		<**LOD**
		006-007-00-5											
										Total:	0.0807 %		

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: WS03 ES1-27/02/2026-0.20-0.50m

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

Sample details

Sample name:
WS03 ES1-27/02/2026-0.20-0.50m
Moisture content:
12.7%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 12.7% Dry Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic pentoxide }	033-004-00-6	215-116-9	1303-28-2		62.5 mg/kg	1.534	85.064 mg/kg	0.00851 %	✓	
2	cadmium { cadmium compounds, with the exception of cadmium sulphoselenide (xCdS.yCdSe), reaction mass of cadmium sulphide with zinc sulphide (xCdS.yZnS), reaction mass of cadmium sulphide with mercury sulphide (xCdS.yHgS), and those specified elsewhere in this Annex }	048-001-00-5			1	<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<**LOD**
3	chromium in Cr(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		109.8 mg/kg	1.462	142.395 mg/kg	0.0142 %	✓	
4	copper { copper sulphate }	029-004-00-0	231-847-6	7758-98-7		253 mg/kg	2.512	563.851 mg/kg	0.0564 %	✓	
5	lead { lead di(acetate) }	082-005-00-8	206-104-4	301-04-2	1	139 mg/kg	1.57	193.625 mg/kg	0.0123 %	✓	
6	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.3 mg/kg	1.353	0.36 mg/kg	0.000036 %	✓	
7	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		62.6 mg/kg	2.637	146.456 mg/kg	0.0146 %	✓	
8	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<**LOD**
9	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		165 mg/kg	1.245	182.234 mg/kg	0.0182 %	✓	
10	naphthalene	601-052-00-2	202-049-5	91-20-3		1.32 mg/kg		1.171 mg/kg	0.000117 %	✓	
11	acenaphthylene		205-917-1	208-96-8		0.28 mg/kg		0.248 mg/kg	0.0000248 %	✓	
12	acenaphthene		201-469-6	83-32-9		3.01 mg/kg		2.671 mg/kg	0.000267 %	✓	
13	fluorene		201-695-5	86-73-7		2.13 mg/kg		1.89 mg/kg	0.000189 %	✓	
14	phenanthrene		201-581-5	85-01-8		21.69 mg/kg		19.246 mg/kg	0.00192 %	✓	
15	anthracene		204-371-1	120-12-7		5.42 mg/kg		4.809 mg/kg	0.000481 %	✓	

#		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
16		fluoranthene		205-912-4	206-44-0		29.5	mg/kg		26.176	mg/kg	0.00262 %	✓	
17		pyrene		204-927-3	129-00-0		25.27	mg/kg		22.422	mg/kg	0.00224 %	✓	
18		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		13.1	mg/kg		11.624	mg/kg	0.00116 %	✓	
19		chrysene	601-048-00-0	205-923-4	218-01-9		13.99	mg/kg		12.413	mg/kg	0.00124 %	✓	
20		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		13.9	mg/kg		12.334	mg/kg	0.00123 %	✓	
21		indeno[123-cd]pyrene		205-893-2	193-39-5		8.01	mg/kg		7.107	mg/kg	0.000711 %	✓	
22		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		1.6	mg/kg		1.42	mg/kg	0.000142 %	✓	
23		benzo[ghi]perylene		205-883-8	191-24-2		7.53	mg/kg		6.681	mg/kg	0.000668 %	✓	
24		coronene		205-881-7	191-07-1		1.1	mg/kg		0.976	mg/kg	0.0000976 %	✓	
25		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		15.28	mg/kg		13.558	mg/kg	0.00136 %	✓	
26		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		5.94	mg/kg		5.271	mg/kg	0.000527 %	✓	
27		TPH (C6 to C40) petroleum group			TPH		785	mg/kg		696.539	mg/kg	0.0697 %	✓	
28		polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.035	mg/kg		<0.035	mg/kg	<0.0000035 %		<LOD
29		benzene	601-020-00-8	200-753-7	71-43-2		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
30		toluene	601-021-00-3	203-625-9	108-88-3		0.007	mg/kg		0.0062	mg/kg	0.000000621 %	✓	
31		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
32		xylene	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		0.007	mg/kg		0.0062	mg/kg	0.000000621 %	✓	
33		chromium in Cr(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.3	mg/kg	1.923	<0.577	mg/kg	<0.0000577 %		<LOD
34		pH			PH		7.82	pH		7.82	pH	7.82 pH		
35		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
											Total:	0.209 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous Property to non-hazardous for cumulative determinand results below the concentration of: 1000 mg/kg (0.1%) because: WM3 states that the Hazard Statement HP 3 (first and fourth indents) can be discounted as this is a solid waste without a free draining liquid phase.

Hazard Statements hit:

Flam. Liq. 2; H225 "Highly flammable liquid and vapour."

Because of determinand:

toluene (conc.: 6.21e-07%)

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

Because of determinands:

TPH (C6 to C40) petroleum group (conc.: 0.0697%)
xylene (conc.: 6.21e-07%)

Classification of sample: WS04 ES1-27/02/2026-0.30-0.60m

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

Sample details

Sample name:
WS04 ES1-27/02/2026-0.30-0.60m
Moisture content:
17.5%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 17.5% Dry Weight Moisture Correction applied (MC)

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		arsenic { arsenic pentoxide }	033-004-00-6	215-116-9	1303-28-2		10.6	mg/kg	1.534	13.838	mg/kg	0.00138 %	✓	
2		cadmium { cadmium compounds, with the exception of cadmium sulphoselenide (xCdS.yCdSe), reaction mass of cadmium sulphide with zinc sulphide (xCdS.yZnS), reaction mass of cadmium sulphide with mercury sulphide (xCdS.yHgS), and those specified elsewhere in this Annex }	048-001-00-5			1	<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		<**LOD**
3		chromium in Cr(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		69.5	mg/kg	1.462	86.449	mg/kg	0.00864 %	✓	
4		copper { copper sulphate }	029-004-00-0	231-847-6	7758-98-7		97	mg/kg	2.512	207.349	mg/kg	0.0207 %	✓	
5		lead { lead di(acetate) }	082-005-00-8	206-104-4	301-04-2	1	88	mg/kg	1.57	117.575	mg/kg	0.00749 %	✓	
6		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.2	mg/kg	1.353	0.23	mg/kg	0.000023 %	✓	
7		nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		29	mg/kg	2.637	65.076	mg/kg	0.00651 %	✓	
8		selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<**LOD**
9		zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		80	mg/kg	1.245	84.746	mg/kg	0.00847 %	✓	
10		naphthalene	601-052-00-2	202-049-5	91-20-3		0.24	mg/kg		0.204	mg/kg	0.0000204 %	✓	
11		acenaphthylene		205-917-1	208-96-8		0.08	mg/kg		0.0681	mg/kg	0.00000681 %	✓	
12		acenaphthene		201-469-6	83-32-9		0.66	mg/kg		0.562	mg/kg	0.0000562 %	✓	
13		fluorene		201-695-5	86-73-7		0.47	mg/kg		0.4	mg/kg	0.00004 %	✓	
14		phenanthrene		201-581-5	85-01-8		4.24	mg/kg		3.609	mg/kg	0.000361 %	✓	
15		anthracene		204-371-1	120-12-7		0.9	mg/kg		0.766	mg/kg	0.0000766 %	✓	

#		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		fluoranthene				5.75	mg/kg		4.894	mg/kg	0.000489 %	✓	
			205-912-4	206-44-0									
17		pyrene				4.94	mg/kg		4.204	mg/kg	0.00042 %	✓	
			204-927-3	129-00-0									
18		benzo[a]anthracene				2.33	mg/kg		1.983	mg/kg	0.000198 %	✓	
		601-033-00-9	200-280-6	56-55-3									
19		chrysene				2.68	mg/kg		2.281	mg/kg	0.000228 %	✓	
		601-048-00-0	205-923-4	218-01-9									
20		benzo[a]pyrene; benzo[def]chrysene				2.48	mg/kg		2.111	mg/kg	0.000211 %	✓	
		601-032-00-3	200-028-5	50-32-8									
21		indeno[123-cd]pyrene				1.26	mg/kg		1.072	mg/kg	0.000107 %	✓	
			205-893-2	193-39-5									
22		dibenz[a,h]anthracene				0.24	mg/kg		0.204	mg/kg	0.0000204 %	✓	
		601-041-00-2	200-181-8	53-70-3									
23		benzo[ghi]perylene				1.07	mg/kg		0.911	mg/kg	0.0000911 %	✓	
			205-883-8	191-24-2									
24		coronene				0.13	mg/kg		0.111	mg/kg	0.0000111 %	✓	
			205-881-7	191-07-1									
25		benzo[b]fluoranthene				2.57	mg/kg		2.187	mg/kg	0.000219 %	✓	
		601-034-00-4	205-911-9	205-99-2									
26		benzo[k]fluoranthene				1	mg/kg		0.851	mg/kg	0.0000851 %	✓	
		601-036-00-5	205-916-6	207-08-9									
27		TPH (C6 to C40) petroleum group				157	mg/kg		133.617	mg/kg	0.0134 %	✓	
				TPH									
28		polychlorobiphenyls; PCB				<0.035	mg/kg		<0.035	mg/kg	<0.0000035 %		<**LOD**
		602-039-00-4	215-648-1	1336-36-3									
29		benzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-020-00-8	200-753-7	71-43-2									
30		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
31		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
32		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]									
33		chromium in Cr(VI) compounds { chromium(VI) oxide }				<0.3	mg/kg	1.923	<0.577	mg/kg	<0.0000577 %		<**LOD**
		024-001-00-0	215-607-8	1333-82-0									
34		pH				8.09	pH		8.09	pH	8.09 pH		
				PH									
35		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		603-181-00-X	216-653-1	1634-04-4									
										Total:	0.0693 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous Property to non-hazardous for cumulative determinand results below the concentration of: 1000 mg/kg (0.1%) because: WM3 states that the Hazard Statement HP 3 (first and fourth indents) can be discounted as this is a solid waste without a free draining liquid phase.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group (conc.: 0.0134%)

Appendix A: Classifier defined and non GB MCL determinands

cadmium compounds, with the exception of cadmium sulphoselenide (xCdS.yCdSe), reaction mass of cadmium sulphide with zinc sulphide (xCdS.yZnS), reaction mass of cadmium sulphide with mercury sulphide (xCdS.yHgS), and those specified elsewhere in this Annex

GB MCL index number: 048-001-00-5
Description/Comments: Worst Case: IARC considers cadmium 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 di(acetate) (EC Number: 206-104-4, CAS Number: 301-04-2)

GB MCL index number: 082-005-00-8
Description/Comments: 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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

- **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

- **coronene** (EC Number: 205-881-7, CAS Number: 191-07-1)

Description/Comments: Data from C&L Inventory Database; no entries in Registered Substances or Pesticides Properties databases; SDS: Sigma Aldrich, 1907/2006 compliant, dated 2012 - no entries; IARC – Group 3, not carcinogenic.
Data source: http://clp-inventory.echa.europa.eu/SummaryOfClassAndLabelling.aspx?SubstanceID=17010&HarmOnly=no?fc=true&lang=en
Data source date: 16 Jun 2014
Hazard Statements: STOT SE 2; H371

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

Description/Comments: Unknown Oil

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

- **polychlorobiphenyls; PCB** (EC Number: 215-648-1, CAS Number: 1336-36-3)

GB MCL index number: 602-039-00-4
Description/Comments: Worst Case: IARC considers PCB Group 1; Carcinogenic to humans;

POP specific threshold from ATP1 (Regulation 756/2010/EU) to POPs Regulation (Regulation 850/2004/EC). Where applicable, the calculation method laid down in European standards EN 12766-1 and EN 12766-2 shall be applied.
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

- **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

arsenic {arsenic pentoxide}

Worst Case

cadmium {cadmium compounds, with the exception of cadmium sulphoselenide (xCdS.yCdSe), reaction mass of cadmium sulphide with zinc sulphide (xCdS.yZnS), reaction mass of cadmium sulphide with mercury sulphide (xCdS.yHgS), and those specified elsewhere in this Annex}

Using elemental Cadmium with no CrVI

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

Worst case species

copper {copper sulphate}

Worst Case Species

lead {lead di(acetate)}

Worst Case Species

mercury {mercury dichloride}

Worst Case Species

nickel {nickel sulfate}

Worst Case Species considered likely to be present on most brownfield land sites.

selenium {nickel selenate}

Worst Case Species

zinc {zinc oxide}

Elemental Zinc with no CrVI

chromium in Cr(VI) compounds {chromium(VI) oxide}

Worst case species

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}

Only available species.

Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition v1.2.GB - Oct 2021
HazWasteOnline Classification Engine Version: 2026.56.7002.12617 (25 Feb 2026)
HazWasteOnline Database: 2026.56.7002.12617 (25 Feb 2026)

This classification utilises the following guidance and legislation:
WM3 v1.2.GB - Waste Classification - 1st Edition v1.2.GB - Oct 2021
CLP Regulation - Regulation 1272/2008/EC of 16 December 2008
1st ATP - Regulation 790/2009/EC of 10 August 2009
2nd ATP - Regulation 286/2011/EC of 10 March 2011
3rd ATP - Regulation 618/2012/EU of 10 July 2012
4th ATP - Regulation 487/2013/EU of 8 May 2013
Correction to 1st ATP - Regulation 758/2013/EU of 7 August 2013
5th ATP - Regulation 944/2013/EU of 2 October 2013
6th ATP - Regulation 605/2014/EU of 5 June 2014
WFD Annex III replacement - Regulation 1357/2014/EU of 18 December 2014
Revised List of Waste 2014 - Decision 2014/955/EU of 18 December 2014
7th ATP - Regulation 2015/1221/EU of 24 July 2015
8th ATP - Regulation (EU) 2016/918 of 19 May 2016
9th ATP - Regulation (EU) 2016/1179 of 19 July 2016
10th ATP - Regulation (EU) 2017/776 of 4 May 2017
HP14 amendment - Regulation (EU) 2017/997 of 8 June 2017
13th ATP - Regulation (EU) 2018/1480 of 4 October 2018
14th ATP - Regulation (EU) 2020/217 of 4 October 2019
15th ATP - Regulation (EU) 2020/1182 of 19 May 2020
The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use)(Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1567 of 16th December 2020
The Waste and Environmental Permitting etc. (Legislative Functions and Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1540 of 16th December 2020
GB MCL List - version 1.1 of 09 June 2021
GB MCL List v2.0 - version 2.0 of 20th October 2023
GB MCL List v3.0 - version 3.0 of 11th January 2024
GB MCL List v4.0 - version 4.0 of 2nd March 2024
GB MCL List v5.0 - version 5.0 of 26th June 2024
GB MCL List v6.0 - version 6.0 of 15th February 2025
GB MCL List v7.0 - version 7.0 of 23rd September 2025

APPENDIX F

DCP Results

Dynamic Cone Penetrometer

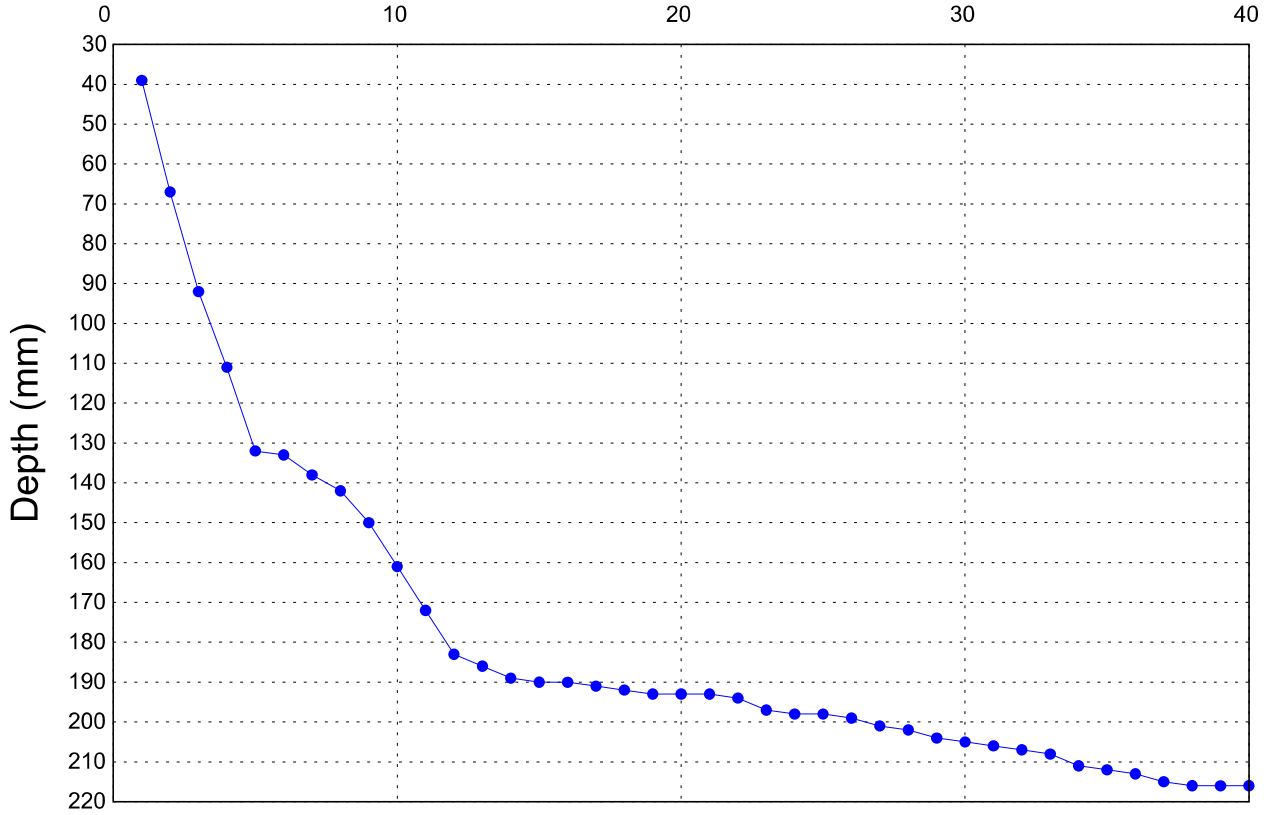
DCP01
Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
DCP	414615.00	416201.00	83.00	1:20

Project Name	Project No.	Start Date	End Date
University of Huddersfield	UK26.7777	27.02.2026	27.02.2026

Client	Consultant	Contractor
GSS Architecture	EPS	Taylor Drilling Services

Number of Blows (Cumulative)



CBR Estimates (Per-100mm)

Start mm	Finish mm	Blows	mm / blow	CBR Estimate (%)
39	139	6.25	16.00	16.12
139	216	32.75	2.35	122.34

CBR empirical estimate based on the Transport Research Laboratory CBR DCP relationship formula. Individual values reported to 2DP.

Remarks

Method, Plant, Stability, Dimensions

Logger

Checked By: AW **Approved By:** SB

Created using Pebble Geo

Dynamic Cone Penetrometer

DCP02

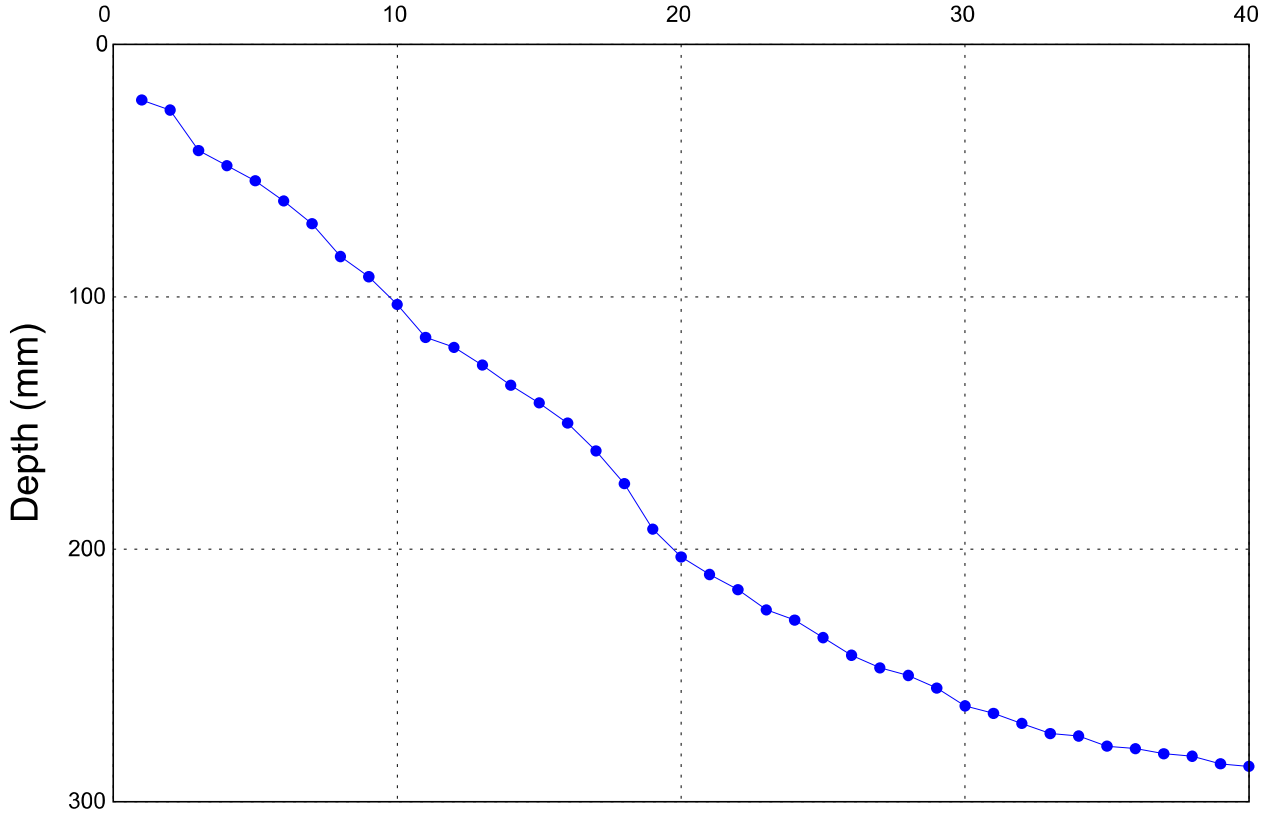
Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
DCP	414616.00	416186.00	83.00	1:20

Project Name	Project No.	Start Date	End Date
University of Huddersfield	UK26.7777	27.02.2026	27.02.2026

Client	Consultant	Contractor
GSS Architecture	EPS	Taylor Drilling Services

Number of Blows (Cumulative)



CBR Estimates (Per-100mm)

Start mm	Finish mm	Blows	mm / blow	CBR Estimate (%)
22	122	11.29	8.86	30.10
122	222	10.46	9.56	27.79
222	286	17.25	3.71	75.54

CBR empirical estimate based on the Transport Research Laboratory CBR DCP relationship formula. Individual values reported to 2DP.

Remarks

Method, Plant, Stability, Dimensions

Logger

Checked By: AW **Approved By:** SB

Dynamic Cone Penetrometer

DCP03

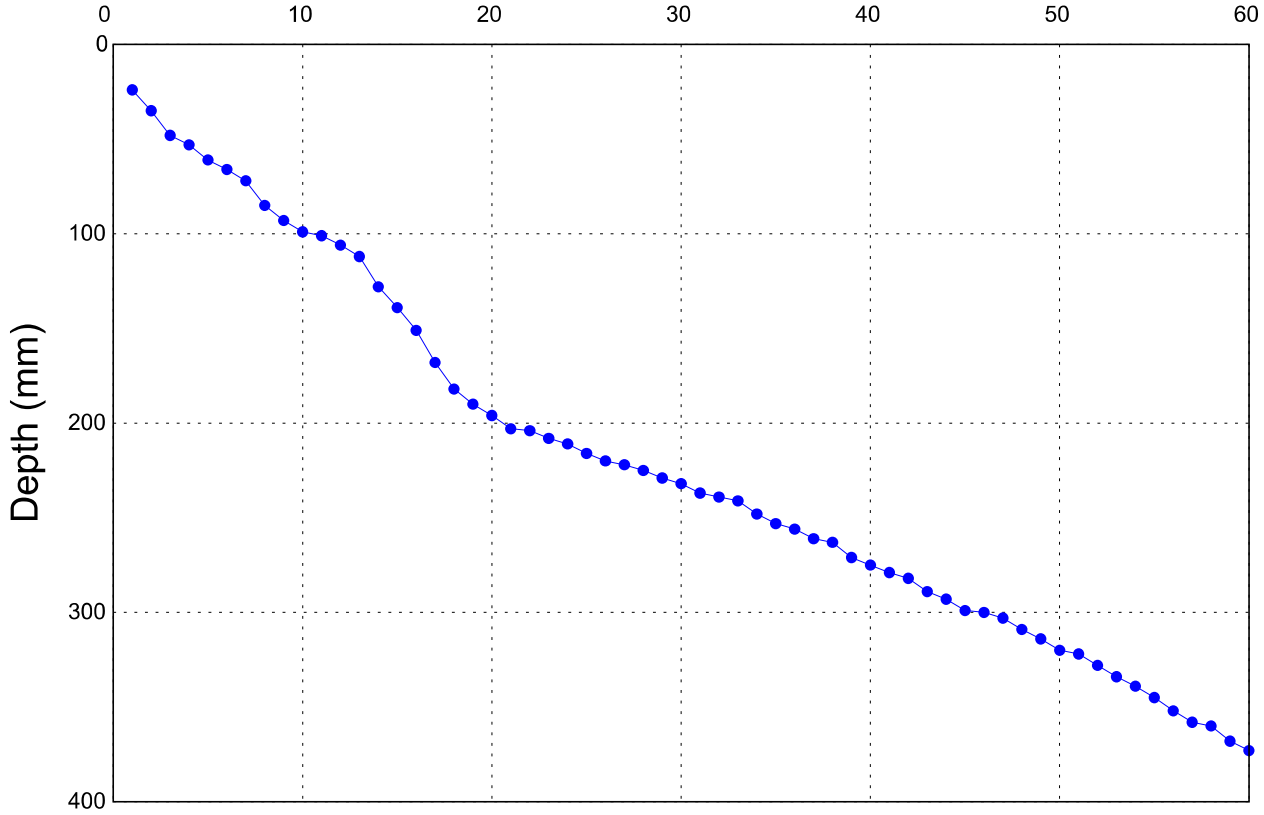
Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
DCP	414632.00	416193.00	83.00	1:20

Project Name	Project No.	Start Date	End Date
University of Huddersfield	UK26.7777	27.02.2026	27.02.2026

Client	Consultant	Contractor
GSS Architecture	EPS	Taylor Drilling Services

Number of Blows (Cumulative)



CBR Estimates (Per-100mm)

Start mm	Finish mm	Blows	mm / blow	CBR Estimate (%)
24	124	12.75	7.84	34.24
124	224	13.92	7.19	37.56
224	324	23.67	4.23	65.84
324	373	8.67	5.65	48.39

CBR empirical estimate based on the Transport Research Laboratory CBR DCP relationship formula. Individual values reported to 2DP.

Remarks

Method, Plant, Stability, Dimensions **Logger**

Checked By: AW **Approved By:** SB

Created using Pebble Geo

Dynamic Cone Penetrometer

DCP04

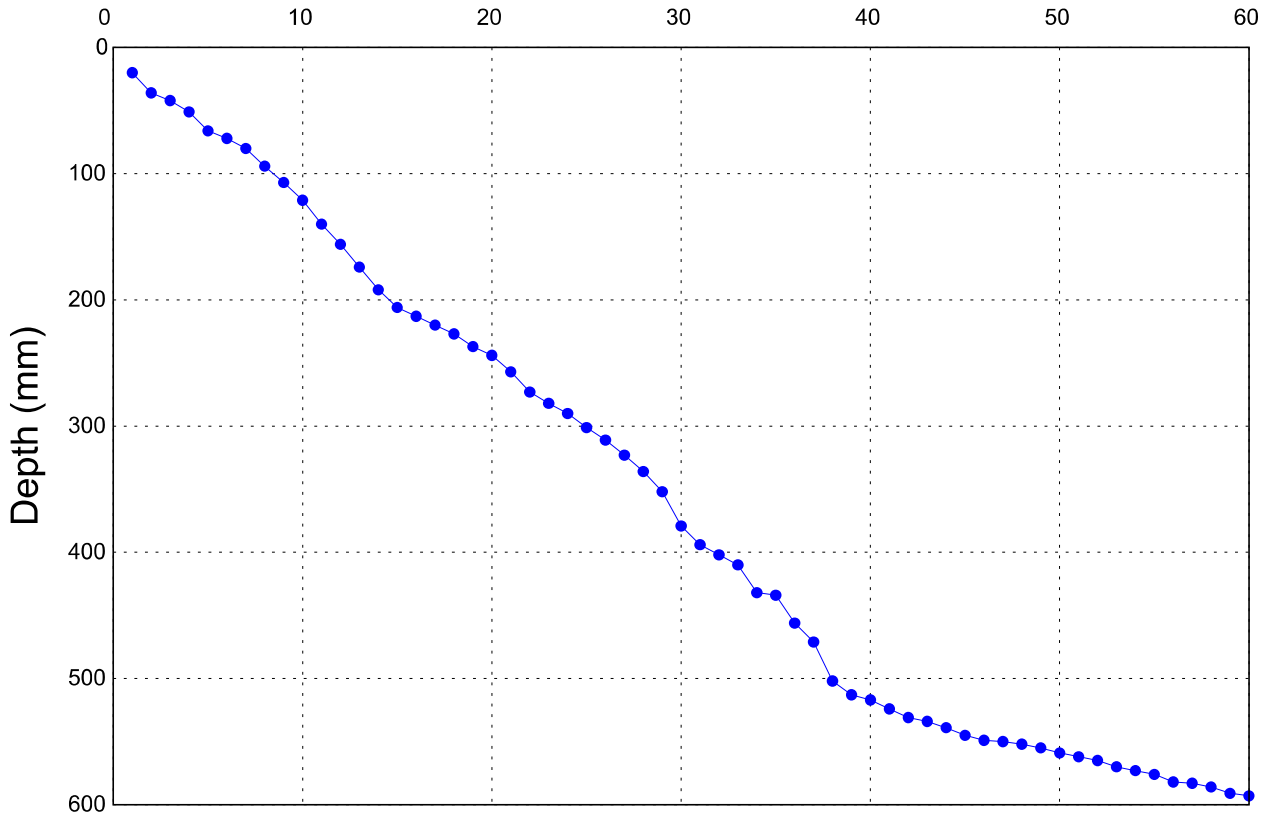
Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
DCP	414648.00	416184.00	83.00	1:20

Project Name	Project No.	Start Date	End Date
University of Huddersfield	UK26.7777	27.02.2026	27.02.2026

Client	Consultant	Contractor
GSS Architecture	EPS	Taylor Drilling Services

Number of Blows (Cumulative)



CBR Estimates (Per-100mm)

Start mm	Finish mm	Blows	mm / blow	CBR Estimate (%)
20	120	8.93	11.20	23.50
120	220	7.07	14.14	18.36
220	320	9.75	10.26	25.79
320	420	6.70	14.92	17.36
420	520	6.97	14.34	18.10
520	593	19.57	3.73	75.11

CBR empirical estimate based on the Transport Research Laboratory CBR DCP relationship formula. Individual values reported to 2DP.

Remarks

Method, Plant, Stability, Dimensions

Logger

Checked By: AW **Approved By:** SB

Created using Pebble Geo

APPENDIX G

Laboratory Results – Geotechnical

TEST REPORT

Serial number: LT2089 Date of issue: 23/03/2026 Page 1 of 9

1265

Issued by Soil Engineering Geoservices Limited,
Parkside Lane,
Dewsbury Road,
Leeds
LS11 5SX.
Tel: 0113 2711111

Email: enquiries@soil-engineering.co.uk

Authorised signatory

S.Harper

P. A. Rodgers (Technical Manager)
S. D. Harper √ (Laboratory Production Manager)

Customer name	EPS
Address	10-12 East Parade Leeds LS1 2BH

Contract name	Uni Of Huddersfield
Your reference	UK26.7777
Dates of receipt of samples	06/03/2026
Dates of testing	13/03/2026 to 21/03/2026

Sampling was not performed by the Laboratory of Soil Engineering.

Testing was performed on 3 number of samples received in good condition.

Opinions and interpretations expressed herein are outside the scope of our UKAS accreditation.

Results reported relate only to the samples tested.

Tests marked 'Not UKAS' in this report are not included in the UKAS accreditation schedule for our laboratory. These results will appear in italics on any summary of tests.

Samples will be retained for 28 days from date of issue of this report and then be disposed of, unless we receive written instruction to the contrary

This test report shall not be reproduced except in full without the written permission of Soil Engineering Geoservices Limited.

Key to Laboratory Summary Sheets

Common to all summaries				
Sample Type	U	Undisturbed sample	D	Small disturbed sample
	P	Piston sample	B	Bulk disturbed sample
	TW	Thin walled sample	BLK	Block sample
	L	Liner sample	C	Rock core
	AMAL	Amalgamated sample		
Test status	Any result in *italics* indicates a test that is not within the scope of the UKAS accreditation for this laboratory.			
Summary of Laboratory Soil Tests: Index / Classification Tests				
Particle density	p		g	Gas jar method
Plastic index	N/P	Non plastic, although liquid limit will have been determined if requested		
Particle size (PSD)	1	Following value in silt column denotes combined clay and silt fraction		
	p	Following value in clay column denotes sedimentation by pipette, else sedimentation is by hydrometer.		
Summary of Laboratory Soil Tests: Strength and Permeability Tests				
Triaxial	UU	Single stage unconsolidated quick undrained	UUM	Multi stage unconsolidated quick undrained
	UU3	Set of 3 unconsolidated quick undrained	CU	Single stage consolidated undrained
	CUM	Multi stage consolidated undrained	CU3	Set of 3 consolidated undrained
	CD	Single stage consolidated drained	CDM	Multi stage consolidated drained
	CD3	Set of 3 consolidated drained		
	Note that single stage tests are reported assuming f = 0 for total stress and c' = 0 for effective stress			
Consol	Oed	One-dimensional oedometer	Hyd	Hydraulic cell consolidation
	m_v	coefficient of compressibility quoted for p0 to p0 + 100kPa, where determined		
Permeability	C	Constant head permeability	T	Triaxial permeability
Shearbox	SSB	Small shear box	LSB	Large shear box
	p	Peak value	r	Residual value
	RS	Ring shear		
Summary of Laboratory Soil Re-Use Test				
MCV	s	MCV value at natural or specified moisture content	int	21/03/2026
Summary of Laboratory Rock Strength Tests				
Point Load Type	D	Diametral	A	Axial
(Combination of)	I	Irregular lump	B	Block
	L	Test performed parallel to planes of weakness		
	P	Test performed perpendicular to planes of weakness		
	X	Invalid failure of point load (not broken between points of load application)		
Summary of Laboratory Rock Materials Tests				
Ten% fines	w	Soaked test	d	Dry test
Point Load Index Result				
Point Load Type	D	Diametral	A	Axial
(Combination of)	I	Irregular lump	B	Block
	L	Parallel to planes of weakness	P	Perpendicular to planes of weakness
	X	Invalid failure of point load (not broken between points of load application)		
Dimensions	W	Diameter of core or average smallest width perpendicular to axis of loading in a block or irregular lump		
	D	Distance between platens when just in contact with specimen		
	D'	Distance between platens at point of failure		
	De	Equivalent core diameter	Is	P/De^2
	Is(50)	F x Is	F	$(De/50)^{0.45}$
	Is(50) point load strength index corrected for a diametral test of core diameter 50mm			
	For Axial/Lump tests $De^2 = (4/Pi) \times (W \times D')$		For Diametral tests $De^2 = D \times D'$	

Important note: summary sheets are provided for convenience and in no way replace individual test result sheets which shall, without exception, be regarded as the definitive result.

Project Name	Uni of Huddersfield	**Water Content**	Hole ID WS01
Project No.	LT2089		Sample Depth 1.50m
Engineer	EPS		Sample Number D1
Employer	EPS	BS 1377-2:2022 Clause 4.1 / BS EN ISO 17892-1:2014+A1:2022	Sample Type D
Description	Brown slightly gravelly CLAY.		Specimen Depth 1.50m
			Specimen Number 2

Water content	23.8	%
Oven temperature	105/110	°C
Is test result assumed to be a natural water content?	Yes	

Remarks

Results relate only to the items tested. The laboratory has not been responsible for the sampling stage, so results apply to the sample as received.

Approved by:	Leeds Laboratory		SOIL ENGINEERING
Steve Harper		Print date 23/03/2026	
	Revision No. 1.01	Issue Date 01/05/2024	

Project Name	Uni of Huddersfield	**Water Content**	Hole ID WS03
Project No.	LT2089		Sample Depth 0.90m
Engineer	EPS		Sample Number D1
Employer	EPS	BS 1377-2:2022 Clause 4.1 / BS EN ISO 17892-1:2014+A1:2022	Sample Type D
Description	Brown slightly gravelly slightly sandy CLAY.		Specimen Depth 0.90m
			Specimen Number 2

Water content	29.4	%
Oven temperature	105/110	°C
Is test result assumed to be a natural water content?	Yes	

Remarks

Results relate only to the items tested. The laboratory has not been responsible for the sampling stage, so results apply to the sample as received.

Approved by:	Leeds Laboratory		SOIL ENGINEERING
Steve Harper		Print date 23/03/2026	
	Revision No. 1.01	Issue Date 01/05/2024	

Project Name	Uni of Huddersfield	**Water Content**	Hole ID WS03
Project No.	LT2089		Sample Depth 1.10m
Engineer	EPS		Sample Number B1
Employer	EPS	BS 1377-2:2022 Clause 4.1 / BS EN ISO 17892-1:2014+A1:2022	Sample Type B
Description	Greyish brown slightly gravelly slightly sandy CLAY.		Specimen Depth 1.10m
			Specimen Number 3

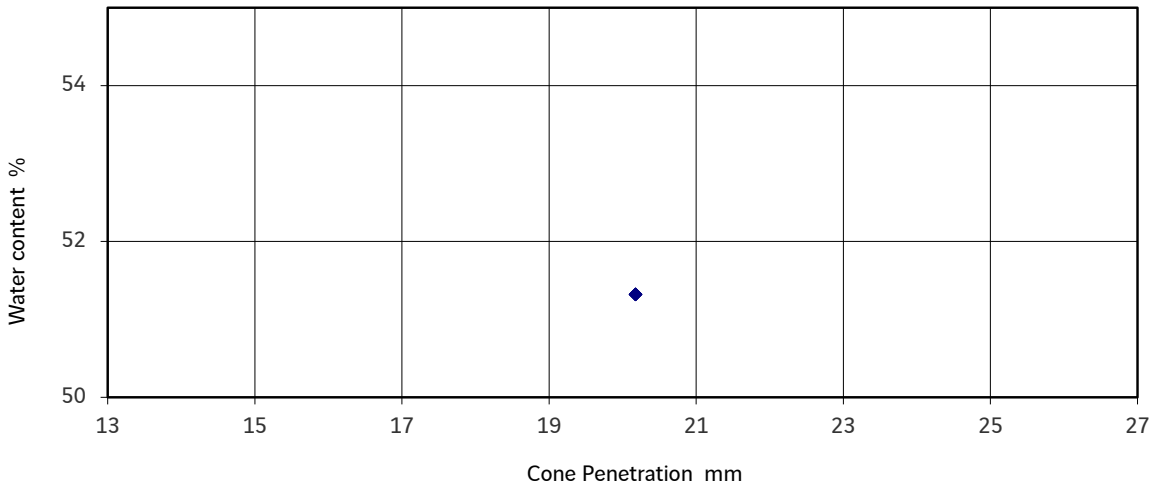
Water content	20.2	%
Oven temperature	105/110	°C
Is test result assumed to be a natural water content?	Yes	

Remarks

Results relate only to the items tested. The laboratory has not been responsible for the sampling stage, so results apply to the sample as received.

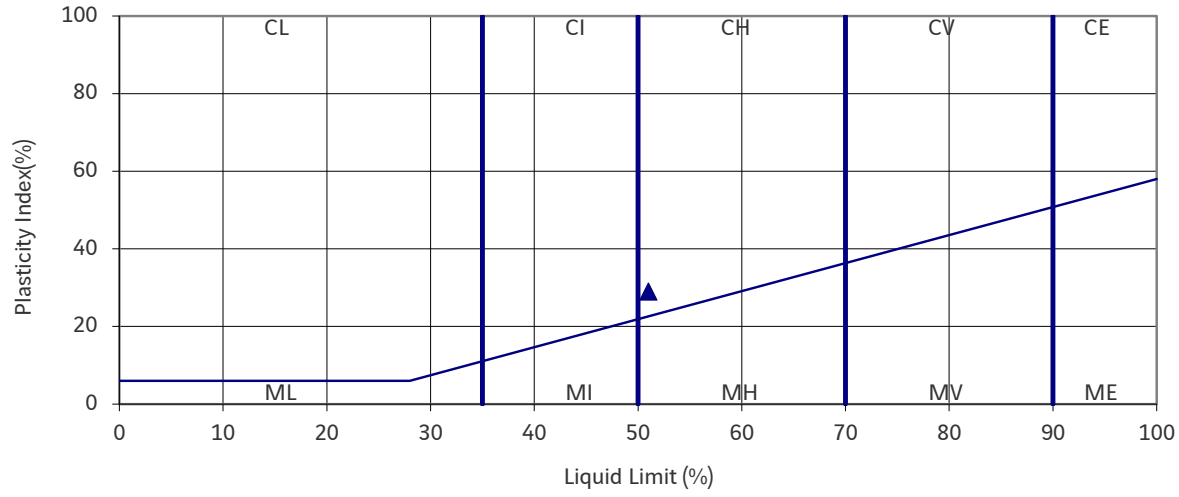
Approved by:	Leeds Laboratory		
Steve Harper		Print date 23/03/2026	SOIL ENGINEERING
	Revision No. 1.01	Issue Date 01/05/2024	

Project Name	Uni of Huddersfield	**Liquid Limit (Fall Cone) And Plastic Limit Test**	Hole ID WS01
Project No.	LT2089		Sample Depth 1.50m
Engineer	EPS		Sample Number D1
Employer	EPS	BS 1377-2: 2022 / BS EN ISO 17892-12:2018+A2:2022	Sample Type D
Description	Brown slightly gravelly CLAY.		Specimen Depth 1.50m
			Specimen Number 1



As received water content:	23.8%	Estimated percentage passing 425µm sieve:	98%
Liquid limit:	51%	Preparation of sample: Natural	
Plastic limit:	22%	Remarks: Test performed with 80g/30deg cone Scheduled as 1 point test.	
Plasticity index:	29%		
Water content of soil passing 425µm	24.1%		
Liquidity index:	0.073		

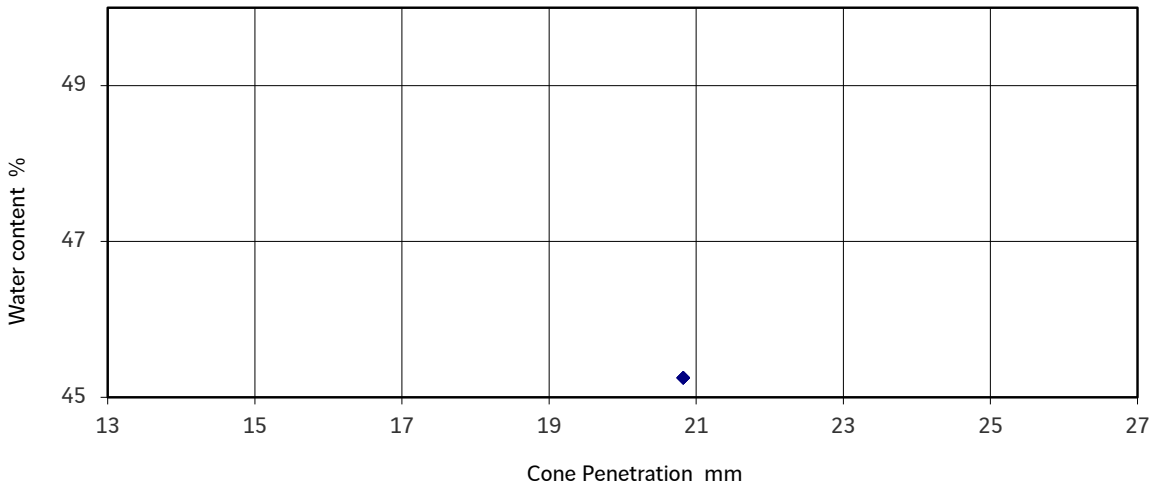
A-Line plot after Casagrande 1932. Does not form part of accredited test activities.



Results relate only to the items tested. The laboratory has not been responsible for the sampling stage, so results apply to the sample as received.

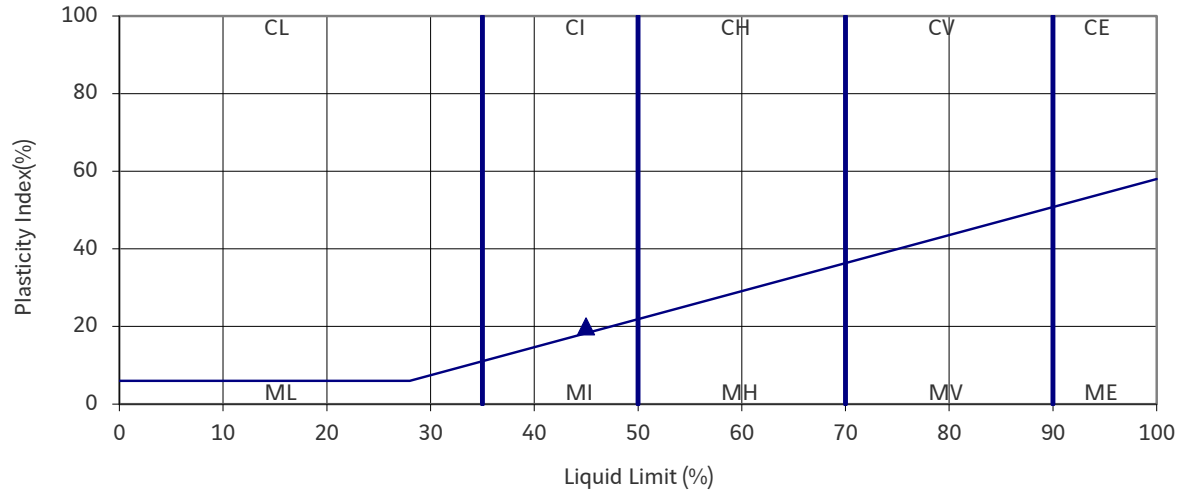
Approved by:	Leeds Laboratory		SOIL ENGINEERING
Steve Harper		Print date 23/03/2026	
	Revision No. 3.01	Issue Date 13/11/2025	

Project Name	Uni of Huddersfield	**Liquid Limit (Fall Cone) And Plastic Limit Test**	Hole ID WS03
Project No.	LT2089		Sample Depth 0.90m
Engineer	EPS		Sample Number D1
Employer	EPS	BS 1377-2: 2022 / BS EN ISO 17892-12:2018+A2:2022	Sample Type D
Description	Brown slightly gravelly slightly sandy CLAY.		Specimen Depth 0.90m
			Specimen Number 1



As received water content:	29.4%	Estimated percentage passing 425µm sieve:	99%
Liquid limit:	45%	Preparation of sample: Natural	
Plastic limit:	25%	Remarks: Test performed with 80g/30deg cone Scheduled as 1 point test.	
Plasticity index:	20%		
Water content of soil passing 425µm	29.7%		
Liquidity index:	0.235		

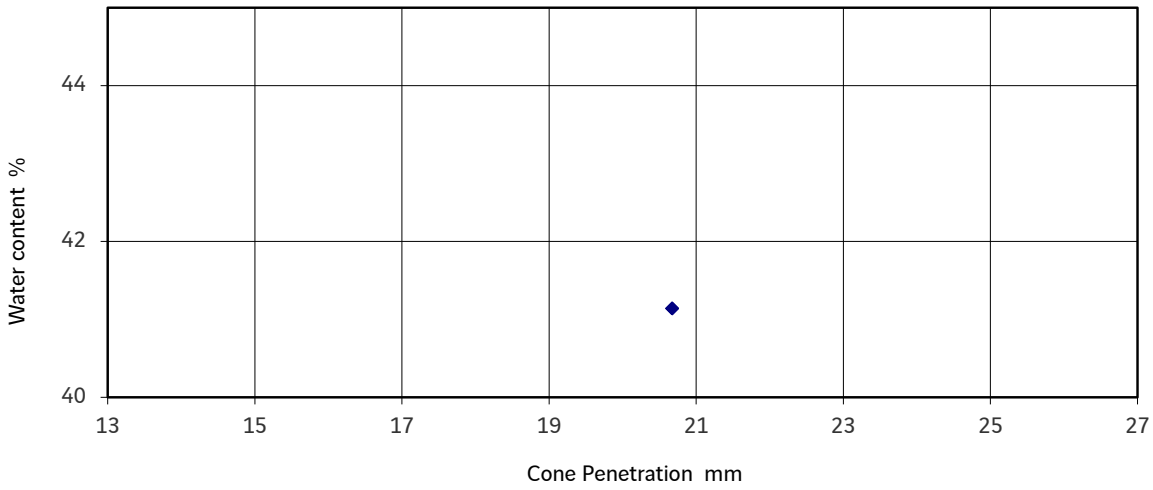
A-Line plot after Casagrande 1932. Does not form part of accredited test activities.



Results relate only to the items tested. The laboratory has not been responsible for the sampling stage, so results apply to the sample as received.

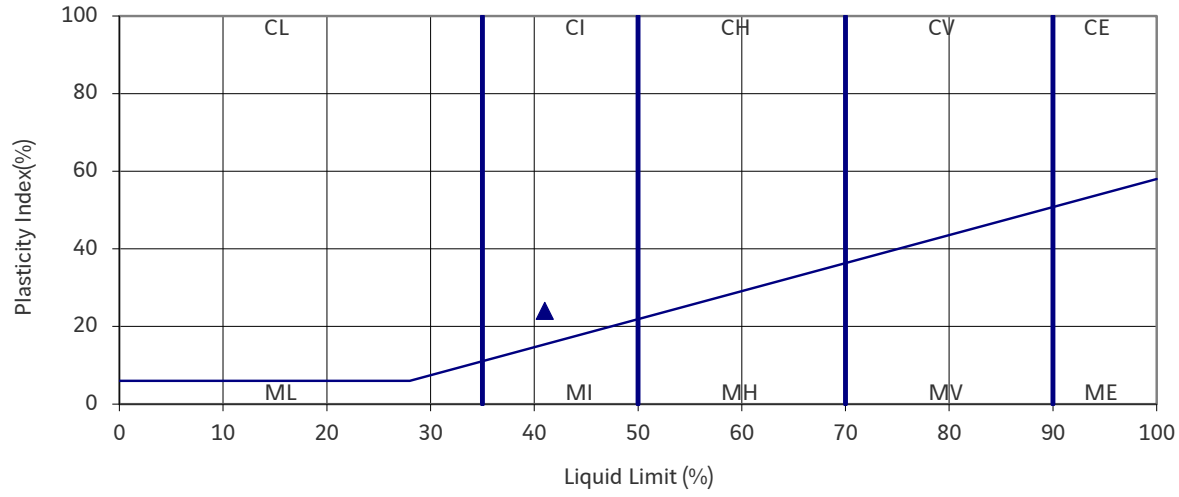
Approved by:	Leeds Laboratory		SOIL ENGINEERING
Steve Harper		Print date 23/03/2026	
	Revision No. 3.01	Issue Date 13/11/2025	

Project Name	Uni of Huddersfield	**Liquid Limit (Fall Cone) And Plastic Limit Test**	Hole ID WS03
Project No.	LT2089		Sample Depth 1.10m
Engineer	EPS		Sample Number B1
Employer	EPS	BS 1377-2: 2022 / BS EN ISO 17892-12:2018+A2:2022	Sample Type B
Description	Greyish brown slightly gravelly slightly sandy CLAY.		Specimen Depth 1.10m
			Specimen Number 2



As received water content:	20.2%	Estimated percentage passing 425µm sieve:	99%
Liquid limit:	41%	Preparation of sample: Natural	
Plastic limit:	17%	Remarks: Test performed with 80g/30deg cone Scheduled as 1 point test.	
Plasticity index:	24%		
Water content of soil passing 425µm	20.4%		
Liquidity index:	0.143		

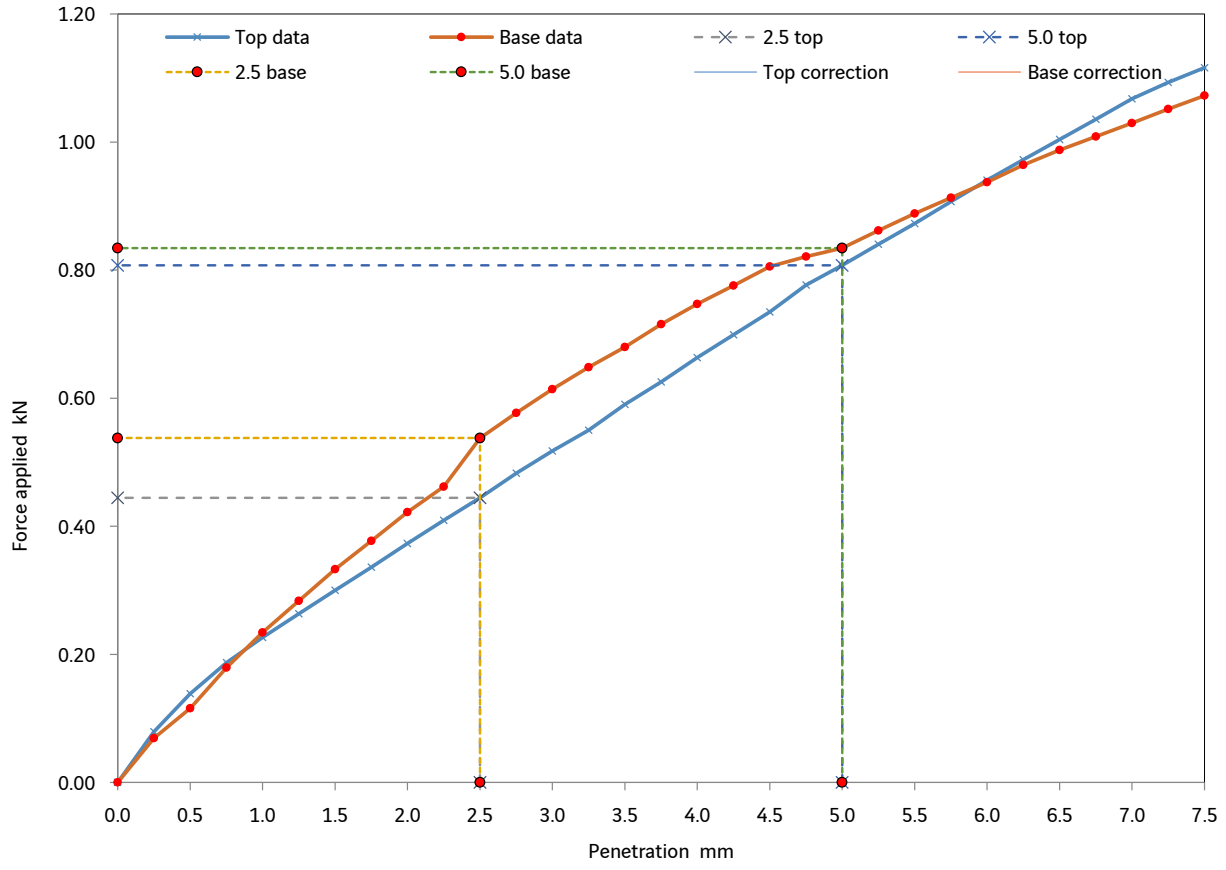
A-Line plot after Casagrande 1932. Does not form part of accredited test activities.



Results relate only to the items tested. The laboratory has not been responsible for the sampling stage, so results apply to the sample as received.

Approved by:	Leeds Laboratory		SOIL ENGINEERING
Steve Harper		Print date 23/03/2026	
	Revision No. 3.01	Issue Date 13/11/2025	

Project Name	Uni of Huddersfield	**California Bearing Ratio Test**	Hole ID WS03
Project No.	LT2089		Sample Depth 1.10m
Engineer	EPS		Sample Number B1
Employer	EPS	BS 1377-2:2022: 15	Sample Type B
Description	Brown slightly gravelly sandy CLAY.		Specimen Depth 1.10m
			Specimen Number 1



CBR values %

Penetration	Top	Base	Accepted CBR
2.50 mm	3.4	4.1	4.1
5.00 mm	4.0	4.2	
Curve correction			

As received water content	17.6	%
Water content - top	18.2	%
Water content - base	19.5	%
Initial bulk density	2.08	Mg/m³
Initial dry density	1.75	Mg/m³

Seating load - top			10	N
Seating load - base			10	N
Surcharge	15.2	kg /	10	kPa
Gravel retained on 20mm sieve			7.8	%
Gravel retained on 37.5mm sieve			5.3	%

Method of compaction 2.5kg rammer

General remarks Unsoaked.

Deviation from test method None

Results relate only to the items tested. The laboratory has not been responsible for the sampling stage, so results apply to the sample as received.

Approved by:
Paul Rodgers

Print date 19/03/2026

Revision No. 2.09 Issue Date 29/10/2024

SOIL ENGINEERING

APPENDIX H

Generic Screening Criteria

EPS Generic Quantitative Risk Assessment

Generic Screening Criteria (C4SLs) - All Land Uses

Contaminant	Soil Targets					
	Residential		Allotments	Commercial	Public Open Spaces	
	With Home Grown Produce	Without Home Grown Produce			Residential	Parks
Unit	mg/kg					
Arsenic	37	40	49	640	79	168
Benzene	0.87	3.3	0.18	98	140	230
Benzo(a)pyrene	5	5.3	5.7	76	10	21
Cadmium	26	149	4.9	410	220	880
Chromium (VI)	21	21	170	49	23	250
Lead	200	310	80	2330	630	1300
Chloroethene (Vinyl Chloride)	0.0064	0.015	0.0017	1.1	7.8	18
Trichloroethene (TCE)	0.0093	0.097	0.032	0.73	76	41
Tetrachloroethene (PCE)	0.31	0.32	2	24	3200	1400
cis-1,2 Dichloroethene	0.46	0.5	0.89	38	3800	2000
Naphthalene	15	15	65	1600	11000	800
PFOS	0.013	0.041	0.0027	0.6	0.079	0.17
PFOA	0.0076	0.041	0.0014	0.6	0.079	0.17

Notes:

Targets for Human Health have been taken from the publicly available Category 4 Screening Levels (C4SLs) for assessment of land affected by contamination issued by DEFRA/CL:AIRE between December 2013 and May 2024.

Within the modelling for the original six C4SLs (Arsenic, Benzene, Benzo(a)pyrene, Cadmium, Chromium VI, Lead), a Soil Organic Matter content of 6% was used. This differs from the older Suitable for Use Levels (S4ULs) which modelled contaminants with 1%, 2.5% and 6% SOM, with the latter the least conservative. These numbers are therefore not particularly conservative, however sensitivity analysis has shown that a change in SOM only makes a notable difference for Benzene and therefore caution should be taken when using the value for Benzene. For the remaining, newer C4SLs, these were modelled in all SOM and therefore the most conservative 1% values have been used. Reference to site-specific data should be made where possible.

Aug-25

EPS Generic Quantitative Risk Assessment - Public Open Space (parks)

Contaminant	Soil Targets			Groundwater Targets		
	Human Health	Controlled Waters		Human Health	Controlled Waters	
		Surface Water	Groundwater		Surface Water	Groundwater
Unit	**mg/kg**			**µg/l**		
Arsenic	See C4SL	n/c	n/c	-	50	10
Cadmium	See C4SL	n/c	n/c	-	1.5	5
Chromium III	33000	n/c	n/c	-	15	50
Chromium VI	See C4SL	n/c	n/c	-	3.4	
Copper	44000	n/c	n/c	-	93.1#	2000
Mercury (elemental)	30	n/c	n/c	-	0.07	1
Nickel	3400	n/c	n/c	-	14.8#	20
Lead	See C4SL	n/c	n/c	-	27.7#	10
Selenium	1800	n/c	n/c	-	10	10
Zinc	170000	n/c	n/c	-	373#	3000
Benzene	See C4SL	0.020	0.0020	-	10	1
Toluene	87000(869)*	0.399	3.77	-	74	700
Ethylbenzene	17000(518)*	0.23	3.4	-	20	300
Xylene (para)	17000(576)**	0.351	5.86	-	30	500
MTBE	73	0.00864		-	15	15
Benzo(a)Pyrene	See C4SL	n/c	n/c	-	0.27	0.01
Naphthalene	See C4SL	n/c	n/c	-	2	2
Aliphatic C5-C6	95000(304)**	7.67		-	300‡	300†
Aliphatic C6-C8	150000(144)**	32.4		-	300†	300†
Aliphatic C8-C10	14000(78)**	241		-	300	300
Aliphatic C10-C12	21000(48)**	1,890		-	300	300
Aliphatic C12-C16	25000(24)**	37,600		-	300	300
Aliphatic C16-C35	450000f	n/c		-	-	-
Aromatic C8-C10	7200(613)*	12		-	300	300
Aromatic C10-C12	9200(364)**	5.67		-	90	90
Aromatic C12-C16	10000	11.3		-	90	90
Aromatic C16-C21	7600f	35.6		-	90	90
Aromatic C21-C35	7800f	284		-	90	90
Tetrachloroethene	See C4SL	0.07		-	10	10
Trichloroethene	See C4SL	0.04		-	10	10
cis-1,2 Dichloroethene	See C4SL	0.0657		-	-	-
Vinyl Chloride	See C4SL	0.0005		-	0.5	0.5
PFOS	See C4SL	0.000956		-	0.1	0.1
PFOA	See C4SL	0.000314		-	0.1	0.1
Asbestos##	0.001%	-	-	-	-	-

Notes:
* = S4UL exceeds vapour saturation limit (in brackets) ** = S4UL exceeds solubility saturation limit (in brackets)
n/c = not calculated. Under normal conditions contaminant exhibits low solubility /volatility, therefore risks from leaching and or vapour pathways are considered low.

To establish suitable compliance criteria for Surface Water, review of basline groundwater quality in England and Wales was completed following research reported in Shand, P, Edmunds, W M, Lawrence, A R, Smedle y, P L, and Burke, S. 2007. The natural (baseline) quality of groundwater in England and Wales. British Geological Survey Research Report No. RR/07/06. Where compliance criteria was found below the 97.7 percentile of baseline value, the latter was adopted as GAC.

Where assessment of the risk to human health from asbestos in soil is concerned there is no nationally recognised suitable for use /generic screening value commonly referred to through the planning system. As such, EPS has adopted a conservative value of 0.001% as a screening tool for initial risk assessment, although this should be supplemented with a qualitative assessment of the risk.

Soil Targets

Targets for Human Health have been taken from *S4ULs 'Suitable For Use Levels for Human Health Risk Assessment' – LQM and CIEH (2014)* derived using standard sandy loam soil with 1% SOM, except (*) = *EIC/AGS/CL:AIRE GAC 'Soil Generic Assessment Criteria' (2010)* . For sites where ground conditions differ significantly from sandy loam or site-specific SOM and pH are available, the generic human health targets may be revised.

Targets for Controlled waters have been derived using EA Remedial Targets Worksheet (v3.1) - using standard Sandy Loam ground conditions as described in Science Report SC050021/SR3, literature values for chemical parameters and with criteria of EQS or UKDWS for Surface Water and Groundwater respectively (see notes for GW targets).

Groundwater Targets

For Surface Water, targets have been taken as Freshwater EQS, using the annual avergae where available, or else the maximum allowable concentration. For MTBE, in the absence of UK EQS, the UKDWS has been used. For individual TPH fractions, in absence of UK EQS, the WHO Drinking Water Standards have been used.

For Groundwater, targets have been taken as UKDWS where available. In the absence of UK targets internationally recognised criteria were adopted, notably WHO Drinking Water Standards for individual TPH fractions, BTEX and MTBE. ‡ = Aliphatic C5-C8 ranges have utilised the longer chain values on a conervsative basis (300ug/l compared to the published 15,000ug/l).

May-25
EPS058b

APPENDIX I

Method Statement for Encountering Unexpected Contamination

METHOD STATEMENT

ACTIONS TO BE TAKEN IN THE EVENT OF DISCOVERING UNEXPECTED CONTAMINATION DURING INTRUSIVE GROUNDWORKS

If at any point during intrusive groundworks at a site, evidence of unforeseen contamination is encountered in the form of significant noxious odours, discolouration, or instability within soils or sheen/ discolouration in groundwater, the following actions will be taken:

- Intrusive works in the immediate area of the impacted ground will be suspended and the continuation of work in other areas of the site will be considered within the context of the site specific health & safety plan.
- Environmental Protection Strategies Ltd (EPS) will be contacted and appraised of the situation so that arrangements can be made to characterise the impact and determine what action may be necessary in addition to the scheduled site works. Where possible / health & safety plan permits, digital photographs of the impacted ground will be taken and emailed to EPS at the address below to assist in the initial assessment
- It may well be necessary for EPS to attend site to undertake visual inspection and obtain samples for field and/or laboratory analysis, although the actions taken will be dependent on the nature of what is encountered
- In cases where EPS consider the unforeseen contamination likely to pose a significant risk of significant harm to adjacent site users or local environmental receptors, the local authority and the Environment Agency will be informed of the situation and the actions being taken
- Once appropriate action has been agreed and undertaken, a written summary will be produced by EPS for submission to the Local Authority, (and where relevant, the Environment Agency) in accordance with planning requirements. The submission will include details of work undertaken, analytical results of investigative and validation samples obtained and conclusions and recommendations for any further actions considered necessary
- Where regulatory bodies have been involved, site works should only recommence following their agreement and in all cases should only recommence when the site manager considers it safe to do so within the context of the site specific health & safety plan.

EPS Contact Details:

Marcus Bell	Director	Tel: 0787 206 9979
Will Evans	Director	Tel: 0781 253 9655
Steve Bullock	Director	Tel: 0786 694 9221

Email: info@epstrategies.co.uk (Automatically forwarded to the above and office-based personnel)

7b Caxton House
Broad Street
Cambourne
Cambridge CB23 6JN

T +44(0) 1954 710666
E info@epstrategies.co.uk
W www.epstrategies.co.uk

Registered office as above. Environmental Protection Strategies Ltd (04330320) trading as EPS.