

Phase 2: Site Investigation

BESS Project, Lea Green Road, St Helens

Cobalt Energy

S250235/SI

Solmek Ltd

12 Yarm Road
Stockton-on-Tees
TS18 3NA
Tel: 01642 607083

www.solmek.com

info@solmek.com

PHASE 2 SITE INVESTIGATION REPORT

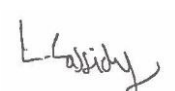
BESS PROJECT, ST HELENS

TABLE OF CONTENTS

1	EXECUTIVE SUMMARY	2
2	INTRODUCTION.....	3
3	SITE DESCRIPTION	3
4	FIELDWORK.....	4
5	GROUND CONDITIONS	4
6	CONTAMINATION TESTING RESULTS	5
7	CONCEPTUAL MODEL AND CONTAMINATION ANALYSIS.....	8
8	GEOTECHNICAL TESTING AND ANALYSIS.....	12
TABLE 1: SUMMARY OF INORGANIC CONTAMINATION TESTING RESULTS.....		6
TABLE 2: SUMMARY OF ORGANIC CONTAMINATION TESTING RESULTS		7
TABLE 3: CONCEPTUAL MODEL.....		9
TABLE 4: SUMMARY OF CBR TESTS.....		13

APPENDICES

Appendix A:	Drawings
Appendix B:	Borehole & Trial Pit Logs
Appendix C:	Contamination Laboratory Results
Appendix D:	Geotechnical Laboratory Results
Appendix E:	Notes on Limitations & Contamination Guidelines

Revision	Date	Prepared by	Signed
Final	March 2025	D Simpson <i>Geotechnical Engineer</i>	
		Checked by	
		L Cassidy <i>Associate Director</i>	
		Approved by	
		R Woods <i>Managing Director</i>	

1 EXECUTIVE SUMMARY

Site Address	Rainhill Sub Station, Lea Green Road, St Helens, WA9 4QD.
Proposed Development	The proposed development is outlined to be commercial comprising of transformers and battery packs with new access roads.
Fieldwork	• 5no small percussive boreholes (BH01 to BH05 inclusive) to a maximum depth of 5.00m below ground level (bgl). • 6no machine excavated trial pits (TP01 to TP06) were dug to a maximum depth of 2.00mbgl.
Ground Conditions	• Made ground was consistent across the site and comprised slightly sandy slightly gravelly clay to depths of between 0.80mbgl and 1.40mbgl. • Natural ground generally comprised firm to stiff, sandy slightly gravelly medium to high strength silty clay with frequent cobbles, which was encountered to termination depths in the boreholes of between 2.70mbgl and 5.00mbgl • No groundwater was encountered during the intrusive works.
Contamination Analysis	• Given the site's proposed commercial land use, the levels of contamination recorded on site are unlikely to pose a risk to the current and future users of the site. • If any zones of odorous, brightly coloured or suspected contaminated ground or groundwater are encountered then work should cease in that area until the material has been investigated. The results of the investigation will therefore determine whether or not remediation will be required. • Made ground classed as posing a low risk with respect to construction workers. PPE for workers. Damping down of site during dry windy conditions. • Controlled waters unlikely to be at risk. • With respect to utilities pH and phenol were elevated; as a minimum all services should be laid in clean trenches. • Sub surface concrete should be designed to DS-1 ACEC (Class AC-1s). This assumes static groundwater conditions.
Geotechnical Analysis & Foundation Recommendations	• Bearing capacity of 100kN/m² at minimum depth of 0.75mbgl on 0.60m wide strips. • Local deepening of foundations to 1.40mbgl due to depth of made ground. • Settlements within 25mm. • Normal earthworks plant for excavations.

2 INTRODUCTION

2.1 Authorisation

The site investigation described in this report was carried out by Solmek to the instructions of Cobalt Energy on a parcel of land to the south of Rainhill Sub Station, Lea Green Road, St Helens, WA9 4QD.

Sources of information, including previous work undertaken at the site, are detailed below:

- *Solmek Phase 1 Desk Study (S250235) March 2025.*

Reference should be made to the above reports for details of the site's history and environmental setting.

2.2 Scope of Works

The proposed development is outlined to be commercial comprising of transformers and battery packs with new access roads.

The following steps may be required in the investigation and remediation of potentially contaminated land:

- Phase 1: Desk Study
- Phase 2: Intrusive Investigation
- Phase 3: Remediation Statement
- Phase 4: Validation Reports

Phases 1 and 2 are generally required in the redevelopment of most sites. Phases 3 and 4 are subject to the findings of the initial stages.

A geotechnical and environmental (Phase 2) investigation including a ground gas risk assessment was requested. The fieldwork and testing was generally carried out according to:

- BS 5930:2015+A1:2020 Code of Practice for Ground Investigations
- BS 10175:2011+A1:2013 Investigation of Potentially Contaminated Sites – Code of Practice.
- CIRIA C665:2007 Assessing Risks Posed by Hazardous Ground Gas to Buildings
- BS 8485:2015+A1:2019 Code of Practice for the Characterization and Remediation from Ground Gas in Affected Developments
- Rock and soil descriptions shall be in accordance with BS EN ISO 14689-1:2003, BS EN ISO 14688-1:2002 and BS EN ISO 14688-2:2004

This report forms part of a Stage 1 Risk Assessment (Generic Quantitative Risk Assessment) with respect to the Environment Agency's guidance document *Environment Agency Land Contamination Risk Management*, which replaced the now-withdrawn *Contaminated Land Report 11 – Model Procedures for the Management of Land Contamination (2004)*.

The information provided in this report is based on the investigation fieldwork and is subject to the comments and approval of the various regulatory authorities. There may be other conditions prevailing on the site which have not been disclosed by this investigation and which have not been taken into account by this report. Solmek reserve the right to alter conclusions and recommendations should further information be available or provided. Any schematic representation or opinion of the possible configuration of ground conditions between exploratory holes is conjectural and given for guidance only and confirmation of intermediate ground conditions should be considered if deemed necessary.

3 SITE DESCRIPTION

A site inspection, as recommended in BS 5930 and BS 10175, was undertaken as part of the Phase 1 Desk Study on 10th of March 2025. The centre of the site is located at OS Grid Ref 351020, 391670 and covers an area of approximately 1.12Ha.

The site is located on a parcel of land south of Rainhill Sub Station, Lea Green Road, St Helens, WA9 4QD with gated access point in the northeast corner of the site.

The site is rectangular in shape and comprises stripped topsoil with demolition arisings. The topography of the site is predominantly flat and even with no vegetation present. A large industrial unit is noted within the eastern portion of the site. A large industrial estate is identified to the south and east of the site and comprises industrial/commercial units with associated access roads.

To the north is a small gravel compound comprising a small car park and half a dozen welfare cabins for the workforce on site. The site is secured by large metal fencing and several security cameras around the perimeter.

A compacted gravel road is noted immediately north of the site which allows for access to the Phase 1 battery storage facility. The battery storage facility is located approximately 50m to the west of the site and contains several dozen transformers and battery units. No overhead utilities are noted around this area of the site.

Lea Green Substation is noted 100m to the north of the site and comprises of several dozen transformers and overhead utilities. Lea green road is noted ca. 50m east of the site.

The surrounding areas to the east and south of the site are commercial in nature comprising of warehouse-like structures and factories.

4 FIELDWORK

The fieldwork commenced on 3rd March 2025. The extent of the investigation was:

- 5no small percussive boreholes (BH01 to BH05 inclusive) to a maximum depth of 5.00m below ground level (bgl).
 - The boreholes were evenly spread around the site to achieve maximum site coverage.
- 6no machine excavated trial pits (TP01 to TP06) were dug to a maximum depth of 2.00mbgl.
 - Plate Bearing tests were undertaken within each trial pit to obtain California Bearing Ratios (CBRs).
- In-situ testing in the exploratory positions as Standard Penetration Tests (SPTs) and hand shear vanes.
- Retrieval of samples for geotechnical and chemical testing.

The boreholes were backfilled with bentonite/grout upon completion. Trial pits were backfilled in layers with arisings. Selected plates of the trial pits are presented in Appendix A.

A plan showing the location of the boreholes and trial pits can be found in Appendix A (Figure 2).

5 GROUND CONDITIONS

A summary of the ground conditions encountered is given below. The exploratory hole logs are presented in Appendix B.

5.1 Made Ground

Made ground was consistent across the site and comprised slightly sandy slightly gravelly clay to depths of between 0.80mbgl (BH02 and TP01) and 1.40mbgl (TP03 and TP06). The gravel component comprised mudstone, siltstone, sandstone, dolomite, brick and concrete. The full extent of made ground was not proven in TP05 which terminated at 0.50mbgl. A layer of pea gravel was logged within TP01.

5.2 Natural Deposits

Proven to underlie the made ground deposits across the site, natural ground generally comprised firm to stiff, sandy slightly gravelly medium to high strength silty clay with frequent cobbles, which was encountered to termination depths in the boreholes of between 2.70mbgl (BH05) and 5.00mbgl (BH03 and BH4). The gravel and cobbles comprised mudstone and sandstone.

5.3 Groundwater

No groundwater was encountered during the intrusive works.

It should be noted the rapid rate of advancement of the exploratory holes may mask minor seepages and it should be borne in mind that water levels fluctuate with a number of influences including season, rainfall, dewatering and pumping activities.

6 CONTAMINATION TESTING RESULTS

The proposed development of the site is to be commercial comprising of transformers and battery packs with new access roads. The chemical samples were generally retrieved in line with BS ISO 18400-105:2017 *Soil Quality. Sampling*. The chemical results are presented in Appendix C.

6.1 Site Characterisation

Within the Solmek Phase 1 Desk Study, a preliminary conceptual model was formed based on the information obtained. The initial risk was based on the site history which recorded generally open land from the mid-20th century.

An overall low to high risk was provided for various receptors:

- Human Health – Low
- Controlled Water – Low
- Current Site Users (on-site workers/visitors) – Moderate/Low
- Vegetation – Moderate/Low
- Construction Materials – Moderate/Low

6.2 Contamination Testing and Rationale

To provide information upon the possibility of ground contamination six samples of made ground and six samples of natural material were selected for shallow contamination testing. A low to moderate overall contamination risk was highlighted in the Phase 1 Desk Study due to previous land uses. This coupled with the end use being commercial means that six samples are considered appropriate for testing. The samples selected are detailed below:

- TP01 – 0.00-0.10m (Made ground – cohesive)
- TP02 – 0.50-0.60m (Made ground – cohesive)
- TP03 – 0.00-0.10m (Made ground – cohesive)
- TP04 – 0.00-0.10m (Made ground – cohesive)
- TP05 – 0.50-0.60m (Made ground – cohesive)
- TP06 – 1.10-1.20m (Made ground – cohesive)
- BH01 – 1.00-2.00m (Natural clay)
- BH02 – 2.00-3.00m (Natural clay)
- BH03 – 2.00-3.00m (Natural clay)
- BH04 – 1.20-2.00m (Natural clay)
- BH05 – 1.00-2.00m (Natural clay)
- TP03 – 1.50-1.60m (Natural clay)

The samples selected are considered to provide coverage of the made ground from across the site that would be most likely to be exposed during future site works. The samples were tested for the following contaminant suites:

- 12no Metals, semi-metals, non-metals, inorganic determinants
- 12no Asbestos identification screenings
- 12no Speciated Polyaromatic Hydrocarbons (PAHs)
- 12no Total Petroleum Hydrocarbon Criteria Working Group fractions (TPHCWG)

6.3 Test Results

Based on the proposed development at the site, the test results have been compared to a series of Land Quality Management (LQM) Suitable for Use Levels (S4UL) based on a commercial land use. These are the most up to date thresholds published in December 2014.

The value for lead has been compared with the Category 4 Screening Level (March 2014) developed by Contaminated Land: Applications In Real Environments (CL:AIRE).

The test results are presented in Appendix C, and a summary is provided below in Tables 1 and 2.

TABLE 1: SUMMARY OF INORGANIC CONTAMINATION TESTING RESULTS

Determinand	Units	Number of Samples above Level of Detection	Minimum Recorded Level	Maximum Recorded Level	Commercial Threshold Value	Number of Results Exceeding Threshold Value
Metals						
Cadmium	mg/kg	7	<0.1	0.6	190	0
Chromium	mg/kg	12	11	54	8600	0
Copper	mg/kg	12	16	120	68000	0
Lead	mg/kg	12	8.1	58	2300*	0
Mercury	mg/kg	2	<0.05	0.08	1100	0
Nickel	mg/kg	12	12	43	980	0
Zinc	mg/kg	12	26	140	730000	0
Semi metals and non metals						
Arsenic	mg/kg	12	4.5	22	640	0
Boron	mg/kg	9	<0.2	0.3	240000	0
Selenium	mg/kg	1	<0.5	1.2	12000	0
Inorganic chemicals						
Cyanide	mg/kg	2	<0.1	0.2	1580**	0
W.S. Sulphate	mg/l	12	18	94	2000^	0
Other						
pH	pH	-	7.2	10.5	<5.5^	0
* Category 4 Screening Levels, March 2014 ** CLEA Software Version 1.06 (pH7 and 1% SOM) ^ EA Threshold Values HGP Home Grown Produce						

6.4 Metals, Semi Metals and Non Metals

None of the samples indicated significant raised levels of contamination above the S4UL threshold values, based on the twelve samples tested.

6.5 Inorganic Chemicals

Soluble sulphates (potentially aggressive to foundation concrete) were recorded between 21 and 85mg/l. None of the samples were elevated above levels affecting human health, or above the BRE Special Digest 1 500mg/l limit for the sulphate classification of concrete.

The results of the pH testing were between 7.2 and 10.5. These pH levels are consistent with slightly alkaline to highly alkaline conditions.

6.6 Organic Chemicals

The organic thresholds vary depending on the levels of soil organic matter (SOM).

The average SOM recorded across the site was 1.40% therefore a SOM of 1.00% has been used to determine the S4UL thresholds. Table 2, below, summarises the results.

TABLE 2: SUMMARY OF ORGANIC CONTAMINATION TESTING RESULTS

Determinand	Units	Number of Samples above Level of Detection	Minimum Recorded Level	Maximum Recorded Level	Commercial Value at 1% SOM	Number of Results Exceeding Threshold Value
TPH Aliphatic Fractions						
Aliphatic (C5-C6)	mg/kg	0	<0.01	-	3200	0
Aliphatic (C6-C8)	mg/kg	0	<0.01	-	77800	0
Aliphatic (C8-C10)	mg/kg	0	<0.01	-	2000	0
Aliphatic (C10-C12)	mg/kg	0	<1.5	-	9700	0
Aliphatic (C12-C16)	mg/kg	0	<1.2	-	59000	0
Aliphatic (C16-C35)	mg/kg	0	<3.4	-	1600000	0
TPH Aromatic Fractions						
Aromatic (C5-C7)	mg/kg	0	<0.01	-	26000	0
Aromatic (C7-C8)	mg/kg	0	<0.01	-	56000	0
Aromatic (C8-C10)	mg/kg	0	<0.01	-	3500	0
Aromatic (C10-C12)	mg/kg	0	<0.9	-	16000	0
Aromatic (C12-C16)	mg/kg	0	<0.5	-	36000	0
Aromatic (C16-C21)	mg/kg	0	<0.6	-	28000	0
Aromatic (C21-C35)	mg/kg	0	<1.4	-	28000	0
Speciated PAH						
Naphthalene	mg/kg	0	<0.1	-	190	0
Acenaphthylene	mg/kg	0	<0.1	-	83000	0
Acenaphthene	mg/kg	0	<0.1	-	84000	0
Fluorene	mg/kg	0	<0.1	-	63000	0
Phenanthrene	mg/kg	0	<0.1	-	22000	0
Anthracene	mg/kg	0	<0.1	-	520000	0
Fluoranthene	mg/kg	2	<0.1	0.2	23000	0
Pyrene	mg/kg	2	<0.1	0.1	54000	0
Benzo(a)anthracene	mg/kg	0	<0.1	-	170	0
Chrysene	mg/kg	0	<0.1	-	350	0
Benzo(b)fluoranthene	mg/kg	0	<0.1	-	44	0
Benzo(k)fluoranthene	mg/kg	0	<0.1	-	1200	0
Benzo(a)pyrene	mg/kg	0	<0.1	-	35	0
Indeno(123cd)pyrene	mg/kg	0	<0.1	-	3900	0
Dibenz(ah)anthracene	mg/kg	0	<0.1	-	3.5	0
Benzo(ghi)perylene	mg/kg	0	<0.1	-	500	0
PAH	mg/kg	0	<1.6	-	1000*	0
Phenols	mg/kg	1	<0.3	0.6	760	0
* EA Threshold Values						

From the twelve samples tested for organic determinants, no exceedances were recorded.

6.7 Asbestos

From the twelve samples subject to asbestos screening, no asbestos fibres were recorded.

6.8 Environmental Protection Act 1990: Part 2A Revised Statutory Guidance (April 2012)

This revised document explains how the Local Authority should decide if land, based on a legal interpretation, is contaminated. The document replaces the previous guidance given in Annex 3 of DEFRA Circular 01/2006, issued in accordance with section 78YA of the 1990 Environmental Protection Act.

The main objectives of the Part 2A regime are to “identify and remove unacceptable risks to human health and the environment” and to “seek to ensure that contaminated land is made suitable for its current use”. Part 2A uses a risk based approach to defining contaminated land whereby the “risk” is interpreted as “the likelihood that harm, or pollution of water, will occur as a result of contaminants in, on or under the land” and by “the scale and seriousness of such harm or pollution if it did occur”.

For a relevant risk to exist a contaminant, pathway and receptor linkage must be present before the land can be considered to be contaminated. The document explains that *“for a risk to exist there must be contaminants present in, on or under the land in a form and quantity that poses a hazard, and one or more pathways by which they might significantly harm people, the environment, or property; or significantly pollute controlled waters.”*

A conceptual model is used to develop and communicate the risks associated with a particular site.

To determine if land is contaminated the local authority use various categories from 1 to 4. Categories 1 and 2 include “land which is capable of being determined as contaminated land on grounds of significant possibility of significant harm to human health.” Categories 3 and 4 “encompass land which is not capable of being determined on such grounds”.

See Appendix E for additional notes on contamination guidelines.

7 CONCEPTUAL MODEL AND CONTAMINATION ANALYSIS

The contamination conceptual model in Table 3 identifies the potential pollution linkages present on site based on source – pathway – receptor relationships.

TABLE 3: CONCEPTUAL MODEL

Source	Pathway	Receptor	Risk Rating	Comments
Asphyxiating or explosive ground gases - Made ground (<1.4m) - Landfills within 250m - Coal mining area - Infilled pits within 250m - Backfilled railway cutting	Ground gas migration - Migration through permeable soils - Inhalation	Future site users Adult workers	Low	Gas monitoring not required given nature of the development which does not include occupied buildings.
		Users during development Construction workers	Low	
Areas of contamination hazardous to human health (Commercial Thresholds) 12no samples tested - No significantly elevated organic determinants - No significantly elevated inorganic determinants - No Asbestos	- Inhalation - Dust ingestion - Dermal contact	Future site users Adult workers	Low	Low contamination levels unlikely to pose a risk.
		Users during development Construction workers	Low	Low contamination levels unlikely to pose a risk to construction workers. As good practice, consideration to be given to Health and Safety Executive: <i>Protection of Workers and the General Public During the Development of Contaminated Land</i> .
	- Inhalation - Dust ingestion	Users of surrounding sites Transient adult workers	Low	Consideration to be given to dust suppression during dry/windy conditions, in line with BRE: <i>The Control of Dust and Emissions from Construction and Demolition, Best Practice Guidance</i> .
		Drift geology Secondary Aquifer – Undifferentiated	Low	The low permeability and the relatively low sensitivity aquifer is not considered to be a sensitive receptor.
	Leaching mobilised contaminants	Solid geology Secondary Aquifer – A.	Low	Limited availability of contaminants in soil analysis.
		Surface water features River 32m north	Low	The distant surface water is highly unlikely to be impacted by the low contamination levels recorded.
Areas of phytotoxic contamination	Uptake via roots and leaf surfaces	Vegetation None on site or proposed	Very Low	No potential for Vegetation impact as no vegetation is present or proposed.
Areas of contamination above service fabric or BRE Special Digest 1 thresholds Elevated pH and Phenols	Direct contact	Construction Materials Concrete	Low	Class DS-1 ACEC (Class AC-1s) requirements for concrete protection
		Construction Materials Service Fabric	Moderate	PVC and copper piping to be avoided and prudent to lay any service within a clean bedding.

In general terms, and construction materials are **potentially most** at risk as pollution linkages may be present for each of these receptors. Users of the site, construction workers, users of the surrounding sites and construction materials are considered to be **potentially** at risk from contamination in the soils on site. Controlled waters and vegetation are considered to be at **potentially less** of a risk.

Mitigation measures to reduce the risks identified for each receptor are discussed in the following sections.

7.1 Users of the Site Once Development is Complete

The users of the site, particularly construction workers, are likely to be exposed to contaminants present in the soils beneath the site during redevelopment work. **Potential** exposure pathways include dermal absorption after contact with contaminated ground, inhalation of soil or dust, inhalation of volatised compounds, and inadvertent soil ingestion. Moreover, a risk to ground/surface water receptors exists through leaching of contaminants.

To establish if the levels of contaminants present on site may pose a risk to the health of the future users of the site the results of the contamination testing have been compared to a series of LQM S4UL thresholds based on commercial end use (see Tables 1 and 2).

The levels of contaminants across the site are generally low with no exceedances.

The proposed development is outlined to be commercial comprising of transformers and battery packs with new access roads. Based on the **shallow** soil contamination testing, it is considered that the levels of contamination will not pose a risk to future users of the site, as no soft landscaping is proposed in the final development. Any pollutant linkage would be severed by buildings, or hardstanding.

7.2 Construction Workers and Users of Surrounding Sites

Short term human exposure to contaminants present in soils can occur via several pathways during the construction and ground works phase of the development. These include dermal absorption after contact with contaminated ground, inhalation of soil or dust (including windblown dust), inhalation of volatised compounds, inadvertent soil ingestion and contact with contaminated groundwater.

As good practice, full PPE must be employed in accordance with Health and Safety Executive: *Protection of Workers and the General Public During the Development of Contaminated Land* and safeguards should be taken to limit dust during ground works, and access to the public should be restricted. Construction workers should use gloves as a precaution when handling any fill materials. Provision of suitable hygiene facilities are needed for site workers.

Although asbestos or other forms of contamination were not detected from the soil samples subjected to testing within this investigation, the possibility still exists that asbestos containing materials may still be present on site and currently lie undetected. It is therefore advised that a 'watching brief' is undertaken during the initial site strip and any excavation works and advice sought if asbestos is found or suspected.

During dry weather, any excavations may require clean water to be sprinkled at shallow depth to prevent excess dust escaping to off-site receptors. Monitoring of dust concentrations during construction should be given careful consideration to ensure occupational exposure levels are not exceeded. Works should be undertaken in line with BRE: *The Control of Dust and Emissions from Construction and Demolition, Best Practice Guidance*.

7.3 Vegetation

Plants can be affected by soil contamination in a number of ways resulting in growth inhibition, nutrient deficiencies and yellowing of leaves. Contaminants are taken up by plants through the roots and through foliage. Contaminants identified as being highly phytotoxic include boron, cadmium, copper, nickel, and zinc.

To establish if the levels of contaminants present on site may pose a risk to vegetation the results of the contamination testing have been compared to a series of threshold values published in *Code of Good Agricultural Practice for the Protection of Soil*.

Soft landscaping not part of proposed development.

7.4 Ground and Surface Water

The principal pathway by which soil contamination may reach the water environment is through a slow seepage or leaching to groundwater or surface water. The potential for contaminants to migrate along such pathways is dependent on the chemical and physical characteristics of the contaminants and the local hydrogeology.

From the site investigation undertaken, ground conditions broadly comprise cohesive made ground up to 1.40mbgl over drift deposits of clay noted. The cohesive deposits can be considered to have a low permeability. The drift deposits are designated as a Secondary Aquifer – A by the Environment Agency.

The nearest surface water feature is a River 32m north. No groundwater was encountered during this investigation.

No contamination was recorded based on the six samples tested.

Due to the generally low contamination found across the site, the aquifer designations beneath the site, and the distance to surface waters, the development is considered to represent a low risk to groundwater or surface water receptors.

7.5 Construction Materials

Materials at risk from potential soil contamination include inorganic matrices such as cement and concrete and also organic material; e.g. plastics and rubbers. Acid ground conditions and elevated levels of sulphates can accelerate the corrosion of building materials. Plastics and rubbers are generally used for piping and service ducts and are potentially attacked by a range of chemicals, most of which are organic, particularly petroleum-based substances. Drinking water supplies can be tainted by substances that can penetrate piping and water companies enforce stringent threshold values.

7.5.1 Concrete Classification

BRE Special Digest One: *Concrete in Aggressive Ground*: 2005 3rd Edition has been used to assess the risks posed to underground concrete and to establish the design measures required to mitigate the risks. The results of the pH and water-soluble sulphate tests (when converted to total potential sulphate) fall into Class DS-1 ACEC (Class AC-1s) requirements for concrete protection. This assumes static groundwater conditions.

7.5.2 Water Supply Pipes Material Selection

The levels of potential contaminants should be compared to thresholds supplied in the UK Water Industry Research (UKWIR) publication *Guidance for the selection of Water Supply Pipes to be used in Brownfield Sites* (January 2011). A Brownfield Site is defined in the document as “Land or premises that have previously been used or developed that may be vacant or derelict”. It should be noted that Brownfield sites may not be contaminated. The guidance does not apply to Greenfield Sites however water companies may have their own assessment criteria which should be checked by the developer.

Based on the samples tested during the site investigation, levels of alkaline to highly alkaline pH (7.2 to 10.5) were recorded across the site at depths of between 0.00mbgl and 3.00mbgl within the made ground and natural samples.

The concentrations of the selected determinants should be compared to the pipe material selection table in Appendix E, and consultation with the appropriate utility supply company is required to identify the most suitable service fabric. However, the pH and phenol levels may preclude the use of copper and PVC pipes respectively depending on the depth of proposed service corridors.

7.6 Unexpected Contamination

If during the initial site strip or subsequent ongoing construction activities, any zones of odorous, brightly coloured or suspected contaminated ground, or suspected Asbestos Containing Materials (ACMs) are encountered, then the following procedure should be followed:

- Stop work in the affected area
- Contact Solmek and provide pictures of the affected area
- Solmek can visit site to investigate the material and provide guidance
- If required – Solmek can sample and test the material
- Once test results are returned, this will determine whether or not remediation will be required

7.7 Waste Classification

During the site strip and construction activities, material may be required to be removed from site. Any such material would require classification, in line with Environment Agency Technical Guidance *Waste Classification: Guidance on the classification and assessment of waste* (2015). This would classify the material as either Non-Hazardous or Hazardous Waste.

Once the material has been classified, determining the suitable landfill for disposal is governed by landfill directive Waste Acceptance Criteria (WAC) testing, with landfills categorized as Inert Waste, Stable Non-Reactive Hazardous Waste and Hazardous Waste.

If waste classification and/or WAC testing are not undertaken, material taken off site may be subject to WAC testing by the appropriate waste disposal company. The decision on whether or not to accept waste, or whether further testing is required, is at the discretion of the waste disposal company.

8 GEOTECHNICAL TESTING AND ANALYSIS

Samples taken from the boreholes and trial pits underwent a series of geotechnical tests at a UKAS accredited laboratory to aid foundation design and soil description. In addition, in-situ Standard Penetration Tests (SPTs) were undertaken at regular intervals during drilling. The geotechnical results are presented in Appendix D.

8.1 Strength and Density

8.1.1 SPT N Values

Standard Penetration Tests undertaken within the natural cohesive deposits yielded N values of between 5 and 24. These N values can be correlated to provide approximate shear strengths, with these results indicating low to high strength deposits.

8.1.2 Hand Shear Vanes

Hand shear vane testing within the natural cohesive deposits returned results ranging from 54kPa to 110kPa, which are indicative of medium to high strength conditions. At approximate foundation depth (1.50mbgl) the results ranged between 54kPa and 98kPa.

8.2 Moisture Contents

Six samples recovered from the boreholes and trial pits have been subject to moisture content tests to determine the moisture profile at depths of between 1.0 and 2.0mbgl. Moisture levels were between 13% and 20%.

8.3 Atterberg Limit Determinations

Six Atterberg Limit Determination tests were carried out on samples of cohesive material to classify the fine grained soils. The results were compared to the Casagrande Chart published in BS 5930 and showed the samples to generally be clay of low to intermediate plasticity.

The Plasticity Indices ranged from 12 to 18. The cohesive material can be assessed as having a **low** shrinkage potential in relation to current relevant guidance.

8.4 pH and Sulphate Results

Six samples of natural soil from the trial pits were tested for acidity and soluble sulphate content to assess whether the material may be potentially aggressive to building fabric. The results of the testing for pH ranged from 7.9 to 8.5 indicating slightly alkaline to alkaline conditions. Soluble sulphates were recorded at levels ranging from 14mg/l to 30mg/l.

8.5 CBR Tests

CBR testing was undertaken at 0.60mbgl in all six trial pits. The in-situ CBR results are detailed below in Table 4.

TABLE 4: SUMMARY OF CBR TESTS

Trial Pit	0.60mbgl result (%)
PBT01	0.38
PBT02	0.77
PBT03	0.11
PBT04	0.23
PBT05	0.10
PBT06	0.16

Where cohesive made ground was present, a conservative equilibrium CBR of <2% should be adopted for design purposes.

8.6 Foundations

8.6.1 Conventional Foundations upon Cohesive Deposits

Based on plasticity index results, all cohesive soils at the site should be regarded as being of low volume change potential. Foundations should therefore be placed at a minimum depth of 0.75m below original or finished ground level, whichever is the lower.

Based on the soil descriptions, insitu and laboratory testing a safe bearing capacity of 100kN/m² has been determined for strip foundations 0.60m wide founding on the natural medium to high strength clay at depths of around 0.75mbgl. Providing the safe bearing capacity is not exceeded settlements have been calculated to be less than 25mm.

Locally, foundations will require deepening due to made ground depths (recorded up to 1.40mbgl). All deepened sections should be adequately stepped, in accordance with current guidance.

Foundations near existing or proposed trees should be deepened and provided with appropriate heave precautions in accordance with current guidance.

It should be recognised that clay rich soils can deteriorate fairly rapidly on exposure, particularly in periods of wet weather and frost. It would be prudent to protect all exposed soils in foundation excavations with a concrete blinding layer, particularly if they are likely to remain open for extended period of time.

8.6.2 General Foundation Comments

It is recommended that an adequate drainage system for surface water be installed by a competent contractor in order to prevent surface water ponding or collecting during and post construction, which may in turn lead to deterioration of the founding stratum.

Prior to placing foundation concrete, obvious soft or loose spots should be removed and replaced with

suitably recompacted hardcore or lean mix concrete. In addition, all excavations should be inspected to ensure that they fully penetrate areas of disturbed ground.

Further advice should be sought from Solmek if unexpected ground conditions are encountered during redevelopment.

8.7 Excavation

Based on the nature of the ground conditions encountered, excavations should be within the capacity of normal earthworks plant although breaking out of relict foundations and other obstructions should be anticipated. Stability of excavations will be poor in the made ground but should improve slightly in the natural clay. Excavation sides should be designed, constructed and supported in accordance with the recommendations given in CIRIA Report No. 97: "Trenching Practice".

8.8 Groundwater

Groundwater was not encountered during this investigation.

It should be noted the rapid rate of advancement of the exploratory holes may mask minor seepages and it should be borne in mind that water levels fluctuate with a number of influences including season, rainfall, dewatering and pumping activities.

SOLMEK

APPENDIX A: Figures & Drawings



12-16 Yarm Road, Stockton on Tees, TS18 3NA
Tel: 01642 607083 Email: info@solmek.com

Figure Title

Site Location Plan

Project Number

S250235

Project Name

BESS Project, Lea Green Road, ST Helens

Client

Cobalt Energy

Date

March 2025

DRG Number

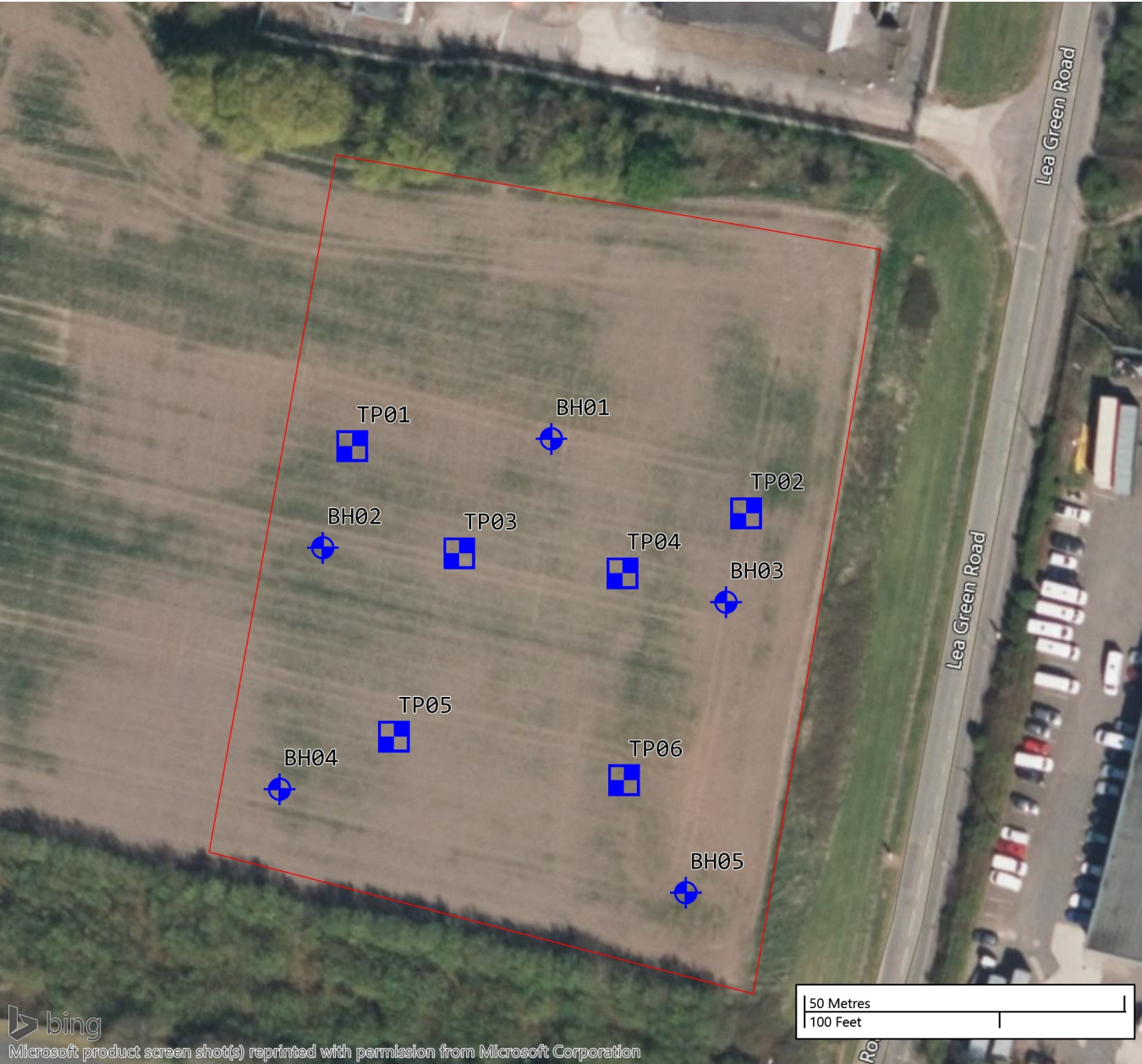
Figure 1

Scale

1:5000 @ A4 [DO NOT SCALE]

Legend Key

 Project Bounds - Project Bounds



12-16 Yarm Road, Stockton on Tees, TS18 3NA
Tel: 01642 607083 Email: info@solmek.com

Figure Title

Exploratory Hole Location Plan

Project Number

S250235

Project Name

BESS Project, Lea Green Road, ST Helens

Client

Cobalt Energy

Date

March 2025

DRG Number

Figure 2

Scale

1:1000 @ A4 [DO NOT SCALE]

Legend Key

- ◆ Locations By Type - BH
- ▣ Locations By Type - TP
- ▭ Project Bounds - Project Bounds



Figure 3: TP01



Figure 4: TP01 Spoil

Title	Date
Figures 3 & 4	March 2025
Project	
BESS Site, St Helens	
Client	
Cobalt Energy	

Solmek Ltd.
12 Yarm Road
Stockton-on-Tees
TS18 3NA

Tel: +44 (0) 1642 607083
Fax: +44 (0) 1642 612355
e-mail: south@solmek.com
www.solmek.com





Figure 5: TP02



Figure 6: TP02 Spoil

Title	Date
Figures 5 & 6	March 2025
Project	
BESS Site, St Helens	
Client	
Cobalt Energy	

Solmek Ltd.
12 Yarm Road
Stockton-on-Tees
TS18 3NA

Tel: +44 (0) 1642 607083
Fax: +44 (0) 1642 612355
e-mail: south@solmek.com
www.solmek.com





Figure 7: TP03



Figure 8: TP03 Spoil

Title	Date
Figures 7 & 8	March 2025
Project	
BESS Site, St Helens	
Client	
Cobalt Energy	

Solmek Ltd.
12 Yarm Road
Stockton-on-Tees
TS18 3NA

Tel: +44 (0) 1642 607083
Fax: +44 (0) 1642 612355
e-mail: south@solmek.com
www.solmek.com





Figure 9: TP05



Figure 10: TP05 Spoil

Title	Date
Figures 9 & 10	March 2025
Project	
BESS Site, St Helens	
Client	
Cobalt Energy	

Solmek Ltd.
12 Yarm Road
Stockton-on-Tees
TS18 3NA

Tel: +44 (0) 1642 607083
Fax: +44 (0) 1642 612355
e-mail: south@solmek.com
www.solmek.com





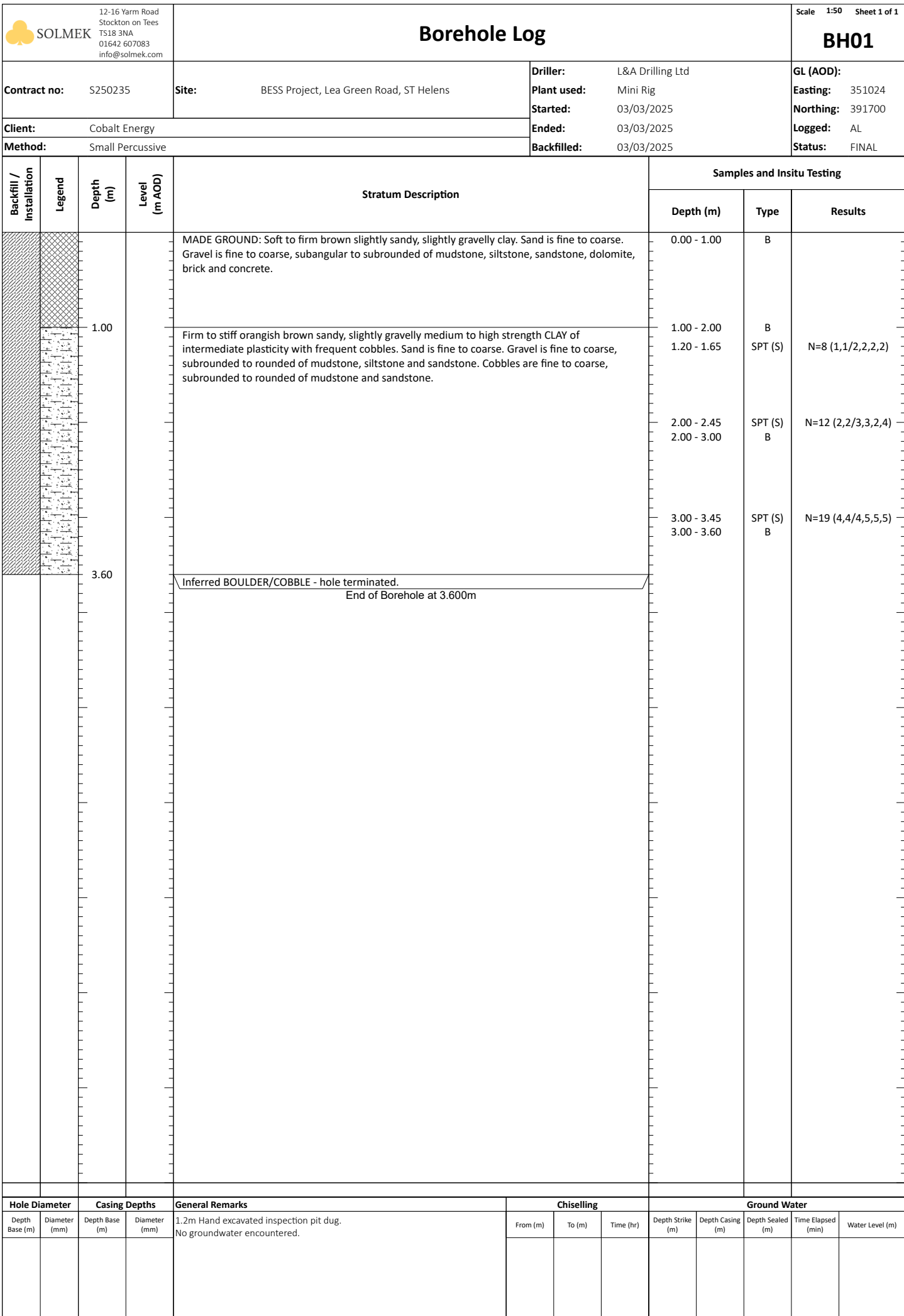
Figure 11: TP06



Figure 12: TP06 Spoil

Title	Date	Solmek Ltd. 12 Yarm Road Stockton-on-Tees TS18 3NA Tel: +44 (0) 1642 607083 Fax: +44 (0) 1642 612355 e-mail: south@solmek.com www.solmek.com 
Figures 11 & 12	March 2025	
Project		
BESS Site, St Helens		
Client		
Cobalt Energy		

APPENDIX B: Borehole & Trial Pit Logs



Borehole Log

BH02

Contract no: S250235

Site: BESS Project, Lea Green Road, ST Helens

Driller: I & A Drilling Ltd

Plant used: Mini Rig

Started: 03/03/2025

Ended: 03/03/2025

Backfilled: 03/03/2025

GI (AOD):

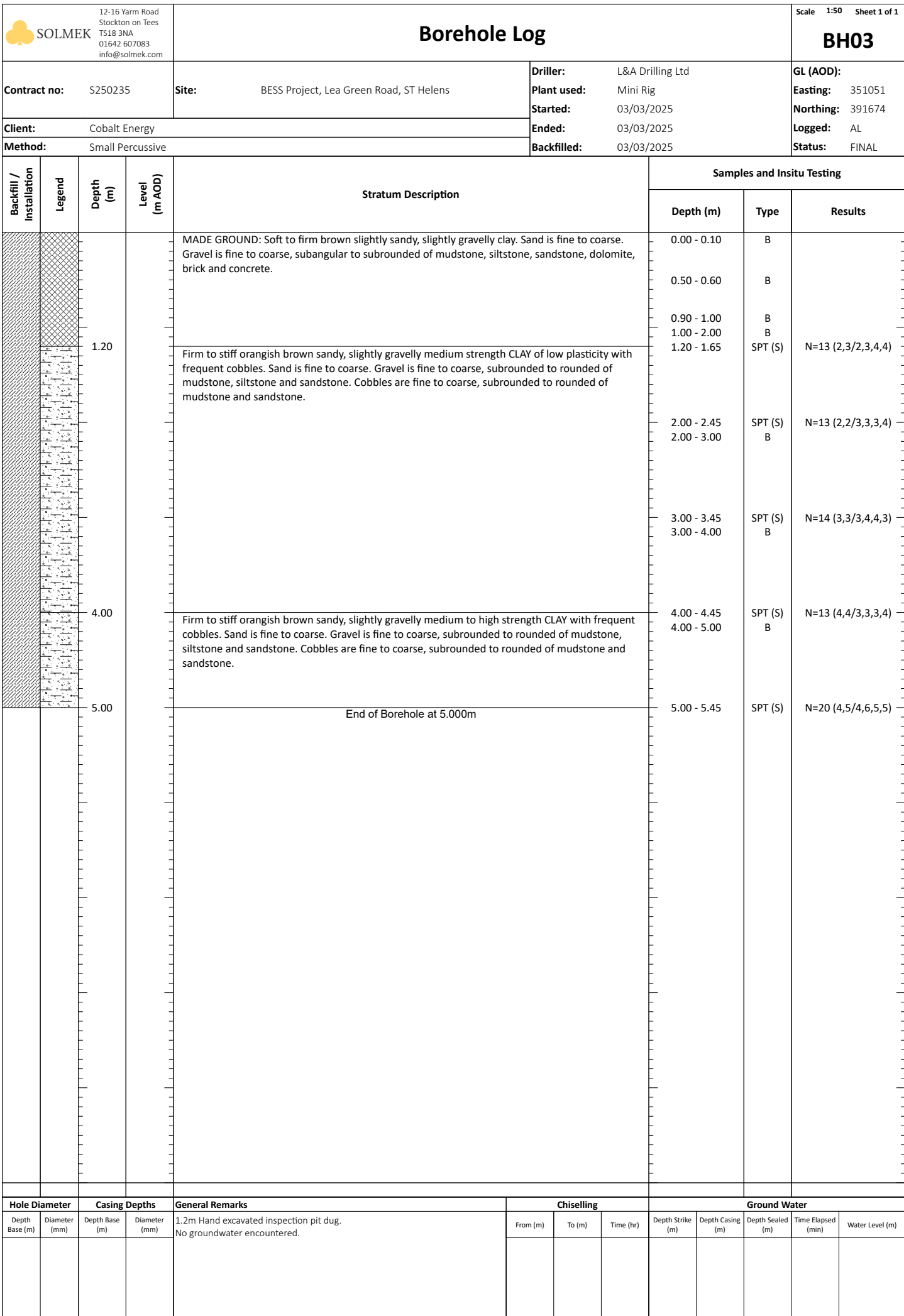
Easting: 350988

Northing: 391683

Logged: AL

Status: FINAL

[illegible]





Borehole Log

Scale	1:50	Sheet 1 of 1
-------	------	--------------

BH04

Contract no: S250235

Site: BESS Project, Lea Green Road, ST Helens

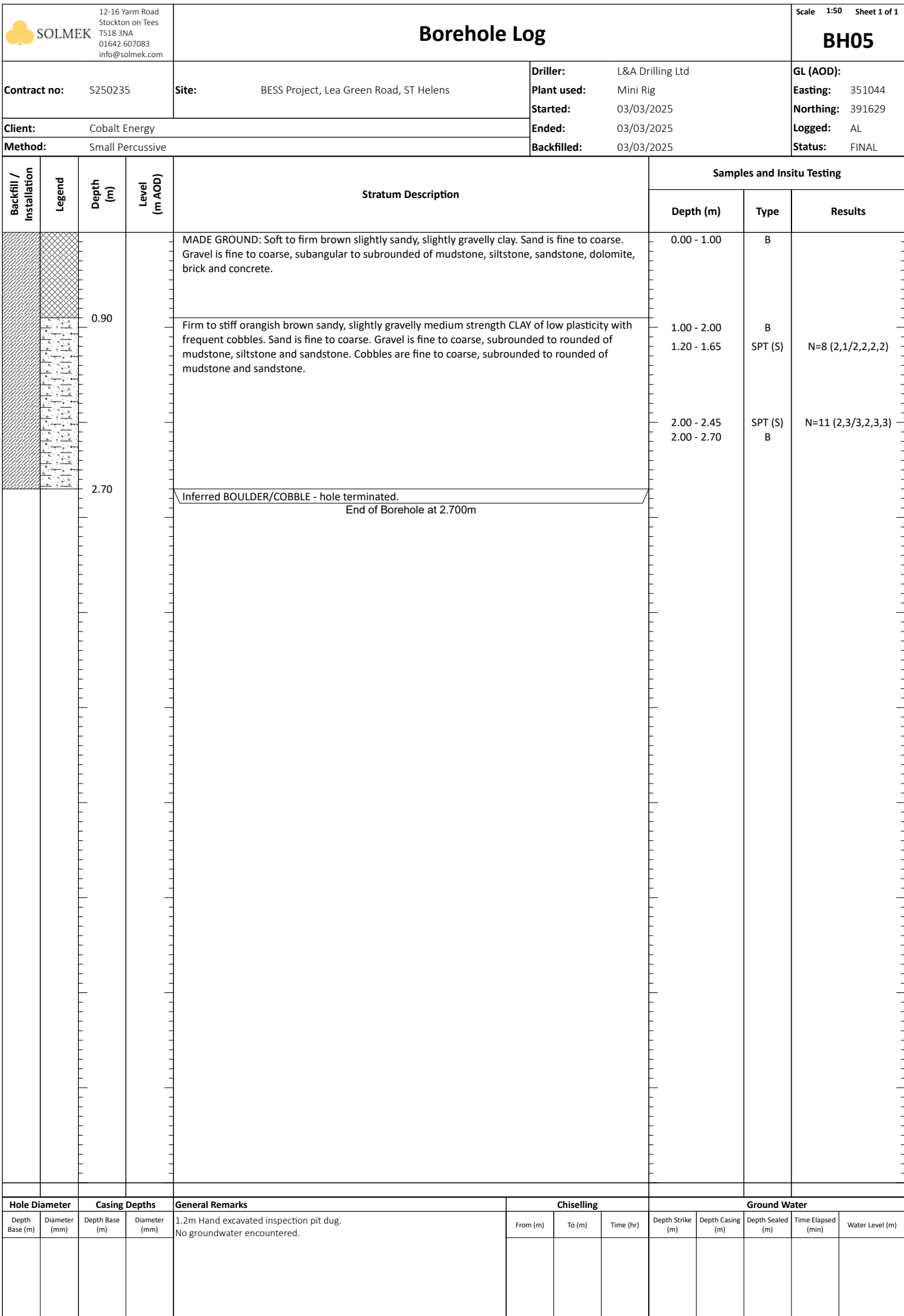
Driller:	L&A Drilling Ltd
Plant used:	Mini Rig
Started:	03/03/2025
Ended:	03/03/2025
Backfilled:	03/03/2025

GL (AOD):	
Easting:	350980
Northing:	391646
Logged:	AL
Status:	FINAL

Client:	Cobalt Energy
----------------	---------------

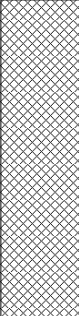
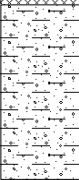
Method:	Small Percussive
----------------	------------------

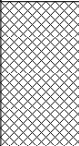
[illegible]



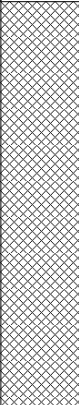
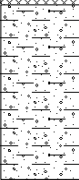
 SOLMEK Solmek Ltd 12-16 Yarm Road Stockton on Tees TS18 3NA Tel: 01642 607083 Email: info@solmek.com				Trial Pit Log				TrialPit No TP01 Sheet 1 of 1	
Project Name: BESS Project, Lea Green Road, ST Helens				Project No. S250235		Co-ords: 350992E - 391699N Level:		Date 03/03/2025	
Plant Used: 8T Excavator				Dimensions (m): Depth 2.00		0.70 1.80		Scale 1:26	
Client: Cobalt Energy								Logged AL	
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
	0.00 - 0.10	B+ES					MADE GROUND: Dark grey slightly silty, slightly gravelly sandy low strength clay with frequent cobbles. Sand is fine to coarse. Gravel is fine to coarse, subangular to angular of concrete, brick, dolomite, tiles and sandstone. Cobbles are fine to coarse, subangular to subrounded of concrete, brick and sandstone. Pea gravel found		
	0.50 - 0.60 0.50	B+ES HV	26kPa						
	0.90 - 1.00 1.00	B+ES HV	62kPa				Firm to stiff orangish brown sandy, slightly gravelly medium strength CLAY with frequent cobbles. Sand is fine to coarse. Gravel is fine to coarse, subrounded to rounded of mudstone, siltstone and sandstone. Cobbles are fine to coarse, subrounded to rounded of mudstone and sandstone.		
	1.40 - 1.50 1.50	B HV	54kPa						
1.90 - 2.00 2.00	B HV	68kPa	End of Pit at 2.000m						
Remarks: No groundwater encountered. Stability: Pit wall stable.									

 SOLMEK Solmek Ltd 12-16 Yarm Road Stockton on Tees TS18 3NA Tel: 01642 607083 Email: info@solmek.com				Trial Pit Log			TrialPit No TP02 Sheet 1 of 1	
Project Name: BESS Project, Lea Green Road, ST Helens		Project No. S250235		Co-ords: 351054E - 391688N Level:		Date 03/03/2025		
Plant Used: 8T Excavator				Dimensions (m): 2.40 0.70 Depth 2.00		Scale 1:26 Logged AL		
Client: Cobalt Energy								
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.00 - 0.10	B+ES	20kPa	0.20			MADE GROUND: Soft to firm brown slightly sandy, slightly gravelly clay. Sand is fine to coarse. Gravel is fine to coarse. Gravel is fine to coarse, subangular to subrounded of mudstone, siltstone, sandstone, dolomite, brick and concrete. MADE GROUND: Brownish dark grey, slightly sandy gravelly low strength clay. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded of mudstone, siltstone, sandstone, dolomite, brick, concrete and rebar.	
	0.50 - 0.60 0.50	B+ES HV						
	0.90 - 1.00 1.00	B+ES HV	68kPa	0.80			Stiff dark grey sandy, slightly gravelly medium strength CLAY with frequent rootlets. Noted possible relict topsoil. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded of mudstone and coal.	
	1.40 - 1.50 1.50	B HV	98kPa	1.30			Firm to stiff orangish brown sandy, slightly gravelly high strength CLAY with frequent cobbles. Sand is fine to coarse. Gravel is fine to coarse, subrounded to rounded of mudstone, siltstone and sandstone. Cobbles are fine to coarse, subrounded to rounded of mudstone and sandstone.	
	1.90 - 2.00 2.00	B HV	106kPa	2.00		End of Pit at 2.000m		
Remarks: No groundwater encountered.								
Stability: Pit wall stable.								

 SOLMEK Solmek Ltd 12-16 Yarm Road Stockton on Tees TS18 3NA Tel: 01642 607083 Email: info@solmek.com				Trial Pit Log				TrialPit No TP03 Sheet 1 of 1	
Project Name: BESS Project, Lea Green Road, ST Helens				Project No. S250235		Co-ords: 351009E - 391682N Level:		Date 03/03/2025	
Plant Used: 8T Excavator				Dimensions (m): Depth 2.00		2.30 0.70		Scale 1:26	
Client: Cobalt Energy								Logged AL	
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
	0.00 - 0.10	B+ES	30kPa	0.30			MADE GROUND: Soft to firm brown slightly sandy, slightly gravelly clay. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded of mudstone, siltstone, sandstone, dolomite, brick and concrete.		
	0.50 - 0.60 0.50	B+ES HV					MADE GROUND: Dark grey slightly silty, slightly gravelly sandy low strength clay with frequent cobbles. Sand is fine to coarse. Gravel is fine to coarse, subangular to angular of concrete, brick, dolomite, tiles and sandstone. Cobbles are fine to coarse, subangular to subrounded of concrete, brick and sandstone.		
	1.10 - 1.20 1.20	B+ES HV	40kPa	1.40			1		
	1.50 - 1.60 1.50	B HV	76kPa						
	1.90 - 2.00 2.00	B HV	80kPa						
			2.00				Firm to stiff orangish brown sandy, slightly gravelly high strength CLAY of intermediate plasticity with frequent cobbles. Sand is fine to coarse. Gravel is fine to coarse, subrounded to rounded of mudstone, siltstone and sandstone. Cobbles are fine to coarse, subrounded to rounded of mudstone and sandstone.		
							End of Pit at 2.000m		
									2
									3
									4
									5
Remarks: No groundwater encountered.									
Stability: Pit wall stable.									

 SOLMEK Solmek Ltd 12-16 Yarm Road Stockton on Tees TS18 3NA Tel: 01642 607083 Email: info@solmek.com				Trial Pit Log				TrialPit No TP04 Sheet 1 of 1	
Project Name: BESS Project, Lea Green Road, ST Helens				Project No. S250235		Co-ords: 351035E - 391679N Level:		Date 03/03/2025	
Plant Used: 8T Excavator				Client: Cobalt Energy		Dimensions (m): 2.40 0.70		Scale 1:26	
		Depth 0.50				Logged AL			
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
	0.00 - 0.10	B+ES		0.50			MADE GROUND: Greyish orange, sandy, slightly gravelly low strength clay. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded of concrete, dolomite, brick, mudstone and sandstone.		
	0.50	HV	20kPa				End of Pit at 0.500m		
							1		
							2		
							3		
							4		
							5		
Remarks: No groundwater encountered.									
Stability: Pit wall stable.									

 SOLMEK Solmek Ltd 12-16 Yarm Road Stockton on Tees TS18 3NA Tel: 01642 607083 Email: info@solmek.com				Trial Pit Log			TrialPit No TP05 Sheet 1 of 1		
Project Name: BESS Project, Lea Green Road, ST Helens				Project No. S250235		Co-ords: 350998E - 391654N Level:		Date 03/03/2025	
Plant Used: 8T Excavator				Dimensions (m): Depth 2.00		2.10		Scale 1:26	
Client: Cobalt Energy						0.70		Logged AL	
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
	0.00 - 0.10	B+ES					MADE GROUND: Soft to firm brown slightly sandy, slightly gravelly clay. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded of mudstone, siltstone, sandstone, dolomite, brick and concrete.		
	0.50 - 0.60 0.50	B+ES HV	18kPa						
	1.00 1.10 - 1.20	HV B+ES	66kPa				Stiff dark grey sandy, slightly gravelly medium strength CLAY with frequent rootlets. Noted possible relict topsoil. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded of mudstone and coal.		
	1.50 - 1.60 1.50	B HV	90kPa				Firm to stiff orangish brown sandy, slightly gravelly high strength CLAY with frequent cobbles. Sand is fine to coarse. Gravel is fine to coarse, subrounded to rounded of mudstone, siltstone and sandstone. Cobbles are fine to coarse, subrounded to rounded of mudstone and sandstone.		
	1.90 - 2.00 2.00	B HV	110kPa	2.00			End of Pit at 2.000m		
Remarks: No groundwater encountered.									
Stability: Pit wall stable.									

 SOLMEK Solmek Ltd 12-16 Yarm Road Stockton on Tees TS18 3NA Tel: 01642 607083 Email: info@solmek.com				Trial Pit Log			TrialPit No TP06 Sheet 1 of 1			
Project Name: BESS Project, Lea Green Road, ST Helens				Project No. S250235		Co-ords: 351035E - 391646N Level:		Date 03/03/2025		
Plant Used: 8T Excavator				Dimensions (m): Depth 2.00		0.70 2.30		Scale 1:26		
Client: Cobalt Energy								Logged AL		
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description			
	Depth	Type	Results							
	0.00 - 0.10	B+ES		1.40			MADE GROUND: Soft to firm brown slightly sandy, slightly gravelly clay. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded of mudstone, siltstone, sandstone, dolomite, brick and concrete.			1
	0.50 - 0.60 0.50	B+ES HV	12kPa							
	1.10 - 1.20 1.20	B+ES HV	30kPa							
	1.50 - 1.60 1.50	B HV	92kPa	2.00			Firm to stiff orangish brown sandy, slightly gravelly high strength CLAY with frequent cobbles. Sand is fine to coarse. Gravel is fine to coarse, subrounded to rounded of mudstone, siltstone and sandstone. Cobbles are fine to coarse, subrounded to rounded of mudstone and sandstone.			2
	1.90 - 2.00 2.00	B HV	110kPa				End of Pit at 2.000m			
										3
										4
										5
Remarks: No groundwater encountered.										
Stability: Pit wall stable.										

APPENDIX C:

Contamination Laboratory Results

Certificate of Analysis

Certificate Number 25-06052

Issued: 26-Mar-25

Client SOLMEK
12 Yarm Road
Stockton On Tees
Cleveland
TS18 3NA

Our Reference 25-06052

Client Reference ~ S250235

Order No ~ SOL-9314

Contract Title ~ BESS Project, St Helens

Description 6 Soil samples.

Date Received 10-Mar-25

Date Started 19-Mar-25

Date Completed 26-Mar-25

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By



John Coffey
Quality Manager



Summary of Chemical Analysis

Matrix Descriptions

Our Ref 25-06052

Client Ref ~ S250235

Contract Title ~ BESS Project, St Helens

Sample ID	Depth	Lab No	Completed	Matrix Description
TP01	0.00-0.10	2480971	26/03/2025	Dark brown gravelly, sandy CLAY (Possible made ground - brick)
TP02	0.50-0.60	2480972	26/03/2025	Dark brown very gravelly, sandy CLAY
TP03	0.00-0.10	2480973	26/03/2025	Dark brown gravelly, sandy CLAY including odd rootlets (Possible made ground - brick)
TP04	0.00-0.10	2480974	26/03/2025	Brown very gravelly CLAY (Possible made ground - brick)
TP05	0.50-0.60	2480975	26/03/2025	Dark brown very gravelly, sandy CLAY (Possible made ground - brick)
TP06	1.10-1.20	2480976	26/03/2025	Dark brown gravelly, sandy CLAY

Summary of Chemical Analysis

Soil Samples

Our Ref 25-06052

Client Ref ~ S250235

Contract Title ~ BESS Project, St Helens

Lab No	2480971	2480972	2480973	2480974	2480975	2480976
Sample ID ~	TP01	TP02	TP03	TP04	TP05	TP06
Depth ~	0.00-0.10	0.50-0.60	0.00-0.10	0.00-0.10	0.50-0.60	1.10-1.20
Other ID ~						
Sample Type ~	D	D	D	D	D	D
Sampling Date ~	03/03/2025	03/03/2025	03/03/2025	03/03/2025	03/03/2025	03/03/2025
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Metals									
Arsenic	DETSC 2301#	0.2	mg/kg	13	4.5	22	5.2	7.9	7.4
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	0.3	0.3	0.3	0.3	0.2	0.3
Cadmium	DETSC 2301#	0.1	mg/kg	0.6	0.5	0.5	0.2	0.2	0.2
Chromium	DETSC 2301#	0.15	mg/kg	22	11	26	20	26	23
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	55	16	61	16	23	18
Lead	DETSC 2301#	0.3	mg/kg	58	15	52	20	15	12
Mercury	DETSC 2325#	0.05	mg/kg	0.08	< 0.05	0.08	< 0.05	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	20	12	25	17	27	22
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	65	28	68	26	39	27
Inorganics									
pH	DETSC 2008#		pH	7.9	10.5	8.1	8.4	8.5	8.6
Cyanide, Free	DETSC 2130#	0.1	mg/kg	0.2	< 0.1	0.1	< 0.1	< 0.1	< 0.1
Organic matter	DETSC 2002#	0.1	%	2.6	1.1	2.7	0.7	0.6	0.7
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	48	70	24	30	27	41
Petroleum Hydrocarbons									
Aliphatic C5-C6: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic >EC10-EC12: EH_2D_AL	DETSC 3521#	1.5	mg/kg	< 1.50	< 1.50	< 1.50	< 1.50	< 1.50	< 1.50
Aliphatic >EC12-EC16: EH_2D_AL	DETSC 3521#	1.2	mg/kg	< 1.20	< 1.20	< 1.20	< 1.20	< 1.20	< 1.20
Aliphatic >EC16-EC21: EH_2D_AL	DETSC 3521#	1.5	mg/kg	< 1.50	< 1.50	< 1.50	< 1.50	< 1.50	< 1.50
Aliphatic >EC21-EC35: EH_2D_AL	DETSC 3521#	3.4	mg/kg	< 3.40	< 3.40	< 3.40	< 3.40	< 3.40	< 3.40
Aliphatic >EC35-EC40: EH_2D_AL	DETSC 3521*	3.4	mg/kg	< 3.40	< 3.40	< 3.40	< 3.40	< 3.40	< 3.40
Aliphatic C5-C40: EH_2D+HS_1D_AL	DETSC 3521*	10	mg/kg	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00
Aromatic C5-C7: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic >EC10-EC12: EH_2D_AR	DETSC 3521#	0.9	mg/kg	< 0.90	< 0.90	< 0.90	< 0.90	< 0.90	< 0.90
Aromatic >EC12-EC16: EH_2D_AR	DETSC 3521#	0.5	mg/kg	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Aromatic >EC16-EC21: EH_2D_AR	DETSC 3521#	0.6	mg/kg	< 0.60	< 0.60	< 0.60	< 0.60	< 0.60	< 0.60
Aromatic >EC21-EC35: EH_2D_AR	DETSC 3521#	1.4	mg/kg	< 1.40	< 1.40	< 1.40	< 1.40	< 1.40	< 1.40
Aromatic >EC35-EC40: EH_2D_AR	DETSC 3521*	1.4	mg/kg	< 1.40	< 1.40	< 1.40	< 1.40	< 1.40	< 1.40
Aromatic C5-C40: EH_2D+HS_1D_AR	DETSC 3521*	10	mg/kg	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00
TPH Ali/Aro C5-C40: EH_2D+HS_1D_Total	DETSC 3521*	10	mg/kg	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00
PAHs									
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

Summary of Chemical Analysis Soil Samples

Our Ref 25-06052

Client Ref ~ S250235

Contract Title ~ BESS Project, St Helens

Lab No	2480971	2480972	2480973	2480974	2480975	2480976
Sample ID ~	TP01	TP02	TP03	TP04	TP05	TP06
Depth ~	0.00-0.10	0.50-0.60	0.00-0.10	0.00-0.10	0.50-0.60	1.10-1.20
Other ID ~						
Sample Type ~	D	D	D	D	D	D
Sampling Date ~	03/03/2025	03/03/2025	03/03/2025	03/03/2025	03/03/2025	03/03/2025
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Phenanthrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	0.2	0.2	< 0.1	< 0.1	< 0.1
Pyrene	DETSC 3301	0.1	mg/kg	< 0.1	0.1	0.1	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
PAH 16 Total	DETSC 3301	1.6	mg/kg	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	0.6	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

Summary of Asbestos Analysis

Soil Samples

Our Ref 25-06052

Client Ref ~ S250235

Contract Title ~ BESS Project, St Helens

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2480971	TP01 0.00-0.10	SOIL	NAD	none	Lee Kerridge
2480972	TP02 0.50-0.60	SOIL	NAD	none	Lee Kerridge
2480973	TP03 0.00-0.10	SOIL	NAD	none	Lee Kerridge
2480974	TP04 0.00-0.10	SOIL	NAD	none	Lee Kerridge
2480975	TP05 0.50-0.60	SOIL	NAD	none	Lee Kerridge
2480976	TP06 1.10-1.20	SOIL	NAD	none	Lee Kerridge

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 25-06052
 Client Ref ~ S250235
 Contract ~ BESS Project, St Helens

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2480971	TP01 0.00-0.10 SOIL	03/03/25	PT 1L		BTEX / C5-C10, EPH/Aliphatic/Aromatic, Naphthalene, PAH FID
2480972	TP02 0.50-0.60 SOIL	03/03/25	PT 1L		BTEX / C5-C10, EPH/Aliphatic/Aromatic, Naphthalene, PAH FID
2480973	TP03 0.00-0.10 SOIL	03/03/25	PT 1L		BTEX / C5-C10, EPH/Aliphatic/Aromatic, Naphthalene, PAH FID
2480974	TP04 0.00-0.10 SOIL	03/03/25	PT 1L		BTEX / C5-C10, EPH/Aliphatic/Aromatic, Naphthalene, PAH FID
2480975	TP05 0.50-0.60 SOIL	03/03/25	PT 1L		BTEX / C5-C10, EPH/Aliphatic/Aromatic, Naphthalene, PAH FID
2480976	TP06 1.10-1.20 SOIL	03/03/25	PT 1L		BTEX / C5-C10, EPH/Aliphatic/Aromatic, Naphthalene, PAH FID

Key: P-Plastic T-Tub

Normec DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Information in Support of the Analytical Results

List of HWOL Acronyms and Operators

Acronym	Description
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
2D	GC-GC - Double coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative eg. EH+HS_Total or EH_CU+HS_Total

Det

Aliphatic C5-C6

Acronym

HS_1D_AL

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETS 2002	Organic matter	%	0.1	Air Dried	No	Yes	Yes
DETS 2003	Loss on ignition	%	0.01	Air Dried	No	Yes	Yes
DETS 2008	pH	pH Units	1	Air Dried	No	Yes	Yes
DETS 2076	Sulphate Aqueous Extract as SO ₄	mg/l	10	Air Dried	No	Yes	Yes
DETS 2084	Total Organic Carbon	%	0.5	Air Dried	No	Yes	Yes
DETS 2119	Ammoniacal Nitrogen as N	mg/kg	0.5	Air Dried	No	Yes	Yes
DETS 2130	Cyanide free	mg/kg	0.1	Air Dried	No	Yes	Yes
DETS 2130	Cyanide total	mg/kg	0.1	Air Dried	No	Yes	Yes
DETS 2130	Phenol - Monohydric	mg/kg	0.3	Air Dried	No	Yes	Yes
DETS 2130	Thiocyanate	mg/kg	0.6	Air Dried	No	Yes	Yes
DETS 2301	Arsenic	mg/kg	0.2	Air Dried	No	Yes	Yes
DETS 2301	Barium	mg/kg	1.5	Air Dried	No	Yes	Yes
DETS 2301	Beryllium	mg/kg	0.2	Air Dried	No	Yes	Yes
DETS 2301	Cadmium Available	mg/kg	0.1	Air Dried	No	Yes	Yes
DETS 2301	Cadmium	mg/kg	0.1	Air Dried	No	Yes	Yes
DETS 2301	Cobalt	mg/kg	0.7	Air Dried	No	Yes	Yes
DETS 2301	Chromium	mg/kg	0.15	Air Dried	No	Yes	Yes
DETS 2301	Copper	mg/kg	0.2	Air Dried	No	Yes	Yes
DETS 2301	Manganese	mg/kg	20	Air Dried	No	Yes	Yes
DETS 2301	Molybdenum	mg/kg	0.4	Air Dried	No	Yes	Yes
DETS 2301	Nickel	mg/kg	1	Air Dried	No	Yes	Yes
DETS 2301	Lead	mg/kg	0.3	Air Dried	No	Yes	Yes
DETS 2301	Selenium	mg/kg	0.5	Air Dried	No	Yes	Yes
DETS 2301	Zinc	mg/kg	1	Air Dried	No	Yes	Yes
DETS 2311	Boron (water soluble)	mg/kg	0.2	Air Dried	No	Yes	Yes
DETS 2321	Total Sulphate as SO ₄	%	0.01	Air Dried	No	Yes	Yes
DETS 2325	Mercury	mg/kg	0.05	Air Dried	No	Yes	Yes
DETS 3049	Sulphur (free)	mg/kg	0.75	As Received	No	Yes	Yes
DETS 3072	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETS 3072	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETS 3072	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETS 3072	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETS 3072	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETS 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETS 3072	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETS 3072	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETS 3072	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETS 3072	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETS 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETS 3303	Acenaphthene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Acenaphthylene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Benzo(a)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Benzo(a)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Benzo(b)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Benzo(k)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Benzo(g,h,i)perylene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Dibenzo(a,h)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 3303	Indeno(1,2,3-c,d)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Naphthalene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Phenanthrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3311	C10-C24 Diesel Range Organics (DRO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	C24-C40 Lube Oil Range Organics (LORO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	EPH (C10-C40)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3321	Benzene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	Ethylbenzene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	Toluene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	m+p Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	o Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 28 + PCB 31	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 52	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 101	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 118	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 153	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 138	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 180	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB Total	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3521	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3521	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETSC 3521	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3521	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETSC 3521	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETSC 3521	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes

Method details are shown only for those determinands listed in Annex A of the MCERTS standard. Anything not included on this list falls outside the scope of MCERTS. No Recovery Factors are used in the determination of results. Results reported assume 100% recovery. Full method statements are available on request.

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
--------	-----------	-------	--------------------	--------------------	----------------	------	--------

Key:

~ Sample details are provided by the client and can affect the validity of the results

* -not accredited.

-MCERTS (accreditation only applies if report carries the MCERTS logo).

\$ -subcontracted.

n/s -not supplied.

I/S -insufficient sample.

U/S -unsuitable sample.

t/f -to follow.

nd -not detected.

End of Report

Certificate of Analysis

Certificate Number 25-05217

Issued: 19-Mar-25

Client SOLMEK
12 Yarm Road
Stockton On Tees
Cleveland
TS18 3NA

Our Reference 25-05217

Client Reference ~ S250235

Order No ~ SOL-9314

Contract Title ~ BESS Project, St Helens

Description 6 Soil samples.

Date Received 10-Mar-25

Date Started 10-Mar-25

Date Completed 19-Mar-25

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By



Reyhan Irfan
Operations Manager



Summary of Chemical Analysis

Matrix Descriptions

Our Ref 25-05217

Client Ref ~ S250235

Contract Title ~ BESS Project, St Helens

Sample ID	Depth	Lab No	Completed	Matrix Description
BH01	1.00-2.00	2476052	19/03/2025	Brown sandy CLAY
BH02	2.00-3.00	2476053	19/03/2025	Brown gravelly, sandy CLAY
BH03	2.00-3.00	2476054	19/03/2025	Brown sandy CLAY
BH04	1.20-2.00	2476055	19/03/2025	Brown sandy CLAY
BH05	1.00-2.00	2476056	19/03/2025	Brown sandy CLAY
TP03	1.50-1.60	2476057	19/03/2025	Brown sandy CLAY

Summary of Chemical Analysis

Soil Samples

Our Ref 25-05217

Client Ref ~ S250235

Contract Title ~ BESS Project, St Helens

Lab No	2476052	2476053	2476054	2476055	2476056	2476057
Sample ID ~	BH01	BH02	BH03	BH04	BH05	TP03
Depth ~	1.00-2.00	2.00-3.00	2.00-3.00	1.20-2.00	1.00-2.00	1.50-1.60
Other ID ~						
Sample Type ~	ES	ES	ES	ES	ES	ES
Sampling Date ~	03/03/2025	03/03/2025	03/03/2025	03/03/2025	03/03/2025	03/03/2025
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Metals									
Arsenic	DETSC 2301#	0.2	mg/kg	7.4	9.9	6.4	8.7	19	6.9
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	< 0.2	0.2	< 0.2	0.3	< 0.2	0.2
Cadmium	DETSC 2301#	0.1	mg/kg	< 0.1	0.2	< 0.1	< 0.1	< 0.1	< 0.1
Chromium	DETSC 2301#	0.15	mg/kg	39	31	31	34	51	34
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	21	26	21	22	120	17
Lead	DETSC 2301#	0.3	mg/kg	8.7	21	11	9.8	14	8.1
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	33	29	32	36	43	28
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	1.2	< 0.5	< 0.5	< 0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	43	43	57	46	140	34
Inorganics									
pH	DETSC 2008#		pH	8.3	8.6	8.6	8.6	8.8	8.3
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Organic matter	DETSC 2002#	0.1	%	0.5	0.4	0.7	0.6	0.4	0.5
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	94	26	18	22	20	< 10
Petroleum Hydrocarbons									
Aliphatic C5-C6: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic >EC10-EC12: EH_2D_AL	DETSC 3521#	1.5	mg/kg	< 1.50	< 1.50	< 1.50	< 1.50	< 1.50	< 1.50
Aliphatic >EC12-EC16: EH_2D_AL	DETSC 3521#	1.2	mg/kg	< 1.20	< 1.20	< 1.20	< 1.20	< 1.20	< 1.20
Aliphatic >EC16-EC21: EH_2D_AL	DETSC 3521#	1.5	mg/kg	< 1.50	< 1.50	< 1.50	< 1.50	< 1.50	< 1.50
Aliphatic >EC21-EC35: EH_2D_AL	DETSC 3521#	3.4	mg/kg	< 3.40	< 3.40	< 3.40	< 3.40	< 3.40	< 3.40
Aliphatic >EC35-EC40: EH_2D_AL	DETSC 3521*	3.4	mg/kg	< 3.40	< 3.40	< 3.40	< 3.40	< 3.40	< 3.40
Aliphatic C5-C40: EH_2D+HS_1D_AL	DETSC 3521*	10	mg/kg	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00
Aromatic C5-C7: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic >EC10-EC12: EH_2D_AR	DETSC 3521#	0.9	mg/kg	< 0.90	< 0.90	< 0.90	< 0.90	< 0.90	< 0.90
Aromatic >EC12-EC16: EH_2D_AR	DETSC 3521#	0.5	mg/kg	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Aromatic >EC16-EC21: EH_2D_AR	DETSC 3521#	0.6	mg/kg	< 0.60	< 0.60	< 0.60	< 0.60	0.71	< 0.60
Aromatic >EC21-EC35: EH_2D_AR	DETSC 3521#	1.4	mg/kg	< 1.40	< 1.40	< 1.40	< 1.40	< 1.40	< 1.40
Aromatic >EC35-EC40: EH_2D_AR	DETSC 3521*	1.4	mg/kg	< 1.40	< 1.40	< 1.40	< 1.40	< 1.40	< 1.40
Aromatic C5-C40: EH_2D+HS_1D_AR	DETSC 3521*	10	mg/kg	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00
TPH Ali/Aro C5-C40: EH_2D+HS_1D_Total	DETSC 3521*	10	mg/kg	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00
PAHs									
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

Summary of Chemical Analysis Soil Samples

Our Ref 25-05217

Client Ref ~ S250235

Contract Title ~ BESS Project, St Helens

Lab No	2476052	2476053	2476054	2476055	2476056	2476057
Sample ID ~	BH01	BH02	BH03	BH04	BH05	TP03
Depth ~	1.00-2.00	2.00-3.00	2.00-3.00	1.20-2.00	1.00-2.00	1.50-1.60
Other ID ~						
Sample Type ~	ES	ES	ES	ES	ES	ES
Sampling Date ~	03/03/2025	03/03/2025	03/03/2025	03/03/2025	03/03/2025	03/03/2025
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Phenanthrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
PAH 16 Total	DETSC 3301	1.6	mg/kg	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

Summary of Asbestos Analysis Soil Samples

Our Ref 25-05217

Client Ref ~ S250235

Contract Title ~ BESS Project, St Helens

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2476052	BH01 1.00-2.00	SOIL	NAD	none	D Wilkinson
2476053	BH02 2.00-3.00	SOIL	NAD	none	D Wilkinson
2476054	BH03 2.00-3.00	SOIL	NAD	none	D Wilkinson
2476055	BH04 1.20-2.00	SOIL	NAD	none	D Wilkinson
2476056	BH05 1.00-2.00	SOIL	NAD	none	D Wilkinson
2476057	TP03 1.50-1.60	SOIL	NAD	none	D Wilkinson

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 25-05217
 Client Ref ~ S250235
 Contract ~ BESS Project, St Helens

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2476052	BH01 1.00-2.00 SOIL	03/03/25	GJ 250ml, PT 1L		BTEX / C5-C10
2476053	BH02 2.00-3.00 SOIL	03/03/25	GJ 250ml, PT 1L		BTEX / C5-C10
2476054	BH03 2.00-3.00 SOIL	03/03/25	GJ 250ml, PT 1L		BTEX / C5-C10
2476055	BH04 1.20-2.00 SOIL	03/03/25	GJ 250ml, PT 1L		BTEX / C5-C10
2476056	BH05 1.00-2.00 SOIL	03/03/25	GJ 250ml, PT 1L		BTEX / C5-C10
2476057	TP03 1.50-1.60 SOIL	03/03/25	GJ 250ml, PT 1L		BTEX / C5-C10

Key: G-Glass P-Plastic J-Jar T-Tub

Normec DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Information in Support of the Analytical Results

List of HWOL Acronyms and Operators

Acronym	Description
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
2D	GC-GC - Double coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative eg. EH+HS_Total or EH_CU+HS_Total

Det

Aliphatic C5-C6

Acronym

HS_1D_AL

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETS 2002	Organic matter	%	0.1	Air Dried	No	Yes	Yes
DETS 2003	Loss on ignition	%	0.01	Air Dried	No	Yes	Yes
DETS 2008	pH	pH Units	1	Air Dried	No	Yes	Yes
DETS 2076	Sulphate Aqueous Extract as SO ₄	mg/l	10	Air Dried	No	Yes	Yes
DETS 2084	Total Organic Carbon	%	0.5	Air Dried	No	Yes	Yes
DETS 2119	Ammoniacal Nitrogen as N	mg/kg	0.5	Air Dried	No	Yes	Yes
DETS 2130	Cyanide free	mg/kg	0.1	Air Dried	No	Yes	Yes
DETS 2130	Cyanide total	mg/kg	0.1	Air Dried	No	Yes	Yes
DETS 2130	Phenol - Monohydric	mg/kg	0.3	Air Dried	No	Yes	Yes
DETS 2130	Thiocyanate	mg/kg	0.6	Air Dried	No	Yes	Yes
DETS 2301	Arsenic	mg/kg	0.2	Air Dried	No	Yes	Yes
DETS 2301	Barium	mg/kg	1.5	Air Dried	No	Yes	Yes
DETS 2301	Beryllium	mg/kg	0.2	Air Dried	No	Yes	Yes
DETS 2301	Cadmium Available	mg/kg	0.1	Air Dried	No	Yes	Yes
DETS 2301	Cadmium	mg/kg	0.1	Air Dried	No	Yes	Yes
DETS 2301	Cobalt	mg/kg	0.7	Air Dried	No	Yes	Yes
DETS 2301	Chromium	mg/kg	0.15	Air Dried	No	Yes	Yes
DETS 2301	Copper	mg/kg	0.2	Air Dried	No	Yes	Yes
DETS 2301	Manganese	mg/kg	20	Air Dried	No	Yes	Yes
DETS 2301	Molybdenum	mg/kg	0.4	Air Dried	No	Yes	Yes
DETS 2301	Nickel	mg/kg	1	Air Dried	No	Yes	Yes
DETS 2301	Lead	mg/kg	0.3	Air Dried	No	Yes	Yes
DETS 2301	Selenium	mg/kg	0.5	Air Dried	No	Yes	Yes
DETS 2301	Zinc	mg/kg	1	Air Dried	No	Yes	Yes
DETS 2311	Boron (water soluble)	mg/kg	0.2	Air Dried	No	Yes	Yes
DETS 2321	Total Sulphate as SO ₄	%	0.01	Air Dried	No	Yes	Yes
DETS 2325	Mercury	mg/kg	0.05	Air Dried	No	Yes	Yes
DETS 3049	Sulphur (free)	mg/kg	0.75	As Received	No	Yes	Yes
DETS 3072	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETS 3072	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETS 3072	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETS 3072	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETS 3072	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETS 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETS 3072	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETS 3072	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETS 3072	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETS 3072	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETS 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETS 3303	Acenaphthene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Acenaphthylene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Benzo(a)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Benzo(a)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Benzo(b)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Benzo(k)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Benzo(g,h,i)perylene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Dibenzo(a,h)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 3303	Indeno(1,2,3-c,d)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Naphthalene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Phenanthrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3311	C10-C24 Diesel Range Organics (DRO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	C24-C40 Lube Oil Range Organics (LORO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	EPH (C10-C40)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3321	Benzene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	Ethylbenzene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	Toluene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	m+p Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	o Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 28 + PCB 31	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 52	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 101	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 118	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 153	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 138	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 180	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB Total	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3521	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3521	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETSC 3521	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3521	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETSC 3521	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETSC 3521	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes

Method details are shown only for those determinands listed in Annex A of the MCERTS standard. Anything not included on this list falls outside the scope of MCERTS. No Recovery Factors are used in the determination of results. Results reported assume 100% recovery. Full method statements are available on request.

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
--------	-----------	-------	--------------------	--------------------	----------------	------	--------

Key:

~ Sample details are provided by the client and can affect the validity of the results

* -not accredited.

-MCERTS (accreditation only applies if report carries the MCERTS logo).

\$ -subcontracted.

n/s -not supplied.

I/S -insufficient sample.

U/S -unsuitable sample.

t/f -to follow.

nd -not detected.

End of Report

APPENDIX D:

Geotechnical Laboratory Results

Laboratory Report Front Sheet		G2M Testing (Stockton) 12-16 Yarm Road, Stockton on Tees, TS18 3NA 01642 033318 info@g2mtesting.co.uk	 10258
Site name	Job number		
BESS Project, St Helens	S250235		

Client details:

Reference: S250235
 Name: Solmek
 Address: 12 Yarm Road,
 Stockton-on-tees,
 TS18 3NA

Telephone: 01642 607083
 Email: lcassidy@solmek.com

FAO: Leo Cassidy

Samples received: 06/03/2025

Date commenced: 11/03/2025

Date reported: 28/03/2025

Observations and interpretations are outside of the UKAS Accreditation

A copy of the Laboratory Schedule of accredited tests as issued by UKAS is attached to this report. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced in full, without the prior written approval of the laboratory.

Samples will be held at the laboratory for a period of 4 weeks after the report date. After the above reporting date the samples will be disposed of. Should further testing be required then the office should be informed before the above date.

Signature:	Approved Signatories:
	☐ D.Anderson (Managing Director) ☒ J. Brischuk (Laboratory Manager) ☐

Summary of Classification Tests

G2M Testing (Stockton)

12-16 Yarm Road,
Stockton on Tees,
TS18 3NA

01642 033318

info@g2mtesting.co.uk



10258

Site name	Job number
BESS Project, St Helens	S250235

Hole	Depth		Type	w %	Oven temp. oc	wa %	Pa %	Pr %	wL %	wP %	IP %	IL	Plasticity class	Preparation method
	Top m	Base m												
BH01	1.00		B	18	105	19	97	3	40-s	18	22	0.045	CI	Tested after >425µm removed by hand
BH02	2.00		B	14	105	16	87	13	32-s	15	17	0.059	CL	Tested after >425µm removed by hand
BH03	2.00		B	13	105	14	90	10	30-s	12	18	0.111	CL	Tested after >425µm removed by hand
BH04	1.20		B	15	105	17	89	11	32-s	17	15	0.000	CL	Tested after >425µm removed by hand
BH05	1.00		B	14	105	19	75	25	31-s	15	16	0.250	CL	Tested after >425µm removed by hand
TP03	1.50		B	20	105	22	92	8	43-s	18	25	0.160	CI	Tested after >425µm removed by hand

All tests found in G2M Testing UKAS Schedule of Accreditation are tested to standard unless otherwise indicated

Key	Description	Category	BS Test Code
w	Moisture content		BS 1377:1990 Part 2 Clause 3.2
wa	Equivalent moisture content passing 425µm sieve		BS 1377:1990 Part 2 Clause 3.2
wL	Liquid limit Single point Four point	-s	BS 1377:1990 Part 2 Clause 4.4
		-f	BS 1377:1990 Part 2 Clause 4.3
wP	Plastic limit		BS 1377:1990 Part 2 Clause 5.2
Pa	Percentage passing 425µm sieve		
Pr	Percentage retained 425µm sieve		
IP	Plasticity index		BS 1377:1990 Part 2 Clause 5.4
IL	Liquidity index		BS 1377:1990 Part 2 Clause 5.4
	Suffix indicating test is "Not UKAS Accredited"	*	

Approved by	D Anderson
Approval date	19/03/2025 09:41
Date report generated	
Report Number	

Certificate of Analysis

Certificate Number 25-06051

Issued: 26-Mar-25

Client SOLMEK
12 Yarm Road
Stockton On Tees
Cleveland
TS18 3NA

Our Reference 25-06051

Client Reference ~ S250235

Order No ~ SOL-9314

Contract Title ~ BESS Project, St Helens

Description 6 Soil samples.

Date Received 10-Mar-25

Date Started 19-Mar-25

Date Completed 26-Mar-25

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By



John Coffey
Quality Manager



Normec DETS Limited

Unit 2, Park Road Industrial Estate South, Consett, Co Durham, DH8 5PY
Tel: 01207 582333 • email: info@dets.co.uk • normecdets.com

Summary of Chemical Analysis

Matrix Descriptions

Our Ref 25-06051

Client Ref ~ S250235

Contract Title ~ BESS Project, St Helens

Sample ID	Depth	Lab No	Completed	Matrix Description
BH01	1.00-2.00	2480965	26/03/2025	Dark brown slightly gravelly, sandy CLAY (Possible made ground - brick)
BH02	2.00-3.00	2480966	26/03/2025	Dark brown slightly gravelly, sandy CLAY (Possible made ground - brick)
BH03	2.00-3.00	2480967	26/03/2025	Dark brown slightly gravelly, sandy CLAY (Possible made ground - brick)
BH04	1.20-2.00	2480968	26/03/2025	Dark brown slightly gravelly, sandy CLAY (Possible made ground - brick)
BH05	1.00-2.00	2480969	26/03/2025	Dark brown slightly gravelly, sandy CLAY (Possible made ground - brick)
TP03	1.50-1.60	2480970	26/03/2025	Dark brown slightly gravelly, sandy CLAY (Possible made ground - brick)

Summary of Chemical Analysis

Soil Samples

Our Ref 25-06051

Client Ref ~ S250235

Contract Title ~ BESS Project, St Helens

Lab No	2480965	2480966	2480967	2480968	2480969	2480970
Sample ID ~	BH01	BH02	BH03	BH04	BH05	TP03
Depth ~	1.00-2.00	2.00-3.00	2.00-3.00	1.20-2.00	1.00-2.00	1.50-1.60
Other ID ~						
Sample Type ~	ES	ES	ES	ES	ES	ES
Sampling Date ~	03/03/2025	03/03/2025	03/03/2025	03/03/2025	03/03/2025	03/03/2025
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Inorganics									
pH	DETSC 2008#		pH	7.9	7.9	8.3	8.5	8.3	8.3
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	20	24	29	30	24	14

Information in Support of the Analytical Results

Our Ref 25-06051
 Client Ref ~ S250235
 Contract ~ BESS Project, St Helens

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2480965	BH01 1.00-2.00 SOIL	03/03/25	GJ 250ml, PT 1L		
2480966	BH02 2.00-3.00 SOIL	03/03/25	GJ 250ml, PT 1L		
2480967	BH03 2.00-3.00 SOIL	03/03/25	GJ 250ml, PT 1L		
2480968	BH04 1.20-2.00 SOIL	03/03/25	GJ 250ml, PT 1L		
2480969	BH05 1.00-2.00 SOIL	03/03/25	GJ 250ml, PT 1L		
2480970	TP03 1.50-1.60 SOIL	03/03/25	GJ 250ml, PT 1L		

Key: G-Glass P-Plastic J-Jar T-Tub

Normec DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETS 2002	Organic matter	%	0.1	Air Dried	No	Yes	Yes
DETS 2003	Loss on ignition	%	0.01	Air Dried	No	Yes	Yes
DETS 2008	pH	pH Units	1	Air Dried	No	Yes	Yes
DETS 2076	Sulphate Aqueous Extract as SO ₄	mg/l	10	Air Dried	No	Yes	Yes
DETS 2084	Total Organic Carbon	%	0.5	Air Dried	No	Yes	Yes
DETS 2119	Ammoniacal Nitrogen as N	mg/kg	0.5	Air Dried	No	Yes	Yes
DETS 2130	Cyanide free	mg/kg	0.1	Air Dried	No	Yes	Yes
DETS 2130	Cyanide total	mg/kg	0.1	Air Dried	No	Yes	Yes
DETS 2130	Phenol - Monohydric	mg/kg	0.3	Air Dried	No	Yes	Yes
DETS 2130	Thiocyanate	mg/kg	0.6	Air Dried	No	Yes	Yes
DETS 2301	Arsenic	mg/kg	0.2	Air Dried	No	Yes	Yes
DETS 2301	Barium	mg/kg	1.5	Air Dried	No	Yes	Yes
DETS 2301	Beryllium	mg/kg	0.2	Air Dried	No	Yes	Yes
DETS 2301	Cadmium Available	mg/kg	0.1	Air Dried	No	Yes	Yes
DETS 2301	Cadmium	mg/kg	0.1	Air Dried	No	Yes	Yes
DETS 2301	Cobalt	mg/kg	0.7	Air Dried	No	Yes	Yes
DETS 2301	Chromium	mg/kg	0.15	Air Dried	No	Yes	Yes
DETS 2301	Copper	mg/kg	0.2	Air Dried	No	Yes	Yes
DETS 2301	Manganese	mg/kg	20	Air Dried	No	Yes	Yes
DETS 2301	Molybdenum	mg/kg	0.4	Air Dried	No	Yes	Yes
DETS 2301	Nickel	mg/kg	1	Air Dried	No	Yes	Yes
DETS 2301	Lead	mg/kg	0.3	Air Dried	No	Yes	Yes
DETS 2301	Selenium	mg/kg	0.5	Air Dried	No	Yes	Yes
DETS 2301	Zinc	mg/kg	1	Air Dried	No	Yes	Yes
DETS 2311	Boron (water soluble)	mg/kg	0.2	Air Dried	No	Yes	Yes
DETS 2321	Total Sulphate as SO ₄	%	0.01	Air Dried	No	Yes	Yes
DETS 2325	Mercury	mg/kg	0.05	Air Dried	No	Yes	Yes
DETS 3049	Sulphur (free)	mg/kg	0.75	As Received	No	Yes	Yes
DETS 3072	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETS 3072	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETS 3072	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETS 3072	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETS 3072	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETS 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETS 3072	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETS 3072	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETS 3072	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETS 3072	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETS 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETS 3303	Acenaphthene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Acenaphthylene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Benzo(a)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Benzo(a)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Benzo(b)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Benzo(k)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Benzo(g,h,i)perylene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Dibenzo(a,h)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 3303	Indeno(1,2,3-c,d)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Naphthalene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Phenanthrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3311	C10-C24 Diesel Range Organics (DRO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	C24-C40 Lube Oil Range Organics (LORO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	EPH (C10-C40)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3321	Benzene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	Ethylbenzene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	Toluene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	m+p Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	o Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 28 + PCB 31	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 52	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 101	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 118	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 153	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 138	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 180	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB Total	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3521	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3521	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETSC 3521	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3521	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETSC 3521	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETSC 3521	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes

Method details are shown only for those determinands listed in Annex A of the MCERTS standard. Anything not included on this list falls outside the scope of MCERTS. No Recovery Factors are used in the determination of results. Results reported assume 100% recovery. Full method statements are available on request.

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
--------	-----------	-------	--------------------	--------------------	----------------	------	--------

Key:

~ Sample details are provided by the client and can affect the validity of the results

* -not accredited.

-MCERTS (accreditation only applies if report carries the MCERTS logo).

\$ -subcontracted.

n/s -not supplied.

I/S -insufficient sample.

U/S -unsuitable sample.

t/f -to follow.

nd -not detected.

End of Report

Certificate of Analysis

Certificate Number 25-05218

Issued: 14-Mar-25

Client SOLMEK
12 Yarm Road
Stockton On Tees
Cleveland
TS18 3NA

Our Reference 25-05218

Client Reference ~ S250235

Order No ~ SOL-9314

Contract Title ~ BESS Project, St Helens

Description 6 Soil samples.

Date Received 10-Mar-25

Date Started 10-Mar-25

Date Completed 14-Mar-25

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By



Reyhan Irfan
Operations Manager



Summary of Chemical Analysis

Matrix Descriptions

Our Ref 25-05218

Client Ref ~ S250235

Contract Title ~ BESS Project, St Helens

Sample ID	Depth	Lab No	Completed	Matrix Description
TP01	0.00-0.10	2476058	14/03/2025	Brown gravelly, sandy CLAY
TP02	0.50-0.60	2476059	14/03/2025	Brown gravelly, sandy CLAY
TP03	0.00-0.10	2476060	14/03/2025	Brown gravelly, sandy CLAY
TP04	0.00-0.10	2476061	14/03/2025	Brown gravelly, sandy CLAY
TP05	0.50-0.60	2476062	14/03/2025	Brown gravelly, sandy CLAY
TP06	1.10-1.20	2476063	14/03/2025	Brown gravelly, sandy CLAY

Summary of Chemical Analysis

Soil Samples

Our Ref 25-05218

Client Ref ~ S250235

Contract Title ~ BESS Project, St Helens

Lab No	2476058	2476059	2476060	2476061	2476062	2476063
Sample ID ~	TP01	TP02	TP03	TP04	TP05	TP06
Depth ~	0.00-0.10	0.50-0.60	0.00-0.10	0.00-0.10	0.50-0.60	1.10-1.20
Other ID ~						
Sample Type ~	D	D	D	D	D	D
Sampling Date ~	03/03/2025	03/03/2025	03/03/2025	03/03/2025	03/03/2025	03/03/2025
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Inorganics									
pH	DETSC 2008#		pH	8.6	9.1	8.0	8.3	8.2	7.2
Sulphate Aqueous Extract as SO ₄ (2:1)	DETSC 2076#	10	mg/l	24	85	27	28	30	21

Information in Support of the Analytical Results

Our Ref 25-05218
 Client Ref ~ S250235
 Contract ~ BESS Project, St Helens

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2476058	TP01 0.00-0.10 SOIL	03/03/25	PT 1L		
2476059	TP02 0.50-0.60 SOIL	03/03/25	PT 1L		
2476060	TP03 0.00-0.10 SOIL	03/03/25	PT 1L		
2476061	TP04 0.00-0.10 SOIL	03/03/25	PT 1L		
2476062	TP05 0.50-0.60 SOIL	03/03/25	PT 1L		
2476063	TP06 1.10-1.20 SOIL	03/03/25	PT 1L		

Key: P-Plastic T-Tub

Normec DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 2002	Organic matter	%	0.1	Air Dried	No	Yes	Yes
DETSC 2003	Loss on ignition	%	0.01	Air Dried	No	Yes	Yes
DETSC 2008	pH	pH Units	1	Air Dried	No	Yes	Yes
DETSC 2076	Sulphate Aqueous Extract as SO ₄	mg/l	10	Air Dried	No	Yes	Yes
DETSC 2084	Total Organic Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2119	Ammoniacal Nitrogen as N	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide free	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide total	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Phenol - Monohydric	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC 2130	Thiocyanate	mg/kg	0.6	Air Dried	No	Yes	Yes
DETSC 2301	Arsenic	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC 2301	Barium	mg/kg	1.5	Air Dried	No	Yes	Yes
DETSC 2301	Beryllium	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC 2301	Cadmium Available	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2301	Cadmium	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2301	Cobalt	mg/kg	0.7	Air Dried	No	Yes	Yes
DETSC 2301	Chromium	mg/kg	0.15	Air Dried	No	Yes	Yes
DETSC 2301	Copper	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC 2301	Manganese	mg/kg	20	Air Dried	No	Yes	Yes
DETSC 2301	Molybdenum	mg/kg	0.4	Air Dried	No	Yes	Yes
DETSC 2301	Nickel	mg/kg	1	Air Dried	No	Yes	Yes
DETSC 2301	Lead	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC 2301	Selenium	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC 2301	Zinc	mg/kg	1	Air Dried	No	Yes	Yes
DETSC 2311	Boron (water soluble)	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC 2321	Total Sulphate as SO ₄	%	0.01	Air Dried	No	Yes	Yes
DETSC 2325	Mercury	mg/kg	0.05	Air Dried	No	Yes	Yes
DETSC 3049	Sulphur (free)	mg/kg	0.75	As Received	No	Yes	Yes
DETSC 3072	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETSC 3303	Acenaphthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Acenaphthylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(b)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(k)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(g,h,i)perylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Dibenzo(a,h)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 3303	Indeno(1,2,3-c,d)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Naphthalene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Phenanthrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3311	C10-C24 Diesel Range Organics (DRO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	C24-C40 Lube Oil Range Organics (LORO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	EPH (C10-C40)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3321	Benzene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	Ethylbenzene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	Toluene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	m+p Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	o Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 28 + PCB 31	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 52	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 101	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 118	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 153	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 138	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 180	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB Total	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3521	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3521	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETSC 3521	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3521	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETSC 3521	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETSC 3521	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes

Method details are shown only for those determinands listed in Annex A of the MCERTS standard. Anything not included on this list falls outside the scope of MCERTS. No Recovery Factors are used in the determination of results. Results reported assume 100% recovery. Full method statements are available on request.

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
--------	-----------	-------	--------------------	--------------------	----------------	------	--------

Key:

~ Sample details are provided by the client and can affect the validity of the results

* -not accredited.

-MCERTS (accreditation only applies if report carries the MCERTS logo).

\$ -subcontracted.

n/s -not supplied.

I/S -insufficient sample.

U/S -unsuitable sample.

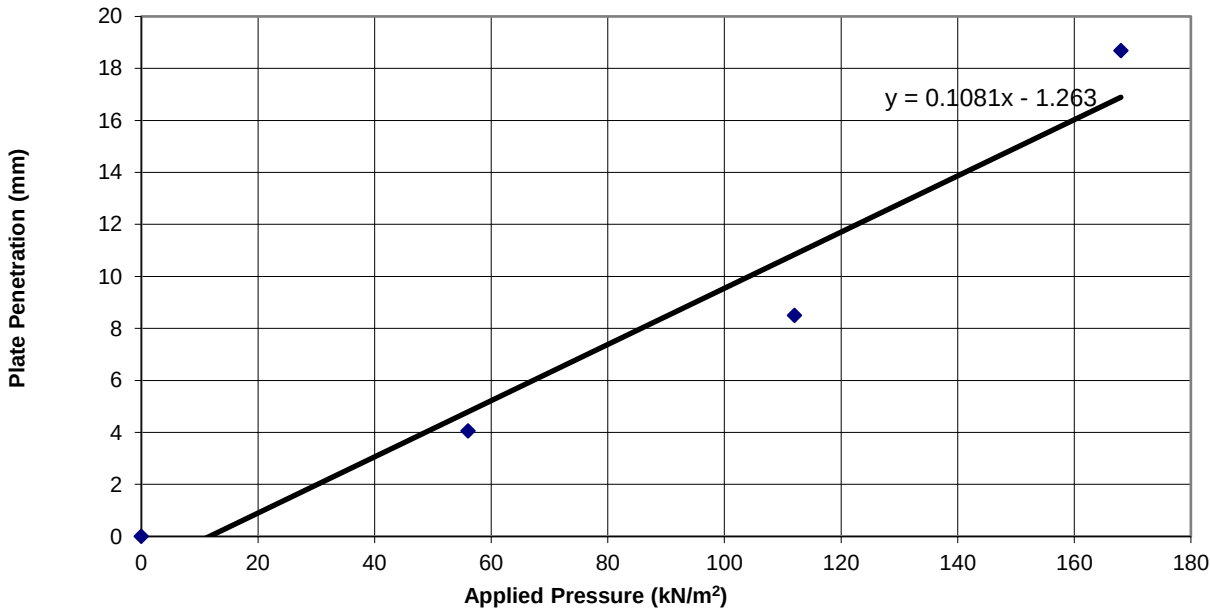
t/f -to follow.

nd -not detected.

End of Report

SOLMEK
GEOTECHNICAL TESTING LABORATORY

PLATE BEARING TEST			Date:	03.03.2025
Project Number:	S250235		Test No:	PBT 01
Project Name:	BESS Project, ST Helens		Test Level:	0.6
Test Method: BS 1377 : Part 9 : 1990 (Incremental Method)			Weather:	Cold/sunny
Plate Diameter:	0.305 m		Load Applied:	168 kPa
Kentledge Type:	8T tracked excavator		Remarks:	MADE GROUND: S-sandy gravelly silty clay

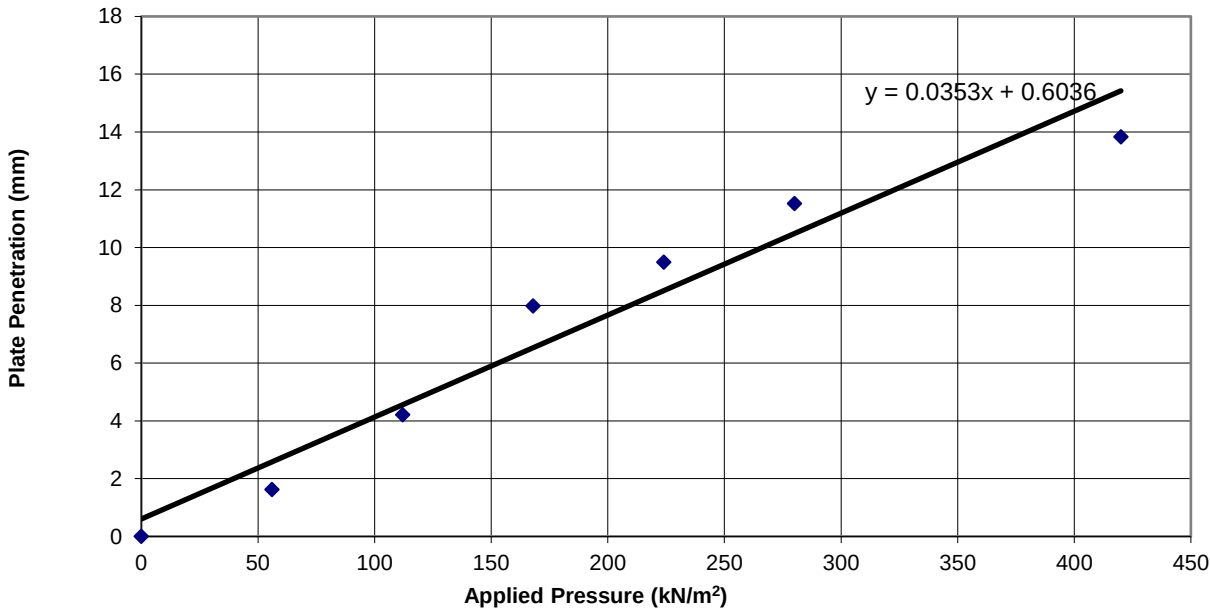


	Pressure (kN/m ²)	Plate Penetration (mm)
Initial	0	0
Stage 1	56	4.07
Stage 2	112	8.50
Stage 3	168	18.70

Conversion Factor	0.45	Produced by: 
Stress Applied @ 1.25mm	23.25 kN/m ²	
Total Plate Deflection	18.70 mm	Checked by: 
Plate Diameter	305 mm	
k305	18603	 SOLMEK
k762	8329	
CBR	0.38 %	

SOLMEK
GEOTECHNICAL TESTING LABORATORY

PLATE BEARING TEST			Date:	03.03.2025
Project Number:	S250235		Test No:	PBT 02
Project Name:	BESS Project, ST Helens		Test Level:	0.5
Test Method: BS 1377 : Part 9 : 1990 (Incremental Method)			Weather:	Cold/sunny
Plate Diameter:	0.305 m		Load Applied:	420 kPa
Kentledge Type:	8T tracked excavator		Remarks:	MADE GROUND: S-sandy gravelly silty clay

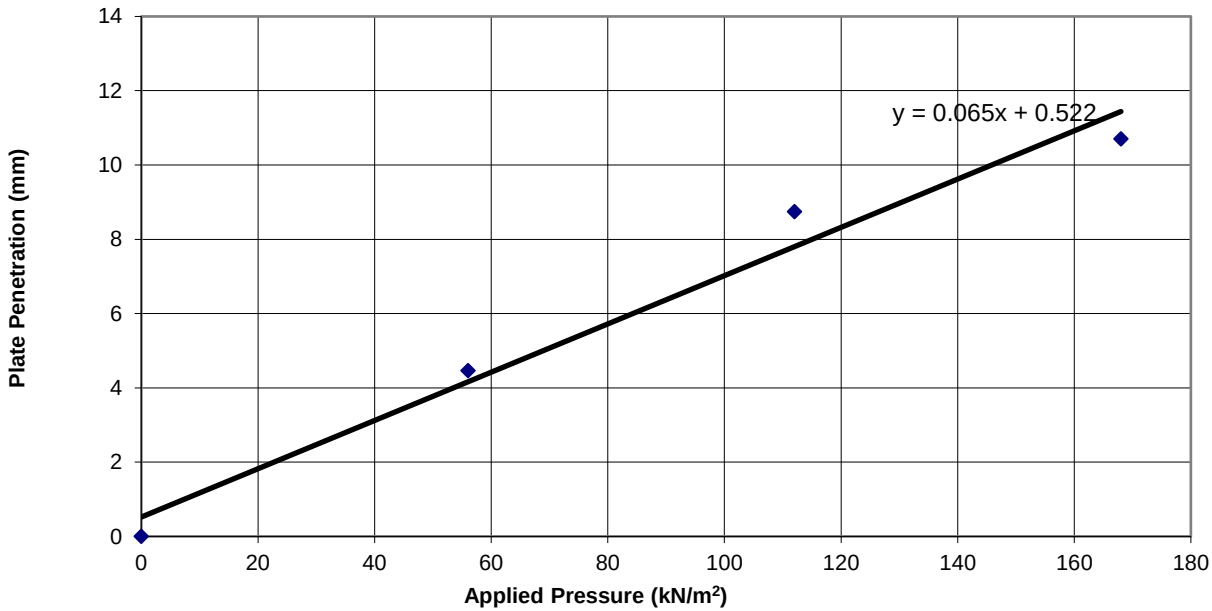


	Pressure (kN/m ²)	Plate Penetration (mm)
Initial	0	0
Stage 1	56	1.63
Stage 2	112	4.22
Stage 3	168	7.99
Stage 4	224	9.50
Stage 5	280	11.53
Stage 6	420	13.84

Conversion Factor	0.45	Produced by: 
Stress Applied @ 1.25mm	34.91 kN/m ²	
Total Plate Deflection	13.84 mm	Checked by: 
Plate Diameter	305 mm	
k305	27932	 SOLMEK
k762	12506	
CBR	0.77 %	

SOLMEK
GEOTECHNICAL TESTING LABORATORY

PLATE BEARING TEST			Date:	03.03.2025
Project Number:	S250235		Test No:	PBT 03
Project Name:	BESS Project, ST Helens		Test Level:	0.6
Test Method: BS 1377 : Part 9 : 1990 (Incremental Method)			Weather:	Cold/sunny
Plate Diameter:	0.305 m		Load Applied:	168 kPa
Kentledge Type:	8T tracked excavator		Remarks:	MADE GROUND: S-sandy gravelly silty clay

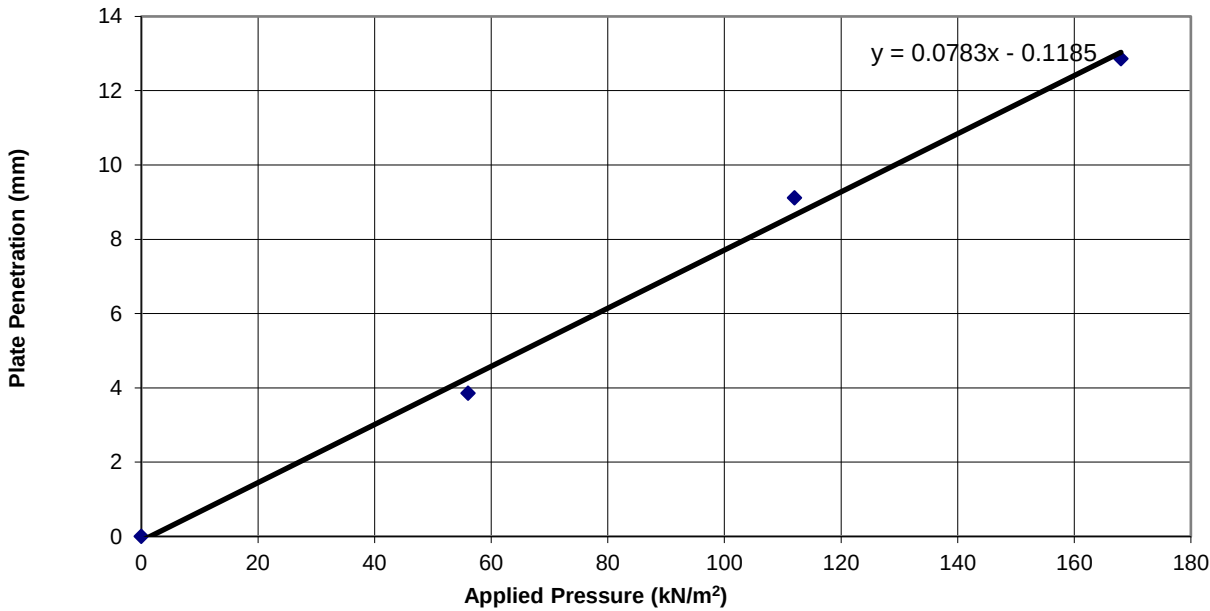


	Pressure (kN/m ²)	Plate Penetration (mm)
Initial	0	0
Stage 1	56	4.47
Stage 2	112	8.75
Stage 3	168	10.71

Conversion Factor	0.45	Produced by: 
Stress Applied @ 1.25mm	11.20 kN/m ²	
Total Plate Deflection	10.71 mm	Checked by: 
Plate Diameter	305 mm	
k305	8961	 SOLMEK
k762	4012	
CBR	0.11 %	

SOLMEK
GEOTECHNICAL TESTING LABORATORY

PLATE BEARING TEST			Date:	03.03.2025
Project Number:	S250235		Test No:	PBT 04
Project Name:	BESS Project, ST Helens		Test Level:	0.6
Test Method: BS 1377 : Part 9 : 1990 (Incremental Method)			Weather:	Cold/sunny
Plate Diameter:	0.305 m		Load Applied:	168 kPa
Kentledge Type:	8T tracked excavator		Remarks:	MADE GROUND: S-sandy gravelly silty clay

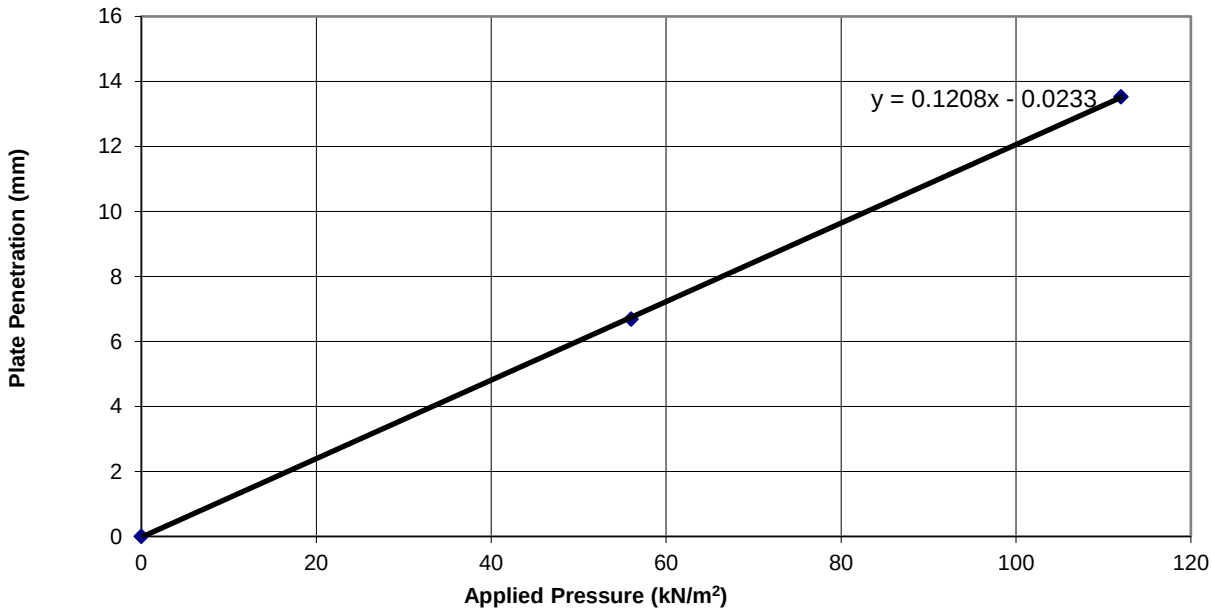


	Pressure (kN/m ²)	Plate Penetration (mm)
Initial	0	0
Stage 1	56	3.86
Stage 2	112	9.12
Stage 3	168	12.86

Conversion Factor	0.45	Produced by: 
Stress Applied @ 1.25mm	17.48 kN/m ²	
Total Plate Deflection	12.86 mm	Checked by: 
Plate Diameter	305 mm	
k305	13985	 SOLMEK
k762	6262	
CBR	0.23 %	

SOLMEK
GEOTECHNICAL TESTING LABORATORY

PLATE BEARING TEST			Date:	03.03.2025
Project Number:	S250235		Test No:	PBT 05
Project Name:	BESS Project, ST Helens		Test Level:	0.6
Test Method: BS 1377 : Part 9 : 1990 (Incremental Method)			Weather:	Cold/sunny
Plate Diameter:	0.305 m		Load Applied:	112 kPa
Kentledge Type:	8T tracked excavator		Remarks:	MADE GROUND: S-sandy gravelly silty clay

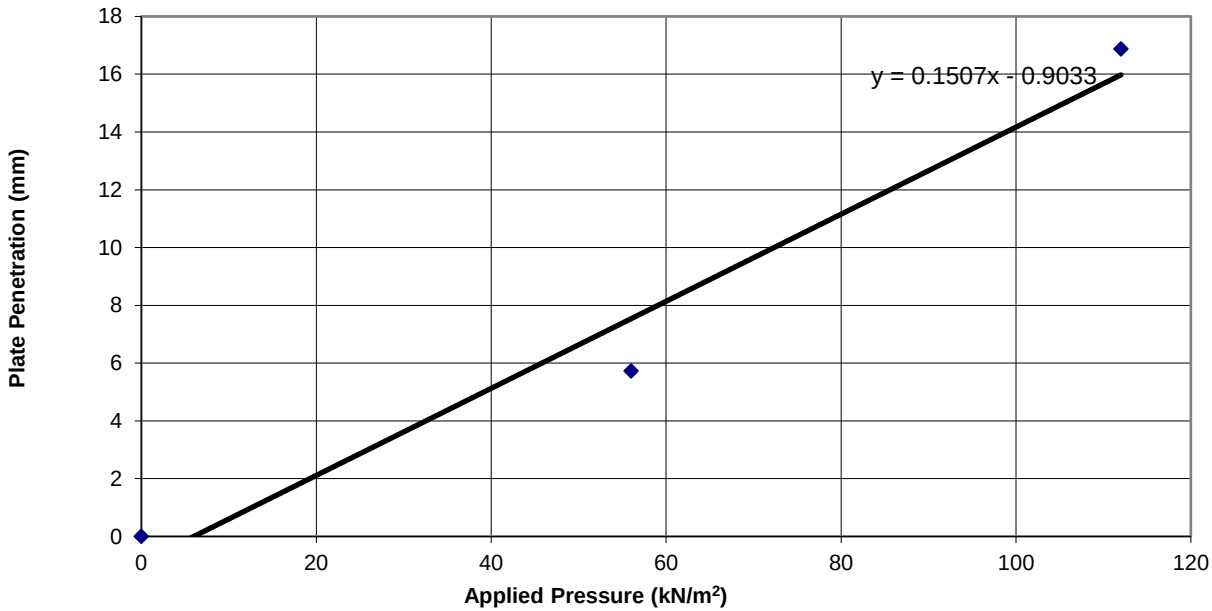


	Pressure (kN/m ²)	Plate Penetration (mm)
Initial	0	0
Stage 1	56	6.70
Stage 2	112	13.53

Conversion Factor	0.45	Produced by: 
Stress Applied @ 1.25mm	10.54 kN/m ²	
Total Plate Deflection	13.53 mm	Checked by: 
Plate Diameter	305 mm	
k305	8432	 SOLMEK
k762	3776	
CBR	0.1 %	

SOLMEK
GEOTECHNICAL TESTING LABORATORY

PLATE BEARING TEST			Date:	03.03.2025
Project Number:	S250235		Test No:	PBT 06
Project Name:	BESS Project, ST Helens		Test Level:	0.6
Test Method: BS 1377 : Part 9 : 1990 (Incremental Method)			Weather:	Cold/sunny
Plate Diameter:	0.305 m		Load Applied:	112 kPa
Kentledge Type:	8T tracked excavator		Remarks:	MADE GROUND: S-sandy gravelly silty clay



	Pressure (kN/m ²)	Plate Penetration (mm)
Initial	0	0
Stage 1	56	5.73
Stage 2	112	16.88

Conversion Factor	0.45	Produced by: 
Stress Applied @ 1.25mm	14.29 kN/m ²	
Total Plate Deflection	16.88 mm	Checked by: 
Plate Diameter	305 mm	
k305	11430	 SOLMEK
k762	5118	
CBR	0.16 %	

APPENDIX E:
Notes on Limitations & Contamination Guidance

UK BACKGROUND

Environmental Protection Act 1990: Part 2A Revised Statutory Guidance (April 2012)

This revised document explains how the Local Authority should decide if land, based on a legal interpretation, is contaminated. The document replaces the previous guidance given in Annex 3 of DEFRA Circular 01/2006, issued in accordance with section 78YA of the 1990 Environmental Protection Act.

The main objectives of the Part 2A regime are to *“identify and remove unacceptable risks to human health and the environment”* and to *“seek to ensure that contaminated land is made suitable for its current use”*.

Part 2A uses a risk based approach to defining contaminated land whereby the “risk” is interpreted as *“the likelihood that harm, or pollution of water, will occur as a result of contaminants in, on or under the land”* and by *“the scale and seriousness of such harm or pollution if it did occur”*.

For a relevant risk to exist a contaminant, pathway and receptor linkage must be present before the land can be considered to be contaminated. The document explains that *“for a risk to exist there must be contaminants present in, on or under the land in a form and quantity that poses a hazard, and one or more pathways by which they might significantly harm people, the environment, or property; or significantly pollute controlled waters.”*

A conceptual model is used to develop and communicate the risks associated with a particular site.

To determine if land is contaminated the local authority use various categories from 1 to 4. Categories 1 and 2 include *“land which is capable of being determined as contaminated land on grounds of significant possibility of significant harm to human health.”*

Categories 3 and 4 *“encompass land which is not capable of being determined on such grounds”*.

PRELIMINARY CONCEPTUAL MODEL

Preliminary Conceptual Models are undertaken in accordance with CIRIA C552. The Preliminary Conceptual Model assesses the consequence and the likelihood of a risk being realised to provide a risk classification, using the tables detailed below.

CONSEQUENCE OF RISK BEING REALISED (Based on C552 CIRIA, 2001)

Classification	Definition	Example
Severe	Short-term (acute) risk to human health, the environment, an element of the development or other aspect with is likely to result in <i>significant harm</i> , damage or both.	High concentrations of cyanide on the surface of an informal recreational area. Major spills of contaminants from site into controlled water. High concentrations of explosive gas in the subsurface environment that have a clear unobstructed pathway into buildings.
Moderate	Chronic damage to human health, a plausible chance that an event will occur, although the timeline is not immediate to be in the short-term.	Appreciable concentration of contamination that over the longer-term will cause significant harm i.e. high lead concentration in topsoil. Shallow mine workings that are potentially unstable but may remain in a satisfactory or stable conditions for a number of years.
Mild	Low level pollution of non-sensitive water, a feasible hazardous scenario although the timeline of such occurring can probably be considered in 10's of years.	The effect of high sulphate concentrations on structural concrete. Pollution of non-classified groundwater.
Minor	Harm, although not necessarily significant to human health, or with respect to other aspects of the development, which are considered implausible in terms of occurrence, or will have little consequential impact.	The presence of contaminants at such low concentrations that protective equipment is required during site works. Any damage to structures is minimal and will not be structural in characteristics.

PROBABILITY OF RISK BEING REALISED (C552 CIRIA, 2001)

Classification	Definition
High Likelihood	There is a viable pollutant linkage and an event that either appears very likely in the short term and almost inevitable over the long term, or there is evidence that the receptor has been harmed or polluted.
Likely	There is a viable pollutant linkage and all elements are present and in the right place, which means that it is probable that an event will occur. Circumstances are such that an event is not inevitable, but possible in the short term and likely over the long term.
Low Likelihood	There is a viable pollutant linkage and circumstances are possible under which an event could occur. However, it is by no means certain that even over a longer period such event would take place, and is less likely in the shorter term.
Unlikely	There is a viable pollutant linkage but circumstances are such that it is improbable that an event would occur even in the very long term.

RISK CLASSIFICATION MATRIX (C552 CIRIA, 2001)

Risk = Probability x Consequence		Consequence			
		Severe	Moderate	Mild	Minor
Probability	High likelihood	Very high risk	High risk	Moderate risk	Moderate/low risk
	Likely	High risk	Moderate risk	Moderate/low risk	Low risk
	Low likelihood	Moderate risk	Moderate/low risk	Low risk	Very low risk
	Unlikely	Moderate/low risk	Low risk	Very low risk	Very low risk

HUMAN RECEPTORS

Human exposure to contaminants present in soils can occur via several pathways. Direct exposure pathways include dermal absorption after contact with contaminated ground, inhalation of soil or dust, inhalation of volatilised compounds, and inadvertent soil ingestion (or deliberate soil ingestion in the case of some children). Other indirect pathways include human ingestion of plants grown in contaminated soil or contaminated ground or surface water. Contaminants associated with wind blown dust can affect humans on surrounding sites.

VEGETATION

Plants can be affected by soil contamination in a number of ways resulting in growth inhibition, nutrient deficiencies and yellowing of leaves. Contaminants are taken up by plants through the roots and through foliage. Contaminants identified as being highly phytotoxic include boron, cadmium, copper, lead, nickel, and zinc.

To establish if the levels of contaminants present on a site may pose a risk to vegetation the results of the contamination testing are compared to a series of threshold values published in 'Code of Good Agricultural Practice for the Protection of Soil'.

GROUNDWATER AND SURFACE WATER RECEPTORS

The principal pathway by which soil contamination may reach the water environment is through a slow seepage or leaching to groundwater or surface water. The potential for contaminants to migrate along such pathways is dependent on the chemical and physical characteristics of the contaminants and the local hydrogeology. Surface watercourses may also accumulate contamination as contaminated sediments are deposited within the water body.

Where the site investigated overlies major/principal aquifers (and in some cases minor/secondary aquifers depending on certain conditions), groundwater Source Protection Zones and areas in close proximity to groundwater abstractions, contamination test results have been compared with the Water Supply (Water Quality) Regulations 1989 and The Water Supply (Water Quality) Regulations 2000.

Should a surface water receptor, such as a fresh water environment (river, canal, stream, lake etc), or marine environment be considered sensitive in relation to a site, then test results are compared with DEFRA & SEPA Environmental Quality Standards (2004). Many of the Environmental Quality Standards are hardness (CaCO_3) depended. Where no hardness values are available, Solmek assume conservative values (of between 0 and 50mg/l).

In the absence of vulnerable ground and surface water environments, Solmek may compare any test results with the Environment Agency Leachate Quality Threshold Values.

DETAILED QUANTITATIVE RISK ASSESSMENT (DQRA)

In line with Environment Agency's guidance document Environment Agency *Land Contamination Risk Management*, which replaced the now-withdrawn *Contaminated Land Report 11 – Model Procedures for the Management of Land Contamination (2004)*, a DQRA for groundwater/human health may be required following a Phase 2 investigation and before the preparation of a Phase 3 Remediation Strategy. For human health DQRA, a site specific assessment criteria is undertaken using CLEA Software Version 1.06. For groundwater DQRA, the Environment Agency Remedial Targets Worksheet Version 3.1 is used.

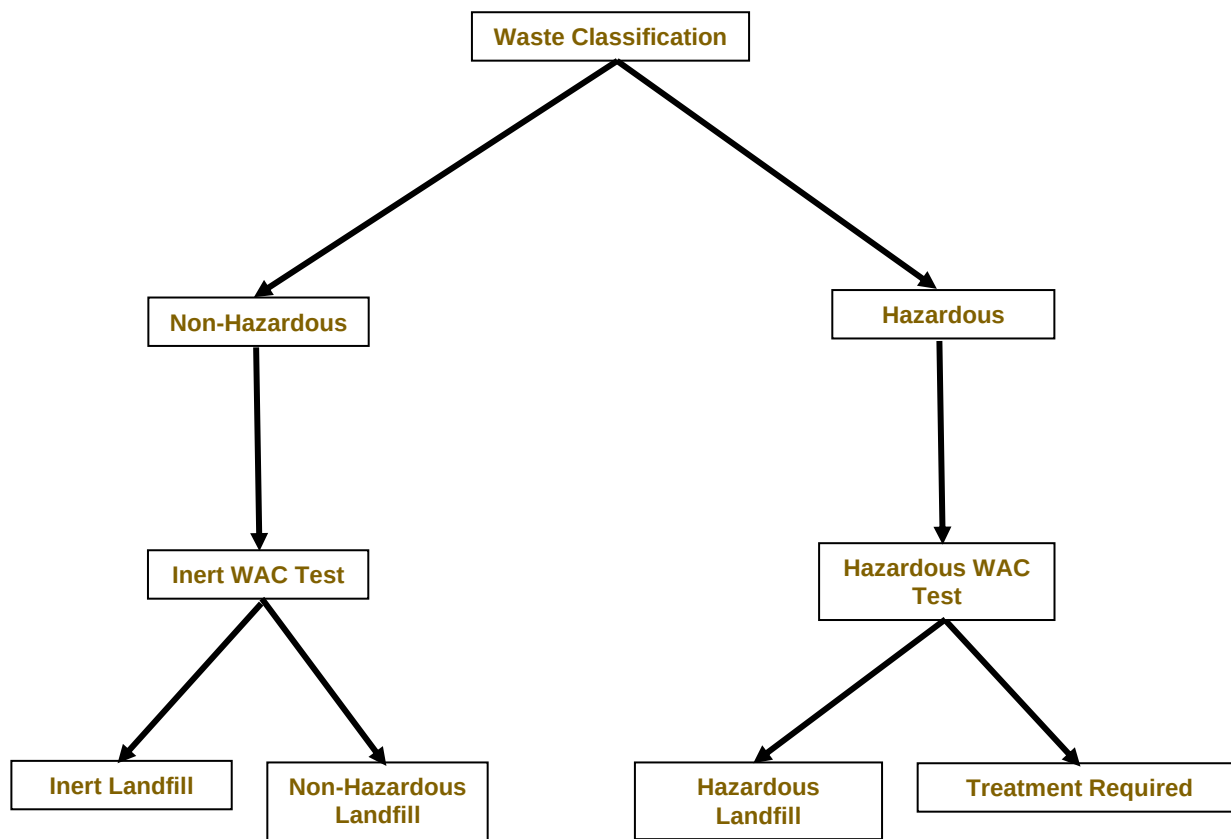
WASTE CLASSIFICATION AND WASTE ACCEPTANCE CRITERIA

During the site strip and construction activities, material may be required to be removed from site. Any such material would require classification, in line with Environment Agency Technical Guidance *Waste Classification: Guidance on the classification and assessment of waste (2015)*. This would classify the material as either Non-Hazardous or Hazardous Waste.

Once the material has been classified, determining the suitable landfill for disposal is governed by landfill directive Waste Acceptance Criteria (WAC) testing, with landfills categorized as Inert Waste, Stable Non-Reactive Hazardous Waste and Hazardous Waste. The WAC testing relates to materials that are to be exported from a site/development to landfill, and do not directly relate to human health specifically. The testing results are generally presented as certificates which can be used by site owners/contractors etc, which should be presented to the accepting waste facility or waste contractor.

If waste classification and/or WAC testing are not undertaken, material taken off site may be subject to WAC testing by the appropriate waste disposal company. The decision on whether or not to accept waste, or whether further testing is required, is at the discretion of the waste disposal company.

The below flow chart provides further information on the waste classification process.



CONSTRUCTION MATERIALS

Materials at risk from possible soil contaminants include inorganic matrices such as cement and concrete and also organic material such as plastics and rubbers. Acid ground conditions and high levels of sulphates can accelerate the corrosion of building materials. Where pH and soluble sulphate analysis has been undertaken, Solmek compare the test results with the guidelines presented within BRE Special Digest 1, 2005 (3rd Edition) 'Concrete in Aggressive Ground'. Plastics and rubbers are generally used for piping and service ducts and are potentially attacked by a range of chemicals, most of which are organic, particularly petroleum based substances. Drinking water supplies can be tainted by substances that can penetrate piping and water companies enforce stringent threshold values.

The levels of potential contaminants should be compared to thresholds supplied in the UK Water Industry Research (UKWIR) publication "Guidance for the selection of Water Supply Pipes to be used in Brownfield Sites" (January 2011). A Brownfield Site is defined in the document as "Land or premises that have not previously been used or developed that may be vacant or derelict". It should be noted that Brownfield sites may not be contaminated. The guidance does not apply to Greenfield Sites however water companies may have their own assessment criteria which should be checked by the developer. The table below outlines the pipe material selection threshold concentrations.

Parameter group	Pipe Material (Threshold concentrations in mg/kg)					
	PE	PVC	Barrier pipe (PE-AL-PE)	Wrapped Steel	Wrapped Ductile Iron	Copper
Extended VOC suite by purge and trap or head space and GC-MS with TIC	0.5	0.125	Pass	Pass	Pass	Pass
+ BTEX + MTBE	0.1	0.03	Pass	Pass	Pass	Pass
SVOCs TIC by purge and trap or head space and GC-MS with TIC (aliphatic and aromatic C5-C10)	2	1.4	Pass	Pass	Pass	Pass
+ Phenols	2	0.4	Pass	Pass	Pass	Pass
+ Cresols and chlorinated phenols	2	0.04	Pass	Pass	Pass	Pass
Mineral oil C11-C20	10	Pass	Pass	Pass	Pass	Pass
Mineral oil C21-C40	500	Pass	Pass	Pass	Pass	Pass
Corrosive (Conductivity, Redox and pH)	Pass	Pass	Pass	Corrosive if pH <7 and conductivity >400µS/cm	Corrosive if pH <5, Eh not neutral and conductivity >400µS/cm	Corrosive if pH <5 or >8 and Eh positive
Specific suite identified as relevant following site investigation						
Ethers	0.5	1	Pass	Pass	Pass	Pass
Nitrobenzene	0.5	0.4	Pass	Pass	Pass	Pass
Ketones	0.5	0.02	Pass	Pass	Pass	Pass
Aldehydes	0.5	0.02	Pass	Pass	Pass	Pass
Amines	Fail	Pass	Pass	Pass	Pass	Pass

REQUIREMENTS OF PARTIES WITHIN THE DEVELOPMENT PROCESS

Interested parties involved in the development process may use the data in different ways and there may be varying views and interpretation of the factual data. Local Authority staff may have a view on contamination and human health and the wider environment. The Environment Agency are concerned principally with the protection of Controlled waters. Building insurers, funders and purchasers may be primarily concerned with issues of potential commercial blight. Purchasers are also not always fully informed, and perceptions on issues associated with risk can affect the decision to purchase. Developers and construction organisations will focus on financial aspects of dealing with the contamination in the context of the development and construction programme.

RISKS & LIABILITIES FROM CONTAMINATION

In simple terms, risks associated with contamination may be considered in terms of 1) statutory risks and 2) development related risks. If contamination is severe or forms a potential hazard based on its potential to affect groundwater, surface water or human health, a statutory risk may be present, and as such, if the risk is not reduced, criminal proceedings may be instigated by a government body or local authority.

If the contamination is less severe or not considered to be mobile, it may be considered a commercial liability which could, in theory remain untreated, but which may at a later date affect the value of the property, or, with changing legislation, become a statutory risk. Commercial liabilities could give rise to civil proceedings by third parties if there are grounds for action.

♣Solmek conditions of offer, notes on limitations & basis for contract (ref: version1/2025)

These conditions accompany our tender and supercede any previous conditions issued. Solmek will prepare a report solely for the use of the Client (the party invoiced) and its agent(s). No reliance should be placed on the contents of this report, in whole or in part by 3rd parties. The report, its content and format and associated data are copyright, and the property of Solmek. Photocopying of part or all of the contents, transfer or reproduction of any kind is forbidden without written permission from Solmek. A charge may be levied against such approval, the same to be made at the discretion of Solmek.

Solmek cannot be held liable and do not warrant, or otherwise guarantee the validity of information provided by third parties and subsequently used in our reports. Solmek are not responsible for the action negligent of otherwise of subcontractors or third parties.

Site investigation is a process of sampling. The scope and size of an investigation may be considered proportional to levels of confidence regarding the ground and groundwater conditions. The exploratory holes undertaken investigate only a small volume of the ground in relation to the overall size of the site, and can only provide a general indication of site conditions. The opinions provided and recommendations given in this report are based on the ground conditions as encountered within each of the exploratory holes. There may be different ground conditions elsewhere on the site which have not been identified by this investigation and which therefore have not been taken into account in this report. Reports are generally subject to the comments of the local authority and Environment Agency. The comments made on groundwater conditions are based on observations made at the time that site work was carried out. It should be noted that mobile contamination, ground gas levels and groundwater levels may vary owing to seasonal, tidal and/or weather related effects. Solmek cannot be held liable for any unrecorded or unforeseen obstructions between exploratory boreholes and trial pits. This includes instances where previous structures on the site (buried man made structures) or the presence of boulder clay (cobbles and/or boulder obstructions) have been anticipated. All types of piling operations should make allowance for obstructions within the construction budget to accommodate this. Unrecorded ancient mining may occur anywhere where seams that have been worked and influence the rock and soil above. Dissolution cavities can occur where gypsum or chalk is present. Rotary drilling is the recommended technique to prove the integrity of the rock.

Where the scope of the investigation is limited via access to information, time constraints, equipment limitations, testing, interpretation or by the client or his agents budgetary constraints, elements not set out in the proposal and excluded from the report are deemed to be omitted from the scope of the investigation.

Desk studies are generally prepared in accordance with RICS guidelines. Environmental site investigations are generally undertaken as 'exploratory investigations' in accordance with the definitions provided in paragraph 5.4 of BS 10175:2011 in order to confirm the conceptual assumptions. You are advised to familiarize yourself with the typical scope of such an investigation. No pumping of water will be undertaken unless a licence or facilities/equipment have been arranged by others.

Where the type, number or/and depth of exploratory hole is specified by others, Solmek cannot and will not be responsible for any subsequent shortfall or inadequacy in data, and any consequent shortfall in interpretation of environmental and geotechnical aspects which may be required at a later date in order to facilitate the design of permanent or temporary works.

All information acquired by Solmek in the course of investigation is the property of Solmek, and, only also becomes the joint property of the Client only on the complete settlement of all invoices relating to the project. Solmek reserve the right to use the information in commercial tendering and marketing, unless the Client expressly wishes otherwise in writing. The quoted rates do not include VAT, and payment terms are 30 days from dispatch of invoice from our offices. Quotes are subject to a site visit.

We have allowed for 1 mobilisation and normal working hours unless otherwise stated. The scope of the investigation may be reviewed following the desk study and/or fieldwork. The presence or otherwise of Japanese Knotweed or other invasive plants can be difficult to identify especially during winter months. If Japanese Knotweed or other invasive species are suspect, it should be confirmed by an ecologist. We have not allowed for acquiring services information, and cannot be responsible for damage to underground services or pipes not shown to us or not clearly shown on plans. Costs incurred will be passed on to you, and in commissioning Solmek you understand and accept that you/your agent have a contractual relationship with Solmek & you accept this. Our rates assume unobstructed, reasonably level and firm access to the exploratory positions and adequate clear working areas and headroom. We have priced on the basis that you or your client have the necessary permissions, wayleaves and approvals to access land. All boreholes and pits are backfilled with arisings except where gas monitoring pipes are installed with stopcock covers. Solmek are not responsible for any uneven surfaces as a result of siteworks and rutting and backfilled excavations may require re-levelling and/or making good by others after fieldwork is complete, and Solmek has not allowed for this. No price has been provided or requested for a return visit to remove pipework and covers. Hourly rates apply to consultancy only and do not include expenses unless otherwise shown. If warranties are required, legal costs incurred will be passed on to you assuming Solmek agree to complete such warranties, modified or otherwise and you understand and agree to pay all costs.

We reserve the right to pursue full payment of the invoice prior to release of any information including reports. We advise you/your client that we may elect to pursue our statutory rights under late payment legislation, and will apply 8% to the base rate for unreasonably late payments. Solmek are exempt from the CIS Scheme. Solmek offer to undertake work only in strict accordance with conditions covered by our current insurances, which are available for inspection. Solmek are not responsible for acts, negligent or otherwise of subcontractors and as a matter of policy cannot indemnify any other parties. Professional indemnity Insurance is limited to ten times the invoice net total except where stated otherwise by Solmek. Solmek give notice that consequential loss as a direct or indirect result of Solmek's activities or omission of the same are excluded.