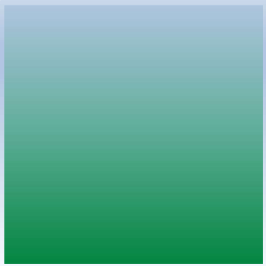
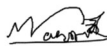

VHE Construction Plc
Final Ground Investigation
Factual Report:
The Seam, Barnsley

Client: Willmott Dixon



September 2024

Document Issue:

	Prepared by	Reviewed by	Approved by
Name:	Carl Lacey	Hassan Masoum	Hassan Masoum
Signed:			
Date:	06/09/2024	06/09/2024	06/09/2024

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Distribution

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1. Introduction

1.1. Report Objectives and Brief

Willmott Dixon (the Client) appointed VHE Construction Plc (VHE) as Principal Contractor to undertake intrusive ground investigation works at The Seam, Barnsley (the site). The purpose of the investigation is to gain information on the existing ground conditions for the design of remedial works and potential future new car park and residential development.

The works were carried out under the supervision of Fairhurst (the Consultant) whom provided the ground investigation specification. VHE were directly tasked with the machine and hand excavated trial pit and plate load testing elements of the specification whilst Solmek Ltd (sub-contractor) were responsible for the boreholes and soakaway testing.

All ground investigation works have been carried out in accordance with the specification and the general requirements of SB5930:2015+A1:2020.

The main objectives of this report are:

- To detail the works undertaken by VHE.
- To provide verification that the works have been undertaken in accordance with the relevant specifications.
- To provide the results of the ground conditions encountered.
- To provide results of testing including in situ, geotechnical and geoenvironmental.
- To provide verification that the site, post-works, has been left in a suitable state for its continued use as a car park.

1.2. Limitations

The information provided within this report and the opinions expressed are based on ground conditions encountered during the works by VHE, and on the results of laboratory and in-situ testing. The findings of Solmek's investigation works is provided in Appendix A. It may be that ground and groundwater conditions at the site may differ between exploratory hole locations.

1.3. Involved Parties

The key parties involved in the works are provided in Table 1 below.

Table 1. Involved Parties

Company & Registered Address	Association with Works
Willmott Dixon Unit 12, Cliffe Park, Bruntcliffe Road, Morley, Leeds, LS27 0RY	Client

Company & Registered Address	Association with Works
Fairhurst 1 Arngrove Court, Barrack Road, Newcastle upon Tyne, NE4 6DB	Consultant
VHE Construction Plc. 6 Newton Business Centre, Chapeltown, Sheffield, S35 2PH	Principal Contractor
Solmek Ltd. 12-16 Yarm Road, Stockton-on-Tees, TS18 3NA	Sub-Contractor
i2 Analytical Ltd. Unit 8, Delta Court, 2 nd Avenue, Auckley, Doncaster DN9 3GN	Chemical Laboratory
Chemtech Environmental Ltd. Unit 6 Parkhead, Greencroft Industrial Park, Stanley, County Durham, DH9 7YB	Chemical Laboratory
Murray Rix Ltd. Andrew House, Hadfield Street, Dukinfield SK16 4QX	Geotechnical Laboratory

2. Background

2.1. Site Description and Location

The site is accessed via northern and southern access roads off County Way, in the northern portion of Barnsley Town Centre, summarised in Table 2. A site location plan is shown in **Appendix B**.

Table 2. Site Location Details

Site Address	The Seam Lower Car Park, Off County Way, Barnsley, S70 2EQ
National Grid Reference	434642, 406729

The site is presently a surfaced car park owned by Barnsley Town Council and covers approximately 1.68 hectares. It is irregular shaped, though elongated north to west. It has a maximum north to south length of 300m and a maximum east to west width of 75m. The site is bound to the north by open vegetated ground beside Old Mill Lane. To the east is a railway line in the northern portion and Eldston Street in the southern portion. To the south the site comes to a point at the junction of Regent Street and Eldson Street, beyond which is Barnsley Railway Station and Bus Station. To the west is The Seam Upper Car Park which is approximately 6m higher in elevation compared with the site and the two are separated by a historic arched retaining wall in the centre of the site and a steep slope further north. However, to the west of the far south of the site is the Digital Media Centre and The Courthouse Pub.

2.2. Geology

British Geological Survey information indicates that there is no information on superficial deposits at the site. The solid geology is indicated to be Kents Rock across the majority of the site which is described as sedimentary sandstone bedrock that formed between 318 and 315.2 million years ago during the Carboniferous Period. However, a band of Pennine Middle Coal Measures is shown through the middle of the site in a north east to south west orientation. This is described as mudstone, siltstone and sandstone sedimentary bedrock that formed 318 to 309.5 million years ago also during the Carboniferous Period.

3. Scope of Works

To ensure compliance with the design, the works were undertaken in accordance with the sections of the following specification documents that are relevant to VHEs scope of works:

- Fairhurst The Seam Ground Investigation Specification and Contract Document, DID/159592/08 (Dated 31/05/2024)
- Fairhurst The Seam Ground Investigation Specification Schedule 2, Issue 2, DID/159592/08 (Dated 12/07/2024)
- Fairhurst Standard Ground Investigation Contract Document, DID/159592/08 (Dated 30/04/2020)

The ground investigation comprised the following:

- 26no Machine excavated trial pits (TP101 to TP126)
- 12no Hand dug trail pits (HP101 to HP112)
- 5no Hand/machine excavated foundation inspection pits along the base of the historic arched wall along the central western boundary (FP 101 to FP105)
- 27no Plate load tests (PL101 to PL109 – 3no at each location)
- 4no weekly ground gas and groundwater monitoring visits

4. Site Works

4.1. General

The ground investigation site works took place between 16th of July 2024 and 5th of August 2024. This was followed by 4no weekly ground gas and groundwater monitoring visits from 3rd September to 26th September. Each exploratory hole location was marked out before the tarmac was cut using a floor saw by a third party sub-contractor. An exploratory hole location plan can be found in Appendix C. Prior to the ground investigation works starting, a Ground Penetrating Radar (GPR) survey was undertaken to determine the locations of underground services. The exploratory hole locations were then selected by Fairhurst using the information found from this. However, in accordance with the Risk Assessment and Method Statement, a Cable Avoidance Tool (CAT Scanner) and Generator (where required) were used at each location before breaking ground. The tarmac was then peckered using a wheeled JCB 3CX and the tarmac moved to stockpile. The hand dug trial pits were excavated using insulated digging tools. The logs can be found in Appendix D and contain detailed descriptions of the soils encountered, details of samples taken, visible contamination, groundwater, and any in situ testing. Photographs of each exploratory hole are shown in Appendix E.

4.2. Machine Excavated Trial Pits

The trial pits were excavated using a wheeled JCB 3CX to a maximum depth of 3.1m bgl. Chemical and geotechnical samples were taken at regular intervals in accordance with the specification and in situ hand shear vane testing was carried out where cohesive material was encountered.

4.3. Hand Excavated Trial Pits

The hand pits were excavated manually using insulated digging tools to a maximum depth of 1.2m bgl. Chemical and geotechnical samples were taken at regular intervals and In situ hand shear vane testing was carried out where cohesive material was encountered.

4.4. Foundation Inspection Pits

The foundation inspection pits were excavated using insulated digging tools and, for some, with the use of a JCB 3CX to aid achieving finding the base of the wall structure.

4.5. Vacuum Excavated Service Inspection Pits

These were excavated using a third party sub-contracted vacuum excavator to confirm, or not, the locations of underground services that were identified or suspected to be present from the GPR survey.

4.6. Plate Load Tests

In-situ plate load tests were carried out immediately below tarmac, at 0.5m bgl and at 0.75m bgl each location.

5. Summary of findings

5.1. Exploratory Holes

The ground conditions found within the machine excavated trial pits and hand dug pits generally comprised tarmac between 0.04m and 0.45m thick (average 0.13m thick) and comprising up to three layers (likely including a binder course). However, in hand pits completed in soft landscaped areas (HP106, HP108 and HP110), loamy topsoil with anthropogenic material was found from the surface. Below the tarmac across the car park area is limestone or occasionally sandstone and brick fragments sub-base with a minimum thickness of 0.02m and a maximum thickness of 0.53m (average 0.23m thick). Generally, below this is a light weight, black, sometimes brown, ashy sand with frequent industrial waste material including clinker, slag, coal and brick fragments, and often with sandstone and/or mudstone gravel. However, in some locations other made ground material including sand with gravel up to boulder size of sandstone and also brick and concrete can be found above, and sometimes below, the black ashy material. Generally, below made ground that contains obvious anthropogenic material is brown, sometimes grey, gravelly sand or sandy gravel of sandstone and/or mudstone with occasional coal. This is interpreted as possibly reworked natural material. Clay was rarely encountered but where it was it was found to be variable in strength but soft or firm more often than not. Trial pits that were completed in the south west of the site encountered Pennine Middle Coal Measures below any made ground, and shallow bedrock. In TP123 in-tact coal was found between 1.05m bgl and 1.90m bgl and coal was found as a gravel component and in pockets across the site. Finally, demolition material was found in TP108 and comprised bricks, brick fragments, metal, slate and sandstone between 0.2m bgl and 0.8m bgl.

In terms of visual or olfactory contamination, the black ashy material sometimes presented a hydrocarbon odour and given the gravel content often containing presumed foundry waste would suggest contaminants are present in this material. The only gross contamination encountered was in TP102 where free phase hydrocarbon seepage was noted at 0.65m bgl. However, due to pit access constraints and the risk of collapse,

this could not be sampled. In the south eastern portion of the site, below sub-base or topsoil, a sandstone cobble pavement is present which was found to be bound by tar at its base in some locations.

For the foundation inspection pits, no obvious foundations were encountered at any location. Instead, the wall and arch structures continued below ground level with a slight curve away, or steps out, from the above ground portion of the wall. Thereby appearing that the wall and arch structures thicken towards the base to provide support to the structure. The base of the structure was found in FP102 at 3.70m bgl, and in FP104 at 2.6m bgl. The base of structure was not proven in FP101 (inspection pit termination depth at 3.8m bgl), FP103 (inspection pit termination depth at 3.9m bgl), and FP105 (shallow refusal). This indicates that the wall structure continues to at least these depth below ground level. Sketches of each foundation inspection pit are shown in Appendix F.

6. Chemical Results

All chemical test results can be found in Appendix G.

7. Geotechnical Testing Results

All Geotechnical testing results can be found in Appendix H.

7.1. Plate Load Tests

The results of these tests can be found in Appendix I and are summarised in Table 3 below.

Table 3. Summary of Plate Load Test Results.

Location	Depth		
	Top of Sub-base	0.5m bgl	0.75m bgl
PL 101	21.8	2.4	7.4
PL 102	8.6	4.1	7.3
PL 103	9.9	8.0	5.7
PL 104	4.9	1.2	1.2
PL 105	6.3	0.8	1.1
PL 106	4.1	1.2	0.9
PL 107	12.6	9.3	6.6
PL 108	12.8	5.4	4.1
PL 109	7.9	9.7	2.0

The material on which the plate load tests were carried out are shown in Table 4 below.

Table 4. Plate Load Test Material

Location	Depth (m bgl)	Material Description
PL 101	Top of sub-base	MADE GROUND: Cream, sandy, medium to cobbles, angular and sub-angular limestone GRAVEL sub-base.
	0.5	MADE GROUND: Brown and grey, sandy, fine to cobbles, angular to sub-rounded sandstone GRAVEL.
	0.75	MADE GROUND: Brown and grey, sandy, clayey, fine to cobbles, angular to sub-rounded sandstone GRAVEL.
	Top of sub-base	MADE GROUND: White, sandy, medium and coarse, angular and sub-angular limestone GRAVEL sub-base.

PL 102	0.5	MADE GROUND: White, sandy, medium and coarse, angular and sub-angular limestone GRAVEL sub-base.
	0.75	MADE GROUND: Grey and brown, gravelly SAND. Gravel is fine to cobbles, angular and sub-angular sandstone, coal and mudstone.
PL103	Top of sub-base	MADE GROUND: White, sandy, medium and coarse, angular and sub-angular limestone GRAVEL sub-base.
	0.5	MADE GROUND: Black and grey, gravelly SAND. Gravel is fine to coarse, angular and sub-angular coal, sandstone, slag and mudstone.
	0.75	MADE GROUND: Black and grey, gravelly SAND. Gravel is fine to coarse, angular and sub-angular coal, sandstone, slag and mudstone.
PL104	Top of sub-base	MADE GROUND: White and brown, sandy, medium and coarse, angular and sub-angular limestone GRAVEL sub-base.
	0.5	MADE GROUND: Brown, gravelly SAND. Gravel is fine to cobbles, angular and sub-angular sandstone, and occasional brick.
	0.75	MADE GROUND: Brown, gravelly SAND. Gravel is fine to cobbles, angular and sub-angular sandstone, and mudstone.
PL105	Top of sub-base	MADE GROUND: White, sandy, medium and coarse, angular and sub-angular limestone GRAVEL sub-base.
	0.5	MADE GROUND: Black and grey, clayey, sandy, fine to coarse, angular to sub-rounded sandstone, coal, mudstone and brick,
	0.75	MADE GROUND: Black and grey, very clayey, slightly sandy, fine to coarse, angular to sub-rounded sandstone, coal, and mudstone.
PL106	Top of sub-base	MADE GROUND: White/cream, slightly sandy, medium and coarse, angular and sub-angular limestone GRAVEL sub-base.
	0.5	MADE GROUND: Brown, sandy, fine to cobbles, angular and sub-angular sandstone and occasional coal GRAVEL.
	0.75	MADE GROUND: Brown, clayey, fine to coarse, angular and sub-angular sandstone and occasional coal GRAVEL.
PL107	Top of sub-base	MADE GROUND: Yellow, slightly sandy, medium and coarse, angular and sub-angular limestone GRAVEL sub-base.
	0.5	MADE GROUND: Black gravelly SAND. Gravel is fine to coarse, angular and sub-angular coal, sandstone, and slag.
	0.75	MADE GROUND: Brown, sandy, fine to coarse, angular and sub-angular sandstone, mudstone and coal GRAVEL.
PL108	Top of sub-base	MADE GROUND: Brownish yellow, sandy, medium and coarse, angular and sub-angular limestone, sandstone and brick GRAVEL sub-base.
	0.5	MADE GROUND: Black gravelly SAND. Gravel is fine to coarse, angular and sub-angular coal, sandstone, and slag.
	0.75	MADE GROUND: Brown, sandy, fine to coarse, angular and sub-angular sandstone, mudstone and occasional coal GRAVEL.
PL109	Top of sub-base	MADE GROUND: Yellowish white, sandy, medium and coarse, angular and sub-angular limestone, sandstone and brick GRAVEL sub-base.
	0.5	MADE GROUND: Brown and black, slightly clayey SAND, Gravel is fine to coarse, angular and sub-angular sandstone, mudstone and coal.
	0.75	MADE GROUND: Brown, sandy, fine to coarse, angular and sub-angular sandstone, mudstone and coal GRAVEL.

8. Post Works Ground Water and Gas Monitoring

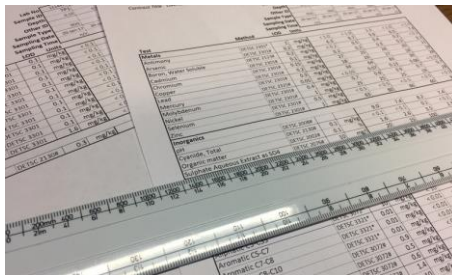
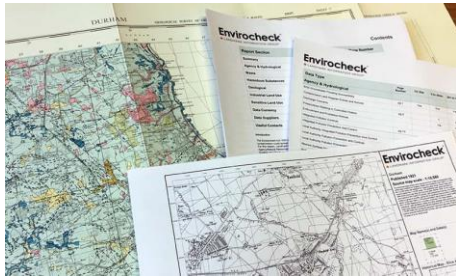
Ground water and ground gas monitoring was undertaken weekly over four weeks. Groundwater was encountered in three of the boreholes (BH102, WS107 and WS109). Water samples were collected from these on the 12 September and tested for a suite of contaminants. The results of water testing is included in Appendix G. Ground Gas measurements were taken on each visit and the results of these can be found in Appendix J.

9. Final Site Conditions

All exploratory hole locations were backfilled with arisings and new tarmac was placed at the surface as reinstatement. Following completion of the ground investigation works, the original tarmac that was stockpiled, and any arisings that did not go back into the ground were removed from the site.

Appendix A

Solmek Factual Ground Investigation Report



Factual Site Investigation

The Seam, Barnsley

Willmott Dixon Construction

S240526

Solmek Ltd

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

www.solmek.com

info@solmek.com



FACTUAL SITE INVESTIGATION REPORT

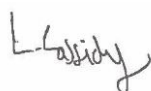
THE SEAM, BARNSELEY

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3	GROUND GAS/WATER MONITORING	4
4	GEOTECHNICAL TESTING	5
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APPENDICES

Appendix A:	Drawings
Appendix B:	Borehole & Trial Pit Logs
Appendix C:	Dynamic Cone Penetrometer & Soakaway Tests
Appendix D:	Notes on Limitations

Revision	Date	Prepared By	Signed
Final	August 2024	L Cassidy <i>Principal Environmental Engineer</i>	
		Checked By	
		L Richards <i>Regional Manager</i>	
		Approved By	
		R Woods <i>Managing Director</i>	

1 INTRODUCTION

1.1 Authorisation

The site investigation described in this report was carried out by Solmek to the instructions of Fairhurst, on behalf of Willmott Dixon Construction, on land at The Seam, Barnsley. A site location plan is presented as Figure 1 in Appendix A.

1.2 Scope of Works

The site is expected to be developed with a new car park

A geotechnical and environmental investigation was requested. Laboratory testing and subsequent monitoring visits are outside the scope of this report. The type and position of exploratory positions and the scope and nature of testing were all determined by Fairhurst.

The fieldwork and testing was generally carried out according to the recommendations of BS5930:2015+A1:2020 “Code of Practice for Ground Investigations” and where applicable BS EN 1997-2:2007 with soil descriptions to BS EN 14688-1:2013 where applicable. 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.

2 SITE DESCRIPTION AND FIELDWORK

The site is located at 434637, 406734 and is approximately 1.44Ha. The site is irregularly shaped and is generally flat.

The site is undeveloped, consisting generally of a tarmac surface, utilised as a carpark.

The site is bound to the west and south by commercial premises, with a railway line present to the east.

2.1 Fieldwork

The fieldwork commenced on 22nd July 2024. The extent of the investigation was:

- 6no cable percussive with rotary follow-on boreholes (BH101-BH106) to a maximum depth of 22.50mbgl.
 - The borehole locations and depths were specified by Fairhurst.
 - BH101-105 were cored to termination depths whilst bH106 was cored to 7.10mbgl before continuing via openhole methods.
- 12no small percussive boreholes (WS101-WS110 including WS106A & WS106B) to a maximum depth of 5.00mbgl
- Gas monitoring wells were installed within BH104, BH105, WS102, WS105, WS107, WS109 & WS110.
 - The monitoring wells were designed by Fairhurst and are summarised in Table 1.
- 10no Road Cores (RC101-RC110) to a maximum depth of 0.52mbgl.
 - The locations were specified by Fairhurst.
 - Dynamic Cone Penetrometer (DCP) testing was undertaken within all 10no positions.
- 4no machine excavated trial pits (SA101-SA104) to a maximum depth of 3.00mbgl.
 - In-situ soakaway testing was undertaken within all 4no pits.
- Insitu testing in the exploratory boreholes as Hand Shear Vane Tests and Standard Penetration Tests (SPTs).
- Retrieval of samples for geotechnical and contamination testing.

The boreholes were backfilled with gas pipe installations (bentonite where no installations were specified) whilst the trial pits were backfilled with arisings.

Descriptions of the strata encountered in the exploratory positions together with details of sampling and groundwater are presented in Appendix B of this report. A plan showing the location of all positions can be found in Appendix A (Figure 2).

3 GROUND CONDITIONS

A brief summary of the ground conditions encountered is given below. A cross section of the encountered geology is provided in Appendix A (Figure 3).

3.1 Made Ground

Made ground was encountered across the site and was variable in both depth and composition, ranging from 1.20mbgl in BH105 to 6.00mbgl in BH103.

Made ground was not fully penetrated within RC101-RC110, WS103-WS106, WS106A, WS106B and WS108

Generally, tarmacadam was encountered, ranging in thickness from 0.04-0.20m. No tarmacadam was present within WS106, WS106A and WS106B, where sandy gravelly topsoil was instead present to 1.00mbgl.

The tarmacadam was generally underlain by a dolomite subbase, to a max. depth of 0.40mbgl. This was generally underlain by further made ground, initially comprising variable granular made ground of brick, ash, concrete and tarmac, which was in turn underlain by cohesive made ground.

Within WS103-WS105, the deeper made ground encountered here was inferred to represent reworked mudstone backfill.

3.2 Obstructions

Buried obstructions were noted within the made ground, as summarised below:

- WS103 recorded an SPT N value of 50+ (refusal) within the made ground at 5.00mbgl
- WS105 recorded an SPT N value of 50+ (refusal) within the made ground at 5.00mbgl
- WS106, WS106A and WS106B all encountered a buried concrete obstruction at 1.00m and terminated
- WS108 encountered granite cobbles from an inferred relic cobble road, which resulted in termination at 0.90mbgl

3.3 Natural Deposits

Natural drift deposits were only encountered within BH101, BH102, BH103, BH104, BH105, SA101-SA104 and WS107.

Generally, a band of soft to stiff slightly sandy to sandy slightly gravelly clay was encountered (0.50-3.90m thick).

This was generally underlain by medium dense gravelly sand/sandy gravel (0.20-2.10m thick).

3.4 Solid Geology

Rockhead was encountered locally within BH101-BH106, WS101-WS102, WS107 and WS109-WS110, between 1.90mbgl (BH105) and 9.00mbgl (BH103)

Generally, rockhead comprised mudstone or sandstone however coal was present at rockhead within BH105 from 1.90-2.60mbgl.

The rock was cored within BH101-106, with the retrieved core generally comprising medium strong thickly laminated sandstone, with weak thinly laminated mudstone encountered more locally. Within BH105 and BH106, weak to very weak thinly laminated interbedded mudstone and sandstone was noted.

BH101-BH105 were cored to between 22.10 and 22.50mbgl, with BH106 cored to 7.10mbgl, before being drilled openhole to 22.10mbgl.

3.5 Groundwater

Groundwater was encountered at 18.10mbgl within BH106. No other groundwater strikes were recorded.

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. Therefore, water levels significantly higher than those found during this investigation may be encountered.

4 CONTAMINATION TESTING

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.

The Environmental Samples retrieved by Solmek were delivered directly to VHE and Solmek will have no further involvement with contamination testing.

5 GROUND GAS/WATER MONITORING

The proposed development includes the redevelopment of the carpark.

Ground gases such as carbon dioxide (CO₂), methane (CH₄), carbon monoxide (CO) and volatile organic compounds (VOCs) can be classed as a form of contamination where there is a potential risk to human health.

For this report, gas monitoring will be done by a 3rd party with no further involvement from Solmek.

5.1 Monitoring Wells and Response Zones

During the site investigation works, gas monitoring wells were installed within seven boreholes, at the request of Fairhurst. The response zones were specified by Fairhurst and are briefly summarised below in Table 1.

TABLE 1: SUMMARY OF MONITORING WELL RESPONSE ZONES

Borehole	Pipework	Installation Depth (mbgl)	Response zone of slotted pipework (mbgl)	Response Zone Stratum
BH104	50mm HDPE pipe	9.00	5.50-9.00	SANDSTONE
BH105	50mm HDPE pipe	1.90	1.20-1.90	CLAY/GRAVEL
WS102	50mm HDPE pipe	2.00	0.50-2.00	MADE GROUND
WS105	50mm HDPE pipe	1.25	0.50-1.25	MADE GROUND
WS107	50mm HDPE pipe	2.00	0.50-2.00	MADE GROUND
WS109	50mm HDPE pipe	2.50	1.00-2.50	MADE GROUND
WS110	50mm HDPE pipe	3.50	1.00-3.50	MADE GROUND

6 GEOTECHNICAL TESTING

6.1 In-Situ Testing

Standard Penetration Tests (SPTs) and Hand Shear Vanes were undertaken at regular intervals during drilling, whilst Dynamic Cone Penetrometer Testing was undertaken with RC101-RC110.

The in-situ testing results are shown on the logs (Appendix B), whilst the DCP and soakaway test results are provided in Appendix C.

6.2 Laboratory Testing

Samples taken from the boreholes and trial pits were delivered directly to VHE for geotechnical testing. Solmek will have no further involvement with geotechnical testing.

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

S240526

Project Name

The Seam, Barnsley

Client

Fairhurst

Date

August 2024

DRG Number

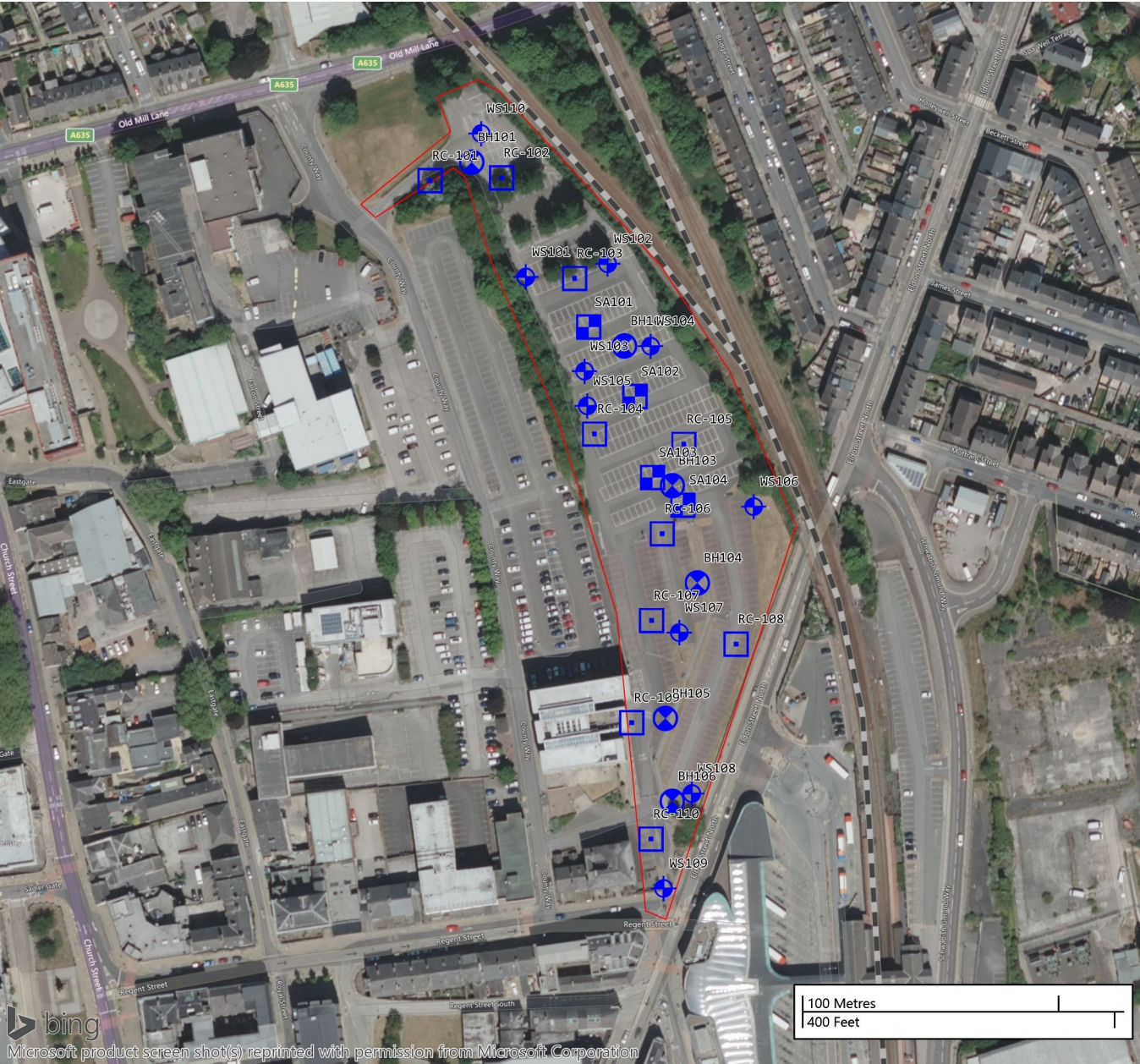
Figure 1

Scale

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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

S240526

Project Name

The Seam, Barnsley

Client

Fairhurst

Date

August 2024

DRG Number

Figure 2

Scale

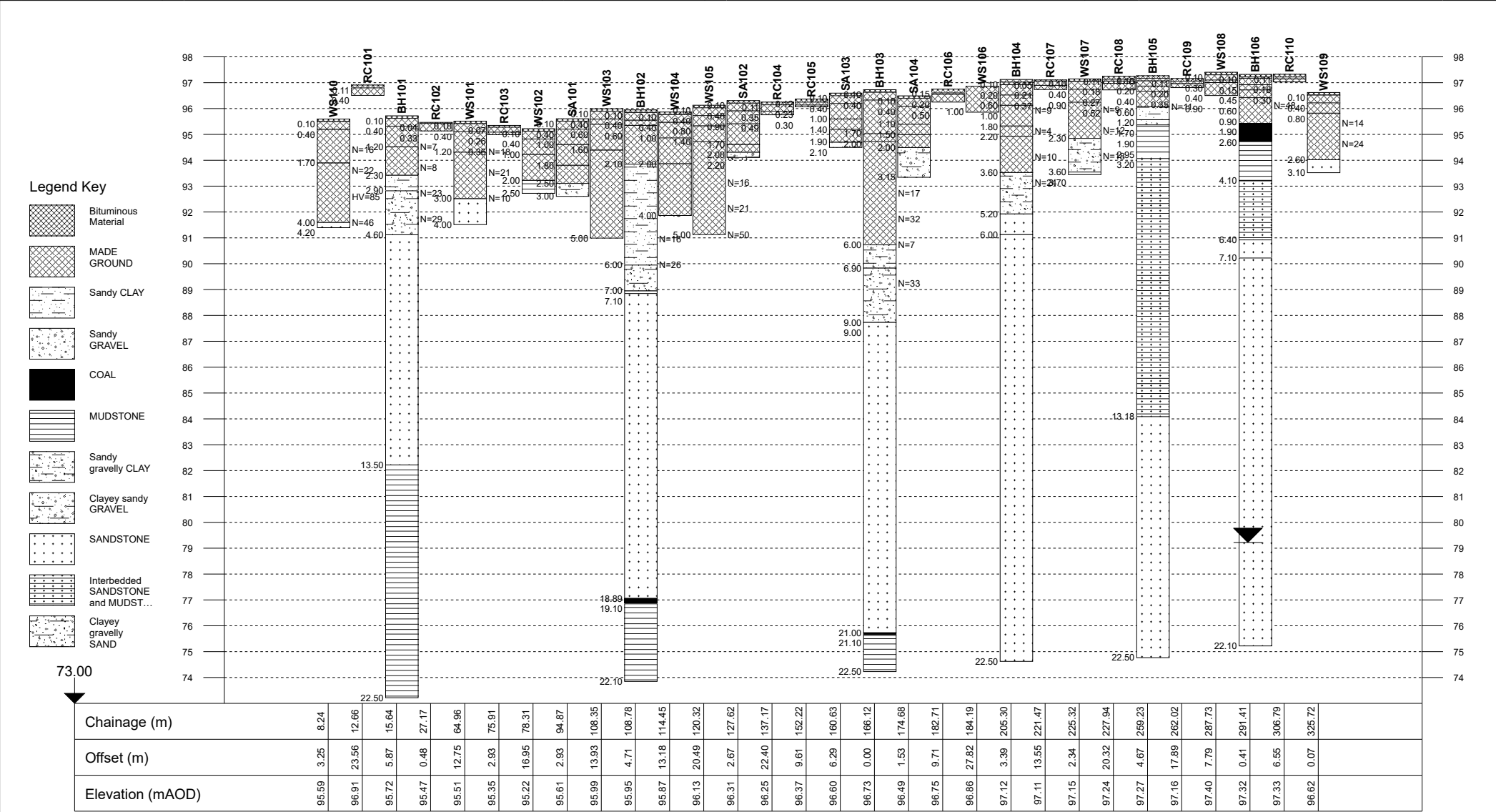
1:2500 @ A4 [DO NOT SCALE]

- Legend Key
- Locations By Type - Empty
 - ⬢ Locations By Type - BH
 - ⊕ Locations By Type - CP+RC
 - Locations By Type - IP
 - ▣ Locations By Type - TP
 - ▭ Project Bounds - Project Bounds

Figure Title	North-South Section Plan	Date	August 2024
Project Number	S240526	DRG Number	Figure 3
Project Name	The Seam, Barnsley	Horizontal Scale	Not to scale
Client	Fairhurst	Vertical Scale	1:209



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



APPENDIX B:

Borehole & Trial Pit Logs

 SOLMEK Solmek Ltd 12-16 Yarm Road Stockton on Tees TS18 3NA Tel: 01642 607083 Email: info@solmek.com				Inspection Pit Log				TrialPit No RC101 Sheet 1 of 1	
Project Name: The Seam, Barnsley				Project No. S240526		Co-ords: 434548E - 406849N Level: 96.91		Date 01/08/2024	
Plant Used: GOLZ SD 160				Dimensions (m): Depth 0.40				Scale 1:26	
Client: Fairhurst								Logged SM	
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
	0.00 - 0.11	C		0.11	96.80		MADE GROUND: Tarmacadam.		
				0.40	96.51		MADE GROUND: Light creamish white sandy gravel. Sand is fine to coarse grained. Gravel is angular to subrounded, fine to coarse dolomite and quartz. (Type I sub-base)		
							MADE GROUND: Light brown slightly gravelly Sand. Sand is fine to coarse grained. Gravel is angular to sub-rounded, fine to coarse of red-brick, dolomite, concrete and sandstone.		
							End of Pit at 0.400m		
1									
2									
3									
4									
5									
Remarks: No groundwater encountered									
Stability:									

 SOLMEK Solmek Ltd 12-16 Yarm Road Stockton on Tees TS18 3NA Tel: 01642 607083 Email: info@solmek.com				Inspection Pit Log			TrialPit No RC102 Sheet 1 of 1		
Project Name: The Seam, Barnsley				Project No. S240526		Co-ords: 434576E - 406850N Level: 95.47		Date 01/08/2024	
Plant Used: GOLZ SD 160				Dimensions (m): Depth 0.33				Scale 1:26	
Client: Fairhurst								Logged SM	
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
	0.00 - 0.04	C		0.04	95.42		MADE GROUND: Tarmacadam.		
				0.33	95.14		MADE GROUND: Light creamish white sandy gravel. Sand is fine to coarse grained. Gravel is angular to subrounded, fine to coarse dolomite and quartz. (Type I sub-base)		
							MADE GROUND: Dark brown sandy, gravelly Clay. Sand is fine to coarse grained. Gravel is angular to sub-rounded, fine to coarse of red-brick, sandstone, concrete and dolomite.		
							End of Pit at 0.330m		
							1		
							2		
							3		
							4		
							5		
Remarks: No groundwater encountered									
Stability:									

 SOLMEK Solmek Ltd 12-16 Yarm Road Stockton on Tees TS18 3NA Tel: 01642 607083 Email: info@solmek.com				Inspection Pit Log			TrialPit No RC103 Sheet 1 of 1		
Project Name: The Seam, Barnsley				Project No. S240526		Co-ords: 434606E - 406811N Level: 95.35		Date 01/08/2024	
Plant Used: GOLZ SD 160				Dimensions (m): Depth 0.36				Scale 1:26	
Client: Fairhurst								Logged SM	
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
	0.00 - 0.07	C		0.07	95.28		MADE GROUND: Tarmacadam. MADE GROUND: Light creamish white sandy gravel. Sand is fine to coarse grained. Gravel is angular to subrounded, fine to coarse dolomite and quartz. (Type I sub-base) MADE GROUND: Dark brown sandy, gravelly Clay. Sand is fine to coarse grained. Gravel is angular to sub-rounded, fine to coarse of red-brick, sandstone, concrete and dolomite. End of Pit at 0.360m		
				0.26	95.09				
				0.36	94.99				
									1
									2
									3
									4
									5
Remarks: No groundwater encountered									
Stability:									

 SOLMEK Solmek Ltd 12-16 Yarm Road Stockton on Tees TS18 3NA Tel: 01642 607083 Email: info@solmek.com				Inspection Pit Log			TrialPit No RC104 Sheet 1 of 1		
Project Name: The Seam, Barnsley				Project No. S240526		Co-ords: 434614E - 406750N Level: 96.25		Date 01/08/2024	
Plant Used: GOLZ SD 160				Dimensions (m): Depth 0.49				Scale 1:26	
Client: Fairhurst				Logged SM					
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
	0.00 - 0.10	C		0.11	96.14		MADE GROUND: Tarmacadam.		
				0.35	95.90		MADE GROUND: Light creamish white sandy gravel. Sand is fine to coarse grained. Gravel is angular to subrounded, fine to coarse dolomite and quartz. (Type I sub-base)		
				0.49	95.76		MADE GROUND: Dark brown sandy, gravelly Clay. Sand is fine to coarse grained. Gravel is angular to sub-rounded, fine to coarse of red-brick, sandstone, concrete and dolomite.		
				End of Pit at 0.490m					
1 2 3 4 5									
Remarks: No groundwater encountered									
Stability:									

 SOLMEK Solmek Ltd 12-16 Yarm Road Stockton on Tees TS18 3NA Tel: 01642 607083 Email: info@solmek.com				Inspection Pit Log				TrialPit No RC105 Sheet 1 of 1	
Project Name: The Seam, Barnsley				Project No. S240526		Co-ords: 434649E - 406746N Level: 96.37		Date 01/08/2024	
Plant Used: GOLZ SD 160				Dimensions (m): Depth 0.30				Scale 1:26	
Client: Fairhurst				Logged SM					
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
	0.00 - 0.12	C		0.12	96.25		MADE GROUND: Tarmacadam.		
				0.23	96.14		MADE GROUND: Light creamish white sandy gravel. Sand is fine to coarse grained. Gravel is angular to subrounded, fine to coarse dolomite and quartz. (Type I sub-base)		
				0.30	96.07		MADE GROUND: Dark brown sandy, gravelly Clay. Sand is fine to coarse grained. Gravel is angular to sub-rounded, fine to coarse of red-brick, sandstone, concrete and dolomite.		
				End of Pit at 0.300m					
1 2 3 4 5									
Remarks: No groundwater encountered									
Stability:									



TrialPit No
RC106
Sheet 1 of 1

Date
01/08/2024

Scale
1:26

Logged
SM

Stability:

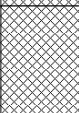
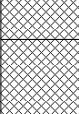
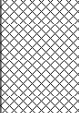
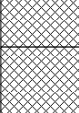
 SOLMEK Solmek Ltd 12-16 Yarm Road Stockton on Tees TS18 3NA Tel: 01642 607083 Email: info@solmek.com				Inspection Pit Log			TrialPit No RC107 Sheet 1 of 1		
Project Name: The Seam, Barnsley				Project No. S240526		Co-ords: 434637E - 406677N Level: 97.11		Date 01/08/2024	
Plant Used: GOLZ SD 160				Dimensions (m): Depth 0.37				Scale 1:26	
Client: Fairhurst								Logged SM	
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
	0.00 - 0.05	C		0.05	97.06		MADE GROUND: Tarmacadam. MADE GROUND: Light creamish white sandy gravel. Sand is fine to coarse grained. Gravel is angular to subrounded, fine to coarse dolomite and quartz. (Type I sub-base) MADE GROUND: Dark brown slightly gravelly Sand. Sand is fine to coarse grained. Gravel is angular to sub-rounded, fine to coarse of red-brick, dolomite, concrete and sandstone. End of Pit at 0.370m		
				0.21	96.90				
				0.37	96.74				
									1
									2
									3
									4
									5
Remarks: No groundwater encountered									
Stability:									

 SOLMEK Solmek Ltd 12-16 Yarm Road Stockton on Tees TS18 3NA Tel: 01642 607083 Email: info@solmek.com				Inspection Pit Log			TrialPit No RC108 Sheet 1 of 1		
Project Name: The Seam, Barnsley				Project No. S240526		Co-ords: 434670E - 406668N Level: 97.24		Date 01/08/2024	
Plant Used: GOLZ SD 160				Dimensions (m): Depth 0.52			Scale 1:26		
Client: Fairhurst							Logged SM		
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
	0.00 - 0.11	C		0.11	97.13		MADE GROUND: Tarmacadam.		
				0.18	97.06		MADE GROUND: Light creamish white sandy gravel. Sand is fine to coarse grained. Gravel is angular to subrounded, fine to coarse dolomite and quartz. (Type I sub-base)		
				0.27	96.98		MADE GROUND: Tarmacadam.		
				0.52	96.72		MADE GROUND: Dark greyish black gravelly Sand, with a low cobble content. Sand is fine to coarse grained of ash. Gravel is sub-angular to sub-rounded, fine to coarse of red-brick, granite, dolomite and sandstone. Cobbles are sub-angular of granite (cobble setts). Slight hydrocarbon odour noted.		
							End of Pit at 0.520m		
1									
2									
3									
4									
5									
Remarks: No groundwater encountered									
Stability:									

 SOLMEK Solmek Ltd 12-16 Yarm Road Stockton on Tees TS18 3NA Tel: 01642 607083 Email: info@solmek.com				Inspection Pit Log			TrialPit No RC109 Sheet 1 of 1		
Project Name: The Seam, Barnsley				Project No. S240526		Co-ords: 434629E - 406637N Level: 97.16		Date 01/08/2024	
Plant Used: GOLZ SD 160				Dimensions (m): Depth 0.35				Scale 1:26	
Client: Fairhurst								Logged SM	
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
	0.00 - 0.10 C								
				0.11	97.06		MADE GROUND: Tarmacadam.		
				0.20	96.96		MADE GROUND: Light creamish white sandy gravel. Sand is fine to coarse grained. Gravel is angular to subrounded, fine to coarse dolomite and quartz. (Type I sub-base)		
				0.35	96.81		MADE GROUND: Dark brown slightly gravelly Sand. Sand is fine to coarse grained. Gravel is angular to sub-rounded, fine to coarse of red-brick, dolomite, concrete and sandstone. Slight hydrocarbon odour noted. End of Pit at 0.350m		
Remarks: No groundwater encountered									
Stability:									

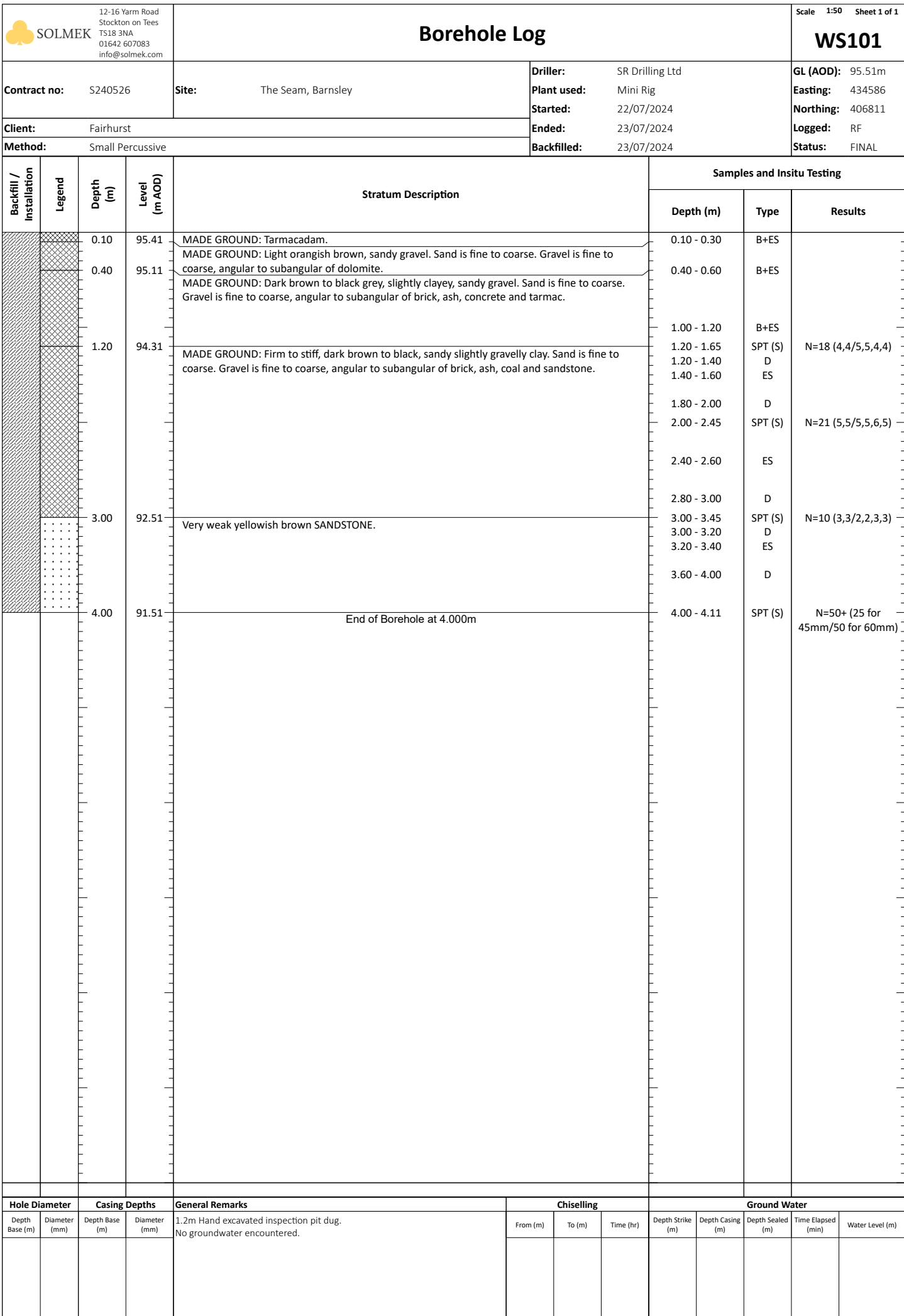
 SOLMEK Solmek Ltd 12-16 Yarm Road Stockton on Tees TS18 3NA Tel: 01642 607083 Email: info@solmek.com				Inspection Pit Log				TrialPit No RC110 Sheet 1 of 1	
Project Name: The Seam, Barnsley				Project No. S240526		Co-ords: 434637E - 406592N Level: 97.33		Date 01/08/2024	
Plant Used: GOLZ SD 160						Dimensions (m): Depth 0.30		Scale 1:26	
Client: Fairhurst								Logged SM	
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
	0.00 - 0.10	C		0.11	97.22		MADE GROUND: Tarmacadam.		
				0.18	97.14		MADE GROUND: Light creamish white sandy gravel. Sand is fine to coarse grained. Gravel is angular to subrounded, fine to coarse dolomite and quartz. (Type I sub-base)		
				0.30	97.03		MADE GROUND: Dark brown slightly gravelly Sand. Sand is fine to coarse grained. Gravel is angular to sub-rounded, fine to coarse of red-brick, dolomite, concrete and sandstone.		
				End of Pit at 0.300m					
							1		
							2		
							3		
							4		
							5		
Remarks: No groundwater encountered									
Stability:									

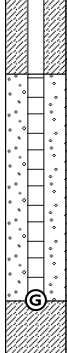
 SOLMEK Solmek Ltd 12-16 Yarm Road Stockton on Tees TS18 3NA Tel: 01642 607083 Email: info@solmek.com				Trial Pit Log				TrialPit No SA101 Sheet 1 of 1	
Project Name: The Seam, Barnsley				Project No. S240526		Co-ords: 434611E - 406792N Level: 95.61		Date 29/07/2024	
Plant Used: JCB 3CX				Dimensions (m): 3.00 1.00				Scale 1:26	
Client: Fairhurst				Depth 3.00				Logged RF	
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
	0.10 - 0.30	B+ES		0.10	95.50		MADE GROUND: Tarmacadam.		
							MADE GROUND: Light orangish brown, sandy gravel. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of dolomite.		
	0.50 - 0.70	B+ES		0.40	95.20		MADE GROUND: Dark brown to dark grey, clayey sandy gravel. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular, brick, ash, concrete and tarmac.		
	1.00 - 1.20	B+ES		1.00	94.60		MADE GROUND: Soft to firm, dark brown to black, sandy slightly gravelly clay. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded, brick, ash and rubble.	1	
	1.50 - 1.70	ES							
	1.80 - 2.00	B+ES		1.80	93.80		MADE GROUND: Soft brown to light brown, sandy clay. Sand is fine to coarse.	2	
	2.50 - 2.70	ES		2.50	93.10		Light brown to light yellowish brown, clayey slightly sandy GRAVEL. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of sandstone and mudstone.		
	2.80 - 3.00	B+ES		3.00	92.60		End of Pit at 3.000m	3	
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 SA102 Sheet 1 of 1	
Project Name: The Seam, Barnsley				Project No. S240526		Co-ords: 434630E - 406765N Level: 96.31		Date 29/07/2024	
Plant Used: JCB 3CX				Dimensions (m): 3.00 1.00				Scale 1:26	
Client: Fairhurst				Depth 2.20				Logged RF	
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
	0.10 - 0.30	B+ES		0.10	96.21		MADE GROUND: Tarmacadam.	1	
	0.40 - 0.60	B+ES		0.40	95.91		MADE GROUND: Light orangish brown, sandy gravel. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of dolomite.		
	0.90 - 1.10	B+ES		0.90	95.41		MADE GROUND: Dark brown to dark grey, clayey sandy gravel. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular, brick, ash, concrete and tarmac.		
	1.40 - 1.60	ES					MADE GROUND: Soft to firm, dark brown to black, sandy slightly gravelly clay. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded, brick, ash and rubble.		
	1.70 - 2.00	B+ES		1.70	94.61		MADE GROUND: Soft brown to light brown, sandy clay. Sand is fine to coarse.		
	2.00 - 2.20	B		2.00	94.31		Yellowish brown slightly clayey, slightly sandy GRAVEL. Gravel is fine to coarse, angular to subrounded of sandstone.		2
	2.20			2.20	94.11		End of Pit at 2.200m		
Remarks: No groundwater encountered.									
Stability: Pit wall stable.									

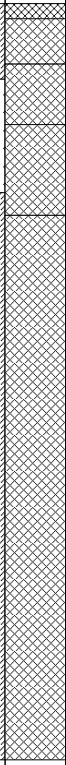
 SOLMEK Solmek Ltd 12-16 Yarm Road Stockton on Tees TS18 3NA Tel: 01642 607083 Email: info@solmek.com				Trial Pit Log				TrialPit No SA103 Sheet 1 of 1	
Project Name: The Seam, Barnsley				Project No. S240526		Co-ords: 434637E - 406733N Level: 96.60		Date 29/07/2024	
Plant Used: JCB 3CX				Dimensions (m): 3.00 1.00				Scale 1:26	
Client: Fairhurst				Depth 2.10				Logged RF	
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
	0.10 - 0.30	B+ES		0.10	96.50		MADE GROUND: Tarmacadam.	1	
	0.40 - 0.60	B+ES		0.40	96.20		MADE GROUND: Light orangish brown, sandy gravel. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of dolomite.		
							MADE GROUND: Dark brown to dark grey, clayey sandy gravel. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular, brick, ash, concrete and tarmac.		
	1.00 - 1.20	B+ES		1.00	95.60		MADE GROUND: Soft to firm, dark brown to black, sandy slightly gravelly clay. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded, brick, ash and rubble.		
	1.40 - 1.60	B+ES		1.40	95.20		MADE GROUND: Soft brown to light brown, sandy clay. Sand is fine to coarse.		
	1.90 - 2.10	B+ES		1.90	94.70		Yellowish brown slightly clayey slightly sandy GRAVEL. Sand is fine to coarse. Gravel is fine to coarse angular to subrounded of sandstone.	2	
				2.10	94.50		End of Pit at 2.100m		
Remarks: No groundwater encountered.									
Stability: Pit wall stable.									

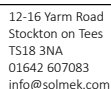
 SOLMEK Solmek Ltd 12-16 Yarm Road Stockton on Tees TS18 3NA Tel: 01642 607083 Email: info@solmek.com				Trial Pit Log				TrialPit No SA104 Sheet 1 of 1	
Project Name: The Seam, Barnsley				Project No. S240526		Co-ords: 434649E - 406722N Level: 96.49		Date 29/07/2024	
Plant Used: JCB 3CX				Dimensions (m): 3.00 1.00 3.15		Scale 1:26		Logged RF	
Client: Fairhurst									
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results				MADE GROUND: Tarmacadam.		
							MADE GROUND: Light orangish brown, sandy gravel. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of dolomite.		
							MADE GROUND: Dark brown to dark grey, clayey sandy gravel. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular, brick, ash, concrete and tarmac.		
							MADE GROUND: Soft to firm, dark brown to black, sandy slightly gravelly clay. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded, brick, ash and rubble.		
							MADE GROUND: Soft brown to light brown, sandy clay. Sand is fine to coarse.		
							Greyish brown clayey slightly sandy GRAVEL. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of mudstone and sandstone.		
							End of Pit at 3.150m		
Remarks: No groundwater encountered.									
Stability: Collapsed from 2.40-3.00m after 2nd soakaway test.									



Backfill / Installation	Legend	Depth (m)	Level (m AOD)	Stratum Description	Samples and Insitu Testing		
					Depth (m)	Type	Results
		0.10	95.12	MADE GROUND: Tarmacadam.	0.10 - 0.30	B	N=26 (5,5/6,6,7,7)
		0.40	94.82	MADE GROUND: Light orangish brown, sandy gravel. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of dolomite.	0.40 - 0.60	B+ES	
				MADE GROUND: Dark brown to dark grey, clayey sandy gravel. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular, brick, ash, concrete and tarmac.	0.80 - 1.00	ES	
		1.00	94.22	MADE GROUND: Stiff dark brown to light yellowish brown, sandy slightly gravelly clay. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of brick, ash and sandstone. Sandstone cobbles present.	1.00 - 1.20	B	
					1.20 - 1.65	SPT (S)	
					1.20 - 1.40	D	
					1.40 - 1.60	ES	
		2.00	93.22	Weak light grey to light brown MUDSTONE.	2.00 - 2.45	SPT (S)	
					2.00 - 2.20	D	
					2.30 - 2.50	D	
		2.50	92.72		2.50 - 2.94	SPT (S)	N=50+

[illegible]

 SOLMEK 12-16 Yarm Road Stockton on Tees TS18 3NA 01642 607083 info@solmek.com		Borehole Log					Scale 1:50 Sheet 1 of 1							
Contract no: S240526		Site: The Seam, Barnsley			Driller: SR Drilling Ltd Plant used: Mini Rig Started: 24/07/2024 Ended: 24/07/2024 Backfilled: 24/07/2024		GL (AOD): 96.13m Easting: 434611 Northing: 406761 Logged: RF Status: FINAL							
Client: Fairhurst														
Method: Small Percussive														
Backfill / Installation	Legend	Depth (m)	Level (m AOD)	Stratum Description	Samples and Insitu Testing									
					Depth (m)	Type	Results							
		0.10	96.03	MADE GROUND: Tarmacadam.	0.10 - 0.30	B+ES								
		0.40	95.73	MADE GROUND: Light orangish brown, sandy gravel. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of dolomite.	0.40 - 0.60	B+ES								
		0.80	95.33	MADE GROUND: Dark brown to dark grey, clayey sandy gravel. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular, brick, ash, concrete and tarmac.	0.80 - 1.00	ES								
		1.40	94.73	MADE GROUND: Soft to firm, dark brown to black, sandy slightly gravelly clay. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded, brick, ash and rubble.	1.20 - 1.65	SPT (S)	N=14 (4,4/4,3,3,4)							
					1.20 - 1.40	D								
					1.40 - 1.60	ES								
					1.60 - 1.80	ES	N=11 (3,3/2,3,3,3)							
					1.80 - 2.00	D								
				MADE GROUND: Stiff light grey to light brown, slightly sandy, gravelly clay. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of mudstone. Likely reworked mudstone backfill layers.	2.00 - 2.45	SPT (S)	N=16 (4,3/4,3,3,6)							
					2.00 - 2.20	D								
					2.80 - 3.00	D	N=21 (3,3/2,3,8,8)							
					3.00 - 3.45	SPT (S)								
					3.80 - 4.00	D	N=50+ (8,9/11,13,14,12 for 50mm)							
					4.00 - 4.45	SPT (S)								
					4.80 - 5.00	D								
					5.00 - 5.42	SPT (S)								
End of Borehole at 5.000m														
Hole Diameter		Casing Depths		General Remarks			Ground Water							
Depth Base (m)	Diameter (mm)	Depth Base (m)	Diameter (mm)	1.2m Hand excavated inspection pit dug. No groundwater encountered.			From (m)	To (m)	Time (hr)	Depth Strike (m)	Depth Casing (m)	Depth Sealed (m)	Time Elapsed (min)	Water Level (m)



Borehole Log

Scale	1:50	Sheet 1 of 1
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WS106

Contract no: S240526

Site: The Seam, Barnsley

Driller:	SR Drilling Ltd
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Plant used: Mini Rig

Started: 24/07/2024

Ended: 24/07/2024

Backfilled: 24/07/2024

GL (AOD): 96.86m

Easting: 434677

Northing: 406722

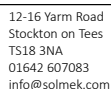
Logged: RF

Status: FINAL

Client:	Fairhurst
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Method:	Small Percussive
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[illegible]



Borehole Log

Scale	1:50	Sheet 1 of 1
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WS106A

Contract no: S240526

Site: The Seam, Barnsley

Driller:	SR Drilling Ltd
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Plant used: Mini Rig

Started: 24/07/2024

Ended: 27/07/2024

Backfilled: 24/07/2024

GL (AOD):

Easting:

Northing:

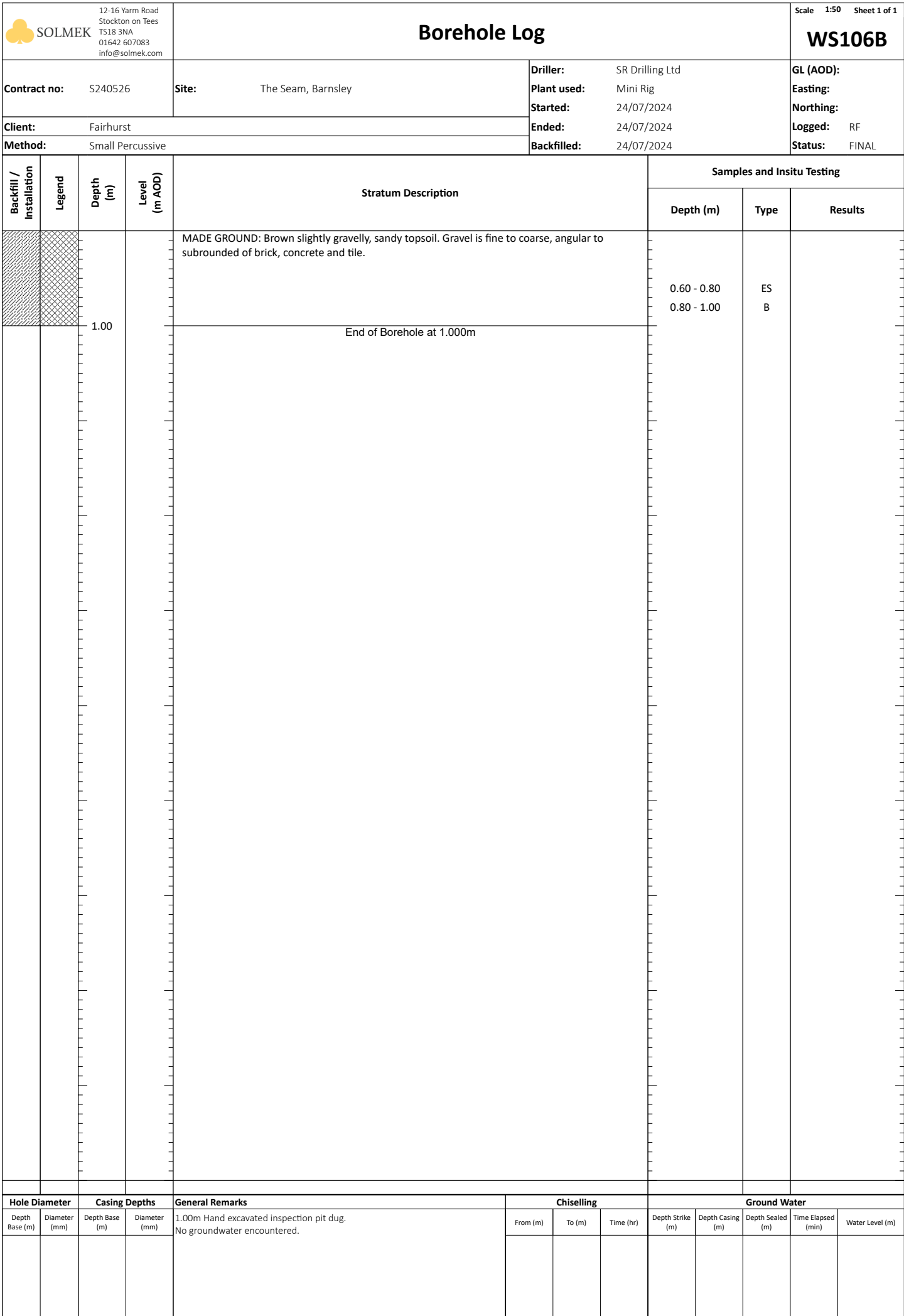
Logged: RF

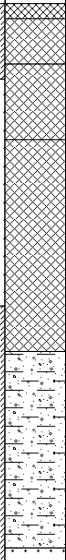
Status: FINAL

Client:	Fairhurst
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Method:	Small Percussive
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[illegible]



 12-16 Yarm Road Stockton on Tees TS18 3NA 01642 607083 info@solmek.com				Borehole Log						Scale 1:50 Sheet 1 of 1		WS107	
Contract no: S240526				Site: The Seam, Barnsley				Driller: SR Drilling Ltd				GL (AOD): 97.14m	
								Plant used: Mini Rig				Easting: 434648	
Client: Fairhurst								Started: 24/07/2024				Northing: 406672	
Method: Small Percussive								Ended: 24/07/2024				Logged: RF	
								Backfilled: 24/07/2024				Status: FINAL	
Backfill / Installation	Legend	Depth (m)	Level (m AOD)	Stratum Description	Samples and Insitu Testing								
					Depth (m)	Type	Results						
		0.10	97.04	MADE GROUND: Tarmacadam.	0.10 - 0.30	B+ES							
		0.40	96.74	MADE GROUND: Light orangish brown, sandy gravel. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of dolomite.	0.40 - 0.60	B+ES							
		0.90	96.24	MADE GROUND: Dark brown to dark grey, clayey sandy gravel. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular, brick, ash, concrete and tarmac.	0.90 - 1.10	B	N=9 (3,3/2,2,2,3)						
					1.10 - 1.30	ES							
					1.20 - 1.65	SPT (S)							
		2.30	94.84	Stiff yellowish brown locally mottled grey, slightly sandy, slightly gravelly CLAY. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded of sandstone.	1.80 - 2.00	D	N=12 (4,3/3,3,4,2)						
					2.00 - 2.45	SPT (S)							
					2.30 - 2.50	D	N=18 (3,4/4,4,5,5)						
		2.50 - 2.70	ES										
		3.60	93.54	Yellowish brown SANDSTONE.	2.90 - 3.00	D	N=50+ (25 for 50mm/50 for 40mm)						
					3.00 - 3.45	SPT (S)							
3.70	93.44	End of Borehole at 3.700m	3.60 - 3.69	SPT (S)									
					3.60 - 3.70	D							

 12-16 Yarm Road Stockton on Tees TS18 3NA 01642 607083 info@solmek.com		Cable Percussive with Rotary Core Follow-on Log										Scale 1:50 Sheet 1 of 3		BH101				
Contract no: S240526		Site: The Seam, Barnsley					Driller: L&A Drilling Ltd Plant used: Dando 1500 Started: 22/07/2024 Ended: 25/07/2024 Backfilled: 25/07/2024					GL (AOD): 95.72m Easting: 434565 Northing: 406856 Logged: RF Status: FINAL						
Client: Fairhurst																		
Method: Cable Percussive with Rotary follow on																		
Backfill / Installation	Legend	Depth (m)	Level (m AOD)	Stratum Description					Samples and Insitu Testing									
									Depth (m)		Type	Results						
		0.10	95.62	MADE GROUND: Tarmacadam.					0.10 - 0.30	B+ES								
		0.40	95.32	MADE GROUND: Light orangish brown, sandy gravel. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of dolomite.					0.40 - 0.60	B+ES								
		1.20	94.52	MADE GROUND: Dark brown to dark grey, clayey sandy gravel. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular, brick, ash, concrete and tarmac.					1.20 - 1.65 1.20 - 1.70	SPT (S) B+ES	N=7 (2,1/1,2,2,2)							
		2.30	93.42	MADE GROUND: Soft to firm, dark brown to black, sandy slightly gravelly clay. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded, brick, ash and rubble.					2.00 - 2.45 2.00 - 2.50	SPT (S) B+ES	N=8 (4,5/2,2,2,2)							
		2.90	92.82	Soft brown to light brown, sandy CLAY. Sand is fine to coarse.					2.90 - 3.00 3.00 - 3.45 3.00 - 3.50	D SPT (S) B+ES	N=23 (5,6/6,5,6,6)							
				Medium dense light brown, slightly clayey gravelly SAND. Gravel is fine to coarse, angular to subangular of sandstone. Sand is fine to coarse.					4.00 - 4.45 4.00 - 4.50	SPT (S) B	N=29 (8,7/7,7,8,7)							
		4.60	91.12	Medium strong, thickly laminated, light brown, SANDSTONE. Discontinuities, sub horizontal and sub vertical, close to medium spaced and slightly oxidised. Non intact zones are comprised of a yellowish brown, slightly sandy gravel. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of sandstone.					4.60 - 4.67	SPT (S)	4.60 - 4.67 N=50+ (25 for 30mm/50 for 40mm)	N=50+ (25 for 30mm/50 for 40mm)						
				Non intact zone. Non intact zone. Non intact zone.							36 26 7 0 100 125							
											91 77 13 0 68 100							
											93 83 71 0 136 250							
						Non intact zone. Non intact zone.							97 61 48 0 125 190					
		Hole Diameter		Casing Depths		General Remarks					Chiselling			Ground Water				
		Depth Base (m)	Diameter (mm)	Depth Base (m)	Diameter (mm)						From (m)	To (m)	Time (hr)	Depth Strike (m)	Depth Casing (m)	Depth Sealed (m)	Time Elapsed (min)	Water Level (m)
		4.60	150			1.2m Hand excavated inspection pit dug. No groundwater encountered.					4.60	4.70	01:00					



Scale 1:50 Sheet 3 of 3

BH101

Contract no: S240526

Site: The Seam, Barnsley

Driller:	L&A Drilling Ltd
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Plant used: Dando 1500

Started: 22/07/2024

Ended:	25/07/2024
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Backfilled: 25/07/2024

GL (AOD): 95.72m

Easting: 434564.73

Northing: 406856.16

Logged: RF

Status: FINAL

Client:	Fairhurst
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Method:	Cable Percussive with Rotary follow on
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[illegible]

Contract no: S240526

Site: The Seam, Barnsley

Driller:	L&A Drilling Ltd
Plant used:	Dando 1500
Started:	22/07/2024
Ended:	29/07/2024
Backfilled:	29/07/2024

GL (AOD): 95.95m
Easting: 434625
Northing: 406785
Logged: RF
Status: FINAL

Client: Fairhurst

Method: Cable Percussive with Rotary follow on

Backfill / Installation	Legend	Depth (m)	Level (m AOD)	Stratum Description	Samples and Insitu Testing								
					Depth (m)	Type	Results						
		0.10	95.85	MADE GROUND: Tarmacadam.	0.10 - 0.30	B+ES							
		0.40	95.55	MADE GROUND: Light orangish brown, sandy gravel. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of dolomite.	0.40 - 0.60	B+ES							
		0.60	95.35	MADE GROUND: Dark brown to dark grey, clayey sandy gravel. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular, brick, ash, concrete and tarmac.	0.70 - 0.90	B+ES							
				MADE GROUND: Soft to firm, dark brown to black, sandy slightly gravelly clay. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded, brick, ash and rubble.	1.20 - 1.65 1.20 - 1.70	SPT (S) B					N=8 (2,2/2,2,2,2)		
		2.10	93.85	Soft brown to light brown, sandy CLAY. Sand is fine to coarse.	2.00 - 2.45 2.00 - 2.50	SPT (S) B	N=11 (2,4/2,3,3,3)						
					3.00 - 3.45 3.00 - 3.50	SPT (S) B	N=13 (2,2/3,4,3,3)						
					4.00 - 4.45 4.00 - 4.50	SPT (S) B	N=15 (3,3/4,4,3,4)						
					5.00 - 5.45 5.00 - 5.50	SPT (S) B	N=16 (5,3/3,4,5,4)						
		6.00	89.95	Medium dense ight brown, slightly clayey gravelly SAND. Gravel is fine to coarse, angular to subangular of sandstone. Sand is fine to coarse.	6.00 - 6.45 6.00 - 6.50	SPT (S) B	N=26 (6,7/6,6,7,7)						
		7.00	88.95										
			7.10	88.85	Light yellowish brown SANDSTONE. Medium strong, thickly laminated, light brown, SANDSTONE. Discontinuities, sub horizontal and sub vertical, close to medium spaced and slightly oxidised. Non intact zones are comprised of a yellowish brown, slightly sandy gravel. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of sandstone. <i>Non intact zone.</i>					86	83	15	0 60 120
					<i>Non intact zone.</i> <i>Non intact zone.</i>					94	87	37	0 88 190

Hole Diameter		Casing Depths		General Remarks	Chiselling			Ground Water				
Depth Base (m)	Diameter (mm)	Depth Base (m)	Diameter (mm)		From (m)	To (m)	Time (hr)	Depth Strike (m)	Depth Casing (m)	Depth Sealed (m)	Time Elapsed (min)	Water Level (m)
7.00	150				1.2m Hand excavated inspection pit dug. No groundwater encountered.	7.00	7.10	01:00				



Scale 1:50 Sheet 3 of 3

BH102

Contract no: S240526

Site: The Seam, Barnsley

Driller:	L&A Drilling Ltd
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Plant used: Dando 1500

Started: 22/07/2024

Ended:	29/07/2024
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Backfilled: 29/07/2024

GL (AOD): 95.95m

Easting: 434625.27

Northing: 406784.59

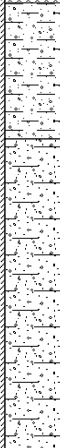
Logged: RF

Status: FINAL

Client:	Fairhurst
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Method:	Cable Percussive with Rotary follow on
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[illegible]

 SOLMEK 12-16 Yarm Road Stockton on Tees TS18 3NA 01642 607083 info@solmek.com		Cable Percussive with Rotary Core Follow-on Log							Scale 1:50 Sheet 1 of 3		BH103			
Contract no: S240526		Site: The Seam, Barnsley			Driller: L&A Drilling Ltd Plant used: Dando 1500 Started: 23/07/2024 Ended: 30/07/2024 Backfilled: 30/07/2024			GL (AOD): 96.73m Easting: 434645 Northing: 406730 Logged: RF Status: FINAL						
Client: Fairhurst		Method: Cable Percussive with Rotary follow on												
Backfill / Installation	Legend	Depth (m)	Level (m AOD)	Stratum Description	Samples and Insitu Testing									
					Depth (m)		Type	Results						
		0.10	96.63	MADE GROUND: Tarmacadam.	0.10 - 0.30		B+ES	N=10 (1,3/3,2,3,2)						
		0.40	96.33	MADE GROUND: Light orangish brown, sandy gravel. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of dolomite.	0.40 - 0.60		B+ES							
		MADE GROUND: Dark brown to dark grey, clayey sandy gravel. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular, brick, ash, concrete and tarmac.												
				1.20	95.03	MADE GROUND: Soft to firm, dark brown to black, sandy slightly gravelly clay. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded, brick, ash and rubble.	1.20 - 1.65		SPT (S)	N=9 (3,3/2,3,2,2)				
				1.20 - 1.70			B+ES							
		1.70		MADE GROUND: Soft to firm, dark brown to black, sandy slightly gravelly clay. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded, brick, ash and rubble.	1.70 - 2.00			B						
		2.00	94.73	MADE GROUND: Stiff light grey to light brown, slightly sandy, gravelly clay. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of mudstone. Likely reworked mudstone backfill layers.	2.00 - 2.45		SPT (S)	N=13 (3,4/4,4,3,2)						
					2.00 - 2.50							B		
					3.00 - 3.45		SPT (S)	N=17 (4,4/5,5,3,4)						
					3.00 - 3.50							B		
					4.00 - 4.45		SPT (S)	N=32 (11,11/12,6,7,7)						
					4.00 - 4.50							B		
		6.00	90.73	Soft, yellowish brown, slightly sandy, slightly gravelly CLAY. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded of sandstone.	6.00 - 6.45		SPT (S)	N=7 (2,2/1,2,2,2)						
					6.00 - 6.50							B		
		6.90	89.83	Dense brown to light yellowish brown, slightly clayey, gravelly SAND. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of sandstone.	6.90 - 7.00		B							
					7.50 - 7.95		SPT (S)	N=33 (12,12/8,8,8,9)						
			7.50 - 8.00		B									
		9.00	87.73	Yellowish brown SANDSTONE.		9.00 - 9.04		SPT (S)	9.00 - 9.04		SPT (S)	N=50+ (25 for 15mm/50 for 30mm)		
		9.00	87.73	Medium strong, thickly laminated, light brown, SANDSTONE. Discontinuities, sub horizontal and sub vertical, close to medium spaced and slightly oxidised. Non intact zones are comprised of a yellowish brown, slightly sandy gravel. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of sandstone.										
Hole Diameter	Casing Depths			General Remarks			Chiselling			Ground Water				
Depth Base (m)	Diameter (mm)	Depth Base (m)	Diameter (mm)	1.2m Hand excavated inspection pit dug. No groundwater encountered.			From (m)	To (m)	Time (hr)	Depth Strike (m)	Depth Casing (m)	Depth Sealed (m)	Time Elapsed (min)	Water Level (m)
9.00	150						8.50	9.00	01:00					

Contract no: S240526

Site: The Seam, Barnsley

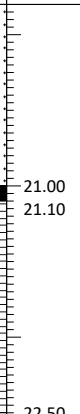
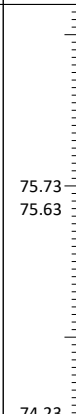
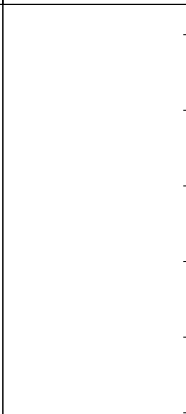
Driller:	L&A Drilling Ltd
Plant used:	Dando 1500
Started:	23/07/2024
Ended:	30/07/2024
Backfilled:	30/07/2024

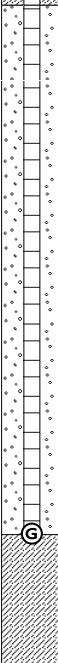
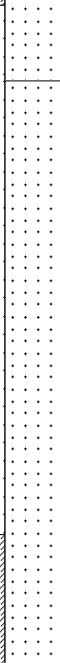
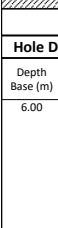
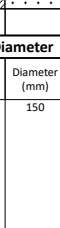
GL (AOD):	96.73m
Easting:	434644.55
Northing:	406730.00
Logged:	RF
Status:	FINAL

Client:	Fairhurst
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Method: Cable Percussive with Rotary follow on

[illegible][illegible]

SOLMEK 12-16 Yarm Road Stockton on Tees TS18 3NA 01642 607083 info@solmek.com				Cable Percussive with Rotary Core Follow-on Log						Scale 1:50 Sheet 3 of 3		BH103			
Contract no: S240526				Site: The Seam, Barnsley				Driller: L&A Drilling Ltd				GL (AOD): 96.73m			
								Plant used: Dando 1500				Easting: 434644.55			
Client: Fairhurst								Started: 23/07/2024				Northing: 406730.00			
Method: Cable Percussive with Rotary follow on								Ended: 30/07/2024				Logged: RF			
								Backfilled: 30/07/2024				Status: FINAL			
Backfill / Installation	Legend	Depth (m)	Level (m AOD)	Stratum Description	Samples and Insitu Testing			Coring / Fractures							
					Depth (m)	Type	Results	TCR (%)	SCR (%)	RQD (%)	Fracture				
				Medium strong, thickly laminated, light brown, SANDSTONE. Discontinuities, sub horizontal and sub vertical, close to medium spaced and slightly oxidised. Non intact zones are comprised of a yellowish brown, slightly sandy gravel. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of sandstone.				93	93	86	20 300 540				
				Extremely weak, black to dark grey, COAL. Non intact recovered as a black, slightly sandy gravel. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of coal. Weak thinly, laminated light grey to grey, slightly weathered MUDSTONE. Discontinuity at closely to very closely spaced, sub horizontal to sub vertical. Non intact zones are comprised of light grey, clayey slightly sandy gravel. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of mudstone. <u>Non intact zone.</u> <u>Non intact zone.</u>				75	43	7	NI 79 110				
				End of Borehole at 22.500m											
Hole Diameter		Casing Depths		General Remarks	Flush Returns				Ground Water						
Depth Base (m)	Diameter (mm)	Depth Base (m)	Diameter (mm)		From (m)	To (m)	Flush Type	Flush (%)	Depth Strike (m)	Depth Casing (m)	Depth Sealed (m)	Time Elapsed (min)	Water Level (m)		
9.00	150														

 SOLMEK 12-16 Yarm Road Stockton on Tees TS18 3NA 01642 607083 info@solmek.com		Cable Percussive with Rotary Core Follow-on Log							Scale 1:50 Sheet 1 of 3		BH104			
Contract no: S240526		Site: The Seam, Barnsley			Driller: L&A Drilling Ltd Plant used: Dando 1500 Started: 24/07/2024 Ended: 31/07/2024 Backfilled: 31/07/2024			GL (AOD): 97.12m Easting: 434655 Northing: 406692 Logged: RF Status: FINAL						
Client: Fairhurst														
Method: Cable Percussive with Rotary follow on														
Backfill / Installation	Legend	Depth (m)	Level (m AOD)	Stratum Description	Samples and Insitu Testing									
					Depth (m)		Type	Results						
		0.10	97.02	MADE GROUND: Brown slightly gravelly sand topsoil. Gravel is fine to coarse, angular to subangular of brick, concrete, tile and tarmac.	0.00 - 0.10	B+ES	N=9 (2,3/3,2,2,2)							
		0.20	96.92		MADE GROUND: Tarmacadam.	0.20 - 0.40						B+ES		
		0.60	96.52	MADE GROUND: Dark brown to dark grey, clayey sandy gravel. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular, brick, ash, concrete and tarmac.	0.60 - 0.80	B+ES								
		1.00	96.12	MADE GROUND: Soft to firm, dark brown to black, sandy slightly gravelly clay. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded, brick, ash and rubble.	1.00 - 1.20	B+ES								
				MADE GROUND: Yellowish brown, clayey slightly sandy gravel. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of sandstone.	1.20 - 1.65	SPT (S)								
					1.20 - 1.70	B								
		1.80	95.32	MADE GROUND: Soft to firm, brown to light brown, slightly silty, slightly sandy gravelly clay. Sand is fine to coarse.	1.80 - 2.00	B						N=4 (1,2/1,1,1,1)		
		2.20	94.92	MADE GROUND: Stiff light grey to light brown, slightly sandy, gravelly clay. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of mudstone. Likely reworked mudstone backfill layers.	2.00 - 2.45	SPT (S)								
					2.00 - 2.50	B								
					3.00 - 3.45	SPT (S)						N=10 (2,2/2,4,2,2)		
			3.00 - 3.50	B										
		3.60	93.52	Firm to stiff, yellowish brown locally mottled grey, sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded of sandstone and mudstone.	3.60 - 3.80	B	N=24 (2,4/3,7,7,7)							
					4.00 - 4.45	SPT (S)								
					4.00 - 4.50	B								
					5.00 - 5.38	SPT (S)	N=50+ (7,8/12,21,17)							
					5.00 - 5.50	B								
				6.00	91.12	Medium strong, thickly laminated, light brown, SANDSTONE. Discontinuities, sub horizontal and sub vertical, close to medium spaced and slightly oxidised. Non intact zones are comprised of a yellowish brown, slightly sandy gravel. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of sandstone.	6.00 - 6.10	SPT (S)	6.00 - 6.10		SPT (S)	N=50+ (25 for 50mm/50 for 45mm)		
						Non intact zone.								
						Non intact zone.								
						Non intact zone.								
						Non intact zone.								
				Non intact zone.										
				Non intact zone.										
				Non intact zone.										
				Non intact zone.										
				Non intact zone.										
Hole Diameter Casing Depths General Remarks Chiselling Ground Water														
Depth Base (m)	Diameter (mm)	Depth Base (m)	Diameter (mm)	1.2m Hand excavated inspection pit dug. No groundwater encountered.			From (m)	To (m)	Time (hr)	Depth Strike (m)	Depth Casing (m)	Depth Sealed (m)	Time Elapsed (min)	Water Level (m)
6.00	150						5.50	6.00	01:00					



Scale	1:50	Sheet 2 of 3
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BH104

Contract no: S240526

Site: The Seam, Barnsley

Driller:	L&A Drilling Ltd
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Plant used: Dando 1500

Started: 24/07/2024

Ended: 31/07/2024

Backfilled: 31/07/2024

GL (AOD): 97.12m

Easting: 434654.80

Northing: 406691.95

Logged: RF

Status: FINAL

[illegible]



Scale	1:50	Sheet 3 of 3
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BH104

Contract no: S240526

Site: The Seam, Barnsley

Driller:	L&A Drilling Ltd
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Plant used: Dando 1500

Started: 24/07/2024

Ended: 31/07/2024

Backfilled: 31/07/2024

GL (AOD): 97.12m

Easting: 434654.80

Northing: 406691.95

Logged: RF

Status: FINAL

Client:	Fairhurst
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Method: Cable Percussive with Rotary follow on

[illegible]

 SOLMEK 12-16 Yarm Road Stockton on Tees TS18 3NA 01642 607083 info@solmek.com		Cable Percussive with Rotary Core Follow-on Log							Scale 1:50 Sheet 1 of 3					
Contract no: S240526		Site: The Seam, Barnsley			Driller: L&A Drilling Ltd Plant used: Dando 1500 Started: 30/07/2024 Ended: 02/08/2024 Backfilled: 02/08/2024			GL (AOD): 97.27m Easting: 434643 Northing: 406639 Logged: RF Status: FINAL						
Client: Fairhurst														
Method: Cable Percussive with Rotary follow on														
Backfill / Installation	Legend	Depth (m)	Level (m AOD)	Stratum Description	Samples and Insitu Testing									
					Depth (m)	Type	Results							
		0.10	97.17	MADE GROUND: Tarmacadam.	0.10 - 0.20	B+ES	N=11 (2,2/3,3,2,3)							
		0.20	97.07	MADE GROUND: Dark brown to dark grey, clayey sandy gravel. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular, brick, ash, concrete and tarmac.	0.20 - 0.40	B+ES								
		0.40	96.87	MADE GROUND: Yellowish brown, slightly sandy gravel. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of sandstone. Sandstone cobbles are present.	0.40 - 0.60	B+ES								
		0.60	96.67	MADE GROUND: Dark brown to dark grey, clayey sandy gravel. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular, brick, ash, concrete and tarmac.	0.60 - 0.80	B+ES								
		1.20	96.07	MADE GROUND: Brown to light yellowish brown, gravelly sand. Gravel is fine to coarse, angular to subrounded of sandstone. Sand is fine to coarse. Soft brown to light brown, sandy CLAY. Sand is fine to coarse.	1.20 - 1.65	SPT (S)	N=50+ (12,12/19,31 for 65mm)							
		1.70	95.57	Light grey, slightly sandy GRAVEL. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded of limestone. Limestone cobbles present.	1.20 - 1.70	B+ES								
		1.90	95.37	Light grey MUDSTONE.	2.00 - 2.29	SPT (S)	N=50+ (25 for 60mm/50 for 50mm)							
		2.95	94.32	Yellowish brown SANDSTONE.	2.00 - 2.50	B								
		3.20	94.07	Weak to very weak, thinly laminated, dark grey to greyish brown, slightly weathered, interbedded MUDSTONE and SANDSTONE. Discontinuities are closely to very closely spaced, sub-horizontal to sub-vertical, and occasionally clay-filled. Non intact zones are comprised of soft to firm, yellowish brown to greyish brown, slightly sandy, gravelly, clay. Sand is fine to coarse. Gravel is fine to coarse, angular to sub-angular of mudstone and sandstone.	3.00 - 3.11	SPT (S)	78 68 18 0 75 130 93 47 0 0 68 90 95 56 7 0 48 100 97 80 29 0 53 130 63 57 40 0 115 140							
				Non intact zone.										
				Non intact zone.										
				Non intact zone.										
				Non intact zone.										
				Non intact zone.										
				Non intact zone.										
		Non intact zone.												
		Non intact zone.												
		Non intact zone.												
		Non intact zone.												
		Non intact zone.												
		Non intact zone.												
Hole Diameter		Casing Depths		General Remarks			Chiselling			Ground Water				
Depth Base (m)	Diameter (mm)	Depth Base (m)	Diameter (mm)	1.2m Hand excavated inspection pit dug. No groundwater encountered.			From (m)	To (m)	Time (hr)	Depth Strike (m)	Depth Casing (m)	Depth Sealed (m)	Time Elapsed (min)	Water Level (m)
3.20	150						3.00	3.20	01:00					

Contract no: S240526

Site: The Seam, Barnsley

Driller:	L&A Drilling Ltd
Plant used:	Dando 1500
Started:	30/07/2024
Ended:	02/08/2024
Backfilled:	02/08/2024

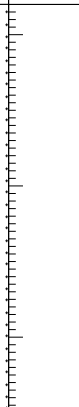
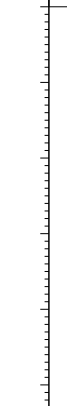
GL (AOD): 97.27m
Easting: 434642.64
Northing: 406638.79
Logged: RF
Status: FINAL

Client: Fairhurst

Method: Cable Percussive with Rotary follow on

Backfill / Installation	Legend	Depth (m)	Level (m AOD)	Stratum Description	Samples and Insitu Testing			Coring / Fractures			
					Depth (m)	Type	Results	TCR (%)	SCR (%)	RQD (%)	Fracture
		13.18	84.09	Weak to very weak, thinly laminated, dark grey to greyish brown, slightly weathered, interbedded MUDSTONE and SANDSTONE. Discontinuities are closely to very closely spaced, sub-horizontal to sub-vertical, and occasionally clay-filled. Non intact zones are comprised of soft to firm, yellowish brown to greyish brown, slightly sandy, gravelly, clay. Sand is fine to coarse. Gravel is fine to coarse, angular to sub-angular of mudstone and sandstone. Non intact zone. Non intact zone. Non intact zone. Non intact zone. Non intact zone. Non intact zone.				91	73	10	0 54 150
				Non intact zone. Non intact zone.				98	89	7	0 52 100
				Non intact zone. Medium strong, thickly laminated, light brown, SANDSTONE. Discontinuities, sub horizontal and sub vertical, close to medium spaced and slightly oxidised. Non intact zones are comprised of a yellowish brown, slightly sandy gravel. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of sandstone. Non intact zone. Non intact zone.				97	88	76	0 167 410
				Non intact zone. Non intact zone.				91	75	65	0 214 380
				Non intact zone.				95	90	80	0 188 410
				Non intact zone. Non intact zone.				83	77	75	0 214 540

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 SOLMEK 12-16 Yarm Road Stockton on Tees TS18 3NA 01642 607083 info@solmek.com				Cable Percussive with Rotary Core Follow-on Log							Scale 1:50 Sheet 3 of 3		BH105	
Contract no: S240526				Site: The Seam, Barnsley				Driller: L&A Drilling Ltd Plant used: Dando 1500 Started: 30/07/2024 Ended: 02/08/2024 Backfilled: 02/08/2024				GL (AOD): 97.27m Easting: 434642.64 Northing: 406638.79 Logged: RF Status: FINAL		
Client: Fairhurst														
Method: Cable Percussive with Rotary follow on														
Backfill / Installation	Legend	Depth (m)	Level (m AOD)	Stratum Description	Samples and Insitu Testing			Coring / Fractures						
					Depth (m)	Type	Results	TCR (%)	SCR (%)	RQD (%)	Fracture			
				Medium strong, thickly laminated, light brown, SANDSTONE. Discontinuities, sub horizontal and sub vertical, close to medium spaced and slightly oxidised. Non intact zones are comprised of a yellowish brown, slightly sandy gravel. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of sandstone.				87	73	57	0 115 350			
				Non intact zone. Non intact zone.				100	97	95	0 375 820			
				Non intact zone.										
		22.50	74.77	End of Borehole at 22.500m										
Hole Diameter		Casing Depths		General Remarks	Flush Returns				Ground Water					
Depth Base (m)	Diameter (mm)	Depth Base (m)	Diameter (mm)		From (m)	To (m)	Flush Type	Flush (%)	Depth Strike (m)	Depth Casing (m)	Depth Sealed (m)	Time Elapsed (min)	Water Level (m)	
3.20	150			1.2m Hand excavated inspection pit dug. No groundwater encountered.										

GL (AOD): 97.32m
Easting: 434645
Northing: 406606
Logged: RF
Status: FINAL

Method: Cable Percussive with Rotary follow on

Hole Diameter		Casing Depths		General Remarks	Chiselling			Ground Water				
Depth Base (m)	Diameter (mm)	Depth Base (m)	Diameter (mm)		From (m)	To (m)	Time (hr)	Depth Strike (m)	Depth Casing (m)	Depth Sealed (m)	Time Elapsed (min)	Water Level (m)
2.50	150				1.2m Hand excavated inspection pit dug. No groundwater encountered.	2.00	2.60	01:00	18.10			



Scale 1:50 Sheet 2 of 3

BH106

Contract no: S240526

Site: The Seam, Barnsley

Driller:	L&A Drilling Ltd
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Plant used: Dando 1500

Started: 01/08/2024

Ended:	05/08/2024
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Backfilled:	05/08/2024
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GL (AOD): 97.32m

Easting: 434645.26

Northing: 406606.31

Logged: RF

Status: FINAL

Client:	Fairhurst
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Method:	Cable Percussive with Rotary follow on
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[illegible]



Scale 1:50 Sheet 3 of 3

BH106

Contract no: S240526

Site: The Seam, Barnsley

Driller:	L&A Drilling Ltd
-----------------	------------------

Plant used: Dando 1500

Started: 01/08/2024

Ended: 05/08/2024

Backfilled:	05/08/2024
--------------------	------------

GL (AOD): 97.32m

Easting: 434645.26

Northing: 406606.31

Logged: RF

Status: FINAL

Client:	Fairhurst
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Method:	Cable Percussive with Rotary follow on
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[illegible]

APPENDIX C: DCP & Soakaway Results

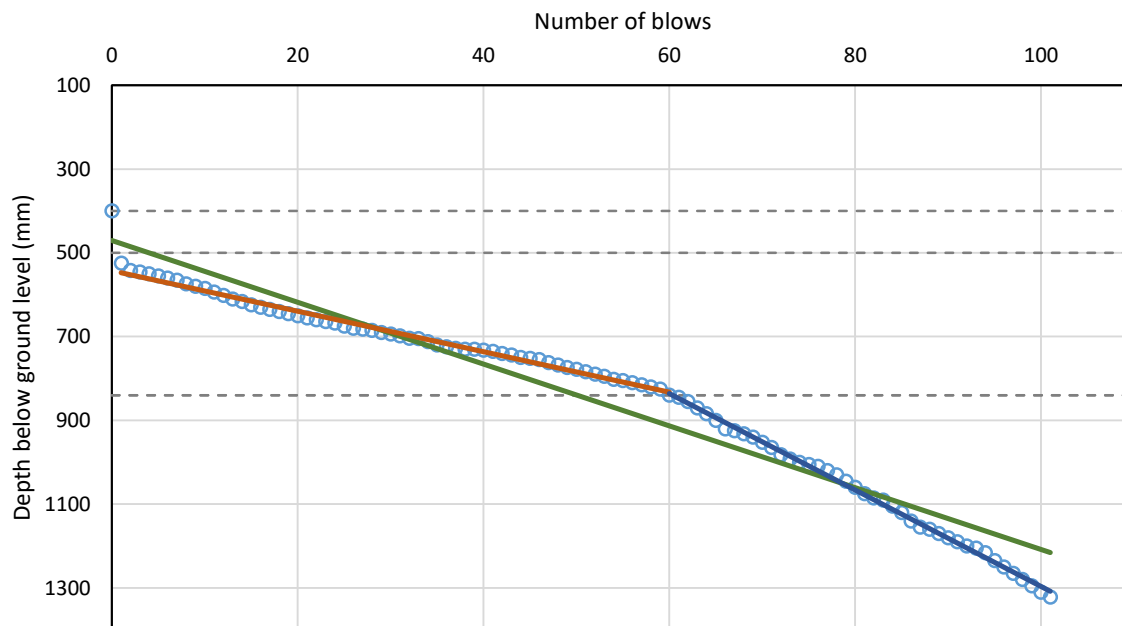


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DYNAMIC CONE PENETROMETER TEST REPORT

Project: S240526
Project name: The Seam, Barnsley
Report date: 05/08/2024

Operator: S. McNiff
Notes: Test commenced at 0.40mbgl
Test date: 01/08/2024
Test location: RC-101



Layer 400-1400mm bgl Full Test

50th Percentile penetration rate 4 mm/blow
Estimated CBR 69.8 % [IAN 73/06 Rev1 (2009) - Clause 893]

Layer 500-840mm bgl

Penetration rate 5 mm/blow
Equivalent CBR 57.1 % [DMRB Vol.7 3.2 HD 29/08 - Section 7.31]

Layer 840-1400mm bgl

Penetration rate 11.51171 mm/blow
Equivalent CBR 22.8 % [DMRB Vol.7 3.2 HD 29/08 - Section 7.31]

Produced by	Dated	Checked by	Dated
S. McNiff	05/08/24	L. Cassidy	06/08/24

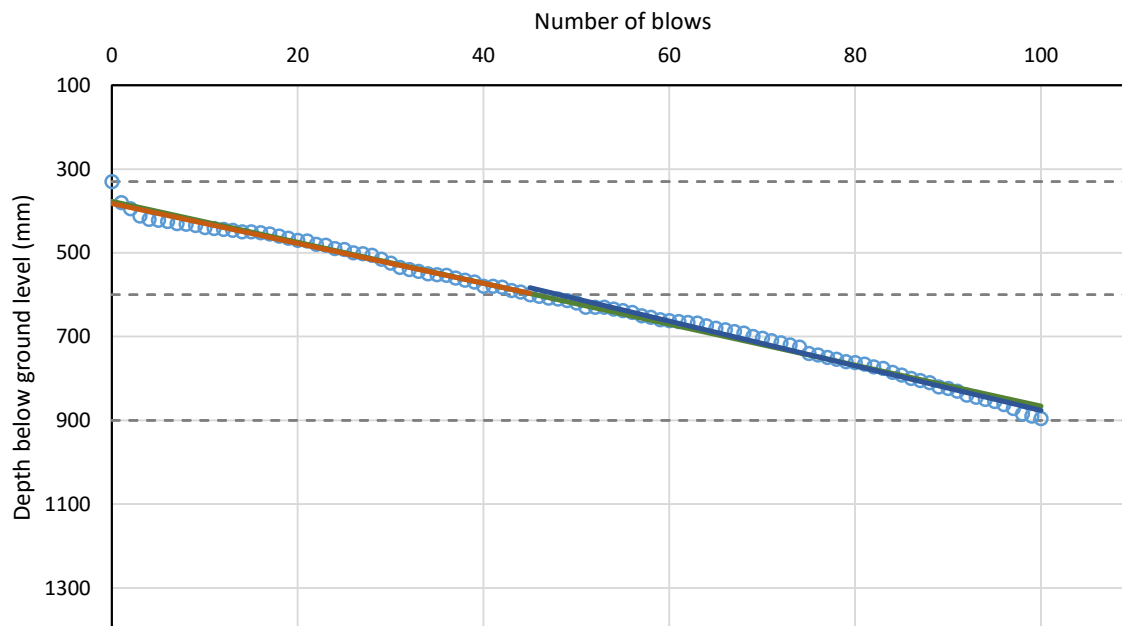


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DYNAMIC CONE PENETROMETER TEST REPORT

Project: S240526
Project name: The Seam, Barnsley
Report date: 05/08/2024

Operator: S. McNiff
Notes: Test commenced at 0.33mbgl
Test date: 01/08/2024
Test location: RC-102



Layer 330-900mm bgl Full Test

50th Percentile penetration rate 3 mm/blow
Estimated CBR 94.6 % [IAN 73/06 Rev1 (2009) - Clause 893]

Layer 330-600mm bgl

Penetration rate 5 mm/blow
Equivalent CBR 58.0 % [DMRB Vol.7 3.2 HD 29/08 - Section 7.31]

Layer 600-900mm bgl

Penetration rate 5.322659 mm/blow
Equivalent CBR 51.6 % [DMRB Vol.7 3.2 HD 29/08 - Section 7.31]

Produced by	Dated	Checked by	Dated
S. McNiff	05/08/24	L. Cassidy	06/08/24

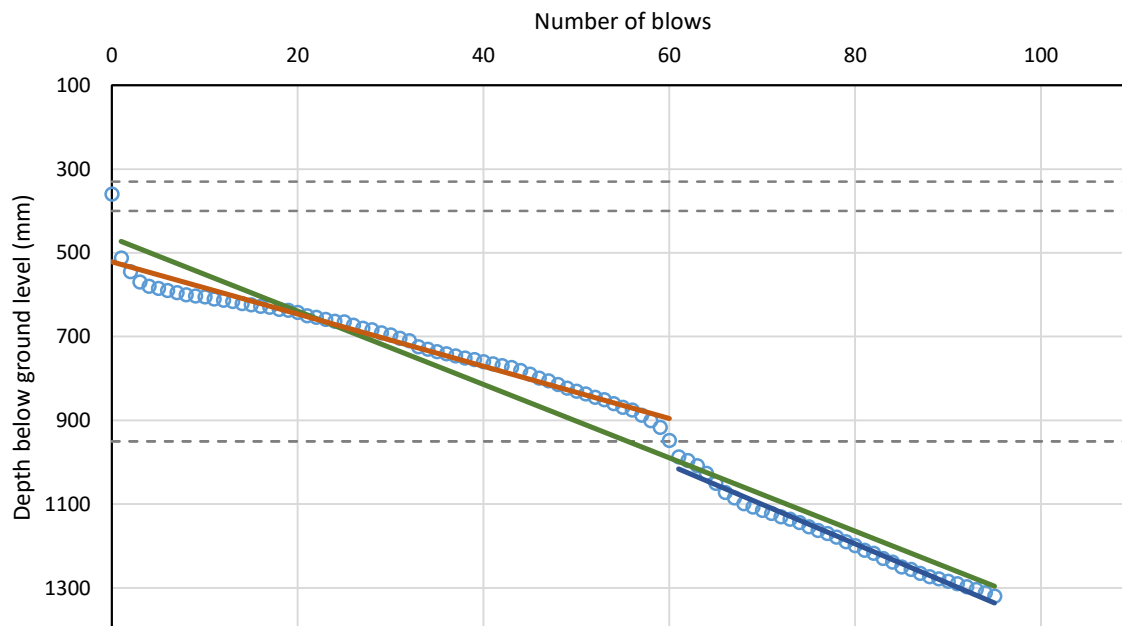


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DYNAMIC CONE PENETROMETER TEST REPORT

Project: S240526
Project name: The Seam, Barnsley
Report date: 05/08/2024

Operator: S. McNiff
Notes: Test commenced at 0.36mbgl
Test date: 01/08/2024
Test location: RC-103



Layer 400-1400mm bgl Full Test

50th Percentile penetration rate 5 mm/blow
Estimated CBR 55.1 % [IAN 73/06 Rev1 (2009) - Clause 893]

Layer 330-950mm bgl

Penetration rate 6 mm/blow
Equivalent CBR 43.6 % [DMRB Vol.7 3.2 HD 29/08 - Section 7.31]

Layer 950-1400mm bgl

Penetration rate 9.410084 mm/blow
Equivalent CBR 28.2 % [DMRB Vol.7 3.2 HD 29/08 - Section 7.31]

Produced by	Dated	Checked by	Dated
S. McNiff	05/08/24	L. Cassidy	06/08/24

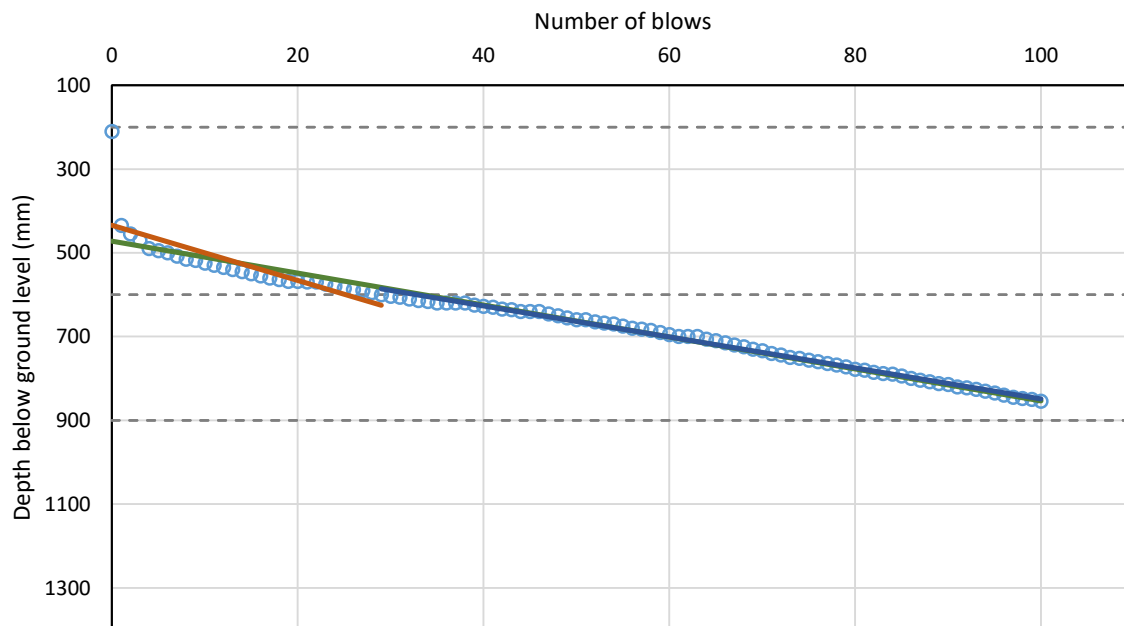


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DYNAMIC CONE PENETROMETER TEST REPORT

Project: S240526
Project name: The Seam, Barnsley
Report date: 05/08/2024

Operator: S. McNiff
Notes: Test commenced at 0.21mbgl
Test date: 01/08/2024
Test location: RC-104



Layer 200-900mm bgl Full Test

50th Percentile penetration rate 2 mm/blow
Estimated CBR 145.1 % [IAN 73/06 Rev1 (2009) - Clause 893]

Layer 200-600mm bgl

Penetration rate 7 mm/blow
Equivalent CBR 41.2 % [DMRB Vol.7 3.2 HD 29/08 - Section 7.31]

Layer 600-900mm bgl

Penetration rate 3.701878 mm/blow
Equivalent CBR 75.7 % [DMRB Vol.7 3.2 HD 29/08 - Section 7.31]

Produced by	Dated	Checked by	Dated
S. McNiff	05/08/24	L. Cassidy	06/08/24

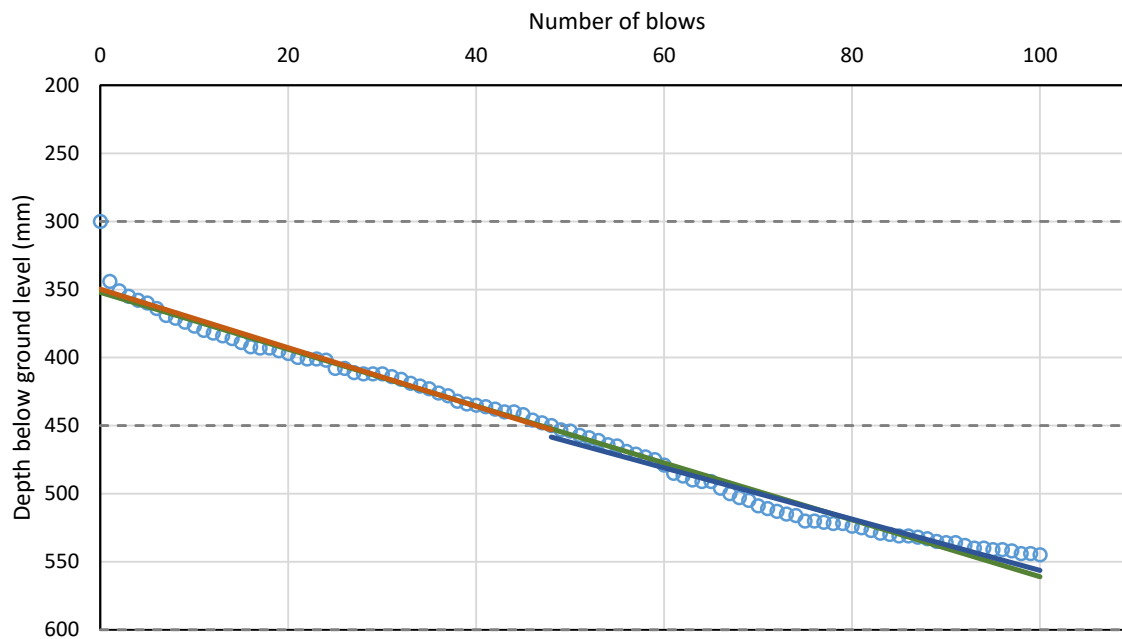


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DYNAMIC CONE PENETROMETER TEST REPORT

Project: S240526
Project name: The Seam, Barnsley
Report date: 05/08/2024

Operator: S. McNiff
Notes: Test commenced at 0.30mbgl
Test date: 01/08/2024
Test location: RC-105



Layer 300-600mm bgl Full Test

50th Percentile penetration rate 2 mm/blow
Estimated CBR 145.1 % [IAN 73/06 Rev1 (2009) - Clause 893]

Layer 300-450mm bgl

Penetration rate 2 mm/blow
Equivalent CBR 134.4 % [DMRB Vol.7 3.2 HD 29/08 - Section 7.31]

Layer 450-600mm bgl

Penetration rate 1.883325 mm/blow
Equivalent CBR 154.7 % [DMRB Vol.7 3.2 HD 29/08 - Section 7.31]

Produced by	Dated	Checked by	Dated
S. McNiff	05/08/24	L. Cassidy	06/08/24

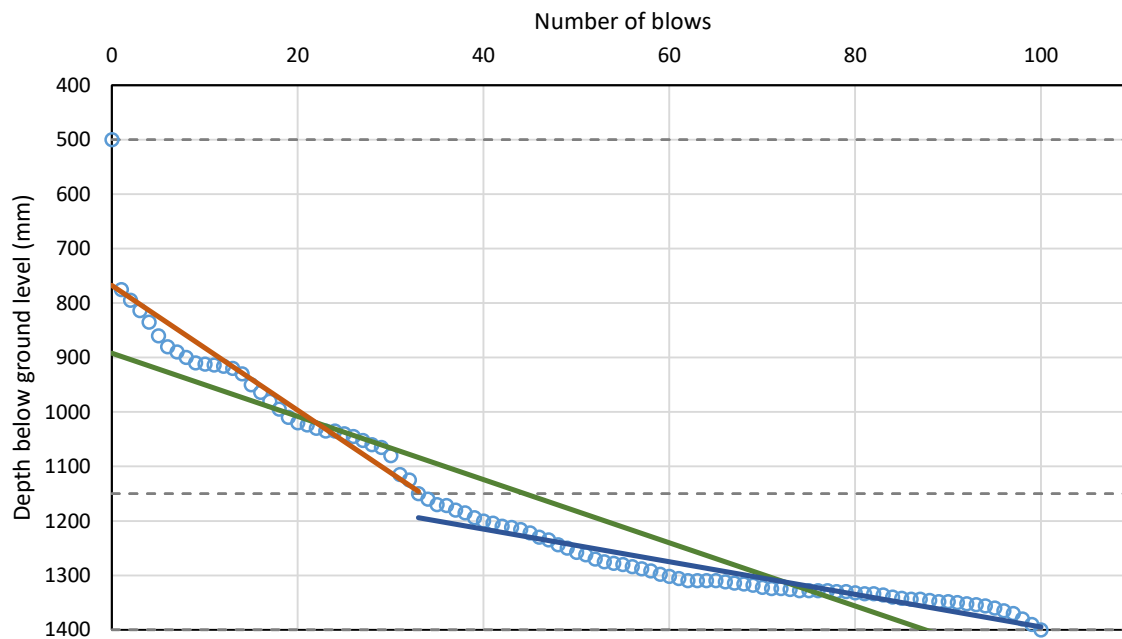


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DYNAMIC CONE PENETROMETER TEST REPORT

Project: S240526
Project name: The Seam, Barnsley
Report date: 05/08/2024

Operator: S. McNiff
Notes: Test commenced at 0.50mbgl
Test date: 01/08/2024
Test location: RC-106



Layer 500-1400mm bgl Full Test

50th Percentile penetration rate 3 mm/blow
Estimated CBR 94.6 % [IAN 73/06 Rev1 (2009) - Clause 893]

Layer 500-1150mm bgl

Penetration rate 11 mm/blow
Equivalent CBR 22.9 % [DMRB Vol.7 3.2 HD 29/08 - Section 7.31]

Layer 1150-1400mm bgl

Penetration rate 2.994999 mm/blow
Equivalent CBR 94.7 % [DMRB Vol.7 3.2 HD 29/08 - Section 7.31]

Produced by	Dated	Checked by	Dated
S. McNiff	05/08/24	L. Cassidy	06/08/24

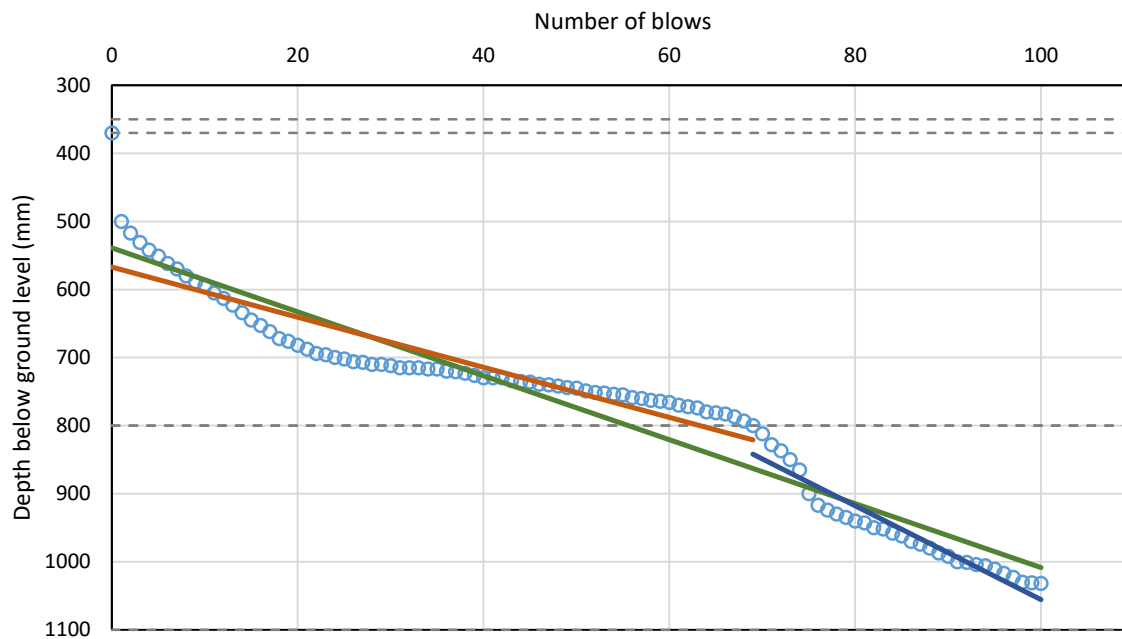


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DYNAMIC CONE PENETROMETER TEST REPORT

Project: S240526
Project name: The Seam, Barnsley
Report date: 05/08/2024

Operator: S. McNiff
Notes: Test commenced at 0.37mbgl
Test date: 01/08/2024
Test location: RC-107



Layer 370-1200mm bgl Full Test

50th Percentile penetration rate 3 mm/blow
Estimated CBR 94.6 % [IAN 73/06 Rev1 (2009) - Clause 893]

Layer 350-800mm bgl

Penetration rate 4 mm/blow
Equivalent CBR 76.2 % [DMRB Vol.7 3.2 HD 29/08 - Section 7.31]

Layer 800-1100mm bgl

Penetration rate 6.891312 mm/blow
Equivalent CBR 39.3 % [DMRB Vol.7 3.2 HD 29/08 - Section 7.31]

Produced by	Dated	Checked by	Dated
S. McNiff	05/08/24	L. Cassidy	06/08/24

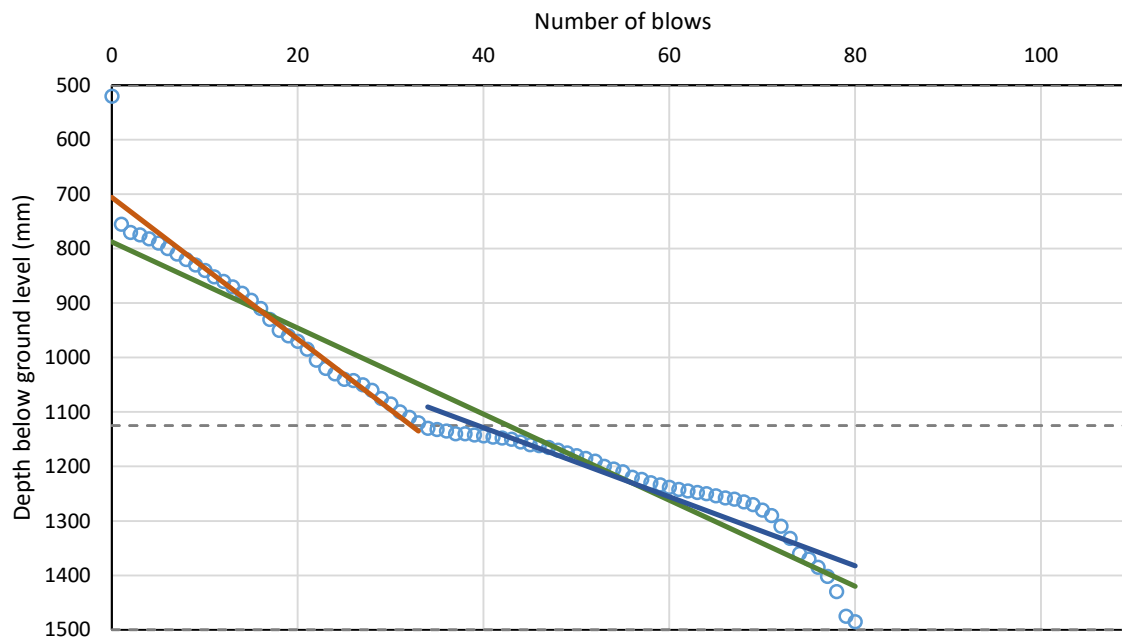


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DYNAMIC CONE PENETROMETER TEST REPORT

Project: S240526
Project name: The Seam, Barnsley
Report date: 05/08/2024

Operator: S. McNiff
Notes: Test commenced at 0.52mbgl
Test date: 01/08/2024
Test location: RC-108



Layer 500-1500mm bgl Full Test

50th Percentile penetration rate 4 mm/blow
Estimated CBR 69.8 % [IAN 73/06 Rev1 (2009) - Clause 893]

Layer 500-1125mm bgl

Penetration rate 13 mm/blow
Equivalent CBR 20.1 % [DMRB Vol.7 3.2 HD 29/08 - Section 7.31]

Layer 1125-1500mm bgl

Penetration rate 6.34401 mm/blow
Equivalent CBR 42.8 % [DMRB Vol.7 3.2 HD 29/08 - Section 7.31]

Produced by	Dated	Checked by	Dated
S. McNiff	05/08/24	L. Cassidy	06/08/24

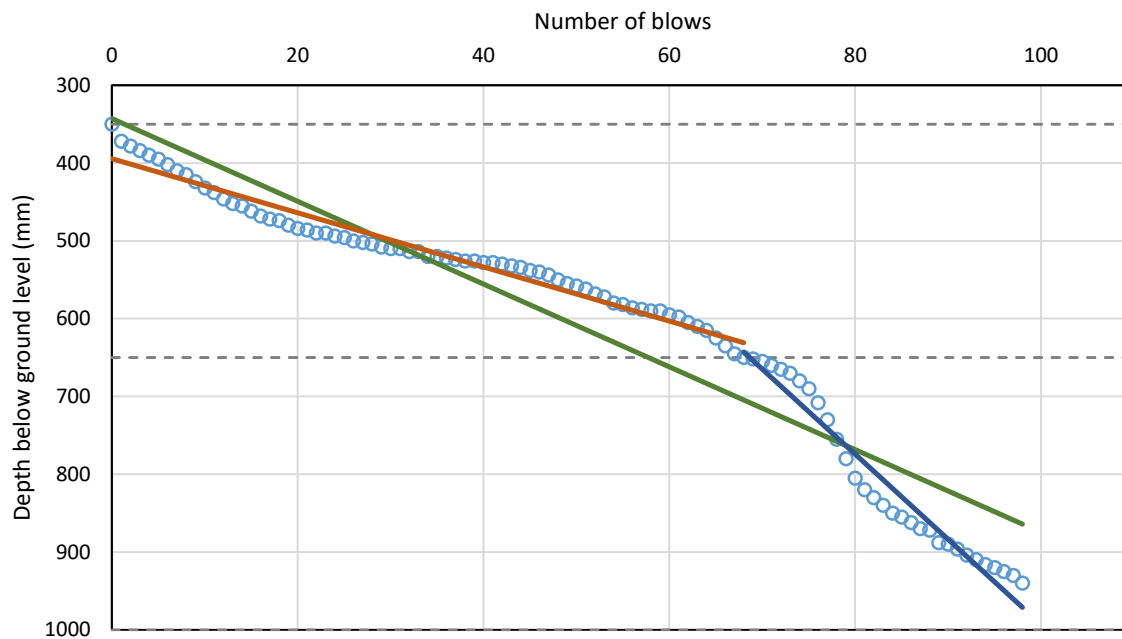


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DYNAMIC CONE PENETROMETER TEST REPORT

Project: S240526
Project name: The Seam, Barnsley
Report date: 05/08/2024

Operator: S. McNiff
Notes: Test commenced at 0.35mbgl
Test date: 01/08/2024
Test location: RC-109



Layer 350-1500mm bgl Full Test

50th Percentile penetration rate 3 mm/blow
Estimated CBR 94.6 % [IAN 73/06 Rev1 (2009) - Clause 893]

Layer 350-650mm bgl

Penetration rate 3 mm/blow
Equivalent CBR 80.8 % [DMRB Vol.7 3.2 HD 29/08 - Section 7.31]

Layer 650-1000mm bgl

Penetration rate 10.9375 mm/blow
Equivalent CBR 24.1 % [DMRB Vol.7 3.2 HD 29/08 - Section 7.31]

Produced by	Dated	Checked by	Dated
S. McNiff	05/08/24	L. Cassidy	06/08/24

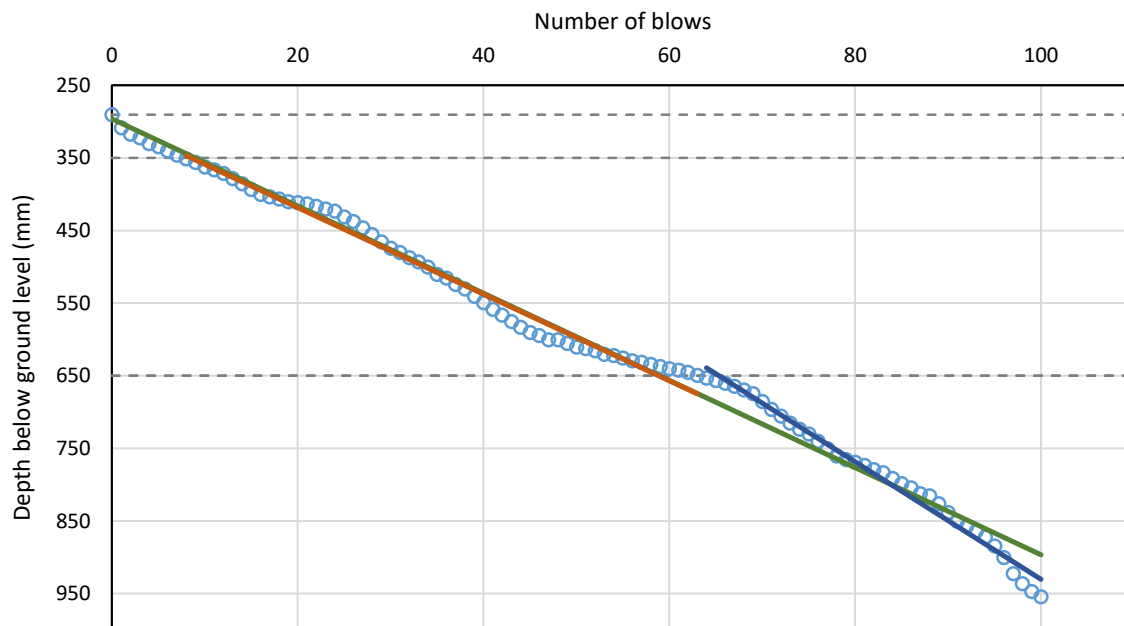


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DYNAMIC CONE PENETROMETER TEST REPORT

Project: S240526
Project name: The Seam, Barnsley
Report date: 05/08/2024

Operator: S. McNiff
Notes: Test commenced at 0.295mbgl
Test date: 01/08/2024
Test location: RC-110



Layer 290.5-1000mm bgl Full Test

50th Percentile penetration rate 4 mm/blow
Estimated CBR 69.8 % [IAN 73/06 Rev1 (2009) - Clause 893]

Layer 350-650mm bgl

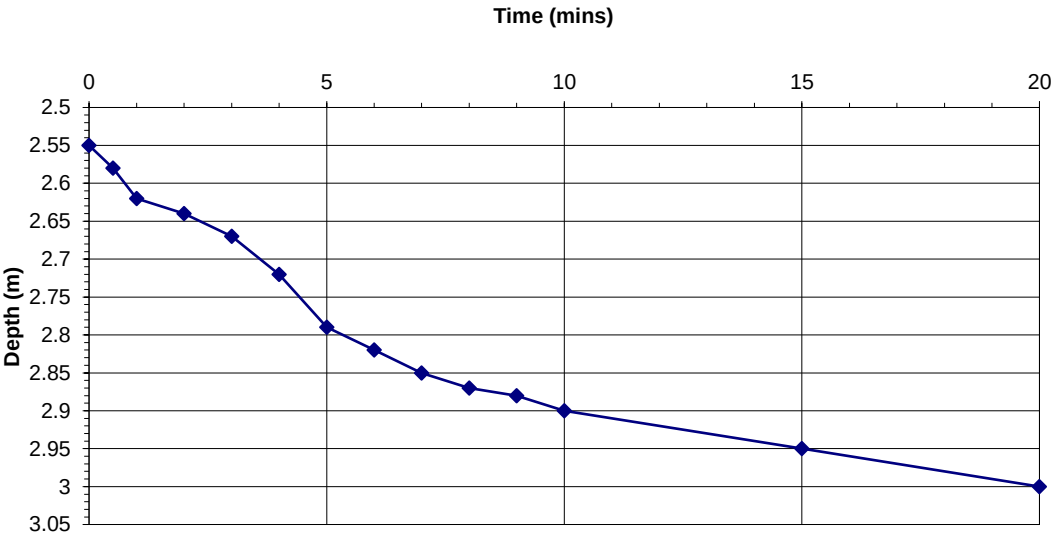
Penetration rate 6 mm/blow
Equivalent CBR 45.8 % [DMRB Vol.7 3.2 HD 29/08 - Section 7.31]

Layer 650-1000mm bgl

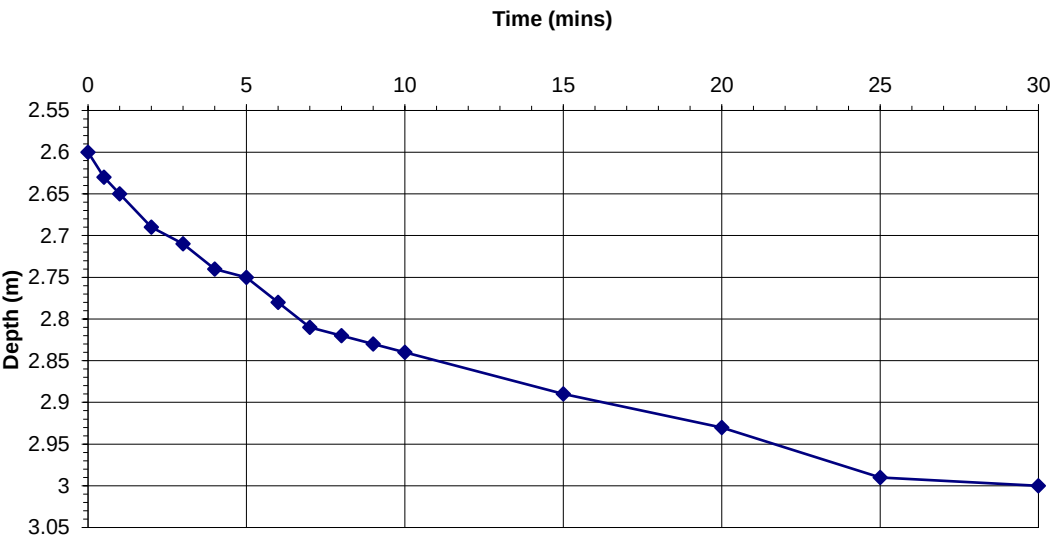
Penetration rate 8.089853 mm/blow
Equivalent CBR 33.1 % [DMRB Vol.7 3.2 HD 29/08 - Section 7.31]

Produced by	Dated	Checked by	Dated
S. McNiff	05/08/24	L. Cassidy	06/08/24

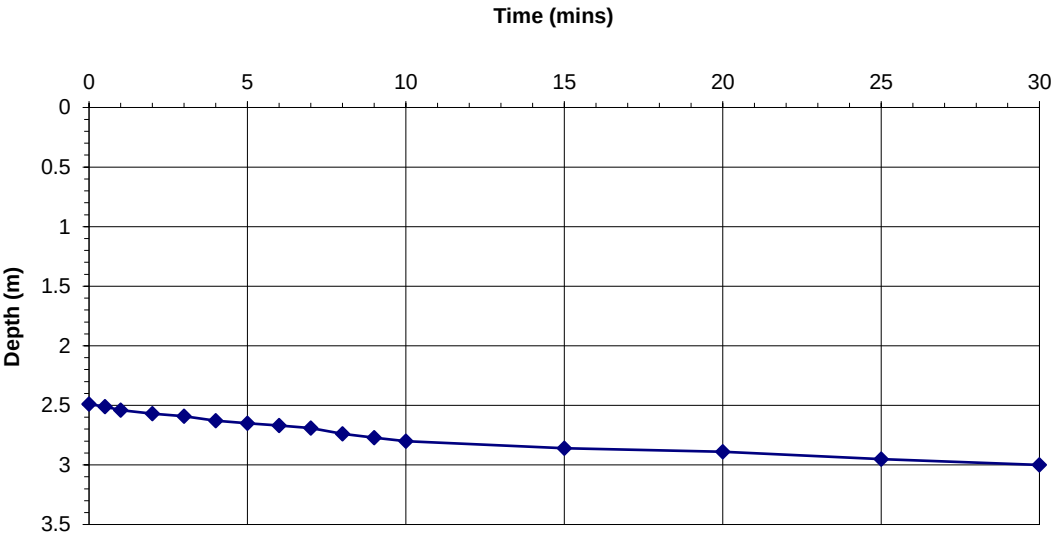
SOAKAWAY DESIGN IN ACCORDANCE WITH BRE DIGEST 365: 1991 BRE Digest 365, Figure 2, Page 5					
Client: Fairhurst					
Site: The Seam, Barnsley		Notes:			
Job No: S240526					
Pit No: SA01		Test No:	1		
CALCULATION OF SOIL INFILTRATION RATE					
Time (min)	Depth (m)	Pit Dimensions	Length (m) =	3.00	
0	2.55		Width (m) =	1.00	
0.5	2.58		Depth (m) =	3.00	
1	2.62				
2	2.64	Depth at start of test (m) = 2.550			
3	2.67	Depth at end of test (m) = 3.000			
4	2.72	75% level (m) = 2.663			
5	2.79	50% Effective Depth 0.225			
6	2.82	25% level (m) = 2.888			
7	2.85				
8	2.87	Base area of pit (m ²) = 3.000			
9	2.88	V _{p75-25} (m ³) = 0.675			
10	2.9	α _{n50} (m ⁴) = 4.800			
15	2.95				
20	3	From the graph:			
25		tp 75 (min) = 2.75			
30		tp 25 (min) = 9.375			
40					
50		Soil infiltration rate, f, (m/s) =	3.54E-04	normal test	
60					
90					
120		Input by:	RF	Date:	06/08/2024
180		Checked by:	LC	Date:	06/08/2024



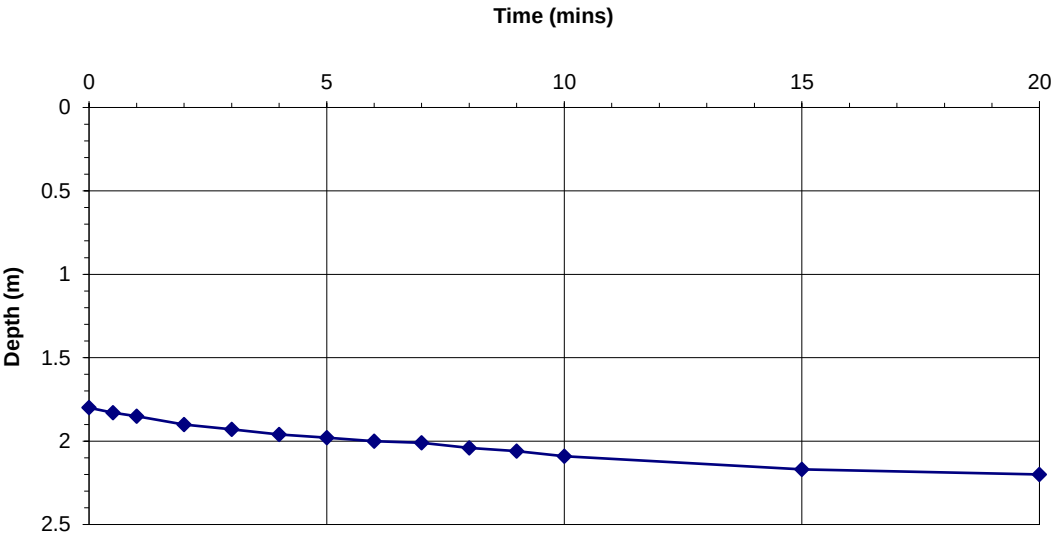
SOAKAWAY DESIGN IN ACCORDANCE WITH BRE DIGEST 365: 1991 BRE Digest 365, Figure 2, Page 5					
Client: Fairhurst					
Site: The Seam, Barnsley		Notes:			
Job No: S240526					
Pit No: SA01		Test No:	2		
CALCULATION OF SOIL INFILTRATION RATE					
Time (min)	Depth (m)		Pit Dimensions	Length (m) =	3.00
0	2.6			Width (m) =	1.00
0.5	2.63			Depth (m) =	3.00
1	2.65				
2	2.69	Depth at start of test (m) = 2.600			
3	2.71	Depth at end of test (m) = 3.000			
4	2.74	75% level (m) = 2.700			
5	2.75	50% Effective Depth			
6	2.78	25% level (m) = 2.900			
7	2.81				
8	2.82	Base area of pit (m ²) = 3.000			
9	2.83	V _{p75-25} (m ³) = 0.600			
10	2.84	α _{n50} (m ⁴) = 4.600			
15	2.89				
20	2.93	From the graph:			
25	2.99	tp 75 (min) = 2.5			
30	3	tp 25 (min) = 16.25			
40					
50		Soil infiltration rate, f, (m/s) =	1.58E-04	normal test	
60					
90					
120		Input by:	RF	Date:	06/08/2024
180		Checked by:	LC	Date:	06/08/2024



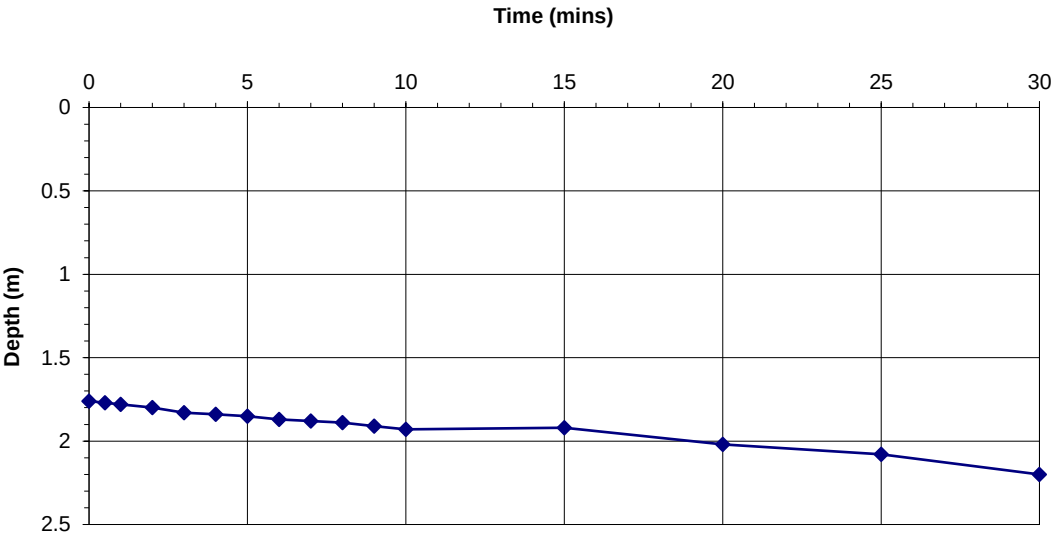
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Client: Fairhurst					
Site: The Seam, Barnsley		Notes:			
Job No: S240526					
Pit No: SA01		Test No:	3		
CALCULATION OF SOIL INFILTRATION RATE					
Time (min)	Depth (m)		Pit Dimensions	Length (m) =	3.00
0	2.49			Width (m) =	1.00
0.5	2.51			Depth (m) =	3.00
1	2.54				
2	2.57	Depth at start of test (m) = 2.490			
3	2.59	Depth at end of test (m) = 3.000			
4	2.63	75% level (m) = 2.618			
5	2.65	50% Effective Depth = 0.255			
6	2.67	25% level (m) = 2.873			
7	2.69				
8	2.74	Base area of pit (m ²) = 3.000			
9	2.77	V _{p75-25} (m ³) = 0.765			
10	2.8	α _{n50} (m ⁴) = 5.040			
15	2.86				
20	2.89	From the graph:			
25	2.95	tp 75 (min) = 3.6875			
30	3	tp 25 (min) = 17.08333333			
40					
50		Soil infiltration rate, f, (m/s) =	1.89E-04	normal test	
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90					
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180		Checked by:	LC	Date:	06/08/2024



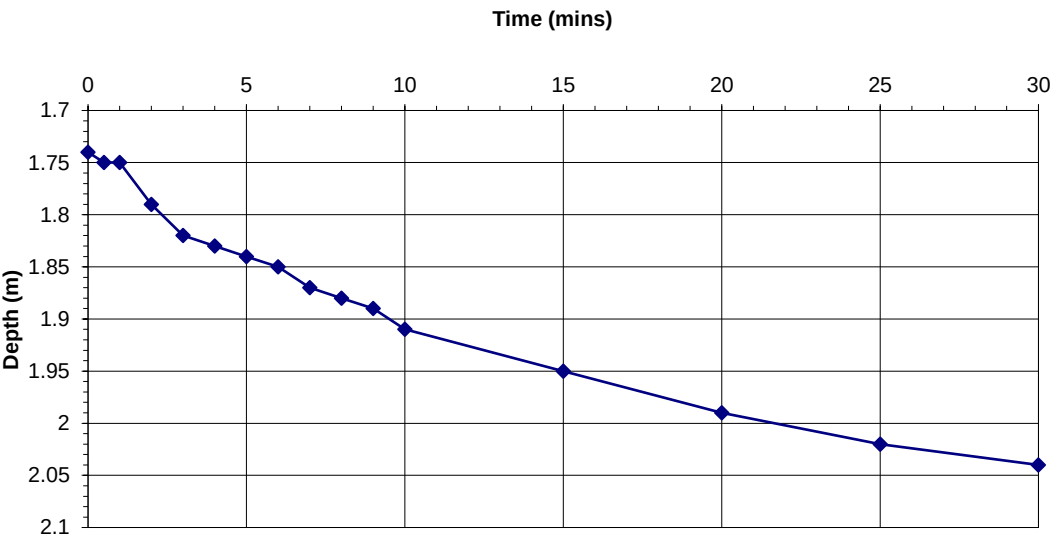
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Client: Fairhurst					
Site: The Seam, Barnsley			Notes:		
Job No: S240526					
Pit No: SA02		Test No: 1			
CALCULATION OF SOIL INFILTRATION RATE					
Time (min)	Depth (m)	Pit Dimensions		Length (m) =	3.00
0	1.8			Width (m) =	1.00
0.5	1.83			Depth (m) =	2.20
1	1.85				
2	1.9	Depth at start of test (m) = 1.800			
3	1.93	Depth at end of test (m) = 2.200			
4	1.96	75% level (m) = 1.900			
5	1.98	50% Effective Depth = 0.200			
6	2	25% level (m) = 2.100			
7	2.01				
8	2.04	Base area of pit (m ²) = 3.000			
9	2.06	V _{p75-25} (m ³) = 0.600			
10	2.09	α _{n50} (m ⁴) = 4.600			
15	2.17				
20	2.2	From the graph:			
25		tp 75 (min) = 2			
30		tp 25 (min) = 10.625			
40					
50		Soil infiltration rate, f, (m/s) =		2.52E-04	normal test
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90					
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180		Checked by:	LC	Date:	06/08/2024



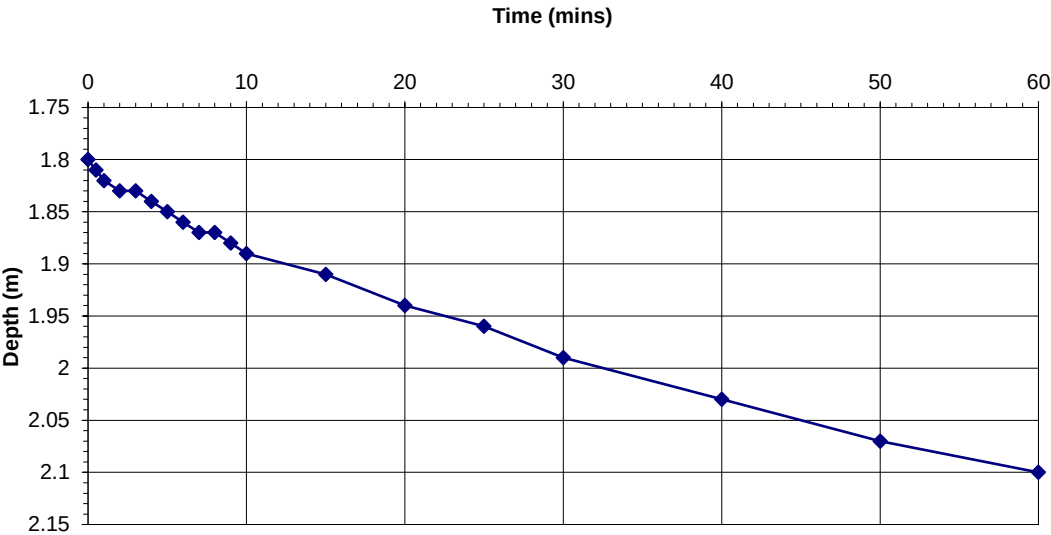
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Client: Fairhurst					
Site: The Seam, Barnsley		Notes:			
Job No: S240526					
Pit No: SA02		Test No:	2		
CALCULATION OF SOIL INFILTRATION RATE					
Time (min)	Depth (m)	Pit Dimensions	Length (m) =	3.00	
0	1.76		Width (m) =	1.00	
0.5	1.77		Depth (m) =	2.20	
1	1.78				
2	1.8	Depth at start of test (m) = 1.760			
3	1.83	Depth at end of test (m) = 2.200			
4	1.84	75% level (m) = 1.870			
5	1.85	50% Effective Depth = 0.220			
6	1.87	25% level (m) = 2.090			
7	1.88				
8	1.89	Base area of pit (m ²) = 3.000			
9	1.91	V _{p75-25} (m ³) = 0.660			
10	1.93	α _{n50} (m ⁴) = 4.760			
15	1.92				
20	2.02	From the graph:			
25	2.08	tp 75 (min) = 6			
30	2.2	tp 25 (min) = 25.41666667			
40					
50		Soil infiltration rate, f, (m/s) =	1.19E-04	normal test	
60					
90					
120		Input by:	RF	Date:	06/08/2024
180		Checked by:	LC	Date:	06/08/2024



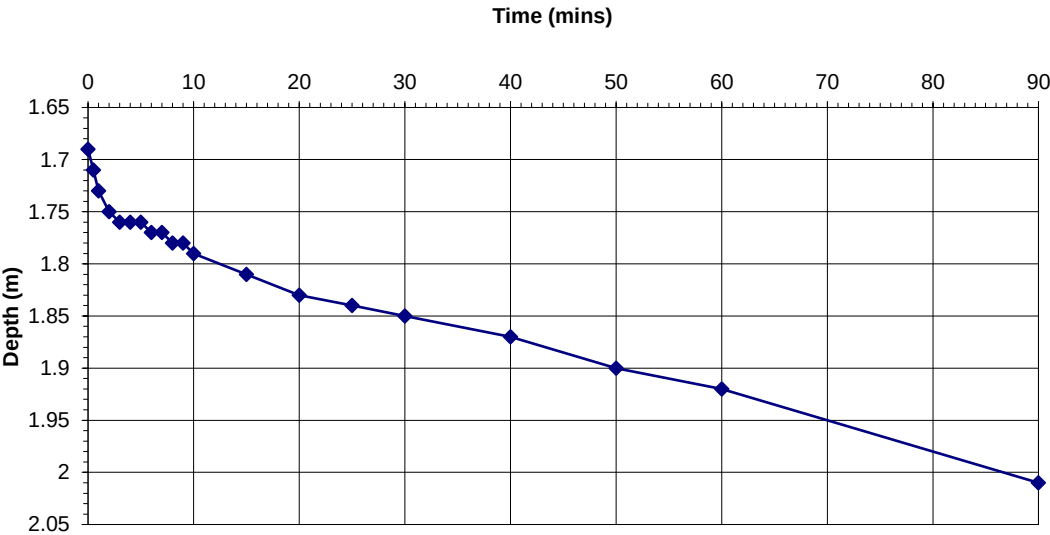
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Client: Fairhurst					
Site: The Seam, Barnsley		Notes:			
Job No: S240526					
Pit No: SA02		Test No:	3		
CALCULATION OF SOIL INFILTRATION RATE					
Time (min)	Depth (m)		Pit Dimensions	Length (m) =	3.00
0	1.74			Width (m) =	1.00
0.5	1.75			Depth (m) =	2.20
1	1.75				
2	1.79	Depth at start of test (m) = 1.740			
3	1.82	Depth at end of test (m) = 2.040			
4	1.83	75% level (m) = 1.815			
5	1.84	50% Effective Depth = 0.310			
6	1.85	25% level (m) = 1.965			
7	1.87				
8	1.88	Base area of pit (m ²) = 3.000			
9	1.89	V _{p75-25} (m ³) = 0.450			
10	1.91	α _{n50} (m ⁴) = 5.480			
15	1.95				
20	1.99	From the graph:			
25	2.02	tp 75 (min) = 2.833333333			
30	2.04	tp 25 (min) = 16.875			
40					
50		Soil infiltration rate, f, (m/s) =	9.75E-05	normal test	
60					
90					
120		Input by:	RF	Date:	06/08/2024
180		Checked by:	LC	Date:	06/08/2024



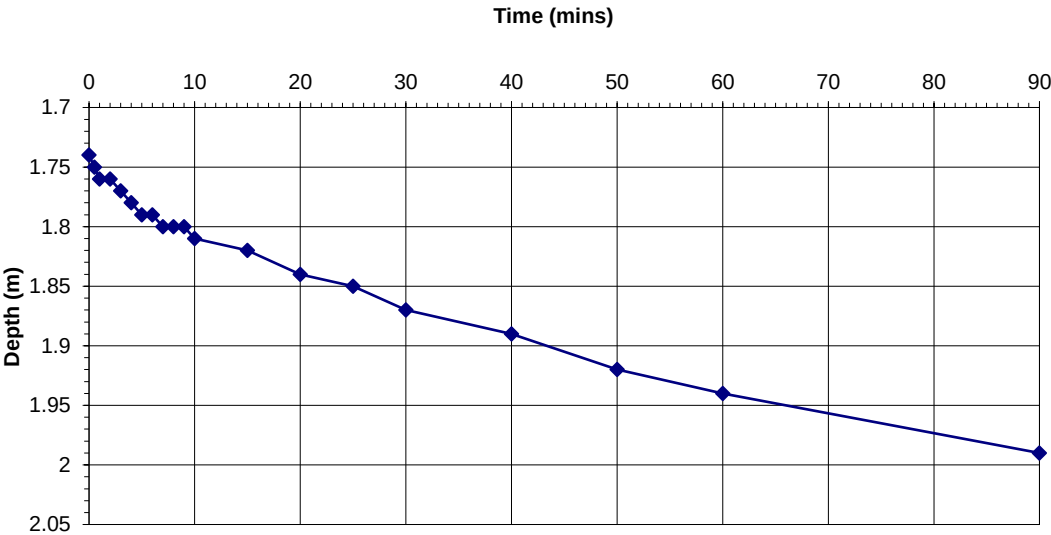
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BRE Digest 365, Figure 2, Page 5					
Client: Fairhurst					
Site: The Seam, Barnsley			Notes:		
Job No: S240526					
Pit No: SA03			Test No:	1	
CALCULATION OF SOIL INFILTRATION RATE					
Time (min)	Depth (m)		Pit Dimensions	Length (m) =	3.00
0	1.8			Width (m) =	1.00
0.5	1.81			Depth (m) =	2.10
1	1.82				
2	1.83	Depth at start of test (m) = 1.800			
3	1.83	Depth at end of test (m) = 2.100			
4	1.84	75% level (m) = 1.875			
5	1.85	50% Effective Depth 0.150			
6	1.86	25% level (m) = 2.025			
7	1.87				
8	1.87	Base area of pit (m ²) = 3.000			
9	1.88	V _{p75-25} (m ³) = 0.450			
10	1.89	α _{n50} (m ⁴) = 4.200			
15	1.91				
20	1.94	From the graph:			
25	1.96	tp 75 (min) = 8.5			
30	1.99	tp 25 (min) = 38.75			
40	2.03				
50	2.07	Soil infiltration rate, f, (m/s) =		5.90E-05	normal test
60	2.1				
90					
120		Input by:	RF	Date:	06/08/2024
180		Checked by:	LC	Date:	06/08/2024



SOAKAWAY DESIGN IN ACCORDANCE WITH BRE DIGEST 365: 1991 BRE Digest 365, Figure 2, Page 5					
Client: Fairhurst					
Site: The Seam, Barnsley			Notes:		
Job No: S240526					
Pit No: SA03			Test No:	2	
CALCULATION OF SOIL INFILTRATION RATE					
Time (min)	Depth (m)		Pit Dimensions	Length (m) =	3.00
0	1.69			Width (m) =	1.00
0.5	1.71			Depth (m) =	2.10
1	1.73				
2	1.75	Depth at start of test (m) = 1.690			
3	1.76	Depth at end of test (m) = 2.010			
4	1.76	75% level (m) = 1.770			
5	1.76	50% Effective Depth = 0.250			
6	1.77	25% level (m) = 1.930			
7	1.77				
8	1.78	Base area of pit (m ²) = 3.000			
9	1.78	V _{p75-25} (m ³) = 0.480			
10	1.79	α _{n50} (m ⁴) = 5.000			
15	1.81				
20	1.83	From the graph:			
25	1.84	tp 75 (min) = 6			
30	1.85	tp 25 (min) = 63.33333333			
40	1.87				
50	1.9	Soil infiltration rate, f, (m/s) =		2.79E-05	normal test
60	1.92				
90	2.01				
120		Input by:	RF	Date:	06/08/2024
180		Checked by:	LC	Date:	06/08/2024



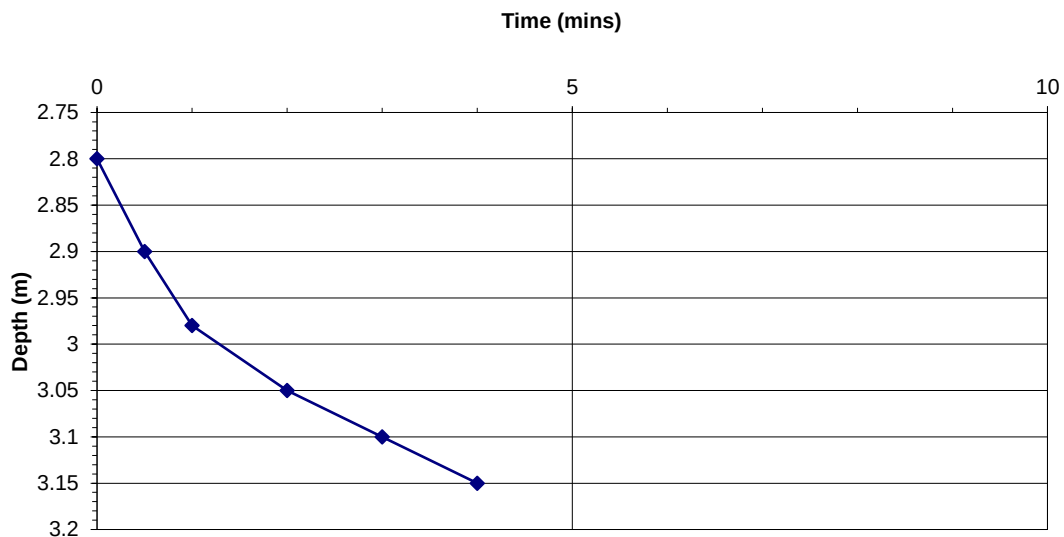
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Client: Fairhurst					
Site: The Seam, Barnsley		Notes:			
Job No: S240526					
Pit No: SA03		Test No:	3		
CALCULATION OF SOIL INFILTRATION RATE					
Time (min)	Depth (m)	Pit Dimensions	Length (m) =	3.00	
0	1.74		Width (m) =	1.00	
0.5	1.75		Depth (m) =	2.10	
1	1.76				
2	1.76	Depth at start of test (m) = 1.740			
3	1.77	Depth at end of test (m) = 1.990			
4	1.78	75% level (m) = 1.803			
5	1.79	50% Effective Depth = 0.235			
6	1.79	25% level (m) = 1.928			
7	1.8				
8	1.8	Base area of pit (m ²) = 3.000			
9	1.8	V _{p75-25} (m ³) = 0.375			
10	1.81	α _{n50} (m ⁴) = 4.880			
15	1.82				
20	1.84	From the graph:			
25	1.85	tp 75 (min) = 9.25			
30	1.87	tp 25 (min) = 53.75			
40	1.89				
50	1.92	Soil infiltration rate, f, (m/s) =	2.88E-05	normal test	
60	1.94				
90	1.99				
120		Input by:	RF	Date:	06/08/2024
180		Checked by:	LC	Date:	06/08/2024



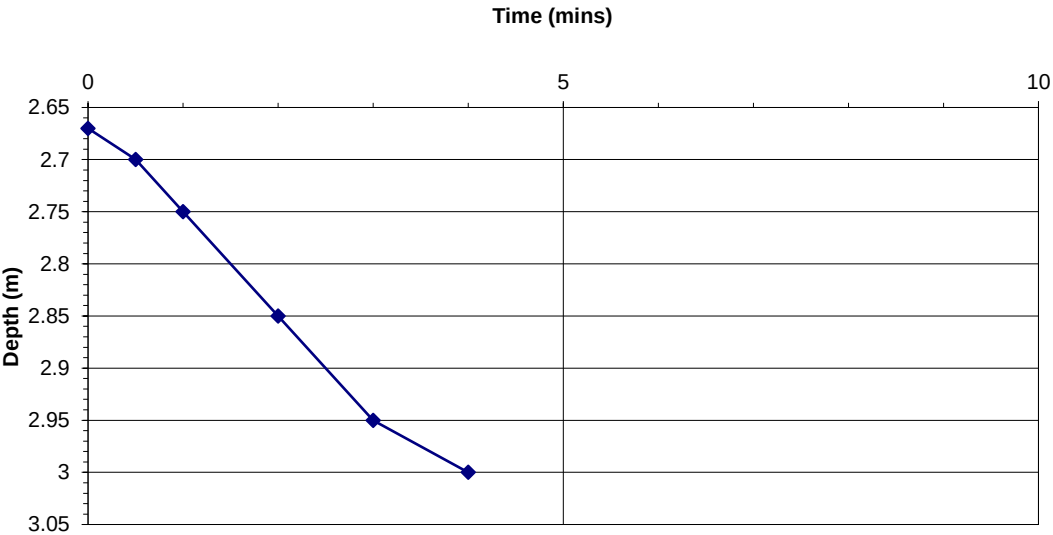
SOAKAWAY DESIGN IN ACCORDANCE WITH BRE DIGEST 365: 1991
BRE Digest 365, Figure 2, Page 5

Client: Fairhurst					
Site: The Seam, Barnsley			Notes:		
Job No: S240526					
Pit No:	SA04		Test No:	1	

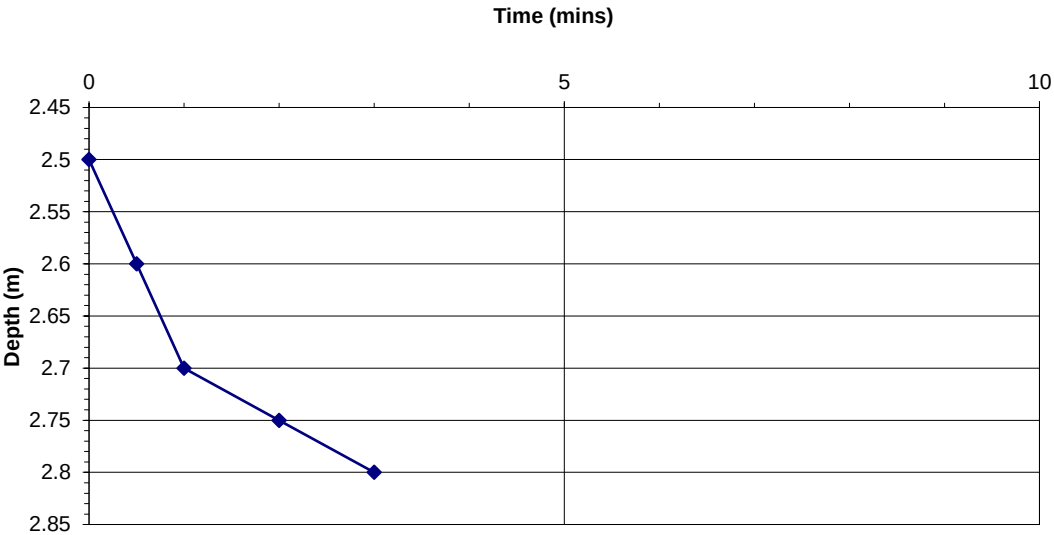
CALCULATION OF SOIL INFILTRATION RATE					
Time (min)	Depth (m)		Pit Dimensions	Length (m) =	3.00
0	2.8			Width (m) =	1.00
0.5	2.9			Depth (m) =	3.15
1	2.98				
2	3.05			Depth at start of test (m) =	2.800
3	3.1			Depth at end of test (m) =	3.150
4	3.15			75% level (m) =	2.888
5				50% Effective Depth	0.175
6				25% level (m) =	3.063
7					
8				Base area of pit (m ²) =	3.000
9				V _{p75-25} (m ³) =	0.525
10				α _{n50} (m ⁴) =	4.400
15					
20				From the graph:	
25				tp 75 (min) =	0.4375
30				tp 25 (min) =	2.25
40					
50				Soil infiltration rate, f, (m/s) =	1.10E-03 normal test
60					
90					
120				Input by:	RF Date: 06/08/2024
180				Checked by:	LC Date: 06/08/2024



SOAKAWAY DESIGN IN ACCORDANCE WITH BRE DIGEST 365: 1991 BRE Digest 365, Figure 2, Page 5					
Client: Fairhurst					
Site: The Seam, Barnsley			Notes: Partial Collapse to 3.00m		
Job No: S240526					
Pit No: SA04		Test No:		2	
CALCULATION OF SOIL INFILTRATION RATE					
Time (min)	Depth (m)	Pit Dimensions		Length (m) =	3.00
0	2.67			Width (m) =	1.00
0.5	2.7			Depth (m) =	3.00
1	2.75				
2	2.85	Depth at start of test (m) = 2.670			
3	2.95	Depth at end of test (m) = 3.000			
4	3	75% level (m) = 2.753			
5		50% Effective Depth 0.165			
6		25% level (m) = 2.918			
7					
8		Base area of pit (m ²) = 3.000			
9		V _{p75-25} (m ³) = 0.495			
10		α _{n50} (m ⁴) = 4.320			
15					
20		From the graph:			
25		tp 75 (min) = 1.025			
30		tp 25 (min) = 2.675			
40					
50		Soil infiltration rate, f, (m/s) =		1.16E-03	normal test
60					
90					
120		Input by:	RF	Date:	06/08/2024
180		Checked by:	LC	Date:	06/08/2024



SOAKAWAY DESIGN IN ACCORDANCE WITH BRE DIGEST 365: 1991 BRE Digest 365, Figure 2, Page 5					
Client: Fairhurst					
Site: The Seam, Barnsley			Notes: Partial Collapse to 2.80m		
Job No: S240526					
Pit No: SA04		Test No:		3	
CALCULATION OF SOIL INFILTRATION RATE					
Time (min)	Depth (m)	Pit Dimensions		Length (m) =	3.00
0	2.5			Width (m) =	1.00
0.5	2.6			Depth (m) =	2.80
1	2.7				
2	2.75	Depth at start of test (m) = 2.500			
3	2.8	Depth at end of test (m) = 2.800			
4		75% level (m) = 2.575			
5		50% Effective Depth 0.150			
6		25% level (m) = 2.725			
7					
8		Base area of pit (m ²) = 3.000			
9		V _{p75-25} (m ³) = 0.450			
10		α _{n50} (m ⁴) = 4.200			
15					
20		From the graph:			
25		tp 75 (min) = 0.375			
30		tp 25 (min) = 1.5			
40					
50		Soil infiltration rate, f, (m/s) =		1.59E-03	normal test
60					
90					
120		Input by:	RF	Date:	06/08/2024
180		Checked by:	LC	Date:	06/08/2024



APPENDIX D: Notes on Limitations

♣Solmek conditions of offer, notes on limitations & basis for contract (ref: version1/2024)

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.

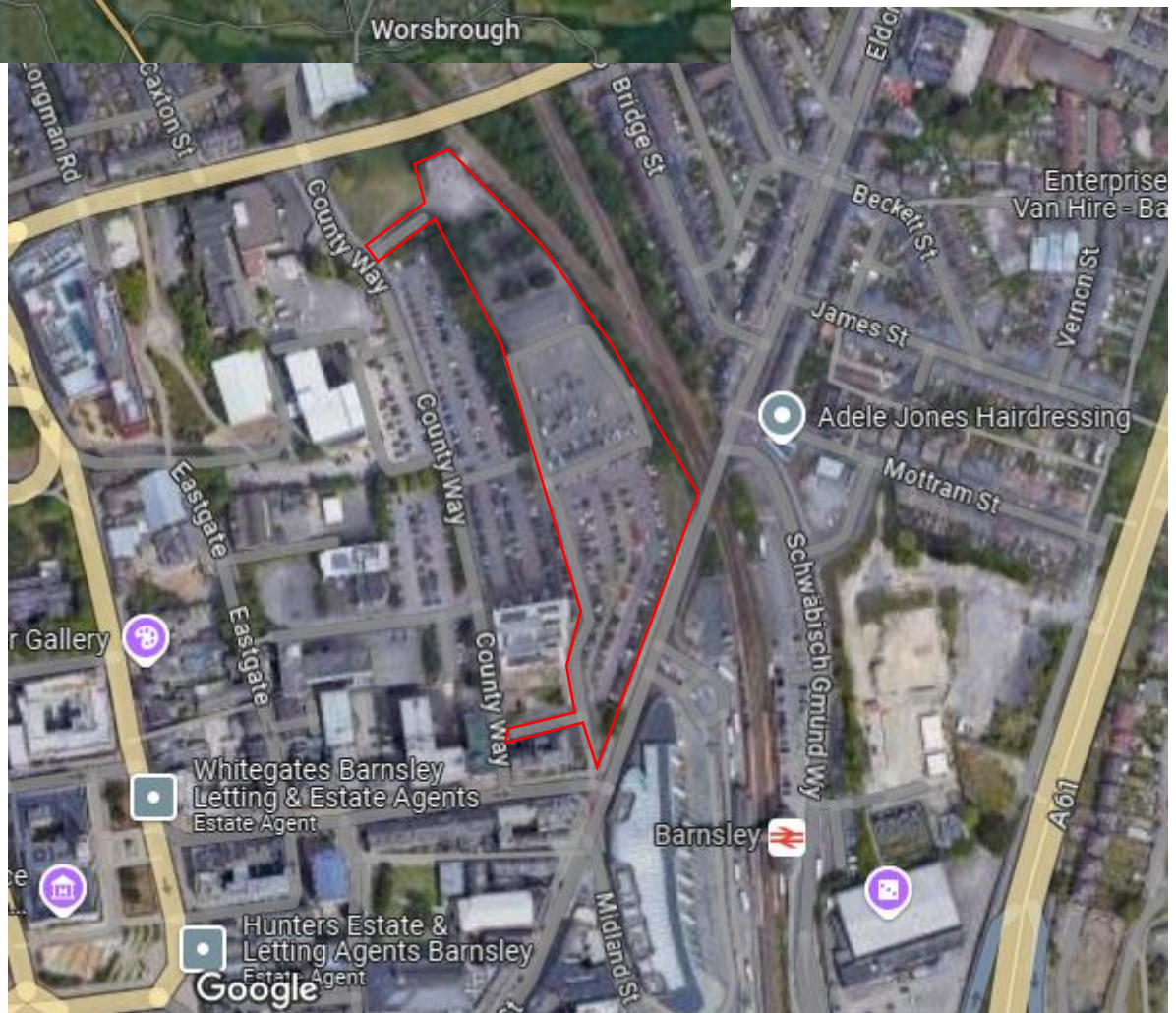
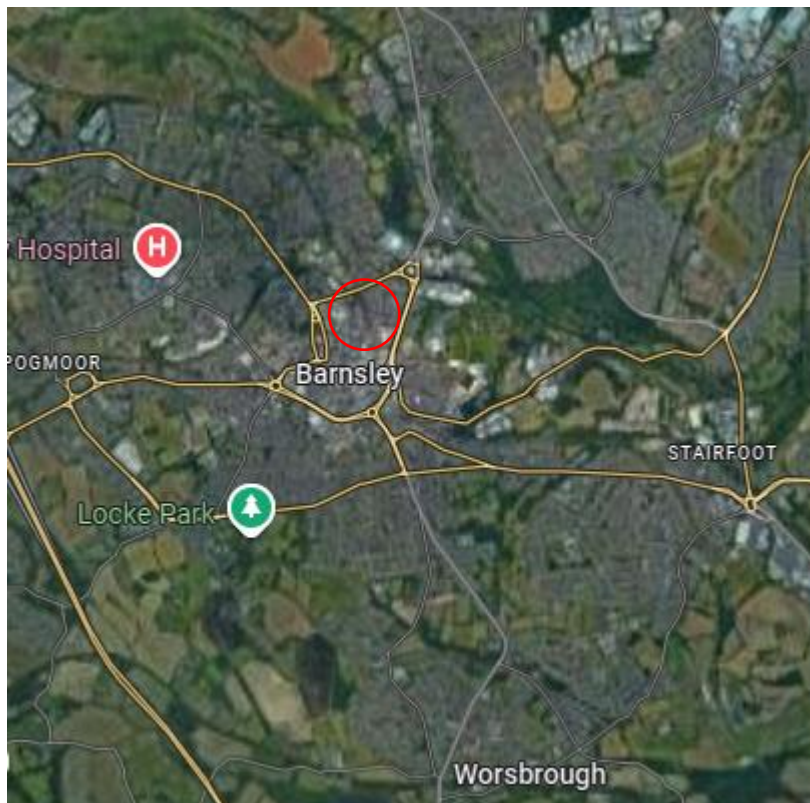
All information acquired by Solmek in the course of investigation is the property of Solmek, and, only also becomes the joint property of the Client only on the complete settlement of all invoices relating to the project. Solmek reserve the right to use the information in commercial tendering and marketing, 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.

Appendix B

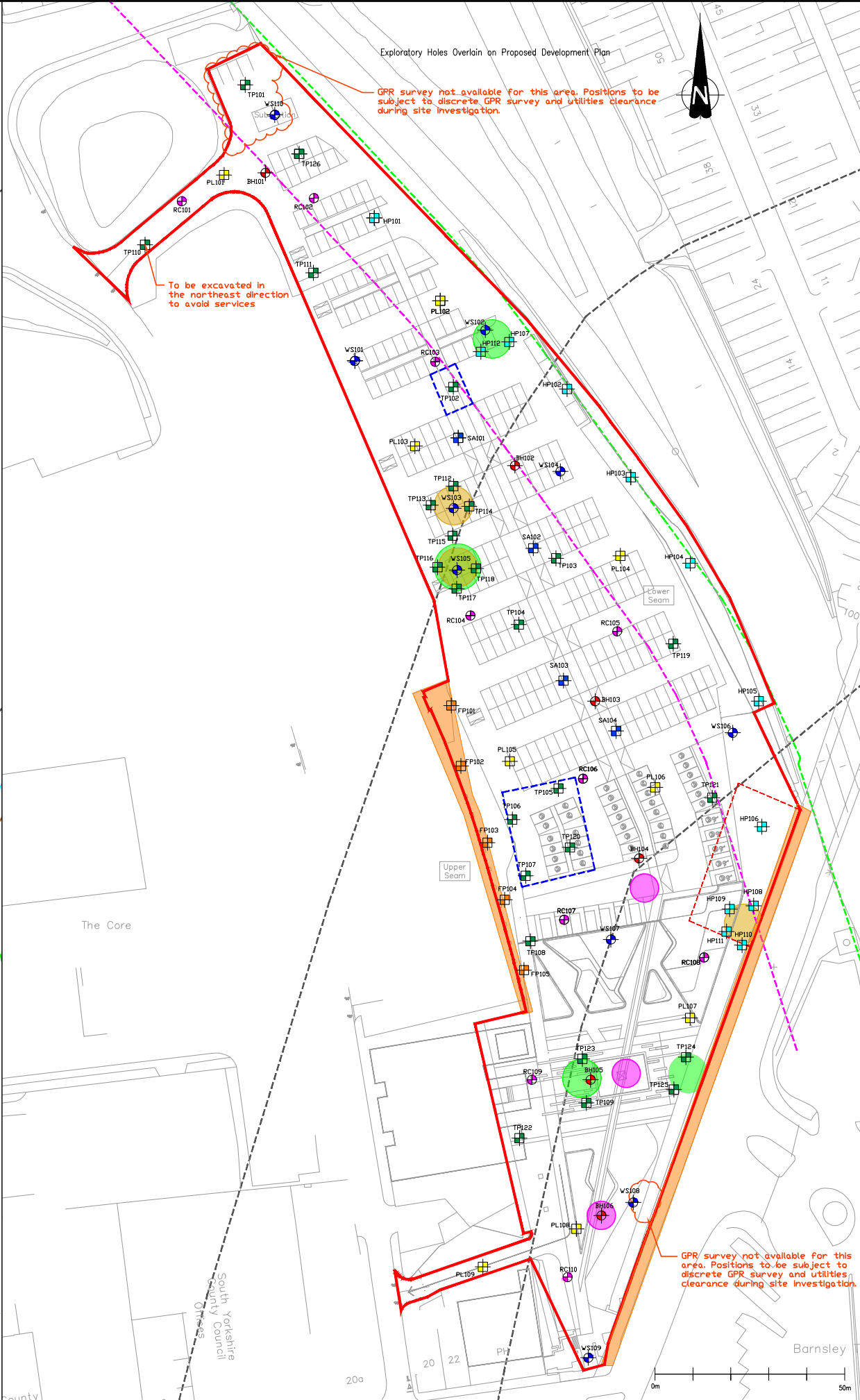
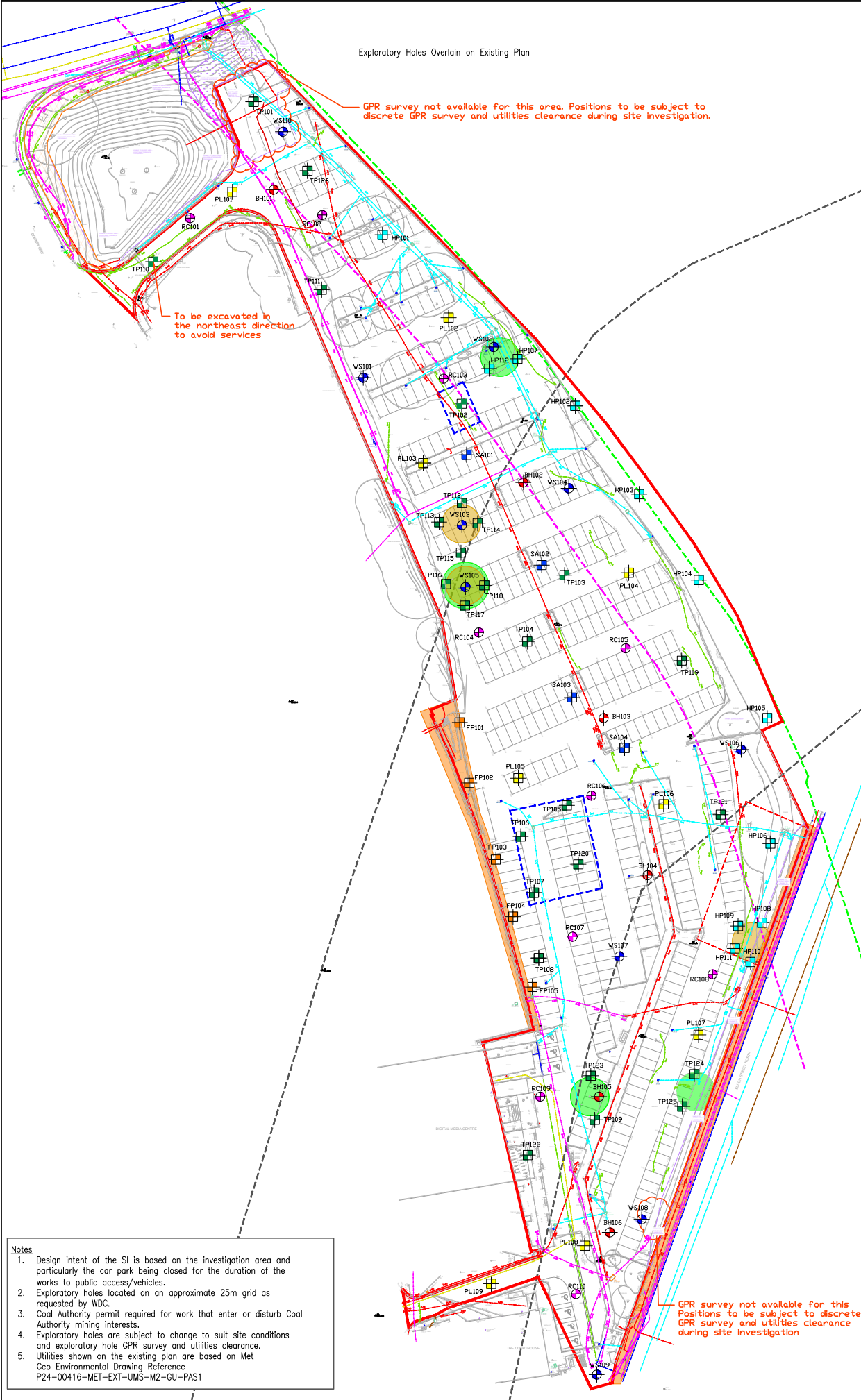
Site Location Plan



The Seam Site Location Plan.

Appendix C

Exploratory Hole Location Plan



Do not scale from this drawing.

SAFETY HEALTH AND ENVIRONMENTAL INFORMATION

IN ADDITION TO THE HAZARD/RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, NOTE THE FOLLOWING RISKS AND INFORMATION:

RISKS LISTED HERE ARE NOT EXHAUSTIVE. REFER TO DESIGN ASSESSMENT FORM DID/159592/09

SITE INVESTIGATION

- Services
- Contamination (including hazardous materials and asbestos)
- Ground and Mine Gas
- Ground Instability / Mine Workings
- Working at Height
- Working Near Railways
- Unstable structures

IT IS ASSUMED THAT ALL WORKS WILL BE CARRIED OUT BY A COMPETENT CONTRACTOR WORKING, WHERE APPROPRIATE, TO AN APPROVED METHOD STATEMENT.

Key

- Site Boundary
- 4m Works Exclusion Zone from Railway Lines for Window Samples, Trial Pits and Hand Pits
- 25m Works Exclusion Zone from Railway Lines for Boreholes
- Retaining Wall
- Asbestos Recorded in Soil During Previous Ground Investigation
- Indicative Positions of Proposed Sculpture Locations, as provided by One Environments (June 2024)
- Elevated Hydrocarbons in Soil Recorded During Previous Ground Investigation (PAH TOTAL > 300mg/kg, TPH TOTAL > 2000mg/kg*)
- Indicative Coal Seam Subcrop
- Indicative Ground Anchor location
- Proposed Cable Percussion Borehole with Rotary Cored Follow On
- Proposed Window Sample Borehole
- Proposed Road Core
- Proposed Trial Pit (Depths TBC)
- Proposed Trial Pit with Plate Load Test at Various Depths (Maximum 600mm)
- Proposed Trial Pit with Soakaway Test Location and Depths TBC with Drainage Designer
- Proposed Hand Dug Foundation Pit
- Proposed Hand Dug Pit
- Area of Potential Historic Sources of Contamination (Associated with Former Railway Land Use, Including Railway Sidings, Goods Shed and Unknown Buildings / Structures)

*Excluding area where elevations have been attributed to tor in sample

G	25/04/24	UPDATED TO REFLECT WDC COMMENTS	GAU	CMD	DD
F	20/04/24	UPDATED TO REFLECT WDC COMMENTS	GAU	CMD	DD
E	18/04/24	REVISED TO REFLECT GPR SURVEY FINDINGS	GAU	CMD	DD
D	17/04/24	UPDATED TO REFLECT NETWORK RAIL COMMENTS	GAU	DD	DD
C	01/04/24	UPDATED TO REFLECT SUB - CONTRACTOR COMMENTS	GAU	CMD	DD
B	24/03/24	UPDATED TO REFLECT WDC COMMENTS	GAU	CMD	DD
A	13/03/24	UTILITIES SHOWN IN COLOUR	CMD	CMD	DD

Rev.	Date	Description	Drawn	Chkd.	Appd.

Client:

FAIRHURST

1 Arngrove Court
Barnack Road,
Newcastle-upon-Tyne
NE4 6DB
Tel: 0191 221 0566
Fax: 0844 381 4412

WILLMOTT DIXON

Project Title:

THE SEAM, BARNSELY

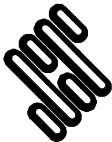
Drawing Title:

EXPLORATORY HOLE LOCATION PLAN

Scale at A1:	Status:	
NTS	For Information	
Drawn:	Checked:	Approved:
CMD	CMD	DD
Date:	Date:	Date:
08/05/24	08/05/24	08/05/24
Drawing No.:	Revision:	
159592/9003	G	

Appendix D

Exploratory Hole logs



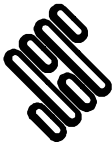
TRIAL PIT LOG

Contract: The Seam			Client: VHE Construction			Trial Pit: FP101	
Contract Ref: 849		Start: 01.08.24	Ground Level: 96.32	National Grid Co-ordinate: E:434611.7 N:406731.2		Sheet: 1 of 1	
		End: 01.08.24					

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Tarmac.	0.10	
						MADE GROUND: White, sandy, medium and coarse, angular and subangular limestone GRAVEL, sub-base.	0.20	
						MADE GROUND: Brown, very sandy, clayey, fine to cobbles, angular to subrounded sandstone, mudstone, coal, brick and brick fragments GRAVEL.	(0.70)	
							0.90	
						MADE GROUND: Grey, sandy, clayey, fine to cobbles, angular to subangular mudstone and coal GRAVEL (possibly reworked).	(2.60)	
							3.50	
						Very soft light brown, slightly sandy CLAY. (Insufficient recovery for HSV)	(0.30)	
						Foundation pit terminated at 3.80m depth.	3.80	

Plan (Not to Scale) 5.00 3.50		General Remarks 1. No groundwater encountered. 2. Terminated due to maximum reach of excavator. 3. Trial pit stable.			
		All dimensions in metres		Scale: 1:25	
		Method Used: Machine dug		Plant Used: JCB-3CX	
		Logged By: C.Lacey		Checked By:	

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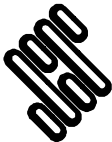
TRIAL PIT LOG

Contract: The Seam			Client: VHE Construction			Trial Pit: FP102	
Contract Ref: 849		Start: 01.08.24 End: 01.08.24	Ground Level: 96.51		National Grid Co-ordinate: E:434613.9 N:406716.4		Sheet: 1 of 1

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Tarmac.	0.10	
						MADE GROUND: White, sandy, medium and coarse, angular and subangular limestone GRAVEL, sub-base.	0.20	
						MADE GROUND: Dark brown, black and grey, very clayey, very sandy, fine to coarse, angular to subrounded sandstone, mudstone, coal and brick GRAVEL. Also occasional wires and string.	(0.50)	
							0.70	
						MADE GROUND: Grey and black, very clayey, fine to coarse, angular and subangular mudstone and coal GRAVEL (possibly reworked).	(2.40)	
							3.10	
						Very soft light brown, slightly silty CLAY.	(0.70)	
3.50		V	$c_u=25/38/36$				3.80	
3.50		V	$c_r=12/20/18$					
						Foundation pit terminated at 3.80m depth.		

Plan (Not to Scale)		General Remarks			
		1. No groundwater encountered. 2. Terminated due to maximum reach of excavator. 3. Trial pit stable.			
		All dimensions in metres		Scale: 1:25	
Method Used: Machine dug	Plant Used: JCB-3CX	Logged By: C.Lacey	Checked By:		

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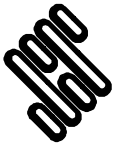
TRIAL PIT LOG

Contract: The Seam			Client: VHE Construction		Trial Pit: FP103
Contract Ref: 849	Start: 02.08.24 End: 02.08.24	Ground Level: 96.89	National Grid Co-ordinate: E:434618.4 N:406695.3		Sheet: 1 of 1

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
3.40	1	B				MADE GROUND: Tarmac.	0.03	
						MADE GROUND: Tarmac.	0.10	
						MADE GROUND: Yellowish, sandy, medium and coarse, angular and subangular limestone GRAVEL, sub-base.	0.22	
						MADE GROUND: Black, brown and grey, very gravelly SAND. Gravel is fine to boulders, angular to subrounded sandstone, brick, brick fragments, concrete, ash and coal.	(0.68)	
							0.90	
						MADE GROUND: Soft to firm orange, mottled grey CLAY with occasional pockets of coal GRAVEL (possibly reworked)	(1.70)	
3.40	1	B				Light brown, soft to firm, slightly friable CLAY.	2.60	
							(1.20)	
						Foundation pit terminated at 3.80m depth.	3.80	

Plan (Not to Scale)		General Remarks			
		1. No groundwater encountered 2. Terminated due to maximum reach of excavator. 3. Trial pit stable.			
		All dimensions in metres		Scale:	1:25
Method Used: Machine dug	Plant Used: JCB-3CX	Logged By: C.Lacey	Checked By:		

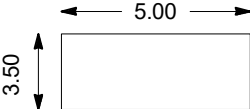
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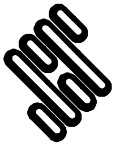
TRIAL PIT LOG

Contract: The Seam			Client: VHE Construction		Trial Pit: FP104
Contract Ref: 849	Start: 31.07.24 End: 31.07.24	Ground Level: 97.16	National Grid Co-ordinate: E:434621.9 N:406680.6		Sheet: 1 of 1

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Tarmac.	0.09	
						MADE GROUND: Yellowish white, sandy, medium and coarse, angular and subangular limestone GRAVEL, sub-base.	0.30	
						MADE GROUND: Black, gravelly SAND. Gravel is fine to coarse, angular to subrounded sandstone, coal, ash and brick fragments with occasional ceramic bottle.	(0.70)	
							1.00	
1.30 1.30		V V	c _u =64/45/44 c _r =28/24/28			Light brown, mottled orange, slightly sandy, slightly silty CLAY.	(1.80)	
2.80 2.80		V V	c _u =57/58/68 c _r =34/33/40			Foundation pit terminated at 2.80m depth.	2.80	

Plan (Not to Scale)		General Remarks			
		1. No groundwater encountered. 2. Terminated due to base of foundation encountered. 3. Trial pit stable.			
		All dimensions in metres		Scale:	1:25
Method Used: Machine dug	Plant Used: JCB-3CX	Logged By: C.Lacey	Checked By:		

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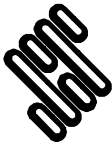
TRIAL PIT LOG

Contract: The Seam		Client: VHE Construction		Trial Pit: FP105	
Contract Ref: 849	Start: ???	Ground Level: 97.22	National Grid Co-ordinate: E:434625.3 N:406666.8	Sheet: 1 of 1	
End: ???					

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Tarmac.	0.10	
						MADE GROUND: Yellow, sandy, medium and coarse, angular and subangular limestone GRAVEL, sub-base.	0.25	
						MADE GROUND: Brown, cobbles, angular sandstone GRAVEL (sandston paving blocks). ... at 0.25m, drain and lead pipe noted.	0.27	
						Trial pit terminated at 0.27m depth due to refusal on sadnstone paving blocks.		

Plan (Not to Scale)		General Remarks	
		1. No groundwater encountered. 2. Terminated due to refusal. 3. Trial pit stable.	
All dimensions in metres		Scale: 1:25	
Method Used: Machine dug	Plant Used: JCB-3CX	Logged By: ???	Checked By:

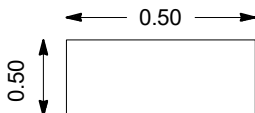
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TRIAL PIT LOG

Contract: The Seam		Client: VHE Construction		Trial Pit: HP101	
Contract Ref: 849		Start: 25.07.24	Ground Level: 95.50	National Grid Co-ordinate: E:434588.8 N:406846.1	Sheet: 1 of 1
End: 25.07.24					

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.60	101	ES				MADE GROUND: Tarmac in 3 layers.	(0.30) 0.30	
						MADE GROUND: Cream, medium to cobbles, angular and subangular limestone GRAVEL, sub-base.	0.50	
						MADE GROUND: Brown, slightly clayey, gravelly SAND. Gravel is fine to coarse subangular sandstone.	0.75	
0.90	1	B				MADE GROUND: Brown, black and red, very gravelly SAND. Gravel is fine to coarse, angular and subangular sandstone, coal, ash and brick fragments.	(0.45)	
1.00	102	ES					1.20	
						Hand pit terminated at 1.20m depth.		

Plan (Not to Scale) 		General Remarks 1. No groundwater encountered. 2. Terminated upon scheduled depth. 3. Trial pit stable.	
		All dimensions in metres Scale: 1:25	
Method Used: Hand dug		Plant Used: Hand tools	
		Logged By: C.Lacey	
		Checked By: AGS	

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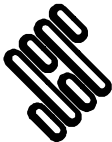


TRIAL PIT LOG

Contract:		Client:		Trial Pit:	
The Seam		VHE Construction		HP102	
Contract Ref:		Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
849		24.07.24	95.51	E:434635.5 N:406804.0	1 of 1

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Tarmac.	0.09	
						MADE GROUND: Whitish cream, sandy, medium and coarse, angular and subangular limestone GRAVEL, sub-base.	(0.29) 0.38	
						MADE GROUND: Soft to firm, light grey, mottled yellow CLAY.	0.60	
						MADE GROUND: Black and dark brown, very gravelly SAND. Gravel is fine to cobbles angular to subrounded mudstone, coal, steel, slag and ash.	(0.60) 1.20	
						Hand pit terminated at 1.20m depth.		

Plan (Not to Scale)		General Remarks 1. No groundwater encountered. 2. Terminated upon scheduled depth. 3. Trial pit stable.	
Method Used: Hand dug		All dimensions in metres Scale: 1:25	
Plant Used: Hand tools		Logged By: C. Lacey	
		Checked By:	



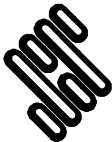
TRIAL PIT LOG

Contract: The Seam		Client: VHE Construction		Trial Pit: HP103	
Contract Ref: 849		Start: 19.07.24	Ground Level: 95.69	National Grid Co-ordinate: E:434647.0 N:406782.2	Sheet: 1 of 1
End: 19.07.24					

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.35	101	ES				MADE GROUND: Tarmac.	0.15	
						MADE GROUND: Whitish cream, very sandy, fine to coarse, angular and subangular limestone GRAVEL, sub-base.	0.35	
						MADE GROUND: Dark brown and black, very gravelly SAND. Gravel is fine to coarse, angular to subrounded coal, sandstone, ash and clinker.	(0.85)	
0.70	1	B						
0.80	102	ES						
							1.20	
						Hand pit terminated at 1.20m depth.		

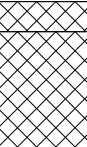
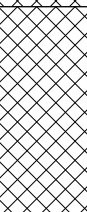
Plan (Not to Scale)		General Remarks						
		1. No groundwater encountered. 2. Terminated upon scheduled depth. 3. Trial pit stable.						
Method Used: Hand dug		Plant Used: Hand tools		Logged By: C.Lacey		Checked By:		

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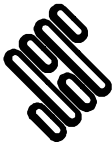


TRIAL PIT LOG

Contract: The Seam			Client: VHE Construction			Trial Pit: HP104	
Contract Ref: 849		Start: 19.07.24	Ground Level: 95.54	National Grid Co-ordinate: E:434660.8 N:406762.3		Sheet: 1 of 1	
		End: 19.07.24					

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.30	101	ES				MADE GROUND: Tarmac.	0.10	
						MADE GROUND: Whitish cream, very sandy, fine to coarse, angular to subrounded limestone sub-base GRAVEL.	(0.40) 0.50	
0.70	102	ES				MADE GROUND: Black, gravelly SAND. Gravel is fine to coarse, angular to subrounded sandstone, coal and ash.	(0.70)	
0.90	1	B					1.20	
Hand pit terminated at 1.20m depth.								

Plan (Not to Scale)			General Remarks				
			1. No groundwater encountered. 2. Terminated upon scheduled depth. 3. Trial pit stable.				
Method Used: Hand dug			Plant Used: Hand tools		Logged By: C.Lacey		Checked By:
			All dimensions in metres		Scale: 1:25		



TRIAL PIT LOG

Contract: The Seam			Client: VHE Construction			Trial Pit: HP105	
Contract Ref: 849		Start: 17.07.24	Ground Level: 96.10	National Grid Co-ordinate: E:434671.1 N:406732.7		Sheet: 1 of 1	
		End: 17.07.24					

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.50 0.60 0.62	101	ES B D				MADE GROUND: Tarmac.	0.13	
						MADE GROUND: Brown yellow, fine to coarse, sandy angular and subangular limestone GRAVEL, sub-base.	0.30	
						MADE GROUND: Brown, gravelly, slightly clayey SAND. Gravel is fine to cobbles, angular to subrounded sandstone with occasional brick fragments and glass.	(0.80)	
1.15	102	ES				Stiff grey, slightly gravelly CLAY with occasional sand lenses. Gravel is medium and coarse, subangular sandstone.	1.10	
						Hand pit terminated at 1.20m depth.	1.20	

Plan (Not to Scale)			General Remarks			
			1. No groundwater encountered. 2. Terminated upon scheduled depth. 3. Trial pit stable.			
			All dimensions in metres		Scale: 1:25	
Method Used: Hand dug		Plant Used: Hand tools		Logged By: C.Lacey	Checked By:	

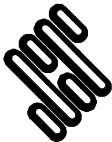
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Contract:		Client:		Trial Pit:	
The Seam		VHE Construction		HP106	
Contract Ref:		Start: 25.07.24		Ground Level:	
849		End: 25.07.24		97.06	
				National Grid Co-ordinate:	
				E:434679.4 N:406697.4	
				Sheet:	
				1 of 1	

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.05	101	ES				MADE GROUND: Light brown, loamy, slightly gravelly TOPSOIL with numerous plant roots. Gravel is fine to coarse, angular to subrounded sandstone, glass, metal and coal.	(0.30)	
						Trial pit terminated at 0.30m depth.	0.30	

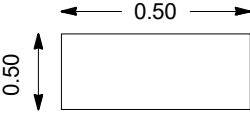
Plan (Not to Scale)		General Remarks 1. No groundwater encountered. 2. Terminated due to refusal. 3. Trial pit stable.	
		All dimensions in metres	Scale: 1:25
Method Used: Hand dug	Plant Used: Hand tools	Logged By: C. Lacey	Checked By: AGS



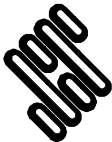
TRIAL PIT LOG

Contract: The Seam		Client: VHE Construction		Trial Pit: HP106a	
Contract Ref: 849		Start: 25.07.24 End: 25.07.24	Ground Level: 97.05	National Grid Co-ordinate: E:434677.9 N:406697.4	Sheet: 1 of 1

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Light brown, loamy, slightly gravelly TOPSOIL with numerous plant roots. Gravel is fine to coarse, angular to subrounded sandstone, glass, metal and coal.	(0.30)	
						Trial pit terminated at 0.30m depth.	0.30	

Plan (Not to Scale) 		General Remarks 1. No groundwater encountered. 2. Terminated due to refusal. 3. Trial pit stable.			
		All dimensions in metres		Scale: 1:25	
Method Used: Hand dug		Plant Used: Hand tools		Logged By: C.Lacey	
				Checked By: 	

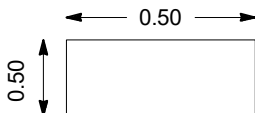
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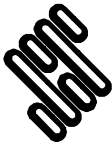
TRIAL PIT LOG

Contract: The Seam		Client: VHE Construction		Trial Pit: HP106b	
Contract Ref: 849		Start: 25.07.24 End: 25.07.24	Ground Level: 97.05	National Grid Co-ordinate: E:434674.8 N:406697.4	Sheet: 1 of 1

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Light brown, loamy, slightly gravelly TOPSOIL with numerous plant roots. Gravel is fine to coarse, angular to subrounded sandstone, glass, metal and coal.	(0.30)	
						Trial pit terminated at 0.30m depth.	0.30	

Plan (Not to Scale) 		General Remarks 1. No groundwater encountered. 2. Terminated due to refusal on sandstone paving. 3. Trial pit stable.	
		All dimensions in metres Scale: 1:25	
Method Used: Hand dug		Plant Used: Hand tools	
		Logged By: C.Lacey	
		Checked By:	

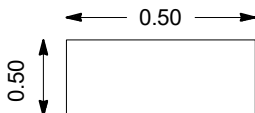
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TRIAL PIT LOG

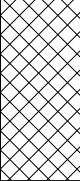
Contract: The Seam		Client: VHE Construction		Trial Pit: HP107	
Contract Ref: 849		Start: 25.07.24 End: 25.07.24	Ground Level: 95.32	National Grid Co-ordinate: E:434623.2 N:406815.2	Sheet: 1 of 1

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.20	101	ES				MADE GROUND: Tarmac.	0.07	
						MADE GROUND: Whitish cream, slightly sandy, medium and coarse, angular and subangular limestone GRAVEL, sub-base.	0.33	
0.60	1	B				MADE GROUND: Black and dark grey, clayey, gravelly SAND. Gravel is fine to coarse, angular and subangular, coal, ash and sandstone.	(0.57)	
							0.90	
1.00	102	ES				Light brown, sandy, medium and coarse, angular and subangular, sandstone GRAVEL (possibly reworked).	(0.30)	
						Hand pit terminated at 1.20m depth.	1.20	

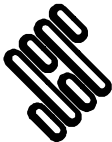
Plan (Not to Scale) 		General Remarks 1. No groundwater encountered. 2. Terminated upon scheduled depth. 3. Trial pit stable.			
		All dimensions in metres		Scale: 1:25	
Method Used: Hand dug		Plant Used: Hand tools		Logged By: C.Lacey	
				Checked By:	

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Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thick ness)	Material Graphic Legend
Depth	No	Type	Results					
0.20	101	ES				MADE GROUND: Grey/light brown, loamy, rarely gravelly TOPSOIL with numerous plant roots. Gravel is medium and coarse, subrounded and subangular sandstone.	(0.30)	
							0.30	
0.50	102	ES				MADE GROUND: Light grey, medium and coarse, angular and subangular mudstone GRAVEL.	0.40	
0.70	1	B				MADE GROUND: Black and dark grey, sandy, fine to cobbles, angular to subrounded clinker, ash, coal and sandstone GRAVEL.	(0.80)	
0.70	2	D						
1.20	103	ES					1.20	

Plan (Not to Scale)		General Remarks	
A diagram showing a rectangular trial pit. The width is labeled as 0.50 with a double-headed arrow above it. The height is labeled as 0.50 with a double-headed arrow to its left.		1. No groundwater encountered. 2. Terminated upon scheduled depth. 3. Trial pit stable.	
		All dimensions in metres	Scale: 1:25
Method Used:	Hand dug	Plant Used:	Logged By: C. Lacey Checked By:
		Hand tools	



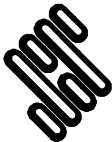
TRIAL PIT LOG

Contract: The Seam		Client: VHE Construction		Trial Pit: HP109	
Contract Ref: 849		Start: 17.07.24	Ground Level: 97.21	National Grid Co-ordinate: E:434676.4 N:406679.7	Sheet: 1 of 1
End: 17.07.24					

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.27	101	ES				MADE GROUND: Tarmac.	0.10	
0.30	1	D				MADE GROUND: Yellow, fine to coarse, angular and subangular limestone GRAVEL. Sub-base.	0.12	
0.31	102	ES				MADE GROUND: Light grey cobbles and boulders, angular sandstone GRAVEL, (sandstone paving blocks up to 0.27x0.17)	0.26	
						MADE GROUND: Grey and brown, medium and coarse, angular and subangular sandstone GRAVEL bound by black, soft, glossy, stringy tar with a strong hydrocarbon odour.	0.28	
						MADE GROUND: Dark brown, very sandy, fine to coarse, angular and subangular sandstone, ash and coal GRAVEL.	(0.92)	
							1.20	
						Hand pit terminated at 1.20m depth due to refusal on sandstone rock. (possible rock head)		

Plan (Not to Scale)		General Remarks			
		1. No groundwater encountered. 2. Terminated upon scheduled depth. 3. Trial pit stable.			
All dimensions in metres		Scale: 1:25			
Method Used: Hand dug		Plant Used: Hand tools		Logged By: C.Lacey	
				Checked By:	

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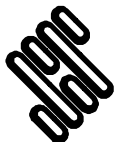
TRIAL PIT LOG

Contract: The Seam			Client: VHE Construction			Trial Pit: HP110	
Contract Ref: 849		Start: 16.07.24 End: 16.07.24	Ground Level: 97.11		National Grid Co-ordinate: E:434680.5 N:406680.4		Sheet: 1 of 1

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.25	101	ES				MADE GROUND: Brown, loamy, rarely gravelly TOPSOIL with numerous plant roots. Gravel is medium to cobbles, angular and subangular sandstone, brick, coal and mudstone. Approx 100mmØ plastic black duct containing 5 no black cables at 0.38m depth.	(0.35) 0.35	
0.60	102	ES				MADE GROUND: Black and dark grey, sandy, fine to cobbles, angular to subrounded clinker, ash, coal, sandstone and brick fragment GRAVEL.	(0.85) 0.85	
0.80	1	B						
0.80	2	D						
1.10	103	ES					1.20	
Hand pit terminated at 1.20m depth.								

Plan (Not to Scale)			General Remarks			
			1. No groundwater encountered. 2. Terminated upon scheduled depth. 3. Trial pit stable.			
			All dimensions in metres		Scale: 1:25	
Method Used: Hand dug		Plant Used: Hand tools		Logged By: C.Lacey	Checked By:	

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TRIAL PIT LOG

Contract: The Seam			Client: VHE Construction		Trial Pit: HP111
Contract Ref: 849	Start: 17.07.24 End: 17.07.24	Ground Level: 97.24	National Grid Co-ordinate: E:434674.9 N:406674.2		Sheet: 1 of 1

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.24	102	ES				MADE GROUND: Tarmac.	0.07	
0.30	1	D				MADE GROUND: Yellow, fine to coarse, angular and subangular, limestone GRAVEL, sub-base.	0.09	
0.30	101	ES				MADE GROUND: Light grey cobbles and boulders, angular sandstone GRAVEL. (sandstone paving blocks up to 0.24x0.14)	0.23	
						MADE GROUND: Grey, medium and coarse, angular and subangular sandstone GRAVEL bound by black, soft, stringy coal tar with a strong hydrocarbon odour.	0.25	
						MADE GROUND: Dark brown/black, sandy, fine to coarse, angular to subrounded sandstone, ash and coal GRAVEL with a slight hydrocarbon odour.	0.35	
						Hand pit terminated at 0.35m depth due to refusal. Possible sandstone paving blocks.		

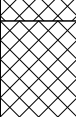
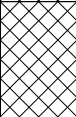
Plan (Not to Scale)		General Remarks			
		1. No groundwater encountered. 2. Terminated due to refusal. 3. Trial pit stable.			
		All dimensions in metres		Scale:	1:25
Method Used: Hand dug	Plant Used: Hand tools	Logged By: C.Lacey	Checked By:		

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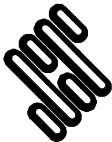


TRIAL PIT LOG

Contract:		Client:		Trial Pit:	
The Seam		VHE Construction		HP112	
Contract Ref:	Start: 25.07.24	Ground Level:	National Grid Co-ordinate:	Sheet:	
849	End: 25.07.24	95.37	E:434616.4 N:406812.8	1 of 1	

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thick ness)	Material Graphic Legend
Depth	No	Type	Results					
0.30	101	ES				MADE GROUND: Tarmac.	0.08	
						MADE GROUND: White, medium to coarse, angular and subangular limestone GRAVEL, sub-base.	(0.32)	
0.60	102	ES				MADE GROUND: Greyey brown, gravelly SAND. Gravel is fine to cobbles, angular and subangular sandstone (possibly reworked).	0.40	
							(0.40)	
						Hand pit terminated at 0.80m depth due to refusal.	0.80	

Plan (Not to Scale)		General Remarks	
A diagram showing a rectangular trial pit. The width is labeled as 0.50 with a horizontal double-headed arrow above it. The depth is labeled as 0.50 with a vertical double-headed arrow to its left.		1. No groundwater encountered. 2. Terminated due to refusal. 3. Trial pit stable.	
		All dimensions in metres	Scale: 1:25
Method Used:	Hand dug	Plant Used:	Hand tools
		Logged By:	C. Lacey
		Checked By:	



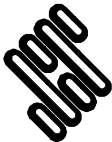
TRIAL PIT LOG

Contract: The Seam		Client: VHE Construction		Trial Pit: TP101	
Contract Ref: 849		Start: 25.07.24	Ground Level: 95.57	National Grid Co-ordinate: E:434560.4 N:406877.2	Sheet: 1 of 1
End: 25.07.24					

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.30	101	ES	c _u =104/89/98 c _i =23/35/28			MADE GROUND: Tarmac.	0.05	
0.60		V				MADE GROUND: Reddish pink and white, very sandy, fine to cobbles, angular and subangular limestone and sandstone GRAVEL, sub-base.	(0.36)	
0.60		V					0.40	
0.80	102	ES				MADE GROUND: Stiff grey, mottled light grey and orange, slightly gravelly CLAY. Gravel is fine to coarse, angular to subrounded sandstone, mudstone and coal.	(0.70)	
1.00	1	B					1.10	
1.30	103	ES				MADE GROUND: Brown, slightly clayey SAND. Gravel is fine to boulders, subangular and subrounded sandstone, occasional metal wire noted. Pockets of black ashy sand with coal gravel at 1.70m. Containing wood and organic odour from 2.20m to 2.80m.		
1.30	2	B						
1.80	104	ES					(2.00)	
2.30	105	ES						
2.80	106	ES					3.10	
						Trial pit terminated at 3.10m depth.		

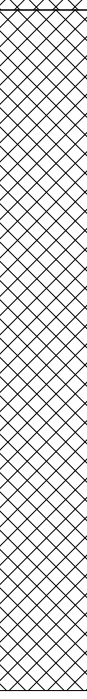
Plan (Not to Scale)		General Remarks					
		1. No groundwater encountered. 2. Terminated upon scheduled depth. 3. Trial pit stable.					
Method Used: Machine dug		Plant Used: JCB-3CX		Logged By: C.Lacey		Checked By: AGS	
		All dimensions in metres		Scale: 1:25			

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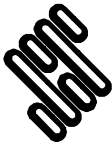
TRIAL PIT LOG

Contract: The Seam			Client: VHE Construction		Trial Pit: TP102
Contract Ref: 849	Start: 24.07.24 End: 24.07.24	Ground Level: 95.49	National Grid Co-ordinate: E:434608.6 N:406805.8		Sheet: 1 of 1

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thick ness)	Material Graphic Legend
Depth	No	Type	Results					
0.35	101	ES			MADE GROUND: Tarmac.	0.12		
					MADE GROUND: Whitish cream sandy, medium and coarse, angular and subangular limestone GRAVEL, sub-base.	(0.53)		
0.60	102	ES			0.65			
1.10	103	ES			MADE GROUND: Black clayey, gravelly SAND. Gravel is fine to coarse, angular to subrounded brick fragments, ash and wood with hydrocarbon odour.		0.85	
					MADE GROUND: Brown sandy, fine to coarse, angular to subrounded sandstone, mudstone and coal GRAVEL (possibly reworked).	(2.25)		
					1.50			1
1.60	104	ES						
2.10	105	ES						
2.60	106	ES						
	</							

Plan (Not to Scale) 		General Remarks	
		1. Groundwater strike at 0.65m below ground level with free phase hydrocarbons. 2. Terminated upon scheduled depth. 3. Trial pit stable.	
All dimensions in metres		Scale:	1:25
Method Used: Machine dug	Plant Used: JCB-3CX	Logged By: C.Lacey	Checked By:

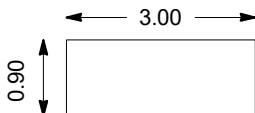
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TRIAL PIT LOG

Contract: The Seam		Client: VHE Construction		Trial Pit: TP103	
Contract Ref: 849		Start: 29.07.24 End: 29.07.24	Ground Level: 96.32	National Grid Co-ordinate: E:434632.4 N:406765.9	Sheet: 1 of 1

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Tarmac.	0.14	
						MADE GROUND: White and brown sandy, medium and coarse, angular and subangular limestone GRAVEL, sub-base.	0.30	
0.50	101	ES				MADE GROUND: Brown very gravelly SAND. Gravel is fine to cobbles, angular to subrounded sandstone, brick and concrete.	(0.55)	
0.80	1	B					0.85	
1.00	102	ES				MADE GROUND: White sandy, medium and coarse, angular and subangular limestone GRAVEL.	1.00	
1.50	103	ES				MADE GROUND: Black gravelly SAND. Gravel is fine to cobbles, angular to subrounded sandstone, ash, coal and occasional brick fragments with occasional coal tar staining.	(1.20)	
1.50	2	B						
2.00	104	ES					2.20	
2.50	105	ES				Grey very sandy, slightly clayey, fine to cobbles, angular and subangular mudstone and coal GRAVEL (possibly reworked).	(0.80)	
2.50	3	B						
3.00	106	ES				Trial pit terminated at 3.00m depth.	3.00	

Plan (Not to Scale) 		General Remarks 1. No groundwater encountered. 2. Terminated upon scheduled depth. 3. Trial pit stable.	
		All dimensions in metres Scale: 1:25	
Method Used: Machine dug		Plant Used: JCB-3CX	
		Logged By: C.Lacey	
		Checked By: AGS	

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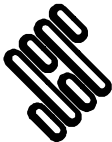
TRIAL PIT LOG

Contract: The Seam			Client: VHE Construction			Trial Pit: TP104	
Contract Ref: 849		Start: 23.07.24 End: 23.07.24	Ground Level: 96.50		National Grid Co-ordinate: E:434626.0 N:406747.8		Sheet: 1 of 1

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thick ness)	Material Graphic Legend
Depth	No	Type	Results					
0.70	101	ES				MADE GROUND: Tarmac.	0.12	
						MADE GROUND: Gravel hardcore.	0.33	
						MADE GROUND; Brown, gravelly SAND. Gravel is fine to coarse, angular and subangular concrete, sandstone and tarmac. Frequent cobbles of angular and subangular concrete and sandstone. Frequent old visqueen and steel.	(0.57)	
						MADE GROUND: Black, sandy, gravelly CLAY. Gravel is fine to coarse, subangular brick, chalk and sandstone.	0.90	
						MADE GROUND: Black, ashy, gravelly SAND. Gravel is fine to coarse, angular slag and coal.	(0.50)	
						MADE GROUND: Yellowish brown, sandy GRAVEL. Gravel is fine to coarse, subangular siltstone and sandstone. Frequent cobbles of subangular sandstone.	1.40	
2.20 2.20 2.20	102 2	D ES B				MADE GROUND: Firm to stiff, greenish dark grey, silty, gravelly CLAY. Gravel is fine to coarse, subangular and angular mudstone. Frequent cobbles of angular mudstone.	(0.30) 1.80	
							(1.20)	
							3.00	
						Trial pit terminated at 3.00m depth.		

Plan (Not to Scale)		General Remarks	
		1. No groundwater encountered. 2. Terminated upon scheduled depth. 3. Trial pit stable.	
All dimensions in metres		Scale:	1:25
Method Used: Machine dug	Plant Used: JCB-3CX	Logged By: ???	Checked By:

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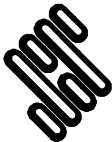
TRIAL PIT LOG

Contract: The Seam		Client: VHE Construction		Trial Pit: TP105	
Contract Ref: 849	Start: 23.07.24 End: 23.07.24	Ground Level: 96.86	National Grid Co-ordinate: E:434637.0 N:406708.6	Sheet: 1 of 1	

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.60	101	ES				MADE GROUND: Tarmac.	0.15	
						MADE GROUND: Gravel hardcore.	0.25	
						MADE GROUND: Light brown, gravelly SAND. Gravel is fine to coarse, angular and subangular concrete and tarmac.	0.35	
						MADE GROUND: Black, ashy, gravelly SAND. Gravel is fine to coarse, angular slag and coal.	(0.35) 0.70	
0.90	102	ES				MADE GROUND: Blackish brown, gravelly SAND. Gravel is fine to coarse, subangular and angular sandstone and slag. Frequent cobbles of subangular sandstone. Occasional broken glass fragments.	(0.30) 1.00	
						MADE GROUND: Light brown and orangish brown, sandy GRAVEL. Gravel is fine to coarse, angular and subangular sandstone. Frequent cobbles of subangular sandstone. Occasional broken glass bottles.	(0.50) 1.50	
2.00 2.00 2.00	103 2	D ES B				MADE GROUND: Firm to stiff, dark grey, silty, gravelly CLAY. Gravel is fine to coarse, subangular and angular mudstone. Frequent cobbles of angular mudstone. Occasional fine to coarse subangular sandstone.	(1.50) 3.00	
						Trial pit terminated at 3.00m depth.		

Plan (Not to Scale)		General Remarks	
		1. No groundwater encountered. 2. Terminated upon scheduled depth. 3. Trial pit stable.	
All dimensions in metres		Scale: 1:25	
Method Used: Machine dug	Plant Used: JCB-3CX	Logged By: ???	Checked By:

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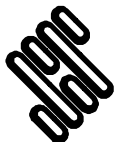
TRIAL PIT LOG

Contract: The Seam			Client: VHE Construction			Trial Pit: TP106	
Contract Ref: 849		Start: 23.07.24 End: 23.07.24	Ground Level: 96.85	National Grid Co-ordinate: E:434626.9 N:406702.0		Sheet: 1 of 1	

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thick ness)	Material Graphic Legend
Depth	No	Type	Results					
0.40	101	ES				MADE GROUND: Tarmac.	0.11	
						MADE GROUND: Gravel hardcore.	0.28	
						MADE GROUND: Black, ashy, gravelly SAND. Gravel is fine to coarse, angular and subangular brick, tarmac, concrete, sandstone, coal and slag. Frequent cobbles of subangular and angular brick, concrete and tarmac.	(0.62)	
						0.90		
						MADE GROUND: Light orangish brown, sandy GRAVEL. Gravel is fine to coarse, subangular sandstone. Frequent cobbles of subangular sandstone.	(0.60)	
2.50 2.50	102	B ES				MADE GROUND: Firm to stiff, greenish dark grey, silty, gravelly CLAY. Gravel is fine to coarse, angular and subangular mudstone and coal. Frequent cobbles of subangular and angular mudstone. Occasional pockets of orange mottled, light grey, silty clay.	(1.50)	
						3.00		
						Trial pit terminated at 3.00m depth.		

Plan (Not to Scale)			General Remarks				
			1. No groundwater encountered. 2. Terminated upon scheduled depth. 3. Trial pit stable.				
			All dimensions in metres		Scale: 1:25		
Method Used: Machine dug		Plant Used: JCB-3CX		Logged By: ???	Checked By:		

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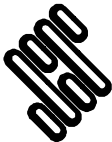
TRIAL PIT LOG

Contract: The Seam			Client: VHE Construction		Trial Pit: TP107
Contract Ref: 849	Start: 22.07.24 End: 22.07.24	Ground Level: 97.03	National Grid Co-ordinate: E:434627.2 N:406687.2		Sheet: 1 of 1

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.30	101	ES				MADE GROUND: Tarmac.	0.05	
						MADE GROUND: Gravel hardcore.	0.18	
						MADE GROUND: Blackish brown, gravelly SAND. Gravel is fine to coarse, subangular concrete, brick, slate, siltstone and chalk. Occasional gravel of fine and medium, angular slag.	0.37	
0.80	102	ES				MADE GROUND: Black, ashy, gravelly SAND. Gravel is fine to coarse, subangular sandstone, siltstone, slate, concrete and brick. Frequent cobbles of subangular and angular concrete and brick.	(0.73)	
							1.10	
2.00	103	D ES				MADE GROUND: Firm to stiff, greenish grey, silty, gravelly CLAY. Gravel is fine to coarse, angular mudstone. Occasional gravel of fine to coarse, subangular and angular coal.	(1.40)	
							2.50	
						MADE GROUND: Firm to stiff, grey and orangish brown, silty, gravelly CLAY. Gravel is fine to coarse, subangular and angular mudstone. Occasional gravel of fine and medium, subangular siltstone and sandstone.	(0.50)	
							3.00	
						Trial pit terminated at 3.00m depth.		

Plan (Not to Scale)		General Remarks			
		1. No groundwater encountered. 2. Terminated upon scheduled depth. 3. Trial pit stable.			
		All dimensions in metres		Scale:	1:25
Method Used: Machine dug	Plant Used: JCB-3CX	Logged By: ???	Checked By:		

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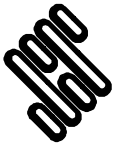
TRIAL PIT LOG

Contract: The Seam			Client: VHE Construction			Trial Pit: TP108	
Contract Ref: 849		Start: 19.07.24 End: 19.07.24	Ground Level: 97.12	National Grid Co-ordinate: E:434627.5 N:406671.6		Sheet: 1 of 1	

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.40	101	ES				MADE GROUND: Tarmac.	0.10	
						MADE GROUND: Yellowish white sandy, medium and coarse, angular and subangular limestone GRAVEL, sub-base.	0.20	
						MADE GROUND: Red and brown, sandy, fine to cobbles of angular and subangular bricks, brick fragments, metal, slate and sandstone GRAVEL.	(0.60)	
							0.80	
0.90	102	ES	c _u =88 c _r =22			Soft to firm light brown, mottled light grey, rarely gravelly CLAY. Gravel is fine to coarse angular coal. Stiff below 2.50m.	(2.20)	
1.40	103	ES						
1.90	104	ES						
2.00		V	c _u =140 c _r =35			Trial pit terminated at 3.00m depth.	3.00	
2.00		V						
2.40	105	ES						
2.80	106	ES						
3.00		V						
3.00		V						

Plan (Not to Scale)			General Remarks			
			1. No groundwater encountered. 2. Terminated upon scheduled depth. 3. Trial pit stable.			
			All dimensions in metres		Scale: 1:25	
Method Used: Machine dug	Plant Used: JCB-3CX		Logged By: C.Lacey	Checked By:		

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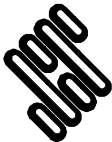
TRIAL PIT LOG

Contract: The Seam			Client: VHE Construction		Trial Pit: TP109
Contract Ref: 849	Start: 29.07.24 End: 29.07.24	Ground Level: 97.30	National Grid Co-ordinate: E:434642.6 N:406634.1		Sheet: 1 of 1

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.50	101	ES				MADE GROUND: Tarmac.	0.10	
						MADE GROUND: Yellow, sandy, medium and coarse, angular and subangular limestone GRAVEL, sub-base.	0.20	
						MADE GROUND: Light brown cobbles and boulders, angular sandstone paving blocks. 150mmØ clay land drain at 1.10m.	0.40	
						MADE GROUND: Black, gravelly SAND. Gravel is fine to coarse, subangular and subrounded sandstone, coal and ash with occasional brick fragments and pockets of coal and sandstone.	(0.60)	
1.00	1	B				Black, sandy, fine to cobbles, angular coal GRAVEL (pennine middle coal measures).	1.00	
1.00	102	ES						
1.30	2	B					(0.70)	
1.50	103	ES					1.70	
1.50	3	B				Light grey and orange/brown very clayey, silty, fine to coarse, angular and subangular mudstone GRAVEL (weathered mudstone of pennine middle coal measures).		
2.00	104	ES					(0.90)	
2.50	105	ES				Trial pit terminated at 2.60m depth due to refusal on mudstone rock.	2.60	
2.60	106	ES						
2.60	4	B						

Plan (Not to Scale)		General Remarks			
		1. No groundwater encountered. 2. Terminated due to refusal. 3. Trial pit stable.			
		All dimensions in metres		Scale:	1:25
Method Used: Machine dug	Plant Used: JCB-3CX	Logged By: C.Lacey	Checked By:		

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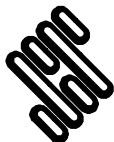
TRIAL PIT LOG

Contract: The Seam		Client: VHE Construction		Trial Pit: TP110	
Contract Ref: 849		Start: 29.07.24	Ground Level: 98.40	National Grid Co-ordinate: E:434528.4 N:406836.9	Sheet: 1 of 1
End: 29.07.24					

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.40	101	ES				MADE GROUND: Tarmac.	0.20	
						MADE GROUND: Whitish pinkish cream, sandy, medium to cobbles, angular and subangular limestone GRAVEL, sub-base.	(0.35)	
						MADE GROUND: Light brown and grey, sandy, fine to boulders, angular to subrounded sandstone GRAVEL. Becomes slightly clayey below 2.50m (possibly reworked).	0.55	
0.90	102	ES						
1.00		B						
1.40	103	ES						
1.90	104	ES					(2.55)	
2.40	105	ES						
2.90	106	ES					3.10	
Trial pit terminated at 3.10m depth. Partial collapses on pit sides.								

Plan (Not to Scale)		General Remarks			
		1. No groundwater encountered. 2. Terminated upon scheduled depth. 3. Trial pit stable.			
		All dimensions in metres		Scale: 1:25	
Method Used: Machine dug		Plant Used: JCB-3CX		Logged By: C.Lacey	
				Checked By:	

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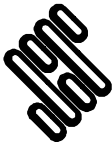
TRIAL PIT LOG

Contract: The Seam			Client: VHE Construction		Trial Pit: TP111
Contract Ref: 849	Start: 24.07.24 End: 24.07.24	Ground Level: 95.49	National Grid Co-ordinate: E:434576.2 N:406832.1		Sheet: 1 of 1

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.35	101	ES				MADE GROUND: Tarmac.	0.10	
0.60	1	B				MADE GROUND: White, sandy, medium and coarse, angular and subangular limestone GRAVEL, sub-base.	0.23	
0.70	102	ES				MADE GROUND: Creamy red, sandy, fine to coarse, angular and subangular sandstone GRAVEL, sub-base.	0.42	
						MADE GROUND: Firm, grey, slightly gravelly CLAY. Gravel is fine to cobbles, angular to subrounded limestone, brick and wood with hydrocarbon odour.	(0.48)	
							0.90	
1.20	103	ES				MADE GROUND: Brownish grey, slightly clayey, very gravelly SAND. Gravel is fine to coarse, angular to subrounded sandstone. Also occasional wood and metal wires and concrete.	(0.70)	
1.40	2	B					1.60	
1.70	104	ES				MADE GROUND: Black and dark grey, gravelly SAND. Gravel is fine to coarse, angular to subrounded coal, ash and steel slag with occasional metal wire.		
2.20	105	ES					(1.30)	
2.50	3	B						
2.70	106	ES					2.90	
						Brown very clayey SAND.	3.00	
						Trial pit terminated at 3.00m depth.		

Plan (Not to Scale)		General Remarks			
		1. No groundwater encountered. 2. Terminated upon scheduled depth. 3. Trial pit stable.			
		All dimensions in metres		Scale:	1:25
Method Used: Machine dug	Plant Used: JCB-3CX	Logged By: C.Lacey	Checked By:		

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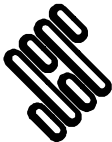
TRIAL PIT LOG

Contract: The Seam			Client: VHE Construction		Trial Pit: TP112
Contract Ref: 849	Start: 26.07.24 End: 26.07.24	Ground Level: 95.97	National Grid Co-ordinate: E:434611.2 N:406778.3		Sheet: 1 of 1

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.20	101	ES				MADE GROUND: Tarmac.	0.13	
0.50	1	B				MADE GROUND: Brown and yellow, sandy, medium and coarse, angular and subangular limestone and sandstone GRAVEL, sub-base.	0.30	
0.50	102	ES					(0.40)	
						MADE GROUND: Brown, very sandy, fine to cobbles, angular to rounded slag, sandstone, quartzite, brick and concrete GRAVEL. Also occasional plastic sheets with a slight hydrocarbon odour.	0.70	
1.10	103	ES					(0.60)	
1.20	2	B				MADE GROUND: Black, gravelly SAND. Gravel is fine to coarse, angular to subrounded, ash, slag, coal and sandstone with very strong diesel odour and wet black coating on gravels.	1.30	
1.60	104	ES					(1.70)	
2.00	3	B				Brown and orange, very clayey, fine to coarse, angular and subangular mudstone and coal GRAVEL (possibly reworked).		
2.60	105	ES					3.00	
						Trial pit terminated at 3.00m depth.		

Plan (Not to Scale)		General Remarks			
		1. No groundwater encountered. 2. Terminated upon scheduled depth. 3. Trial pit stable.			
		All dimensions in metres		Scale:	1:25
Method Used:	Machine dug	Plant Used:	JCB-3CX	Logged By:	C.Lacey
		Checked By:			

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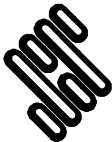
TRIAL PIT LOG

Contract: The Seam		Client: VHE Construction		Trial Pit: TP113	
Contract Ref: 849		Start: 26.07.24 End: 26.07.24	Ground Level: 95.87	National Grid Co-ordinate: E:434604.6 N:406778.1	Sheet: 1 of 1

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.20	101	ES				MADE GROUND: Tarmac.	0.10	
						MADE GROUND: Light brown and white, very sandy, fine to coarse, angular and subangular limestone GRAVEL, sub-base.	0.33	
						MADE GROUND: Black very gravelly SAND. Gravel is fine to coarse, angular to subrounded sandstone, coal, ash, brick and slag with very strong hydrocarbon odour.	(1.67)	
0.70 0.80	102 1	ES B						
1.20	103	ES						
1.70	104	ES					2.00	
2.20	105	ES				MADE GROUND: Grey and orange, very clayey, fine to cobbles, angular and subangular mudstone and coal GRAVEL (possibly reworked)	(1.10)	
2.50	2	B						
2.70	106	ES					3.10	
						Trial pit terminated at 3.10m depth.		

Plan (Not to Scale)		General Remarks					
		1. No groundwater encountered. 2. Terminated upon scheduled depth. 3. Trial pit stable.					
		All dimensions in metres		Scale: 1:25			
Method Used: Machine dug		Plant Used: JCB-3CX		Logged By: C.Lacey		Checked By:	

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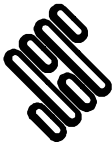
TRIAL PIT LOG

Contract: The Seam			Client: VHE Construction		Trial Pit: TP114
Contract Ref: 849	Start: 25.07.24 End: 25.07.24	Ground Level: 96.02	National Grid Co-ordinate: E:434612.8 N:406776.8		Sheet: 1 of 1

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.45	101	ES				MADE GROUND: Tarmac.	0.12	
						MADE GROUND: Brown and white, very sandy, medium and coarse, angular and subangular limestone GRAVEL with occasional brick fragments, sub-base.	0.32	
						MADE GROUND: Brown and grey, very gravelly SAND. Gravel is fine to boulders, angular to subrounded brick, slag, concrete, sandstone quartzite and tarmac.	(0.38) 0.70	
0.80	102	ES				MADE GROUND: Dark brown and black, very gravelly SAND. Gravel is fine to coarse, angular to subrounded, slag and ash with visible black hydrocarbon staining and very strong diesel hydrocarbon odour.	(0.45) 1.15	
1.40	103	ES				MADE GROUND: Light grey and orange, very clayey, slightly silty, sandy, fine to coarse, angular and subangular mudstone and sandstone and coal GRAVEL (possibly reworked).		
1.50	1	B						
1.90	104	ES					(1.75)	
2.40	105	ES						
2.90	106	ES				Trial pit terminated at 2.90m depth.	2.90	

Plan (Not to Scale) 		General Remarks 1. No groundwater encountered. 2. Terminated upon scheduled depth. 3. Trial pit stable.	
		All dimensions in metres	Scale: 1:25
Method Used: Machine dug	Plant Used: JCB-3CX	Logged By: C.Lacey	Checked By:

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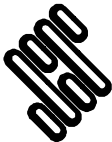
TRIAL PIT LOG

Contract: The Seam			Client: VHE Construction			Trial Pit: TP115	
Contract Ref: 849		Start: 25.07.24 End: 25.07.24	Ground Level: 96.05		National Grid Co-ordinate: E:434611.2 N:406769.3		Sheet: 1 of 1

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.30	101	ES				MADE GROUND: Tarmac.	0.20	
						MADE GROUND: White and brown, sandy, fine to coarse, angular and subangular limestone GRAVEL, sub-base.	0.35	
						MADE GROUND: Brown, very sandy, fine to coarse, angular to subrounded ash, glass, brick, slag, sandstone GRAVEL. (Foundation waste)	(1.00)	
0.80	102	ES				Firm to stiff, light brown and grey, silty, very friable CLAY. Gravel is medium and coarse, angular mudstone.	1.35	
0.90	1	B						
1.30	103	ES						
1.80	104	ES				Trial pit terminated at 3.00m depth.	(1.65)	
2.00	2	B						
2.30	105	ES						
2.80	106	ES					3.00	

Plan (Not to Scale)			General Remarks				
			1. No groundwater encountered. 2. Terminated upon scheduled depth. 3. Trial pit stable.				
			All dimensions in metres		Scale: 1:25		
Method Used: Machine dug		Plant Used: JCB-3CX		Logged By: C.Lacey		Checked By:	

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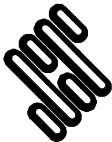
TRIAL PIT LOG

Contract: The Seam			Client: VHE Construction			Trial Pit: TP116	
Contract Ref: 849		Start: 23.07.24	Ground Level: 95.98	National Grid Co-ordinate: E:434605.9 N:406763.2		Sheet: 1 of 1	
		End: 23.07.24					

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thick ness)	Material Graphic Legend
Depth	No	Type	Results					
0.75	101	ES				MADE GROUND: Tarmac.	0.08	
						MADE GROUND: Gravel hardcore.	0.34	
						MADE GROUND: Light brown, gravelly SAND. Gravel is fine to coarse, angular and subangular chalk, concrte, tarmac, siltstone and sandstone. Frequent cobbles of angular concrete.	0.60	
						MADE GROUND: Black, ashy, gravelly SAND. Gravel is fine to coarse, angular and subangular coal, tarmac, sandstone and occasional concrete.	(0.50)	
						MADE GROUND: Bluish grey, sandy, gravelly CLAY. Gravel is fine to coarse, angular and subangular slag, brick, tarmac, slate, sandstone and coal.	1.10	
1.70	102	ES					(1.10)	
						2.20		
2.30	103	ES				MADE GROUND: Firm to stiff, greenish grey, silty, gravelly CLAY. Gravel is fine to coarse, angular and subangular mudstone and subangular sandstone. Moderate cobble content of subangular and angular mudstone (sandstone has occasional iron staining).	(0.80)	
						3.00		
						Trial pit terminated at 3.00m depth.		

Plan (Not to Scale)			General Remarks				
			1. No groundwater encountered. 2. Terminated upon scheduled depth. 3. Trial pit stable.				
			All dimensions in metres		Scale: 1:25		
Method Used: Machine dug		Plant Used: JCB-3CX		Logged By: ???		Checked By:	

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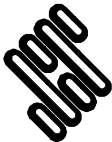
TRIAL PIT LOG

Contract: The Seam			Client: VHE Construction		Trial Pit: TP117
Contract Ref: 849	Start: 25.07.24 End: 25.07.24	Ground Level: 96.07	National Grid Co-ordinate: E:434610.8 N:406758.2		Sheet: 1 of 1

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.30	101	ES				MADE GROUND: Tarmac.	(0.45) 0.45	
0.70 0.80	1 102	B ES				MADE GROUND: Black, gravelly SAND. Gravel is fine to cobbles, angular to subrounded ash, clinker, coal, wood, concrete and sandstone.	(0.45) 0.90	
1.30	103	ES				MADE GROUND: Brown, sandy, medium and coarse, angular and subangular limestone GRAVEL, sub-base.	1.10	
1.70 1.80	2 104	B ES				MADE GROUND: Light grey and dark grey, very clayey, slightly silty, slightly sandy, fine to cobbles, angular and subangular mudstone GRAVEL (possibly reworked).	(1.90)	
2.30	105	ES						
2.80	106	ES					3.00	
						Trial pit terminated at 3.00m depth.		

Plan (Not to Scale)		General Remarks			
		1. No groundwater encountered. 2. Terminated upon scheduled depth. 3. Trial pit stable.			
		All dimensions in metres		Scale:	1:25
Method Used: Machine dug	Plant Used: JCB-3CX	Logged By: C.Lacey	Checked By:		

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PnVersion: v8_07 | Log TRIAL PIT LOG - A4P | 849 THE SEAM.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Castleford, The Potteries, Potters, West Yorkshire, WF10 1NJ. Tel: 01977-552255, Fax: 01977-552299, Web: www.soils.co.uk, Email: ask@soils.co.uk | 20/09/24 - 09:07 | CC2 |



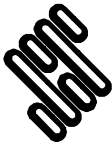
TRIAL PIT LOG

Contract: The Seam			Client: VHE Construction		Trial Pit: TP118
Contract Ref: 849	Start: 19.07.24 End: 19.07.24	Ground Level: 96.16	National Grid Co-ordinate: E:434614.9 N:406760.8		Sheet: 1 of 1

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.35	101	ES				MADE GROUND: Tarmac.	0.12	
						MADE GROUND: Whitish brown, sandy, medium and coarse, angular and subangular limestone GRAVEL, sub-base.	(0.34)	
						MADE GROUND: Pink, sandy, medium and coarse, angular and subangular limestone GRAVEL, sub-base.	0.46	
0.80	102	ES				MADE GROUND: Black and dark grey, very gravelly SAND. Gravel is fine to coarse, angular to subrounded coal, sandstone, ash, tarmac and slag.	0.52	
							(0.68)	
1.10	1	B					1.20	
1.30	103	ES				MADE GROUND: Grey, very clayey, silty, medium to cobbles, angular and subangular coal GRAVEL possibly reworked).		
1.80	104	ES						
2.30	105 b	ES B					(1.90)	
2.30								
2.80	106	ES						
						Trial pit terminated at 3.10m depth.	3.10	

Plan (Not to Scale)		General Remarks			
		1. No groundwater encountered. 2. Terminated upon scheduled depth. 3. Trial pit stable.			
		All dimensions in metres		Scale:	1:25
Method Used: Machine dug	Plant Used: JCB-3CX	Logged By: C.Lacey	Checked By:		

GINT LIBRARY_V10_01.GLB LibVersion: v8_07_001 PnVersion: v8_07 | Log TRIAL PIT LOG - A4P | 849 THE SEAM.GPJ - v10_01.
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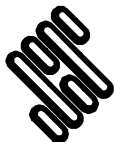
TRIAL PIT LOG

Contract: The Seam			Client: VHE Construction		Trial Pit: TP119
Contract Ref: 849	Start: 19.07.24 End: 19.07.24	Ground Level: 96.07	National Grid Co-ordinate: E:434662.7 N:406744.4		Sheet: 1 of 1

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Tarmac.	0.16	
						MADE GROUND: Light grey, very sandy, medium and coarse, angular and subangular limestone GRAVEL, sub-base.	0.35	
0.50	101	ES				MADE GROUND: Grey and brown, very gravelly SAND. Gravel is medium and coarse, subangular and subrounded sandstone and quartzite with 100mm band of black clinker and ash at 0.90m.		
0.70	1	B					(0.65)	
1.00	102	ES					1.00	
1.50	103	ES				MADE GROUND: Orange and brown, very gravelly SAND. Gravel is fine to coarse, subangular and subrounded sandstone. (possibly reworked)		
1.50	2	B					(0.70)	
							1.70	
2.00	104	ES				MADE GROUND: Grey, very sandy, very gravelly, friable CLAY. Gravel is fine to coarse, angular and subangular mudstone and sandstone (possibly reworked).		
2.30		V	$c_u=30/100/44$ $c_v=13/32/18$					
2.30		V						
2.40	3	B						
2.50	105	ES					(1.40)	
3.00	106	ES					3.10	
						Trial pit terminated at 3.10m depth.		

Plan (Not to Scale)		General Remarks			
		1. No groundwater encountered. 2. Terminated upon scheduled depth. 3. Trial pit stable.			
		All dimensions in metres		Scale:	1:25
Method Used: Machine dug	Plant Used: JCB-3CX	Logged By: C.Lacey	Checked By:		

GINT LIBRARY_V10_01.GLB LibVersion: v8_07 | Log TRIAL PIT LOG - A4P | 849 THE SEAM.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Castleford, The Potteries, Pottery Street, Castleford, West Yorkshire, WF10 1NJ. Tel: 01977-552255, Fax: 01977-552299, Web: www.soils.co.uk, Email: ask@soils.co.uk | 20/09/24 - 09:07 | CC2 |



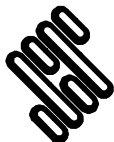
TRIAL PIT LOG

Contract: The Seam			Client: VHE Construction		Trial Pit: TP120
Contract Ref: 849	Start: 22.07.24 End: 22.07.24	Ground Level: 96.97	National Grid Co-ordinate: E:434638.2 N:406694.1		Sheet: 1 of 1

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.50 0.50	1 101	B ES				MAE GROUND: Tarmac. MADE GROUND: Gravel hardcore. ... 0.04m-0.40m, boulder of concrete.	0.04 0.26	
						MADE GROUND: Dark grey, gravelly SAND. Gravel is fine to coarse, subangular and angular brick, concrete, slate, sandstone and siltstone.	(0.32)	
						MADE GROUND: Black, slightly clayey, gravelly SAND. Gravel is fine to coarse, subangular and angular concrete, brick, siltstone and sandstone.	0.58 0.64	
1.10	102	ES				MADE GROUND: Yellowish brown, slightly clayey, gravelly SAND. Gravel is fine to coarse, subangular siltstone and sandstone. Frequent cobbles of subangular sandstone. Occasional gravel of fine and medium, angular coal and occasional boulders of subangular sandstone.	(0.76)	
						MADE GROUND: Firm, greenish grey, gravelly, silty CLAY. Gravel is fine to coarse, angular and subangular mudstone and coal.	1.40	
							(1.40)	
2.40 2.40	103 2	ES B				MADE GROUND: Firm brown, silty, gravelly CLAY. Gravel is fine to coarse, subangular and angular coal, mudstone and sandstone.	2.80	
						Trial pit terminated at 3.00m depth.	3.00	

Plan (Not to Scale)		General Remarks			
		1. No groundwater encountered. 2. Terminated upon scheduled depth. 3. Trial pit stable.			
		All dimensions in metres		Scale:	1:25
Method Used: Machine dug	Plant Used: JCB-3CX	Logged By: C.Lacey	Checked By:		

GINT LIBRARY_V10_01.GLB LibVersion: v8_07 | Log TRIAL PIT LOG - A4P | 849 THE SEAM.GPJ - v10_01.
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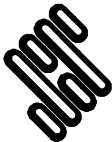
TRIAL PIT LOG

Contract: The Seam			Client: VHE Construction		Trial Pit: TP121
Contract Ref: 849	Start: 19.07.24 End: 19.07.24	Ground Level: 97.00	National Grid Co-ordinate: E:434674.5 N:406706.0		Sheet: 1 of 1

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thick ness)	Material Graphic Legend	
Depth	No	Type	Results						
0.30 0.40	101 1	ES				MADE GROUND:Tarmac.	0.10		
						MADE GROUND: Grey boulders of angular sandstone GRAVEL. (sandstone paving blocks)	0.25		
						MADE GRPOUND: Black, very gravelly SAND. Gravel is fine to coarse, angular to subrounded sandstone, coal and ash.	0.50		
0.70 0.80	102 2	ES B				MADE GROUND: Orange, sandy, medium boulders, angular and subangular sandstone GRAVEL with pockets of black ash.	(0.80)		
						1.30			
1.30	103	ES							
1.50 1.50		V V	c _u =48 c _r =25						
1.70	104	ES							
2.00 2.00 2.00	3	B V V	c _u =50 c _r =18						
2.30	105	ES							
2.50 2.50		V V	c _u =98 c _r =25						
2.70	106	ES					3.10		
3.00 3.00		V V							c _u =70 c _r =22
						Trial pit terminated at 3.10m depth.			

Plan (Not to Scale)		General Remarks			
		1. No groundwater encountered. 2. Terminated upon scheduled depth. 3. Trial pit stable.			
		All dimensions in metres		Scale:	1:25
Method Used: Machine dug	Plant Used: JCB-3CX	Logged By: C.Lacey	Checked By:		

GINT LIBRARY_V10_01.GLB LibVersion: v8_07 | Log TRIAL PIT LOG - A4P | 849 THE SEAM.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Castleford, The Potteries, Potters Street, Castleford, West Yorkshire, WF10 1NJ. Tel: 01977-552255, Fax: 01977-552299, Web: www.soils.co.uk, Email: ask@soils.co.uk | 20/09/24 - 09:07 | CC2 |



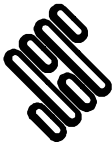
TRIAL PIT LOG

Contract: The Seam		Client: VHE Construction		Trial Pit: TP122	
Contract Ref: 849		Start: 29.07.24 End: 29.07.24	Ground Level: 97.16	National Grid Co-ordinate: E:434629.5 N:406625.6	Sheet: 1 of 1

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.35	101	ES				MADE GROUND: Tarmac. (in 2 layers)	(0.28) 0.28	
						MADE GROUND: Yellowish brown, medium to boulders, angular and subangular limestone, sandstone and occasional brick and brick fragments GRAVEL, sub-base. 150mmØ clay land drain at 0.60m.	(0.47) 0.75	
0.80	102	ES				MADE GROUND: Brown, slightly clayey, gravelly SAND. Gravel is fine to coarse, angular and subangular sandstone and mudstone. Concrete wall from 0.10m at southern end of pit (reworked).	(1.25)	
1.30 1.30	1 103	B ES						
1.80	104	ES						
						Trial pit terminated at 2.00m depth due to refusal on sandstone rocks.	2.00	

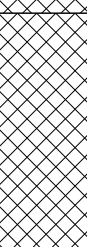
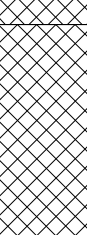
Plan (Not to Scale)		General Remarks	
		1. No groundwater encountered. 2. Terminated due to refusal. 3. Trial pit stable.	
Method Used: Machine dug		Plant Used: JCB-3CX	Logged By: C.Lacey
		Scale: 1:25	Checked By:

GINT LIBRARY_V10_01.GLB LibVersion: v8_07_001 PnVersion: v8_07 | Log TRIAL PIT LOG - A4P | 849 THE SEAM.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Castleford, The Potteries, Potters, West Yorkshire, WF10 1NJ. Tel: 01977-552255, Fax: 01977-552299, Web: www.soils.co.uk, Email: ask@soils.co.uk | 20/09/24 - 09:07 | CC2 |



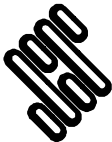
TRIAL PIT LOG

Contract: The Seam			Client: VHE Construction			Trial Pit: TP123	
Contract Ref: 849		Start: ???	Ground Level: 97.29	National Grid Co-ordinate: E:434644.2 N:406641.0		Sheet: 1 of 1	
End: ???							

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thick ness)	Material Graphic Legend
Depth	No	Type	Results					
0.50	101	ES				MADE GROUND: Tarmac.	0.03	
						MADE GROUND: Tarmac.	0.13	
						MADE GROUND: Yellow, sandy, medium and coarse, angular and subangular limestone GRAVEL, sub-base.	0.20	
						MADE GROUND: Grey cobbles and boulders, angular sandstone GRAVEL (sandstone paving blocks).	0.45	
						MADE GROUND: Black, very gravelly SAND. Gravel is fine to coarse, angular to subrounded sandstone, clinker, slag, coal and occasional metal pipe.	(0.30)	
0.70	1	B					0.75	
1.00	102	ES				MADE GROUND: Light brown and orange, very sandy, medium to cobbles, angular and subangular sandstone GRAVEL.	(0.30)	
1.10	103	ES				MADE GROUND: Black, fine to coarse, angular coal GRAVEL. (Intact coal seam of pennine middle coal measures).	1.05	
1.50	2	B					(0.85)	
							1.90	
2.40	3	B				MADE GROUND: Light grey, slightly clayey, fine to coarse, angular to subrounded mudstone GRAVEL (pennine middle coal measures).	(0.80)	
							2.70	
			Trial pit terminated at 2.70m depth due to refusal on mudstone.					

Plan (Not to Scale)		General Remarks	
		1. No groundwater encountered. 2. Terminated due to refusal. 3. Trial pit stable.	
All dimensions in metres		Scale: 1:25	
Method Used: Machine dug	Plant Used: JCB-3CX	Logged By: C.Lacey	Checked By:

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PnVersion: v8_07 | Log TRIAL PIT LOG - A4P | 849 THE SEAM.GPJ - v10_01.
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TRIAL PIT LOG

Contract: The Seam			Client: VHE Construction		Trial Pit: TP124
Contract Ref: 849	Start: 18.07.24 End: 18.07.24	Ground Level: 97.22	National Grid Co-ordinate: E:434666.4 N:406643.8		Sheet: 1 of 1

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.40 0.50	101 1	ES B				MADE GROUND: Tarmac.	0.10	
						MADE GROUND: Yellowish white, sandy, fine to coarse, angular to subrounded limestone GRAVEL, sub-base.	0.15	
						MADE GROUND: Light grey cobbles of angular sandstone GRAVEL. (sandstone paving blocks with coal tar binding).	0.30	
						MADE GROUND: Black, very sandy, fine to coarse, angular to subrounded coal, sandstone and ash.	(0.30) 0.60	
						MADE GROUND: Orange, very sandy, fine to cobbles, angular and subangular sandstone GRAVEL (possibly reworked).	(0.50) 1.10	
0.90 0.90	102 2	ES B				MADE GROUND: Light grey, sandy, slightly clayey, fine to coarse, angular sandstone GRAVEL (possibly reworked).	(1.90) 3.00	
1.40	103	ES						
1.80 1.90	3 104	B ES						
2.40	105	ES						
2.90	106	ES						
Trial pit terminated at 3.00m depth.								

Plan (Not to Scale)		General Remarks	
		1. No groundwater encountered. 2. Terminated upon scheduled depth. 3. Trial pit stable.	
All dimensions in metres		Scale: 1:25	
Method Used: Machine dug	Plant Used: JCB-3CX	Logged By: C.Lacey	Checked By:

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PjVersion: v8_07_001 Log TRIAL PIT LOG - A4P | 849 THE SEAM.GPJ - v10_01.
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TRIAL PIT LOG

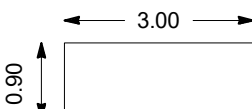
Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Tarmac.	0.09	
						MADE GROUND: Yellowish white, sandy, fine to coarse, angular to subrounded limestone GRAVEL, sub-base.	0.16	
0.50	1	B				MADE GROUND: Light grey cobbles and boulders, angular sandstone GRAVEL. (sandstone paving block up to 0.24m x 0.13m)	0.40	
0.50	101	ES				MADE GROUND: Black, sandy fine to coarse, angular to subrounded concrete, ash, clinker and sandstone and steel slag.	(0.40)	
0.50	2	D					0.80	
0.90	102	ES				MADE GROUND: Orangey brown, sandy, medium to coarse, angular to subrounded sandstone GRAVEL (possibly reworked).	(0.30)	
							1.10	
1.50	103	ES				MADE GROUND: Grey, very sandy, medium to coarse, angular to subangular sandstone and mudstone GRAVEL (possibly reworked).		
1.50	3	B						
2.00	104	ES					(1.90)	
2.50	105	ES						
3.00	106	ES				Trial pit terminated at 3.00m depth.	3.00	

GINT_LIBRARY_V10_01.GLB LibVersion: v8.07 | Log TRIAL PIT LOG - A4P | 849 THE SEAM GPJ - v10.01.
The Potteries, Pottery Street, Castleford, West Yorkshire, WF10 1NJ. Tel: 01977-552255, Fax: 01977-552299, Web: www.soils.co.uk, Email: ask@soils.co.uk, 12/09/24 - 09:07 | CC2 |



TRIAL PIT LOG

[illegible]

Plan (Not to Scale)		General Remarks		
		1. No groundwater encountered. 2. Terminated upon scheduled depth. 3. Trial pit stable.		
		All dimensions in metres		Scale: 1:25
Method Used: Machine dug	Plant Used: JCB-3CX	Logged By: C. Lacey	Checked By:	

SINT_LIBRARY_V10_01GLB LibVersion: v8.07.001 PivVersion: v8.07 | Log TRIAL PIT LOG - A4P | 849 THE SEAM.GPJ - v10.01.
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Appendix E

Exploratory Hole Photographs

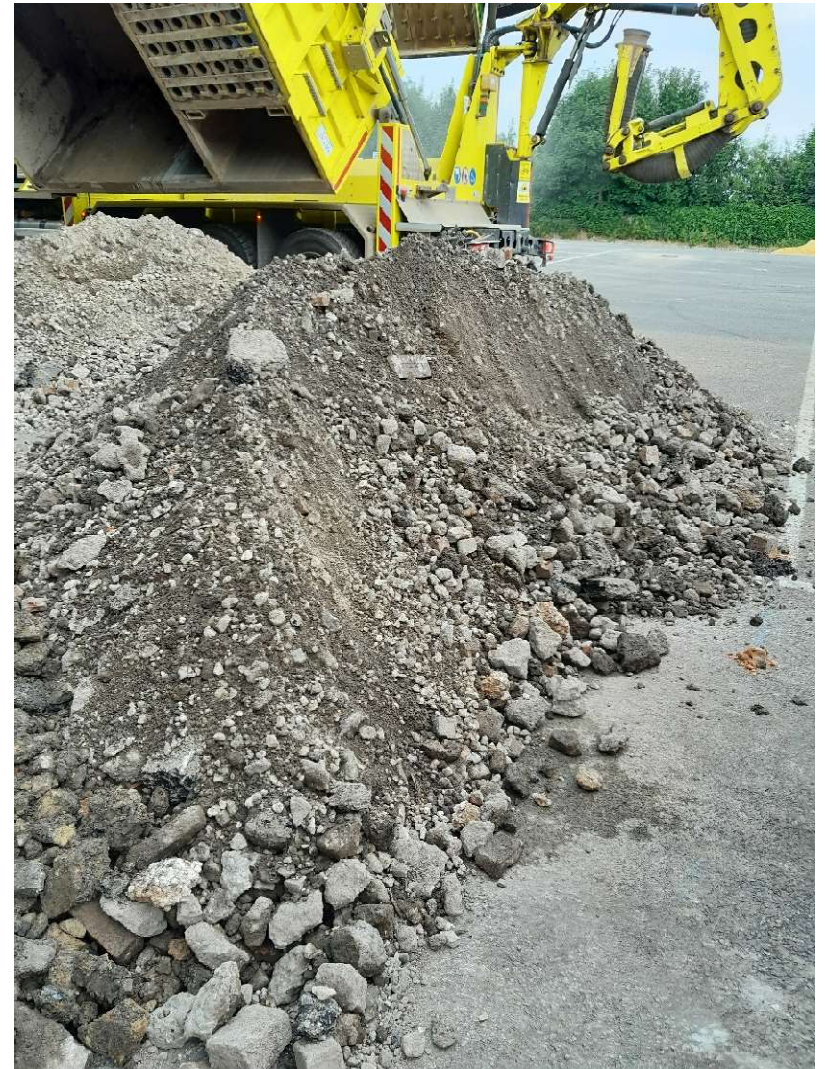


Plate FP101

Exploratory Hole: FP101

VHE Construction	Client: Willmott Dixon	Project Number: 849	Site Name: The Seam
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Plate FP102

Exploratory Hole: TP102			
VHE Construction	Client: Willmott Dixon	Project Number: 849	Site Name: The Seam

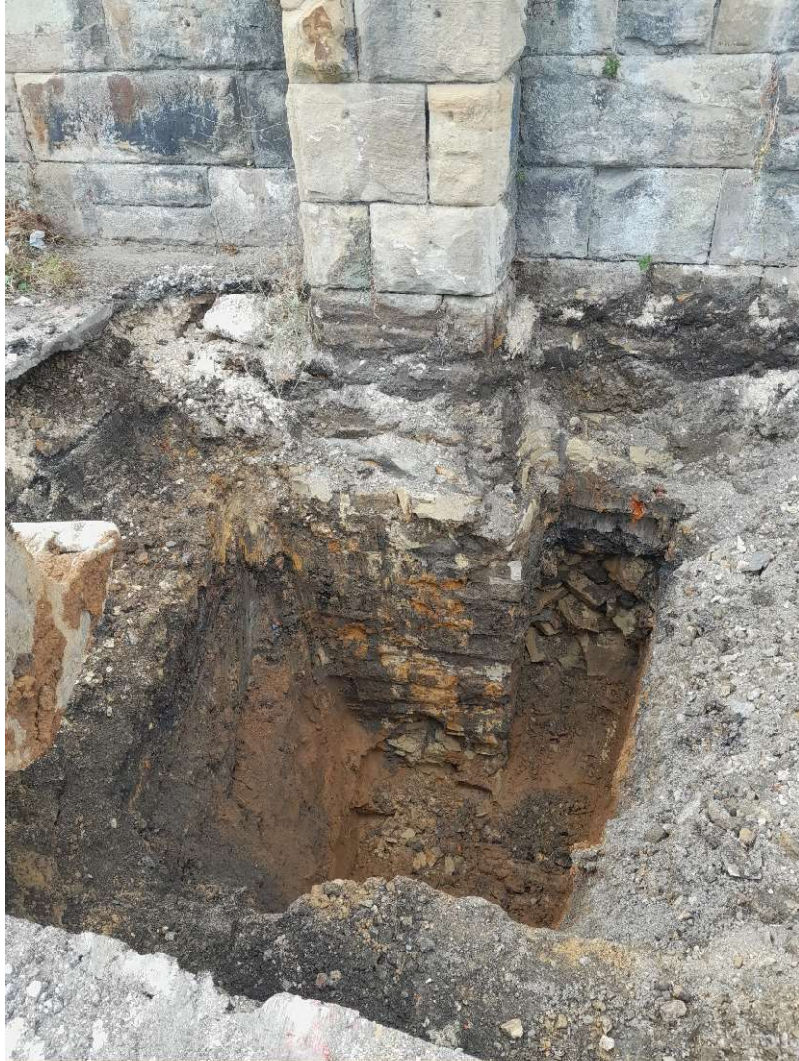


Plate FP103

Exploratory Hole: FP103			
VHE Construction	Client: Willmott Dixon	Project Number: 849	Site Name: The Seam



Plate FP104

Exploratory Hole: FP104

VHE Construction	Client: Willmott Dixon	Project Number: 849	Site Name: The Seam
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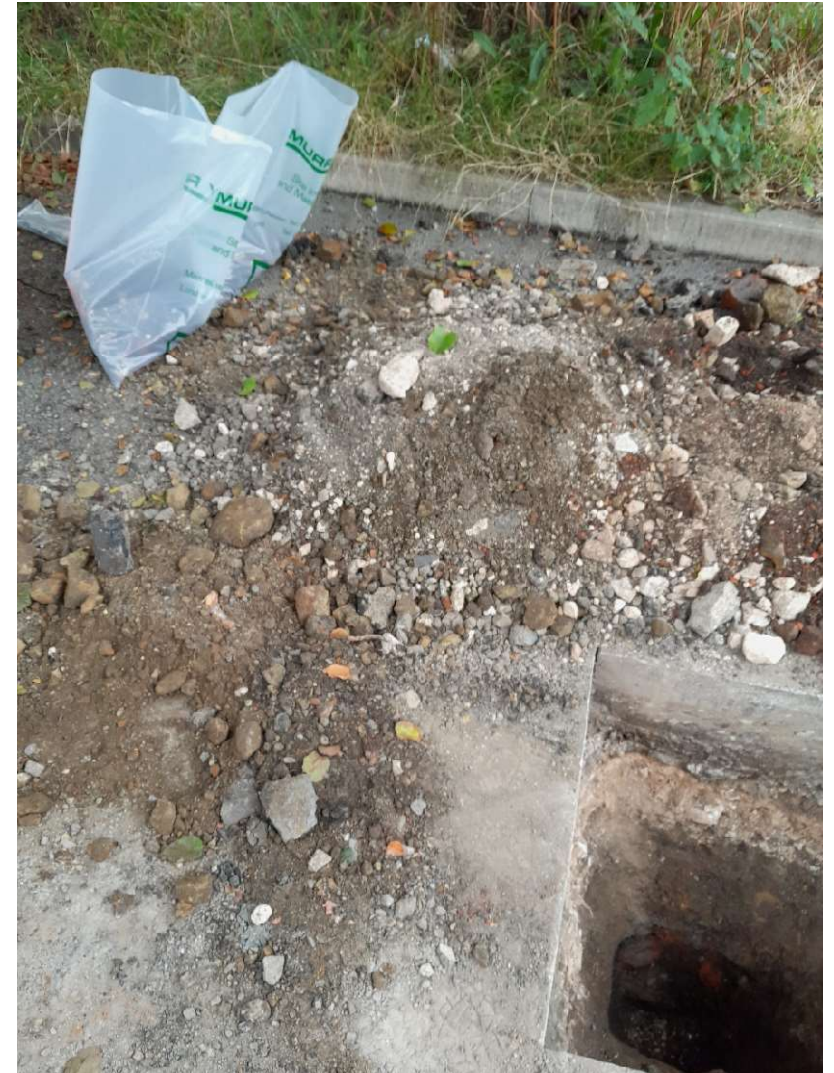


Plate HP101

Exploratory Hole: HP101

VHE Construction	Client: Willmott Dixon	Project Number: 849	Site Name: The Seam
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Plate HP102

Exploratory Hole: HP102

VHE Construction

Client: Willmott Dixon

Project Number: 849

Site Name: The Seam



Plate HP103

Exploratory Hole: HP103

VHE Construction

Client: Willmott Dixon

Project Number: 849

Site Name: The Seam



Plate HP104

Exploratory Hole: HP 104

VHE Construction	Client: Willmott Dixon	Project Number: 849	Site Name: The Seam
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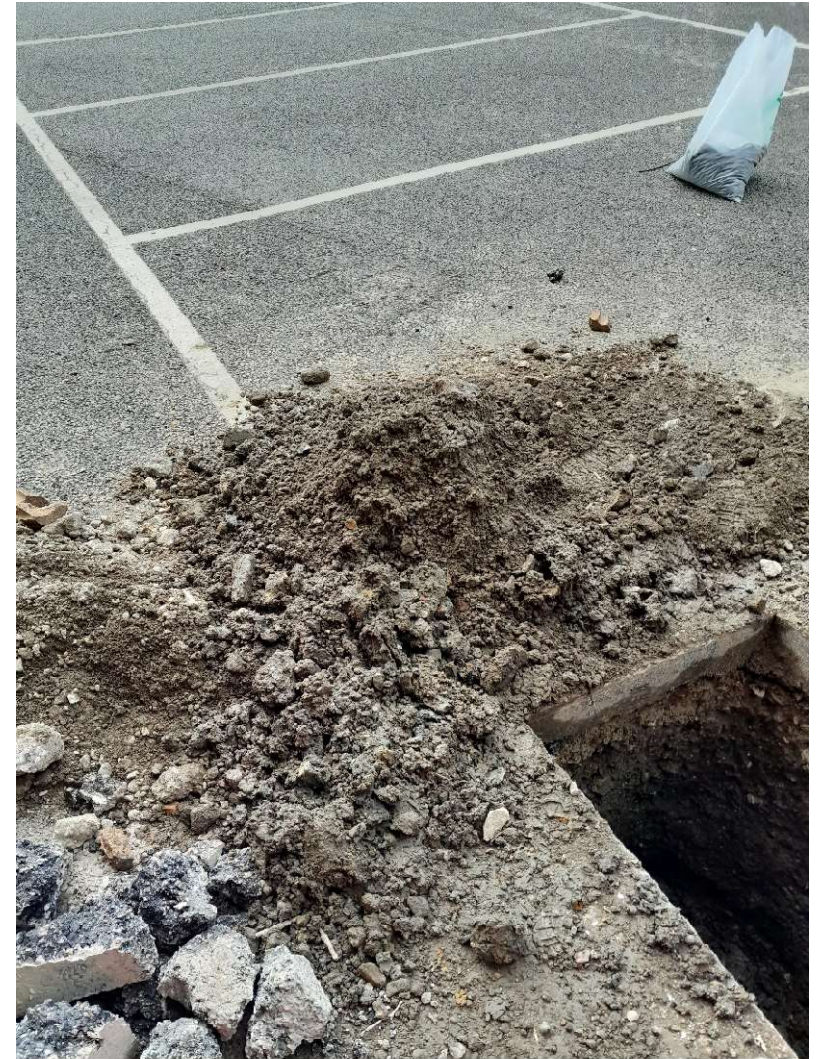


Plate HP105

Exploratory Hole: HP105

VHE Construction	Client: Willmott Dixon	Project Number: 849	Site Name: The Seam
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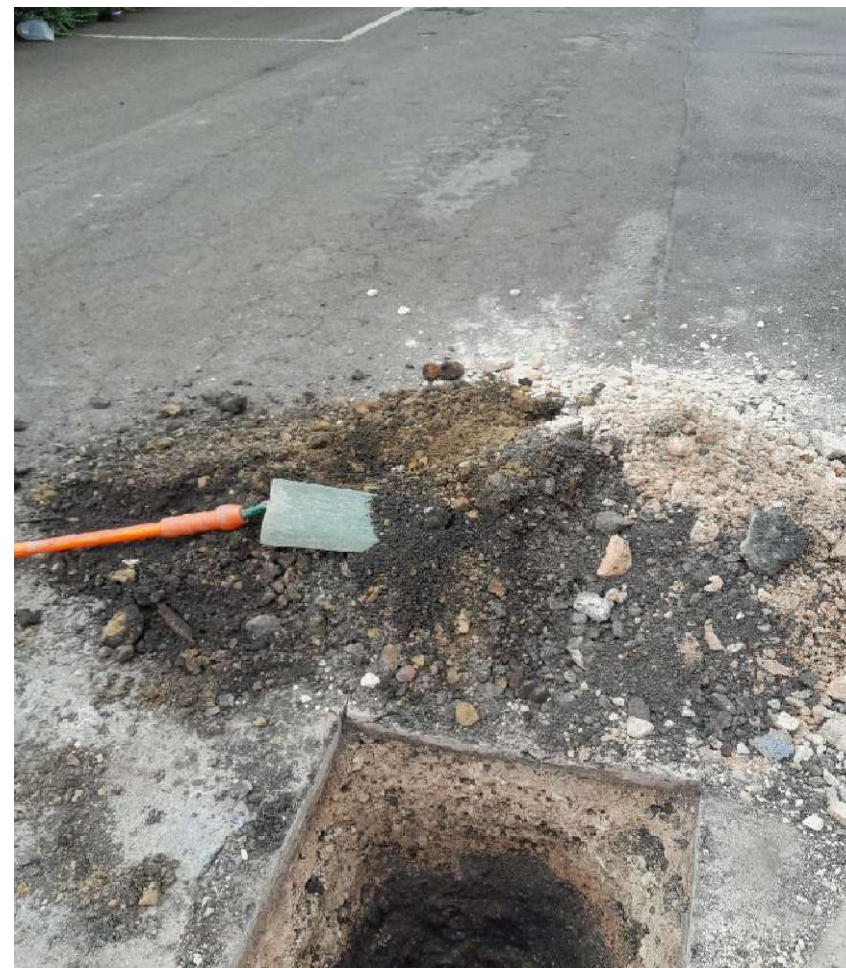


Plate HP107

Exploratory Hole: HP107

VHE Construction

Client: Willmott Dixon

Project Number: 849

Site Name: The Seam



Plate HP108

Exploratory Hole: HP108			
VHE Construction	Client: Willmott Dixon	Project Number: 849	Site Name: The Seam

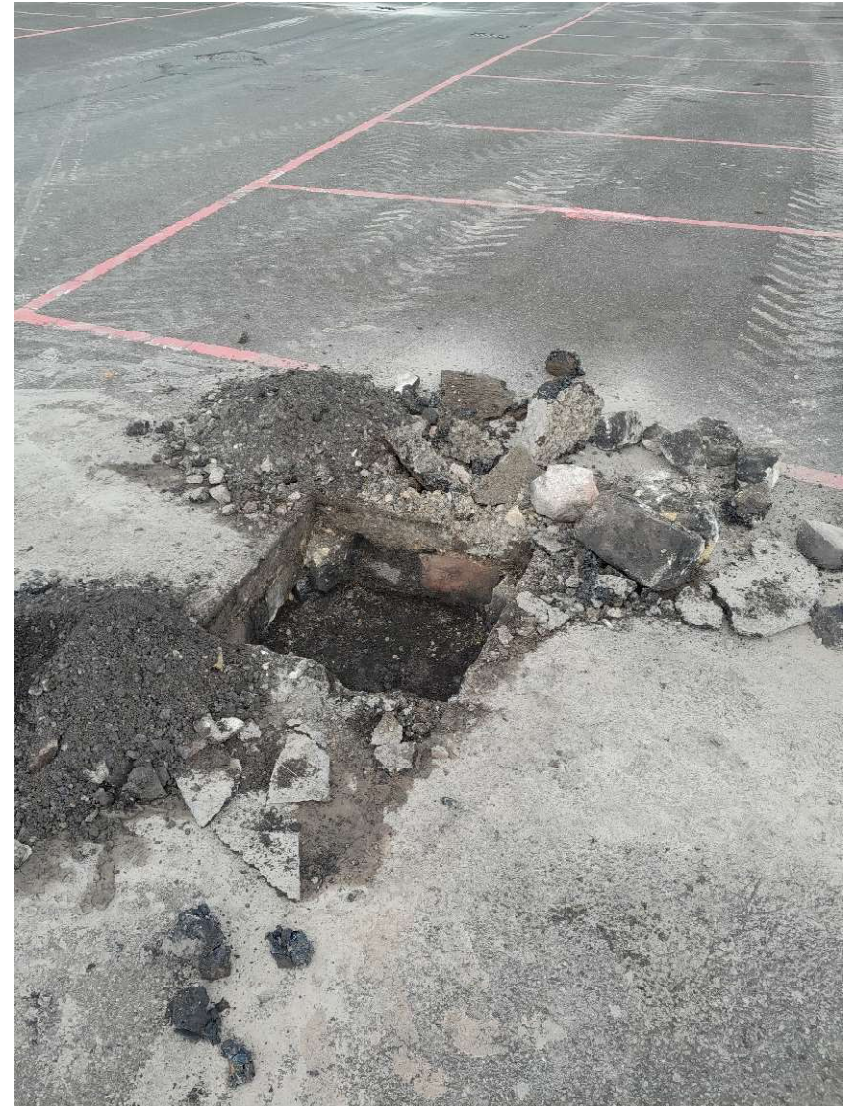


Plate HP109

Exploratory Hole: HP109			
VHE Construction	Client: Willmott Dixon	Project Number: 849	Site Name: The Seam



Plate HP110



Exploratory Hole: HP110

VHE Construction

Client: Willmott Dixon

Project Number: 849

Site Name: The Seam



Plate HP111

Exploratory Hole: HP111

VHE Construction

Client: Willmott Dixon

Project Number: 849

Site Name: The Seam

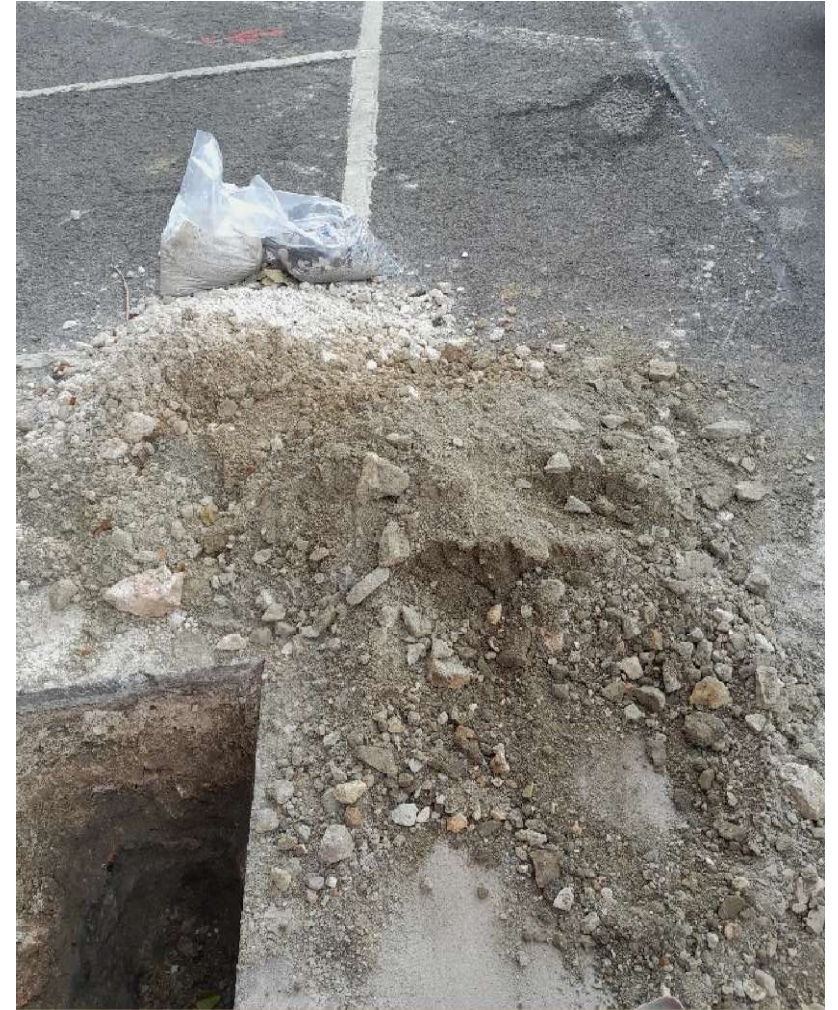


Plate HP112

Exploratory Hole: HP112

VHE Construction PLC

Client: Willmott Dixon

Project Number: 849

Site Name: The Seam



Plate TP101

Exploratory Hole: TP101

VHE Construction

Client: Willmott Dixon

Project Number: 849

Site Name: The Seam

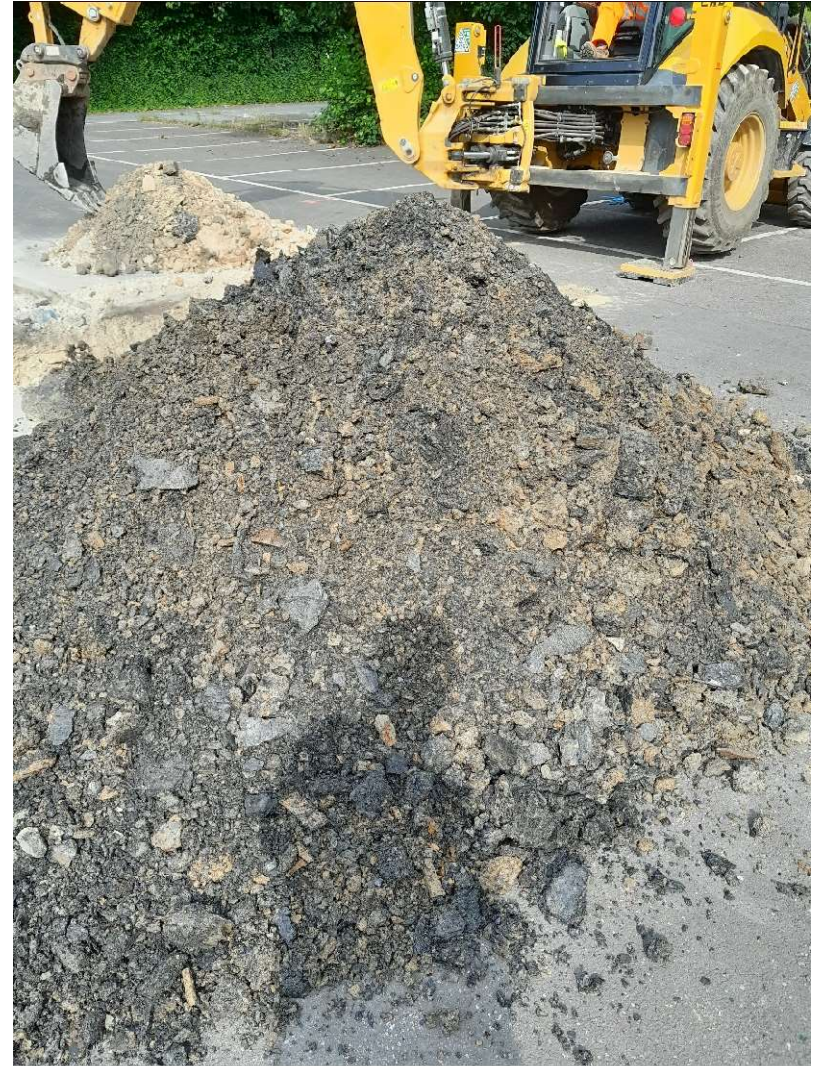


Plate TP102

Exploratory Hole: TP102

VHE Construction

Client: Willmott Dixon

Project Number: 849

Site Name: The Seam

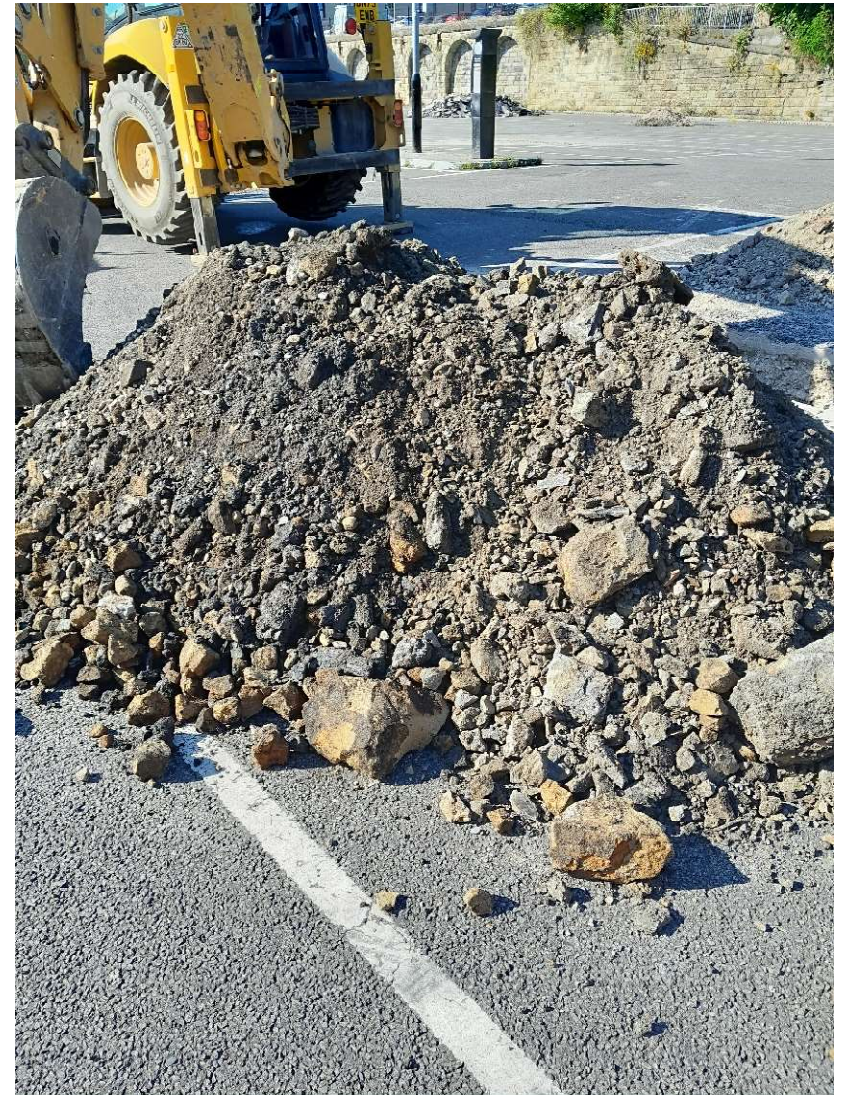


Plate TP103

Exploratory Hole: TP103

VHE Construction

Client: Willmott Dixon

Project Number: 849

Site Name: The Seam

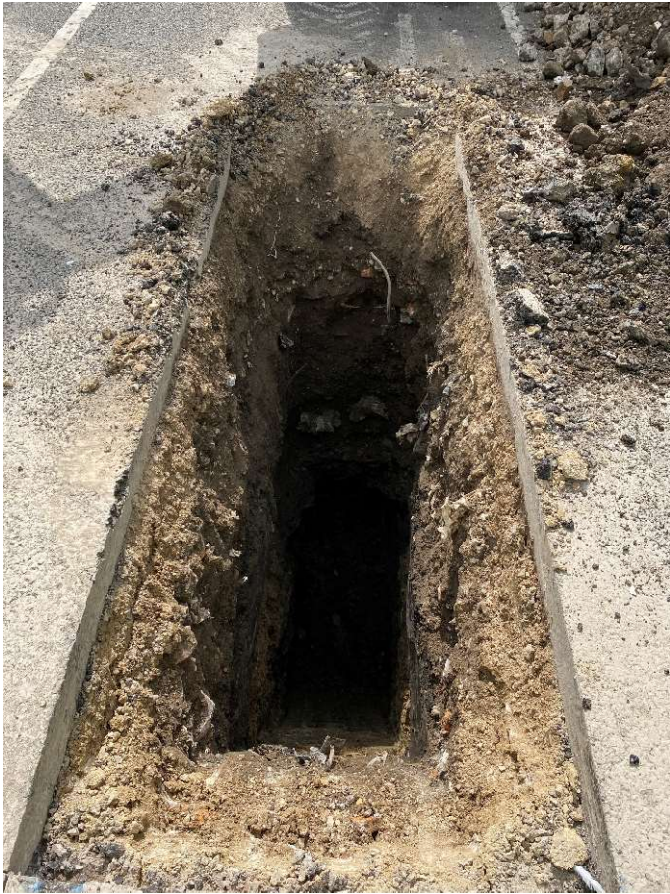


Plate TP104

Exploratory Hole: TP104			
VHE Construction	Client: Willmott Dixon	Project Number: 849	Site Name: The Seam



Plate TP105

Exploratory Hole: TP105			
VHE Construction	Client: Willmott Dixon	Project Number: 849	Site Name: The Seam

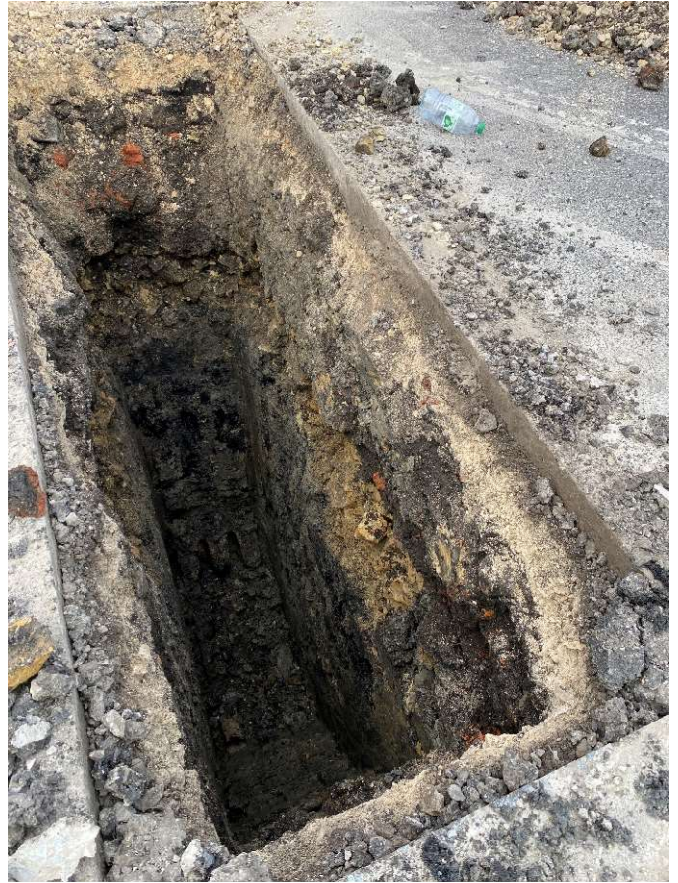
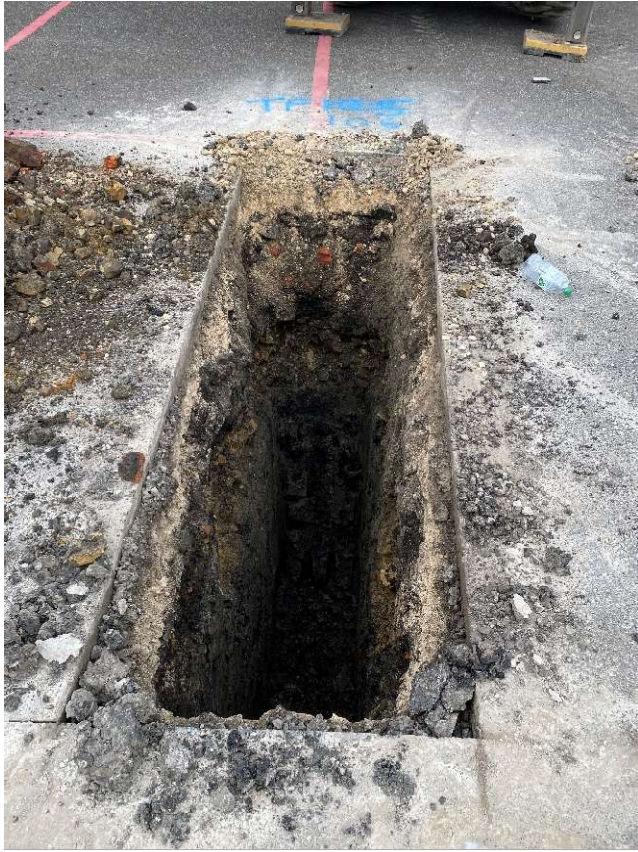


Plate TP106

Exploratory Hole: TP106

VHE Construction

Client: Willmott Dixon

Project Number: 849

Site Name: The Seam

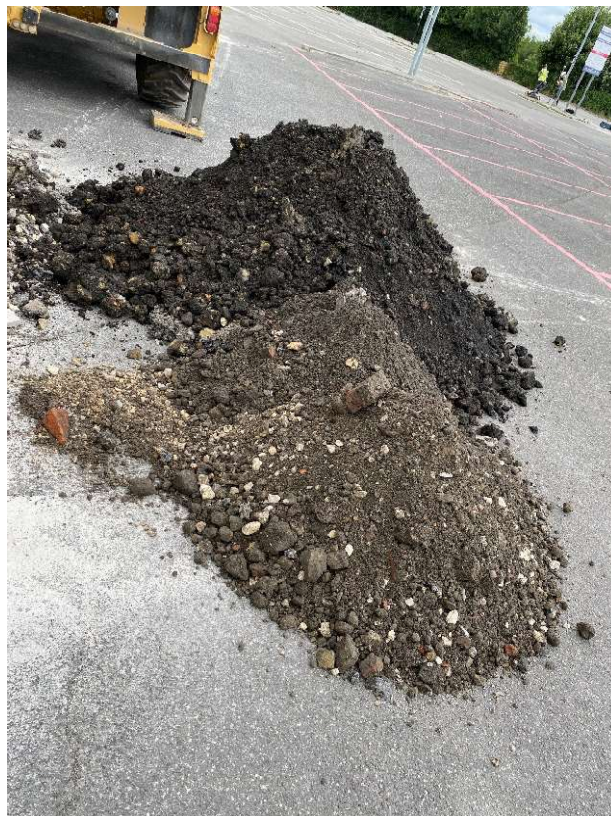


Plate TP107

Exploratory Hole: TP107			
VHE Construction	Client: Willmott Dixon	Project Number: 849	Site Name: The Seam

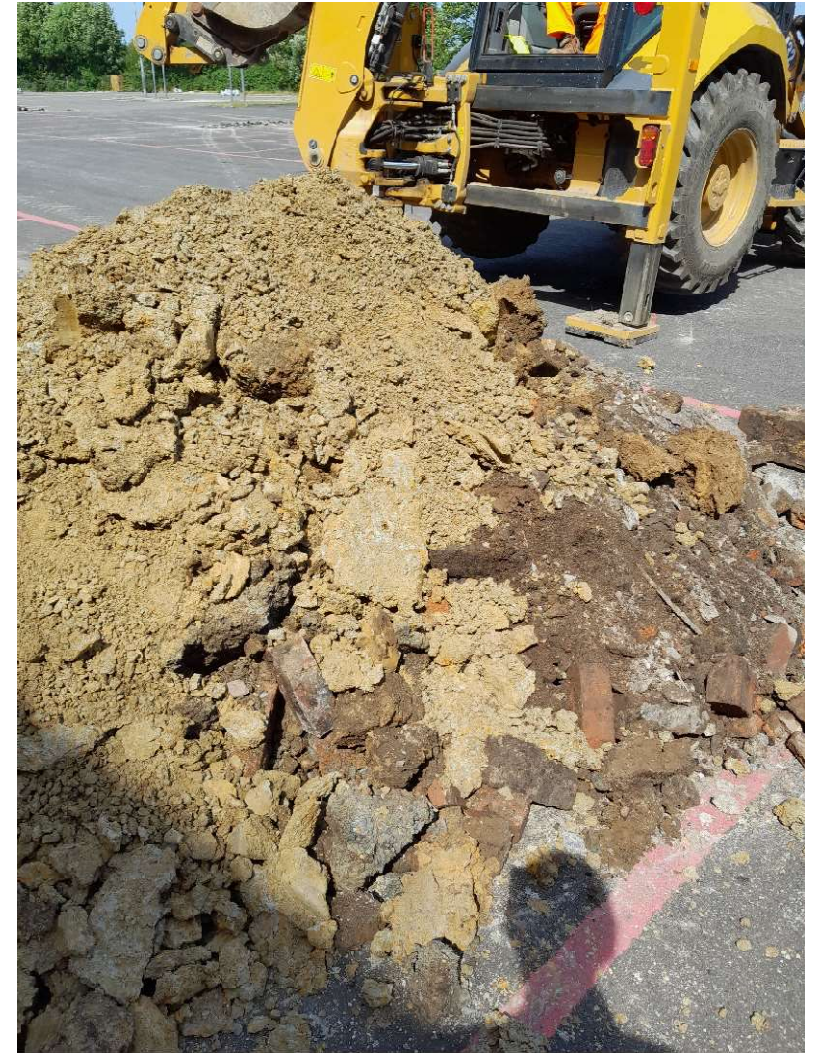


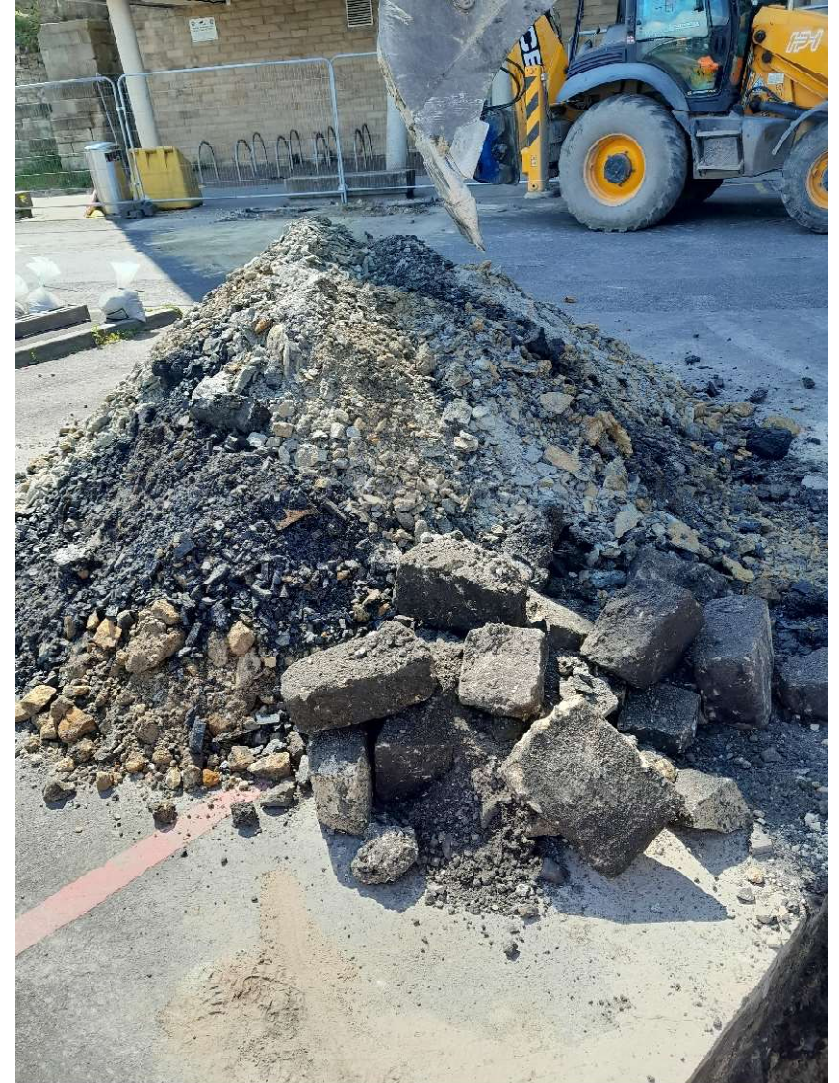
Plate TP108

Exploratory Hole: TP108

VHE Construction	Client: Willmott Dixon	Project Number: 849	Site Name: The Seam
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Plate TP109



Exploratory Hole: TP109

VHE Construction	Client: Willmott Dixon	Project Number: 849	Site Name: The Seam
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Plate TP110

Exploratory Hole: TP110

VHE Construction	Client: Willmott Dixon	Project Number: 849	Site Name: The Seam
------------------	------------------------	---------------------	---------------------

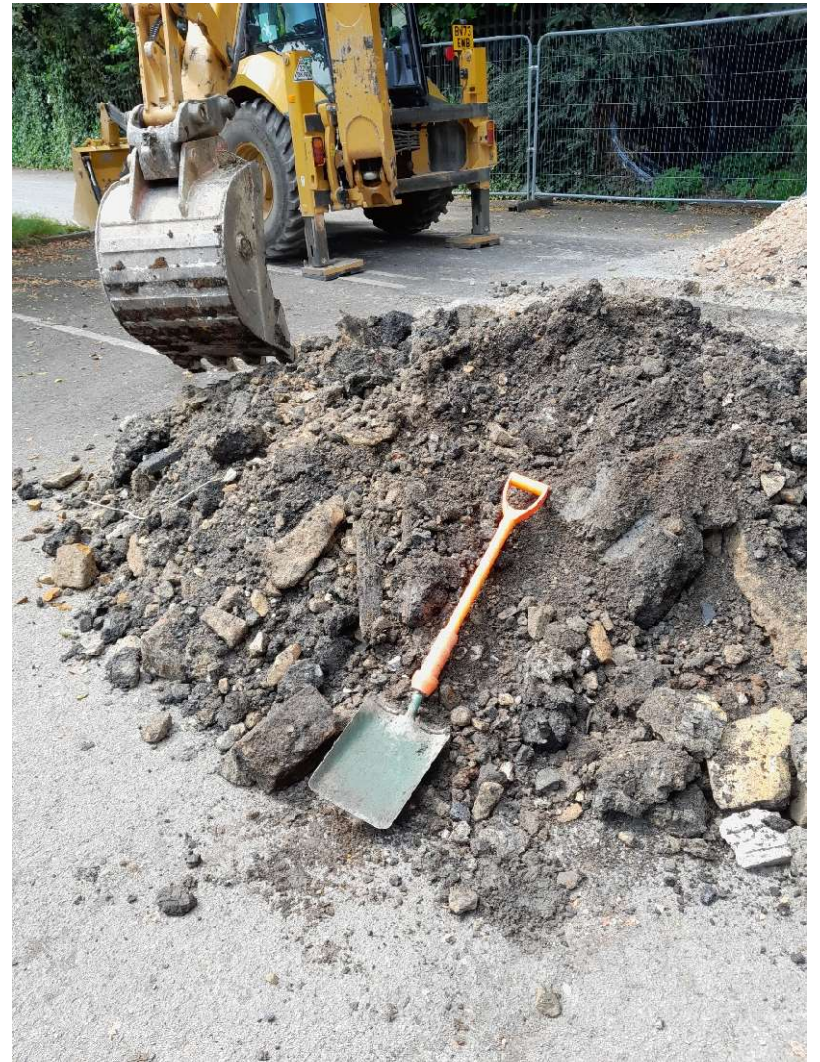


Plate TP111

Exploratory Hole: TP111

VHE Construction

Client: Willmott Dixon

Project Number: 849

Site Name: The Seam



Plate TP112

Exploratory Hole: TP112

VHE Construction	Client: Willmott Dixon	Project Number: 849	Site Name: The Seam
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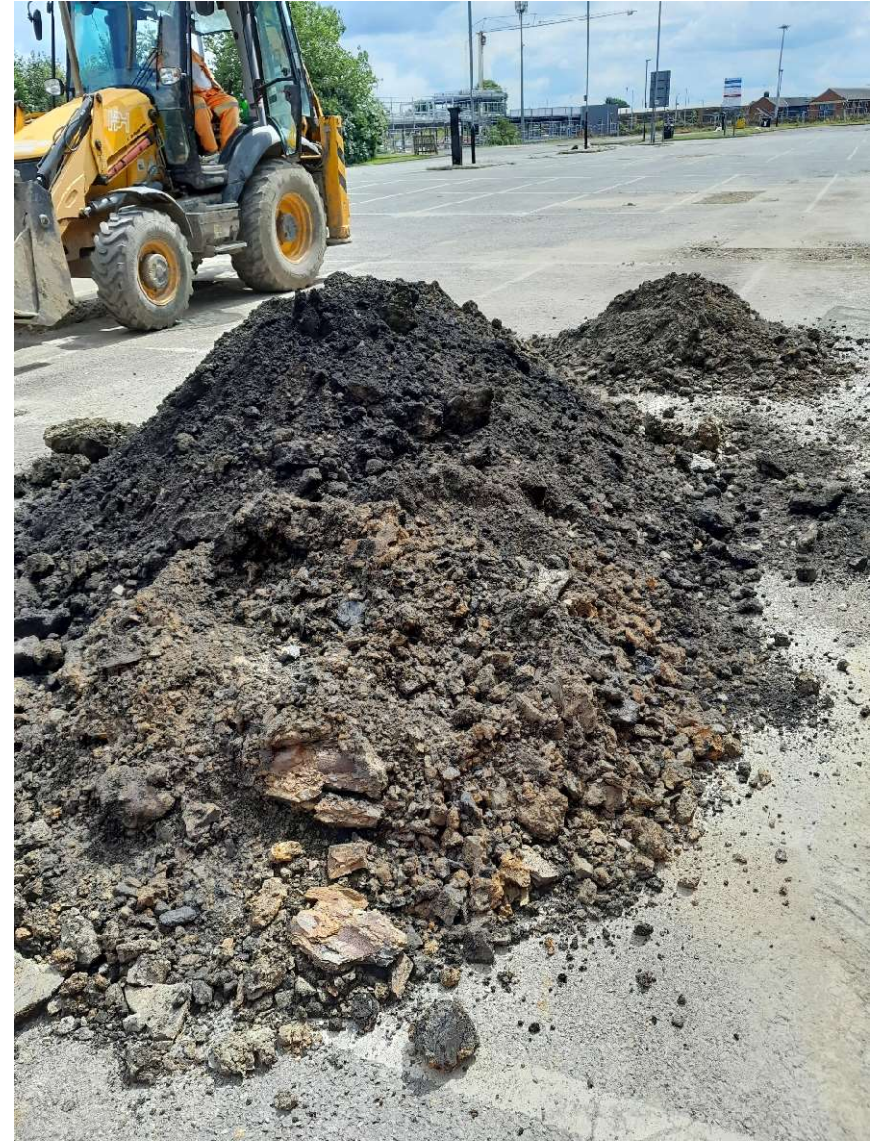


Plate TP113

Exploratory Hole: TP113

VHE Construction

Client: Willmott Dixon

Project Number: 849

Site Name: The Seam

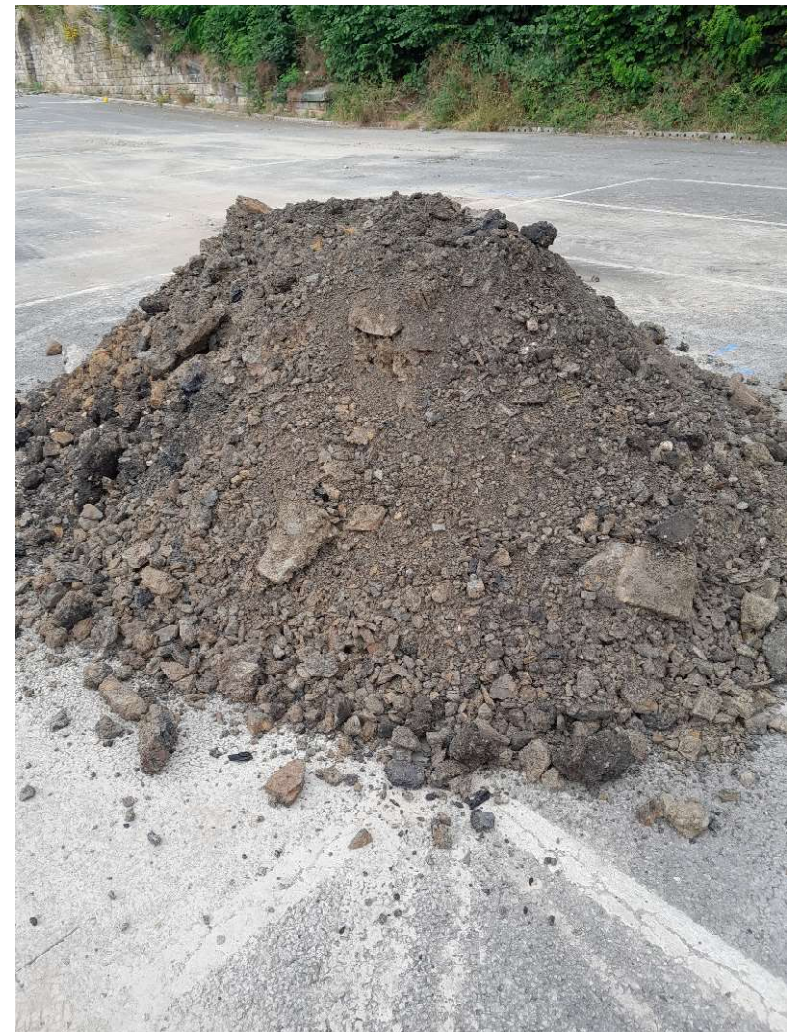


Plate TP114

Exploratory Hole: TP114

VHE Construction

Client: Willmott Dixon

Project Number: 849

Site Name: The Seam



Plate TP115

Exploratory Hole: TP115

VHE Construction

Client: Willmott Dixon

Project Number: 849

Site Name: The Seam



Plate TP116

Exploratory Hole: TP116

VHE Construction

Client: Willmott Dixon

Project Number: 849

Site Name: The Seam

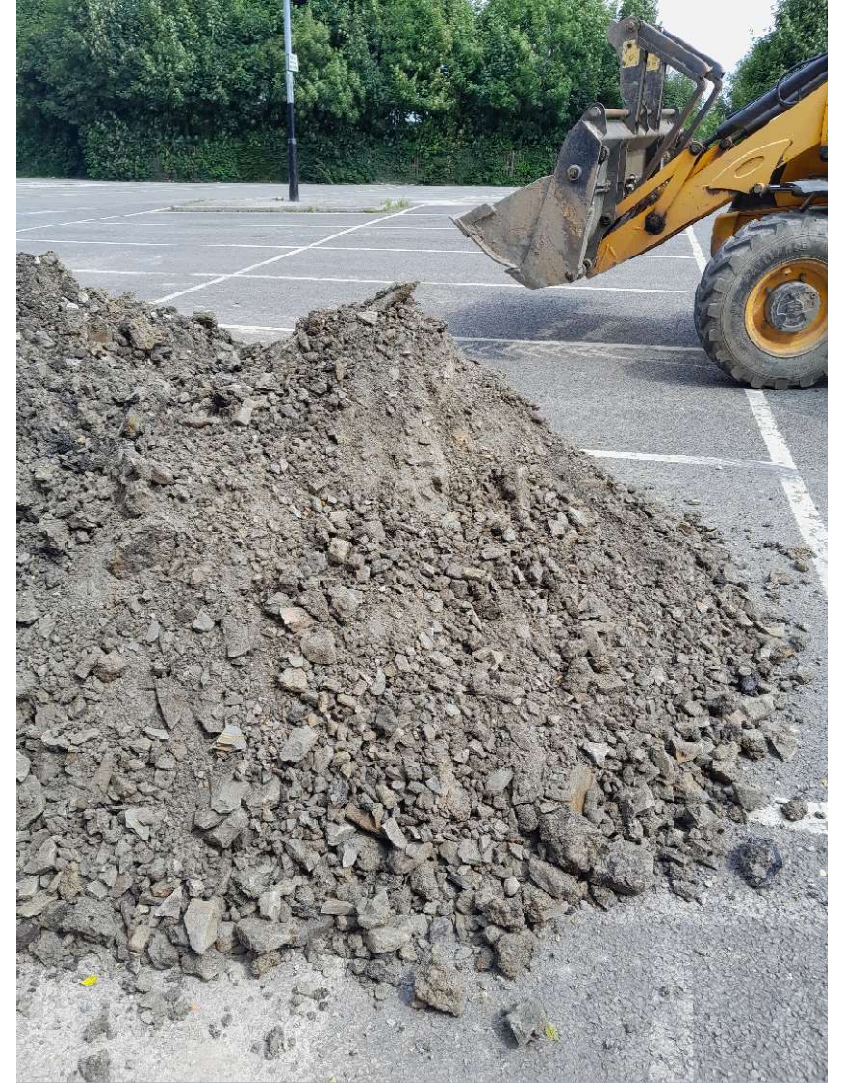


Plate TP117

Exploratory Hole: TP117

VHE Construction

Client: Willmott Dixon

Project Number: 849

Site Name: The Seam



Plate TP118

Exploratory Hole: TP118

VHE Construction	Client: Willmott Dixon	Project Number: 849	Site Name: The Seam
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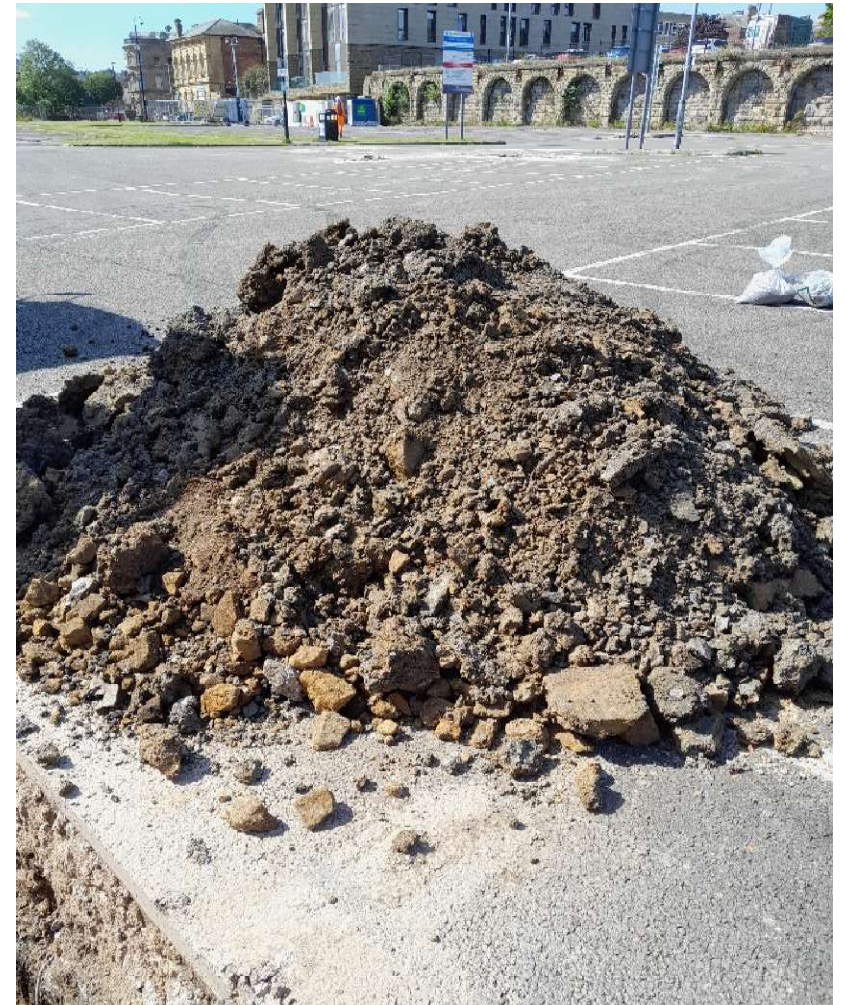


Plate TP119

Exploratory Hole: TP119

VHE Construction PLC	Client: Willmott Dixon	Project Number: 849	Site Name: The Seam
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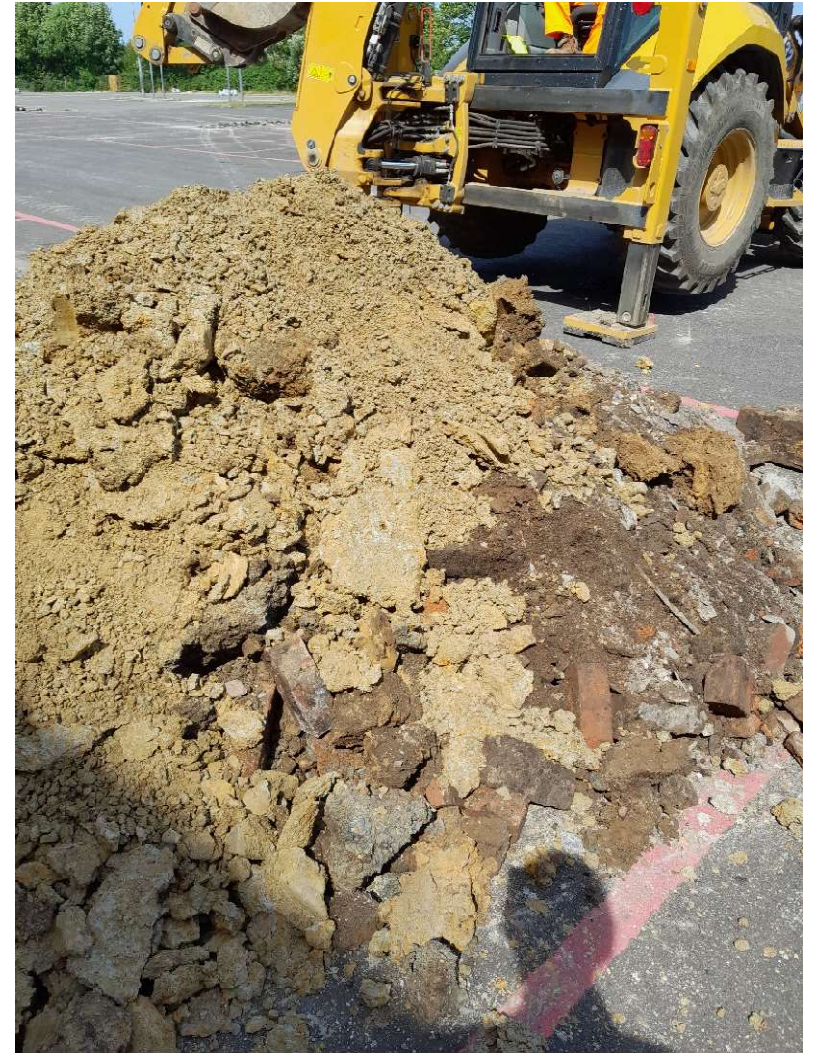


Plate TP120

Exploratory Hole: TP120			
VHE Construction	Client: Willmott Dixon	Project Number: 849	Site Name: The Seam

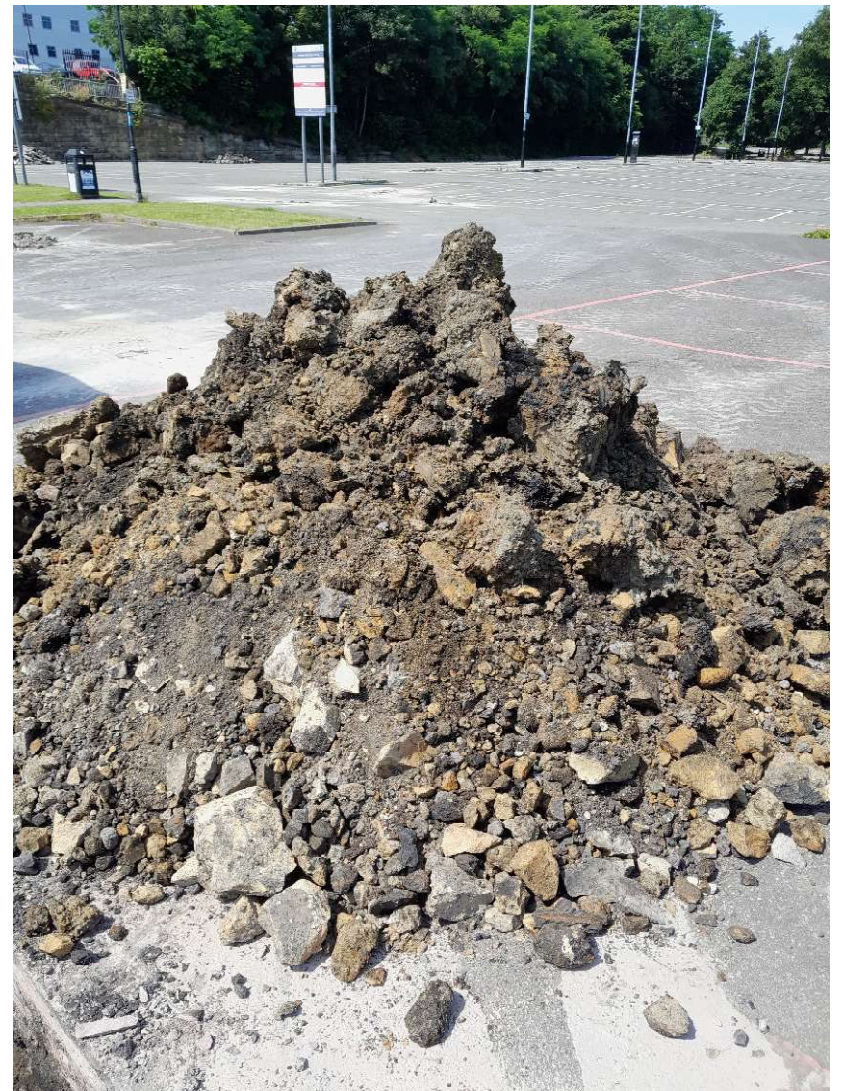


Plate TP121

Exploratory Hole: TP121

VHE Construction

Client: Willmott Dixon

Project Number: 849

Site Name: The Seam

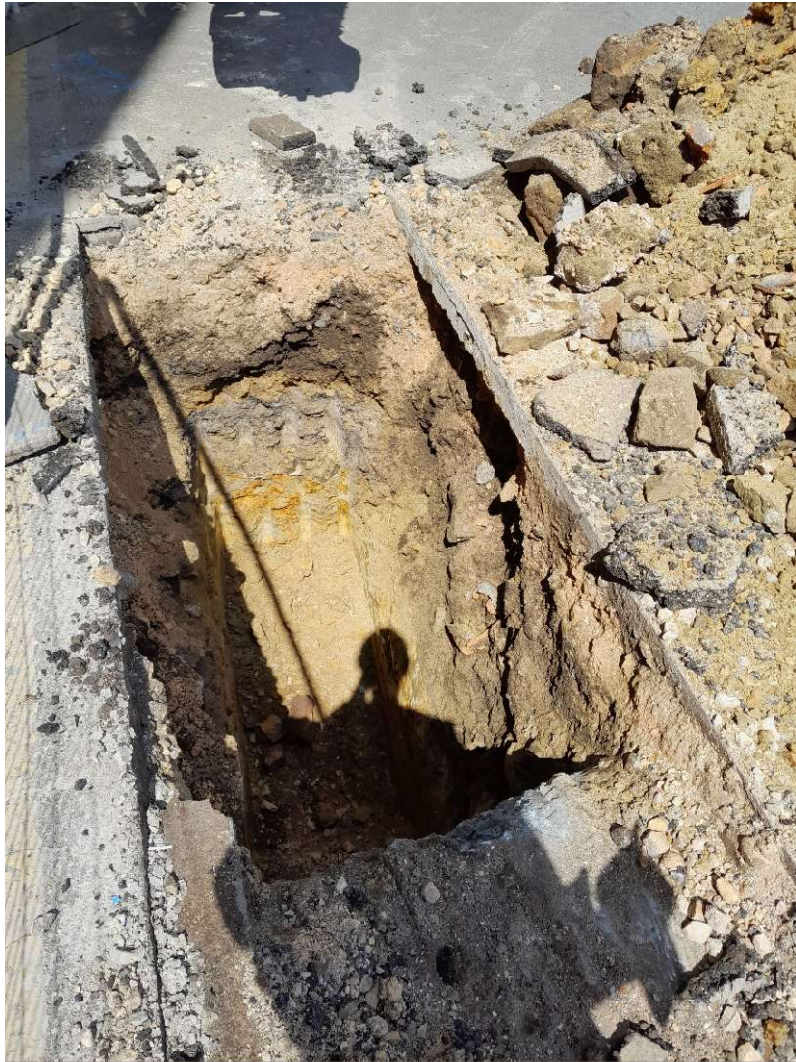


Plate TP122

Exploratory Hole: TP122

VHE Construction	Client: Willmott Dixon	Project Number: 849	Site Name: The Seam
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Plate TP123

Exploratory Hole: TP123

VHE Construction

Client: Willmott Dixon

Project Number: 849

Site Name: The Seam



Plate TP124

Exploratory Hole: TP124

VHE Construction

Client: Willmott Dixon

Project Number: 849

Site Name: The Seam



Plate TP125

Exploratory Hole: TP125			
VHE Construction PLC	Client: Willmott Dixon	Project Number: 849	Site Name: The Seam



Plate TP126

Exploratory Hole: TP126

VHE Construction

Client: Willmott Dixon

Project Number: 849

Site Name: The Seam

Appendix F

Foundation Inspection Pit Sketches

Made by CL

Title The seam, FPI01 Sketch

Project No.

849 /

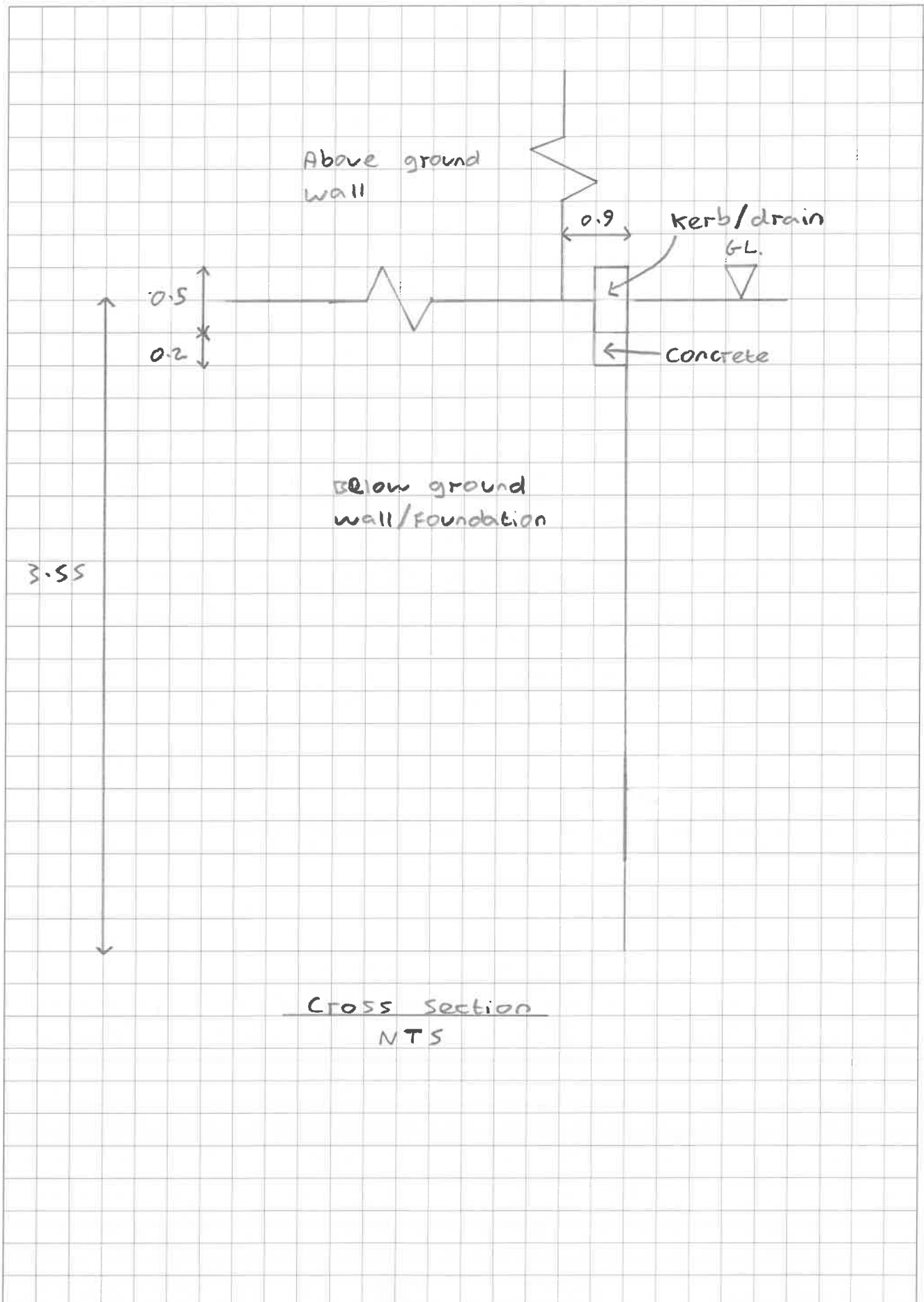
Checked by HM

Comment Dimensions in meters. Base of Foundation not Proven

Date 01/08/24

Page No.

1 of 4



Made by CL

Title The seam, FP102 sketch

Project No.

849

/

Checked by HM

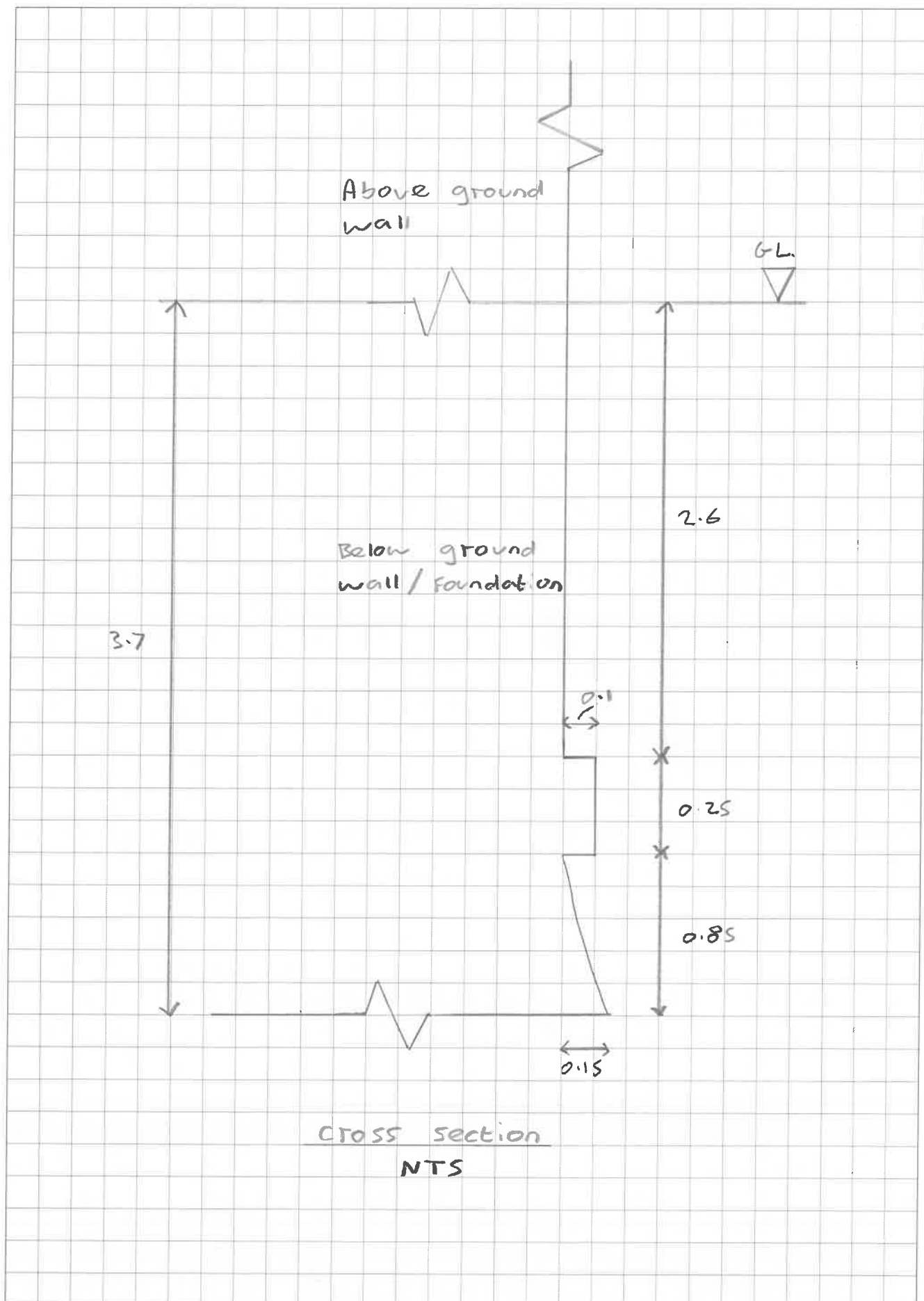
Comment

Date 01/08/24

Dimensions in meters

Page No.

2 of 4



Made by **CL**

Title

The seam, FP103 sketchChecked by **Hm**

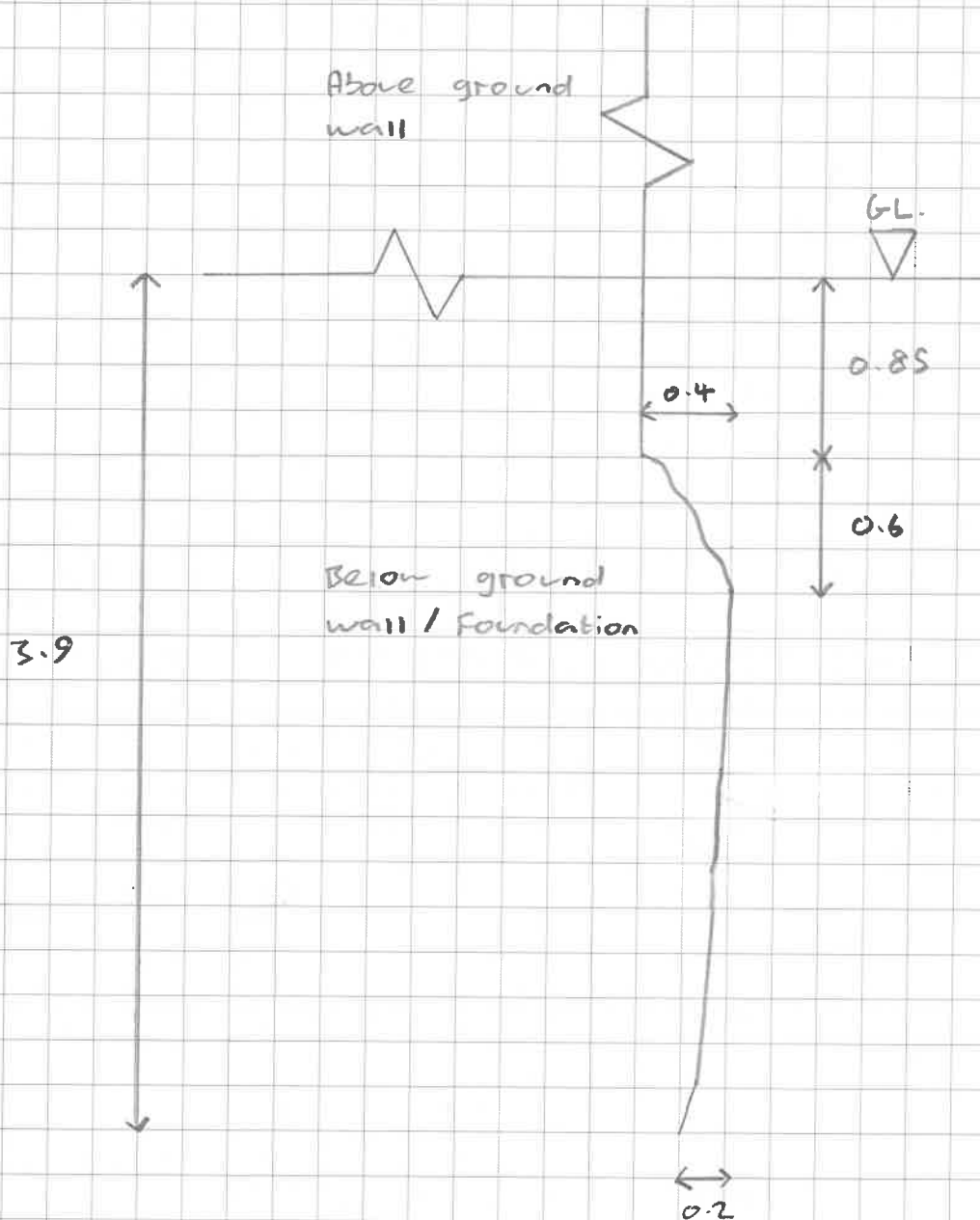
Comment

Dimensions in meters. Base of foundation
not proven.

Project No.

849**/**Date **02/08/24**

Page No.

3 of **4**Cross Section

NTS

Made by CL

Title

The seam, FP 104

Checked by HM

Comment

Dimensions in meters

Project No.

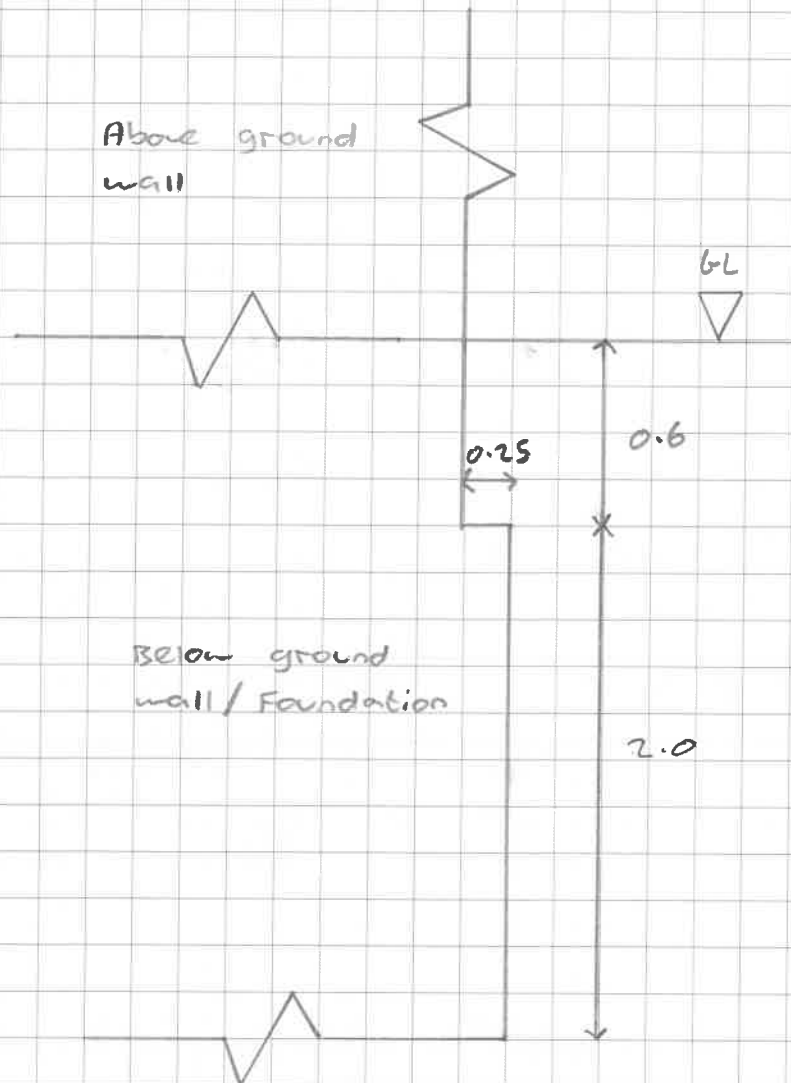
849

/

Date 31/07/24

Page No.

4 of 4

Cross section

NTS

Appendix G

Chemical Test Results



4041



VHE Construction plc
Whaley Road
Barug
Barnsley
S75 1HT

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

e: carl.lacey@vhe.co.uk

Analytical Report Number : 24-041781

Project / Site name:	The Seam	Samples received on:	12/09/2024
Your job number:	849	Samples instructed on/ Analysis started on:	12/09/2024
Your order number:		Analysis completed by:	23/09/2024
Report Issue Number:	1	Report issued on:	23/09/2024
Samples Analysed:	4 water samples		

Signed:

Charlotte Andrew
Key Account Manager
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.



4041



Analytical Report Number: 24-041781

Project / Site name: The Seam

Lab Sample Number				314769	314770	314771	314772
Sample Reference				BH102	BH104	WS102	WS109
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				12/09/2024	12/09/2024	12/09/2024	12/09/2024
Time Taken				1145	1130	1300	1400
Analytical Parameter (Water Analysis)	Units	Test Limit of detection	Test Accreditation Status				

General Inorganics

pH (L099)	pH Units	N/A	ISO 17025	6.9	7.4	7.2	7.8
Total Cyanide	µg/l	10	ISO 17025	< 10	< 10	13	< 10
Complex Cyanide	µg/l	10	ISO 17025	< 10	< 10	13	< 10
Free Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10
Thiocyanate as SCN	µg/l	200	ISO 17025	< 200	240	610	< 200
Sulphate as SO ₄	mg/l	0.045	ISO 17025	115	388	52.5	194
Ammoniacal Nitrogen as NH ₃	µg/l	15	ISO 17025	< 15	1100	< 15	< 15
Chemical Oxygen Demand (Total)	mg/l	2	ISO 17025	47	21	57	32
BOD (Biochemical Oxygen Demand) (Total) - PL (L086B)	mg/l	1	ISO 17025	1.4	2.7	23	1.6
Hardness - Total	mg CaCO ₃ /l	1	ISO 17025	223	365	191	620

Total Phenols

Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10
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Speciated PAHs

Naphthalene	µg/l	0.01	ISO 17025	< 0.01	3.3	< 0.01	2.6
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	0.18	< 0.01	0.13
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01

Total PAH

Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	3.51	< 0.16	2.69
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Heavy Metals / Metalloids

Antimony (dissolved)	µg/l	0.4	ISO 17025	0.5	1	1.4	< 0.4
Arsenic (dissolved)	µg/l	0.15	ISO 17025	1.82	0.65	2.4	0.16
Barium (dissolved)	µg/l	0.06	ISO 17025	20	110	100	91
Beryllium (dissolved)	µg/l	0.1	ISO 17025	< 0.1	< 0.1	< 0.1	< 0.1
Cadmium (dissolved)	µg/l	0.02	ISO 17025	0.05	< 0.02	0.05	0.1
Chromium (dissolved)	µg/l	0.2	ISO 17025	0.5	0.3	3.9	0.2
Copper (dissolved)	µg/l	0.5	ISO 17025	5.2	8.8	10	11
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2	1	2
Manganese (dissolved)	µg/l	0.05	ISO 17025	120	62	200	320
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	< 0.05
Molybdenum (dissolved)	µg/l	0.05	ISO 17025	1.6	3.1	3.3	1.3
Nickel (dissolved)	µg/l	0.5	ISO 17025	5.8	1.8	5.2	140
Selenium (dissolved)	µg/l	0.6	ISO 17025	1	8.9	23	1.3

Analytical Report Number: 24-041781
Project / Site name: The Seam

Lab Sample Number				314769	314770	314771	314772
Sample Reference				BH102	BH104	WS102	WS109
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				12/09/2024	12/09/2024	12/09/2024	12/09/2024
Time Taken				1145	1130	1300	1400
Analytical Parameter (Water Analysis)	Units	Test Limit of detection	Test Accreditation Status				
Vanadium (dissolved)	µg/l	0.2	ISO 17025	0.6	2	7.7	0.4
Zinc (dissolved)	µg/l	0.5	ISO 17025	49	30	6.4	15

Boron (dissolved)	µg/l	10	ISO 17025	37	110	56	94
Calcium (dissolved)	mg/l	0.012	ISO 17025	71	79	61	74
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0
Chromium (III)	µg/l	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
Iron (dissolved)	µg/l	4	ISO 17025	220	12	440	7.2

Petroleum Hydrocarbons

TPH - Aliphatic >EC5 - EC6 _{HS_1D_AL}	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
TPH - Aliphatic >EC6 - EC8 _{HS_1D_AL}	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
TPH - Aliphatic >EC8 - EC10 _{HS_1D_AL}	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
TPH - Aliphatic >EC10 - EC12 _{EH_1D_AL_MS}	µg/l	10	NONE	< 10	< 10	< 10	< 10
TPH - Aliphatic >EC12 - EC16 _{EH_1D_AL_MS}	µg/l	10	NONE	< 10	< 10	< 10	< 10
TPH - Aliphatic >EC16 - EC21 _{EH_1D_AL_MS}	µg/l	10	NONE	< 10	< 10	< 10	< 10
TPH - Aliphatic >EC21 - EC35 _{EH_1D_AL_MS}	µg/l	10	NONE	< 10	< 10	< 10	< 10
TPH - Aliphatic >EC5 - EC35 _{HS+EH_1D_AL_MS}	µg/l	10	NONE	< 10	< 10	< 10	< 10
TPH - Aliphatic >EC35 - EC40 _{EH_1D_AL_MS}	µg/l	10	NONE	< 10	< 10	< 10	< 10
TPH - Aliphatic >EC35 - EC44 _{EH_1D_AL_MS}	µg/l	10	NONE	< 10	< 10	< 10	< 10
TPH - Aliphatic >EC40 - EC44 _{EH_1D_AL_MS}	µg/l	10	NONE	< 10	< 10	< 10	< 10
TPH - Aliphatic >EC5 - EC44 _{HS+EH_1D_AL_MS}	µg/l	10	NONE	< 10	< 10	< 10	< 10

TPH - Aromatic >EC5 - EC7 _{HS_1D_AR}	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
TPH - Aromatic >EC7 - EC8 _{HS_1D_AR}	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
TPH - Aromatic >EC8 - EC10 _{HS_1D_AR}	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
TPH - Aromatic >EC10 - EC12 _{EH_1D_AR_MS}	µg/l	10	NONE	< 10	< 10	< 10	< 10
TPH - Aromatic >EC12 - EC16 _{EH_1D_AR_MS}	µg/l	10	NONE	< 10	< 10	< 10	< 10
TPH - Aromatic >EC16 - EC21 _{EH_1D_AR_MS}	µg/l	10	NONE	< 10	< 10	< 10	< 10
TPH - Aromatic >EC21 - EC35 _{EH_1D_AR_MS}	µg/l	10	NONE	< 10	< 10	< 10	< 10
TPH - Aromatic >EC5 - EC35 _{HS+EH_1D_AR_MS}	µg/l	10	NONE	< 10	< 10	< 10	< 10
TPH - Aromatic >EC35 - EC40 _{EH_1D_AR_MS}	µg/l	10	NONE	< 10	< 10	< 10	< 10
TPH - Aromatic >EC35 - EC44 _{EH_1D_AR_MS}	µg/l	10	NONE	< 10	< 10	< 10	< 10
TPH - Aromatic >EC40 - EC44 _{EH_1D_AR_MS}	µg/l	10	NONE	< 10	< 10	< 10	< 10
TPH - Aromatic >EC5 - EC44 _{HS+EH_1D_AR_MS}	µg/l	10	NONE	< 10	< 10	< 10	< 10

VOCs

MTBE (Methyl Tertiary Butyl Ether)	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0
Benzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0
Toluene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0
Ethylbenzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0
p & m-xylene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0
o-xylene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected



4041



Environmental Science

Analytical Report Number : 24-041781

Project / Site name: The Seam

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in water by ICP-MS (dissolved)	Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW	In-house method based on USEPA Method 6020 & 200.8 for the determination of trace elements in water by ICP-MS	L012B	W	ISO 17025
Metals in water by ICP-OES (dissolved)	Determination of metals in water by acidification followed by ICP-OES. Accredited Matrices: SW, GW, PW, PrW (Al, Cu, Fe,Zn)	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L039B	W	ISO 17025
Total Hardness of water	Determination of hardness in waters by calculation from calcium and magnesium	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L045B	W	ISO 17025
Chemical Oxygen Demand in water (Total)	Determination of total COD in water by reflux oxidation with acidified K ₂ Cr ₂ O ₇ followed by colorimetry. Accredited matrices: SW, PW, GW	HACH DR/890 Colorimeter Procedures Manual (48470-22) (Ref 0170.2)	L065-PL	W	ISO 17025
Total petroleum hydrocarbons with carbon banding by GC-MS in water	Determination of total petroleum hydrocarbons in water by GC-MS/GC-MS HS with carbon banding aliphatic and aromatic	In-house method	L070B	W	NONE
BTEX and/or Volatile organic compounds in water	Determination of volatile organic compounds in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA 8260	L073B	W	ISO 17025
Complex cyanide in water	Determination of complex cyanide by calculation. Accredited matrices SW, PW, GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	ISO 17025
Chromium III in water	In-house method by calculation from total Cr and Cr VI	In-house method by calculation	L080-PL	W	NONE
Hexavalent chromium in water	Determination of hexavalent chromium in water by acidification, addition of 1,5 diphenylcarbazine followed by colorimetry	In-house method by continuous flow analyser. Accredited Matrices SW, GW, PW	L080-PL	W	ISO 17025
Free cyanide in water	Determination of free cyanide by distillation followed by colorimetry. Accredited matrices SW, GW, PW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	ISO 17025
Monohydric phenols in water	Determination of phenols in water by continuous flow analyser. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	ISO 17025
Total cyanide in water	Determination of total cyanide by distillation followed by colorimetry. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	ISO 17025
Ammonia as NH ₃ in water	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082B	W	ISO 17025
Biological oxygen demand (total) of water	Determination of biochemical oxygen demand in water (5 days). Accredited matrices: SW, PW, GW	In-house method based on standard method 5210B	L086B	W	ISO 17025
Total petroleum hydrocarbons by GC-MS HS in water	Determination of total petroleum hydrocarbons in water by GC-MS HS	In-house method	L088-PL	W	ISO 17025
pH at 20°C in water (automated)	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In-house method	L099-PL	W	ISO 17025

Analytical Report Number : 24-041781

Project / Site name: The Seam

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Speciated PAHs and/or Semi-volatile organic compounds in water	Determination of semi-volatile organic compounds (including PAH) in leachate by extraction in dichloromethane followed by GC-MS	In-house method based on USEPA 8270	L102B	W	ISO 17025
Thiocyanate in water	Determination of thiocyanate in water by discrete analyser (colorimetry). Accredited matrices SW, GW, PW	In-house method based on SMWW 4500-CN-M. Accredited matrices: SW, PW, GW	L082B	W	ISO 17025
Sulphate in water	Determination of sulphate in water after filtration by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW, PrW, LL	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L039B	W	ISO 17025

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30°C.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#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 e.g. EH+HS_Total or EH_CU+HS_Total

Quality control parameter failure associated with individual result applies to calculated sum of individuals.

The result for sum should be interpreted with caution

ANALYTICAL TEST REPORT

Report Number 24-01730, issue number 2

Contract name: Coal Tar Testing

Client reference: The Seam

Clients name: VHE Construction

Clients address: VHE Construction
6 Newton Business Centre
Chapelton
Sheffield
S35 2PH

Samples received: 11/09/2024

Analysis started: 11/09/2024

Analysis completed: 16/09/2024

Report issued: 17/09/2024
This is a supplementary report to 24-01730-01 issued 16/09/2024

Key

U	UKAS accredited test
M	MCERTS & UKAS accredited test
\$	Test carried out by an approved subcontractor
I/S	Insufficient sample to carry out test
U/S	Sample not suitable for testing
NAD	No Asbestos Detected



Approved by: Sam Rogerson
Manager

SAMPLE INFORMATION

Lab ref	Sample ID	Depth (m)	Sample description	Material removed	% Removed	% Moisture
13039	RC 101	0.00 - 0.11	-	-	-	0.6
13040	RC 102	0.00 - 0.04	-	-	-	0.8
13041	RC 103	0.00 - 0.07	-	-	-	0.7
13042	RC 104	0.00 - 0.11	-	-	-	0.5
13043	RC 105	0.00 - 0.12	-	-	-	0.3
13044	RC 106	0.00 - 0.15	-	-	-	0.5
13045	RC 107	0.00 - 0.05	-	-	-	0.6
13046	RC 108	0.00 - 0.11	-	-	-	0.2
13047	RC 109	0.00 - 0.11	-	-	-	0.5
13048	RC 110	0.00 - 0.11	-	-	-	0.6

SOLIDS

Lab Number					13039	13040	13041	13042	13043
Sample ID					RC 101	RC 102	RC 103	RC 104	RC 105
Depth (m)					0.00 - 0.11	0.00 - 0.04	0.00 - 0.07	0.00 - 0.11	0.00 - 0.12
Sampling Date					01/09/2024	01/09/2024	01/09/2024	01/09/2024	01/09/2024
Test	Method	Accred	LoD	Units					
Combustion									
Moisture Content	CE001	N	0.1	%	0.6	0.8	0.7	0.5	0.3
Polyaromatic hydrocarbons									
Naphthalene	CE151	N	1	mg/kg	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
Acenaphthylene	CE151	N	1	mg/kg	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
Acenaphthene	CE151	N	1	mg/kg	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
Fluorene	CE151	N	1	mg/kg	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
Phenanthrene	CE151	N	1	mg/kg	< 1.00	< 1.00	2.52	< 1.00	< 1.00
Anthracene	CE151	N	1	mg/kg	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
Fluoranthene	CE151	N	1	mg/kg	< 1.00	< 1.00	3.00	< 1.00	< 1.00
Pyrene	CE151	N	1	mg/kg	< 1.00	< 1.00	3.32	< 1.00	< 1.00
Benzo(a)anthracene	CE151	N	1	mg/kg	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
Chrysene	CE151	N	1	mg/kg	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
Benzo(b)fluoranthene	CE151	N	1	mg/kg	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
Benzo(k)fluoranthene	CE151	N	1	mg/kg	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
Benzo(a)pyrene	CE151	N	1	mg/kg	< 1.00*	< 1.00*	< 1.00*	< 1.00*	< 1.00*
Indeno(1,2,3-cd)pyrene	CE151	N	1	mg/kg	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
Dibenzo(a,h)anthracene	CE151	N	1	mg/kg	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
Benzo(g,h,i)perylene	CE151	N	1	mg/kg	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
Total PAH(16)	CE151	N	16	mg/kg	< 16.0	< 16.0	< 16.0	< 16.0	< 16.0
Comment					*Coal Tar Not Suspected	*Coal Tar Not Suspected	*Coal Tar Not Suspected	*Coal Tar Not Suspected	*Coal Tar Not Suspected

SOLIDS

Lab Number					13044	13045	13046	13047	13048
Sample ID					RC 106	RC 107	RC 108	RC 109	RC 110
Depth (m)					0.00 - 0.15	0.00 - 0.05	0.00 - 0.11	0.00 - 0.11	0.00 - 0.11
Sampling Date					01/09/2024	01/09/2024	01/09/2024	01/09/2024	01/09/2024
Test	Method	Accred	LoD	Units					
Combustion									
Moisture Content	CE001	N	0.1	%	0.5	0.6	0.2	0.5	0.6
Polyaromatic hydrocarbons									
Naphthalene	CE151	N	1	mg/kg	3.93	< 1.00	< 1.00	< 1.00	< 1.00
Acenaphthylene	CE151	N	1	mg/kg	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
Acenaphthene	CE151	N	1	mg/kg	1.68	< 1.00	< 1.00	< 1.00	< 1.00
Fluorene	CE151	N	1	mg/kg	1.66	< 1.00	< 1.00	< 1.00	< 1.00
Phenanthrene	CE151	N	1	mg/kg	5.65	< 1.00	< 1.00	< 1.00	< 1.00
Anthracene	CE151	N	1	mg/kg	1.83	< 1.00	< 1.00	< 1.00	< 1.00
Fluoranthene	CE151	N	1	mg/kg	4.99	< 1.00	1.72	< 1.00	< 1.00
Pyrene	CE151	N	1	mg/kg	4.15	< 1.00	2.20	< 1.00	< 1.00
Benzo(a)anthracene	CE151	N	1	mg/kg	2.24	< 1.00	< 1.00	< 1.00	< 1.00
Chrysene	CE151	N	1	mg/kg	1.90	< 1.00	< 1.00	< 1.00	< 1.00
Benzo(b)fluoranthene	CE151	N	1	mg/kg	1.37	< 1.00	< 1.00	< 1.00	< 1.00
Benzo(k)fluoranthene	CE151	N	1	mg/kg	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
Benzo(a)pyrene	CE151	N	1	mg/kg	< 1.00*	< 1.00*	< 1.00*	< 1.00*	< 1.00*
Indeno(1,2,3-cd)pyrene	CE151	N	1	mg/kg	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
Dibenzo(a,h)anthracene	CE151	N	1	mg/kg	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
Benzo(g,h,i)perylene	CE151	N	1	mg/kg	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
Total PAH(16)	CE151	N	16	mg/kg	29.4	< 16.0	< 16.0	< 16.0	< 16.0
Comment					*Coal Tar Not Suspected	*Coal Tar Not Suspected	*Coal Tar Not Suspected	*Coal Tar Not Suspected	*Coal Tar Not Suspected

METHOD DETAILS

METHOD	TESTNAME	METHOD SUMMARY	ANALYSIS BASIS
CE151	PAH in Road Cores	DCM Extraction and GCMS	As submitted sample

REPORT INFORMATION

Report No.:24-01730, issue number 2

Key	
U	ISO17025 Accredited Result
M	ISO17025 and MCERTS Accredited Result
N	Do not currently hold accreditation
^	MCERTS accreditation not applicable for sample matrix
*	ISO17025 accreditation not applicable for sample matrix
S	Subcontracted
I/S	Insufficient Sample
U/S	Unsuitable sample
N/T	Not tested
<	Means "less than"
>	Means "greater than"

LOD refers to limit of detection, except in the case of pH soils and pH waters where it means limit of discrimination.

This report shall not be reproduced except in full, without prior written approval.

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

All testing carried out at Unit 6 Parkhead, Stanley, DH9 7YB, except for subcontracted testing.

The results relate only to the sample received.

Unless otherwise stated, sample information has been provided by the client. This may affect the validity of the results.

Moisture Content Calculated on a Wet Weight basis

Unless otherwise stated, Chemtech Environmental Ltd was not responsible for sampling.

Sampling was undertaken by Chemtech Environmental Limited and is outside the UKAS accreditation scope.

Methods, procedures and performance data are available on request.

Results reported herein relate only to the material supplied to the laboratory.

BTEX compounds are identified by retention time only and may include interference from co-eluting compounds.

For soils and solids, all results are reported on a dry basis. Samples dried at no more than 30°C in a drying

For soils and solids, analytical results are inclusive of stones, where applicable.

Sample Retention and Disposal

All soil samples will be retained for a period of 4 weeks from the point of receipt

All water samples will be retained for a period of 2 weeks from the point of Reporting

Charges may apply to extended sample storage

TPH Classification - HWOL Acronym System

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

SAMPNUM	CLIENTSREI	Sample_ID	Location	SAMPTYPE	Top_Depth	Bottom_De	METHOD	TEST
13039			RC 101	SOLID	0.00	0.11	CE001	Moisture C
13039			RC 101	SOLID	0.00	0.11	CE151	Fluorene
13039			RC 101	SOLID	0.00	0.11	CE151	Acenaphth
13039			RC 101	SOLID	0.00	0.11	CE151	Chrysene
13039			RC 101	SOLID	0.00	0.11	CE151	Naphthaler
13039			RC 101	SOLID	0.00	0.11	CE151	Total PAH(
13039			RC 101	SOLID	0.00	0.11	CE151	Acenaphth
13039			RC 101	SOLID	0.00	0.11	CE151	Pyrene
13039			RC 101	SOLID	0.00	0.11	CE151	Benzo(a)an
13039			RC 101	SOLID	0.00	0.11	CE151	Benzo(g,h,i
13039			RC 101	SOLID	0.00	0.11	CE151	Benzo(b)flu
13039			RC 101	SOLID	0.00	0.11	CE151	Fluoranth
13039			RC 101	SOLID	0.00	0.11	CE151	Phenanthre
13039			RC 101	SOLID	0.00	0.11	CE151	Anthracene
13039			RC 101	SOLID	0.00	0.11	CE151	Benzo(a)py
13039			RC 101	SOLID	0.00	0.11	CE151	Dibenzo(a,l
13039			RC 101	SOLID	0.00	0.11	CE151	Benzo(k)flu
13039			RC 101	SOLID	0.00	0.11	CE151	Indeno(1,2,
13040			RC 102	SOLID	0.00	0.04	CE001	Moisture C
13040			RC 102	SOLID	0.00	0.04	CE151	Chrysene
13040			RC 102	SOLID	0.00	0.04	CE151	Total PAH(
13040			RC 102	SOLID	0.00	0.04	CE151	Acenaphth
13040			RC 102	SOLID	0.00	0.04	CE151	Benzo(b)flu
13040			RC 102	SOLID	0.00	0.04	CE151	Indeno(1,2,
13040			RC 102	SOLID	0.00	0.04	CE151	Pyrene
13040			RC 102	SOLID	0.00	0.04	CE151	Benzo(g,h,i
13040			RC 102	SOLID	0.00	0.04	CE151	Anthracene
13040			RC 102	SOLID	0.00	0.04	CE151	Benzo(a)py
13040			RC 102	SOLID	0.00	0.04	CE151	Benzo(k)flu
13040			RC 102	SOLID	0.00	0.04	CE151	Naphthaler
13040			RC 102	SOLID	0.00	0.04	CE151	Phenanthre
13040			RC 102	SOLID	0.00	0.04	CE151	Fluorene
13040			RC 102	SOLID	0.00	0.04	CE151	Dibenzo(a,l
13040			RC 102	SOLID	0.00	0.04	CE151	Fluoranth
13040			RC 102	SOLID	0.00	0.04	CE151	Acenaphth
13040			RC 102	SOLID	0.00	0.04	CE151	Benzo(a)an
13041			RC 103	SOLID	0.00	0.07	CE001	Moisture C
13041			RC 103	SOLID	0.00	0.07	CE151	Phenanthre
13041			RC 103	SOLID	0.00	0.07	CE151	Acenaphth
13041			RC 103	SOLID	0.00	0.07	CE151	Benzo(k)flu
13041			RC 103	SOLID	0.00	0.07	CE151	Fluorene
13041			RC 103	SOLID	0.00	0.07	CE151	Indeno(1,2,
13041			RC 103	SOLID	0.00	0.07	CE151	Benzo(b)flu
13041			RC 103	SOLID	0.00	0.07	CE151	Chrysene
13041			RC 103	SOLID	0.00	0.07	CE151	Naphthaler
13041			RC 103	SOLID	0.00	0.07	CE151	Pyrene
13041			RC 103	SOLID	0.00	0.07	CE151	Acenaphth
13041			RC 103	SOLID	0.00	0.07	CE151	Anthracene
13041			RC 103	SOLID	0.00	0.07	CE151	Total PAH(

13041	RC 103	SOLID	0.00	0.07	CE151	Benzo(g,h,i
13041	RC 103	SOLID	0.00	0.07	CE151	Fluoranthene
13041	RC 103	SOLID	0.00	0.07	CE151	Benzo(a)anthracene
13041	RC 103	SOLID	0.00	0.07	CE151	Dibenzo(a,h)anthracene
13041	RC 103	SOLID	0.00	0.07	CE151	Benzo(a)pyrene
13042	RC 104	SOLID	0.00	0.11	CE001	Moisture Content
13042	RC 104	SOLID	0.00	0.11	CE151	Fluorene
13042	RC 104	SOLID	0.00	0.11	CE151	Benzo(k)fluoranthene
13042	RC 104	SOLID	0.00	0.11	CE151	Naphthalene
13042	RC 104	SOLID	0.00	0.11	CE151	Phenanthrene
13042	RC 104	SOLID	0.00	0.11	CE151	Chrysene
13042	RC 104	SOLID	0.00	0.11	CE151	Benzo(a)pyrene
13042	RC 104	SOLID	0.00	0.11	CE151	Fluoranthene
13042	RC 104	SOLID	0.00	0.11	CE151	Acenaphthene
13042	RC 104	SOLID	0.00	0.11	CE151	Anthracene
13042	RC 104	SOLID	0.00	0.11	CE151	Benzo(b)fluoranthene
13042	RC 104	SOLID	0.00	0.11	CE151	Acenaphthylene
13042	RC 104	SOLID	0.00	0.11	CE151	Total PAH(%)
13042	RC 104	SOLID	0.00	0.11	CE151	Pyrene
13042	RC 104	SOLID	0.00	0.11	CE151	Indeno(1,2,3-cd)pyrene
13042	RC 104	SOLID	0.00	0.11	CE151	Benzo(g,h,i)perylene
13042	RC 104	SOLID	0.00	0.11	CE151	Dibenzo(a,h)anthracene
13042	RC 104	SOLID	0.00	0.11	CE151	Benzo(a)anthracene
13043	RC 105	SOLID	0.00	0.12	CE001	Moisture Content
13043	RC 105	SOLID	0.00	0.12	CE151	Benzo(b)fluoranthene
13043	RC 105	SOLID	0.00	0.12	CE151	Benzo(k)fluoranthene
13043	RC 105	SOLID	0.00	0.12	CE151	Fluoranthene
13043	RC 105	SOLID	0.00	0.12	CE151	Benzo(a)pyrene
13043	RC 105	SOLID	0.00	0.12	CE151	Anthracene
13043	RC 105	SOLID	0.00	0.12	CE151	Acenaphthene
13043	RC 105	SOLID	0.00	0.12	CE151	Benzo(g,h,i)perylene
13043	RC 105	SOLID	0.00	0.12	CE151	Chrysene
13043	RC 105	SOLID	0.00	0.12	CE151	Pyrene
13043	RC 105	SOLID	0.00	0.12	CE151	Dibenzo(a,h)anthracene
13043	RC 105	SOLID	0.00	0.12	CE151	Naphthalene
13043	RC 105	SOLID	0.00	0.12	CE151	Fluorene
13043	RC 105	SOLID	0.00	0.12	CE151	Benzo(a)anthracene
13043	RC 105	SOLID	0.00	0.12	CE151	Acenaphthylene
13043	RC 105	SOLID	0.00	0.12	CE151	Total PAH(%)
13043	RC 105	SOLID	0.00	0.12	CE151	Phenanthrene
13043	RC 105	SOLID	0.00	0.12	CE151	Indeno(1,2,3-cd)pyrene
13044	RC 106	SOLID	0.00	0.15	CE001	Moisture Content
13044	RC 106	SOLID	0.00	0.15	CE151	Acenaphthene
13044	RC 106	SOLID	0.00	0.15	CE151	Benzo(k)fluoranthene
13044	RC 106	SOLID	0.00	0.15	CE151	Pyrene
13044	RC 106	SOLID	0.00	0.15	CE151	Benzo(a)anthracene
13044	RC 106	SOLID	0.00	0.15	CE151	Fluorene
13044	RC 106	SOLID	0.00	0.15	CE151	Anthracene
13044	RC 106	SOLID	0.00	0.15	CE151	Naphthalene
13044	RC 106	SOLID	0.00	0.15	CE151	Chrysene

13044	RC 106	SOLID	0.00	0.15	CE151	Benzo(a)py
13044	RC 106	SOLID	0.00	0.15	CE151	Fluoranth
13044	RC 106	SOLID	0.00	0.15	CE151	Indeno(1,2,
13044	RC 106	SOLID	0.00	0.15	CE151	Phenanthr
13044	RC 106	SOLID	0.00	0.15	CE151	Acenaphth
13044	RC 106	SOLID	0.00	0.15	CE151	Benzo(g,h,i
13044	RC 106	SOLID	0.00	0.15	CE151	Benzo(b)flu
13044	RC 106	SOLID	0.00	0.15	CE151	Dibenzo(a,l
13044	RC 106	SOLID	0.00	0.15	CE151	Total PAH(
13045	RC 107	SOLID	0.00	0.05	CE001	Moisture C
13045	RC 107	SOLID	0.00	0.05	CE151	Pyrene
13045	RC 107	SOLID	0.00	0.05	CE151	Fluoranth
13045	RC 107	SOLID	0.00	0.05	CE151	Benzo(g,h,i
13045	RC 107	SOLID	0.00	0.05	CE151	Naphthaler
13045	RC 107	SOLID	0.00	0.05	CE151	Benzo(a)an
13045	RC 107	SOLID	0.00	0.05	CE151	Benzo(k)flu
13045	RC 107	SOLID	0.00	0.05	CE151	Acenaphth
13045	RC 107	SOLID	0.00	0.05	CE151	Phenanthr
13045	RC 107	SOLID	0.00	0.05	CE151	Benzo(a)py
13045	RC 107	SOLID	0.00	0.05	CE151	Anthracene
13045	RC 107	SOLID	0.00	0.05	CE151	Benzo(b)flu
13045	RC 107	SOLID	0.00	0.05	CE151	Fluorene
13045	RC 107	SOLID	0.00	0.05	CE151	Acenaphth
13045	RC 107	SOLID	0.00	0.05	CE151	Indeno(1,2,
13045	RC 107	SOLID	0.00	0.05	CE151	Chrysene
13045	RC 107	SOLID	0.00	0.05	CE151	Total PAH(
13045	RC 107	SOLID	0.00	0.05	CE151	Dibenzo(a,l
13046	RC 108	SOLID	0.00	0.11	CE001	Moisture C
13046	RC 108	SOLID	0.00	0.11	CE151	Total PAH(
13046	RC 108	SOLID	0.00	0.11	CE151	Benzo(b)flu
13046	RC 108	SOLID	0.00	0.11	CE151	Chrysene
13046	RC 108	SOLID	0.00	0.11	CE151	Fluoranth
13046	RC 108	SOLID	0.00	0.11	CE151	Benzo(k)flu
13046	RC 108	SOLID	0.00	0.11	CE151	Benzo(g,h,i
13046	RC 108	SOLID	0.00	0.11	CE151	Acenaphth
13046	RC 108	SOLID	0.00	0.11	CE151	Indeno(1,2,
13046	RC 108	SOLID	0.00	0.11	CE151	Dibenzo(a,l
13046	RC 108	SOLID	0.00	0.11	CE151	Acenaphth
13046	RC 108	SOLID	0.00	0.11	CE151	Naphthaler
13046	RC 108	SOLID	0.00	0.11	CE151	Anthracene
13046	RC 108	SOLID	0.00	0.11	CE151	Pyrene
13046	RC 108	SOLID	0.00	0.11	CE151	Benzo(a)an
13046	RC 108	SOLID	0.00	0.11	CE151	Benzo(a)py
13046	RC 108	SOLID	0.00	0.11	CE151	Phenanthr
13046	RC 108	SOLID	0.00	0.11	CE151	Fluorene
13047	RC 109	SOLID	0.00	0.11	CE001	Moisture C
13047	RC 109	SOLID	0.00	0.11	CE151	Naphthaler
13047	RC 109	SOLID	0.00	0.11	CE151	Acenaphth
13047	RC 109	SOLID	0.00	0.11	CE151	Acenaphth
13047	RC 109	SOLID	0.00	0.11	CE151	Fluorene

13047	RC 109	SOLID	0.00	0.11	CE151	Phenanthre
13047	RC 109	SOLID	0.00	0.11	CE151	Anthracene
13047	RC 109	SOLID	0.00	0.11	CE151	Fluoranth
13047	RC 109	SOLID	0.00	0.11	CE151	Pyrene
13047	RC 109	SOLID	0.00	0.11	CE151	Benzo(a)an
13047	RC 109	SOLID	0.00	0.11	CE151	Chrysene
13047	RC 109	SOLID	0.00	0.11	CE151	Benzo(b)flu
13047	RC 109	SOLID	0.00	0.11	CE151	Benzo(k)flu
13047	RC 109	SOLID	0.00	0.11	CE151	Benzo(a)py
13047	RC 109	SOLID	0.00	0.11	CE151	Indeno(1,2,
13047	RC 109	SOLID	0.00	0.11	CE151	Dibenzo(a,l
13047	RC 109	SOLID	0.00	0.11	CE151	Benzo(g,h,i
13047	RC 109	SOLID	0.00	0.11	CE151	Total PAH(
13048	RC 110	SOLID	0.00	0.11	CE001	Moisture C
13048	RC 110	SOLID	0.00	0.11	CE151	Naphthaler
13048	RC 110	SOLID	0.00	0.11	CE151	Acenaphth
13048	RC 110	SOLID	0.00	0.11	CE151	Acenaphth
13048	RC 110	SOLID	0.00	0.11	CE151	Fluorene
13048	RC 110	SOLID	0.00	0.11	CE151	Phenanthre
13048	RC 110	SOLID	0.00	0.11	CE151	Anthracene
13048	RC 110	SOLID	0.00	0.11	CE151	Fluoranth
13048	RC 110	SOLID	0.00	0.11	CE151	Pyrene
13048	RC 110	SOLID	0.00	0.11	CE151	Benzo(a)an
13048	RC 110	SOLID	0.00	0.11	CE151	Chrysene
13048	RC 110	SOLID	0.00	0.11	CE151	Benzo(b)flu
13048	RC 110	SOLID	0.00	0.11	CE151	Benzo(k)flu
13048	RC 110	SOLID	0.00	0.11	CE151	Benzo(a)py
13048	RC 110	SOLID	0.00	0.11	CE151	Indeno(1,2,
13048	RC 110	SOLID	0.00	0.11	CE151	Dibenzo(a,l
13048	RC 110	SOLID	0.00	0.11	CE151	Benzo(g,h,i
13048	RC 110	SOLID	0.00	0.11	CE151	Total PAH(

RESULT	UNITS	ACCREDITATION
0.6	%	
< 1.00	mg/kg	
< 1.00	mg/kg	
< 1.00	mg/kg	
< 1.00	mg/kg	
< 16.0	mg/kg	
< 1.00	mg/kg	
< 1.00	mg/kg	
< 1.00	mg/kg	
< 1.00	mg/kg	
< 1.00	mg/kg	
< 1.00	mg/kg	
< 1.00	mg/kg	
< 1.00	mg/kg	
< 1.00	mg/kg	
< 1.00	mg/kg	
0.8	%	
< 1.00	mg/kg	
< 16.0	mg/kg	
< 1.00	mg/kg	
< 1.00	mg/kg	
< 1.00	mg/kg	
< 1.00	mg/kg	
< 1.00	mg/kg	
< 1.00	mg/kg	
< 1.00	mg/kg	
< 1.00	mg/kg	
< 1.00	mg/kg	
< 1.00	mg/kg	
< 1.00	mg/kg	
< 1.00	mg/kg	
< 1.00	mg/kg	
< 1.00	mg/kg	
0.7	%	
2.52	mg/kg	
< 1.00	mg/kg	
< 1.00	mg/kg	
< 1.00	mg/kg	
< 1.00	mg/kg	
< 1.00	mg/kg	
< 1.00	mg/kg	
< 1.00	mg/kg	
< 1.00	mg/kg	
3.32	mg/kg	
< 1.00	mg/kg	
< 1.00	mg/kg	
< 16.0	mg/kg	

< 1.00	mg/kg
3.00	mg/kg
< 1.00	mg/kg
< 1.00	mg/kg
< 1.00	mg/kg
0.5	%
< 1.00	mg/kg
< 1.00	mg/kg
< 1.00	mg/kg
< 1.00	mg/kg
< 1.00	mg/kg
< 1.00	mg/kg
< 1.00	mg/kg
< 1.00	mg/kg
< 1.00	mg/kg
< 16.0	mg/kg
< 1.00	mg/kg
< 1.00	mg/kg
< 1.00	mg/kg
< 1.00	mg/kg
< 1.00	mg/kg
0.3	%
< 1.00	mg/kg
< 1.00	mg/kg
< 1.00	mg/kg
< 1.00	mg/kg
< 1.00	mg/kg
< 1.00	mg/kg
< 1.00	mg/kg
< 1.00	mg/kg
< 1.00	mg/kg
< 1.00	mg/kg
< 1.00	mg/kg
< 1.00	mg/kg
< 1.00	mg/kg
< 1.00	mg/kg
< 16.0	mg/kg
< 1.00	mg/kg
< 1.00	mg/kg
0.5	%
1.68	mg/kg
< 1.00	mg/kg
4.15	mg/kg
2.24	mg/kg
1.66	mg/kg
1.83	mg/kg
3.93	mg/kg
1.90	mg/kg

< 1.00	mg/kg
4.99	mg/kg
< 1.00	mg/kg
5.65	mg/kg
< 1.00	mg/kg
< 1.00	mg/kg
1.37	mg/kg
< 1.00	mg/kg
29.4	mg/kg
0.6	%
< 1.00	mg/kg
< 1.00	mg/kg
< 1.00	mg/kg
< 1.00	mg/kg
< 1.00	mg/kg
< 1.00	mg/kg
< 1.00	mg/kg
< 1.00	mg/kg
< 1.00	mg/kg
< 1.00	mg/kg
< 1.00	mg/kg
< 1.00	mg/kg
< 1.00	mg/kg
< 1.00	mg/kg
< 16.0	mg/kg
< 1.00	mg/kg
0.2	%
< 16.0	mg/kg
< 1.00	mg/kg
< 1.00	mg/kg
1.72	mg/kg
< 1.00	mg/kg
< 1.00	mg/kg
< 1.00	mg/kg
< 1.00	mg/kg
< 1.00	mg/kg
< 1.00	mg/kg
< 1.00	mg/kg
< 1.00	mg/kg
< 1.00	mg/kg
2.20	mg/kg
< 1.00	mg/kg
< 1.00	mg/kg
< 1.00	mg/kg
< 1.00	mg/kg
0.5	%
< 1.00	mg/kg
< 1.00	mg/kg
< 1.00	mg/kg
< 1.00	mg/kg

[illegible]

VHE Construction plc

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

e: carl.lacey@vhe.co.uk
vhelab@vhe.co.uk

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 24-033489

Project / Site name:	The Seeam	Samples received on:	24/07/2024
Your job number:		Samples instructed on/ Analysis started on:	31/07/2024
Your order number:		Analysis completed by:	08/08/2024
Report Issue Number:	1	Report issued on:	08/08/2024
Samples Analysed:	16 soil samples - 3 leachate samples		

Signed: 
Claire Bancroft
Customer Service Advisor
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 24-033489
Project / Site name: The Seeam

Lab Sample Number	272367	272368	272369	272370	272371
Sample Reference	HP108	HP110	HP110	HP111	HP111
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.50	0.25	0.60	0.24	0.30
Date Sampled	16/07/2024	16/07/2024	16/07/2024	17/07/2024	17/07/2024
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Stone Content	%	0.1	NONE	< 0.1	-	-	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	11	-	-	0.28	8.3
Total mass of sample received	kg	0.1	NONE	0.8	-	-	0.8	0.8

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	-	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	SPU	SPU	SPU	-	SPU

General Inorganics

pH (L099)	pH Units	N/A	MCERTS	8.1	-	-	-	-
Total Cyanide	mg/kg	1	MCERTS	< 1.0	-	-	-	-
Complex Cyanide	mg/kg	1	MCERTS	< 1.0	-	-	-	-
Free Cyanide	mg/kg	1	MCERTS	< 1.0	-	-	-	-
Thiocyanate as SCN	mg/kg	5	NONE	< 5.0	-	-	-	-
Total Sulphate as SO ₄	mg/kg	50	MCERTS	2800	-	-	-	-
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	98	-	-	-	-
Water Soluble SO ₄ 16hr extraction (2:1)	mg/l	1.25	MCERTS	48.8	-	-	-	-
Total Sulphur	mg/kg	50	MCERTS	2100	-	-	-	-
Total Sulphur	%	0.005	MCERTS	0.208	-	-	-	-
Ammoniacal Nitrogen as NH ₃	mg/kg	0.5	MCERTS	< 0.5	-	-	-	-
Organic Matter	%	0.1	MCERTS	-	-	-	-	-
Organic Matter (automated)	%	0.1	MCERTS	9	-	-	-	12
Calorific Value	MJ/kg	0.12	ISO 17025	-	-	-	-	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	-	-	-	-
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	8.4	-	-	70	72
Acenaphthylene	mg/kg	0.05	MCERTS	0.3	-	-	0.73	3.6
Acenaphthene	mg/kg	0.05	MCERTS	8.2	-	-	34	150
Fluorene	mg/kg	0.05	MCERTS	6.5	-	-	25	120
Phenanthrene	mg/kg	0.05	MCERTS	40	-	-	190	770
Anthracene	mg/kg	0.05	MCERTS	12	-	-	43	220
Fluoranthene	mg/kg	0.05	MCERTS	42	-	-	240	970
Pyrene	mg/kg	0.05	MCERTS	37	-	-	200	840
Benzo(a)anthracene	mg/kg	0.05	MCERTS	17	-	-	75	400
Chrysene	mg/kg	0.05	MCERTS	18	-	-	83	450
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	20	-	-	93	470
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	7.3	-	-	30	240
Benzo(a)pyrene	mg/kg	0.05	MCERTS	18	-	-	78	430
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	9.6	-	-	40	220
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	2.2	-	-	12	44
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	11	-	-	43	240

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	257	-	-	1260	5620
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Heavy Metals / Metalloids

Antimony (aqua regia extractable)	mg/kg	1	ISO 17025	4.6	-	-	-	-
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Analytical Report Number: 24-033489

Project / Site name: The Seeam

Lab Sample Number				272367	272368	272369	272370	272371
Sample Reference				HP108	HP110	HP110	HP111	HP111
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	0.25	0.60	0.24	0.30
Date Sampled				16/07/2024	16/07/2024	16/07/2024	17/07/2024	17/07/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	32	-	-	-	-
Barium (aqua regia extractable)	mg/kg	1	MCERTS	170	-	-	-	-
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1.5	-	-	-	-
Boron (water soluble)	mg/kg	0.2	MCERTS	0.5	-	-	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	1.2	-	-	-	-
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	-	-	-	-
Chromium (III)	mg/kg	1	NONE	21	-	-	-	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	21	-	-	-	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	150	-	-	-	-
Iron (aqua regia extractable)	mg/kg	40	MCERTS	56000	-	-	-	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	140	-	-	-	-
Manganese (aqua regia extractable)	mg/kg	1	MCERTS	1200	-	-	-	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.5	-	-	-	-
Molybdenum (aqua regia extractable)	mg/kg	0.25	MCERTS	8.5	-	-	-	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	24	-	-	-	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	3.2	-	-	-	-
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	35	-	-	-	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	120	-	-	-	-

Calcium (aqua regia extractable)	mg/kg	20	ISO 17025	-	-	-	-	-
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Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010	-	-	< 0.010	< 0.010
TPHCWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010	-	-	< 0.010	< 0.010
TPHCWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010	-	-	< 0.010	< 0.010
TPHCWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	MCERTS	< 1.0	-	-	4.9	12
TPHCWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	5.3	-	-	26	64
TPHCWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	14	-	-	54	75
TPHCWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	14	-	-	340	150
TPHCWG - Aliphatic >EC35 - EC44 _{EH_CU_1D_AL}	mg/kg	8.4	NONE	< 8.4	-	-	500	130
TPHCWG - Aliphatic >EC5 - EC35 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	34	-	-	430	300
TPHCWG - Aliphatic >EC5 - EC44 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	34	-	-	920	430

TPHCWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.01	MCERTS	< 0.010	-	-	< 0.010	< 0.010
TPHCWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.01	MCERTS	< 0.010	-	-	< 0.010	< 0.010
TPHCWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.02	MCERTS	< 0.020	-	-	< 0.020	< 0.020
TPHCWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	6.3	-	-	92	26
TPHCWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	47	-	-	230	370
TPHCWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	170	-	-	560	1600
TPHCWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	280	-	-	1300	2000
TPHCWG - Aromatic >EC35 - EC44 _{EH_CU_1D_AR}	mg/kg	8.4	NONE	42	-	-	1000	450
TPHCWG - Aromatic >EC5 - EC35 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	500	-	-	2100	3900
TPHCWG - Aromatic >EC5 - EC44 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	540	-	-	3200	4400

TPH (>EC10 - EC24) _{EH_CU_1D_TOTAL}	mg/kg	10	NONE	-	-	-	-	-
TPH (>EC24 - EC40) _{EH_CU_1D_TOTAL}	mg/kg	10	NONE	-	-	-	-	-

TPH Total >EC6 - EC40 _{EH_CU+HS_1D_TOTAL}	mg/kg	10	NONE	-	-	-	-	-
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Petroleum Range Organics (EC6 - EC10) _{HS_1D_TOTAL}	mg/kg	1	ISO 17025	-	-	-	-	-
TPH (EC10 - EC40) _{EH_CU_1D_TOTAL}	mg/kg	10	MCERTS	-	-	-	-	-

Analytical Report Number: 24-033489
Project / Site name: The Seeam

Lab Sample Number	272367	272368	272369	272370	272371
Sample Reference	HP108	HP110	HP110	HP111	HP111
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.50	0.25	0.60	0.24	0.30
Date Sampled	16/07/2024	16/07/2024	16/07/2024	17/07/2024	17/07/2024
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

VOCs

Chloromethane	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
Chloroethane	µg/kg	5	NONE	-	-	-	-	< 5.0
Bromomethane	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
Vinyl Chloride	µg/kg	5	NONE	-	-	-	-	< 5.0
Trichlorofluoromethane	µg/kg	5	NONE	-	-	-	-	< 5.0
1,1-Dichloroethene	µg/kg	5	NONE	-	-	-	-	< 5.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	NONE	-	-	-	-	< 5.0
Trans 1,2-dichloroethylene	µg/kg	5	NONE	-	-	-	-	< 5.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	-	-	< 5.0	< 5.0
1,1-Dichloroethane	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
2,2-Dichloropropane	µg/kg	5	NONE	-	-	-	-	< 5.0
Chloroform	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
1,1,1-Trichloroethane	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
1,2-Dichloroethane	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
1,1-Dichloropropene	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
Cis-1,2-dichloroethene	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
Benzene	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	< 5.0
Carbontetrachloride	µg/kg	5	NONE	-	-	-	-	< 5.0
1,2-Dichloropropane	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
Trichloroethene	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
Dibromomethane	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
Bromodichloromethane	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
Cis-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
Trans-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	< 5.0
1,1,2-Trichloroethane	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
1,3-Dichloropropane	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
Dibromochloromethane	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
Tetrachloroethene	µg/kg	5	NONE	-	-	-	-	< 5.0
1,2-Dibromoethane	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
Chlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
1,1,1,2-Tetrachloroethane	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	< 5.0
p & m-Xylene	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	< 5.0
Styrene	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
Bromoform	µg/kg	5	NONE	-	-	-	-	< 5.0
o-Xylene	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	< 5.0
Isopropylbenzene	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
1,1,2,2-Tetrachloroethane	µg/kg	5	NONE	-	-	-	-	< 5.0
Bromobenzene	µg/kg	5	NONE	-	-	-	-	< 5.0
n-Propylbenzene	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
2-Chlorotoluene	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
4-Chlorotoluene	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
1,3,5-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
tert-Butylbenzene	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
sec-Butylbenzene	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
1,3-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
p-Isopropyltoluene	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
1,4-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
1,2-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	< 5.0

Analytical Report Number: 24-033489
Project / Site name: The Seeam

Lab Sample Number				272367	272368	272369	272370	272371
Sample Reference				HP108	HP110	HP110	HP111	HP111
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	0.25	0.60	0.24	0.30
Date Sampled				16/07/2024	16/07/2024	16/07/2024	17/07/2024	17/07/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
Butylbenzene	µg/kg	5	NONE	-	-	-	-	< 5.0
1,2-Dibromo-3-chloropropane	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
1,2,4-Trichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
Hexachlorobutadiene	µg/kg	5	NONE	-	-	-	-	< 5.0
1,2,3-Trichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	< 5.0

SVOCs

Aniline	mg/kg	0.1	NONE	-	-	-	-	< 0.1
Phenol	mg/kg	0.2	ISO 17025	-	-	-	-	< 0.2
2-Chlorophenol	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	-	-	-	< 0.2
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	< 0.2
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	< 0.2
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
2-Methylphenol	mg/kg	0.3	MCERTS	-	-	-	-	< 0.3
Hexachloroethane	mg/kg	0.05	ISO 17025	-	-	-	-	< 0.05
Nitrobenzene	mg/kg	0.3	MCERTS	-	-	-	-	< 0.3
4-Methylphenol	mg/kg	0.2	NONE	-	-	-	-	< 0.2
Isophorone	mg/kg	0.2	MCERTS	-	-	-	-	< 0.2
2-Nitrophenol	mg/kg	0.3	NONE	-	-	-	-	< 0.3
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	-	-	-	< 0.3
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	-	-	-	< 0.3
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	< 0.3
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	-	-	-	< 0.3
4-Chloroaniline	mg/kg	0.1	NONE	-	-	-	-	< 0.1
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-	-	-	< 0.1
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	-	-	-	-	< 0.1
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	-	-	-	-	< 0.2
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-	-	-	74
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
Dimethylphthalate	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
2,6-Dinitrotoluene	mg/kg	0.1	NONE	-	-	-	-	< 0.1
2,4-Dinitrotoluene	mg/kg	0.2	NONE	-	-	-	-	< 0.2
Dibenzofuran	mg/kg	0.2	MCERTS	-	-	-	-	83
4-Chlorophenyl phenyl ether	mg/kg	0.3	MCERTS	-	-	-	-	< 0.3
Diethyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-	< 0.2
4-Nitroaniline	mg/kg	0.2	NONE	-	-	-	-	< 0.2
Azobenzene	mg/kg	0.3	NONE	-	-	-	-	< 0.3
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	-	-	-	< 0.2
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	< 0.30
Carbazole	mg/kg	0.3	MCERTS	-	-	-	-	38
Dibutyl phthalate	mg/kg	0.2	NONE	-	-	-	-	< 0.2
Anthraquinone	mg/kg	0.3	NONE	-	-	-	-	33
Butyl benzyl phthalate	mg/kg	0.3	NONE	-	-	-	-	< 0.3

PCBs by GC-MS

PCB Congener 28	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 52	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 101	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 118	mg/kg	0.001	MCERTS	-	-	-	-	-

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Project / Site name: The Seeam

Lab Sample Number				272367	272368	272369	272370	272371
Sample Reference				HP108	HP110	HP110	HP111	HP111
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	0.25	0.60	0.24	0.30
Date Sampled				16/07/2024	16/07/2024	16/07/2024	17/07/2024	17/07/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status		
PCB Congener 138				mg/kg	0.001	MCERTS	-	-
PCB Congener 153				mg/kg	0.001	MCERTS	-	-
PCB Congener 180				mg/kg	0.001	MCERTS	-	-
Total PCBs				mg/kg	0.007	MCERTS	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 24-033489
Project / Site name: The Seeam

Lab Sample Number	272372	272373	272374	272375	272376
Sample Reference	HP109	HP105	TP125	TP125	TP124
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.27	0.70	0.50	0.90	0.40
Date Sampled	17/07/2024	17/07/2024	18/07/2024	18/07/2024	18/07/2024
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Stone Content	%	0.1	NONE	-	< 0.1	< 0.1	73	< 0.1
Moisture Content	%	0.01	NONE	-	12	11	7.3	13
Total mass of sample received	kg	0.1	NONE	-	0.5	0.8	0.8	0.8

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	-	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	SPU	MWI	MWI	-	MWI

General Inorganics

pH (L099)	pH Units	N/A	MCERTS	-	9.1	8.9	-	-
Total Cyanide	mg/kg	1	MCERTS	-	< 1.0	< 1.0	-	-
Complex Cyanide	mg/kg	1	MCERTS	-	< 1.0	< 1.0	-	-
Free Cyanide	mg/kg	1	MCERTS	-	< 1.0	< 1.0	-	-
Thiocyanate as SCN	mg/kg	5	NONE	-	< 5.0	< 5.0	-	-
Total Sulphate as SO ₄	mg/kg	50	MCERTS	-	2500	1500	-	-
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	-	1000	200	-	-
Water Soluble SO ₄ 16hr extraction (2:1)	mg/l	1.25	MCERTS	-	518	101	-	-
Total Sulphur	mg/kg	50	MCERTS	-	890	1700	-	-
Total Sulphur	%	0.005	MCERTS	-	0.089	0.174	-	-
Ammoniacal Nitrogen as NH ₃	mg/kg	0.5	MCERTS	-	< 0.5	< 0.5	-	-
Organic Matter	%	0.1	MCERTS	-	-	-	-	17
Organic Matter (automated)	%	0.1	MCERTS	-	-	9.2	-	-
Calorific Value	MJ/kg	0.12	ISO 17025	-	-	2.04	-	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	-	< 1.0	< 1.0	-	-
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	0.34	15	0.61	40
Acenaphthylene	mg/kg	0.05	MCERTS	-	0.07	1.7	< 0.05	1.4
Acenaphthene	mg/kg	0.05	MCERTS	-	0.29	36	0.65	60
Fluorene	mg/kg	0.05	MCERTS	-	0.2	27	0.45	47
Phenanthrene	mg/kg	0.05	MCERTS	-	2.1	200	3.4	380
Anthracene	mg/kg	0.05	MCERTS	-	0.61	60	0.88	100
Fluoranthene	mg/kg	0.05	MCERTS	-	4.3	270	4.4	500
Pyrene	mg/kg	0.05	MCERTS	-	4.1	240	4	420
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	2.1	120	1.9	200
Chrysene	mg/kg	0.05	MCERTS	-	2	120	1.9	220
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	-	2.5	140	2	230
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	-	1.2	65	0.96	120
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	2.5	120	2	220
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	1.4	71	1	110
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	0.34	17	0.21	24
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	1.5	87	1.2	120

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	-	25.7	1590	25.5	2790
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Heavy Metals / Metalloids

Antimony (aqua regia extractable)	mg/kg	1	ISO 17025	-	2.7	5.8	-	-
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Analytical Report Number: 24-033489

Project / Site name: The Seeam

Lab Sample Number				272372	272373	272374	272375	272376	
Sample Reference				HP109	HP105	TP125	TP125	TP124	
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	
Depth (m)				0.27	0.70	0.50	0.90	0.40	
Date Sampled				17/07/2024	17/07/2024	18/07/2024	18/07/2024	18/07/2024	
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status						
	Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	11	25	-	-
	Barium (aqua regia extractable)	mg/kg	1	MCERTS	-	120	190	-	-
	Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	-	0.77	2.6	-	-
	Boron (water soluble)	mg/kg	0.2	MCERTS	-	1.1	0.4	-	-
	Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	0.5	< 0.2	-	-
	Chromium (hexavalent)	mg/kg	1.8	MCERTS	-	< 1.8	< 1.8	-	-
	Chromium (III)	mg/kg	1	NONE	-	25	33	-	-
	Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	26	34	-	-
	Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	33	220	-	-
	Iron (aqua regia extractable)	mg/kg	40	MCERTS	-	25000	46000	-	-
	Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	48	180	-	-
	Manganese (aqua regia extractable)	mg/kg	1	MCERTS	-	900	2500	-	-
	Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	< 0.3	< 0.3	-	-
	Molybdenum (aqua regia extractable)	mg/kg	0.25	MCERTS	-	2.1	4.8	-	-
	Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	17	27	-	-
	Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	1.3	1.9	-	-
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	-	26	90	-	-	
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	93	160	-	-	

Calcium (aqua regia extractable)	mg/kg	20	ISO 17025	-	-	-	-	-
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Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.01	MCERTS	-	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.01	MCERTS	-	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.01	MCERTS	-	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	MCERTS	-	< 1.0	5.5	< 1.0	1.6
TPHCWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	-	< 2.0	41	< 2.0	26
TPHCWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	-	< 8.0	81	< 8.0	61
TPHCWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	-	96	220	< 8.0	160
TPHCWG - Aliphatic >EC35 - EC44 _{EH_CU_1D_AL}	mg/kg	8.4	NONE	-	78	53	< 8.4	43
TPHCWG - Aliphatic >EC5 - EC35 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	-	96	340	< 10	250
TPHCWG - Aliphatic >EC5 - EC44 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	-	170	400	< 10	290

TPHCWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.01	MCERTS	-	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.01	MCERTS	-	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.02	MCERTS	-	< 0.020	< 0.020	< 0.020	0.035
TPHCWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	-	< 1.0	11	1.4	46
TPHCWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	-	2.6	200	7	330
TPHCWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	-	28	670	32	1700
TPHCWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	-	120	1300	66	2800
TPHCWG - Aromatic >EC35 - EC44 _{EH_CU_1D_AR}	mg/kg	8.4	NONE	-	170	340	100	400
TPHCWG - Aromatic >EC5 - EC35 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	-	150	2200	110	4900
TPHCWG - Aromatic >EC5 - EC44 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	-	320	2500	210	5300

TPH (>EC10 - EC24) _{EH_CU_1D_TOTAL}	mg/kg	10	NONE	-	-	1400	-	-
TPH (>EC24 - EC40) _{EH_CU_1D_TOTAL}	mg/kg	10	NONE	-	-	1400	-	-

TPH Total >EC6 - EC40 _{EH_CU+HS_1D_TOTAL}	mg/kg	10	NONE	-	-	2800	-	-
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Petroleum Range Organics (EC6 - EC10) _{HS_1D_TOTAL}	mg/kg	1	ISO 17025	-	-	< 1.0	-	-
TPH (EC10 - EC40) _{EH_CU_1D_TOTAL}	mg/kg	10	MCERTS	-	-	2800	-	-

Analytical Report Number: 24-033489
Project / Site name: The Seeam

Lab Sample Number				272372	272373	272374	272375	272376
Sample Reference				HP109	HP105	TP125	TP125	TP124
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.27	0.70	0.50	0.90	0.40
Date Sampled				17/07/2024	17/07/2024	18/07/2024	18/07/2024	18/07/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status		

VOCs

Chloromethane	µg/kg	5	ISO 17025	-	-	< 5.0	-	< 5.0
Chloroethane	µg/kg	5	NONE	-	-	< 5.0	-	< 5.0
Bromomethane	µg/kg	5	ISO 17025	-	-	< 5.0	-	< 5.0
Vinyl Chloride	µg/kg	5	NONE	-	-	< 5.0	-	< 5.0
Trichlorofluoromethane	µg/kg	5	NONE	-	-	< 5.0	-	< 5.0
1,1-Dichloroethene	µg/kg	5	NONE	-	-	< 5.0	-	< 5.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	NONE	-	-	< 5.0	-	< 5.0
Trans 1,2-dichloroethylene	µg/kg	5	NONE	-	-	< 5.0	-	< 5.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	-	< 5.0	< 5.0	< 5.0	< 5.0
1,1-Dichloroethane	µg/kg	5	ISO 17025	-	-	< 5.0	-	< 5.0
2,2-Dichloropropane	µg/kg	5	NONE	-	-	< 5.0	-	< 5.0
Chloroform	µg/kg	5	ISO 17025	-	-	< 5.0	-	< 5.0
1,1,1-Trichloroethane	µg/kg	5	ISO 17025	-	-	< 5.0	-	< 5.0
1,2-Dichloroethane	µg/kg	5	ISO 17025	-	-	< 5.0	-	< 5.0
1,1-Dichloropropene	µg/kg	5	ISO 17025	-	-	< 5.0	-	< 5.0
Cis-1,2-dichloroethene	µg/kg	5	ISO 17025	-	-	< 5.0	-	< 5.0
Benzene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	< 5.0	< 5.0
Carbontetrachloride	µg/kg	5	NONE	-	-	< 5.0	-	< 5.0
1,2-Dichloropropane	µg/kg	5	ISO 17025	-	-	< 5.0	-	< 5.0
Trichloroethene	µg/kg	5	ISO 17025	-	-	< 5.0	-	< 5.0
Dibromomethane	µg/kg	5	ISO 17025	-	-	< 5.0	-	< 5.0
Bromodichloromethane	µg/kg	5	ISO 17025	-	-	< 5.0	-	< 5.0
Cis-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-	< 5.0	-	< 5.0
Trans-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-	< 5.0	-	< 5.0
Toluene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	µg/kg	5	ISO 17025	-	-	< 5.0	-	< 5.0
1,3-Dichloropropane	µg/kg	5	ISO 17025	-	-	< 5.0	-	< 5.0
Dibromochloromethane	µg/kg	5	ISO 17025	-	-	< 5.0	-	< 5.0
Tetrachloroethene	µg/kg	5	NONE	-	-	< 5.0	-	< 5.0
1,2-Dibromoethane	µg/kg	5	ISO 17025	-	-	< 5.0	-	< 5.0
Chlorobenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	< 5.0
1,1,1,2-Tetrachloroethane	µg/kg	5	ISO 17025	-	-	< 5.0	-	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	< 5.0	10
p & m-Xylene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	< 5.0	8.9
Styrene	µg/kg	5	ISO 17025	-	-	< 5.0	-	< 5.0
Bromoform	µg/kg	5	NONE	-	-	< 5.0	-	< 5.0
o-Xylene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	< 5.0	< 5.0
Isopropylbenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	< 5.0
1,1,2,2-Tetrachloroethane	µg/kg	5	NONE	-	-	< 5.0	-	< 5.0
Bromobenzene	µg/kg	5	NONE	-	-	< 5.0	-	< 5.0
n-Propylbenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	< 5.0
2-Chlorotoluene	µg/kg	5	ISO 17025	-	-	< 5.0	-	< 5.0
4-Chlorotoluene	µg/kg	5	ISO 17025	-	-	< 5.0	-	< 5.0
1,3,5-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	8.6
tert-Butylbenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	< 5.0
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	15
sec-Butylbenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	< 5.0
1,3-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	< 5.0
p-Isopropyltoluene	µg/kg	5	ISO 17025	-	-	< 5.0	-	< 5.0
1,4-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	< 5.0
1,2-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	< 5.0

Analytical Report Number: 24-033489
Project / Site name: The Seeam

Lab Sample Number				272372	272373	272374	272375	272376
Sample Reference				HP109	HP105	TP125	TP125	TP124
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.27	0.70	0.50	0.90	0.40
Date Sampled				17/07/2024	17/07/2024	18/07/2024	18/07/2024	18/07/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
Butylbenzene	µg/kg	5	NONE	-	-	< 5.0	-	< 5.0
1,2-Dibromo-3-chloropropane	µg/kg	5	ISO 17025	-	-	< 5.0	-	< 5.0
1,2,4-Trichlorobenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	< 5.0
Hexachlorobutadiene	µg/kg	5	NONE	-	-	< 5.0	-	< 5.0
1,2,3-Trichlorobenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	< 5.0

SVOCs

Aniline	mg/kg	0.1	NONE	-	-	< 0.1	-	< 0.1
Phenol	mg/kg	0.2	ISO 17025	-	-	< 0.2	-	< 0.2
2-Chlorophenol	mg/kg	0.1	MCERTS	-	-	< 0.1	-	< 0.1
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	-	< 0.2	-	< 0.2
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	< 0.2	-	< 0.2
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	-	< 0.1	-	< 0.1
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	< 0.2	-	< 0.2
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	-	< 0.1	-	< 0.1
2-Methylphenol	mg/kg	0.3	MCERTS	-	-	< 0.3	-	< 0.3
Hexachloroethane	mg/kg	0.05	ISO 17025	-	-	< 0.05	-	< 0.05
Nitrobenzene	mg/kg	0.3	MCERTS	-	-	< 0.3	-	< 0.3
4-Methylphenol	mg/kg	0.2	NONE	-	-	< 0.2	-	< 0.2
Isophorone	mg/kg	0.2	MCERTS	-	-	< 0.2	-	< 0.2
2-Nitrophenol	mg/kg	0.3	NONE	-	-	< 0.3	-	< 0.3
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	-	< 0.3	-	< 0.3
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	-	< 0.3	-	< 0.3
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	-	< 0.3	-	< 0.3
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	-	< 0.3	-	< 0.3
4-Chloroaniline	mg/kg	0.1	NONE	-	-	< 0.1	-	< 0.1
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	-	< 0.1	-	< 0.1
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-	< 0.1	-	< 0.1
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	-	-	< 0.1	-	< 0.1
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	-	-	< 0.2	-	< 0.2
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-	9.1	-	23
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	-	< 0.1	-	< 0.1
Dimethylphthalate	mg/kg	0.1	MCERTS	-	-	< 0.1	-	< 0.1
2,6-Dinitrotoluene	mg/kg	0.1	NONE	-	-	< 0.1	-	< 0.1
2,4-Dinitrotoluene	mg/kg	0.2	NONE	-	-	< 0.2	-	< 0.2
Dibenzofuran	mg/kg	0.2	MCERTS	-	-	15	-	31
4-Chlorophenyl phenyl ether	mg/kg	0.3	MCERTS	-	-	< 0.3	-	< 0.3
Diethyl phthalate	mg/kg	0.2	MCERTS	-	-	< 0.2	-	< 0.2
4-Nitroaniline	mg/kg	0.2	NONE	-	-	< 0.2	-	< 0.2
Azobenzene	mg/kg	0.3	NONE	-	-	< 0.3	-	< 0.3
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	-	< 0.2	-	< 0.2
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	-	< 0.30	-	< 0.30
Carbazole	mg/kg	0.3	MCERTS	-	-	12	-	35
Dibutyl phthalate	mg/kg	0.2	NONE	-	-	< 0.2	-	< 0.2
Anthraquinone	mg/kg	0.3	NONE	-	-	14	-	23
Butyl benzyl phthalate	mg/kg	0.3	NONE	-	-	< 0.3	-	< 0.3

PCBs by GC-MS

PCB Congener 28	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 52	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 101	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 118	mg/kg	0.001	MCERTS	-	-	-	-	-

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Lab Sample Number				272372	272373	272374	272375	272376
Sample Reference				HP109	HP105	TP125	TP125	TP124
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.27	0.70	0.50	0.90	0.40
Date Sampled				17/07/2024	17/07/2024	18/07/2024	18/07/2024	18/07/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status		
PCB Congener 138				mg/kg	0.001	MCERTS	-	-
PCB Congener 153				mg/kg	0.001	MCERTS	-	-
PCB Congener 180				mg/kg	0.001	MCERTS	-	-
Total PCBs				mg/kg	0.007	MCERTS	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

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Project / Site name: The Seeam

Lab Sample Number	272377	272378	272379	272380	272381
Sample Reference	TP124	TP119	HP104	HP103	TP121
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.90	0.50	0.30	0.35	0.70
Date Sampled	18/07/2024	19/07/2024	19/07/2024	19/07/2024	19/07/2024
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Stone Content	%	0.1	NONE	< 0.1	-	< 0.1	57.5	-
Moisture Content	%	0.01	NONE	8	-	2.9	4.8	-
Total mass of sample received	kg	0.1	NONE	0.7	-	0.7	0.6	-

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	-	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	-	MWI	MWI	MWI	MWI

General Inorganics

pH (L099)	pH Units	N/A	MCERTS	-	-	-	9.4	-
Total Cyanide	mg/kg	1	MCERTS	-	-	-	< 1.0	-
Complex Cyanide	mg/kg	1	MCERTS	-	-	-	< 1.0	-
Free Cyanide	mg/kg	1	MCERTS	-	-	-	< 1.0	-
Thiocyanate as SCN	mg/kg	5	NONE	-	-	-	< 5.0	-
Total Sulphate as SO ₄	mg/kg	50	MCERTS	-	-	-	1100	-
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	-	-	-	96	-
Water Soluble SO ₄ 16hr extraction (2:1)	mg/l	1.25	MCERTS	-	-	-	47.8	-
Total Sulphur	mg/kg	50	MCERTS	-	-	-	350	-
Total Sulphur	%	0.005	MCERTS	-	-	-	0.035	-
Ammoniacal Nitrogen as NH ₃	mg/kg	0.5	MCERTS	-	-	-	< 0.5	-
Organic Matter	%	0.1	MCERTS	-	-	-	-	-
Organic Matter (automated)	%	0.1	MCERTS	-	-	0.4	-	-
Calorific Value	MJ/kg	0.12	ISO 17025	-	-	-	-	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	-	-	-	< 1.0	-
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.15	-	-	< 0.05	-
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	-	-	< 0.05	-
Acenaphthene	mg/kg	0.05	MCERTS	0.15	-	-	< 0.05	-
Fluorene	mg/kg	0.05	MCERTS	0.12	-	-	< 0.05	-
Phenanthrene	mg/kg	0.05	MCERTS	0.89	-	-	0.14	-
Anthracene	mg/kg	0.05	MCERTS	0.2	-	-	< 0.05	-
Fluoranthene	mg/kg	0.05	MCERTS	1	-	-	0.18	-
Pyrene	mg/kg	0.05	MCERTS	0.89	-	-	0.16	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.39	-	-	0.09	-
Chrysene	mg/kg	0.05	MCERTS	0.49	-	-	0.12	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.41	-	-	0.09	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.21	-	-	< 0.05	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.39	-	-	0.08	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.25	-	-	< 0.05	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	-	-	< 0.05	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.29	-	-	< 0.05	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	5.85	-	-	0.86	-
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Heavy Metals / Metalloids

Antimony (aqua regia extractable)	mg/kg	1	ISO 17025	-	-	-	1.9	-
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Project / Site name: The Seeam

Lab Sample Number				272377	272378	272379	272380	272381
Sample Reference				TP124	TP119	HP104	HP103	TP121
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.90	0.50	0.30	0.35	0.70
Date Sampled				18/07/2024	19/07/2024	19/07/2024	19/07/2024	19/07/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	7.8	-
Barium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	730	-
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	-	-	-	0.39	-
Boron (water soluble)	mg/kg	0.2	MCERTS	-	-	-	0.2	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	-	-	1.3	-
Chromium (hexavalent)	mg/kg	1.8	MCERTS	-	-	-	< 1.8	-
Chromium (III)	mg/kg	1	NONE	-	-	-	12	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	13	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	20	-
Iron (aqua regia extractable)	mg/kg	40	MCERTS	-	-	-	7500	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	280	-
Manganese (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	610	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
Molybdenum (aqua regia extractable)	mg/kg	0.25	MCERTS	-	-	-	1.3	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	16	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	1.2	-
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	19	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	540	-

Calcium (aqua regia extractable)	mg/kg	20	ISO 17025	-	-	-	-	-
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Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010	-	-	< 0.010	-
TPHCWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010	-	-	< 0.010	-
TPHCWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010	-	-	< 0.010	-
TPHCWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	MCERTS	< 1.0	-	-	< 1.0	-
TPHCWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	< 2.0	-	-	< 2.0	-
TPHCWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	< 8.0	-	-	< 8.0	-
TPHCWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	< 8.0	-	-	< 8.0	-
TPHCWG - Aliphatic >EC35 - EC44 _{EH_CU_1D_AL}	mg/kg	8.4	NONE	< 8.4	-	-	< 8.4	-
TPHCWG - Aliphatic >EC5 - EC35 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	< 10	-	-	< 10	-
TPHCWG - Aliphatic >EC5 - EC44 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	< 10	-	-	< 10	-

TPHCWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.01	MCERTS	< 0.010	-	-	< 0.010	-
TPHCWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.01	MCERTS	< 0.010	-	-	< 0.010	-
TPHCWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.02	MCERTS	< 0.020	-	-	< 0.020	-
TPHCWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	< 1.0	-	-	< 1.0	-
TPHCWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	< 2.0	-	-	< 2.0	-
TPHCWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	< 10	-	-	< 10	-
TPHCWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	10	-	-	< 10	-
TPHCWG - Aromatic >EC35 - EC44 _{EH_CU_1D_AR}	mg/kg	8.4	NONE	< 8.4	-	-	< 8.4	-
TPHCWG - Aromatic >EC5 - EC35 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	10	-	-	< 10	-
TPHCWG - Aromatic >EC5 - EC44 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	10	-	-	< 10	-

TPH (>EC10 - EC24) _{EH_CU_1D_TOTAL}	mg/kg	10	NONE	-	-	-	-	-
TPH (>EC24 - EC40) _{EH_CU_1D_TOTAL}	mg/kg	10	NONE	-	-	-	-	-

TPH Total >EC6 - EC40 _{EH_CU+HS_1D_TOTAL}	mg/kg	10	NONE	-	-	-	-	-
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Petroleum Range Organics (EC6 - EC10) _{HS_1D_TOTAL}	mg/kg	1	ISO 17025	-	-	-	-	-
TPH (EC10 - EC40) _{EH_CU_1D_TOTAL}	mg/kg	10	MCERTS	-	-	-	-	-

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Project / Site name: The Seeam

Lab Sample Number				272377	272378	272379	272380	272381
Sample Reference				TP124	TP119	HP104	HP103	TP121
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.90	0.50	0.30	0.35	0.70
Date Sampled				18/07/2024	19/07/2024	19/07/2024	19/07/2024	19/07/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status		

VOCs

Chloromethane	µg/kg	5	ISO 17025	-	-	-	-	-
Chloroethane	µg/kg	5	NONE	-	-	-	-	-
Bromomethane	µg/kg	5	ISO 17025	-	-	-	-	-
Vinyl Chloride	µg/kg	5	NONE	-	-	-	-	-
Trichlorofluoromethane	µg/kg	5	NONE	-	-	-	-	-
1,1-Dichloroethene	µg/kg	5	NONE	-	-	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	NONE	-	-	-	-	-
Trans 1,2-dichloroethylene	µg/kg	5	NONE	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	-	-	< 5.0	-
1,1-Dichloroethane	µg/kg	5	ISO 17025	-	-	-	-	-
2,2-Dichloropropane	µg/kg	5	NONE	-	-	-	-	-
Chloroform	µg/kg	5	ISO 17025	-	-	-	-	-
1,1,1-Trichloroethane	µg/kg	5	ISO 17025	-	-	-	-	-
1,2-Dichloroethane	µg/kg	5	ISO 17025	-	-	-	-	-
1,1-Dichloropropene	µg/kg	5	ISO 17025	-	-	-	-	-
Cis-1,2-dichloroethene	µg/kg	5	ISO 17025	-	-	-	-	-
Benzene	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	-
Carbontetrachloride	µg/kg	5	NONE	-	-	-	-	-
1,2-Dichloropropane	µg/kg	5	ISO 17025	-	-	-	-	-
Trichloroethene	µg/kg	5	ISO 17025	-	-	-	-	-
Dibromomethane	µg/kg	5	ISO 17025	-	-	-	-	-
Bromodichloromethane	µg/kg	5	ISO 17025	-	-	-	-	-
Cis-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-	-	-	-
Trans-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-	-	-	-
Toluene	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	-
1,1,2-Trichloroethane	µg/kg	5	ISO 17025	-	-	-	-	-
1,3-Dichloropropane	µg/kg	5	ISO 17025	-	-	-	-	-
Dibromochloromethane	µg/kg	5	ISO 17025	-	-	-	-	-
Tetrachloroethene	µg/kg	5	NONE	-	-	-	-	-
1,2-Dibromoethane	µg/kg	5	ISO 17025	-	-	-	-	-
Chlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	5	ISO 17025	-	-	-	-	-
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	-
p & m-Xylene	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	-
Styrene	µg/kg	5	ISO 17025	-	-	-	-	-
Bromoform	µg/kg	5	NONE	-	-	-	-	-
o-Xylene	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	-
Isopropylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	5	NONE	-	-	-	-	-
Bromobenzene	µg/kg	5	NONE	-	-	-	-	-
n-Propylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
2-Chlorotoluene	µg/kg	5	ISO 17025	-	-	-	-	-
4-Chlorotoluene	µg/kg	5	ISO 17025	-	-	-	-	-
1,3,5-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
tert-Butylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
sec-Butylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
1,3-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-
p-Isopropyltoluene	µg/kg	5	ISO 17025	-	-	-	-	-
1,4-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-
1,2-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-

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Project / Site name: The Seeam

Lab Sample Number				272377	272378	272379	272380	272381
Sample Reference				TP124	TP119	HP104	HP103	TP121
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.90	0.50	0.30	0.35	0.70
Date Sampled				18/07/2024	19/07/2024	19/07/2024	19/07/2024	19/07/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
Butylbenzene	µg/kg	5	NONE	-	-	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	5	ISO 17025	-	-	-	-	-
1,2,4-Trichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-
Hexachlorobutadiene	µg/kg	5	NONE	-	-	-	-	-
1,2,3-Trichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-

SVOCs

Aniline	mg/kg	0.1	NONE	-	-	-	-	-
Phenol	mg/kg	0.2	ISO 17025	-	-	-	-	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-	-	-	-	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	-	-	-	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	-	-	-	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	-	-	-	-
2-Methylphenol	mg/kg	0.3	MCERTS	-	-	-	-	-
Hexachloroethane	mg/kg	0.05	ISO 17025	-	-	-	-	-
Nitrobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
4-Methylphenol	mg/kg	0.2	NONE	-	-	-	-	-
Isophorone	mg/kg	0.2	MCERTS	-	-	-	-	-
2-Nitrophenol	mg/kg	0.3	NONE	-	-	-	-	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	-	-	-	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	-	-	-	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	-	-	-	-
4-Chloroaniline	mg/kg	0.1	NONE	-	-	-	-	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	-	-	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-	-	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	-	-	-	-	-
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	-	-	-	-	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-	-	-	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	-	-	-	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-	-	-	-	-
2,6-Dinitrotoluene	mg/kg	0.1	NONE	-	-	-	-	-
2,4-Dinitrotoluene	mg/kg	0.2	NONE	-	-	-	-	-
Dibenzofuran	mg/kg	0.2	MCERTS	-	-	-	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	MCERTS	-	-	-	-	-
Diethyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-	-
4-Nitroaniline	mg/kg	0.2	NONE	-	-	-	-	-
Azobenzene	mg/kg	0.3	NONE	-	-	-	-	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	-	-	-	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Carbazole	mg/kg	0.3	MCERTS	-	-	-	-	-
Dibutyl phthalate	mg/kg	0.2	NONE	-	-	-	-	-
Anthraquinone	mg/kg	0.3	NONE	-	-	-	-	-
Butyl benzyl phthalate	mg/kg	0.3	NONE	-	-	-	-	-

PCBs by GC-MS

PCB Congener 28	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 52	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 101	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 118	mg/kg	0.001	MCERTS	-	-	-	-	-

Analytical Report Number: 24-033489

Project / Site name: The Seeam

Lab Sample Number				272377	272378	272379	272380	272381
Sample Reference				TP124	TP119	HP104	HP103	TP121
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.90	0.50	0.30	0.35	0.70
Date Sampled				18/07/2024	19/07/2024	19/07/2024	19/07/2024	19/07/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status		
PCB Congener 138	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 153	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 180	mg/kg	0.001	MCERTS	-	-	-	-	-
Total PCBs	mg/kg	0.007	MCERTS	-	-	-	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 24-033489

Project / Site name: The Seeam

Lab Sample Number				272382
Sample Reference				TP108
Sample Number				None Supplied
Depth (m)				0.40
Date Sampled				19/07/2024
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status	

Stone Content	%	0.1	NONE	< 0.1
Moisture Content	%	0.01	NONE	21
Total mass of sample received	kg	0.1	NONE	0.8

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	MWI

General Inorganics

pH (L099)	pH Units	N/A	MCERTS	9.2
Total Cyanide	mg/kg	1	MCERTS	< 1.0
Complex Cyanide	mg/kg	1	MCERTS	< 1.0
Free Cyanide	mg/kg	1	MCERTS	< 1.0
Thiocyanate as SCN	mg/kg	5	NONE	< 5.0
Total Sulphate as SO ₄	mg/kg	50	MCERTS	2600
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	200
Water Soluble SO ₄ 16hr extraction (2:1)	mg/l	1.25	MCERTS	102
Total Sulphur	mg/kg	50	MCERTS	1100
Total Sulphur	%	0.005	MCERTS	0.107
Ammoniacal Nitrogen as NH ₃	mg/kg	0.5	MCERTS	< 0.5
Organic Matter	%	0.1	MCERTS	-
Organic Matter (automated)	%	0.1	MCERTS	2.5
Calorific Value	MJ/kg	0.12	ISO 17025	< 0.120

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.17
Acenaphthylene	mg/kg	0.05	MCERTS	0.08
Acenaphthene	mg/kg	0.05	MCERTS	0.13
Fluorene	mg/kg	0.05	MCERTS	0.08
Phenanthrene	mg/kg	0.05	MCERTS	0.68
Anthracene	mg/kg	0.05	MCERTS	0.19
Fluoranthene	mg/kg	0.05	MCERTS	1.4
Pyrene	mg/kg	0.05	MCERTS	1.2
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.68
Chrysene	mg/kg	0.05	MCERTS	0.8
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.87
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.36
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.71
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.45
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.11
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.53

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	8.4
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Heavy Metals / Metalloids

Antimony (aqua regia extractable)	mg/kg	1	ISO 17025	8.7
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Analytical Report Number: 24-033489
Project / Site name: The Seeam

Lab Sample Number				272382
Sample Reference				TP108
Sample Number				None Supplied
Depth (m)				0.40
Date Sampled				19/07/2024
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status	
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	23
Barium (aqua regia extractable)	mg/kg	1	MCERTS	460
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.83
Boron (water soluble)	mg/kg	0.2	MCERTS	0.8
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	1
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8
Chromium (III)	mg/kg	1	NONE	17
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	17
Copper (aqua regia extractable)	mg/kg	1	MCERTS	57
Iron (aqua regia extractable)	mg/kg	40	MCERTS	27000
Lead (aqua regia extractable)	mg/kg	1	MCERTS	1200
Manganese (aqua regia extractable)	mg/kg	1	MCERTS	720
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.5
Molybdenum (aqua regia extractable)	mg/kg	0.25	MCERTS	1.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	17
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	1.1
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	28
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	430

Calcium (aqua regia extractable)	mg/kg	20	ISO 17025	69000
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Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010
TPHCWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010
TPHCWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010
TPHCWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	MCERTS	< 1.0
TPHCWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	< 2.0
TPHCWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	< 8.0
TPHCWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	< 8.0
TPHCWG - Aliphatic >EC35 - EC44 _{EH_CU_1D_AL}	mg/kg	8.4	NONE	< 8.4
TPHCWG - Aliphatic >EC5 - EC35 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	< 10
TPHCWG - Aliphatic >EC5 - EC44 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	< 10

TPHCWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.01	MCERTS	< 0.010
TPHCWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.01	MCERTS	< 0.010
TPHCWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.02	MCERTS	< 0.020
TPHCWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	< 1.0
TPHCWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	< 2.0
TPHCWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	< 10
TPHCWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	< 10
TPHCWG - Aromatic >EC35 - EC44 _{EH_CU_1D_AR}	mg/kg	8.4	NONE	< 8.4
TPHCWG - Aromatic >EC5 - EC35 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	< 10
TPHCWG - Aromatic >EC5 - EC44 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	< 10

TPH (>EC10 - EC24) _{EH_CU_1D_TOTAL}	mg/kg	10	NONE	-
TPH (>EC24 - EC40) _{EH_CU_1D_TOTAL}	mg/kg	10	NONE	-

TPH Total >EC6 - EC40 _{EH_CU+HS_1D_TOTAL}	mg/kg	10	NONE	-
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Petroleum Range Organics (EC6 - EC10) _{HS_1D_TOTAL}	mg/kg	1	ISO 17025	-
TPH (EC10 - EC40) _{EH_CU_1D_TOTAL}	mg/kg	10	MCERTS	-

Analytical Report Number: 24-033489

Project / Site name: The Seeam

Lab Sample Number				272382
Sample Reference				TP108
Sample Number				None Supplied
Depth (m)				0.40
Date Sampled				19/07/2024
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)				
	Units	Test Limit of detection	Test Accreditation Status	

VOCs

Chloromethane	µg/kg	5	ISO 17025	-
Chloroethane	µg/kg	5	NONE	-
Bromomethane	µg/kg	5	ISO 17025	-
Vinyl Chloride	µg/kg	5	NONE	-
Trichlorofluoromethane	µg/kg	5	NONE	-
1,1-Dichloroethene	µg/kg	5	NONE	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	NONE	-
Trans 1,2-dichloroethylene	µg/kg	5	NONE	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0
1,1-Dichloroethane	µg/kg	5	ISO 17025	-
2,2-Dichloropropane	µg/kg	5	NONE	-
Chloroform	µg/kg	5	ISO 17025	-
1,1,1-Trichloroethane	µg/kg	5	ISO 17025	-
1,2-Dichloroethane	µg/kg	5	ISO 17025	-
1,1-Dichloropropene	µg/kg	5	ISO 17025	-
Cis-1,2-dichloroethene	µg/kg	5	ISO 17025	-
Benzene	µg/kg	5	MCERTS	< 5.0
Carbontetrachloride	µg/kg	5	NONE	-
1,2-Dichloropropane	µg/kg	5	ISO 17025	-
Trichloroethene	µg/kg	5	ISO 17025	-
Dibromomethane	µg/kg	5	ISO 17025	-
Bromodichloromethane	µg/kg	5	ISO 17025	-
Cis-1,3-dichloropropene	µg/kg	5	ISO 17025	-
Trans-1,3-dichloropropene	µg/kg	5	ISO 17025	-
Toluene	µg/kg	5	MCERTS	< 5.0
1,1,2-Trichloroethane	µg/kg	5	ISO 17025	-
1,3-Dichloropropane	µg/kg	5	ISO 17025	-
Dibromochloromethane	µg/kg	5	ISO 17025	-
Tetrachloroethene	µg/kg	5	NONE	-
1,2-Dibromoethane	µg/kg	5	ISO 17025	-
Chlorobenzene	µg/kg	5	ISO 17025	-
1,1,1,2-Tetrachloroethane	µg/kg	5	ISO 17025	-
Ethylbenzene	µg/kg	5	MCERTS	< 5.0
p & m-Xylene	µg/kg	5	MCERTS	< 5.0
Styrene	µg/kg	5	ISO 17025	-
Bromoform	µg/kg	5	NONE	-
o-Xylene	µg/kg	5	MCERTS	< 5.0
Isopropylbenzene	µg/kg	5	ISO 17025	-
1,1,2,2-Tetrachloroethane	µg/kg	5	NONE	-
Bromobenzene	µg/kg	5	NONE	-
n-Propylbenzene	µg/kg	5	ISO 17025	-
2-Chlorotoluene	µg/kg	5	ISO 17025	-
4-Chlorotoluene	µg/kg	5	ISO 17025	-
1,3,5-Trimethylbenzene	µg/kg	5	ISO 17025	-
tert-Butylbenzene	µg/kg	5	ISO 17025	-
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	-
sec-Butylbenzene	µg/kg	5	ISO 17025	-
1,3-Dichlorobenzene	µg/kg	5	ISO 17025	-
p-Isopropyltoluene	µg/kg	5	ISO 17025	-
1,4-Dichlorobenzene	µg/kg	5	ISO 17025	-
1,2-Dichlorobenzene	µg/kg	5	ISO 17025	-

Analytical Report Number: 24-033489
Project / Site name: The Seeam

Lab Sample Number				272382
Sample Reference				TP108
Sample Number				None Supplied
Depth (m)				0.40
Date Sampled				19/07/2024
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status	
Butylbenzene	µg/kg	5	NONE	-
1,2-Dibromo-3-chloropropane	µg/kg	5	ISO 17025	-
1,2,4-Trichlorobenzene	µg/kg	5	ISO 17025	-
Hexachlorobutadiene	µg/kg	5	NONE	-
1,2,3-Trichlorobenzene	µg/kg	5	ISO 17025	-

SVOCs

Aniline	mg/kg	0.1	NONE	-
Phenol	mg/kg	0.2	ISO 17025	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-
2-Methylphenol	mg/kg	0.3	MCERTS	-
Hexachloroethane	mg/kg	0.05	ISO 17025	-
Nitrobenzene	mg/kg	0.3	MCERTS	-
4-Methylphenol	mg/kg	0.2	NONE	-
Isophorone	mg/kg	0.2	MCERTS	-
2-Nitrophenol	mg/kg	0.3	NONE	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-
4-Chloroaniline	mg/kg	0.1	NONE	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	-
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-
2,6-Dinitrotoluene	mg/kg	0.1	NONE	-
2,4-Dinitrotoluene	mg/kg	0.2	NONE	-
Dibenzofuran	mg/kg	0.2	MCERTS	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	MCERTS	-
Diethyl phthalate	mg/kg	0.2	MCERTS	-
4-Nitroaniline	mg/kg	0.2	NONE	-
Azobenzene	mg/kg	0.3	NONE	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	-
Carbazole	mg/kg	0.3	MCERTS	-
Dibutyl phthalate	mg/kg	0.2	NONE	-
Anthraquinone	mg/kg	0.3	NONE	-
Butyl benzyl phthalate	mg/kg	0.3	NONE	-

PCBs by GC-MS

PCB Congener 28	mg/kg	0.001	MCERTS	< 0.001
PCB Congener 52	mg/kg	0.001	MCERTS	< 0.001
PCB Congener 101	mg/kg	0.001	MCERTS	< 0.001
PCB Congener 118	mg/kg	0.001	MCERTS	< 0.001

Analytical Report Number: 24-033489

Project / Site name: The Seeam

Lab Sample Number				272382
Sample Reference				TP108
Sample Number				None Supplied
Depth (m)				0.40
Date Sampled				19/07/2024
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status	
PCB Congener 138	mg/kg	0.001	MCERTS	< 0.001
PCB Congener 153	mg/kg	0.001	MCERTS	< 0.001
PCB Congener 180	mg/kg	0.001	MCERTS	< 0.001
Total PCBs	mg/kg	0.007	MCERTS	< 0.007

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 24-033489
Project / Site name: The Seeam

Lab Sample Number				272374	272376	272382
Sample Reference				TP125	TP124	TP108
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				0.50	0.40	0.40
Date Sampled				18/07/2024	18/07/2024	19/07/2024
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)	Units	Test Limit of detection	Test Accreditation Status			

General Inorganics

pH (automated)	pH Units	N/A	ISO 17025	8.3	-	8.4
Total Cyanide	µg/l	10	ISO 17025	< 10	-	< 10
Complex Cyanide	µg/l	10	ISO 17025	< 10	-	< 10
Free Cyanide	µg/l	10	ISO 17025	< 10	-	< 10
Thiocyanate as SCN	µg/l	200	ISO 17025	< 200	-	< 200
Sulphate as SO ₄	mg/l	0.045	ISO 17025	21.1	-	33.2
Ammoniacal Nitrogen as NH ₃	µg/l	15	NONE	32	-	31

Total Phenols

Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10	-	< 10
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Speciated PAHs

Naphthalene	µg/l	0.01	ISO 17025	6.3	4.1	1.3
Acenaphthylene	µg/l	0.01	ISO 17025	0.62	0.26	0.1
Acenaphthene	µg/l	0.01	ISO 17025	9.1	4.7	0.1
Fluorene	µg/l	0.01	ISO 17025	3	1.6	0.12
Phenanthrene	µg/l	0.01	ISO 17025	6.3	3.5	0.15
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	4.2	2.5	< 0.01
Pyrene	µg/l	0.01	ISO 17025	3.4	2.1	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	1.2	0.94	< 0.01
Chrysene	µg/l	0.01	ISO 17025	1.5	1.2	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	2.4	2.1	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	0.7	0.63	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	2.2	1.8	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	NONE	1.3	1.4	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	NONE	1.6	1.9	< 0.01

Total PAH

Total EPA-16 PAHs	µg/l	0.16	NONE	43.7	28.6	1.76
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Heavy Metals / Metalloids

Antimony (dissolved)	µg/l	1.7	ISO 17025	2	-	17
Arsenic (dissolved)	µg/l	1	ISO 17025	8.8	-	2.1
Barium (dissolved)	µg/l	0.05	ISO 17025	14	-	80
Beryllium (dissolved)	µg/l	0.2	ISO 17025	< 0.2	-	< 0.2
Boron (dissolved)	µg/l	10	ISO 17025	34	-	92
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	-	0.11
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	-	37
Chromium (III)	µg/l	5	NONE	8	-	7.8
Chromium (dissolved)	µg/l	0.4	ISO 17025	8	-	45
Copper (dissolved)	µg/l	0.7	ISO 17025	21	-	7.4
Iron (dissolved)	µg/l	4	ISO 17025	470	-	31
Lead (dissolved)	µg/l	1	ISO 17025	9	-	3.2
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	-	< 0.5
Molybdenum (dissolved)	µg/l	0.4	ISO 17025	49	-	26
Nickel (dissolved)	µg/l	0.3	ISO 17025	1.3	-	0.4
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	-	< 4.0
Vanadium (dissolved)	µg/l	1.7	ISO 17025	4.6	-	3.6

Analytical Report Number: 24-033489
Project / Site name: The Seeam

Lab Sample Number				272374	272376	272382
Sample Reference				TP125	TP124	TP108
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				0.50	0.40	0.40
Date Sampled				18/07/2024	18/07/2024	19/07/2024
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)	Units	Test Limit of detection	Test Accreditation Status			
	µg/l	0.4	ISO 17025	17	-	7.1

Magnesium (dissolved)	µg/l	5	ISO 17025	1900	-	14000
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Petroleum Hydrocarbons

TPH - Aliphatic >EC5 - EC6 _{HS,1D,AL}	µg/l	1	NONE	< 1.0	< 1.0	< 1.0
TPH - Aliphatic >EC6 - EC8 _{HS,1D,AL}	µg/l	1	NONE	< 1.0	< 1.0	< 1.0
TPH - Aliphatic >EC8 - EC10 _{HS,1D,AL}	µg/l	1	NONE	< 1.0	< 1.0	< 1.0
TPH - Aliphatic >EC10 - EC12 _{EH,1D,AL,MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH - Aliphatic >EC12 - EC16 _{EH,1D,AL,MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH - Aliphatic >EC16 - EC21 _{EH,1D,AL,MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH - Aliphatic >EC21 - EC35 _{EH,1D,AL,MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH - Aliphatic >EC35 - EC40 _{EH,1D,AL,MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH - Aliphatic >EC35 - EC44 _{EH,1D,AL,MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH - Aliphatic >EC40 - EC44 _{EH,1D,AL,MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH - Aliphatic >EC5 - EC35 _{HS+EH,1D,AL,MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH - Aliphatic >EC5 - EC44 _{HS+EH,1D,AL,MS}	µg/l	10	NONE	< 10	< 10	< 10

TPH - Aromatic >EC5 - EC7 _{HS,1D,AR}	µg/l	1	NONE	< 1.0	< 1.0	< 1.0
TPH - Aromatic >EC7 - EC8 _{HS,1D,AR}	µg/l	1	NONE	< 1.0	< 1.0	< 1.0
TPH - Aromatic >EC8 - EC10 _{EH,1D,AR,MS}	µg/l	1	NONE	< 1.0	< 1.0	< 1.0
TPH - Aromatic >EC10 - EC12 _{EH,1D,AR,MS}	µg/l	10	NONE	35	16	< 10
TPH - Aromatic >EC12 - EC16 _{EH,1D,AR,MS}	µg/l	10	NONE	91	53	16
TPH - Aromatic >EC16 - EC21 _{EH,1D,AR,MS}	µg/l	10	NONE	120	120	10
TPH - Aromatic >EC21 - EC35 _{EH,1D,AR,MS}	µg/l	10	NONE	36	17	< 10
TPH - Aromatic >EC35 - EC40 _{EH,1D,AR,MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH - Aromatic >EC35 - EC44 _{EH,1D,AR,MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH - Aromatic >EC40 - EC44 _{EH,1D,AR,MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH - Aromatic >EC5 - EC44 _{HS+EH,1D,AR,MS}	µg/l	10	NONE	280	200	26
TPH - Aromatic >EC6 - EC35 _{HS+EH,1D,AR,MS}	µg/l	10	NONE	280	200	26

VOCs

MTBE (Methyl Tertiary Butyl Ether)	µg/l	3	NONE	< 3.0	< 3.0	< 3.0
Benzene	µg/l	3	NONE	< 3.0	< 3.0	< 3.0
Toluene	µg/l	3	NONE	< 3.0	< 3.0	< 3.0
Ethylbenzene	µg/l	3	NONE	< 3.0	< 3.0	< 3.0
p & m-xylene	µg/l	3	NONE	< 3.0	< 3.0	< 3.0
o-xylene	µg/l	3	NONE	< 3.0	< 3.0	< 3.0

PCBs by GC-MS

PCB Congener 28	µg/l	0.05	NONE	-	-	< 0.05
PCB Congener 52	µg/l	0.05	NONE	-	-	< 0.05
PCB Congener 101	µg/l	0.05	NONE	-	-	< 0.05
PCB Congener 118	µg/l	0.05	NONE	-	-	< 0.05
PCB Congener 138	µg/l	0.05	NONE	-	-	< 0.05
PCB Congener 153	µg/l	0.05	NONE	-	-	< 0.05
PCB Congener 180	µg/l	0.05	NONE	-	-	< 0.05
Total PCBs	µg/l	0.35	NONE	-	-	< 0.35

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number : 24-033489
Project / Site name: The Seeam

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
272367	HP108	None Supplied	0.5	Brown loam and sand with gravel
272370	HP111	None Supplied	0.24	Non Soil. ^{nb}
272371	HP111	None Supplied	0.3	Brown loam and sand with gravel
272373	HP105	None Supplied	0.7	Brown loam and sand with gravel
272374	TP125	None Supplied	0.5	Brown loam and sand with gravel
272375	TP125	None Supplied	0.9	Brown loam and sand with stones
272376	TP124	None Supplied	0.4	Brown loam with gravel
272377	TP124	None Supplied	0.9	Brown clay and sand with gravel
272379	HP104	None Supplied	0.3	Brown sand with gravel
272380	HP103	None Supplied	0.35	Brown sand with stones
272382	TP108	None Supplied	0.4	Brown loam and sand with gravel

Analytical Report Number : 24-033489

Project / Site name: The Seeam

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in Soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques	In-house method based on HSG 248, 2021	A001B	D	ISO 17025
Organic matter (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)	In-house method	L009B	D	MCERTS
Calorific Value of soil	Determination of the calorific value of soil by combustion in a controlled environment	Calorific Value of Soil by Bomb Calorimeter	L013B	D	ISO 17025
Moisture Content	Moisture content, determined gravimetrically (up to 30°C)	In-house method	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
Organic matter in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)	In-house method	L023B	D	MCERTS
PCB's By GC-MS in soil	Determination of PCB by extraction with hexane followed by GC-MS	In-house method based on USEPA 8082	L027B	D	MCERTS
PCB's By GC-MS in leachate	Determination of PCB by extraction with hexane followed by GC-MS	In-house method based on USEPA 8082	L028B	W	NONE
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L038B	D	MCERTS
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES	In-house method based on Second Site Properties version 3	L038B	D	MCERTS
Cations in soil by ICP-OES	Determination of cations in soil by aqua-regia digestion followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L038B	D	MCERTS
Total sulphate (as SO ₄ in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES	In-house method	L038B	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Sulphate, water soluble, in soil (16hr extraction)	In-house method	L038B	D	MCERTS
Total Sulphur in soil	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES	In-house method	L038B	D	MCERTS
Metals by ICP-OES in leachate	Determination of metals in leachate by acidification followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L039B	W	ISO 17025
Speciated PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS

Analytical Report Number : 24-033489

Project / Site name: The Seeam

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Total petroleum hydrocarbons with carbon banding by GC-MS/GC-MS HS in leachate	Determination of total petroleum hydrocarbons in leachate by GC-MS/GC-MS HS with carbon banding aliphatic and aromatic	In-house method	L070B/L088	W	NONE
BTEX and/or Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS	In-house method based on USEPA 8260	L073B	W	MCERTS
BTEX and/or Volatile organic compounds in leachate	Determination of volatile organic compounds in leachate by headspace GC-MS	In-house method based on USEPA 8260	L073B	W	NONE
Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS with carbon banding aliphatic and aromatic	In-house method	L076B/L088	D/W	MCERTS
Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS	In-house method	L076B/L088	D/W	MCERTS
Complex cyanide in leachate	Determination of complex cyanide by calculation	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	ISO 17025
Complex Cyanide in soil	Determination of complex cyanide by calculation	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	MCERTS
Chromium III in leachate	In-house method by calculation from total Cr and Cr VI	In-house method by calculation	L080	W	NONE
Chromium III in soil	In-house method by calculation from total Cr and Cr VI	In-house method by calculation	L080	W	NONE
Hexavalent chromium in leachate	Determination of hexavalent chromium in leachate by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry	In-house method	L080	W	ISO 17025
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazide followed by colorimetry	In-house method	L080	W	MCERTS
Free cyanide in leachate	Determination of free cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	ISO 17025
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	MCERTS
Monohydric phenols in leachate	Determination of phenols in leachate by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	ISO 17025
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	MCERTS
Total cyanide in leachate	Determination of total cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	ISO 17025

Analytical Report Number : 24-033489

Project / Site name: The Seeam

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	MCERTS
Ammonia as NH ₃ in leachate	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082B	W	NONE
Ammonia as NH ₃ in soil	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082B	W	MCERTS
Thiocyanate in soil	Determination of thiocyanate in soil by extraction in water followed by acidification followed by addition of ferric nitrate followed by discrete analyser (spectrophotometer)	In-house method	L082B	D	NONE
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement	In-house method	L099	D	MCERTS
pH at 20°C in leachate (automated)	Determination of pH in leachate by electrometric measurement	In-house method	L099	W	ISO 17025
Speciated PAHs and/or Semi-volatile organic compounds in leachate	SVOCs and PAHs in leachate	In-house method	L102B		ISO 17025
Thiocyanate in leachate	Determination of thiocyanate in water by discrete analyser (colorimetry)	In-house method based on SMWW 4500-CN-M	L082B	W	ISO 17025

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30°C.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#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 e.g. EH+HS_Total or EH_CU+HS_Total



Analytical Report Number : 24-033489
Project / Site name: The Seeam

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
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Quality control parameter failure associated with individual result applies to calculated sum of individuals.
 The result for sum should be interpreted with caution

2 - Underserved sample matrix

Analytical Report Number : 24-033489

Project / Site name: The Seeam

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis. Please note that the associated result(s) may be unreliable and should be interpreted with care.

Key: a - No sampling date b - Incorrect container c - Holding time d - Headspace e - Temperature

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
HP103	N/A	S	272380	c	Complex Cyanide in soil	L080	c
HP103	N/A	S	272380	c	Free cyanide in soil	L080	c
HP103	N/A	S	272380	c	Total cyanide in soil	L080	c
HP105	N/A	S	272373	bc	BTEX and/or Volatile organic compounds in soil	L073B	b
HP105	N/A	S	272373	bc	Complex Cyanide in soil	L080	c
HP105	N/A	S	272373	bc	Free cyanide in soil	L080	c
HP105	N/A	S	272373	bc	Monohydric phenols in soil	L080	b
HP105	N/A	S	272373	bc	Speciated PAHs and/or Semi-volatile organic compounds in soil	L064B	b
HP105	N/A	S	272373	bc	Total cyanide in soil	L080	c
HP105	N/A	S	272373	bc	Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	L076B/L088	b
HP108	N/A	S	272367	c	BTEX and/or Volatile organic compounds in soil	L073B	c
HP108	N/A	S	272367	c	Complex Cyanide in soil	L080	c
HP108	N/A	S	272367	c	Free cyanide in soil	L080	c
HP108	N/A	S	272367	c	Thiocyanate in soil	L082B	c
HP108	N/A	S	272367	c	Total cyanide in soil	L080	c
TP108	N/A	S	272382	c	Complex Cyanide in soil	L080	c
TP108	N/A	S	272382	c	Free cyanide in soil	L080	c
TP108	N/A	S	272382	c	Total cyanide in soil	L080	c
TP125	N/A	S	272374	c	Complex Cyanide in soil	L080	c
TP125	N/A	S	272374	c	Free cyanide in soil	L080	c
TP125	N/A	S	272374	c	Total cyanide in soil	L080	c

VHE Construction plc

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

e: carl.lacey@vhe.co.uk
vhelab@vhe.co.uk

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 24-033499

Project / Site name:	The Seeam	Samples received on:	24/07/2024
Your job number:		Samples instructed on/ Analysis started on:	31/07/2024
Your order number:		Analysis completed by:	06/08/2024
Report Issue Number:	1	Report issued on:	06/08/2024
Samples Analysed:	3 soil samples - 3 leachate samples		


Signed:

Charlotte Andrew
Key Account Manager
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 24-033499
Project / Site name: The Seeam

Lab Sample Number					272427	272428	272429			
Sample Reference					HP108	TP125	TP108			
Sample Number					None Supplied	None Supplied	None Supplied			
Depth (m)					0.50	0.50	0.40			
Date Sampled					16/07/2024	18/07/2024	19/07/2024			
Time Taken					None Supplied	None Supplied	None Supplied			
Analytical Parameter (Soil Analysis)					Units	Test Limit of detection	Test Accreditation Status			

Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	11	17	16
Total mass of sample received	kg	0.1	NONE	0.8	0.8	0.8

General Inorganics

Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	5.2	5.3	1.4
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	8.6	10	0.18
Acenaphthylene	mg/kg	0.05	MCERTS	0.31	0.88	0.09
Acenaphthene	mg/kg	0.05	MCERTS	8.2	26	0.12
Fluorene	mg/kg	0.05	MCERTS	6.5	19	0.1
Phenanthrene	mg/kg	0.05	MCERTS	39	240	0.74
Anthracene	mg/kg	0.05	MCERTS	11	48	0.23
Fluoranthene	mg/kg	0.05	MCERTS	41	320	1.4
Pyrene	mg/kg	0.05	MCERTS	36	290	1.2
Benzo(a)anthracene	mg/kg	0.05	MCERTS	17	150	0.71
Chrysene	mg/kg	0.05	MCERTS	18	140	0.82
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	20	160	0.9
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	7.4	84	0.4
Benzo(a)pyrene	mg/kg	0.05	MCERTS	18	150	0.76
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	9.6	53	0.47
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	2.2	26	0.13
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	11	58	0.56
Coronene	mg/kg	0.05	NONE	4.6	21	0.29

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	254	-	8.82
Total WAC-17 PAHs	mg/kg	0.85	NONE	258	1800	9.1

Petroleum Hydrocarbons

Mineral Oil (EC10 - EC40) BH_CU_ID_AL	mg/kg	10	NONE	46	380	< 10
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VOCs

Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
p & m-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0

Total BTEX	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
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PCBs by GC-MS

PCB Congener 28	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001
PCB Congener 52	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001
PCB Congener 101	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001
PCB Congener 118	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001
PCB Congener 138	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001
PCB Congener 153	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001
PCB Congener 180	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001

Analytical Report Number: 24-033499
Project / Site name: The Seeam

Lab Sample Number				272427	272428	272429
Sample Reference				HP108	TP125	TP108
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				0.50	0.50	0.40
Date Sampled				16/07/2024	18/07/2024	19/07/2024
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status			
Total PCBs				mg/kg	0.007	MCERTS
					< 0.007	< 0.007
					< 0.007	< 0.007

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected



4041



Environmental Science

i2 Analytical

7 Woodshots Meadow
Croxley Green Business Park
Watford, WD18 8YS

Telephone: 01923 225404
Fax: 01923 237404
email:reception@i2analytical.com

Waste Acceptance Criteria Analytical Results							
Report No:		24-033499					
					Client: VHE		
Location		The Seeam			Landfill Waste Acceptance Criteria Limits		
Lab Reference (Sample Number)		272427					
Sampling Date		16/07/2024					
Sample ID		HP108					
Depth (m)		0.50			Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Solid Waste Analysis							
TOC (%)**		5.2			3%	5%	6%
Loss on Ignition (%) **		-			--	--	10%
BTEX (µg/kg) **		< 5.0			6000	--	--
Sum of PCBs (mg/kg) **		< 0.007			1	--	--
Mineral Oil (mg/kg) BH, ID, CU, AL		46			500	--	--
Total PAH (WAC-17) (mg/kg)		258			100	--	--
pH (units)**		-			--	>6	--
Acid Neutralisation Capacity (mmol / kg)		-			--	To be evaluated	To be evaluated
Eluate Analysis		10:1		10:1	Limit values for compliance leaching test		
(BS EN 12457 - 2 preparation utilising end over end leaching procedure)		mg/l			mg/kg		
					using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *		0.00408		0.0408	0.5	2	25
Barium *		0.0188		0.188	20	100	300
Cadmium *		< 0.000100		< 0.00100	0.04	1	5
Chromium *		0.0013		0.013	0.5	10	70
Copper *		0.032		0.32	2	50	100
Mercury *		< 0.000500		< 0.00500	0.01	0.2	2
Molybdenum *		0.00179		0.0179	0.5	10	30
Nickel *		0.0015		0.015	0.4	10	40
Lead *		< 0.0010		< 0.010	0.5	10	50
Antimony *		< 0.0017		< 0.017	0.06	0.7	5
Selenium *		< 0.0040		< 0.040	0.1	0.5	7
Zinc *		0.0028		0.028	4	50	200
Chloride *		1.1		11	800	15000	25000
Fluoride*		1.3		13	10	150	500
Sulphate *		6.0		60	1000	20000	50000
TDS*		64		640	4000	60000	100000
Phenol Index (Monohydric Phenols) *		< 0.010		< 0.10	1	-	-
DOC		12.2		122	500	800	1000
Leach Test Information							
Stone Content (%)		< 0.1					
Sample Mass (kg)		0.8					
Dry Matter (%)		89					
Moisture (%)		11					
Results are expressed on a dry weight basis, after correction for moisture content where applicable.							
* = UKAS accredited (liquid eluate analysis only)							
Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation							
** = MCERTS accredited							

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3.
This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous.



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Environmental Science

i2 Analytical

7 Woodshots Meadow
Croxley Green Business Park
Watford, WD18 8YS

Telephone: 01923 225404
Fax: 01923 237404
email:reception@i2analytical.com

Waste Acceptance Criteria Analytical Results							
Report No:	24-033499						
					Client: VHE		
Location	The Seeam						
Lab Reference (Sample Number)	272428				Landfill Waste Acceptance Criteria		
Sampling Date	18/07/2024				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	TP125						
Depth (m)	0.50						
Solid Waste Analysis							
TOC (%)**	5.3				3%	5%	6%
Loss on Ignition (%) **	-				--	--	10%
BTEX (µg/kg) **	< 5.0				6000	--	--
Sum of PCBs (mg/kg) **	< 0.007				1	--	--
Mineral Oil (mg/kg) EH, ID, CU, AL	380				500	--	--
Total PAH (WAC-17) (mg/kg)	1800				100	--	--
pH (units)**	-				--	>6	--
Acid Neutralisation Capacity (mmol / kg)	-				--	To be evaluated	To be evaluated
Eluate Analysis	10:1			10:1	Limit values for compliance leaching test		
	mg/l			mg/kg	using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
(BS EN 12457 - 2 preparation utilising end over end leaching procedure)							
Arsenic *	0.00476			0.0476	0.5	2	25
Barium *	0.00639			0.0639	20	100	300
Cadmium *	< 0.000100			< 0.00100	0.04	1	5
Chromium *	0.00067			0.0067	0.5	10	70
Copper *	0.021			0.21	2	50	100
Mercury *	< 0.000500			< 0.00500	0.01	0.2	2
Molybdenum *	0.0113			0.113	0.5	10	30
Nickel *	0.0011			0.011	0.4	10	40
Lead *	< 0.0010			< 0.010	0.5	10	50
Antimony *	0.0022			0.022	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0.5	7
Zinc *	0.0064			0.064	4	50	200
Chloride *	7.1			71	800	15000	25000
Fluoride*	1.7			17	10	150	500
Sulphate *	9.5			95	1000	20000	50000
TDS*	84			840	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	14.4			144	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	0.8						
Dry Matter (%)	83						
Moisture (%)	17						
Results are expressed on a dry weight basis, after correction for moisture content where applicable.							
* = UKAS accredited (liquid eluate analysis only)							
Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation							
** = MCFRTS accredited							

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3.
This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous.



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Environmental Science

i2 Analytical

7 Woodshots Meadow
Croxley Green Business Park
Watford, WD18 8YS

Telephone: 01923 225404
Fax: 01923 237404
email:reception@i2analytical.com

Waste Acceptance Criteria Analytical Results

Report No:	24-033499						
				Client: VHE			
Location	The Seeam						
Lab Reference (Sample Number)	272429			Landfill Waste Acceptance Criteria			
Sampling Date	19/07/2024			Limits			
Sample ID	TP108			Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill	
Depth (m)	0.40						
Solid Waste Analysis							
TOC (%)**	1.4			3%	5%	6%	
Loss on Ignition (%) **	-			--	--	10%	
BTEX (µg/kg) **	< 5.0			6000	--	--	
Sum of PCBs (mg/kg) **	< 0.007			1	--	--	
Mineral Oil (mg/kg) EH, LD, CU, AL	< 10			500	--	--	
Total PAH (WAC-17) (mg/kg)	9.10			100	--	--	
pH (units)**	-			--	>6	--	
Acid Neutralisation Capacity (mmol / kg)	-			--	To be evaluated	To be evaluated	
Eluate Analysis		10:1		10:1	Limit values for compliance leaching test		
(BS EN 12457 - 2 preparation utilising end over end leaching procedure)		mg/l		mg/kg	using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *	0.00741			0.0741	0.5	2	25
Barium *	0.0659			0.659	20	100	300
Cadmium *	< 0.000100			< 0.00100	0.04	1	5
Chromium *	0.0075			0.075	0.5	10	70
Copper *	0.025			0.25	2	50	100
Mercury *	< 0.000500			< 0.00500	0.01	0.2	2
Molybdenum *	0.00361			0.0361	0.5	10	30
Nickel *	0.0019			0.019	0.4	10	40
Lead *	0.0077			0.077	0.5	10	50
Antimony *	0.012			0.12	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0.5	7
Zinc *	0.0083			0.083	4	50	200
Chloride *	11			110	800	15000	25000
Fluoride*	1.5			15	10	150	500
Sulphate *	14			140	1000	20000	50000
TDS*	100			1000	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	8.74			87.4	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	0.8						
Dry Matter (%)	84						
Moisture (%)	16						
Results are expressed on a dry weight basis, after correction for moisture content where applicable.							
Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation							
** = UKAS accredited (liquid eluate analysis only)							
** = MCERTS accredited							

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3.
This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Analytical Report Number : 24-033499

Project / Site name: The Seeam

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
272427	HP108	None Supplied	0.5	Brown loam and sand with gravel
272428	TP125	None Supplied	0.5	Brown loam and sand with gravel
272429	TP108	None Supplied	0.4	Brown loam and sand with gravel

Analytical Report Number : 24-033499
Project / Site name: The Seeam

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)	In-house method	L009B	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically (up to 30°C)	In-house method	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
PCB's By GC-MS in soil	Determination of PCB by extraction with hexane followed by GC-MS	In-house method based on USEPA 8082	L027B	D	MCERTS
Total dissolved solids 10:1 WAC	Determination of total dissolved solids in water by electrometric measurement	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L031B	W	ISO 17025
Fluoride 10:1 WAC	Determination of fluoride in leachate by 1:1ratio with a buffer solution followed by Ion Selective Electrode	In-house method based on Use of Total Ionic Strength Adjustment Buffer for Electrode Determination	L033B	W	ISO 17025
Dissolved organic carbon 10:1 WAC	Determination of dissolved organic carbon in leachate by TOC/DOC NDIR Analyser	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037B	W	NONE
Metals in leachate by ICP-OES	Determination of metals in leachate by acidification followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L039B	W	ISO 17025
Sample Preparation		In-house method	L043B	W	NONE
Speciated PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS
BTEX and/or Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS	In-house method based on USEPA 8260	L073B	W	MCERTS

Analytical Report Number : 24-033499

Project / Site name: The Seeam

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS	In-house method	L076B/L088	D/W	NONE
Monohydric phenols 10:1 WAC	Determination of phenols in leachate by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	ISO 17025
Chloride 10:1 WAC	Determination of Chloride colorimetrically by discrete analyser	In-house based on MEWAM Method ISBN 0117516260	L082B	W	ISO 17025

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30°C.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#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 e.g. EH+HS_Total or EH_CU+HS_Total

Quality control parameter failure associated with individual result applies to calculated sum of individuals.

The result for sum should be interpreted with caution



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Sample Deviation Report



Analytical Report Number : 24-033499

Project / Site name: The Seeam

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis. Please note that the associated result(s) may be unreliable and should be interpreted with care.

Key: a - No sampling date b - Incorrect container c - Holding time d - Headspace e - Temperature

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
HP108	N/A	S	272427	c	BTEX and/or Volatile organic compounds in soil	L073B	c
HP108	N/A	S	272427	c	Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	L076B/L088	c

VHE Construction plc
Whaley Road
Barug
Barnsley
S75 1HT

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

e: carl.lacey@vhe.co.uk

Analytical Report Number : 24-034845

Project / Site name:	The Seam Barnsley	Samples received on:	30/07/2024
Your job number:	159582	Samples instructed on/ Analysis started on:	08/08/2024
Your order number:		Analysis completed by:	15/08/2024
Report Issue Number:	1	Report issued on:	15/08/2024
Samples Analysed:	47 soil samples - 8 leachate samples		

Signed:



Rafał Szczepańczyk
Technical Reviewer
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number				279458	279459	279460	279461	279462
Sample Reference				TP118	TP118	HP107	HP112	HP112
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.35	0.80	0.50	0.30	0.60
Date Sampled				24/07/2024	24/07/2024	24/07/2024	25/07/2024	25/07/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status		

Stone Content	%	0.1	NONE	-	< 0.1	< 0.1	32.9	-
Moisture Content	%	0.01	NONE	-	11	11	1.5	-
Total mass of sample received	kg	0.1	NONE	-	0.7	0.7	0.6	-

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	-	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	MWI	-	MWI	MWI	MWI
Actinolite detected	Type	N/A	ISO 17025	-	-	-	-	-
Amosite detected	Type	N/A	ISO 17025	-	-	-	-	-
Anthophyllite detected	Type	N/A	ISO 17025	-	-	-	-	-
Chrysotile detected	Type	N/A	ISO 17025	-	-	-	-	-
Crocidolite detected	Type	N/A	ISO 17025	-	-	-	-	-
Tremolite detected	Type	N/A	ISO 17025	-	-	-	-	-

Asbestos Containing Material Types Detected (ACM)	Type	N/A	ISO 17025	-	-	-	-	-
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General Inorganics

pH (L099)	pH Units	N/A	MCERTS	-	-	7.7	-	-
Total Cyanide	mg/kg	1	MCERTS	-	-	< 1.0	-	-
Complex Cyanide	mg/kg	1	MCERTS	-	-	< 1.0	-	-
Free Cyanide	mg/kg	1	MCERTS	-	-	< 1.0	-	-
Thiocyanate as SCN	mg/kg	5	NONE	-	-	< 5.0	-	-
Total Sulphate as SO ₄	mg/kg	50	MCERTS	-	-	2500	-	-
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	-	-	1100	-	-
Water Soluble SO ₄ 16hr extraction (2:1)	mg/l	1.25	MCERTS	-	-	553	-	-
Total Sulphur	mg/kg	50	MCERTS	-	-	2500	-	-
Total Sulphur	%	0.005	MCERTS	-	-	0.249	-	-
Ammoniacal Nitrogen as NH ₃	mg/kg	0.5	MCERTS	-	-	< 0.5	-	-
Organic Matter (automated)	%	0.1	MCERTS	-	-	-	-	-
Calorific Value	MJ/Kg	0.12	ISO 17025	-	-	-	-	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	-	-	-	-	-
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Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number				279458	279459	279460	279461	279462
Sample Reference				TP118	TP118	HP107	HP112	HP112
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.35	0.80	0.50	0.30	0.60
Date Sampled				24/07/2024	24/07/2024	24/07/2024	25/07/2024	25/07/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status		

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	4.9	3.2	< 0.05	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	0.84	0.57	< 0.05	-
Acenaphthene	mg/kg	0.05	MCERTS	-	17	6.4	< 0.05	-
Fluorene	mg/kg	0.05	MCERTS	-	9.8	4.3	< 0.05	-
Phenanthrene	mg/kg	0.05	MCERTS	-	66	40	0.09	-
Anthracene	mg/kg	0.05	MCERTS	-	25	13	< 0.05	-
Fluoranthene	mg/kg	0.05	MCERTS	-	96	67	0.23	-
Pyrene	mg/kg	0.05	MCERTS	-	88	58	0.22	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	49	31	0.09	-
Chrysene	mg/kg	0.05	MCERTS	-	46	27	0.12	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	-	84	46	0.12	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	-	82	45	0.06	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	53	29	0.13	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	27	15	0.05	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	11	6.3	< 0.05	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	29	15	0.08	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	-	690	408	1.18	-
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Heavy Metals / Metalloids

Antimony (aqua regia extractable)	mg/kg	1	ISO 17025	-	-	6.6	-	-
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	-	29	-	-
Barium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	290	-	-
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	-	-	1.8	-	-
Boron (water soluble)	mg/kg	0.2	MCERTS	-	-	1.6	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	-	< 0.2	-	-
Chromium (hexavalent)	mg/kg	1.8	MCERTS	-	-	< 1.8	-	-
Chromium (III)	mg/kg	1	NONE	-	-	35	-	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	36	-	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	-	94	-	-
Iron (aqua regia extractable)	mg/kg	40	MCERTS	-	-	41000	-	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	-	160	-	-
Manganese (aqua regia extractable)	mg/kg	1	MCERTS	-	-	1800	-	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	-	< 0.3	-	-
Molybdenum (aqua regia extractable)	mg/kg	0.25	MCERTS	-	-	4.1	-	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	-	23	-	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	1.9	-	-
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	55	-	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	-	290	-	-

Calcium (aqua regia extractable)	mg/kg	20	ISO 17025	-	-	-	-	-
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Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number	279458	279459	279460	279461	279462
Sample Reference	TP118	TP118	HP107	HP112	HP112
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.35	0.80	0.50	0.30	0.60
Date Sampled	24/07/2024	24/07/2024	24/07/2024	25/07/2024	25/07/2024
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.01	MCERTS	-	< 0.010	< 0.010	< 0.010	-
TPHCWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.01	MCERTS	-	< 0.010	< 0.010	< 0.010	-
TPHCWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.01	MCERTS	-	< 0.010	< 0.010	< 0.010	-
TPHCWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	MCERTS	-	1.9	< 1.0	< 1.0	-
TPHCWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	-	20	5	< 2.0	-
TPHCWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	-	68	25	< 8.0	-
TPHCWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	-	640	160	34	-
TPHCWG - Aliphatic >EC35 - EC44 _{EH_CU_1D_AL}	mg/kg	8.4	NONE	-	150	85	22	-
TPHCWG - Aliphatic >EC5 - EC35 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	-	730	190	34	-
TPHCWG - Aliphatic >EC5 - EC44 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	-	880	280	57	-

TPHCWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.01	MCERTS	-	< 0.010	< 0.010	< 0.010	-
TPHCWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.01	MCERTS	-	< 0.010	< 0.010	< 0.010	-
TPHCWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.02	MCERTS	-	< 0.020	< 0.020	< 0.020	-
TPHCWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	-	1.9	< 1.0	< 1.0	-
TPHCWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	-	55	20	< 2.0	-
TPHCWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	-	410	220	< 10	-
TPHCWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	-	660	350	70	-
TPHCWG - Aromatic >EC35 - EC44 _{EH_CU_1D_AR}	mg/kg	8.4	NONE	-	120	110	73	-
TPHCWG - Aromatic >EC5 - EC35 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	-	1100	590	70	-
TPHCWG - Aromatic >EC5 - EC44 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	-	1200	700	140	-

TPH Total >EC6 - EC40 _{EH_CU+HS_1D_TOTAL}	mg/kg	10	NONE	-	-	-	-	-
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Petroleum Range Organics (EC6 - EC10) _{HS_1D_TOTAL}	mg/kg	1	ISO 17025	-	-	-	-	-
TPH (EC10 - EC25) _{EH_CU_1D_TOTAL}	mg/kg	10	MCERTS	-	-	-	-	-
TPH (EC25 - EC40) _{EH_CU_1D_TOTAL}	mg/kg	10	MCERTS	-	-	-	-	-
TPH (EC10 - EC40) _{EH_CU_1D_TOTAL}	mg/kg	10	MCERTS	-	-	-	-	-

Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number	279458	279459	279460	279461	279462
Sample Reference	TP118	TP118	HP107	HP112	HP112
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.35	0.80	0.50	0.30	0.60
Date Sampled	24/07/2024	24/07/2024	24/07/2024	25/07/2024	25/07/2024
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

VOCs

Chloromethane	µg/kg	5	ISO 17025	-	-	-	-	-
Chloroethane	µg/kg	5	NONE	-	-	-	-	-
Bromomethane	µg/kg	5	ISO 17025	-	-	-	-	-
Vinyl Chloride	µg/kg	5	NONE	-	-	-	-	-
Trichlorofluoromethane	µg/kg	5	NONE	-	-	-	-	-
1,1-Dichloroethene	µg/kg	5	NONE	-	-	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	NONE	-	-	-	-	-
Trans 1,2-dichloroethylene	µg/kg	5	NONE	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	-	< 5.0	< 5.0	< 5.0	-
1,1-Dichloroethane	µg/kg	5	ISO 17025	-	-	-	-	-
2,2-Dichloropropane	µg/kg	5	NONE	-	-	-	-	-
Chloroform	µg/kg	5	ISO 17025	-	-	-	-	-
1,1,1-Trichloroethane	µg/kg	5	ISO 17025	-	-	-	-	-
1,2-Dichloroethane	µg/kg	5	ISO 17025	-	-	-	-	-
1,1-Dichloropropene	µg/kg	5	ISO 17025	-	-	-	-	-
Cis-1,2-dichloroethene	µg/kg	5	ISO 17025	-	-	-	-	-
Benzene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	< 5.0	-
Carbontetrachloride	µg/kg	5	NONE	-	-	-	-	-
1,2-Dichloropropane	µg/kg	5	ISO 17025	-	-	-	-	-
Trichloroethene	µg/kg	5	ISO 17025	-	-	-	-	-
Dibromomethane	µg/kg	5	ISO 17025	-	-	-	-	-
Bromodichloromethane	µg/kg	5	ISO 17025	-	-	-	-	-
Cis-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-	-	-	-
Trans-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-	-	-	-
Toluene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	< 5.0	-
1,1,2-Trichloroethane	µg/kg	5	ISO 17025	-	-	-	-	-
1,3-Dichloropropane	µg/kg	5	ISO 17025	-	-	-	-	-
Dibromochloromethane	µg/kg	5	ISO 17025	-	-	-	-	-
Tetrachloroethene	µg/kg	5	NONE	-	-	-	-	-
1,2-Dibromoethane	µg/kg	5	ISO 17025	-	-	-	-	-
Chlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	5	ISO 17025	-	-	-	-	-
Ethylbenzene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	< 5.0	-
p & m-Xylene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	< 5.0	-
Styrene	µg/kg	5	ISO 17025	-	-	-	-	-
Bromoform	µg/kg	5	NONE	-	-	-	-	-
o-Xylene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	< 5.0	-
Isopropylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	5	NONE	-	-	-	-	-
Bromobenzene	µg/kg	5	NONE	-	-	-	-	-
n-Propylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
2-Chlorotoluene	µg/kg	5	ISO 17025	-	-	-	-	-
4-Chlorotoluene	µg/kg	5	ISO 17025	-	-	-	-	-
1,3,5-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
tert-Butylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
sec-Butylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
1,3-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-
p-Isopropyltoluene	µg/kg	5	ISO 17025	-	-	-	-	-
1,4-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-
1,2-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-

Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number				279458	279459	279460	279461	279462
Sample Reference				TP118	TP118	HP107	HP112	HP112
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.35	0.80	0.50	0.30	0.60
Date Sampled				24/07/2024	24/07/2024	24/07/2024	25/07/2024	25/07/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
Butylbenzene	µg/kg	5	NONE	-	-	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	5	ISO 17025	-	-	-	-	-
1,2,4-Trichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-
Hexachlorobutadiene	µg/kg	5	NONE	-	-	-	-	-
1,2,3-Trichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-

SVOCs

Aniline	mg/kg	0.1	NONE	-	-	-	-	-
Phenol	mg/kg	0.2	ISO 17025	-	-	-	-	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-	-	-	-	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	-	-	-	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	-	-	-	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	-	-	-	-
2-Methylphenol	mg/kg	0.3	MCERTS	-	-	-	-	-
Hexachloroethane	mg/kg	0.05	ISO 17025	-	-	-	-	-
Nitrobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
4-Methylphenol	mg/kg	0.2	NONE	-	-	-	-	-
Isophorone	mg/kg	0.2	MCERTS	-	-	-	-	-
2-Nitrophenol	mg/kg	0.3	NONE	-	-	-	-	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	-	-	-	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	-	-	-	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	-	-	-	-
4-Chloroaniline	mg/kg	0.1	NONE	-	-	-	-	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	-	-	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-	-	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	-	-	-	-	-
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	-	-	-	-	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-	-	-	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	-	-	-	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-	-	-	-	-
2,6-Dinitrotoluene	mg/kg	0.1	NONE	-	-	-	-	-
2,4-Dinitrotoluene	mg/kg	0.2	NONE	-	-	-	-	-
Dibenzofuran	mg/kg	0.2	MCERTS	-	-	-	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	MCERTS	-	-	-	-	-
Diethyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-	-
4-Nitroaniline	mg/kg	0.2	NONE	-	-	-	-	-
Azobenzene	mg/kg	0.3	NONE	-	-	-	-	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	-	-	-	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Carbazole	mg/kg	0.3	MCERTS	-	-	-	-	-
Dibutyl phthalate	mg/kg	0.2	NONE	-	-	-	-	-
Anthraquinone	mg/kg	0.3	NONE	-	-	-	-	-
Butyl benzyl phthalate	mg/kg	0.3	NONE	-	-	-	-	-

Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number				279458	279459	279460	279461	279462
Sample Reference				TP118	TP118	HP107	HP112	HP112
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.35	0.80	0.50	0.30	0.60
Date Sampled				24/07/2024	24/07/2024	24/07/2024	25/07/2024	25/07/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status		

PCBs by GC-MS

PCB Congener 28	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 52	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 101	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 118	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 138	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 153	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 180	mg/kg	0.001	MCERTS	-	-	-	-	-
Total PCBs	mg/kg	0.007	MCERTS	-	-	-	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number				279463	279464	279465	279466	279467
Sample Reference				HP101	TP117	TP115	TP115	TP114
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.60	0.80	0.80	1.80	0.45
Date Sampled				25/07/2024	25/07/2024	25/07/2024	25/07/2024	25/07/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status		

Stone Content	%	0.1	NONE	-	59.4	71.5	-	-
Moisture Content	%	0.01	NONE	-	8.3	4.6	-	-
Total mass of sample received	kg	0.1	NONE	-	1	0.9	-	-

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	MWI	MWI	MWI	MWI	MWI
Actinolite detected	Type	N/A	ISO 17025	-	-	-	-	-
Amosite detected	Type	N/A	ISO 17025	-	-	-	-	-
Anthophyllite detected	Type	N/A	ISO 17025	-	-	-	-	-
Chrysotile detected	Type	N/A	ISO 17025	-	-	-	-	-
Crocidolite detected	Type	N/A	ISO 17025	-	-	-	-	-
Tremolite detected	Type	N/A	ISO 17025	-	-	-	-	-

Asbestos Containing Material Types Detected (ACM)	Type	N/A	ISO 17025	-	-	-	-	-
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General Inorganics

pH (L099)	pH Units	N/A	MCERTS	-	8	7.2	-	-
Total Cyanide	mg/kg	1	MCERTS	-	< 1.0	< 1.0	-	-
Complex Cyanide	mg/kg	1	MCERTS	-	< 1.0	< 1.0	-	-
Free Cyanide	mg/kg	1	MCERTS	-	< 1.0	< 1.0	-	-
Thiocyanate as SCN	mg/kg	5	NONE	-	< 5.0	< 5.0	-	-
Total Sulphate as SO ₄	mg/kg	50	MCERTS	-	12000	9100	-	-
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	-	4000	6500	-	-
Water Soluble SO ₄ 16hr extraction (2:1)	mg/l	1.25	MCERTS	-	1980	3250	-	-
Total Sulphur	mg/kg	50	MCERTS	-	4800	3700	-	-
Total Sulphur	%	0.005	MCERTS	-	0.48	0.373	-	-
Ammoniacal Nitrogen as NH ₃	mg/kg	0.5	MCERTS	-	1.3	< 0.5	-	-
Organic Matter (automated)	%	0.1	MCERTS	-	9.5	6.8	-	-
Calorific Value	MJ/Kg	0.12	ISO 17025	-	-	-	-	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	-	< 1.0	< 1.0	-	-
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Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number				279463	279464	279465	279466	279467
Sample Reference				HP101	TP117	TP115	TP115	TP114
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.60	0.80	0.80	1.80	0.45
Date Sampled				25/07/2024	25/07/2024	25/07/2024	25/07/2024	25/07/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status		

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	3.7	1.4	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	2.2	0.7	-	-
Acenaphthene	mg/kg	0.05	MCERTS	-	24	2.5	-	-
Fluorene	mg/kg	0.05	MCERTS	-	24	2.2	-	-
Phenanthrene	mg/kg	0.05	MCERTS	-	130	28	-	-
Anthracene	mg/kg	0.05	MCERTS	-	67	10	-	-
Fluoranthene	mg/kg	0.05	MCERTS	-	150	69	-	-
Pyrene	mg/kg	0.05	MCERTS	-	150	64	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	110	36	-	-
Chrysene	mg/kg	0.05	MCERTS	-	95	36	-	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	-	160	64	-	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	-	160	62	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	100	41	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	56	22	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	20	8.5	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	54	23	-	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	-	1300	471	-	-
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Heavy Metals / Metalloids

Antimony (aqua regia extractable)	mg/kg	1	ISO 17025	-	4.2	4.9	-	-
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	26	27	-	-
Barium (aqua regia extractable)	mg/kg	1	MCERTS	-	200	210	-	-
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	-	1.8	1.8	-	-
Boron (water soluble)	mg/kg	0.2	MCERTS	-	2.6	2.5	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	< 0.2	< 0.2	-	-
Chromium (hexavalent)	mg/kg	1.8	MCERTS	-	< 1.8	< 1.8	-	-
Chromium (III)	mg/kg	1	NONE	-	22	28	-	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	22	28	-	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	94	100	-	-
Iron (aqua regia extractable)	mg/kg	40	MCERTS	-	35000	43000	-	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	110	110	-	-
Manganese (aqua regia extractable)	mg/kg	1	MCERTS	-	2000	1600	-	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	< 0.3	< 0.3	-	-
Molybdenum (aqua regia extractable)	mg/kg	0.25	MCERTS	-	2.7	3	-	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	15	19	-	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	2.4	1.6	-	-
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	-	47	56	-	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	81	92	-	-
Calcium (aqua regia extractable)	mg/kg	20	ISO 17025	-	-	-	-	-

Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number				279463	279464	279465	279466	279467
Sample Reference				HP101	TP117	TP115	TP115	TP114
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.60	0.80	0.80	1.80	0.45
Date Sampled				25/07/2024	25/07/2024	25/07/2024	25/07/2024	25/07/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status		

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.01	MCERTS	-	< 0.010	< 0.010	-	-
TPHCWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.01	MCERTS	-	< 0.010	< 0.010	-	-
TPHCWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.01	MCERTS	-	< 0.010	< 0.010	-	-
TPHCWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	MCERTS	-	3.3	< 1.0	-	-
TPHCWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	-	15	6.1	-	-
TPHCWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	-	34	13	-	-
TPHCWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	-	180	71	-	-
TPHCWG - Aliphatic >EC35 - EC44 _{EH_CU_1D_AL}	mg/kg	8.4	NONE	-	60	34	-	-
TPHCWG - Aliphatic >EC5 - EC35 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	-	230	90	-	-
TPHCWG - Aliphatic >EC5 - EC44 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	-	290	120	-	-

TPHCWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.01	MCERTS	-	< 0.010	< 0.010	-	-
TPHCWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.01	MCERTS	-	< 0.010	< 0.010	-	-
TPHCWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.02	MCERTS	-	< 0.020	< 0.020	-	-
TPHCWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	-	4.2	< 1.0	-	-
TPHCWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	-	85	16	-	-
TPHCWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	-	630	230	-	-
TPHCWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	-	790	420	-	-
TPHCWG - Aromatic >EC35 - EC44 _{EH_CU_1D_AR}	mg/kg	8.4	NONE	-	110	68	-	-
TPHCWG - Aromatic >EC5 - EC35 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	-	1500	660	-	-
TPHCWG - Aromatic >EC5 - EC44 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	-	1600	730	-	-

TPH Total >EC6 - EC40 _{EH_CU+HS_1D_TOTAL}	mg/kg	10	NONE	-	-	-	-	-
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Petroleum Range Organics (EC6 - EC10) _{HS_1D_TOTAL}	mg/kg	1	ISO 17025	-	-	-	-	-
TPH (EC10 - EC25) _{EH_CU_1D_TOTAL}	mg/kg	10	MCERTS	-	-	-	-	-
TPH (EC25 - EC40) _{EH_CU_1D_TOTAL}	mg/kg	10	MCERTS	-	-	-	-	-
TPH (EC10 - EC40) _{EH_CU_1D_TOTAL}	mg/kg	10	MCERTS	-	-	-	-	-

Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number	279463	279464	279465	279466	279467
Sample Reference	HP101	TP117	TP115	TP115	TP114
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.60	0.80	0.80	1.80	0.45
Date Sampled	25/07/2024	25/07/2024	25/07/2024	25/07/2024	25/07/2024
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

VOCs

Chloromethane	µg/kg	5	ISO 17025	-	-	-	-	-
Chloroethane	µg/kg	5	NONE	-	-	-	-	-
Bromomethane	µg/kg	5	ISO 17025	-	-	-	-	-
Vinyl Chloride	µg/kg	5	NONE	-	-	-	-	-
Trichlorofluoromethane	µg/kg	5	NONE	-	-	-	-	-
1,1-Dichloroethene	µg/kg	5	NONE	-	-	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	NONE	-	-	-	-	-
Trans 1,2-dichloroethylene	µg/kg	5	NONE	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	-	< 5.0	< 5.0	-	-
1,1-Dichloroethane	µg/kg	5	ISO 17025	-	-	-	-	-
2,2-Dichloropropane	µg/kg	5	NONE	-	-	-	-	-
Chloroform	µg/kg	5	ISO 17025	-	-	-	-	-
1,1,1-Trichloroethane	µg/kg	5	ISO 17025	-	-	-	-	-
1,2-Dichloroethane	µg/kg	5	ISO 17025	-	-	-	-	-
1,1-Dichloropropene	µg/kg	5	ISO 17025	-	-	-	-	-
Cis-1,2-dichloroethene	µg/kg	5	ISO 17025	-	-	-	-	-
Benzene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	-	-
Carbontetrachloride	µg/kg	5	NONE	-	-	-	-	-
1,2-Dichloropropane	µg/kg	5	ISO 17025	-	-	-	-	-
Trichloroethene	µg/kg	5	ISO 17025	-	-	-	-	-
Dibromomethane	µg/kg	5	ISO 17025	-	-	-	-	-
Bromodichloromethane	µg/kg	5	ISO 17025	-	-	-	-	-
Cis-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-	-	-	-
Trans-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-	-	-	-
Toluene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	-	-
1,1,2-Trichloroethane	µg/kg	5	ISO 17025	-	-	-	-	-
1,3-Dichloropropane	µg/kg	5	ISO 17025	-	-	-	-	-
Dibromochloromethane	µg/kg	5	ISO 17025	-	-	-	-	-
Tetrachloroethene	µg/kg	5	NONE	-	-	-	-	-
1,2-Dibromoethane	µg/kg	5	ISO 17025	-	-	-	-	-
Chlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	5	ISO 17025	-	-	-	-	-
Ethylbenzene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	-	-
p & m-Xylene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	-	-
Styrene	µg/kg	5	ISO 17025	-	-	-	-	-
Bromoform	µg/kg	5	NONE	-	-	-	-	-
o-Xylene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	-	-
Isopropylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	5	NONE	-	-	-	-	-
Bromobenzene	µg/kg	5	NONE	-	-	-	-	-
n-Propylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
2-Chlorotoluene	µg/kg	5	ISO 17025	-	-	-	-	-
4-Chlorotoluene	µg/kg	5	ISO 17025	-	-	-	-	-
1,3,5-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
tert-Butylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
sec-Butylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
1,3-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-
p-Isopropyltoluene	µg/kg	5	ISO 17025	-	-	-	-	-
1,4-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-
1,2-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-

Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number				279463	279464	279465	279466	279467
Sample Reference				HP101	TP117	TP115	TP115	TP114
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.60	0.80	0.80	1.80	0.45
Date Sampled				25/07/2024	25/07/2024	25/07/2024	25/07/2024	25/07/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
Butylbenzene	µg/kg	5	NONE	-	-	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	5	ISO 17025	-	-	-	-	-
1,2,4-Trichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-
Hexachlorobutadiene	µg/kg	5	NONE	-	-	-	-	-
1,2,3-Trichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-

SVOCs

Aniline	mg/kg	0.1	NONE	-	-	-	-	-
Phenol	mg/kg	0.2	ISO 17025	-	-	-	-	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-	-	-	-	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	-	-	-	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	-	-	-	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	-	-	-	-
2-Methylphenol	mg/kg	0.3	MCERTS	-	-	-	-	-
Hexachloroethane	mg/kg	0.05	ISO 17025	-	-	-	-	-
Nitrobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
4-Methylphenol	mg/kg	0.2	NONE	-	-	-	-	-
Isophorone	mg/kg	0.2	MCERTS	-	-	-	-	-
2-Nitrophenol	mg/kg	0.3	NONE	-	-	-	-	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	-	-	-	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	-	-	-	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	-	-	-	-
4-Chloroaniline	mg/kg	0.1	NONE	-	-	-	-	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	-	-	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-	-	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	-	-	-	-	-
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	-	-	-	-	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-	-	-	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	-	-	-	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-	-	-	-	-
2,6-Dinitrotoluene	mg/kg	0.1	NONE	-	-	-	-	-
2,4-Dinitrotoluene	mg/kg	0.2	NONE	-	-	-	-	-
Dibenzofuran	mg/kg	0.2	MCERTS	-	-	-	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	MCERTS	-	-	-	-	-
Diethyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-	-
4-Nitroaniline	mg/kg	0.2	NONE	-	-	-	-	-
Azobenzene	mg/kg	0.3	NONE	-	-	-	-	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	-	-	-	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Carbazole	mg/kg	0.3	MCERTS	-	-	-	-	-
Dibutyl phthalate	mg/kg	0.2	NONE	-	-	-	-	-
Anthraquinone	mg/kg	0.3	NONE	-	-	-	-	-
Butyl benzyl phthalate	mg/kg	0.3	NONE	-	-	-	-	-

Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number				279463	279464	279465	279466	279467
Sample Reference				HP101	TP117	TP115	TP115	TP114
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.60	0.80	0.80	1.80	0.45
Date Sampled				25/07/2024	25/07/2024	25/07/2024	25/07/2024	25/07/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status		

PCBs by GC-MS

PCB Congener 28	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 52	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 101	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 118	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 138	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 153	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 180	mg/kg	0.001	MCERTS	-	-	-	-	-
Total PCBs	mg/kg	0.007	MCERTS	-	-	-	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number				279468	279469	279470	279471	279472
Sample Reference				TP114	HP106	TP112	TP112	TP112
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.90	0.05	0.20	0.60	1.10
Date Sampled				25/07/2024	25/07/2024	26/04/2024	26/04/2024	26/04/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status		

Stone Content	%	0.1	NONE	90.5	-	-	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	4.4	-	-	11	33
Total mass of sample received	kg	0.1	NONE	0.5	-	-	0.6	0.7

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	-	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	MWI	MUA	MUA	-	MUA
Actinolite detected	Type	N/A	ISO 17025	-	-	-	-	-
Amosite detected	Type	N/A	ISO 17025	-	-	-	-	-
Anthophyllite detected	Type	N/A	ISO 17025	-	-	-	-	-
Chrysotile detected	Type	N/A	ISO 17025	-	-	-	-	-
Crocidolite detected	Type	N/A	ISO 17025	-	-	-	-	-
Tremolite detected	Type	N/A	ISO 17025	-	-	-	-	-

Asbestos Containing Material Types Detected (ACM)	Type	N/A	ISO 17025	-	-	-	-	-
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General Inorganics

pH (L099)	pH Units	N/A	MCERTS	9.7	-	-	-	7.3
Total Cyanide	mg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
Complex Cyanide	mg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
Free Cyanide	mg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
Thiocyanate as SCN	mg/kg	5	NONE	< 5.0	-	-	-	< 5.0
Total Sulphate as SO ₄	mg/kg	50	MCERTS	7100	-	-	-	2900
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	6700	-	-	-	1600
Water Soluble SO ₄ 16hr extraction (2:1)	mg/l	1.25	MCERTS	3340	-	-	-	801
Total Sulphur	mg/kg	50	MCERTS	4700	-	-	-	1800
Total Sulphur	%	0.005	MCERTS	0.467	-	-	-	0.183
Ammoniacal Nitrogen as NH ₃	mg/kg	0.5	MCERTS	< 0.5	-	-	-	< 0.5
Organic Matter (automated)	%	0.1	MCERTS	6	-	-	-	10
Calorific Value	MJ/Kg	0.12	ISO 17025	-	-	-	-	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	-	-	-	-	-
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Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number				279468	279469	279470	279471	279472
Sample Reference				TP114	HP106	TP112	TP112	TP112
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.90	0.05	0.20	0.60	1.10
Date Sampled				25/07/2024	25/07/2024	26/04/2024	26/04/2024	26/04/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status		

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	73	-	-	2	1.1
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	-	-	0.45	0.13
Acenaphthene	mg/kg	0.05	MCERTS	130	-	-	3.8	2
Fluorene	mg/kg	0.05	MCERTS	110	-	-	3.2	2.1
Phenanthrene	mg/kg	0.05	MCERTS	410	-	-	24	19
Anthracene	mg/kg	0.05	MCERTS	130	-	-	7.4	5.9
Fluoranthene	mg/kg	0.05	MCERTS	290	-	-	50	26
Pyrene	mg/kg	0.05	MCERTS	250	-	-	47	22
Benzo(a)anthracene	mg/kg	0.05	MCERTS	95	-	-	25	10
Chrysene	mg/kg	0.05	MCERTS	110	-	-	25	9
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	110	-	-	31	9.3
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	43	-	-	14	4.9
Benzo(a)pyrene	mg/kg	0.05	MCERTS	91	-	-	27	8.9
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	44	-	-	14	4.5
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	6.8	-	-	< 0.05	1
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	49	-	-	15	5.2

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	1930	-	-	288	130
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Heavy Metals / Metalloids

Antimony (aqua regia extractable)	mg/kg	1	ISO 17025	< 1.0	-	-	-	6.4
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	12	-	-	-	78
Barium (aqua regia extractable)	mg/kg	1	MCERTS	390	-	-	-	120
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	9	-	-	-	2.8
Boron (water soluble)	mg/kg	0.2	MCERTS	7.5	-	-	-	3.6
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	-	-	-	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	-	-	-	< 1.8
Chromium (III)	mg/kg	1	NONE	20	-	-	-	22
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	20	-	-	-	23
Copper (aqua regia extractable)	mg/kg	1	MCERTS	23	-	-	-	210
Iron (aqua regia extractable)	mg/kg	40	MCERTS	18000	-	-	-	83000
Lead (aqua regia extractable)	mg/kg	1	MCERTS	38	-	-	-	78
Manganese (aqua regia extractable)	mg/kg	1	MCERTS	3200	-	-	-	790
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	-	-	-	< 0.3
Molybdenum (aqua regia extractable)	mg/kg	0.25	MCERTS	0.94	-	-	-	13
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	5.4	-	-	-	49
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	3.4	-	-	-	2
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	41	-	-	-	71
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	18	-	-	-	99

Calcium (aqua regia extractable)	mg/kg	20	ISO 17025	-	-	-	-	-
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Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number				279468	279469	279470	279471	279472
Sample Reference				TP114	HP106	TP112	TP112	TP112
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.90	0.05	0.20	0.60	1.10
Date Sampled				25/07/2024	25/07/2024	26/04/2024	26/04/2024	26/04/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status		

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010	-	-	< 0.010	< 0.010
TPHCWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010	-	-	< 0.010	< 0.010
TPHCWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010	-	-	< 0.010	< 0.010
TPHCWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	MCERTS	< 1.0	-	-	< 1.0	< 1.0
TPHCWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	8.6	-	-	5	< 2.0
TPHCWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	25	-	-	25	< 8.0
TPHCWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	51	-	-	160	< 8.0
TPHCWG - Aliphatic >EC35 - EC44 _{EH_CU_1D_AL}	mg/kg	8.4	NONE	15	-	-	66	< 8.4
TPHCWG - Aliphatic >EC5 - EC35 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	84	-	-	190	< 10
TPHCWG - Aliphatic >EC5 - EC44 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	99	-	-	250	< 10

TPHCWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.01	MCERTS	< 0.010	-	-	< 0.010	< 0.010
TPHCWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.01	MCERTS	< 0.010	-	-	< 0.010	< 0.010
TPHCWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.02	MCERTS	< 0.020	-	-	< 0.020	< 0.020
TPHCWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	62	-	-	1.5	1.7
TPHCWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	710	-	-	20	24
TPHCWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	1900	-	-	150	150
TPHCWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	1800	-	-	330	190
TPHCWG - Aromatic >EC35 - EC44 _{EH_CU_1D_AR}	mg/kg	8.4	NONE	510	-	-	110	72
TPHCWG - Aromatic >EC5 - EC35 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	4500	-	-	500	360
TPHCWG - Aromatic >EC5 - EC44 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	5000	-	-	600	440

TPH Total >EC6 - EC40 _{EH_CU+HS_1D_TOTAL}	mg/kg	10	NONE	4900	-	-	-	400
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Petroleum Range Organics (EC6 - EC10) _{HS_1D_TOTAL}	mg/kg	1	ISO 17025	< 1.0	-	-	-	< 1.0
TPH (EC10 - EC25) _{EH_CU_1D_TOTAL}	mg/kg	10	MCERTS	3400	-	-	-	240
TPH (EC25 - EC40) _{EH_CU_1D_TOTAL}	mg/kg	10	MCERTS	1500	-	-	-	170
TPH (EC10 - EC40) _{EH_CU_1D_TOTAL}	mg/kg	10	MCERTS	4900	-	-	-	400

Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number	279468	279469	279470	279471	279472
Sample Reference	TP114	HP106	TP112	TP112	TP112
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.90	0.05	0.20	0.60	1.10
Date Sampled	25/07/2024	25/07/2024	26/04/2024	26/04/2024	26/04/2024
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

VOCs

Chloromethane	µg/kg	5	ISO 17025	< 5.0	-	-	-	< 5.0
Chloroethane	µg/kg	5	NONE	< 5.0	-	-	-	< 5.0
Bromomethane	µg/kg	5	ISO 17025	< 5.0	-	-	-	< 5.0
Vinyl Chloride	µg/kg	5	NONE	< 5.0	-	-	-	< 5.0
Trichlorofluoromethane	µg/kg	5	NONE	< 5.0	-	-	-	< 5.0
1,1-Dichloroethene	µg/kg	5	NONE	< 5.0	-	-	-	< 5.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	NONE	< 5.0	-	-	-	< 5.0
Trans 1,2-dichloroethylene	µg/kg	5	NONE	< 5.0	-	-	-	< 5.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	-	-	< 5.0	< 5.0
1,1-Dichloroethane	µg/kg	5	ISO 17025	< 5.0	-	-	-	< 5.0
2,2-Dichloropropane	µg/kg	5	NONE	< 5.0	-	-	-	< 5.0
Chloroform	µg/kg	5	ISO 17025	< 5.0	-	-	-	< 5.0
1,1,1-Trichloroethane	µg/kg	5	ISO 17025	< 5.0	-	-	-	< 5.0
1,2-Dichloroethane	µg/kg	5	ISO 17025	< 5.0	-	-	-	< 5.0
1,1-Dichloropropene	µg/kg	5	ISO 17025	< 5.0	-	-	-	< 5.0
Cis-1,2-dichloroethene	µg/kg	5	ISO 17025	< 5.0	-	-	-	< 5.0
Benzene	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	< 5.0
Carbontetrachloride	µg/kg	5	NONE	< 5.0	-	-	-	< 5.0
1,2-Dichloropropane	µg/kg	5	ISO 17025	< 5.0	-	-	-	< 5.0
Trichloroethene	µg/kg	5	ISO 17025	< 5.0	-	-	-	< 5.0
Dibromomethane	µg/kg	5	ISO 17025	< 5.0	-	-	-	< 5.0
Bromodichloromethane	µg/kg	5	ISO 17025	< 5.0	-	-	-	< 5.0
Cis-1,3-dichloropropene	µg/kg	5	ISO 17025	< 5.0	-	-	-	< 5.0
Trans-1,3-dichloropropene	µg/kg	5	ISO 17025	< 5.0	-	-	-	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	< 5.0
1,1,2-Trichloroethane	µg/kg	5	ISO 17025	< 5.0	-	-	-	< 5.0
1,3-Dichloropropane	µg/kg	5	ISO 17025	< 5.0	-	-	-	< 5.0
Dibromochloromethane	µg/kg	5	ISO 17025	< 5.0	-	-	-	< 5.0
Tetrachloroethene	µg/kg	5	NONE	< 5.0	-	-	-	< 5.0
1,2-Dibromoethane	µg/kg	5	ISO 17025	< 5.0	-	-	-	< 5.0
Chlorobenzene	µg/kg	5	ISO 17025	< 5.0	-	-	-	< 5.0
1,1,1,2-Tetrachloroethane	µg/kg	5	ISO 17025	< 5.0	-	-	-	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	< 5.0
p & m-Xylene	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	< 5.0
Styrene	µg/kg	5	ISO 17025	< 5.0	-	-	-	< 5.0
Bromoform	µg/kg	5	NONE	< 5.0	-	-	-	< 5.0
o-Xylene	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	< 5.0
Isopropylbenzene	µg/kg	5	ISO 17025	< 5.0	-	-	-	< 5.0
1,1,2,2-Tetrachloroethane	µg/kg	5	NONE	< 5.0	-	-	-	< 5.0
Bromobenzene	µg/kg	5	NONE	< 5.0	-	-	-	< 5.0
n-Propylbenzene	µg/kg	5	ISO 17025	< 5.0	-	-	-	< 5.0
2-Chlorotoluene	µg/kg	5	ISO 17025	< 5.0	-	-	-	< 5.0
4-Chlorotoluene	µg/kg	5	ISO 17025	< 5.0	-	-	-	< 5.0
1,3,5-Trimethylbenzene	µg/kg	5	ISO 17025	< 5.0	-	-	-	< 5.0
tert-Butylbenzene	µg/kg	5	ISO 17025	< 5.0	-	-	-	< 5.0
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	< 5.0	-	-	-	< 5.0
sec-Butylbenzene	µg/kg	5	ISO 17025	< 5.0	-	-	-	< 5.0
1,3-Dichlorobenzene	µg/kg	5	ISO 17025	< 5.0	-	-	-	< 5.0
p-Isopropyltoluene	µg/kg	5	ISO 17025	< 5.0	-	-	-	< 5.0
1,4-Dichlorobenzene	µg/kg	5	ISO 17025	< 5.0	-	-	-	< 5.0
1,2-Dichlorobenzene	µg/kg	5	ISO 17025	< 5.0	-	-	-	< 5.0

Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number				279468	279469	279470	279471	279472
Sample Reference				TP114	HP106	TP112	TP112	TP112
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.90	0.05	0.20	0.60	1.10
Date Sampled				25/07/2024	25/07/2024	26/04/2024	26/04/2024	26/04/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
Butylbenzene	µg/kg	5	NONE	< 5.0	-	-	-	< 5.0
1,2-Dibromo-3-chloropropane	µg/kg	5	ISO 17025	< 5.0	-	-	-	< 5.0
1,2,4-Trichlorobenzene	µg/kg	5	ISO 17025	< 5.0	-	-	-	< 5.0
Hexachlorobutadiene	µg/kg	5	NONE	< 5.0	-	-	-	< 5.0
1,2,3-Trichlorobenzene	µg/kg	5	ISO 17025	< 5.0	-	-	-	< 5.0

SVOCs

Aniline	mg/kg	0.1	NONE	< 0.1	-	-	-	< 0.1
Phenol	mg/kg	0.2	ISO 17025	< 0.2	-	-	-	< 0.2
2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1	-	-	-	< 0.1
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	< 0.2	-	-	-	< 0.2
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	-	-	-	< 0.2
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1	-	-	-	< 0.1
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	-	-	-	< 0.2
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1	-	-	-	< 0.1
2-Methylphenol	mg/kg	0.3	MCERTS	< 0.3	-	-	-	< 0.3
Hexachloroethane	mg/kg	0.05	ISO 17025	< 0.05	-	-	-	< 0.05
Nitrobenzene	mg/kg	0.3	MCERTS	< 0.3	-	-	-	< 0.3
4-Methylphenol	mg/kg	0.2	NONE	< 0.2	-	-	-	< 0.2
Isophorone	mg/kg	0.2	MCERTS	< 0.2	-	-	-	< 0.2
2-Nitrophenol	mg/kg	0.3	NONE	< 0.3	-	-	-	< 0.3
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	< 0.3	-	-	-	< 0.3
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	< 0.3	-	-	-	< 0.3
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	< 0.3	-	-	-	< 0.3
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	< 0.3	-	-	-	< 0.3
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	-	-	-	< 0.1
Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1	-	-	-	< 0.1
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	-	-	-	< 0.1
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	< 0.1	-	-	-	< 0.1
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	< 0.2	-	-	-	< 0.2
2-Methylnaphthalene	mg/kg	0.1	NONE	53	-	-	-	0.8
2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1	-	-	-	< 0.1
Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1	-	-	-	< 0.1
2,6-Dinitrotoluene	mg/kg	0.1	NONE	< 0.1	-	-	-	< 0.1
2,4-Dinitrotoluene	mg/kg	0.2	NONE	< 0.2	-	-	-	< 0.2
Dibenzofuran	mg/kg	0.2	MCERTS	95	-	-	-	1.5
4-Chlorophenyl phenyl ether	mg/kg	0.3	MCERTS	< 0.3	-	-	-	< 0.3
Diethyl phthalate	mg/kg	0.2	MCERTS	< 0.2	-	-	-	< 0.2
4-Nitroaniline	mg/kg	0.2	NONE	< 0.2	-	-	-	< 0.2
Azobenzene	mg/kg	0.3	NONE	< 0.3	-	-	-	< 0.3
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0.2	-	-	-	< 0.2
Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0.30	-	-	-	< 0.30
Carbazole	mg/kg	0.3	MCERTS	44	-	-	-	1.4
Dibutyl phthalate	mg/kg	0.2	NONE	< 0.2	-	-	-	< 0.2
Anthraquinone	mg/kg	0.3	NONE	13	-	-	-	0.9
Butyl benzyl phthalate	mg/kg	0.3	NONE	< 0.3	-	-	-	< 0.3

Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number				279468	279469	279470	279471	279472
Sample Reference				TP114	HP106	TP112	TP112	TP112
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.90	0.05	0.20	0.60	1.10
Date Sampled				25/07/2024	25/07/2024	26/04/2024	26/04/2024	26/04/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status		

PCBs by GC-MS

PCB Congener 28	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 52	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 101	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 118	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 138	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 153	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 180	mg/kg	0.001	MCERTS	-	-	-	-	-
Total PCBs	mg/kg	0.007	MCERTS	-	-	-	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number				279473	279474	279475	279476	279477
Sample Reference				TP112	TP113	TP113	TP113	TP113
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.10	0.20	0.70	1.20	2.20
Date Sampled				26/04/2024	26/04/2024	26/04/2024	26/04/2024	26/04/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status		

Stone Content	%	0.1	NONE	< 0.1	-	< 0.1	-	< 0.1
Moisture Content	%	0.01	NONE	9.2	-	13	-	11
Total mass of sample received	kg	0.1	NONE	0.6	-	0.9	-	0.9

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	-	Not-detected	Not-detected	Not-detected	-
Asbestos Analyst ID	N/A	N/A	N/A	-	MUA	MUA	MUA	-
Actinolite detected	Type	N/A	ISO 17025	-	-	-	-	-
Amosite detected	Type	N/A	ISO 17025	-	-	-	-	-
Anthophyllite detected	Type	N/A	ISO 17025	-	-	-	-	-
Chrysotile detected	Type	N/A	ISO 17025	-	-	-	-	-
Crocidolite detected	Type	N/A	ISO 17025	-	-	-	-	-
Tremolite detected	Type	N/A	ISO 17025	-	-	-	-	-

Asbestos Containing Material Types Detected (ACM)	Type	N/A	ISO 17025	-	-	-	-	-
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General Inorganics

pH (L099)	pH Units	N/A	MCERTS	-	-	7.8	-	-
Total Cyanide	mg/kg	1	MCERTS	-	-	< 1.0	-	-
Complex Cyanide	mg/kg	1	MCERTS	-	-	< 1.0	-	-
Free Cyanide	mg/kg	1	MCERTS	-	-	< 1.0	-	-
Thiocyanate as SCN	mg/kg	5	NONE	-	-	< 5.0	-	-
Total Sulphate as SO ₄	mg/kg	50	MCERTS	-	-	13000	-	-
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	-	-	4300	-	-
Water Soluble SO ₄ 16hr extraction (2:1)	mg/l	1.25	MCERTS	-	-	2170	-	-
Total Sulphur	mg/kg	50	MCERTS	-	-	5400	-	-
Total Sulphur	%	0.005	MCERTS	-	-	0.545	-	-
Ammoniacal Nitrogen as NH ₃	mg/kg	0.5	MCERTS	-	-	< 0.5	-	-
Organic Matter (automated)	%	0.1	MCERTS	-	-	9.8	-	-
Calorific Value	MJ/Kg	0.12	ISO 17025	-	-	6.92	-	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	-	-	< 1.0	-	-
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Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number				279473	279474	279475	279476	279477
Sample Reference				TP112	TP113	TP113	TP113	TP113
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.10	0.20	0.70	1.20	2.20
Date Sampled				26/04/2024	26/04/2024	26/04/2024	26/04/2024	26/04/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status		

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.23	-	2.3	-	0.81
Acenaphthylene	mg/kg	0.05	MCERTS	0.08	-	0.42	-	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	0.84	-	4.4	-	0.29
Fluorene	mg/kg	0.05	MCERTS	0.63	-	3.2	-	0.27
Phenanthrene	mg/kg	0.05	MCERTS	7	-	26	-	1.9
Anthracene	mg/kg	0.05	MCERTS	2	-	7.9	-	0.41
Fluoranthene	mg/kg	0.05	MCERTS	15	-	45	-	1.6
Pyrene	mg/kg	0.05	MCERTS	15	-	41	-	1.4
Benzo(a)anthracene	mg/kg	0.05	MCERTS	6.4	-	25	-	0.83
Chrysene	mg/kg	0.05	MCERTS	7.2	-	21	-	0.9
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	7.8	-	29	-	0.81
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	3.6	-	11	-	0.31
Benzo(a)pyrene	mg/kg	0.05	MCERTS	6.7	-	26	-	0.6
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	3.5	-	14	-	0.35
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	-	3.2	-	0.15
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	3.7	-	17	-	0.44

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	79.7	-	277	-	11
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Heavy Metals / Metalloids

Antimony (aqua regia extractable)	mg/kg	1	ISO 17025	-	-	6.4	-	-
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	-	41	-	-
Barium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	270	-	-
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	-	-	1.7	-	-
Boron (water soluble)	mg/kg	0.2	MCERTS	-	-	2.5	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	-	< 0.2	-	-
Chromium (hexavalent)	mg/kg	1.8	MCERTS	-	-	< 1.8	-	-
Chromium (III)	mg/kg	1	NONE	-	-	23	-	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	23	-	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	-	220	-	-
Iron (aqua regia extractable)	mg/kg	40	MCERTS	-	-	49000	-	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	-	200	-	-
Manganese (aqua regia extractable)	mg/kg	1	MCERTS	-	-	1400	-	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	-	< 0.3	-	-
Molybdenum (aqua regia extractable)	mg/kg	0.25	MCERTS	-	-	4.6	-	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	-	24	-	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	2.1	-	-
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	46	-	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	-	150	-	-

Calcium (aqua regia extractable)	mg/kg	20	ISO 17025	-	-	-	-	-
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Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number				279473	279474	279475	279476	279477
Sample Reference				TP112	TP113	TP113	TP113	TP113
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.10	0.20	0.70	1.20	2.20
Date Sampled				26/04/2024	26/04/2024	26/04/2024	26/04/2024	26/04/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status		

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010	-	< 0.010	-	< 0.010
TPHCWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010	-	< 0.010	-	< 0.010
TPHCWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010	-	< 0.010	-	< 0.010
TPHCWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	MCERTS	< 1.0	-	< 1.0	-	1.1
TPHCWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	< 2.0	-	4.3	-	4.2
TPHCWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	< 8.0	-	< 8.0	-	< 8.0
TPHCWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	< 8.0	-	91	-	< 8.0
TPHCWG - Aliphatic >EC35 - EC44 _{EH_CU_1D_AL}	mg/kg	8.4	NONE	< 8.4	-	52	-	< 8.4
TPHCWG - Aliphatic >EC5 - EC35 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	< 10	-	96	-	< 10
TPHCWG - Aliphatic >EC5 - EC44 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	< 10	-	150	-	< 10

TPHCWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.01	MCERTS	< 0.010	-	< 0.010	-	< 0.010
TPHCWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.01	MCERTS	< 0.010	-	< 0.010	-	< 0.010
TPHCWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.02	MCERTS	< 0.020	-	< 0.020	-	< 0.020
TPHCWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	< 1.0	-	< 1.0	-	< 1.0
TPHCWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	6.2	-	14	-	< 2.0
TPHCWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	57	-	140	-	< 10
TPHCWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	80	-	280	-	< 10
TPHCWG - Aromatic >EC35 - EC44 _{EH_CU_1D_AR}	mg/kg	8.4	NONE	27	-	69	-	20
TPHCWG - Aromatic >EC5 - EC35 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	140	-	430	-	< 10
TPHCWG - Aromatic >EC5 - EC44 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	170	-	500	-	20

TPH Total >EC6 - EC40 _{EH_CU+HS_1D_TOTAL}	mg/kg	10	NONE	-	-	-	-	-
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Petroleum Range Organics (EC6 - EC10) _{HS_1D_TOTAL}	mg/kg	1	ISO 17025	-	-	-	-	-
TPH (EC10 - EC25) _{EH_CU_1D_TOTAL}	mg/kg	10	MCERTS	-	-	-	-	-
TPH (EC25 - EC40) _{EH_CU_1D_TOTAL}	mg/kg	10	MCERTS	-	-	-	-	-
TPH (EC10 - EC40) _{EH_CU_1D_TOTAL}	mg/kg	10	MCERTS	-	-	-	-	-

Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number	279473	279474	279475	279476	279477
Sample Reference	TP112	TP113	TP113	TP113	TP113
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	2.10	0.20	0.70	1.20	2.20
Date Sampled	26/04/2024	26/04/2024	26/04/2024	26/04/2024	26/04/2024
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

VOCs

Chloromethane	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Chloroethane	µg/kg	5	NONE	-	-	< 5.0	-	-
Bromomethane	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Vinyl Chloride	µg/kg	5	NONE	-	-	< 5.0	-	-
Trichlorofluoromethane	µg/kg	5	NONE	-	-	< 5.0	-	-
1,1-Dichloroethene	µg/kg	5	NONE	-	-	< 5.0	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	NONE	-	-	< 5.0	-	-
Trans 1,2-dichloroethylene	µg/kg	5	NONE	-	-	< 5.0	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	-	< 5.0	-	< 5.0
1,1-Dichloroethane	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
2,2-Dichloropropane	µg/kg	5	NONE	-	-	< 5.0	-	-
Chloroform	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
1,1,1-Trichloroethane	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
1,2-Dichloroethane	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
1,1-Dichloropropene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Cis-1,2-dichloroethene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Benzene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-	< 5.0
Carbontetrachloride	µg/kg	5	NONE	-	-	< 5.0	-	-
1,2-Dichloropropane	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Trichloroethene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Dibromomethane	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Bromodichloromethane	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Cis-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Trans-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Toluene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-	< 5.0
1,1,2-Trichloroethane	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
1,3-Dichloropropane	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Dibromochloromethane	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Tetrachloroethene	µg/kg	5	NONE	-	-	< 5.0	-	-
1,2-Dibromoethane	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Chlorobenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
1,1,1,2-Tetrachloroethane	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-	< 5.0
p & m-Xylene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-	< 5.0
Styrene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Bromoform	µg/kg	5	NONE	-	-	< 5.0	-	-
o-Xylene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-	< 5.0
Isopropylbenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
1,1,2,2-Tetrachloroethane	µg/kg	5	NONE	-	-	< 5.0	-	-
Bromobenzene	µg/kg	5	NONE	-	-	< 5.0	-	-
n-Propylbenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
2-Chlorotoluene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
4-Chlorotoluene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
1,3,5-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
tert-Butylbenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
sec-Butylbenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
1,3-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
p-Isopropyltoluene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
1,4-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
1,2-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-

Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number				279473	279474	279475	279476	279477
Sample Reference				TP112	TP113	TP113	TP113	TP113
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.10	0.20	0.70	1.20	2.20
Date Sampled				26/04/2024	26/04/2024	26/04/2024	26/04/2024	26/04/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
Butylbenzene	µg/kg	5	NONE	-	-	< 5.0	-	-
1,2-Dibromo-3-chloropropane	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
1,2,4-Trichlorobenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Hexachlorobutadiene	µg/kg	5	NONE	-	-	< 5.0	-	-
1,2,3-Trichlorobenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-

SVOCs

Aniline	mg/kg	0.1	NONE	-	-	< 0.1	-	-
Phenol	mg/kg	0.2	ISO 17025	-	-	< 0.2	-	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-	-	< 0.1	-	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	-	< 0.2	-	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	< 0.2	-	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	-	< 0.1	-	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	< 0.2	-	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	-	< 0.1	-	-
2-Methylphenol	mg/kg	0.3	MCERTS	-	-	< 0.3	-	-
Hexachloroethane	mg/kg	0.05	ISO 17025	-	-	< 0.05	-	-
Nitrobenzene	mg/kg	0.3	MCERTS	-	-	< 0.3	-	-
4-Methylphenol	mg/kg	0.2	NONE	-	-	< 0.2	-	-
Isophorone	mg/kg	0.2	MCERTS	-	-	< 0.2	-	-
2-Nitrophenol	mg/kg	0.3	NONE	-	-	< 0.3	-	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	-	< 0.3	-	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	-	< 0.3	-	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	-	< 0.3	-	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	-	< 0.3	-	-
4-Chloroaniline	mg/kg	0.1	NONE	-	-	< 0.1	-	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	-	< 0.1	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-	< 0.1	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	-	-	< 0.1	-	-
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	-	-	< 0.2	-	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-	1.6	-	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	-	< 0.1	-	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-	-	< 0.1	-	-
2,6-Dinitrotoluene	mg/kg	0.1	NONE	-	-	< 0.1	-	-
2,4-Dinitrotoluene	mg/kg	0.2	NONE	-	-	< 0.2	-	-
Dibenzofuran	mg/kg	0.2	MCERTS	-	-	3.3	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	MCERTS	-	-	< 0.3	-	-
Diethyl phthalate	mg/kg	0.2	MCERTS	-	-	< 0.2	-	-
4-Nitroaniline	mg/kg	0.2	NONE	-	-	< 0.2	-	-
Azobenzene	mg/kg	0.3	NONE	-	-	< 0.3	-	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	-	< 0.2	-	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	-	< 0.30	-	-
Carbazole	mg/kg	0.3	MCERTS	-	-	1.8	-	-
Dibutyl phthalate	mg/kg	0.2	NONE	-	-	< 0.2	-	-
Anthraquinone	mg/kg	0.3	NONE	-	-	2.5	-	-
Butyl benzyl phthalate	mg/kg	0.3	NONE	-	-	< 0.3	-	-

Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number				279473	279474	279475	279476	279477
Sample Reference				TP112	TP113	TP113	TP113	TP113
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.10	0.20	0.70	1.20	2.20
Date Sampled				26/04/2024	26/04/2024	26/04/2024	26/04/2024	26/04/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status		

PCBs by GC-MS

PCB Congener 28	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 52	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 101	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 118	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 138	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 153	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 180	mg/kg	0.001	MCERTS	-	-	-	-	-
Total PCBs	mg/kg	0.007	MCERTS	-	-	-	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number				279478	279479	279480	279481	279482
Sample Reference				TP101	TP101	TP103	TP103	TP110
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.80	2.30	0.50	1.00	0.40
Date Sampled				26/04/2024	26/04/2024	29/07/2024	29/07/2024	29/07/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status		

Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	-
Moisture Content	%	0.01	NONE	16	13	2.8	15	-
Total mass of sample received	kg	0.1	NONE	0.8	0.9	0.9	0.9	-

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Detected	Not-detected	-	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	DSA	DSA	DSA	-	DSA
Actinolite detected	Type	N/A	ISO 17025	-	Not-detected	-	-	-
Amosite detected	Type	N/A	ISO 17025	-	Detected	-	-	-
Anthophyllite detected	Type	N/A	ISO 17025	-	Not-detected	-	-	-
Chrysotile detected	Type	N/A	ISO 17025	-	Detected	-	-	-
Crocidolite detected	Type	N/A	ISO 17025	-	Not-detected	-	-	-
Tremolite detected	Type	N/A	ISO 17025	-	Not-detected	-	-	-

Asbestos Containing Material Types Detected (ACM)	Type	N/A	ISO 17025	-	Asbestos Cement	-	-	-
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General Inorganics

pH (L099)	pH Units	N/A	MCERTS	8.5	8	9.9	-	-
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
Complex Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
Free Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
Thiocyanate as SCN	mg/kg	5	NONE	< 5.0	< 5.0	< 5.0	-	-
Total Sulphate as SO ₄	mg/kg	50	MCERTS	250	1400	1900	-	-
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	120	880	540	-	-
Water Soluble SO ₄ 16hr extraction (2:1)	mg/l	1.25	MCERTS	58.1	438	268	-	-
Total Sulphur	mg/kg	50	MCERTS	130	1200	860	-	-
Total Sulphur	%	0.005	MCERTS	0.013	0.116	0.086	-	-
Ammoniacal Nitrogen as NH ₃	mg/kg	0.5	MCERTS	< 0.5	< 0.5	< 0.5	-	-
Organic Matter (automated)	%	0.1	MCERTS	-	7	-	-	-
Calorific Value	MJ/Kg	0.12	ISO 17025	-	-	-	-	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	-	< 1.0	< 1.0	-	-
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Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number				279478	279479	279480	279481	279482
Sample Reference				TP101	TP101	TP103	TP103	TP110
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.80	2.30	0.50	1.00	0.40
Date Sampled				26/04/2024	26/04/2024	29/07/2024	29/07/2024	29/07/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status		

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	3.7	0.15	0.65	-
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	0.33	< 0.05	< 0.05	-
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	1	0.19	0.45	-
Fluorene	mg/kg	0.05	MCERTS	< 0.05	1	0.16	0.41	-
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	8.9	0.96	2.8	-
Anthracene	mg/kg	0.05	MCERTS	< 0.05	2.2	0.3	0.62	-
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	10	1	2.8	-
Pyrene	mg/kg	0.05	MCERTS	< 0.05	9	0.89	2.5	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	4.5	0.34	1.4	-
Chrysene	mg/kg	0.05	MCERTS	< 0.05	4.8	0.39	1.5	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	4.8	0.38	1.7	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	1.8	0.14	0.67	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	4.3	0.35	1.3	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	2.4	0.17	0.71	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	0.58	< 0.05	0.21	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	2.6	0.2	0.77	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	< 0.80	62	5.65	18.6	-
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Heavy Metals / Metalloids

Antimony (aqua regia extractable)	mg/kg	1	ISO 17025	2.4	9.1	1.6	-	-
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	5.5	31	4.7	-	-
Barium (aqua regia extractable)	mg/kg	1	MCERTS	200	450	1600	-	-
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1.3	1.1	0.26	-	-
Boron (water soluble)	mg/kg	0.2	MCERTS	1	1.3	1.2	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	1.8	-	-
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	-	-
Chromium (III)	mg/kg	1	NONE	25	21	11	-	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	25	23	11	-	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	38	330	14	-	-
Iron (aqua regia extractable)	mg/kg	40	MCERTS	26000	60000	5000	-	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	29	220	150	-	-
Manganese (aqua regia extractable)	mg/kg	1	MCERTS	280	860	300	-	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	-	-
Molybdenum (aqua regia extractable)	mg/kg	0.25	MCERTS	0.65	3.6	1.1	-	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	43	36	11	-	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	23	37	15	-	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	99	160	170	-	-
Calcium (aqua regia extractable)	mg/kg	20	ISO 17025	-	15000	-	-	-

Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number	279478	279479	279480	279481	279482
Sample Reference	TP101	TP101	TP103	TP103	TP110
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.80	2.30	0.50	1.00	0.40
Date Sampled	26/04/2024	26/04/2024	29/07/2024	29/07/2024	29/07/2024
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	-
TPHCWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	-
TPHCWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	-
TPHCWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	-
TPHCWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	-
TPHCWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	< 8.0	71	< 8.0	< 8.0	-
TPHCWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	< 8.0	490	37	25	-
TPHCWG - Aliphatic >EC35 - EC44 _{EH_CU_1D_AL}	mg/kg	8.4	NONE	< 8.4	110	52	9.8	-
TPHCWG - Aliphatic >EC5 - EC35 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	< 10	560	37	25	-
TPHCWG - Aliphatic >EC5 - EC44 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	< 10	670	89	35	-

TPHCWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	-
TPHCWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	-
TPHCWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.02	MCERTS	< 0.020	< 0.020	< 0.020	< 0.020	-
TPHCWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	< 1.0	2.5	< 1.0	< 1.0	-
TPHCWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	< 2.0	8.9	< 2.0	< 2.0	-
TPHCWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	< 10	56	< 10	< 10	-
TPHCWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	< 10	180	16	13	-
TPHCWG - Aromatic >EC35 - EC44 _{EH_CU_1D_AR}	mg/kg	8.4	NONE	< 8.4	31	36	15	-
TPHCWG - Aromatic >EC5 - EC35 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	< 10	250	16	13	-
TPHCWG - Aromatic >EC5 - EC44 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	< 10	280	52	28	-

TPH Total >EC6 - EC40 _{EH_CU+HS_1D_TOTAL}	mg/kg	10	NONE	-	910	-	-	-
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Petroleum Range Organics (EC6 - EC10) _{HS_1D_TOTAL}	mg/kg	1	ISO 17025	< 1.0	< 1.0	-	-	-
TPH (EC10 - EC25) _{EH_CU_1D_TOTAL}	mg/kg	10	MCERTS	< 10	310	-	-	-
TPH (EC25 - EC40) _{EH_CU_1D_TOTAL}	mg/kg	10	MCERTS	< 10	600	-	-	-
TPH (EC10 - EC40) _{EH_CU_1D_TOTAL}	mg/kg	10	MCERTS	-	910	-	-	-

Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number	279478	279479	279480	279481	279482
Sample Reference	TP101	TP101	TP103	TP103	TP110
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.80	2.30	0.50	1.00	0.40
Date Sampled	26/04/2024	26/04/2024	29/07/2024	29/07/2024	29/07/2024
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

VOCs

Chloromethane	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
Chloroethane	µg/kg	5	NONE	-	< 5.0	-	-	-
Bromomethane	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
Vinyl Chloride	µg/kg	5	NONE	-	< 5.0	-	-	-
Trichlorofluoromethane	µg/kg	5	NONE	-	< 5.0	-	-	-
1,1-Dichloroethene	µg/kg	5	NONE	-	< 5.0	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	NONE	-	< 5.0	-	-	-
Trans 1,2-dichloroethylene	µg/kg	5	NONE	-	< 5.0	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	-
1,1-Dichloroethane	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
2,2-Dichloropropane	µg/kg	5	NONE	-	< 5.0	-	-	-
Chloroform	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
1,1,1-Trichloroethane	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
1,2-Dichloroethane	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
1,1-Dichloropropene	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
Cis-1,2-dichloroethene	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	-
Carbontetrachloride	µg/kg	5	NONE	-	< 5.0	-	-	-
1,2-Dichloropropane	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
Trichloroethene	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
Dibromomethane	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
Bromodichloromethane	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
Cis-1,3-dichloropropene	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
Trans-1,3-dichloropropene	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	-
1,1,2-Trichloroethane	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
1,3-Dichloropropane	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
Dibromochloromethane	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
Tetrachloroethene	µg/kg	5	NONE	-	< 5.0	-	-	-
1,2-Dibromoethane	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
Chlorobenzene	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	-
p & m-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	-
Styrene	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
Bromoform	µg/kg	5	NONE	-	< 5.0	-	-	-
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	-
Isopropylbenzene	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	5	NONE	-	< 5.0	-	-	-
Bromobenzene	µg/kg	5	NONE	-	< 5.0	-	-	-
n-Propylbenzene	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
2-Chlorotoluene	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
4-Chlorotoluene	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
1,3,5-Trimethylbenzene	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
tert-Butylbenzene	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
sec-Butylbenzene	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
1,3-Dichlorobenzene	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
p-Isopropyltoluene	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
1,4-Dichlorobenzene	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
1,2-Dichlorobenzene	µg/kg	5	ISO 17025	-	< 5.0	-	-	-

Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number				279478	279479	279480	279481	279482
Sample Reference				TP101	TP101	TP103	TP103	TP110
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.80	2.30	0.50	1.00	0.40
Date Sampled				26/04/2024	26/04/2024	29/07/2024	29/07/2024	29/07/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
Butylbenzene	µg/kg	5	NONE	-	< 5.0	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
1,2,4-Trichlorobenzene	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
Hexachlorobutadiene	µg/kg	5	NONE	-	< 5.0	-	-	-
1,2,3-Trichlorobenzene	µg/kg	5	ISO 17025	-	< 5.0	-	-	-

SVOCs

Aniline	mg/kg	0.1	NONE	-	< 0.1	-	-	-
Phenol	mg/kg	0.2	ISO 17025	-	< 0.2	-	-	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-	< 0.1	-	-	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	< 0.2	-	-	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	< 0.2	-	-	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	< 0.1	-	-	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	< 0.2	-	-	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	< 0.1	-	-	-
2-Methylphenol	mg/kg	0.3	MCERTS	-	< 0.3	-	-	-
Hexachloroethane	mg/kg	0.05	ISO 17025	-	< 0.05	-	-	-
Nitrobenzene	mg/kg	0.3	MCERTS	-	< 0.3	-	-	-
4-Methylphenol	mg/kg	0.2	NONE	-	< 0.2	-	-	-
Isophorone	mg/kg	0.2	MCERTS	-	< 0.2	-	-	-
2-Nitrophenol	mg/kg	0.3	NONE	-	< 0.3	-	-	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	< 0.3	-	-	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	< 0.3	-	-	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	< 0.3	-	-	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	< 0.3	-	-	-
4-Chloroaniline	mg/kg	0.1	NONE	-	< 0.1	-	-	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	< 0.1	-	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	< 0.1	-	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	-	< 0.1	-	-	-
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	-	< 0.2	-	-	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-	1.6	-	-	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	< 0.1	-	-	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-	< 0.1	-	-	-
2,6-Dinitrotoluene	mg/kg	0.1	NONE	-	< 0.1	-	-	-
2,4-Dinitrotoluene	mg/kg	0.2	NONE	-	< 0.2	-	-	-
Dibenzofuran	mg/kg	0.2	MCERTS	-	1.3	-	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	MCERTS	-	< 0.3	-	-	-
Diethyl phthalate	mg/kg	0.2	MCERTS	-	< 0.2	-	-	-
4-Nitroaniline	mg/kg	0.2	NONE	-	< 0.2	-	-	-
Azobenzene	mg/kg	0.3	NONE	-	< 0.3	-	-	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	< 0.2	-	-	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	< 0.30	-	-	-
Carbazole	mg/kg	0.3	MCERTS	-	0.7	-	-	-
Dibutyl phthalate	mg/kg	0.2	NONE	-	< 0.2	-	-	-
Anthraquinone	mg/kg	0.3	NONE	-	1	-	-	-
Butyl benzyl phthalate	mg/kg	0.3	NONE	-	< 0.3	-	-	-

Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number				279478	279479	279480	279481	279482
Sample Reference				TP101	TP101	TP103	TP103	TP110
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.80	2.30	0.50	1.00	0.40
Date Sampled				26/04/2024	26/04/2024	29/07/2024	29/07/2024	29/07/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status		

PCBs by GC-MS

PCB Congener 28	mg/kg	0.001	MCERTS	< 0.001	-	< 0.001	-	-
PCB Congener 52	mg/kg	0.001	MCERTS	< 0.001	-	< 0.001	-	-
PCB Congener 101	mg/kg	0.001	MCERTS	< 0.001	-	< 0.001	-	-
PCB Congener 118	mg/kg	0.001	MCERTS	< 0.001	-	< 0.001	-	-
PCB Congener 138	mg/kg	0.001	MCERTS	< 0.001	-	< 0.001	-	-
PCB Congener 153	mg/kg	0.001	MCERTS	< 0.001	-	< 0.001	-	-
PCB Congener 180	mg/kg	0.001	MCERTS	< 0.001	-	< 0.001	-	-
Total PCBs	mg/kg	0.007	MCERTS	< 0.007	-	< 0.007	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number				279483	279484	279485	279486	279487
Sample Reference				TP110	BH101	BH101	BH102	BH103
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.90	0.10-0.30	0.40-0.60	0.80-1.00	0.40-0.60
Date Sampled				29/07/2024	22/07/2024	22/07/2024	22/07/2024	23/07/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status		

Stone Content	%	0.1	NONE	53.9	-	-	-	49.3
Moisture Content	%	0.01	NONE	9.6	-	-	-	5.4
Total mass of sample received	kg	0.1	NONE	0.8	-	-	-	2

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	DSA	DSA	DSA	DSA	DSA
Actinolite detected	Type	N/A	ISO 17025	-	-	-	-	-
Amosite detected	Type	N/A	ISO 17025	-	-	-	-	-
Anthophyllite detected	Type	N/A	ISO 17025	-	-	-	-	-
Chrysotile detected	Type	N/A	ISO 17025	-	-	-	-	-
Crocidolite detected	Type	N/A	ISO 17025	-	-	-	-	-
Tremolite detected	Type	N/A	ISO 17025	-	-	-	-	-

Asbestos Containing Material Types Detected (ACM)	Type	N/A	ISO 17025	-	-	-	-	-
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General Inorganics

pH (L099)	pH Units	N/A	MCERTS	8.6	-	-	-	10.6
Total Cyanide	mg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
Complex Cyanide	mg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
Free Cyanide	mg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
Thiocyanate as SCN	mg/kg	5	NONE	< 5.0	-	-	-	< 5.0
Total Sulphate as SO ₄	mg/kg	50	MCERTS	180	-	-	-	4600
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	65	-	-	-	1300
Water Soluble SO ₄ 16hr extraction (2:1)	mg/l	1.25	MCERTS	32.6	-	-	-	665
Total Sulphur	mg/kg	50	MCERTS	98	-	-	-	1600
Total Sulphur	%	0.005	MCERTS	0.01	-	-	-	0.161
Ammoniacal Nitrogen as NH ₃	mg/kg	0.5	MCERTS	< 0.5	-	-	-	< 0.5
Organic Matter (automated)	%	0.1	MCERTS	-	-	-	-	1.6
Calorific Value	MJ/Kg	0.12	ISO 17025	-	-	-	-	< 0.120

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
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Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number				279483	279484	279485	279486	279487
Sample Reference				TP110	BH101	BH101	BH102	BH103
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.90	0.10-0.30	0.40-0.60	0.80-1.00	0.40-0.60
Date Sampled				29/07/2024	22/07/2024	22/07/2024	22/07/2024	23/07/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status		

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	0.19
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	0.12
Fluorene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	0.13
Phenanthrene	mg/kg	0.05	MCERTS	0.06	-	-	-	1.3
Anthracene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	0.37
Fluoranthene	mg/kg	0.05	MCERTS	0.11	-	-	-	1.9
Pyrene	mg/kg	0.05	MCERTS	0.11	-	-	-	2
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.06	-	-	-	0.86
Chrysene	mg/kg	0.05	MCERTS	0.06	-	-	-	0.94
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.07	-	-	-	1.1
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	-	-	-	0.46
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.09	-	-	-	0.93
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	0.48
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	0.1
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	0.53

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	< 0.80	-	-	-	11.4
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Heavy Metals / Metalloids

Antimony (aqua regia extractable)	mg/kg	1	ISO 17025	1.8	-	-	-	1.6
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	5.9	-	-	-	5.2
Barium (aqua regia extractable)	mg/kg	1	MCERTS	33	-	-	-	670
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.49	-	-	-	0.36
Boron (water soluble)	mg/kg	0.2	MCERTS	0.3	-	-	-	2.3
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	-	-	-	0.7
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	-	-	-	< 1.8
Chromium (III)	mg/kg	1	NONE	11	-	-	-	20
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	11	-	-	-	21
Copper (aqua regia extractable)	mg/kg	1	MCERTS	18	-	-	-	13
Iron (aqua regia extractable)	mg/kg	40	MCERTS	21000	-	-	-	14000
Lead (aqua regia extractable)	mg/kg	1	MCERTS	24	-	-	-	44
Manganese (aqua regia extractable)	mg/kg	1	MCERTS	470	-	-	-	270
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	-	-	-	< 0.3
Molybdenum (aqua regia extractable)	mg/kg	0.25	MCERTS	0.53	-	-	-	1.6
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	19	-	-	-	12
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	16	-	-	-	19
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	44	-	-	-	63
Calcium (aqua regia extractable)	mg/kg	20	ISO 17025	-	-	-	-	190000

Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number				279483	279484	279485	279486	279487
Sample Reference				TP110	BH101	BH101	BH102	BH103
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.90	0.10-0.30	0.40-0.60	0.80-1.00	0.40-0.60
Date Sampled				29/07/2024	22/07/2024	22/07/2024	22/07/2024	23/07/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status		

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010	-	-	-	< 0.010
TPHCWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010	-	-	-	< 0.010
TPHCWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010	-	-	-	< 0.010
TPHCWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
TPHCWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	< 2.0	-	-	-	< 2.0
TPHCWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	< 8.0	-	-	-	9.5
TPHCWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	< 8.0	-	-	-	93
TPHCWG - Aliphatic >EC35 - EC44 _{EH_CU_1D_AL}	mg/kg	8.4	NONE	< 8.4	-	-	-	52
TPHCWG - Aliphatic >EC5 - EC35 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	< 10	-	-	-	100
TPHCWG - Aliphatic >EC5 - EC44 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	< 10	-	-	-	150

TPHCWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.01	MCERTS	< 0.010	-	-	-	< 0.010
TPHCWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.01	MCERTS	< 0.010	-	-	-	< 0.010
TPHCWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.02	MCERTS	< 0.020	-	-	-	< 0.020
TPHCWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
TPHCWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	< 2.0	-	-	-	3
TPHCWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	< 10	-	-	-	15
TPHCWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	< 10	-	-	-	72
TPHCWG - Aromatic >EC35 - EC44 _{EH_CU_1D_AR}	mg/kg	8.4	NONE	< 8.4	-	-	-	83
TPHCWG - Aromatic >EC5 - EC35 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	< 10	-	-	-	90
TPHCWG - Aromatic >EC5 - EC44 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	< 10	-	-	-	170

TPH Total >EC6 - EC40 _{EH_CU+HS_1D_TOTAL}	mg/kg	10	NONE	-	-	-	-	-
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Petroleum Range Organics (EC6 - EC10) _{HS_1D_TOTAL}	mg/kg	1	ISO 17025	-	-	-	-	-
TPH (EC10 - EC25) _{EH_CU_1D_TOTAL}	mg/kg	10	MCERTS	-	-	-	-	-
TPH (EC25 - EC40) _{EH_CU_1D_TOTAL}	mg/kg	10	MCERTS	-	-	-	-	-
TPH (EC10 - EC40) _{EH_CU_1D_TOTAL}	mg/kg	10	MCERTS	-	-	-	-	-

Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number	279483	279484	279485	279486	279487
Sample Reference	TP110	BH101	BH101	BH102	BH103
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.90	0.10-0.30	0.40-0.60	0.80-1.00	0.40-0.60
Date Sampled	29/07/2024	22/07/2024	22/07/2024	22/07/2024	23/07/2024
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

VOCs

Chloromethane	µg/kg	5	ISO 17025	-	-	-	-	-
Chloroethane	µg/kg	5	NONE	-	-	-	-	-
Bromomethane	µg/kg	5	ISO 17025	-	-	-	-	-
Vinyl Chloride	µg/kg	5	NONE	-	-	-	-	-
Trichlorofluoromethane	µg/kg	5	NONE	-	-	-	-	-
1,1-Dichloroethene	µg/kg	5	NONE	-	-	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	NONE	-	-	-	-	-
Trans 1,2-dichloroethylene	µg/kg	5	NONE	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	-	-	-	< 5.0
1,1-Dichloroethane	µg/kg	5	ISO 17025	-	-	-	-	-
2,2-Dichloropropane	µg/kg	5	NONE	-	-	-	-	-
Chloroform	µg/kg	5	ISO 17025	-	-	-	-	-
1,1,1-Trichloroethane	µg/kg	5	ISO 17025	-	-	-	-	-
1,2-Dichloroethane	µg/kg	5	ISO 17025	-	-	-	-	-
1,1-Dichloropropene	µg/kg	5	ISO 17025	-	-	-	-	-
Cis-1,2-dichloroethene	µg/kg	5	ISO 17025	-	-	-	-	-
Benzene	µg/kg	5	MCERTS	< 5.0	-	-	-	< 5.0
Carbontetrachloride	µg/kg	5	NONE	-	-	-	-	-
1,2-Dichloropropane	µg/kg	5	ISO 17025	-	-	-	-	-
Trichloroethene	µg/kg	5	ISO 17025	-	-	-	-	-
Dibromomethane	µg/kg	5	ISO 17025	-	-	-	-	-
Bromodichloromethane	µg/kg	5	ISO 17025	-	-	-	-	-
Cis-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-	-	-	-
Trans-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-	-	-	-
Toluene	µg/kg	5	MCERTS	< 5.0	-	-	-	< 5.0
1,1,2-Trichloroethane	µg/kg	5	ISO 17025	-	-	-	-	-
1,3-Dichloropropane	µg/kg	5	ISO 17025	-	-	-	-	-
Dibromochloromethane	µg/kg	5	ISO 17025	-	-	-	-	-
Tetrachloroethene	µg/kg	5	NONE	-	-	-	-	-
1,2-Dibromoethane	µg/kg	5	ISO 17025	-	-	-	-	-
Chlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	5	ISO 17025	-	-	-	-	-
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	-	-	-	< 5.0
p & m-Xylene	µg/kg	5	MCERTS	< 5.0	-	-	-	< 5.0
Styrene	µg/kg	5	ISO 17025	-	-	-	-	-
Bromoform	µg/kg	5	NONE	-	-	-	-	-
o-Xylene	µg/kg	5	MCERTS	< 5.0	-	-	-	< 5.0
Isopropylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	5	NONE	-	-	-	-	-
Bromobenzene	µg/kg	5	NONE	-	-	-	-	-
n-Propylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
2-Chlorotoluene	µg/kg	5	ISO 17025	-	-	-	-	-
4-Chlorotoluene	µg/kg	5	ISO 17025	-	-	-	-	-
1,3,5-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
tert-Butylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
sec-Butylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
1,3-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-
p-Isopropyltoluene	µg/kg	5	ISO 17025	-	-	-	-	-
1,4-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-
1,2-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-

Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number				279483	279484	279485	279486	279487
Sample Reference				TP110	BH101	BH101	BH102	BH103
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.90	0.10-0.30	0.40-0.60	0.80-1.00	0.40-0.60
Date Sampled				29/07/2024	22/07/2024	22/07/2024	22/07/2024	23/07/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
Butylbenzene	µg/kg	5	NONE	-	-	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	5	ISO 17025	-	-	-	-	-
1,2,4-Trichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-
Hexachlorobutadiene	µg/kg	5	NONE	-	-	-	-	-
1,2,3-Trichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-

SVOCs

Aniline	mg/kg	0.1	NONE	-	-	-	-	-
Phenol	mg/kg	0.2	ISO 17025	-	-	-	-	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-	-	-	-	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	-	-	-	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	-	-	-	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	-	-	-	-
2-Methylphenol	mg/kg	0.3	MCERTS	-	-	-	-	-
Hexachloroethane	mg/kg	0.05	ISO 17025	-	-	-	-	-
Nitrobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
4-Methylphenol	mg/kg	0.2	NONE	-	-	-	-	-
Isophorone	mg/kg	0.2	MCERTS	-	-	-	-	-
2-Nitrophenol	mg/kg	0.3	NONE	-	-	-	-	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	-	-	-	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	-	-	-	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	-	-	-	-
4-Chloroaniline	mg/kg	0.1	NONE	-	-	-	-	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	-	-	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-	-	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	-	-	-	-	-
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	-	-	-	-	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-	-	-	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	-	-	-	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-	-	-	-	-
2,6-Dinitrotoluene	mg/kg	0.1	NONE	-	-	-	-	-
2,4-Dinitrotoluene	mg/kg	0.2	NONE	-	-	-	-	-
Dibenzofuran	mg/kg	0.2	MCERTS	-	-	-	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	MCERTS	-	-	-	-	-
Diethyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-	-
4-Nitroaniline	mg/kg	0.2	NONE	-	-	-	-	-
Azobenzene	mg/kg	0.3	NONE	-	-	-	-	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	-	-	-	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Carbazole	mg/kg	0.3	MCERTS	-	-	-	-	-
Dibutyl phthalate	mg/kg	0.2	NONE	-	-	-	-	-
Anthraquinone	mg/kg	0.3	NONE	-	-	-	-	-
Butyl benzyl phthalate	mg/kg	0.3	NONE	-	-	-	-	-

Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number				279483	279484	279485	279486	279487
Sample Reference				TP110	BH101	BH101	BH102	BH103
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.90	0.10-0.30	0.40-0.60	0.80-1.00	0.40-0.60
Date Sampled				29/07/2024	22/07/2024	22/07/2024	22/07/2024	23/07/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status		

PCBs by GC-MS

PCB Congener 28	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 52	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 101	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 118	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 138	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 153	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 180	mg/kg	0.001	MCERTS	-	-	-	-	-
Total PCBs	mg/kg	0.007	MCERTS	-	-	-	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number				279488	279489	279490	279491	279492
Sample Reference				BH104	WS101	WS101	WS102	WS103
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.00-1.20	0.10-0.30	1.40-1.60	1.40-1.60	0.40-0.60
Date Sampled				24/07/2024	22/07/2024	22/07/2024	22/07/2024	23/07/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status		

Stone Content	%	0.1	NONE	-	-	-	72.3	-
Moisture Content	%	0.01	NONE	-	-	-	8.2	-
Total mass of sample received	kg	0.1	NONE	-	-	-	2	-

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	KWB	KWB	KWB	KWB	KWB
Actinolite detected	Type	N/A	ISO 17025	-	-	-	-	-
Amosite detected	Type	N/A	ISO 17025	-	-	-	-	-
Anthophyllite detected	Type	N/A	ISO 17025	-	-	-	-	-
Chrysotile detected	Type	N/A	ISO 17025	-	-	-	-	-
Crocidolite detected	Type	N/A	ISO 17025	-	-	-	-	-
Tremolite detected	Type	N/A	ISO 17025	-	-	-	-	-

Asbestos Containing Material Types Detected (ACM)	Type	N/A	ISO 17025	-	-	-	-	-
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General Inorganics

pH (L099)	pH Units	N/A	MCERTS	-	-	-	8.7	-
Total Cyanide	mg/kg	1	MCERTS	-	-	-	< 1.0	-
Complex Cyanide	mg/kg	1	MCERTS	-	-	-	< 1.0	-
Free Cyanide	mg/kg	1	MCERTS	-	-	-	< 1.0	-
Thiocyanate as SCN	mg/kg	5	NONE	-	-	-	< 5.0	-
Total Sulphate as SO ₄	mg/kg	50	MCERTS	-	-	-	140	-
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	-	-	-	80	-
Water Soluble SO ₄ 16hr extraction (2:1)	mg/l	1.25	MCERTS	-	-	-	39.8	-
Total Sulphur	mg/kg	50	MCERTS	-	-	-	67	-
Total Sulphur	%	0.005	MCERTS	-	-	-	0.007	-
Ammoniacal Nitrogen as NH ₃	mg/kg	0.5	MCERTS	-	-	-	< 0.5	-
Organic Matter (automated)	%	0.1	MCERTS	-	-	-	0.6	-
Calorific Value	MJ/Kg	0.12	ISO 17025	-	-	-	-	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	-	-	-	< 1.0	-
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Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number	279488	279489	279490	279491	279492
Sample Reference	BH104	WS101	WS101	WS102	WS103
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	1.00-1.20	0.10-0.30	1.40-1.60	1.40-1.60	0.40-0.60
Date Sampled	24/07/2024	22/07/2024	22/07/2024	22/07/2024	23/07/2024
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Fluorene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-	0.08	-
Anthracene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-	0.11	-
Pyrene	mg/kg	0.05	MCERTS	-	-	-	0.09	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Chrysene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	-	-	-	< 0.05	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	-	-	-	< 0.05	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	-	-	-	< 0.80	-
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Heavy Metals / Metalloids

Antimony (aqua regia extractable)	mg/kg	1	ISO 17025	-	-	-	< 1.0	-
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	6.8	-
Barium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	48	-
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	-	-	-	0.64	-
Boron (water soluble)	mg/kg	0.2	MCERTS	-	-	-	0.2	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
Chromium (hexavalent)	mg/kg	1.8	MCERTS	-	-	-	< 1.8	-
Chromium (III)	mg/kg	1	NONE	-	-	-	12	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	13	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	16	-
Iron (aqua regia extractable)	mg/kg	40	MCERTS	-	-	-	37000	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	13	-
Manganese (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	910	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
Molybdenum (aqua regia extractable)	mg/kg	0.25	MCERTS	-	-	-	0.39	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	21	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	< 1.0	-
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	23	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	37	-

Calcium (aqua regia extractable)	mg/kg	20	ISO 17025	-	-	-	4300	-
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Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number				279488	279489	279490	279491	279492
Sample Reference				BH104	WS101	WS101	WS102	WS103
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.00-1.20	0.10-0.30	1.40-1.60	1.40-1.60	0.40-0.60
Date Sampled				24/07/2024	22/07/2024	22/07/2024	22/07/2024	23/07/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status		

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.01	MCERTS	-	-	-	< 0.010	-
TPHCWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.01	MCERTS	-	-	-	< 0.010	-
TPHCWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.01	MCERTS	-	-	-	< 0.010	-
TPHCWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	MCERTS	-	-	-	< 1.0	-
TPHCWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	-	-	-	< 2.0	-
TPHCWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	-	-	-	< 8.0	-
TPHCWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	-	-	-	< 8.0	-
TPHCWG - Aliphatic >EC35 - EC44 _{EH_CU_1D_AL}	mg/kg	8.4	NONE	-	-	-	< 8.4	-
TPHCWG - Aliphatic >EC5 - EC35 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	-	-	-	< 10	-
TPHCWG - Aliphatic >EC5 - EC44 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	-	-	-	< 10	-

TPHCWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.01	MCERTS	-	-	-	< 0.010	-
TPHCWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.01	MCERTS	-	-	-	< 0.010	-
TPHCWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.02	MCERTS	-	-	-	< 0.020	-
TPHCWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	-	-	-	< 1.0	-
TPHCWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	-	-	-	< 2.0	-
TPHCWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	-	-	-	< 10	-
TPHCWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	-	-	-	< 10	-
TPHCWG - Aromatic >EC35 - EC44 _{EH_CU_1D_AR}	mg/kg	8.4	NONE	-	-	-	< 8.4	-
TPHCWG - Aromatic >EC5 - EC35 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	-	-	-	< 10	-
TPHCWG - Aromatic >EC5 - EC44 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	-	-	-	< 10	-

TPH Total >EC6 - EC40 _{EH_CU+HS_1D_TOTAL}	mg/kg	10	NONE	-	-	-	< 10	-
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Petroleum Range Organics (EC6 - EC10) _{HS_1D_TOTAL}	mg/kg	1	ISO 17025	-	-	-	< 1.0	-
TPH (EC10 - EC25) _{EH_CU_1D_TOTAL}	mg/kg	10	MCERTS	-	-	-	< 10	-
TPH (EC25 - EC40) _{EH_CU_1D_TOTAL}	mg/kg	10	MCERTS	-	-	-	< 10	-
TPH (EC10 - EC40) _{EH_CU_1D_TOTAL}	mg/kg	10	MCERTS	-	-	-	< 10	-

Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number	279488	279489	279490	279491	279492
Sample Reference	BH104	WS101	WS101	WS102	WS103
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	1.00-1.20	0.10-0.30	1.40-1.60	1.40-1.60	0.40-0.60
Date Sampled	24/07/2024	22/07/2024	22/07/2024	22/07/2024	23/07/2024
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

VOCs

Chloromethane	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
Chloroethane	µg/kg	5	NONE	-	-	-	< 5.0	-
Bromomethane	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
Vinyl Chloride	µg/kg	5	NONE	-	-	-	< 5.0	-
Trichlorofluoromethane	µg/kg	5	NONE	-	-	-	< 5.0	-
1,1-Dichloroethene	µg/kg	5	NONE	-	-	-	< 5.0	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	NONE	-	-	-	< 5.0	-
Trans 1,2-dichloroethylene	µg/kg	5	NONE	-	-	-	< 5.0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	-	-	-	< 5.0	-
1,1-Dichloroethane	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
2,2-Dichloropropane	µg/kg	5	NONE	-	-	-	< 5.0	-
Chloroform	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
1,1,1-Trichloroethane	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
1,2-Dichloroethane	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
1,1-Dichloropropene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
Cis-1,2-dichloroethene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
Benzene	µg/kg	5	MCERTS	-	-	-	< 5.0	-
Carbontetrachloride	µg/kg	5	NONE	-	-	-	< 5.0	-
1,2-Dichloropropane	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
Trichloroethene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
Dibromomethane	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
Bromodichloromethane	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
Cis-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
Trans-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
Toluene	µg/kg	5	MCERTS	-	-	-	< 5.0	-
1,1,2-Trichloroethane	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
1,3-Dichloropropane	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
Dibromochloromethane	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
Tetrachloroethene	µg/kg	5	NONE	-	-	-	< 5.0	-
1,2-Dibromoethane	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
Chlorobenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
1,1,1,2-Tetrachloroethane	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
Ethylbenzene	µg/kg	5	MCERTS	-	-	-	< 5.0	-
p & m-Xylene	µg/kg	5	MCERTS	-	-	-	< 5.0	-
Styrene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
Bromoform	µg/kg	5	NONE	-	-	-	< 5.0	-
o-Xylene	µg/kg	5	MCERTS	-	-	-	< 5.0	-
Isopropylbenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
1,1,2,2-Tetrachloroethane	µg/kg	5	NONE	-	-	-	< 5.0	-
Bromobenzene	µg/kg	5	NONE	-	-	-	< 5.0	-
n-Propylbenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
2-Chlorotoluene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
4-Chlorotoluene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
1,3,5-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
tert-Butylbenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
sec-Butylbenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
1,3-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
p-Isopropyltoluene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
1,4-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
1,2-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-

Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number				279488	279489	279490	279491	279492
Sample Reference				BH104	WS101	WS101	WS102	WS103
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.00-1.20	0.10-0.30	1.40-1.60	1.40-1.60	0.40-0.60
Date Sampled				24/07/2024	22/07/2024	22/07/2024	22/07/2024	23/07/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
Butylbenzene	µg/kg	5	NONE	-	-	-	< 5.0	-
1,2-Dibromo-3-chloropropane	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
1,2,4-Trichlorobenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
Hexachlorobutadiene	µg/kg	5	NONE	-	-	-	< 5.0	-
1,2,3-Trichlorobenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-

SVOCs

Aniline	mg/kg	0.1	NONE	-	-	-	< 0.1	-
Phenol	mg/kg	0.2	ISO 17025	-	-	-	< 0.2	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
2-Methylphenol	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
Hexachloroethane	mg/kg	0.05	ISO 17025	-	-	-	< 0.05	-
Nitrobenzene	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
4-Methylphenol	mg/kg	0.2	NONE	-	-	-	< 0.2	-
Isophorone	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
2-Nitrophenol	mg/kg	0.3	NONE	-	-	-	< 0.3	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
4-Chloroaniline	mg/kg	0.1	NONE	-	-	-	< 0.1	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-	-	< 0.1	-
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	-	-	-	< 0.1	-
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	-	-	-	< 0.2	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-	-	< 0.1	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
2,6-Dinitrotoluene	mg/kg	0.1	NONE	-	-	-	< 0.1	-
2,4-Dinitrotoluene	mg/kg	0.2	NONE	-	-	-	< 0.2	-
Dibenzofuran	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
Diethyl phthalate	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
4-Nitroaniline	mg/kg	0.2	NONE	-	-	-	< 0.2	-
Azobenzene	mg/kg	0.3	NONE	-	-	-	< 0.3	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	-	-	< 0.30	-
Carbazole	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
Dibutyl phthalate	mg/kg	0.2	NONE	-	-	-	< 0.2	-
Anthraquinone	mg/kg	0.3	NONE	-	-	-	< 0.3	-
Butyl benzyl phthalate	mg/kg	0.3	NONE	-	-	-	< 0.3	-

Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number				279488	279489	279490	279491	279492
Sample Reference				BH104	WS101	WS101	WS102	WS103
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.00-1.20	0.10-0.30	1.40-1.60	1.40-1.60	0.40-0.60
Date Sampled				24/07/2024	22/07/2024	22/07/2024	22/07/2024	23/07/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status		

PCBs by GC-MS

PCB Congener 28	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 52	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 101	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 118	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 138	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 153	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 180	mg/kg	0.001	MCERTS	-	-	-	-	-
Total PCBs	mg/kg	0.007	MCERTS	-	-	-	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number				279493	279494	279495	279496	279497
Sample Reference				WS103	WS103	WS104	WS104	WS105
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.00-1.20	2.00-2.20	0.40-0.60	2.20-2.40	0.40-0.60
Date Sampled				23/07/2024	23/07/2024	23/07/2024	23/07/2024	24/07/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status		

Stone Content	%	0.1	NONE	-	-	-	< 0.1	89.1
Moisture Content	%	0.01	NONE	-	-	-	11	5.2
Total mass of sample received	kg	0.1	NONE	-	-	-	2	2

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	PKU	PKU	PKU	PKU	PKU
Actinolite detected	Type	N/A	ISO 17025	-	-	-	-	-
Amosite detected	Type	N/A	ISO 17025	-	-	-	-	-
Anthophyllite detected	Type	N/A	ISO 17025	-	-	-	-	-
Chrysotile detected	Type	N/A	ISO 17025	-	-	-	-	-
Crocidolite detected	Type	N/A	ISO 17025	-	-	-	-	-
Tremolite detected	Type	N/A	ISO 17025	-	-	-	-	-

Asbestos Containing Material Types Detected (ACM)	Type	N/A	ISO 17025	-	-	-	-	-
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General Inorganics

pH (L099)	pH Units	N/A	MCERTS	-	-	-	7.3	-
Total Cyanide	mg/kg	1	MCERTS	-	-	-	< 1.0	-
Complex Cyanide	mg/kg	1	MCERTS	-	-	-	< 1.0	-
Free Cyanide	mg/kg	1	MCERTS	-	-	-	< 1.0	-
Thiocyanate as SCN	mg/kg	5	NONE	-	-	-	< 5.0	-
Total Sulphate as SO ₄	mg/kg	50	MCERTS	-	-	-	640	-
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	-	-	-	530	-
Water Soluble SO ₄ 16hr extraction (2:1)	mg/l	1.25	MCERTS	-	-	-	264	-
Total Sulphur	mg/kg	50	MCERTS	-	-	-	290	-
Total Sulphur	%	0.005	MCERTS	-	-	-	0.029	-
Ammoniacal Nitrogen as NH ₃	mg/kg	0.5	MCERTS	-	-	-	< 0.5	-
Organic Matter (automated)	%	0.1	MCERTS	-	-	-	1.4	4.2
Calorific Value	MJ/Kg	0.12	ISO 17025	-	-	-	-	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
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Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number				279493	279494	279495	279496	279497
Sample Reference				WS103	WS103	WS104	WS104	WS105
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.00-1.20	2.00-2.20	0.40-0.60	2.20-2.40	0.40-0.60
Date Sampled				23/07/2024	23/07/2024	23/07/2024	23/07/2024	24/07/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status		

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	-	-	0.06	28
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	1.7
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	73
Fluorene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	72
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-	0.13	420
Anthracene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	140
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-	0.17	390
Pyrene	mg/kg	0.05	MCERTS	-	-	-	0.15	290
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-	0.06	110
Chrysene	mg/kg	0.05	MCERTS	-	-	-	0.09	110
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	-	-	-	< 0.05	94
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	-	-	-	< 0.05	45
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	82
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	33
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	9.3
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	33

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	-	-	-	< 0.80	1930
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Heavy Metals / Metalloids

Antimony (aqua regia extractable)	mg/kg	1	ISO 17025	-	-	-	2.9	-
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	11	-
Barium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	110	-
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	-	-	-	1.3	-
Boron (water soluble)	mg/kg	0.2	MCERTS	-	-	-	0.4	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
Chromium (hexavalent)	mg/kg	1.8	MCERTS	-	-	-	< 1.8	-
Chromium (III)	mg/kg	1	NONE	-	-	-	24	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	25	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	41	-
Iron (aqua regia extractable)	mg/kg	40	MCERTS	-	-	-	44000	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	28	-
Manganese (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	1300	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
Molybdenum (aqua regia extractable)	mg/kg	0.25	MCERTS	-	-	-	0.75	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	41	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	< 1.0	-
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	26	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	110	-

Calcium (aqua regia extractable)	mg/kg	20	ISO 17025	-	-	-	-	85000
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Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number				279493	279494	279495	279496	279497
Sample Reference				WS103	WS103	WS104	WS104	WS105
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.00-1.20	2.00-2.20	0.40-0.60	2.20-2.40	0.40-0.60
Date Sampled				23/07/2024	23/07/2024	23/07/2024	23/07/2024	24/07/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status		

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.01	MCERTS	-	-	-	< 0.010	< 0.010
TPHCWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.01	MCERTS	-	-	-	< 0.010	< 0.010
TPHCWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.01	MCERTS	-	-	-	< 0.010	< 0.010
TPHCWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
TPHCWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	-	-	-	< 2.0	3.4
TPHCWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	-	-	-	< 8.0	< 8.0
TPHCWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	-	-	-	< 8.0	68
TPHCWG - Aliphatic >EC35 - EC44 _{EH_CU_1D_AL}	mg/kg	8.4	NONE	-	-	-	< 8.4	71
TPHCWG - Aliphatic >EC5 - EC35 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	-	-	-	< 10	72
TPHCWG - Aliphatic >EC5 - EC44 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	-	-	-	< 10	140

TPHCWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.01	MCERTS	-	-	-	< 0.010	< 0.010
TPHCWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.01	MCERTS	-	-	-	< 0.010	< 0.010
TPHCWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.02	MCERTS	-	-	-	< 0.020	< 0.020
TPHCWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	-	-	-	< 1.0	24
TPHCWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	-	-	-	< 2.0	400
TPHCWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	-	-	-	< 10	2400
TPHCWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	-	-	-	< 10	1900
TPHCWG - Aromatic >EC35 - EC44 _{EH_CU_1D_AR}	mg/kg	8.4	NONE	-	-	-	< 8.4	250
TPHCWG - Aromatic >EC5 - EC35 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	-	-	-	< 10	4700
TPHCWG - Aromatic >EC5 - EC44 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	-	-	-	< 10	5000

TPH Total >EC6 - EC40 _{EH_CU+HS_1D_TOTAL}	mg/kg	10	NONE	-	-	-	-	5000
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Petroleum Range Organics (EC6 - EC10) _{HS_1D_TOTAL}	mg/kg	1	ISO 17025	-	-	-	-	< 1.0
TPH (EC10 - EC25) _{EH_CU_1D_TOTAL}	mg/kg	10	MCERTS	-	-	-	-	3600
TPH (EC25 - EC40) _{EH_CU_1D_TOTAL}	mg/kg	10	MCERTS	-	-	-	-	1500
TPH (EC10 - EC40) _{EH_CU_1D_TOTAL}	mg/kg	10	MCERTS	-	-	-	-	5000

Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number	279493	279494	279495	279496	279497
Sample Reference	WS103	WS103	WS104	WS104	WS105
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	1.00-1.20	2.00-2.20	0.40-0.60	2.20-2.40	0.40-0.60
Date Sampled	23/07/2024	23/07/2024	23/07/2024	23/07/2024	24/07/2024
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

VOCs

Chloromethane	µg/kg	5	ISO 17025	-	-	-	-	-
Chloroethane	µg/kg	5	NONE	-	-	-	-	-
Bromomethane	µg/kg	5	ISO 17025	-	-	-	-	-
Vinyl Chloride	µg/kg	5	NONE	-	-	-	-	-
Trichlorofluoromethane	µg/kg	5	NONE	-	-	-	-	-
1,1-Dichloroethene	µg/kg	5	NONE	-	-	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	NONE	-	-	-	-	-
Trans 1,2-dichloroethylene	µg/kg	5	NONE	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	-	-	-	< 5.0	< 5.0
1,1-Dichloroethane	µg/kg	5	ISO 17025	-	-	-	-	-
2,2-Dichloropropane	µg/kg	5	NONE	-	-	-	-	-
Chloroform	µg/kg	5	ISO 17025	-	-	-	-	-
1,1,1-Trichloroethane	µg/kg	5	ISO 17025	-	-	-	-	-
1,2-Dichloroethane	µg/kg	5	ISO 17025	-	-	-	-	-
1,1-Dichloropropene	µg/kg	5	ISO 17025	-	-	-	-	-
Cis-1,2-dichloroethene	µg/kg	5	ISO 17025	-	-	-	-	-
Benzene	µg/kg	5	MCERTS	-	-	-	< 5.0	< 5.0
Carbontetrachloride	µg/kg	5	NONE	-	-	-	-	-
1,2-Dichloropropane	µg/kg	5	ISO 17025	-	-	-	-	-
Trichloroethene	µg/kg	5	ISO 17025	-	-	-	-	-
Dibromomethane	µg/kg	5	ISO 17025	-	-	-	-	-
Bromodichloromethane	µg/kg	5	ISO 17025	-	-	-	-	-
Cis-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-	-	-	-
Trans-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-	-	-	-
Toluene	µg/kg	5	MCERTS	-	-	-	< 5.0	< 5.0
1,1,2-Trichloroethane	µg/kg	5	ISO 17025	-	-	-	-	-
1,3-Dichloropropane	µg/kg	5	ISO 17025	-	-	-	-	-
Dibromochloromethane	µg/kg	5	ISO 17025	-	-	-	-	-
Tetrachloroethene	µg/kg	5	NONE	-	-	-	-	-
1,2-Dibromoethane	µg/kg	5	ISO 17025	-	-	-	-	-
Chlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	5	ISO 17025	-	-	-	-	-
Ethylbenzene	µg/kg	5	MCERTS	-	-	-	< 5.0	< 5.0
p & m-Xylene	µg/kg	5	MCERTS	-	-	-	< 5.0	< 5.0
Styrene	µg/kg	5	ISO 17025	-	-	-	-	-
Bromoform	µg/kg	5	NONE	-	-	-	-	-
o-Xylene	µg/kg	5	MCERTS	-	-	-	< 5.0	< 5.0
Isopropylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	5	NONE	-	-	-	-	-
Bromobenzene	µg/kg	5	NONE	-	-	-	-	-
n-Propylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
2-Chlorotoluene	µg/kg	5	ISO 17025	-	-	-	-	-
4-Chlorotoluene	µg/kg	5	ISO 17025	-	-	-	-	-
1,3,5-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
tert-Butylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
sec-Butylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
1,3-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-
p-Isopropyltoluene	µg/kg	5	ISO 17025	-	-	-	-	-
1,4-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-
1,2-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-

Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number				279493	279494	279495	279496	279497
Sample Reference				WS103	WS103	WS104	WS104	WS105
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.00-1.20	2.00-2.20	0.40-0.60	2.20-2.40	0.40-0.60
Date Sampled				23/07/2024	23/07/2024	23/07/2024	23/07/2024	24/07/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
Butylbenzene	µg/kg	5	NONE	-	-	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	5	ISO 17025	-	-	-	-	-
1,2,4-Trichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-
Hexachlorobutadiene	µg/kg	5	NONE	-	-	-	-	-
1,2,3-Trichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-

SVOCs

Aniline	mg/kg	0.1	NONE	-	-	-	-	-
Phenol	mg/kg	0.2	ISO 17025	-	-	-	-	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-	-	-	-	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	-	-	-	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	-	-	-	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	-	-	-	-
2-Methylphenol	mg/kg	0.3	MCERTS	-	-	-	-	-
Hexachloroethane	mg/kg	0.05	ISO 17025	-	-	-	-	-
Nitrobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
4-Methylphenol	mg/kg	0.2	NONE	-	-	-	-	-
Isophorone	mg/kg	0.2	MCERTS	-	-	-	-	-
2-Nitrophenol	mg/kg	0.3	NONE	-	-	-	-	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	-	-	-	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	-	-	-	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	-	-	-	-
4-Chloroaniline	mg/kg	0.1	NONE	-	-	-	-	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	-	-	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-	-	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	-	-	-	-	-
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	-	-	-	-	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-	-	-	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	-	-	-	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-	-	-	-	-
2,6-Dinitrotoluene	mg/kg	0.1	NONE	-	-	-	-	-
2,4-Dinitrotoluene	mg/kg	0.2	NONE	-	-	-	-	-
Dibenzofuran	mg/kg	0.2	MCERTS	-	-	-	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	MCERTS	-	-	-	-	-
Diethyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-	-
4-Nitroaniline	mg/kg	0.2	NONE	-	-	-	-	-
Azobenzene	mg/kg	0.3	NONE	-	-	-	-	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	-	-	-	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Carbazole	mg/kg	0.3	MCERTS	-	-	-	-	-
Dibutyl phthalate	mg/kg	0.2	NONE	-	-	-	-	-
Anthraquinone	mg/kg	0.3	NONE	-	-	-	-	-
Butyl benzyl phthalate	mg/kg	0.3	NONE	-	-	-	-	-

Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number				279493	279494	279495	279496	279497
Sample Reference				WS103	WS103	WS104	WS104	WS105
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.00-1.20	2.00-2.20	0.40-0.60	2.20-2.40	0.40-0.60
Date Sampled				23/07/2024	23/07/2024	23/07/2024	23/07/2024	24/07/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status		

PCBs by GC-MS

PCB Congener 28	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 52	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 101	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 118	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 138	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 153	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 180	mg/kg	0.001	MCERTS	-	-	-	-	-
Total PCBs	mg/kg	0.007	MCERTS	-	-	-	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number				279498	279499	279500	279501	279502
Sample Reference				WS106	WS107	WS108	WS108	WS110
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.40-0.60	1.10-1.30	0.10-0.30	0.30-0.40	0.40-0.60
Date Sampled				24/07/2024	24/07/2024	24/07/2024	24/07/2024	23/07/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status		

Stone Content	%	0.1	NONE	-	-	-	-	65.3
Moisture Content	%	0.01	NONE	-	-	-	-	8.9
Total mass of sample received	kg	0.1	NONE	-	-	-	-	1

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	JSW	JSW	JSW	JSW	JSW
Actinolite detected	Type	N/A	ISO 17025	-	-	-	-	-
Amosite detected	Type	N/A	ISO 17025	-	-	-	-	-
Anthophyllite detected	Type	N/A	ISO 17025	-	-	-	-	-
Chrysotile detected	Type	N/A	ISO 17025	-	-	-	-	-
Crocidolite detected	Type	N/A	ISO 17025	-	-	-	-	-
Tremolite detected	Type	N/A	ISO 17025	-	-	-	-	-

Asbestos Containing Material Types Detected (ACM)	Type	N/A	ISO 17025	-	-	-	-	-
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General Inorganics

pH (L099)	pH Units	N/A	MCERTS	-	-	-	-	9.5
Total Cyanide	mg/kg	1	MCERTS	-	-	-	-	< 1.0
Complex Cyanide	mg/kg	1	MCERTS	-	-	-	-	< 1.0
Free Cyanide	mg/kg	1	MCERTS	-	-	-	-	< 1.0
Thiocyanate as SCN	mg/kg	5	NONE	-	-	-	-	< 5.0
Total Sulphate as SO ₄	mg/kg	50	MCERTS	-	-	-	-	1300
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	-	-	-	-	730
Water Soluble SO ₄ 16hr extraction (2:1)	mg/l	1.25	MCERTS	-	-	-	-	367
Total Sulphur	mg/kg	50	MCERTS	-	-	-	-	680
Total Sulphur	%	0.005	MCERTS	-	-	-	-	0.068
Ammoniacal Nitrogen as NH ₃	mg/kg	0.5	MCERTS	-	-	-	-	< 0.5
Organic Matter (automated)	%	0.1	MCERTS	-	-	-	-	2.3
Calorific Value	MJ/Kg	0.12	ISO 17025	-	-	-	-	1.38

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	-	-	-	-	< 1.0
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Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number	279498	279499	279500	279501	279502
Sample Reference	WS106	WS107	WS108	WS108	WS110
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.40-0.60	1.10-1.30	0.10-0.30	0.30-0.40	0.40-0.60
Date Sampled	24/07/2024	24/07/2024	24/07/2024	24/07/2024	23/07/2024
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	-	-	-	0.47
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-	-	0.08
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-	-	0.54
Fluorene	mg/kg	0.05	MCERTS	-	-	-	-	0.4
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-	-	3
Anthracene	mg/kg	0.05	MCERTS	-	-	-	-	0.78
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	3.9
Pyrene	mg/kg	0.05	MCERTS	-	-	-	-	3.6
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	1.9
Chrysene	mg/kg	0.05	MCERTS	-	-	-	-	1.8
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	-	-	-	-	2.1
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	-	-	-	-	1.1
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	1.9
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	0.97
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	0.23
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	-	-	1.1

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	-	-	-	-	23.9
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Heavy Metals / Metalloids

Antimony (aqua regia extractable)	mg/kg	1	ISO 17025	-	-	-	-	3.3
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	13
Barium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	76
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	-	-	-	-	0.9
Boron (water soluble)	mg/kg	0.2	MCERTS	-	-	-	-	0.6
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	-	-	-	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	-	-	-	-	< 1.8
Chromium (III)	mg/kg	1	NONE	-	-	-	-	19
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	19
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	50
Iron (aqua regia extractable)	mg/kg	40	MCERTS	-	-	-	-	33000
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	57
Manganese (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	950
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	-	-	-	< 0.3
Molybdenum (aqua regia extractable)	mg/kg	0.25	MCERTS	-	-	-	-	1.5
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	24
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	30
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	160

Calcium (aqua regia extractable)	mg/kg	20	ISO 17025	-	-	-	-	15000
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Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number				279498	279499	279500	279501	279502
Sample Reference				WS106	WS107	WS108	WS108	WS110
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.40-0.60	1.10-1.30	0.10-0.30	0.30-0.40	0.40-0.60
Date Sampled				24/07/2024	24/07/2024	24/07/2024	24/07/2024	23/07/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status		

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.01	MCERTS	-	-	-	-	< 0.010
TPHCWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.01	MCERTS	-	-	-	-	< 0.010
TPHCWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.01	MCERTS	-	-	-	-	< 0.010
TPHCWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	MCERTS	-	-	-	-	< 1.0
TPHCWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	-	-	-	-	< 2.0
TPHCWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	-	-	-	-	< 8.0
TPHCWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	-	-	-	-	16
TPHCWG - Aliphatic >EC35 - EC44 _{EH_CU_1D_AL}	mg/kg	8.4	NONE	-	-	-	-	< 8.4
TPHCWG - Aliphatic >EC5 - EC35 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	-	-	-	-	16
TPHCWG - Aliphatic >EC5 - EC44 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	-	-	-	-	16

TPHCWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.01	MCERTS	-	-	-	-	< 0.010
TPHCWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.01	MCERTS	-	-	-	-	< 0.010
TPHCWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.02	MCERTS	-	-	-	-	< 0.020
TPHCWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	-	-	-	-	< 1.0
TPHCWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	-	-	-	-	3
TPHCWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	-	-	-	-	15
TPHCWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	-	-	-	-	33
TPHCWG - Aromatic >EC35 - EC44 _{EH_CU_1D_AR}	mg/kg	8.4	NONE	-	-	-	-	43
TPHCWG - Aromatic >EC5 - EC35 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	-	-	-	-	51
TPHCWG - Aromatic >EC5 - EC44 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	-	-	-	-	94

TPH Total >EC6 - EC40 _{EH_CU+HS_1D_TOTAL}	mg/kg	10	NONE	-	-	-	-	92
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Petroleum Range Organics (EC6 - EC10) _{HS_1D_TOTAL}	mg/kg	1	ISO 17025	-	-	-	-	< 1.0
TPH (EC10 - EC25) _{EH_CU_1D_TOTAL}	mg/kg	10	MCERTS	-	-	-	-	30
TPH (EC25 - EC40) _{EH_CU_1D_TOTAL}	mg/kg	10	MCERTS	-	-	-	-	62
TPH (EC10 - EC40) _{EH_CU_1D_TOTAL}	mg/kg	10	MCERTS	-	-	-	-	92

Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number	279498	279499	279500	279501	279502
Sample Reference	WS106	WS107	WS108	WS108	WS110
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.40-0.60	1.10-1.30	0.10-0.30	0.30-0.40	0.40-0.60
Date Sampled	24/07/2024	24/07/2024	24/07/2024	24/07/2024	23/07/2024
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

VOCs

Chloromethane	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
Chloroethane	µg/kg	5	NONE	-	-	-	-	< 5.0
Bromomethane	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
Vinyl Chloride	µg/kg	5	NONE	-	-	-	-	< 5.0
Trichlorofluoromethane	µg/kg	5	NONE	-	-	-	-	< 5.0
1,1-Dichloroethene	µg/kg	5	NONE	-	-	-	-	< 5.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	NONE	-	-	-	-	< 5.0
Trans 1,2-dichloroethylene	µg/kg	5	NONE	-	-	-	-	< 5.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	-	-	-	-	< 5.0
1,1-Dichloroethane	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
2,2-Dichloropropane	µg/kg	5	NONE	-	-	-	-	< 5.0
Chloroform	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
1,1,1-Trichloroethane	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
1,2-Dichloroethane	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
1,1-Dichloropropene	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
Cis-1,2-dichloroethene	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
Benzene	µg/kg	5	MCERTS	-	-	-	-	< 5.0
Carbontetrachloride	µg/kg	5	NONE	-	-	-	-	< 5.0
1,2-Dichloropropane	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
Trichloroethene	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
Dibromomethane	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
Bromodichloromethane	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
Cis-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
Trans-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
Toluene	µg/kg	5	MCERTS	-	-	-	-	< 5.0
1,1,2-Trichloroethane	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
1,3-Dichloropropane	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
Dibromochloromethane	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
Tetrachloroethene	µg/kg	5	NONE	-	-	-	-	< 5.0
1,2-Dibromoethane	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
Chlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
1,1,1,2-Tetrachloroethane	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	-	-	-	-	< 5.0
p & m-Xylene	µg/kg	5	MCERTS	-	-	-	-	< 5.0
Styrene	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
Bromoform	µg/kg	5	NONE	-	-	-	-	< 5.0
o-Xylene	µg/kg	5	MCERTS	-	-	-	-	< 5.0
Isopropylbenzene	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
1,1,2,2-Tetrachloroethane	µg/kg	5	NONE	-	-	-	-	< 5.0
Bromobenzene	µg/kg	5	NONE	-	-	-	-	< 5.0
n-Propylbenzene	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
2-Chlorotoluene	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
4-Chlorotoluene	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
1,3,5-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
tert-Butylbenzene	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
sec-Butylbenzene	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
1,3-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
p-Isopropyltoluene	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
1,4-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
1,2-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	< 5.0

Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number				279498	279499	279500	279501	279502
Sample Reference				WS106	WS107	WS108	WS108	WS110
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.40-0.60	1.10-1.30	0.10-0.30	0.30-0.40	0.40-0.60
Date Sampled				24/07/2024	24/07/2024	24/07/2024	24/07/2024	23/07/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
Butylbenzene	µg/kg	5	NONE	-	-	-	-	< 5.0
1,2-Dibromo-3-chloropropane	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
1,2,4-Trichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	< 5.0
Hexachlorobutadiene	µg/kg	5	NONE	-	-	-	-	< 5.0
1,2,3-Trichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	< 5.0

SVOCs

Aniline	mg/kg	0.1	NONE	-	-	-	-	< 0.1
Phenol	mg/kg	0.2	ISO 17025	-	-	-	-	< 0.2
2-Chlorophenol	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	-	-	-	< 0.2
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	< 0.2
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	< 0.2
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
2-Methylphenol	mg/kg	0.3	MCERTS	-	-	-	-	< 0.3
Hexachloroethane	mg/kg	0.05	ISO 17025	-	-	-	-	< 0.05
Nitrobenzene	mg/kg	0.3	MCERTS	-	-	-	-	< 0.3
4-Methylphenol	mg/kg	0.2	NONE	-	-	-	-	< 0.2
Isophorone	mg/kg	0.2	MCERTS	-	-	-	-	< 0.2
2-Nitrophenol	mg/kg	0.3	NONE	-	-	-	-	< 0.3
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	-	-	-	< 0.3
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	-	-	-	< 0.3
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	< 0.3
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	-	-	-	< 0.3
4-Chloroaniline	mg/kg	0.1	NONE	-	-	-	-	< 0.1
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-	-	-	< 0.1
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	-	-	-	-	< 0.1
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	-	-	-	-	< 0.2
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-	-	-	0.5
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
Dimethylphthalate	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
2,6-Dinitrotoluene	mg/kg	0.1	NONE	-	-	-	-	< 0.1
2,4-Dinitrotoluene	mg/kg	0.2	NONE	-	-	-	-	< 0.2
Dibenzofuran	mg/kg	0.2	MCERTS	-	-	-	-	0.4
4-Chlorophenyl phenyl ether	mg/kg	0.3	MCERTS	-	-	-	-	< 0.3
Diethyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-	< 0.2
4-Nitroaniline	mg/kg	0.2	NONE	-	-	-	-	< 0.2
Azobenzene	mg/kg	0.3	NONE	-	-	-	-	< 0.3
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	-	-	-	< 0.2
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	< 0.30
Carbazole	mg/kg	0.3	MCERTS	-	-	-	-	< 0.3
Dibutyl phthalate	mg/kg	0.2	NONE	-	-	-	-	< 0.2
Anthraquinone	mg/kg	0.3	NONE	-	-	-	-	< 0.3
Butyl benzyl phthalate	mg/kg	0.3	NONE	-	-	-	-	< 0.3

Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number				279498	279499	279500	279501	279502
Sample Reference				WS106	WS107	WS108	WS108	WS110
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.40-0.60	1.10-1.30	0.10-0.30	0.30-0.40	0.40-0.60
Date Sampled				24/07/2024	24/07/2024	24/07/2024	24/07/2024	23/07/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status		

PCBs by GC-MS

PCB Congener 28	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001
PCB Congener 52	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001
PCB Congener 101	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001
PCB Congener 118	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001
PCB Congener 138	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001
PCB Congener 153	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001
PCB Congener 180	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001
Total PCBs	mg/kg	0.007	MCERTS	-	-	-	-	< 0.007

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number				279503	279522
Sample Reference				WS110	TP114
Sample Number				None Supplied	None Supplied
Depth (m)				1.40-1.60	1.40
Date Sampled				23/07/2024	25/07/2024
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection
				Test Accreditation Status	

Stone Content	%	0.1	NONE	-	< 0.1
Moisture Content	%	0.01	NONE	-	9.6
Total mass of sample received	kg	0.1	NONE	-	1

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	-
Asbestos Analyst ID	N/A	N/A	N/A	JSW	-
Actinolite detected	Type	N/A	ISO 17025	-	-
Amosite detected	Type	N/A	ISO 17025	-	-
Anthophyllite detected	Type	N/A	ISO 17025	-	-
Chrysotile detected	Type	N/A	ISO 17025	-	-
Crocidolite detected	Type	N/A	ISO 17025	-	-
Tremolite detected	Type	N/A	ISO 17025	-	-

Asbestos Containing Material Types Detected (ACM)	Type	N/A	ISO 17025	-	-
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General Inorganics

pH (L099)	pH Units	N/A	MCERTS	-	-
Total Cyanide	mg/kg	1	MCERTS	-	-
Complex Cyanide	mg/kg	1	MCERTS	-	-
Free Cyanide	mg/kg	1	MCERTS	-	-
Thiocyanate as SCN	mg/kg	5	NONE	-	-
Total Sulphate as SO ₄	mg/kg	50	MCERTS	-	-
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	-	-
Water Soluble SO ₄ 16hr extraction (2:1)	mg/l	1.25	MCERTS	-	-
Total Sulphur	mg/kg	50	MCERTS	-	-
Total Sulphur	%	0.005	MCERTS	-	-
Ammoniacal Nitrogen as NH ₃	mg/kg	0.5	MCERTS	-	-
Organic Matter (automated)	%	0.1	MCERTS	-	-
Calorific Value	MJ/Kg	0.12	ISO 17025	-	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	-	-
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Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number				279503	279522
Sample Reference				WS110	TP114
Sample Number				None Supplied	None Supplied
Depth (m)				1.40-1.60	1.40
Date Sampled				23/07/2024	25/07/2024
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	0.17
Acenaphthylene	mg/kg	0.05	MCERTS	-	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	-	0.3
Fluorene	mg/kg	0.05	MCERTS	-	0.31
Phenanthrene	mg/kg	0.05	MCERTS	-	2.9
Anthracene	mg/kg	0.05	MCERTS	-	0.9
Fluoranthene	mg/kg	0.05	MCERTS	-	7.2
Pyrene	mg/kg	0.05	MCERTS	-	7
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	3.3
Chrysene	mg/kg	0.05	MCERTS	-	3.4
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	-	4.3
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	-	1.5
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	3.7
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	2.1
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	0.47
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	2.2

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	-	39.6
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Heavy Metals / Metalloids

Antimony (aqua regia extractable)	mg/kg	1	ISO 17025	-	-
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	-
Barium (aqua regia extractable)	mg/kg	1	MCERTS	-	-
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	-	-
Boron (water soluble)	mg/kg	0.2	MCERTS	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	-
Chromium (hexavalent)	mg/kg	1.8	MCERTS	-	-
Chromium (III)	mg/kg	1	NONE	-	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	-
Iron (aqua regia extractable)	mg/kg	40	MCERTS	-	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	-
Manganese (aqua regia extractable)	mg/kg	1	MCERTS	-	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	-
Molybdenum (aqua regia extractable)	mg/kg	0.25	MCERTS	-	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	-
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	-	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	-

Calcium (aqua regia extractable)	mg/kg	20	ISO 17025	-	-
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Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number				279503	279522
Sample Reference				WS110	TP114
Sample Number				None Supplied	None Supplied
Depth (m)				1.40-1.60	1.40
Date Sampled				23/07/2024	25/07/2024
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.01	MCERTS	-	< 0.010
TPHCWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.01	MCERTS	-	< 0.010
TPHCWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.01	MCERTS	-	< 0.010
TPHCWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	MCERTS	-	< 1.0
TPHCWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	-	< 2.0
TPHCWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	-	< 8.0
TPHCWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	-	< 8.0
TPHCWG - Aliphatic >EC35 - EC44 _{EH_CU_1D_AL}	mg/kg	8.4	NONE	-	< 8.4
TPHCWG - Aliphatic >EC5 - EC35 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	-	< 10
TPHCWG - Aliphatic >EC5 - EC44 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	-	< 10

TPHCWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.01	MCERTS	-	< 0.010
TPHCWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.01	MCERTS	-	< 0.010
TPHCWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.02	MCERTS	-	< 0.020
TPHCWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	-	< 1.0
TPHCWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	-	2.4
TPHCWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	-	24
TPHCWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	-	45
TPHCWG - Aromatic >EC35 - EC44 _{EH_CU_1D_AR}	mg/kg	8.4	NONE	-	18
TPHCWG - Aromatic >EC5 - EC35 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	-	72
TPHCWG - Aromatic >EC5 - EC44 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	-	90

TPH Total >EC6 - EC40 _{EH_CU+HS_1D_TOTAL}	mg/kg	10	NONE	-	-
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Petroleum Range Organics (EC6 - EC10) _{HS_1D_TOTAL}	mg/kg	1	ISO 17025	-	-
TPH (EC10 - EC25) _{EH_CU_1D_TOTAL}	mg/kg	10	MCERTS	-	-
TPH (EC25 - EC40) _{EH_CU_1D_TOTAL}	mg/kg	10	MCERTS	-	-
TPH (EC10 - EC40) _{EH_CU_1D_TOTAL}	mg/kg	10	MCERTS	-	-

Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number				279503	279522
Sample Reference				WS110	TP114
Sample Number				None Supplied	None Supplied
Depth (m)				1.40-1.60	1.40
Date Sampled				23/07/2024	25/07/2024
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

VOCs

Chloromethane	µg/kg	5	ISO 17025	-	-
Chloroethane	µg/kg	5	NONE	-	-
Bromomethane	µg/kg	5	ISO 17025	-	-
Vinyl Chloride	µg/kg	5	NONE	-	-
Trichlorofluoromethane	µg/kg	5	NONE	-	-
1,1-Dichloroethene	µg/kg	5	NONE	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	NONE	-	-
Trans 1,2-dichloroethylene	µg/kg	5	NONE	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	-	< 5.0
1,1-Dichloroethane	µg/kg	5	ISO 17025	-	-
2,2-Dichloropropane	µg/kg	5	NONE	-	-
Chloroform	µg/kg	5	ISO 17025	-	-
1,1,1-Trichloroethane	µg/kg	5	ISO 17025	-	-
1,2-Dichloroethane	µg/kg	5	ISO 17025	-	-
1,1-Dichloropropene	µg/kg	5	ISO 17025	-	-
Cis-1,2-dichloroethene	µg/kg	5	ISO 17025	-	-
Benzene	µg/kg	5	MCERTS	-	< 5.0
Carbontetrachloride	µg/kg	5	NONE	-	-
1,2-Dichloropropane	µg/kg	5	ISO 17025	-	-
Trichloroethene	µg/kg	5	ISO 17025	-	-
Dibromomethane	µg/kg	5	ISO 17025	-	-
Bromodichloromethane	µg/kg	5	ISO 17025	-	-
Cis-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-
Trans-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-
Toluene	µg/kg	5	MCERTS	-	< 5.0
1,1,2-Trichloroethane	µg/kg	5	ISO 17025	-	-
1,3-Dichloropropane	µg/kg	5	ISO 17025	-	-
Dibromochloromethane	µg/kg	5	ISO 17025	-	-
Tetrachloroethene	µg/kg	5	NONE	-	-
1,2-Dibromoethane	µg/kg	5	ISO 17025	-	-
Chlorobenzene	µg/kg	5	ISO 17025	-	-
1,1,1,2-Tetrachloroethane	µg/kg	5	ISO 17025	-	-
Ethylbenzene	µg/kg	5	MCERTS	-	< 5.0
p & m-Xylene	µg/kg	5	MCERTS	-	< 5.0
Styrene	µg/kg	5	ISO 17025	-	-
Bromoform	µg/kg	5	NONE	-	-
o-Xylene	µg/kg	5	MCERTS	-	< 5.0
Isopropylbenzene	µg/kg	5	ISO 17025	-	-
1,1,2,2-Tetrachloroethane	µg/kg	5	NONE	-	-
Bromobenzene	µg/kg	5	NONE	-	-
n-Propylbenzene	µg/kg	5	ISO 17025	-	-
2-Chlorotoluene	µg/kg	5	ISO 17025	-	-
4-Chlorotoluene	µg/kg	5	ISO 17025	-	-
1,3,5-Trimethylbenzene	µg/kg	5	ISO 17025	-	-
tert-Butylbenzene	µg/kg	5	ISO 17025	-	-
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	-	-
sec-Butylbenzene	µg/kg	5	ISO 17025	-	-
1,3-Dichlorobenzene	µg/kg	5	ISO 17025	-	-
p-Isopropyltoluene	µg/kg	5	ISO 17025	-	-
1,4-Dichlorobenzene	µg/kg	5	ISO 17025	-	-
1,2-Dichlorobenzene	µg/kg	5	ISO 17025	-	-

Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number				279503	279522
Sample Reference				WS110	TP114
Sample Number				None Supplied	None Supplied
Depth (m)				1.40-1.60	1.40
Date Sampled				23/07/2024	25/07/2024
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		
Butylbenzene	µg/kg	5	NONE	-	-
1,2-Dibromo-3-chloropropane	µg/kg	5	ISO 17025	-	-
1,2,4-Trichlorobenzene	µg/kg	5	ISO 17025	-	-
Hexachlorobutadiene	µg/kg	5	NONE	-	-
1,2,3-Trichlorobenzene	µg/kg	5	ISO 17025	-	-

SVOCs

Aniline	mg/kg	0.1	NONE	-	-
Phenol	mg/kg	0.2	ISO 17025	-	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	-
2-Methylphenol	mg/kg	0.3	MCERTS	-	-
Hexachloroethane	mg/kg	0.05	ISO 17025	-	-
Nitrobenzene	mg/kg	0.3	MCERTS	-	-
4-Methylphenol	mg/kg	0.2	NONE	-	-
Isophorone	mg/kg	0.2	MCERTS	-	-
2-Nitrophenol	mg/kg	0.3	NONE	-	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	-
4-Chloroaniline	mg/kg	0.1	NONE	-	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	-	-
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	-	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-	-
2,6-Dinitrotoluene	mg/kg	0.1	NONE	-	-
2,4-Dinitrotoluene	mg/kg	0.2	NONE	-	-
Dibenzofuran	mg/kg	0.2	MCERTS	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	MCERTS	-	-
Diethyl phthalate	mg/kg	0.2	MCERTS	-	-
4-Nitroaniline	mg/kg	0.2	NONE	-	-
Azobenzene	mg/kg	0.3	NONE	-	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	-
Carbazole	mg/kg	0.3	MCERTS	-	-
Dibutyl phthalate	mg/kg	0.2	NONE	-	-
Anthraquinone	mg/kg	0.3	NONE	-	-
Butyl benzyl phthalate	mg/kg	0.3	NONE	-	-

Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number				279503	279522
Sample Reference				WS110	TP114
Sample Number				None Supplied	None Supplied
Depth (m)				1.40-1.60	1.40
Date Sampled				23/07/2024	25/07/2024
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection
				Test Accreditation Status	

PCBs by GC-MS

PCB Congener 28	mg/kg	0.001	MCERTS	-	-
PCB Congener 52	mg/kg	0.001	MCERTS	-	-
PCB Congener 101	mg/kg	0.001	MCERTS	-	-
PCB Congener 118	mg/kg	0.001	MCERTS	-	-
PCB Congener 138	mg/kg	0.001	MCERTS	-	-
PCB Congener 153	mg/kg	0.001	MCERTS	-	-
PCB Congener 180	mg/kg	0.001	MCERTS	-	-
Total PCBs	mg/kg	0.007	MCERTS	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number				279465	279468	279478	279480	279487
Sample Reference				TP115	TP114	TP101	TP103	BH103
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.80	0.90	0.80	0.50	0.40-0.60
Date Sampled				25/07/2024	25/07/2024	26/04/2024	29/07/2024	23/07/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)				Units	Test Limit of detection	Test Accreditation Status		

General Inorganics

pH (automated)	pH Units	N/A	ISO 17025	7.7	7.8	8.1	10.7	11.4
Total Cyanide	µg/l	10	ISO 17025	< 10	10	< 10	< 10	< 10
Complex Cyanide	µg/l	10	ISO 17025	< 10	10	< 10	< 10	< 10
Free Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10	< 10
Thiocyanate as SCN	µg/l	200	ISO 17025	210	< 200	< 200	< 200	< 200
Sulphate as SO ₄	mg/l	0.045	ISO 17025	2070	1660	16.3	132	145
Ammoniacal Nitrogen as NH ₃	µg/l	15	NONE	68	22	85	32	43

Total Phenols

Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10	< 10	< 10	-	< 10
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Speciated PAHs

Naphthalene	µg/l	0.01	ISO 17025	< 0.01	4.4	1.9	0.76	0.25
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	0.64	0.13	0.07	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	42 %	0.78	0.18	0.09
Fluorene	µg/l	0.01	ISO 17025	< 0.01	13 %	0.31	0.12	0.05
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	12 %	0.3	0.29	0.18
Anthracene	µg/l	0.01	ISO 17025	< 0.01	3.1	0.05	0.04	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	1.5	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	0.95	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Total PAH

Total EPA-16 PAHs	µg/l	0.16	NONE	< 0.16	77.5	3.47	1.46	0.57
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Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number	279465	279468	279478	279480	279487
Sample Reference	TP115	TP114	TP101	TP103	BH103
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.80	0.90	0.80	0.50	0.40-0.60
Date Sampled	25/07/2024	25/07/2024	26/04/2024	29/07/2024	23/07/2024
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Heavy Metals / Metalloids

Antimony (dissolved)	µg/l	1.7	ISO 17025	< 1.7	< 1.7	< 1.7	< 1.7	< 1.7
Arsenic (dissolved)	µg/l	1	ISO 17025	1.5	2.6	1.7	3.7	1.7
Barium (dissolved)	µg/l	0.05	ISO 17025	35	57	32	56	39
Beryllium (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Boron (dissolved)	µg/l	10	ISO 17025	250	240	69	180	100
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	U/S
Chromium (III)	µg/l	5	NONE	< 5.0	< 5.0	< 5.0	31	U/S
Chromium (dissolved)	µg/l	0.4	ISO 17025	1.7	1.4	1.2	31	96
Copper (dissolved)	µg/l	0.7	ISO 17025	14	16	13	16	14
Iron (dissolved)	mg/l	0.004	ISO 17025	0.037	0.024	0.027	0.046	0.039
Lead (dissolved)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Manganese (dissolved)	µg/l	0.06	ISO 17025	43	54	120	18	7.3
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Molybdenum (dissolved)	µg/l	0.4	ISO 17025	11	35	1.5	24	18
Nickel (dissolved)	µg/l	0.3	ISO 17025	1.9	1.4	1.7	0.6	1.8
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Vanadium (dissolved)	µg/l	1.7	ISO 17025	< 1.7	4.2	< 1.7	33	28
Zinc (dissolved)	µg/l	0.4	ISO 17025	29	18	22	8.9	4.4

Petroleum Hydrocarbons

TPH - Aliphatic >EC5 - EC6 _{HS_1D_AL}	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH - Aliphatic >EC6 - EC8 _{HS_1D_AL}	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH - Aliphatic >EC8 - EC10 _{HS_1D_AL}	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH - Aliphatic >EC10 - EC12 _{EH_1D_AL_MS}	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH - Aliphatic >EC12 - EC16 _{EH_1D_AL_MS}	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH - Aliphatic >EC16 - EC21 _{EH_1D_AL_MS}	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH - Aliphatic >EC21 - EC35 _{EH_1D_AL_MS}	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH - Aliphatic >EC35 - EC40 _{EH_1D_AL_MS}	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH - Aliphatic >EC35 - EC44 _{EH_1D_AL_MS}	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH - Aliphatic >EC40 - EC44 _{EH_1D_AL_MS}	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH - Aliphatic >EC5 - EC35 _{HS+EH_1D_AL_MS}	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH - Aliphatic >EC5 - EC44 _{HS+EH_1D_AL_MS}	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10

TPH - Aromatic >EC5 - EC7 _{HS_1D_AR}	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH - Aromatic >EC7 - EC8 _{HS_1D_AR}	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH - Aromatic >EC8 - EC10 _{EH_1D_AR_MS}	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH - Aromatic >EC10 - EC12 _{EH_1D_AR_MS}	µg/l	10	NONE	< 10	74	< 10	< 10	< 10
TPH - Aromatic >EC12 - EC16 _{EH_1D_AR_MS}	µg/l	10	NONE	< 10	330	< 10	< 10	< 10
TPH - Aromatic >EC16 - EC21 _{EH_1D_AR_MS}	µg/l	10	NONE	< 10	210	< 10	< 10	< 10
TPH - Aromatic >EC21 - EC35 _{EH_1D_AR_MS}	µg/l	10	NONE	< 10	130	< 10	< 10	< 10
TPH - Aromatic >EC35 - EC40 _{EH_1D_AR_MS}	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH - Aromatic >EC35 - EC44 _{EH_1D_AR_MS}	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH - Aromatic >EC40 - EC44 _{EH_1D_AR_MS}	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH - Aromatic >EC5 - EC44 _{HS+EH_1D_AR_MS}	µg/l	10	NONE	< 10	740	< 10	< 10	< 10
TPH - Aromatic >EC6 - EC35 _{HS+EH_1D_AR_MS}	µg/l	10	NONE	< 10	740	< 10	< 10	< 10

Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number				279465	279468	279478	279480	279487
Sample Reference				TP115	TP114	TP101	TP103	BH103
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.80	0.90	0.80	0.50	0.40-0.60
Date Sampled				25/07/2024	25/07/2024	26/04/2024	29/07/2024	23/07/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)	Units	Test Limit of detection	Test Accreditation Status					

VOCs

MTBE (Methyl Tertiary Butyl Ether)	µg/l	3	NONE	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Benzene	µg/l	3	NONE	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Toluene	µg/l	3	NONE	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Ethylbenzene	µg/l	3	NONE	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
p & m-xylene	µg/l	3	NONE	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
o-xylene	µg/l	3	NONE	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0

PCBs by GC-MS

PCB Congener 28	µg/l	0.05	NONE	-	-	< 0.05	< 0.05	-
PCB Congener 52	µg/l	0.05	NONE	-	-	< 0.05	< 0.05	-
PCB Congener 101	µg/l	0.05	NONE	-	-	< 0.05	< 0.05	-
PCB Congener 118	µg/l	0.05	NONE	-	-	< 0.05	< 0.05	-
PCB Congener 138	µg/l	0.05	NONE	-	-	< 0.05	< 0.05	-
PCB Congener 153	µg/l	0.05	NONE	-	-	< 0.05	< 0.05	-
PCB Congener 180	µg/l	0.05	NONE	-	-	< 0.05	< 0.05	-

Total PCBs	µg/l	0.35	NONE	-	-	< 0.35	< 0.35	-
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U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number				279491	279497	279502
Sample Reference				WS102	WS105	WS110
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				1.40-1.60	0.40-0.60	0.40-0.60
Date Sampled				22/07/2024	24/07/2024	23/07/2024
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)	Units	Test Limit of detection	Test Accreditation Status			

General Inorganics

pH (automated)	pH Units	N/A	ISO 17025	8.1	-	-
Total Cyanide	µg/l	10	ISO 17025	< 10	-	-
Complex Cyanide	µg/l	10	ISO 17025	< 10	-	-
Free Cyanide	µg/l	10	ISO 17025	< 10	-	-
Thiocyanate as SCN	µg/l	200	ISO 17025	< 200	-	-
Sulphate as SO ₄	mg/l	0.045	ISO 17025	11.8	-	-
Ammoniacal Nitrogen as NH ₃	µg/l	15	NONE	120	-	-

Total Phenols

Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10	< 10	< 10
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Speciated PAHs

Naphthalene	µg/l	0.01	ISO 17025	< 0.01	43 %	0.22
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	0.96	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	30	0.14
Fluorene	µg/l	0.01	ISO 17025	< 0.01	9	0.09
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	7.4	0.13
Anthracene	µg/l	0.01	ISO 17025	< 0.01	4	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	4.7	0.06
Pyrene	µg/l	0.01	ISO 17025	< 0.01	3	0.05
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	0.2	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	0.16	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01

Total PAH

Total EPA-16 PAHs	µg/l	0.16	NONE	< 0.16	103	0.69
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Analytical Report Number: 24-034845
Project / Site name: The Seam Barnsley

Lab Sample Number	279491	279497	279502
Sample Reference	WS102	WS105	WS110
Sample Number	None Supplied	None Supplied	None Supplied
Depth (m)	1.40-1.60	0.40-0.60	0.40-0.60
Date Sampled	22/07/2024	24/07/2024	23/07/2024
Time Taken	None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)	Units	Test Limit of detection	Test Accreditation Status

Heavy Metals / Metalloids

Antimony (dissolved)	µg/l	1.7	ISO 17025	< 1.7	-	-
Arsenic (dissolved)	µg/l	1	ISO 17025	< 1.0	-	-
Barium (dissolved)	µg/l	0.05	ISO 17025	18	-	-
Beryllium (dissolved)	µg/l	0.2	ISO 17025	< 0.2	-	-
Boron (dissolved)	µg/l	10	ISO 17025	40	-	-
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	-	-
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	-	-
Chromium (III)	µg/l	5	NONE	< 5.0	-	-
Chromium (dissolved)	µg/l	0.4	ISO 17025	2.7	-	-
Copper (dissolved)	µg/l	0.7	ISO 17025	17	-	-
Iron (dissolved)	mg/l	0.004	ISO 17025	1.1	-	-
Lead (dissolved)	µg/l	1	ISO 17025	< 1.0	-	-
Manganese (dissolved)	µg/l	0.06	ISO 17025	62	-	-
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	-	-
Molybdenum (dissolved)	µg/l	0.4	ISO 17025	7.3	-	-
Nickel (dissolved)	µg/l	0.3	ISO 17025	2.1	-	-
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	-	-
Vanadium (dissolved)	µg/l	1.7	ISO 17025	3.7	-	-
Zinc (dissolved)	µg/l	0.4	ISO 17025	13	-	-

Petroleum Hydrocarbons

TPH - Aliphatic >EC5 - EC6 _{HS, 1D, AL}	µg/l	1	NONE	< 1.0	< 1.0	< 1.0
TPH - Aliphatic >EC6 - EC8 _{HS, 1D, AL}	µg/l	1	NONE	< 1.0	< 1.0	< 1.0
TPH - Aliphatic >EC8 - EC10 _{HS, 1D, AL}	µg/l	1	NONE	< 1.0	< 1.0	< 1.0
TPH - Aliphatic >EC10 - EC12 _{EH, 1D, AL, MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH - Aliphatic >EC12 - EC16 _{EH, 1D, AL, MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH - Aliphatic >EC16 - EC21 _{EH, 1D, AL, MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH - Aliphatic >EC21 - EC35 _{EH, 1D, AL, MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH - Aliphatic >EC35 - EC40 _{EH, 1D, AL, MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH - Aliphatic >EC35 - EC44 _{EH, 1D, AL, MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH - Aliphatic >EC40 - EC44 _{EH, 1D, AL, MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH - Aliphatic >EC5 - EC35 _{HS+EH, 1D, AL, MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH - Aliphatic >EC5 - EC44 _{HS+EH, 1D, AL, MS}	µg/l	10	NONE	< 10	< 10	< 10

TPH - Aromatic >EC5 - EC7 _{HS, 1D, AR}	µg/l	1	NONE	< 1.0	< 1.0	< 1.0
TPH - Aromatic >EC7 - EC8 _{HS, 1D, AR}	µg/l	1	NONE	< 1.0	< 1.0	< 1.0
TPH - Aromatic >EC8 - EC10 _{EH, 1D, AR, MS}	µg/l	1	NONE	< 1.0	< 1.0	< 1.0
TPH - Aromatic >EC10 - EC12 _{EH, 1D, AR, MS}	µg/l	10	NONE	< 10	88	< 10
TPH - Aromatic >EC12 - EC16 _{EH, 1D, AR, MS}	µg/l	10	NONE	< 10	240	13
TPH - Aromatic >EC16 - EC21 _{EH, 1D, AR, MS}	µg/l	10	NONE	< 10	460	40
TPH - Aromatic >EC21 - EC35 _{EH, 1D, AR, MS}	µg/l	10	NONE	< 10	760	< 10
TPH - Aromatic >EC35 - EC40 _{EH, 1D, AR, MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH - Aromatic >EC35 - EC44 _{EH, 1D, AR, MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH - Aromatic >EC40 - EC44 _{EH, 1D, AR, MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH - Aromatic >EC5 - EC44 _{HS+EH, 1D, AR, MS}	µg/l	10	NONE	< 10	1600	53
TPH - Aromatic >EC6 - EC35 _{HS+EH, 1D, AR, MS}	µg/l	10	NONE	< 10	1600	53

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Lab Sample Number				279491	279497	279502
Sample Reference				WS102	WS105	WS110
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				1.40-1.60	0.40-0.60	0.40-0.60
Date Sampled				22/07/2024	24/07/2024	23/07/2024
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)	Units	Test Limit of detection	Test Accreditation Status			

VOCS

MTBE (Methyl Tertiary Butyl Ether)	µg/l	3	NONE	< 3.0	< 3.0	< 3.0
Benzene	µg/l	3	NONE	< 3.0	< 3.0	< 3.0
Toluene	µg/l	3	NONE	< 3.0	< 3.0	< 3.0
Ethylbenzene	µg/l	3	NONE	< 3.0	< 3.0	< 3.0
p & m-xylene	µg/l	3	NONE	< 3.0	< 3.0	< 3.0
o-xylene	µg/l	3	NONE	< 3.0	< 3.0	< 3.0

PCBs by GC-MS

PCB Congener 28	µg/l	0.05	NONE	-	-	< 0.05
PCB Congener 52	µg/l	0.05	NONE	-	-	< 0.05
PCB Congener 101	µg/l	0.05	NONE	-	-	< 0.05
PCB Congener 118	µg/l	0.05	NONE	-	-	< 0.05
PCB Congener 138	µg/l	0.05	NONE	-	-	< 0.05
PCB Congener 153	µg/l	0.05	NONE	-	-	< 0.05
PCB Congener 180	µg/l	0.05	NONE	-	-	< 0.05

Total PCBs	µg/l	0.35	NONE	-	-	< 0.35
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U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number : 24-034845

Project / Site name: The Seam Barnsley

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
279459	TP118	None Supplied	0.8	Brown loam and sand with gravel and tar
279460	HP107	None Supplied	0.5	Brown loam and sand with gravel and tar
279461	HP112	None Supplied	0.3	Brown loam and gravel with stones
279464	TP117	None Supplied	0.8	Brown loam and gravel with tar and stones
279465	TP115	None Supplied	0.8	Brown loam and sand with gravel and stones
279468	TP114	None Supplied	0.9	Brown loam and gravel with tar and stones
279471	TP112	None Supplied	0.6	Brown loam and sand with gravel and tar
279472	TP112	None Supplied	1.1	Brown loam and gravel with clinker
279473	TP112	None Supplied	2.1	Brown clay and sand with gravel
279475	TP113	None Supplied	0.7	Brown loam and sand with clinker and gravel
279477	TP113	None Supplied	2.2	Brown clay and sand with gravel
279478	TP101	None Supplied	0.8	Brown clay and sand
279479	TP101	None Supplied	2.3	Brown loam and sand with tar and vegetation
279480	TP103	None Supplied	0.5	Brown sandy loam with gravel and tar
279481	TP103	None Supplied	1	Brown loam and sand with clinker and tar
279483	TP110	None Supplied	0.9	Brown loam and sand with gravel and stones
279487	BH103	None Supplied	0.40-0.60	Brown loam and gravel with concrete and brick
279491	WS102	None Supplied	1.40-1.60	Brown sandy clay with stones
279496	WS104	None Supplied	2.20-2.40	Brown clay and sand with gravel
279497	WS105	None Supplied	0.40-0.60	Brown loam and gravel with tar and stones
279502	WS110	None Supplied	0.40-0.60	Brown sand with gravel and stones
279522	TP114	None Supplied	1.4	Brown sandy clay with gravel

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Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in Soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques	In-house method based on HSG 248, 2021	A001B	D	ISO 17025
Organic matter (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)	In-house method	L009B	D	MCERTS
Calorific Value of soil	Determination of the calorific value of soil by combustion in a controlled environment	Calorific Value of Soil by Bomb Calorimeter	L013B	D	ISO 17025
Moisture Content	Moisture content, determined gravimetrically (up to 30°C)	In-house method	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
PCB's By GC-MS in soil	Determination of PCB by extraction with hexane followed by GC-MS	In-house method based on USEPA 8082	L027B	D	MCERTS
PCB's By GC-MS in leachate	Determination of PCB by extraction with hexane followed by GC-MS	In-house method based on USEPA 8082	L028B	W	NONE
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L038B	D	MCERTS
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES	In-house method based on Second Site Properties version 3	L038B	D	MCERTS
Cations in soil by ICP-OES	Determination of cations in soil by aqua-regia digestion followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L038B	D	MCERTS
Total sulphate (as SO ₄ in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES	In-house method	L038B	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Sulphate, water soluble, in soil (16hr extraction)	In-house method	L038B	D	MCERTS
Total Sulphur in soil	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES	In-house method	L038B	D	MCERTS
Metals by ICP-OES in leachate	Determination of metals in leachate by acidification followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L039B	W	ISO 17025
Speciated PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS
Total petroleum hydrocarbons with carbon banding by GC-MS/GC-MS HS in leachate	Determination of total petroleum hydrocarbons in leachate by GC-MS/GC-MS HS with carbon banding aliphatic and aromatic	In-house method	L070B/L088	W	NONE

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Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
BTEX and/or Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS	In-house method based on USEPA 8260	L073B	W	MCERTS
BTEX and/or Volatile organic compounds in leachate	Determination of volatile organic compounds in leachate by headspace GC-MS	In-house method based on USEPA 8260	L073B	W	NONE
Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS with carbon banding aliphatic and aromatic	In-house method	L076B/L088	D/W	MCERTS
Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS	In-house method	L076B/L088	D/W	MCERTS
Complex cyanide in leachate	Determination of complex cyanide by calculation	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	ISO 17025
Complex Cyanide in soil	Determination of complex cyanide by calculation	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	MCERTS
Chromium III in leachate	In-house method by calculation from total Cr and Cr VI	In-house method by calculation	L080	W	NONE
Chromium III in soil	In-house method by calculation from total Cr and Cr VI	In-house method by calculation	L080	W	NONE
Hexavalent chromium in leachate	Determination of hexavalent chromium in leachate by acidification, addition of 1,5 diphenylcarbazine followed by colorimetry	In-house method	L080	W	ISO 17025
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazine followed by colorimetry	In-house method	L080	W	MCERTS
Free cyanide in leachate	Determination of free cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	ISO 17025
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	MCERTS
Monohydric phenols in leachate	Determination of phenols in leachate by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	ISO 17025
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	MCERTS
Total cyanide in leachate	Determination of total cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	ISO 17025
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	MCERTS

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Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Ammonia as NH ₃ in leachate	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082B	W	NONE
Ammonia as NH ₃ in soil	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082B	W	MCERTS
Thiocyanate in soil	Determination of thiocyanate in soil by extraction in water followed by acidification followed by addition of ferric nitrate followed by discrete analyser (spectrophotometer)	In-house method	L082B	D	NONE
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement	In-house method	L099	D	MCERTS
pH at 20°C in leachate (automated)	Determination of pH in leachate by electrometric measurement	In-house method	L099	W	ISO 17025
Speciated PAHs and/or Semi-volatile organic compounds in leachate	SVOCs and PAHs in leachate	In-house method	L102B		ISO 17025

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Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Thiocyanate in leachate	Determination of thiocyanate in water by discrete analyser (colorimetry)	In-house method based on SMWW 4500-CN-M	L082B	W	ISO 17025

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30°C.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#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 e.g. EH+HS_Total or EH_CU+HS_Total

Quality control parameter failure associated with individual result applies to calculated sum of individuals.

The result for sum should be interpreted with caution

\$% - Concentration has been determined by extrapolated calibration as analyte concentration is above the concentration range for the procedure. The result should be considered as deviating and should be interpreted with caution. The result is not accredited.

Analytical Report Number : 24-034845

Project / Site name: The Seam Barnsley

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis. Please note that the associated result(s) may be unreliable and should be interpreted with care.

Key: a - No sampling date b - Incorrect container c - Holding time d - Headspace e - Temperature

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
BH103	N/A	S	279487	bc	BTEX and/or Volatile organic compounds in soil	L073B	bc
BH103	N/A	S	279487	bc	Complex Cyanide in soil	L080	c
BH103	N/A	S	279487	bc	Free cyanide in soil	L080	c
BH103	N/A	S	279487	bc	Thiocyanate in soil	L082B	c
BH103	N/A	S	279487	bc	Total cyanide in soil	L080	c
BH103	N/A	S	279487	bc	Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	L076B/L088	b
HP107	N/A	S	279460	c	BTEX and/or Volatile organic compounds in soil	L073B	c
HP107	N/A	S	279460	c	Complex Cyanide in soil	L080	c
HP107	N/A	S	279460	c	Free cyanide in soil	L080	c
HP107	N/A	S	279460	c	Thiocyanate in soil	L082B	c
HP107	N/A	S	279460	c	Total cyanide in soil	L080	c
HP112	N/A	S	279461	c	BTEX and/or Volatile organic compounds in soil	L073B	c
TP101	N/A	S	279478	c	Ammonia as NH3 in soil	L082B	c
TP101	N/A	S	279478	c	BTEX and/or Volatile organic compounds in soil	L073B	c
TP101	N/A	S	279478	c	Chromium III in soil	L080	c
TP101	N/A	S	279478	c	Complex Cyanide in soil	L080	c
TP101	N/A	S	279478	c	Free cyanide in soil	L080	c
TP101	N/A	S	279478	c	Hexavalent chromium in soil	L080	c
TP101	N/A	S	279478	c	PCB's By GC-MS in soil	L027B	c
TP101	N/A	S	279478	c	Speciated PAHs and/or Semi-volatile organic compounds in soil	L064B	c
TP101	N/A	S	279478	c	Thiocyanate in soil	L082B	c
TP101	N/A	S	279478	c	Total cyanide in soil	L080	c
TP101	N/A	S	279478	c	Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	L076B/L088	c
TP101	N/A	S	279478	c	Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	L129B	c
TP101	N/A	S	279478	c	Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	L076B/L088	c
TP101	N/A	S	279478	c	pH in soil (automated)	L099	c
TP101	N/A	S	279479	c	Ammonia as NH3 in soil	L082B	c
TP101	N/A	S	279479	c	BTEX and/or Volatile organic compounds in soil	L073B	c
TP101	N/A	S	279479	c	Chromium III in soil	L080	c
TP101	N/A	S	279479	c	Complex Cyanide in soil	L080	c
TP101	N/A	S	279479	c	Free cyanide in soil	L080	c
TP101	N/A	S	279479	c	Hexavalent chromium in soil	L080	c
TP101	N/A	S	279479	c	Monohydric phenols in soil	L080	c
TP101	N/A	S	279479	c	Organic matter (Automated) in soil	L009B	c
TP101	N/A	S	279479	c	Speciated PAHs and/or Semi-volatile organic compounds in soil	L064B	c
TP101	N/A	S	279479	c	Thiocyanate in soil	L082B	c
TP101	N/A	S	279479	c	Total cyanide in soil	L080	c
TP101	N/A	S	279479	c	Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	L076B/L088	c
TP101	N/A	S	279479	c	Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	L129B	c
TP101	N/A	S	279479	c	Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	L076B/L088	c
TP101	N/A	S	279479	c	pH in soil (automated)	L099	c
TP103	N/A	S	279480	c	Complex Cyanide in soil	L080	c
TP103	N/A	S	279480	c	Free cyanide in soil	L080	c
TP103	N/A	S	279480	c	Total cyanide in soil	L080	c
TP110	N/A	S	279483	c	Complex Cyanide in soil	L080	c
TP110	N/A	S	279483	c	Free cyanide in soil	L080	c
TP110	N/A	S	279483	c	Total cyanide in soil	L080	c
TP112	N/A	S	279471	c	BTEX and/or Volatile organic compounds in soil	L073B	c
TP112	N/A	S	279471	c	Speciated PAHs and/or Semi-volatile organic compounds in soil	L064B	c
TP112	N/A	S	279471	c	Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	L076B/L088	c
TP112	N/A	S	279472	c	Ammonia as NH3 in soil	L082B	c
TP112	N/A	S	279472	c	BTEX and/or Volatile organic compounds in soil	L073B	c
TP112	N/A	S	279472	c	Chromium III in soil	L080	c
TP112	N/A	S	279472	c	Complex Cyanide in soil	L080	c
TP112	N/A	S	279472	c	Free cyanide in soil	L080	c
TP112	N/A	S	279472	c	Hexavalent chromium in soil	L080	c
TP112	N/A	S	279472	c	Organic matter (Automated) in soil	L009B	c
TP112	N/A	S	279472	c	Speciated PAHs and/or Semi-volatile organic compounds in soil	L064B	c

Analytical Report Number : 24-034845

Project / Site name: The Seam Barnsley

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis. Please note that the associated result(s) may be unreliable and should be interpreted with care.

Key: a - No sampling date b - Incorrect container c - Holding time d - Headspace e - Temperature

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
TP112	N/A	S	279472	c	Thiocyanate in soil	L082B	c
TP112	N/A	S	279472	c	Total cyanide in soil	L080	c
TP112	N/A	S	279472	c	Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	L076B/L088	c
TP112	N/A	S	279472	c	Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	L129B	c
TP112	N/A	S	279472	c	Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	L076B/L088	c
TP112	N/A	S	279472	c	pH in soil (automated)	L099	c
TP112	N/A	S	279473	c	BTEX and/or Volatile organic compounds in soil	L073B	c
TP112	N/A	S	279473	c	Speciated PAHs and/or Semi-volatile organic compounds in soil	L064B	c
TP112	N/A	S	279473	c	Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	L076B/L088	c
TP113	N/A	S	279475	c	Ammonia as NH3 in soil	L082B	c
TP113	N/A	S	279475	c	BTEX and/or Volatile organic compounds in soil	L073B	c
TP113	N/A	S	279475	c	Chromium III in soil	L080	c
TP113	N/A	S	279475	c	Complex Cyanide in soil	L080	c
TP113	N/A	S	279475	c	Free cyanide in soil	L080	c
TP113	N/A	S	279475	c	Hexavalent chromium in soil	L080	c
TP113	N/A	S	279475	c	Monohydric phenols in soil	L080	c
TP113	N/A	S	279475	c	Organic matter (Automated) in soil	L009B	c
TP113	N/A	S	279475	c	Speciated PAHs and/or Semi-volatile organic compounds in soil	L064B	c
TP113	N/A	S	279475	c	Thiocyanate in soil	L082B	c
TP113	N/A	S	279475	c	Total cyanide in soil	L080	c
TP113	N/A	S	279475	c	Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	L076B/L088	c
TP113	N/A	S	279475	c	pH in soil (automated)	L099	c
TP113	N/A	S	279477	c	BTEX and/or Volatile organic compounds in soil	L073B	c
TP113	N/A	S	279477	c	Speciated PAHs and/or Semi-volatile organic compounds in soil	L064B	c
TP113	N/A	S	279477	c	Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	L076B/L088	c
TP114	N/A	S	279468	c	BTEX and/or Volatile organic compounds in soil	L073B	c
TP114	N/A	S	279468	c	Complex Cyanide in soil	L080	c
TP114	N/A	S	279468	c	Free cyanide in soil	L080	c
TP114	N/A	S	279468	c	Thiocyanate in soil	L082B	c
TP114	N/A	S	279468	c	Total cyanide in soil	L080	c
TP114	N/A	S	279468	c	Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	L076B/L088	c
TP114	N/A	S	279468	c	Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	L129B	c
TP114	N/A	S	279522	c	BTEX and/or Volatile organic compounds in soil	L073B	c
TP115	N/A	S	279465	c	BTEX and/or Volatile organic compounds in soil	L073B	c
TP115	N/A	S	279465	c	Complex Cyanide in soil	L080	c
TP115	N/A	S	279465	c	Free cyanide in soil	L080	c
TP115	N/A	S	279465	c	Thiocyanate in soil	L082B	c
TP115	N/A	S	279465	c	Total cyanide in soil	L080	c
TP117	N/A	S	279464	c	BTEX and/or Volatile organic compounds in soil	L073B	c
TP117	N/A	S	279464	c	Complex Cyanide in soil	L080	c
TP117	N/A	S	279464	c	Free cyanide in soil	L080	c
TP117	N/A	S	279464	c	Thiocyanate in soil	L082B	c
TP117	N/A	S	279464	c	Total cyanide in soil	L080	c
TP118	N/A	S	279459	c	BTEX and/or Volatile organic compounds in soil	L073B	c
WS102	N/A	S	279491	bc	BTEX and/or Volatile organic compounds in soil	L073B	bc
WS102	N/A	S	279491	bc	Complex Cyanide in soil	L080	c
WS102	N/A	S	279491	bc	Free cyanide in soil	L080	c
WS102	N/A	S	279491	bc	Thiocyanate in soil	L082B	c
WS102	N/A	S	279491	bc	Total cyanide in soil	L080	c
WS102	N/A	S	279491	bc	Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	L076B/L088	c
WS102	N/A	S	279491	bc	Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	L129B	c
WS102	N/A	S	279491	bc	Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	L076B/L088	b
WS104	N/A	S	279496	bc	BTEX and/or Volatile organic compounds in soil	L073B	bc
WS104	N/A	S	279496	bc	Complex Cyanide in soil	L080	c
WS104	N/A	S	279496	bc	Free cyanide in soil	L080	c
WS104	N/A	S	279496	bc	Thiocyanate in soil	L082B	c
WS104	N/A	S	279496	bc	Total cyanide in soil	L080	c
WS104	N/A	S	279496	bc	Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	L076B/L088	b

Analytical Report Number : 24-034845
Project / Site name: The Seam Barnsley

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis. Please note that the associated result(s) may be unreliable and should be interpreted with care.

Key: a - No sampling date b - Incorrect container c - Holding time d - Headspace e - Temperature

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
WS105	N/A	S	279497	bc	BTEX and/or Volatile organic compounds in soil	L073B	bc
WS105	N/A	S	279497	bc	Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	L076B/L088	c
WS105	N/A	S	279497	bc	Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	L129B	c
WS105	N/A	S	279497	bc	Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	L076B/L088	b
WS110	N/A	S	279502	bc	BTEX and/or Volatile organic compounds in soil	L073B	bc
WS110	N/A	S	279502	bc	Complex Cyanide in soil	L080	c
WS110	N/A	S	279502	bc	Free cyanide in soil	L080	c
WS110	N/A	S	279502	bc	Thiocyanate in soil	L082B	c
WS110	N/A	S	279502	bc	Total cyanide in soil	L080	c
WS110	N/A	S	279502	bc	Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	L076B/L088	c
WS110	N/A	S	279502	bc	Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	L129B	c
WS110	N/A	S	279502	bc	Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	L076B/L088	b

VHE Construction plc
Whaley Road
Barug
Barnsley
S75 1HT

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

e: carl.lacey@vhe.co.uk

Analytical Report Number : 24-034853

Project / Site name:	The Seam Barnsley	Samples received on:	30/07/2024
Your job number:	159582	Samples instructed on/ Analysis started on:	08/08/2024
Your order number:		Analysis completed by:	14/08/2024
Report Issue Number:	1	Report issued on:	15/08/2024
Samples Analysed:	4 soil samples - 4 leachate samples		


Signed:

Charlotte Andrew
Key Account Manager
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 24-034853
Project / Site name: The Seam Barnsley

Lab Sample Number				279523	279524	279525	279526
Sample Reference				TP101	BH103	WS101	WS105
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.80	0.40-0.60	1.40-1.60	0.40-0.60
Date Sampled				26/04/2024	23/07/2024	22/07/2024	24/07/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status				

Stone Content	%	0.1	NONE	< 0.1	49.3	< 0.1	89.1
Moisture Content	%	0.01	NONE	16	5.4	11	5.2
Total mass of sample received	kg	0.1	NONE	0.8	2	1	2

General Inorganics

Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	1.1	0.9	6.5	2.4
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	0.17	1.7	29
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.19	2
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	0.13	2.6	74
Fluorene	mg/kg	0.05	MCERTS	< 0.05	0.14	2.1	73
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	1.3	15	410
Anthracene	mg/kg	0.05	MCERTS	< 0.05	0.38	5.5	140
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	2	31	380
Pyrene	mg/kg	0.05	MCERTS	< 0.05	2	27	290
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	0.91	13	110
Chrysene	mg/kg	0.05	MCERTS	< 0.05	0.93	13	110
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	1	12	92
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	0.46	6.3	46
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	0.95	12	82
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	0.49	5.4	34
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	0.12	1.4	8.4
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	0.51	6.3	33
Coronene	mg/kg	0.05	NONE	< 0.05	< 0.05	1.9	7.8

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	< 0.80	11.5	155	1920
Total WAC-17 PAHs	mg/kg	0.85	NONE	< 0.85	11.5	157	1920

Petroleum Hydrocarbons

Mineral Oil (EC10 - EC40) BH_CU_ID_AL	mg/kg	10	NONE	< 10	140	560	140
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VOCs

Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0
p & m-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0

Total BTEX	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0
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PCBs by GC-MS

PCB Congener 28	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001
PCB Congener 52	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001
PCB Congener 101	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001
PCB Congener 118	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001
PCB Congener 138	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001
PCB Congener 153	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001
PCB Congener 180	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001

Analytical Report Number: 24-034853
Project / Site name: The Seam Barnsley

Lab Sample Number				279523	279524	279525	279526			
Sample Reference				TP101	BH103	WS101	WS105			
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied			
Depth (m)				0.80	0.40-0.60	1.40-1.60	0.40-0.60			
Date Sampled				26/04/2024	23/07/2024	22/07/2024	24/07/2024			
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied			
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status							
Total PCBs				mg/kg	0.007	MCERTS	< 0.007			
							< 0.007			
							< 0.007			
							< 0.007			

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected



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Environmental Science

i2 Analytical

7 Woodshots Meadow
Croxley Green Business Park
Watford, WD18 8YS

Telephone: 01923 225404
Fax: 01923 237404
email:reception@i2analytical.com

Waste Acceptance Criteria Analytical Results							
Report No:		24-034853					
					Client: VHE		
Location		The Seam Barnsley			Landfill Waste Acceptance Criteria Limits Inert Waste Landfill Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill Hazardous Waste Landfill		
Lab Reference (Sample Number)		279523					
Sampling Date		26/04/2024					
Sample ID		TP101					
Depth (m)		0.80					
Solid Waste Analysis							
TOC (%)**		1.1			3%	5%	6%
Loss on Ignition (%) **		-			--	--	10%
BTEX (µg/kg) **		< 5.0			6000	--	--
Sum of PCBs (mg/kg) **		< 0.007			1	--	--
Mineral Oil (mg/kg) BH, ID, CU, AL		< 10			500	--	--
Total PAH (WAC-17) (mg/kg)		< 0.85			100	--	--
pH (units)**		-			--	>6	--
Acid Neutralisation Capacity (mmol / kg)		-			--	To be evaluated	To be evaluated
Eluate Analysis		10:1		10:1	Limit values for compliance leaching test		
(BS EN 12457 - 2 preparation utilising end over end leaching procedure)		mg/l			mg/kg		
					using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *		< 0.00100		< 0.0100	0.5	2	25
Barium *		0.0546		0.546	20	100	300
Cadmium *		< 0.000100		< 0.00100	0.04	1	5
Chromium *		0.0039		0.039	0.5	10	70
Copper *		0.0017		0.017	2	50	100
Mercury *		< 0.000500		< 0.00500	0.01	0.2	2
Molybdenum *		< 0.000400		< 0.00400	0.5	10	30
Nickel *		0.0024		0.024	0.4	10	40
Lead *		< 0.0010		< 0.010	0.5	10	50
Antimony *		< 0.0017		< 0.017	0.06	0.7	5
Selenium *		< 0.0040		< 0.040	0.1	0.5	7
Zinc *		0.0059		0.059	4	50	200
Chloride *		2.9		29	800	15000	25000
Fluoride*		0.79		7.9	10	150	500
Sulphate *		11		110	1000	20000	50000
TDS*		64		640	4000	60000	100000
Phenol Index (Monohydric Phenols) *		< 0.010		< 0.10	1	-	-
DOC		7.27		72.7	500	800	1000
Leach Test Information							
Stone Content (%)		< 0.1					
Sample Mass (kg)		0.8					
Dry Matter (%)		84					
Moisture (%)		16					
Results are expressed on a dry weight basis, after correction for moisture content where applicable.							
* = UKAS accredited (liquid eluate analysis only)							
Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation							
** = MCERTS accredited							

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3.
This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous.



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Environmental Science

i2 Analytical

7 Woodshots Meadow
Croxley Green Business Park
Watford, WD18 8YS

Telephone: 01923 225404
Fax: 01923 237404
email:reception@i2analytical.com

Waste Acceptance Criteria Analytical Results							
Report No:		24-034853					
					Client: VHE		
Location		The Seam Barnsley					
Lab Reference (Sample Number)		279524			Landfill Waste Acceptance Criteria		
Sampling Date		23/07/2024			Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID		BH103					
Depth (m)		0.40-0.60					
Solid Waste Analysis							
TOC (%)**		0.9			3%	5%	6%
Loss on Ignition (%) **		-			--	--	10%
BTEX (µg/kg) **		< 5.0			6000	--	--
Sum of PCBs (mg/kg) **		< 0.007			1	--	--
Mineral Oil (mg/kg) EH, LD, CU, AL		140			500	--	--
Total PAH (WAC-17) (mg/kg)		11.5			100	--	--
pH (units)**		-			--	>6	--
Acid Neutralisation Capacity (mmol / kg)		-			--	To be evaluated	To be evaluated
Eluate Analysis		10:1		10:1	Limit values for compliance leaching test		
(BS EN 12457 - 2 preparation utilising end over end leaching procedure)		mg/l		mg/kg	using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *		< 0.00100		< 0.0100	0.5	2	25
Barium *		0.0669		0.669	20	100	300
Cadmium *		< 0.000100		< 0.00100	0.04	1	5
Chromium *		0.030		0.30	0.5	10	70
Copper *		0.0059		0.059	2	50	100
Mercury *		< 0.000500		< 0.00500	0.01	0.2	2
Molybdenum *		0.00437		0.0437	0.5	10	30
Nickel *		0.0013		0.013	0.4	10	40
Lead *		0.0034		0.034	0.5	10	50
Antimony *		< 0.0017		< 0.017	0.06	0.7	5
Selenium *		< 0.0040		< 0.040	0.1	0.5	7
Zinc *		0.0081		0.081	4	50	200
Chloride *		78		780	800	15000	25000
Fluoride*		0.46		4.6	10	150	500
Sulphate *		87		870	1000	20000	50000
TDS*		490		4900	4000	60000	100000
Phenol Index (Monohydric Phenols) *		< 0.010		< 0.10	1	-	-
DOC		6.47		64.7	500	800	1000
Leach Test Information							
Stone Content (%)		49.3					
Sample Mass (kg)		2.0					
Dry Matter (%)		95					
Moisture (%)		5.4					
Results are expressed on a dry weight basis, after correction for moisture content where applicable.							
Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation							
** = UKAS accredited (liquid eluate analysis only)							
** = MCERTS accredited							

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3.
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Environmental Science

i2 Analytical

7 Woodshots Meadow
Croxley Green Business Park
Watford, WD18 8YS

Telephone: 01923 225404
Fax: 01923 237404
email:reception@i2analytical.com

Waste Acceptance Criteria Analytical Results							
Report No:		24-034853					
					Client: VHE		
Location		The Seam Barnsley			Landfill Waste Acceptance Criteria Limits		
Lab Reference (Sample Number)		279525					
Sampling Date		22/07/2024			Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID		WS101					
Depth (m)		1.40-1.60					
Solid Waste Analysis							
TOC (%)**		6.5			3%	5%	6%
Loss on Ignition (%) **		-			--	--	10%
BTEX (µg/kg) **		< 5.0			6000	--	--
Sum of PCBs (mg/kg) **		< 0.007			1	--	--
Mineral Oil (mg/kg) EH, LD, CU, AL		560			500	--	--
Total PAH (WAC-17) (mg/kg)		157			100	--	--
pH (units)**		-			--	>6	--
Acid Neutralisation Capacity (mmol / kg)		-			--	To be evaluated	To be evaluated
Eluate Analysis		10:1		10:1	Limit values for compliance leaching test		
(BS EN 12457 - 2 preparation utilising end over end leaching procedure)		mg/l			mg/kg		
					using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *		0.00292		0.0292	0.5	2	25
Barium *		0.0607		0.607	20	100	300
Cadmium *		< 0.000100		< 0.00100	0.04	1	5
Chromium *		0.0012		0.012	0.5	10	70
Copper *		0.018		0.18	2	50	100
Mercury *		< 0.000500		< 0.00500	0.01	0.2	2
Molybdenum *		0.0138		0.138	0.5	10	30
Nickel *		0.0021		0.021	0.4	10	40
Lead *		0.0045		0.045	0.5	10	50
Antimony *		0.0017		0.017	0.06	0.7	5
Selenium *		< 0.0040		< 0.040	0.1	0.5	7
Zinc *		0.014		0.14	4	50	200
Chloride *		27		270	800	15000	25000
Fluoride*		1.8		18	10	150	500
Sulphate *		110		1100	1000	20000	50000
TDS*		280		2800	4000	60000	100000
Phenol Index (Monohydric Phenols) *		< 0.010		< 0.10	1	-	-
DOC		6.53		65.3	500	800	1000
Leach Test Information							
Stone Content (%)		< 0.1					
Sample Mass (kg)		1.0					
Dry Matter (%)		89					
Moisture (%)		11					
Results are expressed on a dry weight basis, after correction for moisture content where applicable.					* = UKAS accredited (liquid eluate analysis only)		
Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation					** = MCERTS accredited		

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3.
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4041



Environmental Science

i2 Analytical

7 Woodshots Meadow
Croxley Green Business Park
Watford, WD18 8YS

Telephone: 01923 225404
Fax: 01923 237404
email:reception@i2analytical.com

Waste Acceptance Criteria Analytical Results							
Report No:	24-034853						
					Client: VHE		
Location	The Seam Barnsley						
Lab Reference (Sample Number)	279526				Landfill Waste Acceptance Criteria		
Sampling Date	24/07/2024				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	WS105						
Depth (m)	0.40-0.60						
Solid Waste Analysis							
TOC (%)**	2.4				3%	5%	6%
Loss on Ignition (%) **	-				--	--	10%
BTEX (µg/kg) **	< 5.0				6000	--	--
Sum of PCBs (mg/kg) **	< 0.007				1	--	--
Mineral Oil (mg/kg) EH, LD, CU, AL	140				500	--	--
Total PAH (WAC-17) (mg/kg)	1920				100	--	--
pH (units)**	-				--	>6	--
Acid Neutralisation Capacity (mmol / kg)	-				--	To be evaluated	To be evaluated
Eluate Analysis	10:1			10:1	Limit values for compliance leaching test		
	mg/l			mg/kg	using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
(BS EN 12457 - 2 preparation utilising end over end leaching procedure)							
Arsenic *	0.00135			0.0135	0.5	2	25
Barium *	0.0617			0.617	20	100	300
Cadmium *	< 0.000100			< 0.00100	0.04	1	5
Chromium *	0.00090			0.0090	0.5	10	70
Copper *	0.017			0.17	2	50	100
Mercury *	< 0.000500			< 0.00500	0.01	0.2	2
Molybdenum *	0.0130			0.130	0.5	10	30
Nickel *	0.0020			0.020	0.4	10	40
Lead *	< 0.0010			< 0.010	0.5	10	50
Antimony *	< 0.0017			< 0.017	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0.5	7
Zinc *	0.023			0.23	4	50	200
Chloride *	13			130	800	15000	25000
Fluoride*	1.8			18	10	150	500
Sulphate *	590			5900	1000	20000	50000
TDS*	680			6800	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	7.05			70.5	500	800	1000
Leach Test Information							
Stone Content (%)	89.1						
Sample Mass (kg)	2.0						
Dry Matter (%)	95						
Moisture (%)	5.2						
Results are expressed on a dry weight basis, after correction for moisture content where applicable.							
Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation							
** = UKAS accredited (liquid eluate analysis only)							
** = MCERTS accredited							

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3.
This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Analytical Report Number : 24-034853

Project / Site name: The Seam Barnsley

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
279523	TP101	None Supplied	0.8	Brown clay and sand
279524	BH103	None Supplied	0.40-0.60	Brown loam and gravel with concrete and brick
279525	WS101	None Supplied	1.40-1.60	Brown loam and sand with gravel and tar
279526	WS105	None Supplied	0.40-0.60	Brown loam and gravel with tar and stones

Analytical Report Number : 24-034853
Project / Site name: The Seam Barnsley

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)	In-house method	L009B	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically (up to 30°C)	In-house method	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
PCB's By GC-MS in soil	Determination of PCB by extraction with hexane followed by GC-MS	In-house method based on USEPA 8082	L027B	D	MCERTS
Total dissolved solids 10:1 WAC	Determination of total dissolved solids in water by electrometric measurement	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L031B	W	ISO 17025
Fluoride 10:1 WAC	Determination of fluoride in leachate by 1:1ratio with a buffer solution followed by Ion Selective Electrode	In-house method based on Use of Total Ionic Strength Adjustment Buffer for Electrode Determination	L033B	W	ISO 17025
Dissolved organic carbon 10:1 WAC	Determination of dissolved organic carbon in leachate by TOC/DOC NDIR Analyser	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037B	W	NONE
Metals in leachate by ICP-OES	Determination of metals in leachate by acidification followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L039B	W	ISO 17025
Sample Preparation		In-house method	L043B	W	NONE
Speciated PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS
BTEX and/or Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS	In-house method based on USEPA 8260	L073B	W	MCERTS
Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS	In-house method	L076B/L088	D/W	NONE
Monohydric phenols 10:1 WAC	Determination of phenols in leachate by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	ISO 17025

Analytical Report Number : 24-034853
Project / Site name: The Seam Barnsley

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Chloride 10:1 WAC	Determination of Chloride colorimetrically by discrete analyser	In-house based on MEWAM Method ISBN 0117516260	L082B	W	ISO 17025

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30°C.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#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 e.g. EH+HS_Total or EH_CU+HS_Total

Quality control parameter failure associated with individual result applies to calculated sum of individuals.

The result for sum should be interpreted with caution

Analytical Report Number : 24-034853

Project / Site name: The Seam Barnsley

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis. Please note that the associated result(s) may be unreliable and should be interpreted with care.

Key: a - No sampling date b - Incorrect container c - Holding time d - Headspace e - Temperature

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
BH103	N/A	S	279524	c	BTEX and/or Volatile organic compounds in soil	L073B	c
BH103	N/A	S	279524	c	Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	L076B/L088	c
TP101	N/A	S	279523	c	BTEX and/or Volatile organic compounds in soil	L073B	c
TP101	N/A	S	279523	c	PCB's By GC-MS in soil	L027B	c
TP101	N/A	S	279523	c	Speciated PAHs and/or Semi-volatile organic compounds in soil	L064B	c
TP101	N/A	S	279523	c	Total organic carbon (Automated) in soil	L009B	c
TP101	N/A	S	279523	c	Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	L076B/L088	c
WS101	N/A	S	279525	c	BTEX and/or Volatile organic compounds in soil	L073B	c
WS101	N/A	S	279525	c	Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	L076B/L088	c
WS105	N/A	S	279526	c	BTEX and/or Volatile organic compounds in soil	L073B	c
WS105	N/A	S	279526	c	Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	L076B/L088	c

VHE Construction plc
Whaley Road
Barug
Barnsley
S75 1HT

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

e: carl.lacey@vhe.co.uk

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 24-035173

Project / Site name:	The Seam Barnsley	Samples received on:	24/07/2024
Your job number:	159592	Samples instructed on/ Analysis started on:	06/08/2024
Your order number:		Analysis completed by:	15/08/2024
Report Issue Number:	1	Report issued on:	15/08/2024
Samples Analysed:	11 soil samples - 3 leachate samples		


Signed:

Charlotte Andrew
Key Account Manager
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 24-035173
Project / Site name: The Seam Barnsley

Lab Sample Number	280964	280965	280966	280967	280968
Sample Reference	TP102	TP102	TP111	TP111	HP102
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	1.10	2.60	0.70	1.20	0.50
Date Sampled	24/07/2024	24/07/2024	24/07/2024	24/07/2024	24/07/2024
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Stone Content	%	0.1	NONE	40.6	32	< 0.1	37.5	-
Moisture Content	%	0.01	NONE	10	9.7	17	10	-
Total mass of sample received	kg	0.1	NONE	0.8	0.6	0.6	0.6	-

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	-	Not-detected	-	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	MUA	-	MUA	-	MUA

General Inorganics

pH (L099)	pH Units	N/A	MCERTS	8.4	-	8.4	-	-
Total Cyanide	mg/kg	1	MCERTS	< 1.0	-	< 1.0	-	-
Complex Cyanide	mg/kg	1	MCERTS	< 1.0	-	< 1.0	-	-
Free Cyanide	mg/kg	1	MCERTS	< 1.0	-	< 1.0	-	-
Thiocyanate as SCN	mg/kg	5	NONE	< 5.0	-	< 5.0	-	-
Total Sulphate as SO ₄	mg/kg	50	MCERTS	320	-	560	-	-
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	74	-	450	-	-
Water Soluble SO ₄ 16hr extraction (2:1)	mg/l	1.25	MCERTS	36.8	-	226	-	-
Total Sulphur	mg/kg	50	MCERTS	150	-	420	-	-
Total Sulphur	%	0.005	MCERTS	0.015	-	0.042	-	-
Ammoniacal Nitrogen as NH ₃	mg/kg	0.5	MCERTS	< 0.5	-	13	-	-
Organic Matter	%	0.1	MCERTS	-	-	-	-	-
Organic Matter (automated)	%	0.1	MCERTS	1.2	-	2.4	-	-
Calorific Value	MJ/kg	0.12	ISO 17025	< 0.120	-	< 0.120	-	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	-	< 1.0	-	-
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.37	1.7	0.25	0.48	-
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.09	-
Acenaphthene	mg/kg	0.05	MCERTS	0.17	< 0.05	0.14	0.69	-
Fluorene	mg/kg	0.05	MCERTS	0.15	< 0.05	0.09	0.61	-
Phenanthrene	mg/kg	0.05	MCERTS	0.85	1.8	0.79	5	-
Anthracene	mg/kg	0.05	MCERTS	0.18	< 0.05	0.19	1.2	-
Fluoranthene	mg/kg	0.05	MCERTS	0.75	0.51	1.1	5.6	-
Pyrene	mg/kg	0.05	MCERTS	0.63	0.51	0.96	4.9	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.29	0.28	0.56	2.2	-
Chrysene	mg/kg	0.05	MCERTS	0.34	0.38	0.54	2.3	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.37	0.22	0.63	2.5	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.16	0.05	0.25	0.91	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.2	< 0.05	0.57	1.9	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.36	0.13	0.3	1.3	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.09	< 0.05	0.06	0.33	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.39	0.25	0.34	1.4	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	5.29	5.82	6.72	31.4	-
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Heavy Metals / Metalloids

Antimony (aqua regia extractable)	mg/kg	1	ISO 17025	1.8	-	3.3	-	-
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Analytical Report Number: 24-035173
Project / Site name: The Seam Barnsley

Lab Sample Number				280964	280965	280966	280967	280968
Sample Reference				TP102	TP102	TP111	TP111	HP102
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.10	2.60	0.70	1.20	0.50
Date Sampled				24/07/2024	24/07/2024	24/07/2024	24/07/2024	24/07/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	5.7	-	8.4	-	-
Barium (aqua regia extractable)	mg/kg	1	MCERTS	30	-	130	-	-
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.47	-	1.1	-	-
Boron (water soluble)	mg/kg	0.2	MCERTS	0.3	-	1.2	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	-	0.3	-	-
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	-	< 1.8	-	-
Chromium (III)	mg/kg	1	NONE	11	-	24	-	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	11	-	24	-	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	21	-	40	-	-
Iron (aqua regia extractable)	mg/kg	40	MCERTS	23000	-	36000	-	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	17	-	40	-	-
Manganese (aqua regia extractable)	mg/kg	1	MCERTS	450	-	710	-	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	-	< 0.3	-	-
Molybdenum (aqua regia extractable)	mg/kg	0.25	MCERTS	0.55	-	0.79	-	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	18	-	33	-	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	-	< 1.0	-	-
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	18	-	26	-	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	44	-	110	-	-

Calcium (aqua regia extractable)	mg/kg	20	ISO 17025	12000	-	18000	-	-
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Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	-
TPHCWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	-
TPHCWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	-
TPHCWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	-
TPHCWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	-
TPHCWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	-
TPHCWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	< 8.0	< 8.0	13	9.3	-
TPHCWG - Aliphatic >EC35 - EC44 _{EH_CU_1D_AL}	mg/kg	8.4	NONE	< 8.4	< 8.4	< 8.4	< 8.4	-
TPHCWG - Aliphatic >EC5 - EC35 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	< 10	< 10	13	< 10	-
TPHCWG - Aliphatic >EC5 - EC44 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	< 10	< 10	13	< 10	-

TPHCWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	-
TPHCWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	-
TPHCWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.02	MCERTS	< 0.020	< 0.020	< 0.020	< 0.020	-
TPHCWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	-
TPHCWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	2.9	-
TPHCWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	< 10	< 10	< 10	10	-
TPHCWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	< 10	< 10	< 10	15	-
TPHCWG - Aromatic >EC35 - EC44 _{EH_CU_1D_AR}	mg/kg	8.4	NONE	< 8.4	< 8.4	< 8.4	< 8.4	-
TPHCWG - Aromatic >EC5 - EC35 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	< 10	< 10	< 10	29	-
TPHCWG - Aromatic >EC5 - EC44 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	< 10	< 10	< 10	29	-

Petroleum Range Organics (EC6 - EC10) _{HS_1D_TOTAL}	mg/kg	1	ISO 17025	< 1.0	-	< 1.0	-	-
TPH (EC10 - EC25) _{EH_CU_1D_TOTAL}	mg/kg	10	MCERTS	< 10	-	20	-	-
TPH (EC25 - EC40) _{EH_CU_1D_TOTAL}	mg/kg	10	MCERTS	< 10	-	17	-	-

VOCs

Chloromethane	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
Chloroethane	µg/kg	5	NONE	< 5.0	-	< 5.0	-	-
Bromomethane	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-

Analytical Report Number: 24-035173
Project / Site name: The Seam Barnsley

Lab Sample Number				280964	280965	280966	280967	280968
Sample Reference				TP102	TP102	TP111	TP111	HP102
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.10	2.60	0.70	1.20	0.50
Date Sampled				24/07/2024	24/07/2024	24/07/2024	24/07/2024	24/07/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
Vinyl Chloride	µg/kg	5	NONE	< 5.0	-	< 5.0	-	-
Trichlorofluoromethane	µg/kg	5	NONE	< 5.0	-	< 5.0	-	-
1,1-Dichloroethene	µg/kg	5	NONE	< 5.0	-	< 5.0	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	NONE	< 5.0	-	< 5.0	-	-
Trans 1,2-dichloroethylene	µg/kg	5	NONE	< 5.0	-	< 5.0	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	-
1,1-Dichloroethane	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
2,2-Dichloropropane	µg/kg	5	NONE	< 5.0	-	< 5.0	-	-
Chloroform	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
1,1,1-Trichloroethane	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
1,2-Dichloroethane	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
1,1-Dichloropropene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
Cis-1,2-dichloroethene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	-
Carbontetrachloride	µg/kg	5	NONE	< 5.0	-	< 5.0	-	-
1,2-Dichloropropane	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
Trichloroethene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
Dibromomethane	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
Bromodichloromethane	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
Cis-1,3-dichloropropene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
Trans-1,3-dichloropropene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	-
1,1,2-Trichloroethane	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
1,3-Dichloropropane	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
Dibromochloromethane	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
Tetrachloroethene	µg/kg	5	NONE	< 5.0	-	< 5.0	-	-
1,2-Dibromoethane	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
Chlorobenzene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
1,1,1,2-Tetrachloroethane	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	-
p & m-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	-
Styrene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
Bromoform	µg/kg	5	NONE	< 5.0	-	< 5.0	-	-
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	-
Isopropylbenzene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
1,1,2,2-Tetrachloroethane	µg/kg	5	NONE	< 5.0	-	< 5.0	-	-
Bromobenzene	µg/kg	5	NONE	< 5.0	-	< 5.0	-	-
n-Propylbenzene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
2-Chlorotoluene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
4-Chlorotoluene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
1,3,5-Trimethylbenzene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
tert-Butylbenzene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
sec-Butylbenzene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
1,3-Dichlorobenzene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
p-Isopropyltoluene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
1,4-Dichlorobenzene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
1,2-Dichlorobenzene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
Butylbenzene	µg/kg	5	NONE	< 5.0	-	< 5.0	-	-
1,2-Dibromo-3-chloropropane	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
1,2,4-Trichlorobenzene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
Hexachlorobutadiene	µg/kg	5	NONE	< 5.0	-	< 5.0	-	-

Analytical Report Number: 24-035173
Project / Site name: The Seam Barnsley

Lab Sample Number				280964	280965	280966	280967	280968
Sample Reference				TP102	TP102	TP111	TP111	HP102
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.10	2.60	0.70	1.20	0.50
Date Sampled				24/07/2024	24/07/2024	24/07/2024	24/07/2024	24/07/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status		
1,2,3-Trichlorobenzene				µg/kg	5	ISO 17025	< 5.0	-

SVOCs

Aniline	mg/kg	0.1	NONE	< 0.1	-	< 0.1	-	-
Phenol	mg/kg	0.2	ISO 17025	< 0.2	-	< 0.2	-	-
2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	-	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	< 0.2	-	< 0.2	-	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	-	< 0.2	-	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	-	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	-	< 0.2	-	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	-	-
2-Methylphenol	mg/kg	0.3	MCERTS	< 0.3	-	< 0.3	-	-
Hexachloroethane	mg/kg	0.05	ISO 17025	< 0.05	-	< 0.05	-	-
Nitrobenzene	mg/kg	0.3	MCERTS	< 0.3	-	< 0.3	-	-
4-Methylphenol	mg/kg	0.2	NONE	< 0.2	-	< 0.2	-	-
Isophorone	mg/kg	0.2	MCERTS	< 0.2	-	< 0.2	-	-
2-Nitrophenol	mg/kg	0.3	NONE	< 0.3	-	< 0.3	-	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	< 0.3	-	< 0.3	-	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	< 0.3	-	< 0.3	-	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	< 0.3	-	< 0.3	-	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	< 0.3	-	< 0.3	-	-
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	-	< 0.1	-	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	-	< 0.1	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	< 0.1	-	< 0.1	-	-
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	< 0.2	-	< 0.2	-	-
2-Methylnaphthalene	mg/kg	0.1	NONE	0.2	-	0.2	-	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	-	-
Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	-	-
2,6-Dinitrotoluene	mg/kg	0.1	NONE	< 0.1	-	< 0.1	-	-
2,4-Dinitrotoluene	mg/kg	0.2	NONE	< 0.2	-	< 0.2	-	-
Dibenzofuran	mg/kg	0.2	MCERTS	0.2	-	< 0.2	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	MCERTS	< 0.3	-	< 0.3	-	-
Diethyl phthalate	mg/kg	0.2	MCERTS	< 0.2	-	< 0.2	-	-
4-Nitroaniline	mg/kg	0.2	NONE	< 0.2	-	< 0.2	-	-
Azobenzene	mg/kg	0.3	NONE	< 0.3	-	< 0.3	-	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0.2	-	< 0.2	-	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0.30	-	< 0.30	-	-
Carbazole	mg/kg	0.3	MCERTS	< 0.3	-	< 0.3	-	-
Dibutyl phthalate	mg/kg	0.2	NONE	< 0.2	-	< 0.2	-	-
Anthraquinone	mg/kg	0.3	NONE	< 0.3	-	< 0.3	-	-
Butyl benzyl phthalate	mg/kg	0.3	NONE	< 0.3	-	< 0.3	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 24-035173
Project / Site name: The Seam Barnsley

Lab Sample Number	280969	280970	280971	280972	281013
Sample Reference	TP107	TP120	TP105	TP104	TP116
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	2.00	1.10	0.60	0.70	0.75
Date Sampled	22/07/2024	22/07/2024	23/07/2024	23/07/2024	23/07/2024
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Stone Content	%	0.1	NONE	< 0.1	-	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	12	-	12	8.4	17
Total mass of sample received	kg	0.1	NONE	0.6	-	0.5	0.5	0.6

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	-
Asbestos Analyst ID	N/A	N/A	N/A	MUA	MUA	MUA	MUA	-

General Inorganics

pH (L099)	pH Units	N/A	MCERTS	7.7	-	6.7	10.3	8.2
Total Cyanide	mg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	17
Complex Cyanide	mg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	17
Free Cyanide	mg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	< 1.0
Thiocyanate as SCN	mg/kg	5	NONE	< 5.0	-	< 5.0	< 5.0	< 5.0
Total Sulphate as SO ₄	mg/kg	50	MCERTS	330	-	11000	3800	3600
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	110	-	3700	1400	770
Water Soluble SO ₄ 16hr extraction (2:1)	mg/l	1.25	MCERTS	54.3	-	1870	691	386
Total Sulphur	mg/kg	50	MCERTS	120	-	4800	1700	3600
Total Sulphur	%	0.005	MCERTS	0.011	-	0.484	0.169	0.356
Ammoniacal Nitrogen as NH ₃	mg/kg	0.5	MCERTS	< 0.5	-	< 0.5	< 0.5	< 0.5
Organic Matter	%	0.1	MCERTS	-	-	27	-	-
Organic Matter (automated)	%	0.1	MCERTS	1.2	-	-	-	-
Calorific Value	MJ/kg	0.12	ISO 17025	-	-	-	-	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.12	-	7.5	0.59	4.1
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	-	0.34	< 0.05	0.24
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	0.12	0.44
Fluorene	mg/kg	0.05	MCERTS	< 0.05	-	0.4	0.08	0.4
Phenanthrene	mg/kg	0.05	MCERTS	0.24	-	7	1.5	6
Anthracene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	0.4	1.4
Fluoranthene	mg/kg	0.05	MCERTS	0.4	-	3.4	3.2	8.1
Pyrene	mg/kg	0.05	MCERTS	0.4	-	3	2.7	7.5
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.23	-	2.6	1.4	4.4
Chrysene	mg/kg	0.05	MCERTS	0.27	-	2.7	1.5	4.8
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.47	-	2.8	1.7	5.4
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.09	-	1	0.72	2.5
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.33	-	1.8	1.4	4.2
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.25	-	1.1	0.71	2.2
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	-	0.36	< 0.05	0.68
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.31	-	1.2	0.74	2.4

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	3.11	-	35.4	16.7	54.7
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Heavy Metals / Metalloids

Antimony (aqua regia extractable)	mg/kg	1	ISO 17025	2	-	5.2	2.1	7.4
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Analytical Report Number: 24-035173
Project / Site name: The Seam Barnsley

Lab Sample Number				280969	280970	280971	280972	281013
Sample Reference				TP107	TP120	TP105	TP104	TP116
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.00	1.10	0.60	0.70	0.75
Date Sampled				22/07/2024	22/07/2024	23/07/2024	23/07/2024	23/07/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	7.7	-	95	8.9	66
Barium (aqua regia extractable)	mg/kg	1	MCERTS	54	-	100	400	110
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1.1	-	0.53	0.65	1.2
Boron (water soluble)	mg/kg	0.2	MCERTS	0.6	-	0.9	3.4	2.4
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	-	< 0.2	0.7	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	-	< 1.8	< 1.8	< 1.8
Chromium (III)	mg/kg	1	NONE	22	-	6.7	24	11
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	22	-	6.7	24	11
Copper (aqua regia extractable)	mg/kg	1	MCERTS	35	-	84	27	280
Iron (aqua regia extractable)	mg/kg	40	MCERTS	29000	-	45000	22000	54000
Lead (aqua regia extractable)	mg/kg	1	MCERTS	22	-	110	71	130
Manganese (aqua regia extractable)	mg/kg	1	MCERTS	350	-	440	490	680
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	-	0.3	< 0.3	< 0.3
Molybdenum (aqua regia extractable)	mg/kg	0.25	MCERTS	0.59	-	7.1	1.9	11
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	40	-	9.2	16	20
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	-	2.2	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	18	-	22	23	30
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	100	-	22	120	180

Calcium (aqua regia extractable)	mg/kg	20	ISO 17025	-	-	-	-	-
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Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010	-	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010	-	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010	-	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	< 1.0
TPHCWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	< 2.0	-	3.6	< 2.0	2.5
TPHCWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	< 8.0	-	< 8.0	8.9	< 8.0
TPHCWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	< 8.0	-	< 8.0	100	17
TPHCWG - Aliphatic >EC35 - EC44 _{EH_CU_1D_AL}	mg/kg	8.4	NONE	< 8.4	-	< 8.4	60	13
TPHCWG - Aliphatic >EC5 - EC35 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	< 10	-	< 10	110	19
TPHCWG - Aliphatic >EC5 - EC44 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	< 10	-	< 10	170	33

TPHCWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.01	MCERTS	< 0.010	-	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.01	MCERTS	< 0.010	-	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.02	MCERTS	< 0.020	-	< 0.020	< 0.020	< 0.020
TPHCWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	< 1.0	-	1	< 1.0	< 1.0
TPHCWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	< 2.0	-	3.9	3.2	3.2
TPHCWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	< 10	-	11	16	18
TPHCWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	< 10	-	14	99	45
TPHCWG - Aromatic >EC35 - EC44 _{EH_CU_1D_AR}	mg/kg	8.4	NONE	< 8.4	-	< 8.4	69	25
TPHCWG - Aromatic >EC5 - EC35 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	< 10	-	29	120	66
TPHCWG - Aromatic >EC5 - EC44 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	< 10	-	29	190	92

Petroleum Range Organics (EC6 - EC10) _{HS_1D_TOTAL}	mg/kg	1	ISO 17025	-	-	-	-	-
TPH (EC10 - EC25) _{EH_CU_1D_TOTAL}	mg/kg	10	MCERTS	-	-	-	-	-
TPH (EC25 - EC40) _{EH_CU_1D_TOTAL}	mg/kg	10	MCERTS	-	-	-	-	-

VOCs

Chloromethane	µg/kg	5	ISO 17025	-	-	-	-	-
Chloroethane	µg/kg	5	NONE	-	-	-	-	-
Bromomethane	µg/kg	5	ISO 17025	-	-	-	-	-

Analytical Report Number: 24-035173
Project / Site name: The Seam Barnsley

Lab Sample Number				280969	280970	280971	280972	281013
Sample Reference				TP107	TP120	TP105	TP104	TP116
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.00	1.10	0.60	0.70	0.75
Date Sampled				22/07/2024	22/07/2024	23/07/2024	23/07/2024	23/07/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
Vinyl Chloride	µg/kg	5	NONE	-	-	-	-	-
Trichlorofluoromethane	µg/kg	5	NONE	-	-	-	-	-
1,1-Dichloroethene	µg/kg	5	NONE	-	-	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	NONE	-	-	-	-	-
Trans 1,2-dichloroethylene	µg/kg	5	NONE	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	-	< 5.0	< 5.0	< 5.0
1,1-Dichloroethane	µg/kg	5	ISO 17025	-	-	-	-	-
2,2-Dichloropropane	µg/kg	5	NONE	-	-	-	-	-
Chloroform	µg/kg	5	ISO 17025	-	-	-	-	-
1,1,1-Trichloroethane	µg/kg	5	ISO 17025	-	-	-	-	-
1,2-Dichloroethane	µg/kg	5	ISO 17025	-	-	-	-	-
1,1-Dichloropropene	µg/kg	5	ISO 17025	-	-	-	-	-
Cis-1,2-dichloroethene	µg/kg	5	ISO 17025	-	-	-	-	-
Benzene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	< 5.0	< 5.0
Carbontetrachloride	µg/kg	5	NONE	-	-	-	-	-
1,2-Dichloropropane	µg/kg	5	ISO 17025	-	-	-	-	-
Trichloroethene	µg/kg	5	ISO 17025	-	-	-	-	-
Dibromomethane	µg/kg	5	ISO 17025	-	-	-	-	-
Bromodichloromethane	µg/kg	5	ISO 17025	-	-	-	-	-
Cis-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-	-	-	-
Trans-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-	-	-	-
Toluene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	µg/kg	5	ISO 17025	-	-	-	-	-
1,3-Dichloropropane	µg/kg	5	ISO 17025	-	-	-	-	-
Dibromochloromethane	µg/kg	5	ISO 17025	-	-	-	-	-
Tetrachloroethene	µg/kg	5	NONE	-	-	-	-	-
1,2-Dibromoethane	µg/kg	5	ISO 17025	-	-	-	-	-
Chlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	5	ISO 17025	-	-	-	-	-
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	< 5.0	< 5.0
p & m-Xylene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	< 5.0	< 5.0
Styrene	µg/kg	5	ISO 17025	-	-	-	-	-
Bromoform	µg/kg	5	NONE	-	-	-	-	-
o-Xylene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	< 5.0	< 5.0
Isopropylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
1,1,1,2,2-Tetrachloroethane	µg/kg	5	NONE	-	-	-	-	-
Bromobenzene	µg/kg	5	NONE	-	-	-	-	-
n-Propylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
2-Chlorotoluene	µg/kg	5	ISO 17025	-	-	-	-	-
4-Chlorotoluene	µg/kg	5	ISO 17025	-	-	-	-	-
1,3,5-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
tert-Butylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
sec-Butylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
1,3-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-
p-Isopropyltoluene	µg/kg	5	ISO 17025	-	-	-	-	-
1,4-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-
1,2-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-
Butylbenzene	µg/kg	5	NONE	-	-	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	5	ISO 17025	-	-	-	-	-
1,2,4-Trichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-
Hexachlorobutadiene	µg/kg	5	NONE	-	-	-	-	-

Analytical Report Number: 24-035173
Project / Site name: The Seam Barnsley

Lab Sample Number				280969	280970	280971	280972	281013
Sample Reference				TP107	TP120	TP105	TP104	TP116
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.00	1.10	0.60	0.70	0.75
Date Sampled				22/07/2024	22/07/2024	23/07/2024	23/07/2024	23/07/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status		
1,2,3-Trichlorobenzene				µg/kg	5	ISO 17025	-	-

SVOCs

Aniline	mg/kg	0.1	NONE	-	-	-	-	-
Phenol	mg/kg	0.2	ISO 17025	-	-	-	-	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-	-	-	-	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	-	-	-	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	-	-	-	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	-	-	-	-
2-Methylphenol	mg/kg	0.3	MCERTS	-	-	-	-	-
Hexachloroethane	mg/kg	0.05	ISO 17025	-	-	-	-	-
Nitrobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
4-Methylphenol	mg/kg	0.2	NONE	-	-	-	-	-
Isophorone	mg/kg	0.2	MCERTS	-	-	-	-	-
2-Nitrophenol	mg/kg	0.3	NONE	-	-	-	-	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	-	-	-	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	-	-	-	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	-	-	-	-
4-Chloroaniline	mg/kg	0.1	NONE	-	-	-	-	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	-	-	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-	-	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	-	-	-	-	-
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	-	-	-	-	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-	-	-	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	-	-	-	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-	-	-	-	-
2,6-Dinitrotoluene	mg/kg	0.1	NONE	-	-	-	-	-
2,4-Dinitrotoluene	mg/kg	0.2	NONE	-	-	-	-	-
Dibenzofuran	mg/kg	0.2	MCERTS	-	-	-	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	MCERTS	-	-	-	-	-
Diethyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-	-
4-Nitroaniline	mg/kg	0.2	NONE	-	-	-	-	-
Azobenzene	mg/kg	0.3	NONE	-	-	-	-	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	-	-	-	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Carbazole	mg/kg	0.3	MCERTS	-	-	-	-	-
Dibutyl phthalate	mg/kg	0.2	NONE	-	-	-	-	-
Anthraquinone	mg/kg	0.3	NONE	-	-	-	-	-
Butyl benzyl phthalate	mg/kg	0.3	NONE	-	-	-	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 24-035173
Project / Site name: The Seam Barnsley

Lab Sample Number				281014
Sample Reference				TP116
Sample Number				None Supplied
Depth (m)				1.70
Date Sampled				23/07/2024
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status	

Stone Content	%	0.1	NONE	< 0.1
Moisture Content	%	0.01	NONE	13
Total mass of sample received	kg	0.1	NONE	0.6

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	-
Asbestos Analyst ID	N/A	N/A	N/A	-

General Inorganics

pH (L099)	pH Units	N/A	MCERTS	8.4
Total Cyanide	mg/kg	1	MCERTS	3.3
Complex Cyanide	mg/kg	1	MCERTS	3.3
Free Cyanide	mg/kg	1	MCERTS	< 1.0
Thiocyanate as SCN	mg/kg	5	NONE	< 5.0
Total Sulphate as SO ₄	mg/kg	50	MCERTS	1200
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	620
Water Soluble SO ₄ 16hr extraction (2:1)	mg/l	1.25	MCERTS	312
Total Sulphur	mg/kg	50	MCERTS	890
Total Sulphur	%	0.005	MCERTS	0.089
Ammoniacal Nitrogen as NH ₃	mg/kg	0.5	MCERTS	< 0.5
Organic Matter	%	0.1	MCERTS	-
Organic Matter (automated)	%	0.1	MCERTS	-
Calorific Value	MJ/kg	0.12	ISO 17025	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	-
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-
Acenaphthylene	mg/kg	0.05	MCERTS	-
Acenaphthene	mg/kg	0.05	MCERTS	-
Fluorene	mg/kg	0.05	MCERTS	-
Phenanthrene	mg/kg	0.05	MCERTS	-
Anthracene	mg/kg	0.05	MCERTS	-
Fluoranthene	mg/kg	0.05	MCERTS	-
Pyrene	mg/kg	0.05	MCERTS	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-
Chrysene	mg/kg	0.05	MCERTS	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	-
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Heavy Metals / Metalloids

Antimony (aqua regia extractable)	mg/kg	1	ISO 17025	3
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Analytical Report Number: 24-035173
Project / Site name: The Seam Barnsley

Lab Sample Number				281014
Sample Reference				TP116
Sample Number				None Supplied
Depth (m)				1.70
Date Sampled				23/07/2024
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status	
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	15
Barium (aqua regia extractable)	mg/kg	1	MCERTS	140
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1.4
Boron (water soluble)	mg/kg	0.2	MCERTS	1
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8
Chromium (III)	mg/kg	1	NONE	18
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	19
Copper (aqua regia extractable)	mg/kg	1	MCERTS	77
Iron (aqua regia extractable)	mg/kg	40	MCERTS	33000
Lead (aqua regia extractable)	mg/kg	1	MCERTS	84
Manganese (aqua regia extractable)	mg/kg	1	MCERTS	1300
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3
Molybdenum (aqua regia extractable)	mg/kg	0.25	MCERTS	1.8
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	28
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	30
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	96

Calcium (aqua regia extractable)	mg/kg	20	ISO 17025	-
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Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.01	MCERTS	-
TPHCWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.01	MCERTS	-
TPHCWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.01	MCERTS	-
TPHCWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	MCERTS	-
TPHCWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	-
TPHCWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	-
TPHCWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	-
TPHCWG - Aliphatic >EC35 - EC44 _{EH_CU_1D_AL}	mg/kg	8.4	NONE	-
TPHCWG - Aliphatic >EC5 - EC35 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	-
TPHCWG - Aliphatic >EC5 - EC44 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	-

TPHCWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.01	MCERTS	-
TPHCWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.01	MCERTS	-
TPHCWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.02	MCERTS	-
TPHCWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	-
TPHCWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	-
TPHCWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	-
TPHCWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	-
TPHCWG - Aromatic >EC35 - EC44 _{EH_CU_1D_AR}	mg/kg	8.4	NONE	-
TPHCWG - Aromatic >EC5 - EC35 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	-
TPHCWG - Aromatic >EC5 - EC44 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	-

Petroleum Range Organics (EC6 - EC10) _{HS_1D_TOTAL}	mg/kg	1	ISO 17025	-
TPH (EC10 - EC25) _{EH_CU_1D_TOTAL}	mg/kg	10	MCERTS	-
TPH (EC25 - EC40) _{EH_CU_1D_TOTAL}	mg/kg	10	MCERTS	-

VOCs

Chloromethane	µg/kg	5	ISO 17025	-
Chloroethane	µg/kg	5	NONE	-
Bromomethane	µg/kg	5	ISO 17025	-

Analytical Report Number: 24-035173
Project / Site name: The Seam Barnsley

Lab Sample Number				281014
Sample Reference				TP116
Sample Number				None Supplied
Depth (m)				1.70
Date Sampled				23/07/2024
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status	
Vinyl Chloride	µg/kg	5	NONE	-
Trichlorofluoromethane	µg/kg	5	NONE	-
1,1-Dichloroethene	µg/kg	5	NONE	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	NONE	-
Trans 1,2-dichloroethylene	µg/kg	5	NONE	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	-
1,1-Dichloroethane	µg/kg	5	ISO 17025	-
2,2-Dichloropropane	µg/kg	5	NONE	-
Chloroform	µg/kg	5	ISO 17025	-
1,1,1-Trichloroethane	µg/kg	5	ISO 17025	-
1,2-Dichloroethane	µg/kg	5	ISO 17025	-
1,1-Dichloropropene	µg/kg	5	ISO 17025	-
Cis-1,2-dichloroethene	µg/kg	5	ISO 17025	-
Benzene	µg/kg	5	MCERTS	-
Carbontetrachloride	µg/kg	5	NONE	-
1,2-Dichloropropane	µg/kg	5	ISO 17025	-
Trichloroethene	µg/kg	5	ISO 17025	-
Dibromomethane	µg/kg	5	ISO 17025	-
Bromodichloromethane	µg/kg	5	ISO 17025	-
Cis-1,3-dichloropropene	µg/kg	5	ISO 17025	-
Trans-1,3-dichloropropene	µg/kg	5	ISO 17025	-
Toluene	µg/kg	5	MCERTS	-
1,1,2-Trichloroethane	µg/kg	5	ISO 17025	-
1,3-Dichloropropane	µg/kg	5	ISO 17025	-
Dibromochloromethane	µg/kg	5	ISO 17025	-
Tetrachloroethene	µg/kg	5	NONE	-
1,2-Dibromoethane	µg/kg	5	ISO 17025	-
Chlorobenzene	µg/kg	5	ISO 17025	-
1,1,1,2-Tetrachloroethane	µg/kg	5	ISO 17025	-
Ethylbenzene	µg/kg	5	MCERTS	-
p & m-Xylene	µg/kg	5	MCERTS	-
Styrene	µg/kg	5	ISO 17025	-
Bromoform	µg/kg	5	NONE	-
o-Xylene	µg/kg	5	MCERTS	-
Isopropylbenzene	µg/kg	5	ISO 17025	-
1,1,1,2,2-Tetrachloroethane	µg/kg	5	NONE	-
Bromobenzene	µg/kg	5	NONE	-
n-Propylbenzene	µg/kg	5	ISO 17025	-
2-Chlorotoluene	µg/kg	5	ISO 17025	-
4-Chlorotoluene	µg/kg	5	ISO 17025	-
1,3,5-Trimethylbenzene	µg/kg	5	ISO 17025	-
tert-Butylbenzene	µg/kg	5	ISO 17025	-
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	-
sec-Butylbenzene	µg/kg	5	ISO 17025	-
1,3-Dichlorobenzene	µg/kg	5	ISO 17025	-
p-Isopropyltoluene	µg/kg	5	ISO 17025	-
1,4-Dichlorobenzene	µg/kg	5	ISO 17025	-
1,2-Dichlorobenzene	µg/kg	5	ISO 17025	-
Butylbenzene	µg/kg	5	NONE	-
1,2-Dibromo-3-chloropropane	µg/kg	5	ISO 17025	-
1,2,4-Trichlorobenzene	µg/kg	5	ISO 17025	-
Hexachlorobutadiene	µg/kg	5	NONE	-

Analytical Report Number: 24-035173
Project / Site name: The Seam Barnsley

Lab Sample Number				281014
Sample Reference				TP116
Sample Number				None Supplied
Depth (m)				1.70
Date Sampled				23/07/2024
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status	
1,2,3-Trichlorobenzene	µg/kg	5	ISO 17025	-

SVOCs

Aniline	mg/kg	0.1	NONE	-
Phenol	mg/kg	0.2	ISO 17025	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-
2-Methylphenol	mg/kg	0.3	MCERTS	-
Hexachloroethane	mg/kg	0.05	ISO 17025	-
Nitrobenzene	mg/kg	0.3	MCERTS	-
4-Methylphenol	mg/kg	0.2	NONE	-
Isophorone	mg/kg	0.2	MCERTS	-
2-Nitrophenol	mg/kg	0.3	NONE	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-
4-Chloroaniline	mg/kg	0.1	NONE	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	-
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-
2,6-Dinitrotoluene	mg/kg	0.1	NONE	-
2,4-Dinitrotoluene	mg/kg	0.2	NONE	-
Dibenzofuran	mg/kg	0.2	MCERTS	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	MCERTS	-
Diethyl phthalate	mg/kg	0.2	MCERTS	-
4-Nitroaniline	mg/kg	0.2	NONE	-
Azobenzene	mg/kg	0.3	NONE	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	-
Carbazole	mg/kg	0.3	MCERTS	-
Dibutyl phthalate	mg/kg	0.2	NONE	-
Anthraquinone	mg/kg	0.3	NONE	-
Butyl benzyl phthalate	mg/kg	0.3	NONE	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 24-035173
Project / Site name: The Seam Barnsley

Lab Sample Number				280964	280966	280971
Sample Reference				TP102	TP111	TP105
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				1.10	0.70	0.60
Date Sampled				24/07/2024	24/07/2024	23/07/2024
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)	Units	Test Limit of detection	Test Accreditation Status			

General Inorganics

pH (automated)	pH Units	N/A	ISO 17025	7.9	8.1	7.7
Total Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10
Complex Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10
Free Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10
Thiocyanate as SCN	µg/l	200	ISO 17025	< 200	< 200	< 200
Sulphate as SO ₄	mg/l	0.045	ISO 17025	15.9	151	482
Ammoniacal Nitrogen as NH ₃	µg/l	15	NONE	110	1900	30

Total Phenols

Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10	< 10	< 10
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Speciated PAHs

Naphthalene	µg/l	0.01	ISO 17025	0.47	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	0.05	< 0.01	< 0.01
Fluorene	µg/l	0.01	ISO 17025	0.11	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	0.14	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01

Total PAH

Total EPA-16 PAHs	µg/l	0.16	NONE	0.77	< 0.16	< 0.16
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Heavy Metals / Metalloids

Antimony (dissolved)	µg/l	1.7	ISO 17025	2.8	2.1	< 1.7
Arsenic (dissolved)	µg/l	1	ISO 17025	< 1.0	1.3	< 1.0
Barium (dissolved)	µg/l	0.05	ISO 17025	21	140	25
Beryllium (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2	< 0.2
Boron (dissolved)	µg/l	10	ISO 17025	52	120	75
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08	< 0.08
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0	< 5.0
Chromium (III)	µg/l	5	NONE	< 5.0	< 5.0	< 5.0
Chromium (dissolved)	µg/l	0.4	ISO 17025	3	0.9	0.6
Copper (dissolved)	µg/l	0.7	ISO 17025	21	30	14
Iron (dissolved)	mg/l	0.004	ISO 17025	1.3	0.057	0.07
Lead (dissolved)	µg/l	1	ISO 17025	6	< 1.0	< 1.0
Manganese (dissolved)	µg/l	0.06	ISO 17025	62	340	69
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5
Molybdenum (dissolved)	µg/l	0.4	ISO 17025	15	14	< 0.4
Nickel (dissolved)	µg/l	0.3	ISO 17025	2.9	2.9	0.9
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0	< 4.0

Analytical Report Number: 24-035173
Project / Site name: The Seam Barnsley

Lab Sample Number				280964	280966	280971
Sample Reference				TP102	TP111	TP105
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				1.10	0.70	0.60
Date Sampled				24/07/2024	24/07/2024	23/07/2024
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)	Units	Test Limit of detection	Test Accreditation Status			
Vanadium (dissolved)	µg/l	1.7	ISO 17025	4.8	< 1.7	< 1.7
Zinc (dissolved)	µg/l	0.4	ISO 17025	30	20	18

Petroleum Hydrocarbons

TPH - Aliphatic >EC5 - EC6 _{HS_1D_AL}	µg/l	1	NONE	< 1.0	< 1.0	< 1.0
TPH - Aliphatic >EC6 - EC8 _{HS_1D_AL}	µg/l	1	NONE	< 1.0	< 1.0	< 1.0
TPH - Aliphatic >EC8 - EC10 _{HS_1D_AL}	µg/l	1	NONE	< 1.0	< 1.0	< 1.0
TPH - Aliphatic >EC10 - EC12 _{EH_1D_AL_MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH - Aliphatic >EC12 - EC16 _{EH_1D_AL_MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH - Aliphatic >EC16 - EC21 _{EH_1D_AL_MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH - Aliphatic >EC21 - EC35 _{EH_1D_AL_MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH - Aliphatic >EC35 - EC40 _{EH_1D_AL_MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH - Aliphatic >EC35 - EC44 _{EH_1D_AL_MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH - Aliphatic >EC40 - EC44 _{EH_1D_AL_MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH - Aliphatic >EC5 - EC35 _{HS+EH_1D_AL_MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH - Aliphatic >EC5 - EC44 _{HS+EH_1D_AL_MS}	µg/l	10	NONE	< 10	< 10	< 10

TPH - Aromatic >EC5 - EC7 _{HS_1D_AR}	µg/l	1	NONE	< 1.0	< 1.0	< 1.0
TPH - Aromatic >EC7 - EC8 _{HS_1D_AR}	µg/l	1	NONE	< 1.0	< 1.0	< 1.0
TPH - Aromatic >EC8 - EC10 _{EH_1D_AR_MS}	µg/l	1	NONE	< 1.0	< 1.0	< 1.0
TPH - Aromatic >EC10 - EC12 _{EH_1D_AR_MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH - Aromatic >EC12 - EC16 _{EH_1D_AR_MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH - Aromatic >EC16 - EC21 _{EH_1D_AR_MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH - Aromatic >EC21 - EC35 _{EH_1D_AR_MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH - Aromatic >EC35 - EC40 _{EH_1D_AR_MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH - Aromatic >EC35 - EC44 _{EH_1D_AR_MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH - Aromatic >EC40 - EC44 _{EH_1D_AR_MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH - Aromatic >EC5 - EC44 _{HS+EH_1D_AR_MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH - Aromatic >EC6 - EC35 _{HS+EH_1D_AR_MS}	µg/l	10	NONE	< 10	< 10	< 10

VOCs

MTBE (Methyl Tertiary Butyl Ether)	µg/l	3	NONE	< 3.0	< 3.0	< 3.0
Benzene	µg/l	3	NONE	< 3.0	< 3.0	< 3.0
Toluene	µg/l	3	NONE	< 3.0	< 3.0	< 3.0
Ethylbenzene	µg/l	3	NONE	< 3.0	< 3.0	< 3.0
p & m-xylene	µg/l	3	NONE	< 3.0	< 3.0	< 3.0
o-xylene	µg/l	3	NONE	< 3.0	< 3.0	< 3.0

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number : 24-035173
Project / Site name: The Seam Barnsley

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
280964	TP102	None Supplied	1.1	Brown loam and sand with gravel and stones
280965	TP102	None Supplied	2.6	Brown clay and sand with gravel and stones
280966	TP111	None Supplied	0.7	Brown clay and loam with gravel
280967	TP111	None Supplied	1.2	Brown sandy clay with gravel and stones
280969	TP107	None Supplied	2	Brown clay and sand with gravel
280971	TP105	None Supplied	0.6	Black sand with gravel
280972	TP104	None Supplied	0.7	Brown sandy loam with gravel and vegetation
281013	TP116	None Supplied	0.75	Black sand with gravel
281014	TP116	None Supplied	1.7	Brown clay and sand with gravel

Analytical Report Number : 24-035173
Project / Site name: The Seam Barnsley

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in Soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques	In-house method based on HSG 248, 2021	A001B	D	ISO 17025
Organic matter (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)	In-house method	L009B	D	MCERTS
Calorific Value of soil	Determination of the calorific value of soil by combustion in a controlled environment	Calorific Value of Soil by Bomb Calorimeter	L013B	D	ISO 17025
Moisture Content	Moisture content, determined gravimetrically (up to 30°C)	In-house method	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
Organic matter in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)	In-house method	L023B	D	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L038B	D	MCERTS
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES	In-house method based on Second Site Properties version 3	L038B	D	MCERTS
Cations in soil by ICP-OES	Determination of cations in soil by aqua-regia digestion followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L038B	D	MCERTS
Total sulphate (as SO ₄ in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES	In-house method	L038B	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Sulphate, water soluble, in soil (16hr extraction)	In-house method	L038B	D	MCERTS
Total Sulphur in soil	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES	In-house method	L038B	D	MCERTS
Metals by ICP-OES in leachate	Determination of metals in leachate by acidification followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L039B	W	ISO 17025
Speciated PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS
Total petroleum hydrocarbons with carbon banding by GC-MS/GC-MS HS in leachate	Determination of total petroleum hydrocarbons in leachate by GC-MS/GC-MS HS with carbon banding aliphatic and aromatic	In-house method	L070B/L088	W	NONE
BTEX and/or Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS	In-house method based on USEPA 8260	L073B	W	MCERTS

Analytical Report Number : 24-035173
Project / Site name: The Seam Barnsley

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
BTEX and/or Volatile organic compounds in leachate	Determination of volatile organic compounds in leachate by headspace GC-MS	In-house method based on USEPA 8260	L073B	W	NONE
Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS with carbon banding aliphatic and aromatic	In-house method	L076B/L088	D/W	MCERTS
Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS	In-house method	L076B/L088	D/W	MCERTS
Complex cyanide in leachate	Determination of complex cyanide by calculation	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	ISO 17025
Complex Cyanide in soil	Determination of complex cyanide by calculation	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	MCERTS
Chromium III in leachate	In-house method by calculation from total Cr and Cr VI	In-house method by calculation	L080	W	NONE
Chromium III in soil	In-house method by calculation from total Cr and Cr VI	In-house method by calculation	L080	W	NONE
Hexavalent chromium in leachate	Determination of hexavalent chromium in leachate by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry	In-house method	L080	W	ISO 17025
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazide followed by colorimetry	In-house method	L080	W	MCERTS
Free cyanide in leachate	Determination of free cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	ISO 17025
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	MCERTS
Monohydric phenols in leachate	Determination of phenols in leachate by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	ISO 17025
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	MCERTS
Total cyanide in leachate	Determination of total cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	ISO 17025
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	MCERTS
Ammonia as NH ₃ in leachate	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082B	W	NONE

Analytical Report Number : 24-035173
Project / Site name: The Seam Barnsley

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Ammonia as NH ₃ in soil	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082B	W	MCERTS
Thiocyanate in soil	Determination of thiocyanate in soil by extraction in water followed by acidification followed by addition of ferric nitrate followed by discrete analyser (spectrophotometer)	In-house method	L082B	D	NONE
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement	In-house method	L099	D	MCERTS
pH at 20°C in leachate (automated)	Determination of pH in leachate by electrometric measurement	In-house method	L099	W	ISO 17025
Speciated PAHs and/or Semi-volatile organic compounds in leachate	SVOCs and PAHs in leachate	In-house method	L102B		ISO 17025
Thiocyanate in leachate	Determination of thiocyanate in water by discrete analyser (colorimetry)	In-house method based on SMWW 4500-CN-M	L082B	W	ISO 17025

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30°C.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#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 e.g. EH+HS_Total or EH_CU+HS_Total

Quality control parameter failure associated with individual result applies to calculated sum of individuals.

The result for sum should be interpreted with caution

Analytical Report Number : 24-035173

Project / Site name: The Seam Barnsley

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis. Please note that the associated result(s) may be unreliable and should be interpreted with care.

Key: a - No sampling date b - Incorrect container c - Holding time d - Headspace e - Temperature

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
TP102	N/A	S	280964	c	Complex Cyanide in soil	L080	c
TP102	N/A	S	280964	c	Free cyanide in soil	L080	c
TP102	N/A	S	280964	c	Total cyanide in soil	L080	c
TP104	N/A	S	280972	c	BTEX and/or Volatile organic compounds in soil	L073B	c
TP104	N/A	S	280972	c	Complex Cyanide in soil	L080	c
TP104	N/A	S	280972	c	Free cyanide in soil	L080	c
TP104	N/A	S	280972	c	Thiocyanate in soil	L082B	c
TP104	N/A	S	280972	c	Total cyanide in soil	L080	c
TP105	N/A	S	280971	c	BTEX and/or Volatile organic compounds in soil	L073B	c
TP105	N/A	S	280971	c	Complex Cyanide in soil	L080	c
TP105	N/A	S	280971	c	Free cyanide in soil	L080	c
TP105	N/A	S	280971	c	Organic matter in soil	L023B	c
TP105	N/A	S	280971	c	Thiocyanate in soil	L082B	c
TP105	N/A	S	280971	c	Total cyanide in soil	L080	c
TP107	N/A	S	280969	c	BTEX and/or Volatile organic compounds in soil	L073B	c
TP107	N/A	S	280969	c	Complex Cyanide in soil	L080	c
TP107	N/A	S	280969	c	Free cyanide in soil	L080	c
TP107	N/A	S	280969	c	Thiocyanate in soil	L082B	c
TP107	N/A	S	280969	c	Total cyanide in soil	L080	c
TP111	N/A	S	280966	c	Complex Cyanide in soil	L080	c
TP111	N/A	S	280966	c	Free cyanide in soil	L080	c
TP111	N/A	S	280966	c	Total cyanide in soil	L080	c
TP116	N/A	S	281013	c	BTEX and/or Volatile organic compounds in soil	L073B	c
TP116	N/A	S	281013	c	Complex Cyanide in soil	L080	c
TP116	N/A	S	281013	c	Free cyanide in soil	L080	c
TP116	N/A	S	281013	c	Thiocyanate in soil	L082B	c
TP116	N/A	S	281013	c	Total cyanide in soil	L080	c
TP116	N/A	S	281014	c	Complex Cyanide in soil	L080	c
TP116	N/A	S	281014	c	Free cyanide in soil	L080	c
TP116	N/A	S	281014	c	Thiocyanate in soil	L082B	c
TP116	N/A	S	281014	c	Total cyanide in soil	L080	c

VHE Construction plc
Whaley Road
Barug
Barnsley
S75 1HT

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

e: carl.lacey@vhe.co.uk

Analytical Report Number : 24-035175

Project / Site name:	The Seam Barnsley	Samples received on:	24/07/2024
Your job number:	159592	Samples instructed on/ Analysis started on:	06/08/2024
Your order number:		Analysis completed by:	14/08/2024
Report Issue Number:	1	Report issued on:	14/08/2024
Samples Analysed:	2 soil samples - 2 leachate samples		

Signed:



Charlotte Andrew
Key Account Manager
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 24-035175
Project / Site name: The Seam Barnsley

Lab Sample Number				280976	280977
Sample Reference				TP102	TP111
Sample Number				None Supplied	None Supplied
Depth (m)				1.10	0.70
Date Sampled				24/07/2024	24/07/2024
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection
				Test Accreditation Status	

Stone Content	%	0.1	NONE	40.6	< 0.1
Moisture Content	%	0.01	NONE	10	17
Total mass of sample received	kg	0.1	NONE	0.8	0.6

General Inorganics

Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	0.7	1.4
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.38	0.25
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	0.18	0.17
Fluorene	mg/kg	0.05	MCERTS	0.19	0.13
Phenanthrene	mg/kg	0.05	MCERTS	0.93	0.86
Anthracene	mg/kg	0.05	MCERTS	0.23	0.24
Fluoranthene	mg/kg	0.05	MCERTS	0.9	1.3
Pyrene	mg/kg	0.05	MCERTS	0.72	1.1
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.33	0.57
Chrysene	mg/kg	0.05	MCERTS	0.39	0.62
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.43	0.69
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.18	0.31
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.21	0.55
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.32	0.29
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.12	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.33	0.29
Coronene	mg/kg	0.05	NONE	< 0.05	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	5.82	7.34
Total WAC-17 PAHs	mg/kg	0.85	NONE	5.82	7.34

Petroleum Hydrocarbons

Mineral Oil (EC10 - EC40) EH_CU_1D_AL	mg/kg	10	NONE	< 10	22
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VOCs

Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0
p & m-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0

Total BTEX	µg/kg	5	MCERTS	< 5.0	< 5.0
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PCBs by GC-MS

PCB Congener 28	mg/kg	0.001	MCERTS	< 0.001	< 0.001
PCB Congener 52	mg/kg	0.001	MCERTS	< 0.001	< 0.001
PCB Congener 101	mg/kg	0.001	MCERTS	< 0.001	< 0.001
PCB Congener 118	mg/kg	0.001	MCERTS	< 0.001	< 0.001
PCB Congener 138	mg/kg	0.001	MCERTS	< 0.001	< 0.001
PCB Congener 153	mg/kg	0.001	MCERTS	< 0.001	< 0.001
PCB Congener 180	mg/kg	0.001	MCERTS	< 0.001	< 0.001

Analytical Report Number: 24-035175
Project / Site name: The Seam Barnsley

Lab Sample Number				280976	280977
Sample Reference				TP102	TP111
Sample Number				None Supplied	None Supplied
Depth (m)				1.10	0.70
Date Sampled				24/07/2024	24/07/2024
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection
				Test Accreditation Status	

Total PCBs	mg/kg	0.007	MCERTS	< 0.007	< 0.007
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U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

i2 Analytical

7 Woodshots Meadow
Croxley Green Business Park
Watford, WD18 8YS

Telephone: 01923 225404
Fax: 01923 237404
email:reception@i2analytical.com

Waste Acceptance Criteria Analytical Results

Waste Acceptance Criteria Analytical Results							
Report No:	24-035175						
					Client: VHE		
Location	The Seam Barnsley						
Lab Reference (Sample Number)	280976				Landfill Waste Acceptance Criteria		
Sampling Date	24/07/2024				Inert Waste Landfill	Stable Non- reactive HAZARDOUS waste in non- hazardous Landfill	Hazardous Waste Landfill
Sample ID	TP102						
Depth (m)	1.10						
Solid Waste Analysis							
TOC (%)**	0.7				3%	5%	6%
Loss on Ignition (%) **	-				--	--	10%
BTEX (µg/kg) **	< 5.0				6000	--	--
Sum of PCBs (mg/kg) **	< 0.007				1	--	--
Mineral Oil (mg/kg) EH, ID, CU, AL	< 10				500	--	--
Total PAH (WAC-17) (mg/kg)	5.82				100	--	--
pH (units)**	-				--	>6	--
Acid Neutralisation Capacity (mmol / kg)	-				--	To be evaluated	To be evaluated
Eluate Analysis (BS EN 12457 - 2 preparation utilising end over end leaching procedure)	10:1			10:1	Limit values for compliance leaching test		
	mg/l			mg/kg	using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *	< 0.00100			< 0.0100	0.5	2	25
Barium *	0.0211			0.211	20	100	300
Cadmium *	< 0.000100			< 0.00100	0.04	1	5
Chromium *	0.0037			0.037	0.5	10	70
Copper *	0.018			0.18	2	50	100
Mercury *	< 0.000500			< 0.00500	0.01	0.2	2
Molybdenum *	0.00695			0.0695	0.5	10	30
Nickel *	0.0031			0.031	0.4	10	40
Lead *	0.0017			0.017	0.5	10	50
Antimony *	< 0.0017			< 0.017	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0.5	7
Zinc *	0.029			0.29	4	50	200
Chloride *	4.1			41	800	15000	25000
Fluoride*	1.7			17	10	150	500
Sulphate *	6.2			62	1000	20000	50000
TDS*	68			680	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	7.87			78.7	500	800	1000
Leach Test Information							
Stone Content (%)	40.6						
Sample Mass (kg)	0.8						
Dry Matter (%)	90						
Moisture (%)	10						
Results are expressed on a dry weight basis, after correction for moisture content where applicable.					* = UKAS accredited (liquid eluate analysis only)		
Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation					** – MCERTS accredited		

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3.
This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous.

i2 Analytical

7 Woodshots Meadow
Croxley Green Business Park
Watford, WD18 8YS

Telephone: 01923 225404
Fax: 01923 237404
email:reception@i2analytical.com

Waste Acceptance Criteria Analytical Results

Waste Acceptance Criteria Analytical Results							
Report No:	24-035175						
					Client: VHE		
Location	The Seam Barnsley						
Lab Reference (Sample Number)	280977				Landfill Waste Acceptance Criteria		
Sampling Date	24/07/2024				Limits		
Sample ID	TP111				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Depth (m)	0.70						
Solid Waste Analysis							
TOC (%)**	1.4				3%	5%	6%
Loss on Ignition (%) **	-				--	--	10%
BTEX (µg/kg) **	< 5.0				6000	--	--
Sum of PCBs (mg/kg) **	< 0.007				1	--	--
Mineral Oil (mg/kg) EH, ID, CU, AL	22				500	--	--
Total PAH (WAC-17) (mg/kg)	7.34				100	--	--
pH (units)**	-				--	>6	--
Acid Neutralisation Capacity (mmol / kg)	-				--	To be evaluated	To be evaluated
Eluate Analysis (BS EN 12457 - 2 preparation utilising end over end leaching procedure)	10:1			10:1	Limit values for compliance leaching test		
	mg/l			mg/kg	using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *	0.00109			0.0109	0.5	2	25
Barium *	0.109			1.09	20	100	300
Cadmium *	< 0.000100			< 0.00100	0.04	1	5
Chromium *	0.00088			0.0088	0.5	10	70
Copper *	0.023			0.23	2	50	100
Mercury *	< 0.000500			< 0.00500	0.01	0.2	2
Molybdenum *	0.00356			0.0356	0.5	10	30
Nickel *	0.0028			0.028	0.4	10	40
Lead *	< 0.0010			< 0.010	0.5	10	50
Antimony *	< 0.0017			< 0.017	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0.5	7
Zinc *	0.012			0.12	4	50	200
Chloride *	34			340	800	15000	25000
Fluoride*	1.3			13	10	150	500
Sulphate *	47			470	1000	20000	50000
TDS*	220			2200	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	14.8			148	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	0.6						
Dry Matter (%)	83						
Moisture (%)	17						
Results are expressed on a dry weight basis, after correction for moisture content where applicable.					* = UKAS accredited (liquid eluate analysis only)		
Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation					** - MCERTS accredited		

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3.
This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Analytical Report Number : 24-035175

Project / Site name: The Seam Barnsley

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
280976	TP102	None Supplied	1.1	Brown loam and sand with gravel and stones
280977	TP111	None Supplied	0.7	Brown clay and loam with gravel

Analytical Report Number : 24-035175
Project / Site name: The Seam Barnsley

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)	In-house method	L009B	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically (up to 30°C)	In-house method	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
PCB's By GC-MS in soil	Determination of PCB by extraction with hexane followed by GC-MS	In-house method based on USEPA 8082	L027B	D	MCERTS
Total dissolved solids 10:1 WAC	Determination of total dissolved solids in water by electrometric measurement	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L031B	W	ISO 17025
Fluoride 10:1 WAC	Determination of fluoride in leachate by 1:1ratio with a buffer solution followed by Ion Selective Electrode	In-house method based on Use of Total Ionic Strength Adjustment Buffer for Electrode Determination	L033B	W	ISO 17025
Dissolved organic carbon 10:1 WAC	Determination of dissolved organic carbon in leachate by TOC/DOC NDIR Analyser	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037B	W	NONE
Metals in leachate by ICP-OES	Determination of metals in leachate by acidification followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L039B	W	ISO 17025
Sample Preparation		In-house method	L043B	W	NONE
Speciated PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS
BTEX and/or Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS	In-house method based on USEPA 8260	L073B	W	MCERTS
Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS	In-house method	L076B/L088	D/W	NONE

Analytical Report Number : 24-035175
Project / Site name: The Seam Barnsley

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Monohydric phenols 10:1 WAC	Determination of phenols in leachate by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	ISO 17025
Chloride 10:1 WAC	Determination of Chloride colorimetrically by discrete analyser	In-house based on MEWAM Method ISBN 0117516260	L082B	W	ISO 17025

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#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 e.g. EH+HS_Total or EH_CU+HS_Total

Quality control parameter failure associated with individual result applies to calculated sum of individuals.

The result for sum should be interpreted with caution

VHE Construction plc
Whaley Road
Barug
Barnsley
S75 1HT

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

e: carl.lacey@vhe.co.uk

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 24-035278

Project / Site name:	The Seam Barnsley	Samples received on:	05/08/2024
Your job number:	159592	Samples instructed on/ Analysis started on:	06/08/2024
Your order number:		Analysis completed by:	15/08/2024
Report Issue Number:	1	Report issued on:	15/08/2024
Samples Analysed:	2 soil samples		

Signed: 

Rafał Szczepańczyk
Technical Reviewer
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 24-035278
Project / Site name: The Seam Barnsley

Lab Sample Number				281516	281517
Sample Reference				BH105	BH105
Sample Number				None Supplied	None Supplied
Depth (m)				0.20	1.20
Date Sampled				30/07/2024	30/07/2024
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Stone Content	%	0.1	NONE	< 0.1	-
Moisture Content	%	0.01	NONE	6.9	-
Total mass of sample received	kg	0.1	NONE	2	-

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	KWB	KWB

General Inorganics

pH (L099)	pH Units	N/A	MCERTS	8.1	-
Total Cyanide	mg/kg	1	MCERTS	< 1.0	-
Complex Cyanide	mg/kg	1	MCERTS	< 1.0	-
Free Cyanide	mg/kg	1	MCERTS	< 1.0	-
Thiocyanate as SCN	mg/kg	5	NONE	< 5.0	-
Total Sulphate as SO ₄	mg/kg	50	MCERTS	1700	-
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	470	-
Water Soluble SO ₄ 16hr extraction (2:1)	mg/l	1.25	MCERTS	234	-
Total Sulphur	mg/kg	50	MCERTS	2300	-
Total Sulphur	%	0.005	MCERTS	0.232	-
Ammoniacal Nitrogen as NH ₃	mg/kg	0.5	MCERTS	< 0.5	-

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.98	-
Acenaphthylene	mg/kg	0.05	MCERTS	0.26	-
Acenaphthene	mg/kg	0.05	MCERTS	4.3	-
Fluorene	mg/kg	0.05	MCERTS	2.9	-
Phenanthrene	mg/kg	0.05	MCERTS	28	-
Anthracene	mg/kg	0.05	MCERTS	7.4	-
Fluoranthene	mg/kg	0.05	MCERTS	42	-
Pyrene	mg/kg	0.05	MCERTS	40	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	19	-
Chrysene	mg/kg	0.05	MCERTS	20	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	23	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	9.5	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	21	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	9.3	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	2.4	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	10	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	240	-
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Analytical Report Number: 24-035278
Project / Site name: The Seam Barnsley

Lab Sample Number				281516	281517
Sample Reference				BH105	BH105
Sample Number				None Supplied	None Supplied
Depth (m)				0.20	1.20
Date Sampled				30/07/2024	30/07/2024
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Heavy Metals / Metalloids

Antimony (aqua regia extractable)	mg/kg	1	ISO 17025	9.5	-
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	17	-
Barium (aqua regia extractable)	mg/kg	1	MCERTS	220	-
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	2.8	-
Boron (water soluble)	mg/kg	0.2	MCERTS	1.2	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	-
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	-
Chromium (III)	mg/kg	1	NONE	170	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	170	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	98	-
Iron (aqua regia extractable)	mg/kg	40	MCERTS	160000	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	61	-
Manganese (aqua regia extractable)	mg/kg	1	MCERTS	8400	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	-
Molybdenum (aqua regia extractable)	mg/kg	0.25	MCERTS	2.4	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	14	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	-
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	690	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	53	-

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010	-
TPHCWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010	-
TPHCWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010	-
TPHCWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	MCERTS	< 1.0	-
TPHCWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	4.4	-
TPHCWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	10	-
TPHCWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	19	-
TPHCWG - Aliphatic >EC35 - EC44 _{EH_CU_1D_AL}	mg/kg	8.4	NONE	< 8.4	-
TPHCWG - Aliphatic >EC5 - EC35 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	34	-
TPHCWG - Aliphatic >EC5 - EC44 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	34	-

TPHCWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.01	MCERTS	< 0.010	-
TPHCWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.01	MCERTS	< 0.010	-
TPHCWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.02	MCERTS	< 0.020	-
TPHCWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	2.1	-
TPHCWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	23	-
TPHCWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	160	-
TPHCWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	300	-
TPHCWG - Aromatic >EC35 - EC44 _{EH_CU_1D_AR}	mg/kg	8.4	NONE	51	-
TPHCWG - Aromatic >EC5 - EC35 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	490	-
TPHCWG - Aromatic >EC5 - EC44 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	540	-

Analytical Report Number: 24-035278
Project / Site name: The Seam Barnsley

Lab Sample Number				281516	281517
Sample Reference				BH105	BH105
Sample Number				None Supplied	None Supplied
Depth (m)				0.20	1.20
Date Sampled				30/07/2024	30/07/2024
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection
				Test Accreditation Status	

VOCs

MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	-
Benzene	µg/kg	5	MCERTS	< 5.0	-
Toluene	µg/kg	5	MCERTS	< 5.0	-
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	-
p & m-Xylene	µg/kg	5	MCERTS	< 5.0	-
o-Xylene	µg/kg	5	MCERTS	< 5.0	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number : 24-035278
Project / Site name: The Seam Barnsley

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
281516	BH105	None Supplied	0.2	Brown loam and clay with gravel

Analytical Report Number : 24-035278
Project / Site name: The Seam Barnsley

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in Soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques	In-house method based on HSG 248, 2021	A001B	D	ISO 17025
Moisture Content	Moisture content, determined gravimetrically (up to 30°C)	In-house method	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L038B	D	MCERTS
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES	In-house method based on Second Site Properties version 3	L038B	D	MCERTS
Cations in soil by ICP-OES	Determination of cations in soil by aqua-regia digestion followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L038B	D	MCERTS
Total sulphate (as SO ₄ in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES	In-house method	L038B	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Sulphate, water soluble, in soil (16hr extraction)	In-house method	L038B	D	MCERTS
Total Sulphur in soil	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES	In-house method	L038B	D	MCERTS
Speciated PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS
BTEX and/or Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS	In-house method based on USEPA 8260	L073B	W	MCERTS
Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS with carbon banding aliphatic and aromatic	In-house method	L076B/L088	D/W	MCERTS
Complex Cyanide in soil	Determination of complex cyanide by calculation	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	MCERTS
Chromium III in soil	In-house method by calculation from total Cr and Cr VI	In-house method by calculation	L080	W	NONE
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazine followed by colorimetry	In-house method	L080	W	MCERTS
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	MCERTS

Analytical Report Number : 24-035278
Project / Site name: The Seam Barnsley

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	MCERTS
Ammonia as NH ₃ in soil	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082B	W	MCERTS
Thiocyanate in soil	Determination of thiocyanate in soil by extraction in water followed by acidification followed by addition of ferric nitrate followed by discrete analyser (spectrophotometer)	In-house method	L082B	D	NONE
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement	In-house method	L099	D	MCERTS

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30°C.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#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 e.g. EH+HS_Total or EH_CU+HS_Total

Quality control parameter failure associated with individual result applies to calculated sum of individuals.

The result for sum should be interpreted with caution

Analytical Report Number : 24-035278

Project / Site name: The Seam Barnsley

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis. Please note that the associated result(s) may be unreliable and should be interpreted with care.

Key: a - No sampling date b - Incorrect container c - Holding time d - Headspace e - Temperature

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
BH105	N/A	S	281516	bc	BTEX and/or Volatile organic compounds in soil	L073B	b
BH105	N/A	S	281516	bc	Complex Cyanide in soil	L080	c
BH105	N/A	S	281516	bc	Free cyanide in soil	L080	c
BH105	N/A	S	281516	bc	Total cyanide in soil	L080	c
BH105	N/A	S	281516	bc	Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	L076B/L088	b



4041



VHE Construction plc

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

e: carl.lacey@vhe.co.uk
vhelab@vhe.co.uk

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 24-036300

Project / Site name:	The Seeam	Samples received on:	30/07/2024
Your job number:		Samples instructed on/ Analysis started on:	14/08/2024
Your order number:		Analysis completed by:	19/08/2024
Report Issue Number:	1	Report issued on:	19/08/2024
Samples Analysed:	1 soil sample		

Signed:

Rafał Szczepańczyk
Technical Reviewer
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

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An estimate of measurement uncertainty can be provided on request.



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Analytical Report Number: 24-036300

Project / Site name: The Seeam

Lab Sample Number				286511
Sample Reference				TP122
Sample Number				None Supplied
Depth (m)				0.80
Date Sampled				29/07/2024
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status	

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	KJK

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected



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Analytical Report Number : 24-036300

Project / Site name: The Seeam

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in Soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques	In-house method based on HSG 248, 2021	A001B	D	ISO 17025

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Quality control parameter failure associated with individual result applies to calculated sum of individuals.

The result for sum should be interpreted with caution



4041

VHE Construction plc
Whaley Road
Barug
Barnsley
S75 1HT

e: carl.lacey@vhe.co.uk



Environmental Science

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404

f: 01923 237404

e: reception@i2analytical.com

Analytical Report Number : 24-036405

Project / Site name:	The Seam	Samples received on:	30/07/2024
Your job number:		Samples instructed on/ Analysis started on:	15/08/2024
Your order number:		Analysis completed by:	19/08/2024
Report Issue Number:	1	Report issued on:	19/08/2024
Samples Analysed:	2 soil samples		

Signed:

Rafał Szczepańczyk
Technical Reviewer
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

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soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

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Analytical Report Number: 24-036405

Project / Site name: The Seam

Lab Sample Number				286916	286917
Sample Reference				TP126	TP126
Sample Number				None Supplied	None Supplied
Depth (m)				0.20	0.50
Date Sampled				24/07/2024	24/07/2024
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection
				Test Accreditation Status	

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	KJK	KJK

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected



4041



Analytical Report Number : 24-036405

Project / Site name: The Seam

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in Soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques	In-house method based on HSG 248, 2021	A001B	D	ISO 17025

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

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The result for sum should be interpreted with caution

VHE Construction plc
Whaley Road
Barug
Barnsley
S75 1HT

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

e: vhelab@vhe.co.uk

Analytical Report Number : 24-036597

Project / Site name:	The Seam	Samples received on:	14/08/2024
Your job number:		Samples instructed on/ Analysis started on:	14/08/2024
Your order number:		Analysis completed by:	22/08/2024
Report Issue Number:	1	Report issued on:	22/08/2024
Samples Analysed:	3 soil samples - 2 leachate samples		

Signed:



Rafał Szczepańczyk
Technical Reviewer
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

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soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

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Analytical Report Number: 24-036597

Project / Site name: The Seam

Lab Sample Number				287861	287862	287863
Sample Reference				TP123	BH106	BH106
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				0.50	0.20	1.20
Date Sampled				08/05/2024	08/05/2024	08/05/2024
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status			

Stone Content	%	0.1	NONE	< 0.1	65.7	-
Moisture Content	%	0.01	NONE	7.3	7.1	-
Total mass of sample received	kg	0.1	NONE	1	1.2	-

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Detected	Detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	MMI	MMI	MMI
Actinolite detected	Type	N/A	ISO 17025	Not-detected	Not-detected	-
Amosite detected	Type	N/A	ISO 17025	Not-detected	Not-detected	-
Anthophyllite detected	Type	N/A	ISO 17025	Not-detected	Not-detected	-
Chrysotile detected	Type	N/A	ISO 17025	Detected	Detected	-
Crocidolite detected	Type	N/A	ISO 17025	Not-detected	Not-detected	-
Tremolite detected	Type	N/A	ISO 17025	Not-detected	Not-detected	-

Asbestos Containing Material Types Detected (ACM)	Type	N/A	ISO 17025	Loose Fibres	Loose Fibres	-
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General Inorganics

pH (L099)	pH Units	N/A	MCERTS	8.5	9.9	-
Total Cyanide	mg/kg	1	MCERTS	< 1.0	1.7	-
Complex Cyanide	mg/kg	1	MCERTS	< 1.0	1.7	-
Free Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	-
Thiocyanate as SCN	mg/kg	5	NONE	< 5.0	< 5.0	-
Total Sulphate as SO ₄	mg/kg	50	MCERTS	3000	2000	-
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	1900	350	-
Water Soluble SO ₄ 16hr extraction (2:1)	mg/l	1.25	MCERTS	935	177	-
Total Sulphur	mg/kg	50	MCERTS	3300	1600	-
Total Sulphur	%	0.005	MCERTS	0.328	0.159	-
Ammoniacal Nitrogen as NH ₃	mg/kg	0.5	MCERTS	< 0.5	< 0.5	-
Organic Matter (automated)	%	0.1	MCERTS	9.1	5.9	-
Calorific Value	MJ/Kg	0.12	ISO 17025	0.634	< 0.120	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	-	< 1.0	-
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Analytical Report Number: 24-036597

Project / Site name: The Seam

Lab Sample Number				287861	287862	287863
Sample Reference				TP123	BH106	BH106
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				0.50	0.20	1.20
Date Sampled				08/05/2024	08/05/2024	08/05/2024
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	13	0.92	-
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	2.2	-
Acenaphthene	mg/kg	0.05	MCERTS	61	1.4	-
Fluorene	mg/kg	0.05	MCERTS	42	1.5	-
Phenanthrene	mg/kg	0.05	MCERTS	360	20	-
Anthracene	mg/kg	0.05	MCERTS	100	8.8	-
Fluoranthene	mg/kg	0.05	MCERTS	400	85	-
Pyrene	mg/kg	0.05	MCERTS	360	80	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	160	54	-
Chrysene	mg/kg	0.05	MCERTS	150	49	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	170	71	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	68	24	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	150	57	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	71	29	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	18	6.7	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	82	30	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	2220	520	-
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Heavy Metals / Metalloids

Antimony (aqua regia extractable)	mg/kg	1	ISO 17025	4.7	45	-
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	17	21	-
Barium (aqua regia extractable)	mg/kg	1	MCERTS	220	700	-
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	2.3	2.6	-
Boron (water soluble)	mg/kg	0.2	MCERTS	0.9	1.3	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	-
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	13	-
Chromium (III)	mg/kg	1	NONE	40	23	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	40	37	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	58	72	-
Iron (aqua regia extractable)	mg/kg	40	MCERTS	49000	32000	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	160	2300	-
Manganese (aqua regia extractable)	mg/kg	1	MCERTS	2800	1500	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	42	0.9	-
Molybdenum (aqua regia extractable)	mg/kg	0.25	MCERTS	2.2	2.7	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	16	20	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	1.3	-
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	120	49	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	160	350	-

Analytical Report Number: 24-036597

Project / Site name: The Seam

Lab Sample Number	287861	287862	287863
Sample Reference	TP123	BH106	BH106
Sample Number	None Supplied	None Supplied	None Supplied
Depth (m)	0.50	0.20	1.20
Date Sampled	08/05/2024	08/05/2024	08/05/2024
Time Taken	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	-
TPHCWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	-
TPHCWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	-
TPHCWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	MCERTS	< 1.0	1.5	-
TPHCWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	6.2	20	-
TPHCWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	24	63	-
TPHCWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	79	85	-
TPHCWG - Aliphatic >EC35 - EC44 _{EH_CU_1D_AL}	mg/kg	8.4	NONE	49	52	-
TPHCWG - Aliphatic >EC5 - EC35 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	110	170	-
TPHCWG - Aliphatic >EC5 - EC44 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	160	220	-

TPHCWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	-
TPHCWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	-
TPHCWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.02	MCERTS	< 0.020	< 0.020	-
TPHCWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	2.3	< 1.0	-
TPHCWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	89	16	-
TPHCWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	590	270	-
TPHCWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	880	750	-
TPHCWG - Aromatic >EC35 - EC44 _{EH_CU_1D_AR}	mg/kg	8.4	NONE	260	310	-
TPHCWG - Aromatic >EC5 - EC35 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	1600	1000	-
TPHCWG - Aromatic >EC5 - EC44 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	1800	1400	-

TPH Total >EC6 - EC40 _{EH_CU+HS_1D_TOTAL}	mg/kg	10	NONE	1900	1400	-
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Petroleum Range Organics (EC6 - EC10) _{HS_1D_TOTAL}	mg/kg	1	ISO 17025	< 1.0	< 1.0	-
TPH (EC10 - EC25) _{EH_CU_1D_TOTAL}	mg/kg	10	MCERTS	1000	640	-
TPH (EC25 - EC40) _{EH_CU_1D_TOTAL}	mg/kg	10	MCERTS	840	810	-
TPH (EC10 - EC40) _{EH_CU_1D_TOTAL}	mg/kg	10	MCERTS	1900	1400	-

VOCs

MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	< 5.0	-
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	-
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	-
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	-
p & m-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	-
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	-

PCBs by GC-MS

PCB Congener 28	mg/kg	0.001	MCERTS	< 0.001	< 0.001	-
PCB Congener 52	mg/kg	0.001	MCERTS	< 0.001	< 0.001	-
PCB Congener 101	mg/kg	0.001	MCERTS	< 0.001	< 0.001	-
PCB Congener 118	mg/kg	0.001	MCERTS	< 0.001	< 0.001	-
PCB Congener 138	mg/kg	0.001	MCERTS	< 0.001	< 0.001	-
PCB Congener 153	mg/kg	0.001	MCERTS	< 0.001	< 0.001	-
PCB Congener 180	mg/kg	0.001	MCERTS	< 0.001	< 0.001	-

Total PCBs	mg/kg	0.007	MCERTS	< 0.007	< 0.007	-
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U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 24-036597
Project / Site name: The Seam

Lab Sample Number				287861	287862
Sample Reference				TP123	BH106
Sample Number				None Supplied	None Supplied
Depth (m)				0.50	0.20
Date Sampled				08/05/2024	08/05/2024
Time Taken				None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)				Units	Test Limit of detection
				Test Accreditation Status	

General Inorganics

pH (automated)	pH Units	N/A	ISO 17025	-	7.7
Total Cyanide	µg/l	10	ISO 17025	-	13
Complex Cyanide	µg/l	10	ISO 17025	-	13
Free Cyanide	µg/l	10	ISO 17025	-	< 10
Thiocyanate as SCN	µg/l	200	ISO 17025	-	< 200
Sulphate as SO ₄	mg/l	0.045	ISO 17025	-	32.8
Ammoniacal Nitrogen as NH ₃	µg/l	15	NONE	-	190

Total Phenols

Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10	< 10
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Speciated PAHs

Naphthalene	µg/l	0.01	ISO 17025	0.89	0.11
Acenaphthylene	µg/l	0.01	ISO 17025	0.76	0.04
Acenaphthene	µg/l	0.01	ISO 17025	15	0.06
Fluorene	µg/l	0.01	ISO 17025	4.8	0.05
Phenanthrene	µg/l	0.01	ISO 17025	3.4	0.29
Anthracene	µg/l	0.01	ISO 17025	0.97	0.11
Fluoranthene	µg/l	0.01	ISO 17025	1.7	1.8
Pyrene	µg/l	0.01	ISO 17025	1.1	2
Benzo(a)anthracene	µg/l	0.01	ISO 17025	0.13	0.49
Chrysene	µg/l	0.01	ISO 17025	0.15	0.54
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	0.17	0.52
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	0.08	0.23
Benzo(a)pyrene	µg/l	0.01	ISO 17025	0.16	0.45
Indeno(1,2,3-cd)pyrene	µg/l	0.01	NONE	0.09	0.22
Dibenz(a,h)anthracene	µg/l	0.01	NONE	< 0.01	0.06
Benzo(ghi)perylene	µg/l	0.01	NONE	0.12	0.26

Total PAH

Total EPA-16 PAHs	µg/l	0.16	NONE	29.7	7.24
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Analytical Report Number: 24-036597
Project / Site name: The Seam

Lab Sample Number				287861	287862
Sample Reference				TP123	BH106
Sample Number				None Supplied	None Supplied
Depth (m)				0.50	0.20
Date Sampled				08/05/2024	08/05/2024
Time Taken				None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Heavy Metals / Metalloids

Antimony (dissolved)	µg/l	1.7	ISO 17025	-	39
Arsenic (dissolved)	µg/l	1	ISO 17025	-	35
Barium (dissolved)	µg/l	0.05	ISO 17025	-	44
Beryllium (dissolved)	µg/l	0.2	ISO 17025	-	< 0.2
Boron (dissolved)	µg/l	10	ISO 17025	-	76
Cadmium (dissolved)	µg/l	0.08	ISO 17025	-	< 0.08
Chromium (hexavalent)	µg/l	5	ISO 17025	-	U/S ^{*U/S}
Chromium (III)	µg/l	5	NONE	-	U/S ^{*U/S}
Chromium (dissolved)	µg/l	0.4	ISO 17025	-	14
Copper (dissolved)	µg/l	0.7	ISO 17025	-	41
Iron (dissolved)	mg/l	0.004	ISO 17025	-	0.62
Lead (dissolved)	µg/l	1	ISO 17025	-	89
Manganese (dissolved)	µg/l	0.06	ISO 17025	-	93
Mercury (dissolved)	µg/l	0.5	ISO 17025	-	1.5
Molybdenum (dissolved)	µg/l	0.4	ISO 17025	-	18
Nickel (dissolved)	µg/l	0.3	ISO 17025	-	1.1
Selenium (dissolved)	µg/l	4	ISO 17025	-	5.7
Vanadium (dissolved)	µg/l	1.7	ISO 17025	-	22
Zinc (dissolved)	µg/l	0.4	ISO 17025	-	26

Petroleum Hydrocarbons

TPH - Aliphatic >EC5 - EC6 _{HS, 1D, AL}	µg/l	1	NONE	< 1.0	< 1.0
TPH - Aliphatic >EC6 - EC8 _{HS, 1D, AL}	µg/l	1	NONE	< 1.0	< 1.0
TPH - Aliphatic >EC8 - EC10 _{HS, 1D, AL}	µg/l	1	NONE	< 1.0	< 1.0
TPH - Aliphatic >EC10 - EC12 _{EH, 1D, AL, MS}	µg/l	10	NONE	< 10	< 10
TPH - Aliphatic >EC12 - EC16 _{EH, 1D, AL, MS}	µg/l	10	NONE	< 10	< 10
TPH - Aliphatic >EC16 - EC21 _{EH, 1D, AL, MS}	µg/l	10	NONE	< 10	< 10
TPH - Aliphatic >EC21 - EC35 _{EH, 1D, AL, MS}	µg/l	10	NONE	< 10	< 10
TPH - Aliphatic >EC35 - EC40 _{EH, 1D, AL, MS}	µg/l	10	NONE	< 10	< 10
TPH - Aliphatic >EC35 - EC44 _{EH, 1D, AL, MS}	µg/l	10	NONE	< 10	< 10
TPH - Aliphatic >EC40 - EC44 _{EH, 1D, AL, MS}	µg/l	10	NONE	< 10	< 10
TPH - Aliphatic >EC5 - EC35 _{HS+EH, 1D, AL, MS}	µg/l	10	NONE	< 10	< 10
TPH - Aliphatic >EC5 - EC44 _{HS+EH, 1D, AL, MS}	µg/l	10	NONE	< 10	< 10

TPH - Aromatic >EC5 - EC7 _{HS, 1D, AR}	µg/l	1	NONE	< 1.0	< 1.0
TPH - Aromatic >EC7 - EC8 _{HS, 1D, AR}	µg/l	1	NONE	< 1.0	< 1.0
TPH - Aromatic >EC8 - EC10 _{EH, 1D, AR, MS}	µg/l	1	NONE	< 1.0	< 1.0
TPH - Aromatic >EC10 - EC12 _{EH, 1D, AR, MS}	µg/l	10	NONE	26	10
TPH - Aromatic >EC12 - EC16 _{EH, 1D, AR, MS}	µg/l	10	NONE	210	22
TPH - Aromatic >EC16 - EC21 _{EH, 1D, AR, MS}	µg/l	10	NONE	390	66
TPH - Aromatic >EC21 - EC35 _{EH, 1D, AR, MS}	µg/l	10	NONE	430	230
TPH - Aromatic >EC35 - EC40 _{EH, 1D, AR, MS}	µg/l	10	NONE	< 10	< 10
TPH - Aromatic >EC35 - EC44 _{EH, 1D, AR, MS}	µg/l	10	NONE	< 10	< 10
TPH - Aromatic >EC40 - EC44 _{EH, 1D, AR, MS}	µg/l	10	NONE	< 10	< 10
TPH - Aromatic >EC5 - EC44 _{HS+EH, 1D, AR, MS}	µg/l	10	NONE	1100	330
TPH - Aromatic >EC6 - EC35 _{HS+EH, 1D, AR, MS}	µg/l	10	NONE	1100	330

Analytical Report Number: 24-036597

Project / Site name: The Seam

Lab Sample Number				287861	287862
Sample Reference				TP123	BH106
Sample Number				None Supplied	None Supplied
Depth (m)				0.50	0.20
Date Sampled				08/05/2024	08/05/2024
Time Taken				None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)				Units	Test Limit of detection
				Test Accreditation Status	

VOCs

MTBE (Methyl Tertiary Butyl Ether)	µg/l	3	NONE	< 3.0	< 3.0
Benzene	µg/l	3	NONE	< 3.0	< 3.0
Toluene	µg/l	3	NONE	< 3.0	< 3.0
Ethylbenzene	µg/l	3	NONE	< 3.0	< 3.0
p & m-xylene	µg/l	3	NONE	< 3.0	< 3.0
o-xylene	µg/l	3	NONE	< 3.0	< 3.0

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number : 24-036597

Project / Site name: The Seam

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
287861	TP123	None Supplied	0.5	Brown sand with gravel
287862	BH106	None Supplied	0.2	Brown sand with gravel and stones

Analytical Report Number : 24-036597

Project / Site name: The Seam

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in Soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques	In-house method based on HSG 248, 2021	A001B	D	ISO 17025
Organic matter (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)	In-house method	L009B	D	MCERTS
Calorific Value of soil	Determination of the calorific value of soil by combustion in a controlled environment	Calorific Value of Soil by Bomb Calorimeter	L013B	D	ISO 17025
Moisture Content	Moisture content, determined gravimetrically (up to 30°C)	In-house method	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
PCB's By GC-MS in soil	Determination of PCB by extraction with hexane followed by GC-MS	In-house method based on USEPA 8082	L027B	D	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L038B	D	MCERTS
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES	In-house method based on Second Site Properties version 3	L038B	D	MCERTS
Cations in soil by ICP-OES	Determination of cations in soil by aqua-regia digestion followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L038B	D	MCERTS
Total sulphate (as SO ₄ in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES	In-house method	L038B	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Sulphate, water soluble, in soil (16hr extraction)	In-house method	L038B	D	MCERTS
Total Sulphur in soil	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES	In-house method	L038B	D	MCERTS
Metals by ICP-OES in leachate	Determination of metals in leachate by acidification followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L039B	W	ISO 17025
Speciated PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS
Total petroleum hydrocarbons with carbon banding by GC-MS/GC-MS HS in leachate	Determination of total petroleum hydrocarbons in leachate by GC-MS/GC-MS HS with carbon banding aliphatic and aromatic	In-house method	L070B/L088	W	NONE
BTEX and/or Volatile organic compounds in leachate	Determination of volatile organic compounds in leachate by headspace GC-MS	In-house method based on USEPA 8260	L073B	W	NONE

Analytical Report Number : 24-036597

Project / Site name: The Seam

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
BTEX and/or Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS	In-house method based on USEPA 8260	L073B	W	MCERTS
Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS with carbon banding aliphatic and aromatic	In-house method	L076B/L088	D/W	MCERTS
Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS	In-house method	L076B/L088	D/W	MCERTS
Complex cyanide in leachate	Determination of complex cyanide by calculation	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	ISO 17025
Complex Cyanide in soil	Determination of complex cyanide by calculation	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	MCERTS
Chromium III in leachate	In-house method by calculation from total Cr and Cr VI	In-house method by calculation	L080	W	NONE
Chromium III in soil	In-house method by calculation from total Cr and Cr VI	In-house method by calculation	L080	W	NONE
Hexavalent chromium in leachate	Determination of hexavalent chromium in leachate by acidification, addition of 1,5 diphenylcarbazine followed by colorimetry	In-house method	L080	W	ISO 17025
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazine followed by colorimetry	In-house method	L080	W	MCERTS
Free cyanide in leachate	Determination of free cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	ISO 17025
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	MCERTS
Monohydric phenols in leachate	Determination of phenols in leachate by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	ISO 17025
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	MCERTS
Total cyanide in leachate	Determination of total cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	ISO 17025
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	MCERTS
Ammonia as NH ₃ in leachate	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082B	W	NONE

Analytical Report Number : 24-036597

Project / Site name: The Seam

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Ammonia as NH ₃ in soil	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082B	W	MCERTS
Thiocyanate in soil	Determination of thiocyanate in soil by extraction in water followed by acidification followed by addition of ferric nitrate followed by discrete analyser (spectrophotometer)	In-house method	L082B	D	NONE
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement	In-house method	L099	D	MCERTS
pH at 20°C in leachate (automated)	Determination of pH in leachate by electrometric measurement	In-house method	L099	W	ISO 17025
Speciated PAHs and/or Semi-volatile organic compounds in leachate	SVOCs and PAHs in leachate	In-house method	L102B		ISO 17025
Thiocyanate in leachate	Determination of thiocyanate in water by discrete analyser (colorimetry)	In-house method based on SMWW 4500-CN-M	L082B	W	ISO 17025

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30°C.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#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 e.g. EH+HS_Total or EH_CU+HS_Total

Quality control parameter failure associated with individual result applies to calculated sum of individuals.

The result for sum should be interpreted with caution

*U/S j - Unsuitable for analysis due to high discrepancy between Hexavalent Chromium and dissolved Chromium results caused by methods difference.

Analytical Report Number : 24-036597

Project / Site name: The Seam

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis. Please note that the associated result(s) may be unreliable and should be interpreted with care.

Key: a - No sampling date b - Incorrect container c - Holding time d - Headspace e - Temperature

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
BH106	N/A	S	287862	bc	Ammonia as NH3 in soil	L082B	c
BH106	N/A	S	287862	bc	BTEX and/or Volatile organic compounds in soil	L073B	bc
BH106	N/A	S	287862	bc	Chromium III in soil	L080	c
BH106	N/A	S	287862	bc	Complex Cyanide in soil	L080	c
BH106	N/A	S	287862	bc	Free cyanide in soil	L080	c
BH106	N/A	S	287862	bc	Hexavalent chromium in soil	L080	c
BH106	N/A	S	287862	bc	Monohydric phenols in soil	L080	c
BH106	N/A	S	287862	bc	Organic matter (Automated) in soil	L009B	c
BH106	N/A	S	287862	bc	PCB's By GC-MS in soil	L027B	c
BH106	N/A	S	287862	bc	Speciated PAHs and/or Semi-volatile organic compounds in soil	L064B	c
BH106	N/A	S	287862	bc	Thiocyanate in soil	L082B	c
BH106	N/A	S	287862	bc	Total cyanide in soil	L080	c
BH106	N/A	S	287862	bc	Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	L076B/L088	c
BH106	N/A	S	287862	bc	Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	L129B	c
BH106	N/A	S	287862	bc	Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	L076B/L088	bc
BH106	N/A	S	287862	bc	pH in soil (automated)	L099	c
TP123	N/A	S	287861	c	Ammonia as NH3 in soil	L082B	c
TP123	N/A	S	287861	c	BTEX and/or Volatile organic compounds in soil	L073B	c
TP123	N/A	S	287861	c	Chromium III in soil	L080	c
TP123	N/A	S	287861	c	Complex Cyanide in soil	L080	c
TP123	N/A	S	287861	c	Free cyanide in soil	L080	c
TP123	N/A	S	287861	c	Hexavalent chromium in soil	L080	c
TP123	N/A	S	287861	c	Organic matter (Automated) in soil	L009B	c
TP123	N/A	S	287861	c	PCB's By GC-MS in soil	L027B	c
TP123	N/A	S	287861	c	Speciated PAHs and/or Semi-volatile organic compounds in soil	L064B	c
TP123	N/A	S	287861	c	Thiocyanate in soil	L082B	c
TP123	N/A	S	287861	c	Total cyanide in soil	L080	c
TP123	N/A	S	287861	c	Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	L076B/L088	c
TP123	N/A	S	287861	c	Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	L129B	c
TP123	N/A	S	287861	c	Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	L076B/L088	c
TP123	N/A	S	287861	c	pH in soil (automated)	L099	c

VHE Construction plc
Whaley Road
Barug
Barnsley
S75 1HT

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

e: vhelab@vhe.co.uk

Analytical Report Number : 24-036597-2

Replaces Analytical Report Number: 24-036597, issue no. 1

Additional analysis undertaken.

Asbestos Quantification added to sample no.287861& 287862 as per client's request

Project / Site name:	The Seam	Samples received on:	14/08/2024
Your job number:		Samples instructed on/ Analysis started on:	14/08/2024
Your order number:		Analysis completed by:	19/09/2024
Report Issue Number:	2	Report issued on:	19/09/2024
Samples Analysed:	3 soil samples - 2 leachate samples		


Signed:

Charlotte Andrew
Key Account Manager
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 24-036597
Project / Site name: The Seam

Lab Sample Number				287861	287862	287863
Sample Reference				TP123	BH106	BH106
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				0.50	0.20	1.20
Date Sampled				08/05/2024	08/05/2024	08/05/2024
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status

Stone Content	%	0.1	NONE	< 0.1	65.7	-
Moisture Content	%	0.01	NONE	7.3	7.1	-
Total mass of sample received	kg	0.1	NONE	1	1.2	-

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Detected	Detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	MMI	MMI	MMI
Actinolite detected	Type	N/A	ISO 17025	Not-detected	Not-detected	-
Amosite detected	Type	N/A	ISO 17025	Not-detected	Not-detected	-
Anthophyllite detected	Type	N/A	ISO 17025	Not-detected	Not-detected	-
Chrysotile detected	Type	N/A	ISO 17025	Detected	Detected	-
Crocidolite detected	Type	N/A	ISO 17025	Not-detected	Not-detected	-
Tremolite detected	Type	N/A	ISO 17025	Not-detected	Not-detected	-

Asbestos % by hand picking/weighing	%	0.001	ISO 17025	< 0.001	< 0.001	-
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Asbestos Containing Material Types Detected (ACM)	Type	N/A	ISO 17025	Loose Fibres	Loose Fibres	-
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General Inorganics

pH (L099)	pH Units	N/A	MCERTS	8.5	9.9	-
Total Cyanide	mg/kg	1	MCERTS	< 1.0	1.7	-
Complex Cyanide	mg/kg	1	MCERTS	< 1.0	1.7	-
Free Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	-
Thiocyanate as SCN	mg/kg	5	NONE	< 5.0	< 5.0	-
Total Sulphate as SO ₄	mg/kg	50	MCERTS	3000	2000	-
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	1900	350	-
Water Soluble SO ₄ 16hr extraction (2:1)	mg/l	1.25	MCERTS	935	177	-
Total Sulphur	mg/kg	50	MCERTS	3300	1600	-
Total Sulphur	%	0.005	MCERTS	0.328	0.159	-
Ammoniacal Nitrogen as NH ₃	mg/kg	0.5	MCERTS	< 0.5	< 0.5	-
Organic Matter (automated)	%	0.1	MCERTS	9.1	5.9	-
Calorific Value	MJ/Kg	0.12	ISO 17025	0.634	< 0.120	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	-	< 1.0	-
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	13	0.92	-
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	2.2	-
Acenaphthene	mg/kg	0.05	MCERTS	61	1.4	-
Fluorene	mg/kg	0.05	MCERTS	42	1.5	-
Phenanthrene	mg/kg	0.05	MCERTS	360	20	-
Anthracene	mg/kg	0.05	MCERTS	100	8.8	-
Fluoranthene	mg/kg	0.05	MCERTS	400	85	-
Pyrene	mg/kg	0.05	MCERTS	360	80	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	160	54	-
Chrysene	mg/kg	0.05	MCERTS	150	49	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	170	71	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	68	24	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	150	57	-

Analytical Report Number: 24-036597
Project / Site name: The Seam

Lab Sample Number				287861	287862	287863
Sample Reference				TP123	BH106	BH106
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				0.50	0.20	1.20
Date Sampled				08/05/2024	08/05/2024	08/05/2024
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status			
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	71	29	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	18	6.7	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	82	30	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	2220	520	-
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Heavy Metals / Metalloids

Antimony (aqua regia extractable)	mg/kg	1	ISO 17025	4.7	45	-
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	17	21	-
Barium (aqua regia extractable)	mg/kg	1	MCERTS	220	700	-
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	2.3	2.6	-
Boron (water soluble)	mg/kg	0.2	MCERTS	0.9	1.3	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	-
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	13	-
Chromium (III)	mg/kg	1	NONE	40	23	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	40	37	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	58	72	-
Iron (aqua regia extractable)	mg/kg	40	MCERTS	49000	32000	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	160	2300	-
Manganese (aqua regia extractable)	mg/kg	1	MCERTS	2800	1500	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	42	0.9	-
Molybdenum (aqua regia extractable)	mg/kg	0.25	MCERTS	2.2	2.7	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	16	20	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	1.3	-
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	120	49	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	160	350	-

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 _{HS,1D,AL}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	-
TPHCWG - Aliphatic >EC6 - EC8 _{HS,1D,AL}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	-
TPHCWG - Aliphatic >EC8 - EC10 _{HS,1D,AL}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	-
TPHCWG - Aliphatic >EC10 - EC12 _{EH,CU,1D,AL}	mg/kg	1	MCERTS	< 1.0	1.5	-
TPHCWG - Aliphatic >EC12 - EC16 _{EH,CU,1D,AL}	mg/kg	2	MCERTS	6.2	20	-
TPHCWG - Aliphatic >EC16 - EC21 _{EH,CU,1D,AL}	mg/kg	8	MCERTS	24	63	-
TPHCWG - Aliphatic >EC21 - EC35 _{EH,CU,1D,AL}	mg/kg	8	MCERTS	79	85	-
TPHCWG - Aliphatic >EC35 - EC44 _{EH,CU,1D,AL}	mg/kg	8.4	NONE	49	52	-
TPHCWG - Aliphatic >EC5 - EC35 _{EH,CU+HS,1D,AL}	mg/kg	10	NONE	110	170	-
TPHCWG - Aliphatic >EC5 - EC44 _{EH,CU+HS,1D,AL}	mg/kg	10	NONE	160	220	-

TPHCWG - Aromatic >EC5 - EC7 _{HS,1D,AR}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	-
TPHCWG - Aromatic >EC7 - EC8 _{HS,1D,AR}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	-
TPHCWG - Aromatic >EC8 - EC10 _{HS,1D,AR}	mg/kg	0.02	MCERTS	< 0.020	< 0.020	-
TPHCWG - Aromatic >EC10 - EC12 _{EH,CU,1D,AR}	mg/kg	1	MCERTS	2.3	< 1.0	-
TPHCWG - Aromatic >EC12 - EC16 _{EH,CU,1D,AR}	mg/kg	2	MCERTS	89	16	-
TPHCWG - Aromatic >EC16 - EC21 _{EH,CU,1D,AR}	mg/kg	10	MCERTS	590	270	-
TPHCWG - Aromatic >EC21 - EC35 _{EH,CU,1D,AR}	mg/kg	10	MCERTS	880	750	-
TPHCWG - Aromatic >EC35 - EC44 _{EH,CU,1D,AR}	mg/kg	8.4	NONE	260	310	-
TPHCWG - Aromatic >EC5 - EC35 _{EH,CU+HS,1D,AR}	mg/kg	10	NONE	1600	1000	-
TPHCWG - Aromatic >EC5 - EC44 _{EH,CU+HS,1D,AR}	mg/kg	10	NONE	1800	1400	-

TPH Total >EC6 - EC40 _{EH,CU+HS,1D,TOTAL}	mg/kg	10	NONE	1900	1400	-
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Analytical Report Number: 24-036597
Project / Site name: The Seam

Lab Sample Number	287861	287862	287863
Sample Reference	TP123	BH106	BH106
Sample Number	None Supplied	None Supplied	None Supplied
Depth (m)	0.50	0.20	1.20
Date Sampled	08/05/2024	08/05/2024	08/05/2024
Time Taken	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status

Petroleum Range Organics (EC6 - EC10) HS_ID_TOTAL	mg/kg	1	ISO 17025	< 1.0	< 1.0	-
TPH (EC10 - EC25) EH_CU_ID_TOTAL	mg/kg	10	MCERTS	1000	640	-
TPH (EC25 - EC40) EH_CU_ID_TOTAL	mg/kg	10	MCERTS	840	810	-
TPH (EC10 - EC40) EH_CU_ID_TOTAL	mg/kg	10	MCERTS	1900	1400	-

VOCs

MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	< 5.0	-
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	-
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	-
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	-
p & m-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	-
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	-

PCBs by GC-MS

PCB Congener 28	mg/kg	0.001	MCERTS	< 0.001	< 0.001	-
PCB Congener 52	mg/kg	0.001	MCERTS	< 0.001	< 0.001	-
PCB Congener 101	mg/kg	0.001	MCERTS	< 0.001	< 0.001	-
PCB Congener 118	mg/kg	0.001	MCERTS	< 0.001	< 0.001	-
PCB Congener 138	mg/kg	0.001	MCERTS	< 0.001	< 0.001	-
PCB Congener 153	mg/kg	0.001	MCERTS	< 0.001	< 0.001	-
PCB Congener 180	mg/kg	0.001	MCERTS	< 0.001	< 0.001	-

Total PCBs	mg/kg	0.007	MCERTS	< 0.007	< 0.007	-
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U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected



Analytical Report Number: 24-036597
Project / Site name: The Seam
Your Order No:

Certificate of Analysis - Asbestos Quantification

Methods:

Qualitative Analysis

The samples were analysed qualitatively for asbestos by polarising light and dispersion staining as described by the Health and Safety Executive in HSG 248.

Quantitative Analysis

The analysis was carried out using our documented in-house method A006 based on HSE Contract Research Report No: 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies et al, 1996) and HSG 248. Our method includes initial examination of the entire representative sample, then fractionation and detailed analysis of each fraction, with quantification by hand picking and weighing.

The limit of detection (reporting limit) of this method is 0.001 %.

The method has been validated using samples of at least 100 g, results for samples smaller than this should be interpreted with caution.

Both Qualitative and Quantitative Analyses are UKAS accredited.

Sample Number	Sample ID	Sample Depth (m)	Sample Weight (g)	Asbestos Containing Material Types Detected (ACM)	PLM Results	Asbestos by hand picking/weighing (%)	Total % Asbestos in Sample
287861	TP123	0.50	145	Loose Fibres	Chrysotile	< 0.001	< 0.001
287862	BH106	0.20	151	Loose Fibres	Chrysotile	< 0.001	< 0.001

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

Analytical Report Number: 24-036597
Project / Site name: The Seam

Lab Sample Number				287861	287862
Sample Reference				TP123	BH106
Sample Number				None Supplied	None Supplied
Depth (m)				0.50	0.20
Date Sampled				08/05/2024	08/05/2024
Time Taken				None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)	Units	Test Limit of detection	Test Accreditation Status		

General Inorganics

pH (automated)	pH Units	N/A	ISO 17025	-	7.7
Total Cyanide	µg/l	10	ISO 17025	-	13
Complex Cyanide	µg/l	10	ISO 17025	-	13
Free Cyanide	µg/l	10	ISO 17025	-	< 10
Thiocyanate as SCN	µg/l	200	ISO 17025	-	< 200
Sulphate as SO ₄	mg/l	0.045	ISO 17025	-	32.8
Ammoniacal Nitrogen as NH ₃	µg/l	15	NONE	-	190

Total Phenols

Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10	< 10
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Speciated PAHs

Naphthalene	µg/l	0.01	ISO 17025	0.89	0.11
Acenaphthylene	µg/l	0.01	ISO 17025	0.76	0.04
Acenaphthene	µg/l	0.01	ISO 17025	15	0.06
Fluorene	µg/l	0.01	ISO 17025	4.8	0.05
Phenanthrene	µg/l	0.01	ISO 17025	3.4	0.29
Anthracene	µg/l	0.01	ISO 17025	0.97	0.11
Fluoranthene	µg/l	0.01	ISO 17025	1.7	1.8
Pyrene	µg/l	0.01	ISO 17025	1.1	2
Benzo(a)anthracene	µg/l	0.01	ISO 17025	0.13	0.49
Chrysene	µg/l	0.01	ISO 17025	0.15	0.54
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	0.17	0.52
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	0.08	0.23
Benzo(a)pyrene	µg/l	0.01	ISO 17025	0.16	0.45
Indeno(1,2,3-cd)pyrene	µg/l	0.01	NONE	0.09	0.22
Dibenz(a,h)anthracene	µg/l	0.01	NONE	< 0.01	0.06
Benzo(ghi)perylene	µg/l	0.01	NONE	0.12	0.26

Total PAH

Total EPA-16 PAHs	µg/l	0.16	NONE	29.7	7.24
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Heavy Metals / Metalloids

Antimony (dissolved)	µg/l	1.7	ISO 17025	-	39
Arsenic (dissolved)	µg/l	1	ISO 17025	-	35
Barium (dissolved)	µg/l	0.05	ISO 17025	-	44
Beryllium (dissolved)	µg/l	0.2	ISO 17025	-	< 0.2
Boron (dissolved)	µg/l	10	ISO 17025	-	76
Cadmium (dissolved)	µg/l	0.08	ISO 17025	-	< 0.08
Chromium (hexavalent)	µg/l	5	ISO 17025	-	U/S ^{u/s}
Chromium (III)	µg/l	5	NONE	-	U/S ^{u/s}
Chromium (dissolved)	µg/l	0.4	ISO 17025	-	14
Copper (dissolved)	µg/l	0.7	ISO 17025	-	41
Iron (dissolved)	mg/l	0.004	ISO 17025	-	0.62
Lead (dissolved)	µg/l	1	ISO 17025	-	89
Manganese (dissolved)	µg/l	0.06	ISO 17025	-	93
Mercury (dissolved)	µg/l	0.5	ISO 17025	-	1.5
Molybdenum (dissolved)	µg/l	0.4	ISO 17025	-	18
Nickel (dissolved)	µg/l	0.3	ISO 17025	-	1.1
Selenium (dissolved)	µg/l	4	ISO 17025	-	5.7

Analytical Report Number: 24-036597
Project / Site name: The Seam

Lab Sample Number				287861	287862
Sample Reference				TP123	BH106
Sample Number				None Supplied	None Supplied
Depth (m)				0.50	0.20
Date Sampled				08/05/2024	08/05/2024
Time Taken				None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)	Units	Test Limit of detection	Test Accreditation Status		
Vanadium (dissolved)	µg/l	1.7	ISO 17025	-	22
Zinc (dissolved)	µg/l	0.4	ISO 17025	-	26

Petroleum Hydrocarbons

TPH - Aliphatic >EC5 - EC6 _{HS_ID_AL}	µg/l	1	NONE	< 1.0	< 1.0
TPH - Aliphatic >EC6 - EC8 _{HS_ID_AL}	µg/l	1	NONE	< 1.0	< 1.0
TPH - Aliphatic >EC8 - EC10 _{HS_ID_AL}	µg/l	1	NONE	< 1.0	< 1.0
TPH - Aliphatic >EC10 - EC12 _{EH_ID_AL_MS}	µg/l	10	NONE	< 10	< 10
TPH - Aliphatic >EC12 - EC16 _{EH_ID_AL_MS}	µg/l	10	NONE	< 10	< 10
TPH - Aliphatic >EC16 - EC21 _{EH_ID_AL_MS}	µg/l	10	NONE	< 10	< 10
TPH - Aliphatic >EC21 - EC35 _{EH_ID_AL_MS}	µg/l	10	NONE	< 10	< 10
TPH - Aliphatic >EC35 - EC40 _{EH_ID_AL_MS}	µg/l	10	NONE	< 10	< 10
TPH - Aliphatic >EC35 - EC44 _{EH_ID_AL_MS}	µg/l	10	NONE	< 10	< 10
TPH - Aliphatic >EC40 - EC44 _{EH_ID_AL_MS}	µg/l	10	NONE	< 10	< 10
TPH - Aliphatic >EC5 - EC35 _{HS+EH_ID_AL_MS}	µg/l	10	NONE	< 10	< 10
TPH - Aliphatic >EC5 - EC44 _{HS+EH_ID_AL_MS}	µg/l	10	NONE	< 10	< 10

TPH - Aromatic >EC5 - EC7 _{HS_ID_AR}	µg/l	1	NONE	< 1.0	< 1.0
TPH - Aromatic >EC7 - EC8 _{HS_ID_AR}	µg/l	1	NONE	< 1.0	< 1.0
TPH - Aromatic >EC8 - EC10 _{EH_ID_AR_MS}	µg/l	1	NONE	< 1.0	< 1.0
TPH - Aromatic >EC10 - EC12 _{EH_ID_AR_MS}	µg/l	10	NONE	26	10
TPH - Aromatic >EC12 - EC16 _{EH_ID_AR_MS}	µg/l	10	NONE	210	22
TPH - Aromatic >EC16 - EC21 _{EH_ID_AR_MS}	µg/l	10	NONE	390	66
TPH - Aromatic >EC21 - EC35 _{EH_ID_AR_MS}	µg/l	10	NONE	430	230
TPH - Aromatic >EC35 - EC40 _{EH_ID_AR_MS}	µg/l	10	NONE	< 10	< 10
TPH - Aromatic >EC35 - EC44 _{EH_ID_AR_MS}	µg/l	10	NONE	< 10	< 10
TPH - Aromatic >EC40 - EC44 _{EH_ID_AR_MS}	µg/l	10	NONE	< 10	< 10
TPH - Aromatic >EC5 - EC44 _{HS+EH_ID_AR_MS}	µg/l	10	NONE	1100	330
TPH - Aromatic >EC6 - EC35 _{HS+EH_ID_AR_MS}	µg/l	10	NONE	1100	330

VOCs

MTBE (Methyl Tertiary Butyl Ether)	µg/l	3	NONE	< 3.0	< 3.0
Benzene	µg/l	3	NONE	< 3.0	< 3.0
Toluene	µg/l	3	NONE	< 3.0	< 3.0
Ethylbenzene	µg/l	3	NONE	< 3.0	< 3.0
p & m-xylene	µg/l	3	NONE	< 3.0	< 3.0
o-xylene	µg/l	3	NONE	< 3.0	< 3.0

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number : 24-036597

Project / Site name: The Seam

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
287861	TP123	None Supplied	0.5	Brown sand with gravel
287862	BH106	None Supplied	0.2	Brown sand with gravel and stones

Analytical Report Number : 24-036597

Project / Site name: The Seam

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in Soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques	In-house method based on HSG 248, 2021	A001B	D	ISO 17025
Asbestos Quantification - Gravimetric	Asbestos quantification by gravimetric method - in house method based on references	HSE Report No: 83/1996, HSG 248 (2021), HSG 264 (2012) & SCA Blue Book (draft)	A006B	D	ISO 17025
Organic matter (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)	In-house method	L009B	D	MCERTS
Calorific Value of soil	Determination of the calorific value of soil by combustion in a controlled environment	Calorific Value of Soil by Bomb Calorimeter	L013B	D	ISO 17025
Moisture Content	Moisture content, determined gravimetrically (up to 30°C)	In-house method	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
PCB's By GC-MS in soil	Determination of PCB by extraction with hexane followed by GC-MS	In-house method based on USEPA 8082	L027B	D	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L038B	D	MCERTS
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES	In-house method based on Second Site Properties version 3	L038B	D	MCERTS
Cations in soil by ICP-OES	Determination of cations in soil by aqua-regia digestion followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L038B	D	MCERTS
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES	In-house method	L038B	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Sulphate, water soluble, in soil (16hr extraction)	In-house method	L038B	D	MCERTS
Total Sulphur in soil	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES	In-house method	L038B	D	MCERTS
Metals by ICP-OES in leachate	Determination of metals in leachate by acidification followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L039B	W	ISO 17025
Speciated PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS
Total petroleum hydrocarbons with carbon banding by GC-MS/GC-MS HS in leachate	Determination of total petroleum hydrocarbons in leachate by GC-MS/GC-MS HS with carbon banding aliphatic and aromatic	In-house method	L070B/L088-PL	W	NONE

Analytical Report Number : 24-036597

Project / Site name: The Seam

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
BTEX and/or Volatile organic compounds in leachate	Determination of volatile organic compounds in leachate by headspace GC-MS	In-house method based on USEPA 8260	L073B	W	NONE
BTEX and/or Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS	In-house method based on USEPA 8260	L073B	W	MCERTS
Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS with carbon banding aliphatic and aromatic	In-house method	L076B/L088-PL	D/W	MCERTS
Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS	In-house method	L076B/L088-PL	D/W	MCERTS
Complex cyanide in leachate	Determination of complex cyanide by calculation	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	ISO 17025
Complex Cyanide in soil	Determination of complex cyanide by calculation	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	MCERTS
Chromium III in leachate	In-house method by calculation from total Cr and Cr VI	In-house method by calculation	L080-PL	W	NONE
Chromium III in soil	In-house method by calculation from total Cr and Cr VI	In-house method by calculation	L080-PL	W	NONE
Hexavalent chromium in leachate	Determination of hexavalent chromium in leachate by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry	In-house method	L080-PL	W	ISO 17025
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazide followed by colorimetry	In-house method	L080-PL	W	MCERTS
Free cyanide in leachate	Determination of free cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	ISO 17025
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	MCERTS
Monohydric phenols in leachate	Determination of phenols in leachate by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	ISO 17025
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	MCERTS
Total cyanide in leachate	Determination of total cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	ISO 17025
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	MCERTS

Analytical Report Number : 24-036597

Project / Site name: The Seam

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Ammonia as NH ₃ in leachate	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082B	W	NONE
Ammonia as NH ₃ in soil	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082B	W	MCERTS
Thiocyanate in soil	Determination of thiocyanate in soil by extraction in water followed by acidification followed by addition of ferric nitrate followed by discrete analyser (spectrophotometer)	In-house method	L082B	D	NONE
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement	In-house method	L099-PL	D	MCERTS
pH at 20°C in leachate (automated)	Determination of pH in leachate by electrometric measurement	In-house method	L099-PL	W	ISO 17025
Speciated PAHs and/or Semi-volatile organic compounds in leachate	SVOCs and PAHs in leachate	In-house method	L102B		ISO 17025
Thiocyanate in leachate	Determination of thiocyanate in water by discrete analyser (colorimetry)	In-house method based on SMWW 4500-CN-M	L082B	W	ISO 17025
Organic 2:1 Leachate		In house method based on BS EN 12457-1	L020B	W	NONE

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30°C.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#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 e.g. EH+HS_Total or EH_CU+HS_Total

Analytical Report Number : 24-036597
Project / Site name: The Seam

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
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Quality control parameter failure associated with individual result applies to calculated sum of individuals.
The result for sum should be interpreted with caution

*U/S j - Unsuitable for analysis due to high discrepancy between Hexavalent Chromium and dissolved Chromium results caused by methods difference.

Analytical Report Number : 24-036597

Project / Site name: The Seam

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis. Please note that the associated result(s) may be unreliable and should be interpreted with care.

Key: a - No sampling date b - Incorrect container c - Holding time d - Headspace e - Temperature

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
BH106	N/A	S	287862	bc	Ammonia as NH3 in soil	L082B	c
BH106	N/A	S	287862	bc	BTEX and/or Volatile organic compounds in soil	L073B	bc
BH106	N/A	S	287862	bc	Chromium III in soil	L080-PL	c
BH106	N/A	S	287862	bc	Complex Cyanide in soil	L080-PL	c
BH106	N/A	S	287862	bc	Free cyanide in soil	L080-PL	c
BH106	N/A	S	287862	bc	Hexavalent chromium in soil	L080-PL	c
BH106	N/A	S	287862	bc	Monohydric phenols in soil	L080-PL	c
BH106	N/A	S	287862	bc	Organic matter (Automated) in soil	L009B	c
BH106	N/A	S	287862	bc	PCB's By GC-MS in soil	L027B	c
BH106	N/A	S	287862	bc	Speciated PAHs and/or Semi-volatile organic compounds in soil	L064B	c
BH106	N/A	S	287862	bc	Thiocyanate in soil	L082B	c
BH106	N/A	S	287862	bc	Total cyanide in soil	L080-PL	c
BH106	N/A	S	287862	bc	Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	L076B/L088-PL	c
BH106	N/A	S	287862	bc	Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	L129-PL	c
BH106	N/A	S	287862	bc	Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	L076B/L088-PL	bc
BH106	N/A	S	287862	bc	pH in soil (automated)	L099-PL	c
TP123	N/A	S	287861	c	Ammonia as NH3 in soil	L082B	c
TP123	N/A	S	287861	c	BTEX and/or Volatile organic compounds in soil	L073B	c
TP123	N/A	S	287861	c	Chromium III in soil	L080-PL	c
TP123	N/A	S	287861	c	Complex Cyanide in soil	L080-PL	c
TP123	N/A	S	287861	c	Free cyanide in soil	L080-PL	c
TP123	N/A	S	287861	c	Hexavalent chromium in soil	L080-PL	c
TP123	N/A	S	287861	c	Organic matter (Automated) in soil	L009B	c
TP123	N/A	S	287861	c	PCB's By GC-MS in soil	L027B	c
TP123	N/A	S	287861	c	Speciated PAHs and/or Semi-volatile organic compounds in soil	L064B	c
TP123	N/A	S	287861	c	Thiocyanate in soil	L082B	c
TP123	N/A	S	287861	c	Total cyanide in soil	L080-PL	c
TP123	N/A	S	287861	c	Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	L076B/L088-PL	c
TP123	N/A	S	287861	c	Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	L129-PL	c
TP123	N/A	S	287861	c	Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	L076B/L088-PL	c
TP123	N/A	S	287861	c	pH in soil (automated)	L099-PL	c



4041



VHE Construction plc

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

e: carl.lacey@vhe.co.uk

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 24-038848

Project / Site name:	The Seam Barnsley	Samples received on:	30/07/2024
Your job number:	159582	Samples instructed on/ Analysis started on:	29/08/2024
Your order number:		Analysis completed by:	02/09/2024
Report Issue Number:	1	Report issued on:	03/09/2024
Samples Analysed:	6 soil samples		

Signed: _____

Anna Goc
PL Head of Reporting Team
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.



4041



Environmental Science

Analytical Report Number: 24-038848
Project / Site name: The Seam Barnsley

Lab Sample Number				299511	299512	299513	299514	299515
Sample Reference				TP106	TP106	TP101	TP101	TP101
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.40	2.50	0.30	1.30	1.80
Date Sampled				23/07/2024	23/07/2024	26/07/2024	26/07/2024	26/07/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status		

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	MWI	MWI	MWI	MWI	MWI

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected



4041



Analytical Report Number: 24-038848
Project / Site name: The Seam Barnsley

Lab Sample Number				299516
Sample Reference				TP101
Sample Number				None Supplied
Depth (m)				2.80
Date Sampled				26/07/2024
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)		Units	Test Limit of detection	Test Accreditation Status

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	MWI

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected



4041



Analytical Report Number : 24-038848

Project / Site name: The Seam Barnsley

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in Soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques	In-house method based on HSG 248, 2021	A001B	D	ISO 17025

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Quality control parameter failure associated with individual result applies to calculated sum of individuals.

The result for sum should be interpreted with caution

VHE Construction plc
Whaley Road
Barug
Barnsley
S75 1HT

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

e: carl.lacey@vhe.co.uk

Analytical Report Number : 24-041991

Project / Site name:	The Seam	Samples received on:	14/08/2024
Your job number:		Samples instructed on/ Analysis started on:	16/09/2024
Your order number:		Analysis completed by:	19/09/2024
Report Issue Number:	1	Report issued on:	19/09/2024
Samples Analysed:	4 soil samples		


Signed:

Charlotte Andrew
Key Account Manager
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 24-041991
Project / Site name: The Seam

Lab Sample Number	315951	315952	315953	315954
Sample Reference	TP123	TP123	BH106	BH106
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	1.00	1.50	0.50	0.90
Date Sampled	05/08/2024	05/08/2024	01/08/2024	01/08/2024
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status	

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	PDO	PDO	PDO	PDO

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number : 24-041991
Project / Site name: The Seam

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in Soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques	In-house method based on HSG 248, 2021	A001B	D	ISO 17025

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30°C.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Quality control parameter failure associated with individual result applies to calculated sum of individuals.

The result for sum should be interpreted with caution

Appendix H

Geotechnical Testing Results

TEST REPORT

Client VHE Construction Plc

Address 6 Newton Business Park
Thorncliffe Park Estate
Sheffield
South Yorkshire
S35 2PH

Contract The Seam,
Barnsley

Job Number MRN 24328/1
Date of Issue 26 September 2024
Page 1 of 54

Approved Signatories

S J Hutchings, O P Davies

Notes

- 1 All remaining samples and remnants from this contract will be disposed 28 days from the date of this report unless you notify us to the contrary.
- 2 Result certificates, in this report, not bearing a UKAS mark, are not included in our UKAS accreditation schedule.
- 3 Opinions and interpretations expressed herein are outside the scope of our UKAS accreditation.
- 4 Certified that the samples have been examined and tested in accordance with the terms of the contract/order and unless otherwise stated conform to the standards/specifications quoted.
- 5 The results included within the report are representative of the samples submitted for analysis.
- 6 This certificate should not be reproduced, except in full, without the express permission of the laboratory.



Andrew House, Hadfield Street, Dukinfield, Cheshire SK16 4QX Tel: 0161 475 0870
Email: enquiries@murrayrix.com Website: www.murrayrix.com

Also at: London: 020 8523 1999

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MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870



TEST CERTIFICATE

DETERMINATION OF THE WATER CONTENT

(OVEN DRY)

BS EN 17892-1:2014+A1:2022

CLIENT	VHE Construction Plc
SITE	The Seam, Barnsley
JOB NUMBER	MRN 24328/1

DATE SAMPLED	Not advised	DATE RECEIVED	30-Jul-24 - 07-Aug-24
DATE TESTED	06-Sep-24	SAMPLED BY	Client

Laboratory Sample Number	Site Reference	Material	Sample Location	Water Content (%)
529801	WS 101 0.1-0.3m B	Made Ground	WS 101	5.8
529810	WS 102 1.0-1.2m B	Made Ground	WS 102	17.3
527801	BH 101 1.2-1.65m D	Made Ground	BH 101	10.7
529814	WS 103 0.8-1.0m B	Made Ground	WS 103	15.6
527868	WS 108 0.4-0.8m B	Made Ground	WS 108	0.3
527869	WS 109 0.2-0.4m B	Made Ground	WS 109	6.2
527870	WS 109 0.8-1.0m B	Made Ground	WS 109	21.4
529840	WS 110A 0.4-0.6m B	Made Ground	WS 110A	16.4
529843	WS 110 1.7-2.0m B	Made Ground	WS 110	26.0

COMMENT / ANOMALIES

NAME O.P. Davies BA (Hons)
(Director / Head of Laboratory)

SIGNED

DATE 26-Sep-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870



TEST CERTIFICATE

DETERMINATION OF THE WATER CONTENT

(OVEN DRY)

BS EN 17892-1:2014+A1:2022

CLIENT	VHE Construction Plc
SITE	The Seam, Barnsley
JOB NUMBER	MRN 24328/1

DATE SAMPLED	Not advised	DATE RECEIVED	30-Jul-24 - 07-Aug-24
DATE TESTED	06-Sep-24	SAMPLED BY	Client

Laboratory Sample Number	Site Reference	Material	Sample Location	Water Content (%)
527834	BH101 2.9-3.0m B	Brown SAND	BH101	18.5
527807	BH 102 3.0-3.45m D	Brown sandy gravelly CLAY	BH 102	13.9
527846	BH103 1.7-2.0m B	Made Ground	BH103	10.5
525943	BH 104 1.8-2.0m B	Made Ground	BH 104	23.2
527824	BH 105 1.2-1.65m D	Brown sandy gravelly CLAY	BH 105	16.4
525952	BH 106 0.2-0.4m B	Made Ground	BH 106	11.2
525954	BH 106 0.6-0.8m B	Made Ground	BH 106	3.5
525956	BH 106 1.2-1.7m B	Made Ground	BH 106	20.3
525913	TP 102 1.5m B	GRAVEL	TP 102	13.6
525905	TP 104 0.7m B	Made Ground	TP 104	10.2

COMMENT / ANOMALIES

NAME O.P. Davies BA (Hons)
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DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870



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DETERMINATION OF THE WATER CONTENT

(OVEN DRY)

BS EN 17892-1:2014+A1:2022

CLIENT	VHE Construction Plc
SITE	The Seam, Barnsley
JOB NUMBER	MRN 24328/1

DATE SAMPLED	Not advised	DATE RECEIVED	30-Jul-24 - 07-Aug-24
DATE TESTED	06-Sep-24	SAMPLED BY	Client

Laboratory Sample Number	Site Reference	Material	Sample Location	Water Content (%)
525908	TP 105 0.9m B	Made Ground	TP 105	18.8
523811	TP 107 2.0m D	Made Ground	TP 107	16.9
525912	TP 109 1.0m B	Weathered Bedrock	TP 109	14.1
525923	TP 109 2.6m B	Weathered Bedrock	TP 109	12.4
525926	TP 110 1.0m B	GRAVEL	TP 110	7.4
523814	TP 111 0.6m D	Made Ground	TP 111	20.0
523003	TP 115 2.0m B	Brown gravelly CLAY	TP 115	7.3
525932	TP 120 2.4m B	Made Ground	TP 120	17.8
525916	TP 122 1.3m B	Made Ground	TP 122	15.9
525901	TP 126 1.8m B	Grey silty sandy CLAY	TP 126	13.8

COMMENT / ANOMALIES

NAME O.P. Davies BA (Hons)
(Director / Head of Laboratory)

SIGNED

DATE 26-Sep-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870



TEST CERTIFICATE

DETERMINATION OF THE WATER CONTENT

(OVEN DRY)

BS EN 17892-1:2014+A1:2022

CLIENT	VHE Construction Plc
SITE	The Seam, Barnsley
JOB NUMBER	MRN 24328/1

DATE SAMPLED	Not advised	DATE RECEIVED	30-Jul-24 - 07-Aug-24
DATE TESTED	06-Sep-24	SAMPLED BY	Client

Laboratory Sample Number	Site Reference	Material	Sample Location	Water Content (%)
525903	TP 126 2.7m B	Made Ground	TP 126	22.2
523009	HP 101 0.9m B	Made Ground	HP 101	7.3
523804	HP 109 0.3m D	Made Ground	HP 109	17.9

COMMENT / ANOMALIES

NAME O.P. Davies BA (Hons)
(Director / Head of Laboratory)

SIGNED

DATE 26-Sep-24

TEST CERTIFICATE
PARTICLE SIZE DISTRIBUTION
BS EN ISO 17892-4:2016

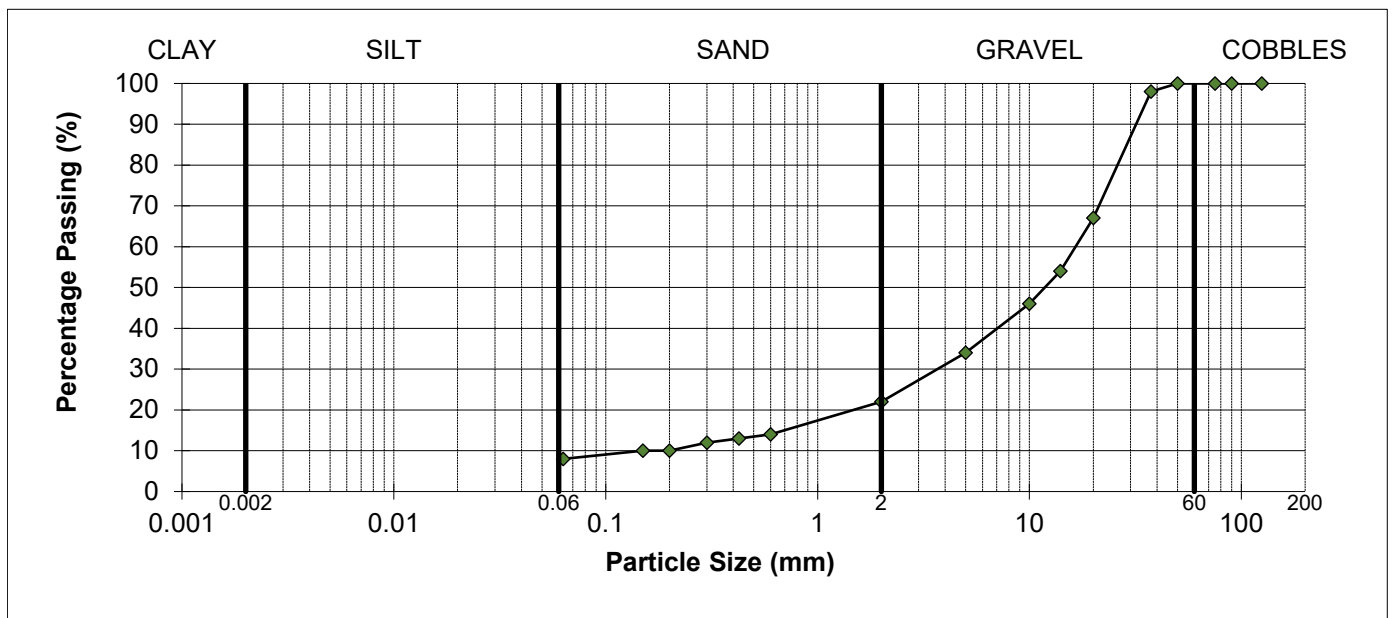
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	VHE Construction Plc
SITE	The Seam, Barnsley
JOB NUMBER	MRN 24328/1

SAMPLE LABEL	WS101 0.1-0.3 B	DATE SAMPLED	Not advised
LAB SAMPLE No	529801	DATE RECEIVED	07-Aug-24
DATE TESTED	06-Sep-24	SAMPLED BY	Client

MATERIAL	Made Ground
ADVISED SOURCE	Site Won

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		5	34	
90	100		2	22	
75	100		0.6	14	
50	100		0.425	13	
37.5	98		0.3	12	
20	67		0.2	10	
14	54		0.15	10	
10	46		0.063	8	



REMARKS

SIGNED



NAME

O.P. Davies BA (Hons)
(Director / Head of Laboratory)

DATE

26-Sep-24

TEST CERTIFICATE
PARTICLE SIZE DISTRIBUTION
BS EN ISO 17892-4:2016

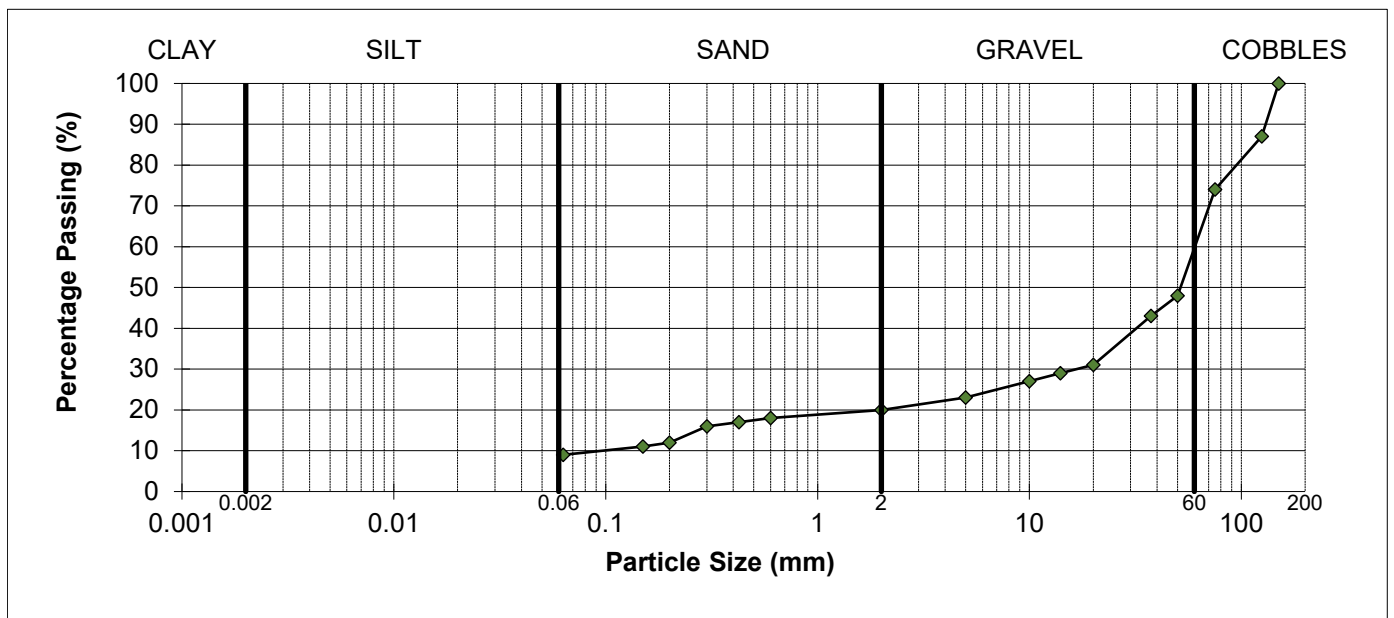
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	VHE Construction Plc
SITE	The Seam, Barnsley
JOB NUMBER	MRN 24328/1

SAMPLE LABEL	TP110 1 B	DATE SAMPLED	Not advised
LAB SAMPLE No	525926	DATE RECEIVED	02-Aug-24
DATE TESTED	06-Sep-24	SAMPLED BY	Client

MATERIAL	Made Ground
ADVISED SOURCE	Site Won

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
150	100		5	23	
125	87		2	20	
75	74		0.6	18	
50	48		0.425	17	
37.5	43		0.3	16	
20	31		0.2	12	
14	29		0.15	11	
10	27		0.063	9	



REMARKS

Sample weight received was below that as required by the British Standard.

SIGNED 
NAME O.P. Davies BA (Hons)
(Director / Head of Laboratory)

DATE 26-Sep-24

TEST CERTIFICATE
PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

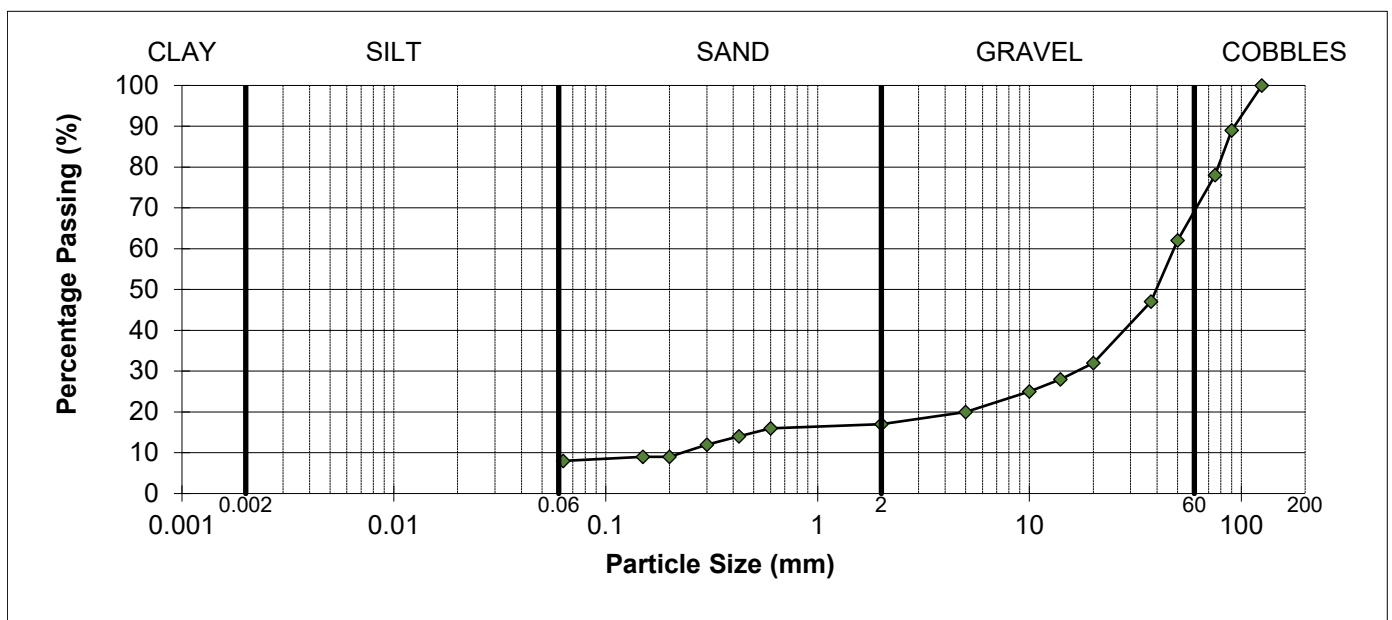
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	VHE Construction Plc
SITE	The Seam, Barnsley
JOB NUMBER	MRN 24328/1

SAMPLE LABEL	TP119 1.5 B	DATE SAMPLED	Not advised
LAB SAMPLE No	525105	DATE RECEIVED	31-Jul-24
DATE TESTED	06-Sep-24	SAMPLED BY	Client

MATERIAL	Made Ground
ADVISED SOURCE	Site Won

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		5	20	
90	89		2	17	
75	78		0.6	16	
50	62		0.425	14	
37.5	47		0.3	12	
20	32		0.2	9	
14	28		0.15	9	
10	25		0.063	8	



REMARKS

Sample weight received was below that as required by the British Standard.

SIGNED



NAME

O.P. Davies BA (Hons)
(Director / Head of Laboratory)

DATE

26-Sep-24

MURRAY RIX
ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

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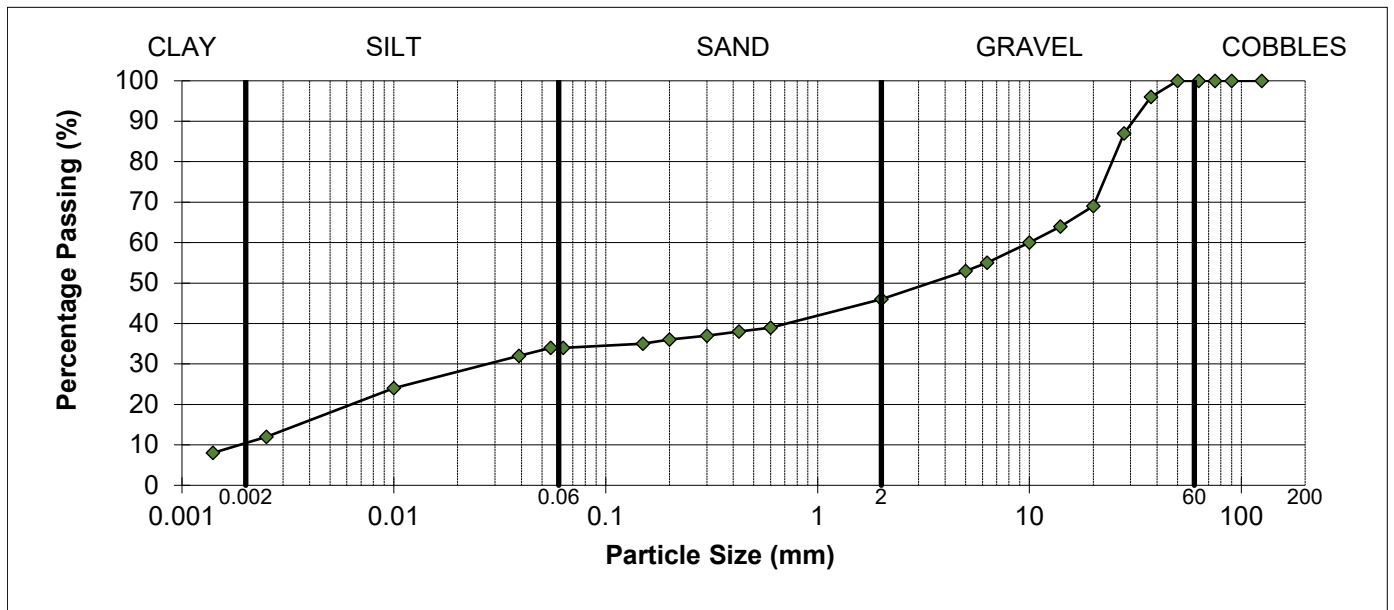
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	VHE Construction Plc		
SITE	The Seam, Barnsley		
JOB NUMBER	MRN 24328/1		

SAMPLE LABEL	WS101 0.4-0.6 B	DATE SAMPLED	Not advised
LAB SAMPLE No	529802	DATE RECEIVED	07-Aug-24
DATE TESTED	06-Sep-24	SAMPLED BY	Client

MATERIAL	Made Ground
ADVISED SOURCE	Site Won

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2	46	
90	100		0.6	39	
75	100		0.425	38	
63	100		0.3	37	
50	100		0.2	36	
37.5	96		0.15	35	
28	87		0.063	34	
20	69		0.055	34	
14	64		0.039	32	
10	60		0.01	24	
6.3	55		0.0025	12	
5	53		0.0014	8	



REMARKS

SIGNED

NAME

O.P. Davies BA (Hons)
(Director / Head of Laboratory)

DATE

26-Sep-24

MURRAY RIX
ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

TEST CERTIFICATE
PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

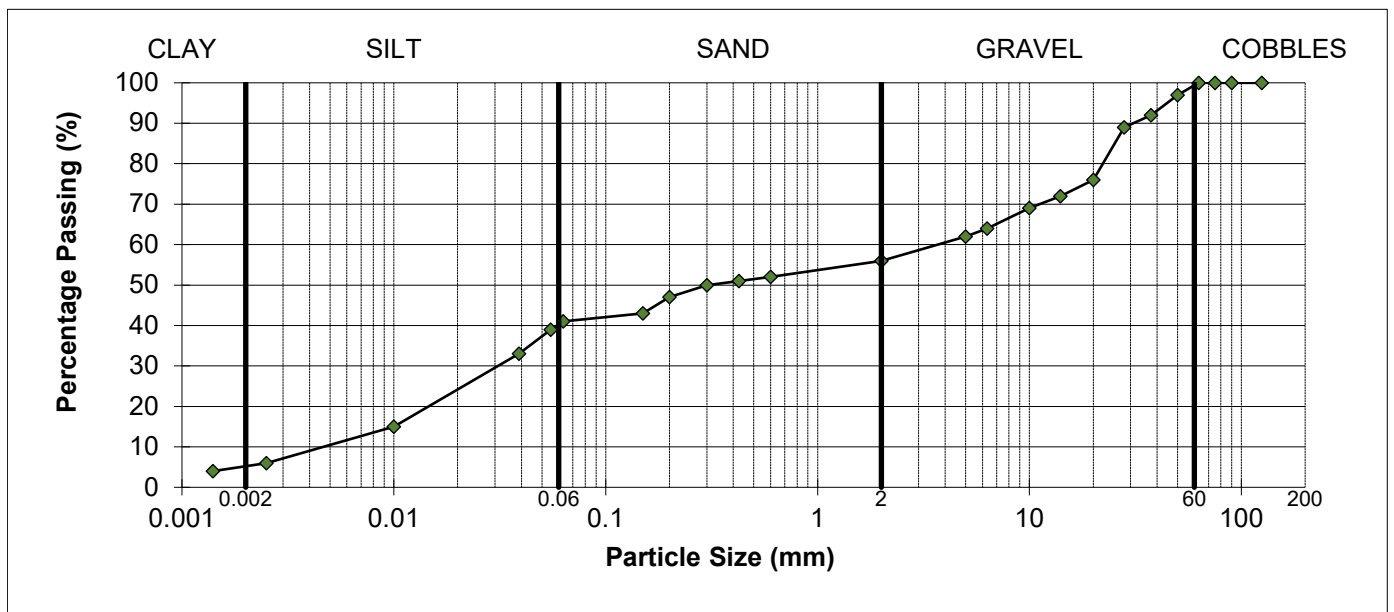
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	VHE Construction Plc
SITE	The Seam, Barnsley
JOB NUMBER	MRN 24328/1

SAMPLE LABEL	BH101 3 B	DATE SAMPLED	Not advised
LAB SAMPLE No	527834	DATE RECEIVED	06-Aug-24
DATE TESTED	06-Sep-24	SAMPLED BY	Client

MATERIAL	Brown slightly clayey silty sandy GRAVEL
ADVISED SOURCE	Site Won

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2	56	
90	100		0.6	52	
75	100		0.425	51	
63	100		0.3	50	
50	97		0.2	47	
37.5	92		0.15	43	
28	89		0.063	41	
20	76		0.055	39	
14	72		0.039	33	
10	69		0.01	15	
6.3	64		0.0025	6	
5	62		0.0014	4	



REMARKS

SIGNED

NAME

O.P. Davies BA (Hons)
(Director / Head of Laboratory)

DATE

26-Sep-24

MURRAY RIX
ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

TEST CERTIFICATE
PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

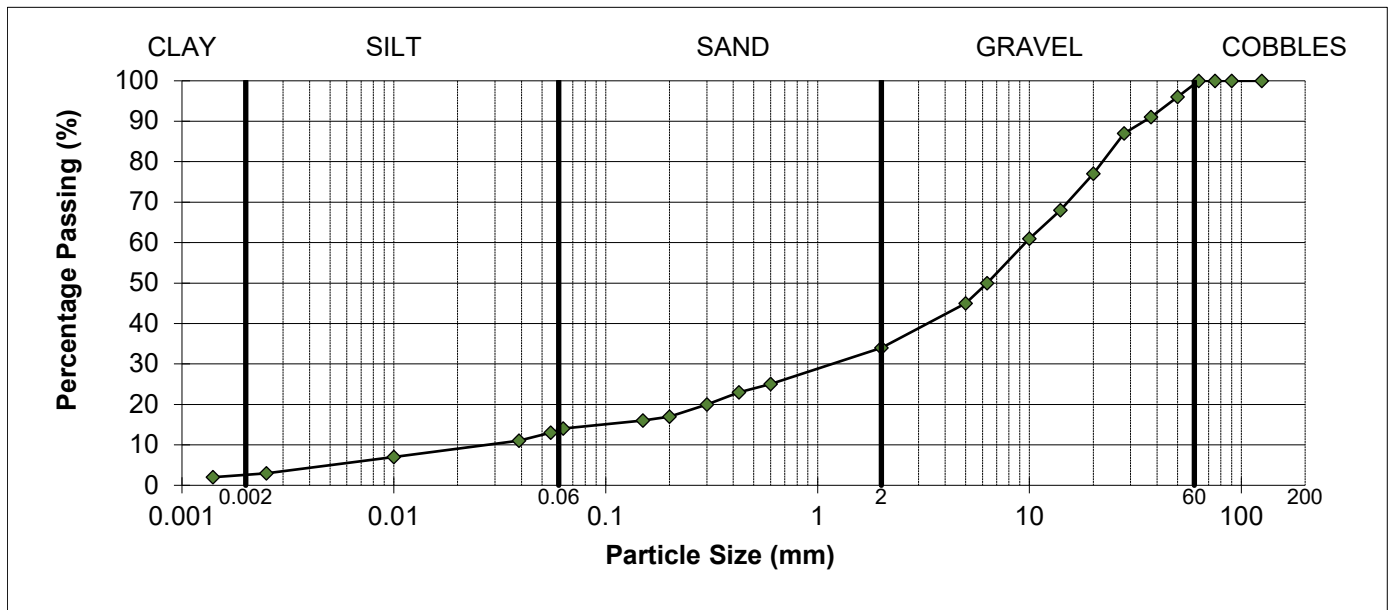
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	VHE Construction Plc
SITE	The Seam, Barnsley
JOB NUMBER	MRN 24328/1

SAMPLE LABEL	BH106 0.2-0.4 B	DATE SAMPLED	Not advised
LAB SAMPLE No	525952	DATE RECEIVED	02-Aug-24
DATE TESTED	06-Sep-24	SAMPLED BY	Client

MATERIAL	Brown silty sandy GRAVEL
ADVISED SOURCE	Site Won

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2	34	
90	100		0.6	25	
75	100		0.425	23	
63	100		0.3	20	
50	96		0.2	17	
37.5	91		0.15	16	
28	87		0.063	14	
20	77		0.055	13	
14	68		0.039	11	
10	61		0.01	7	
6.3	50		0.0025	3	
5	45		0.0014	2	



REMARKS

SIGNED

NAME

O.P. Davies BA (Hons)
(Director / Head of Laboratory)

DATE

26-Sep-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

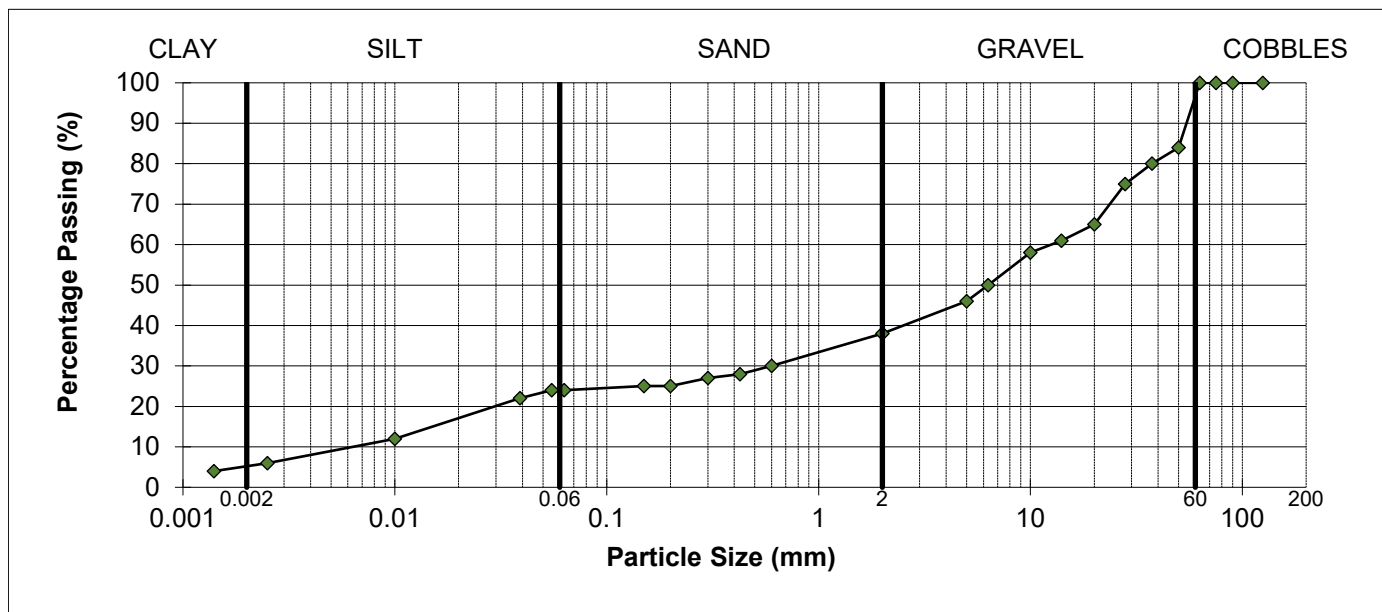
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	VHE Construction Plc
SITE	The Seam, Barnsley
JOB NUMBER	MRN 24328/1

SAMPLE LABEL	TP102 1.5 B	DATE SAMPLED	Not advised
LAB SAMPLE No	525913	DATE RECEIVED	02-Aug-24
DATE TESTED	06-Sep-24	SAMPLED BY	Client

MATERIAL	Brown silty sandy GRAVEL
ADVISED SOURCE	Site Won

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2	38	
90	100		0.6	30	
75	100		0.425	28	
63	100		0.3	27	
50	84		0.2	25	
37.5	80		0.15	25	
28	75		0.063	24	
20	65		0.055	24	
14	61		0.039	22	
10	58		0.01	12	
6.3	50		0.0025	6	
5	46		0.0014	4	



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BS EN ISO 17892-4:2016

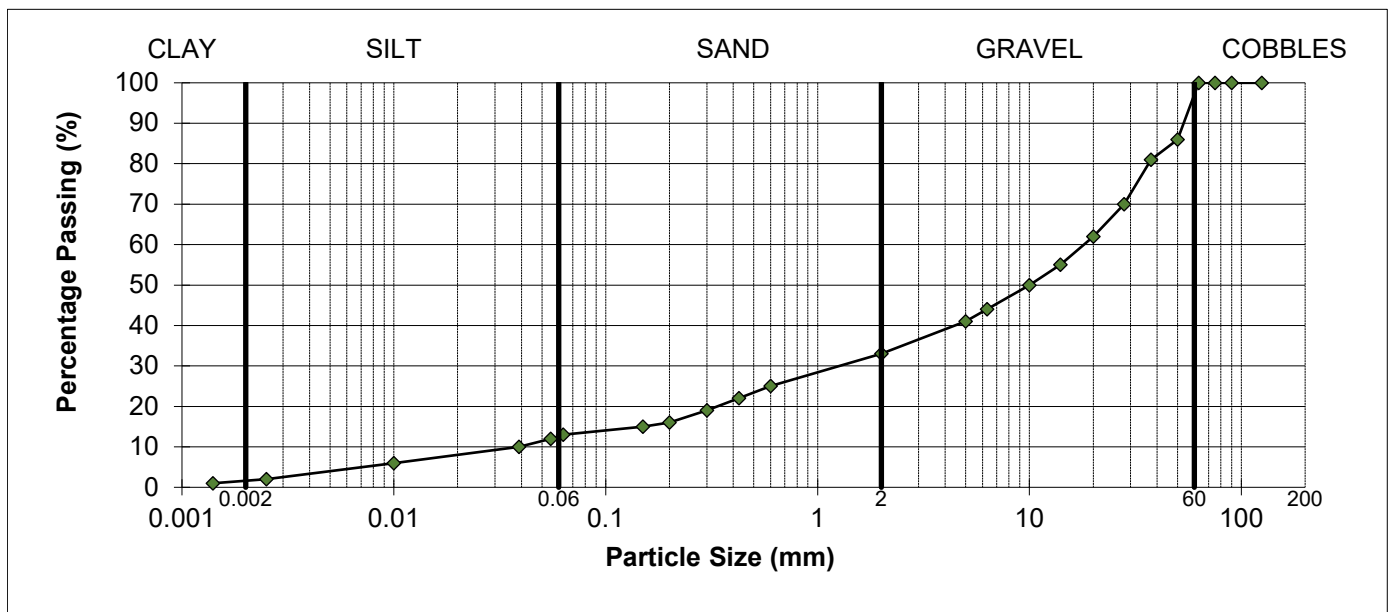
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	VHE Construction Plc
SITE	The Seam, Barnsley
JOB NUMBER	MRN 24328/1

SAMPLE LABEL	TP104 0.7 B	DATE SAMPLED	Not advised
LAB SAMPLE No	525905	DATE RECEIVED	02-Aug-24
DATE TESTED	06-Sep-24	SAMPLED BY	Client

MATERIAL	Made Ground
ADVISED SOURCE	Site Won

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2	33	
90	100		0.6	25	
75	100		0.425	22	
63	100		0.3	19	
50	86		0.2	16	
37.5	81		0.15	15	
28	70		0.063	13	
20	62		0.055	12	
14	55		0.039	10	
10	50		0.01	6	
6.3	44		0.0025	2	
5	41		0.0014	1	



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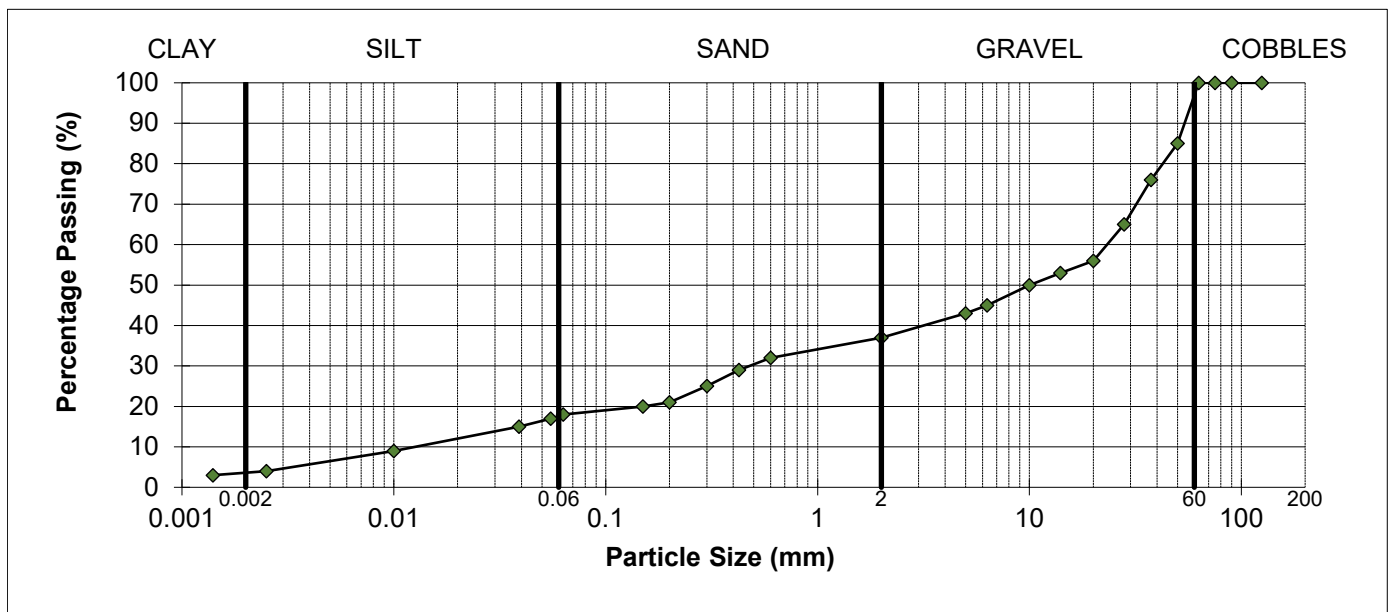
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	VHE Construction Plc
SITE	The Seam, Barnsley
JOB NUMBER	MRN 24328/1

SAMPLE LABEL	TP105 0.9 B	DATE SAMPLED	Not advised
LAB SAMPLE No	525908	DATE RECEIVED	02-Aug-24
DATE TESTED	06-Sep-24	SAMPLED BY	Client

MATERIAL	Made Ground
ADVISED SOURCE	Site Won

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2	37	
90	100		0.6	32	
75	100		0.425	29	
63	100		0.3	25	
50	85		0.2	21	
37.5	76		0.15	20	
28	65		0.063	18	
20	56		0.055	17	
14	53		0.039	15	
10	50		0.01	9	
6.3	45		0.0025	4	
5	43		0.0014	3	



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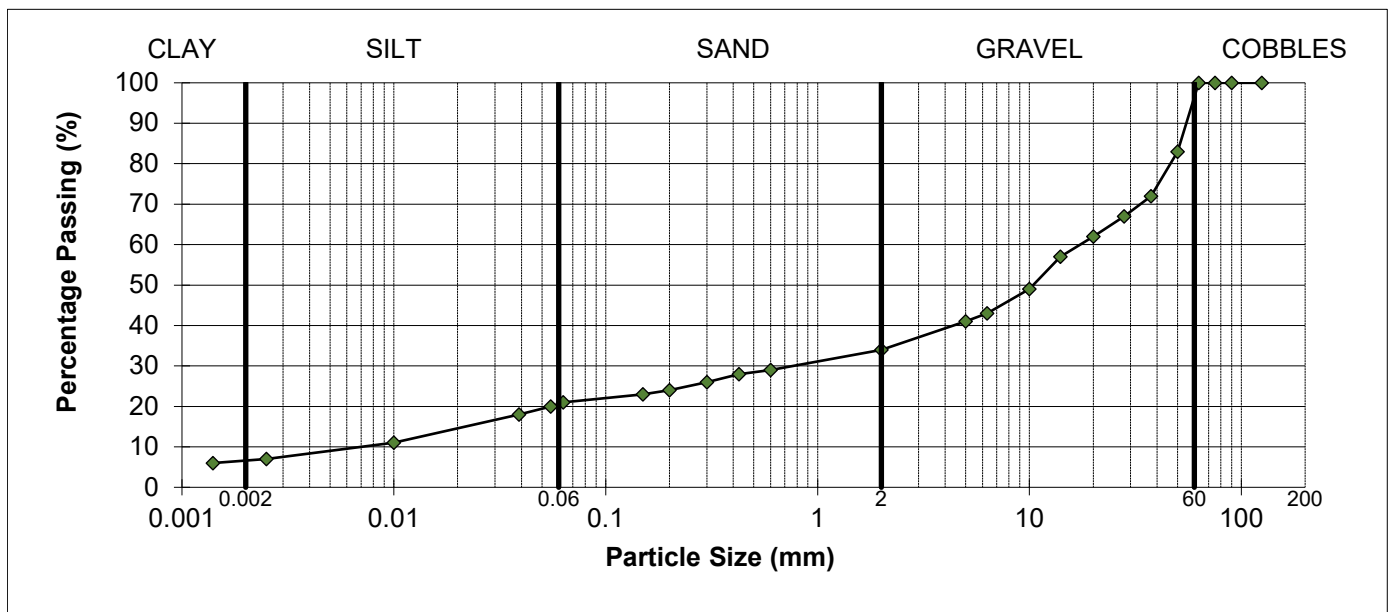
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	VHE Construction Plc
SITE	The Seam, Barnsley
JOB NUMBER	MRN 24328/1

SAMPLE LABEL	TP109 1 B	DATE SAMPLED	Not advised
LAB SAMPLE No	525912	DATE RECEIVED	02-Aug-24
DATE TESTED	06-Sep-24	SAMPLED BY	Client

MATERIAL	Weathered Bedrock
ADVISED SOURCE	Site Won

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2	34	
90	100		0.6	29	
75	100		0.425	28	
63	100		0.3	26	
50	83		0.2	24	
37.5	72		0.15	23	
28	67		0.063	21	
20	62		0.055	20	
14	57		0.039	18	
10	49		0.01	11	
6.3	43		0.0025	7	
5	41		0.0014	6	



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TEL 0161 475 0870

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PARTICLE SIZE DISTRIBUTION

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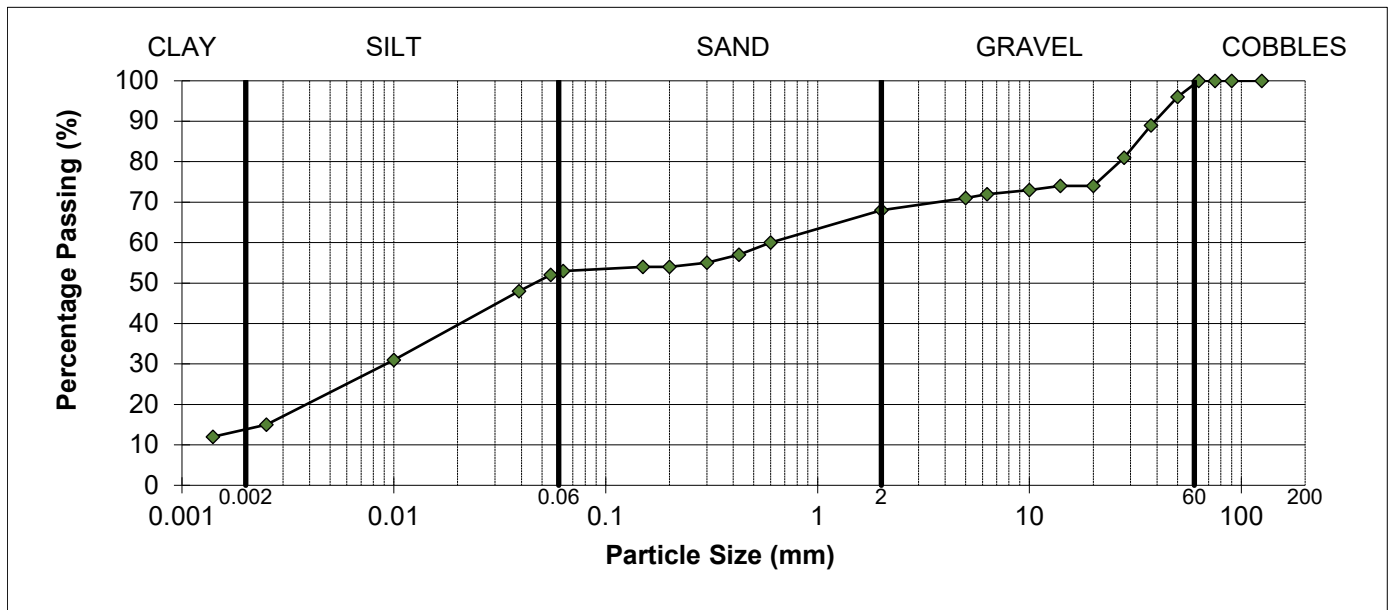
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	VHE Construction Plc
SITE	The Seam, Barnsley
JOB NUMBER	MRN 24328/1

SAMPLE LABEL	TP109 2.6 B	DATE SAMPLED	Not advised
LAB SAMPLE No	525923	DATE RECEIVED	02-Aug-24
DATE TESTED	06-Sep-24	SAMPLED BY	Client

MATERIAL	Weathered Bedrock
ADVISED SOURCE	Site Won

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2	68	
90	100		0.6	60	
75	100		0.425	57	
63	100		0.3	55	
50	96		0.2	54	
37.5	89		0.15	54	
28	81		0.063	53	
20	74		0.055	52	
14	74		0.039	48	
10	73		0.01	31	
6.3	72		0.0025	15	
5	71		0.0014	12	



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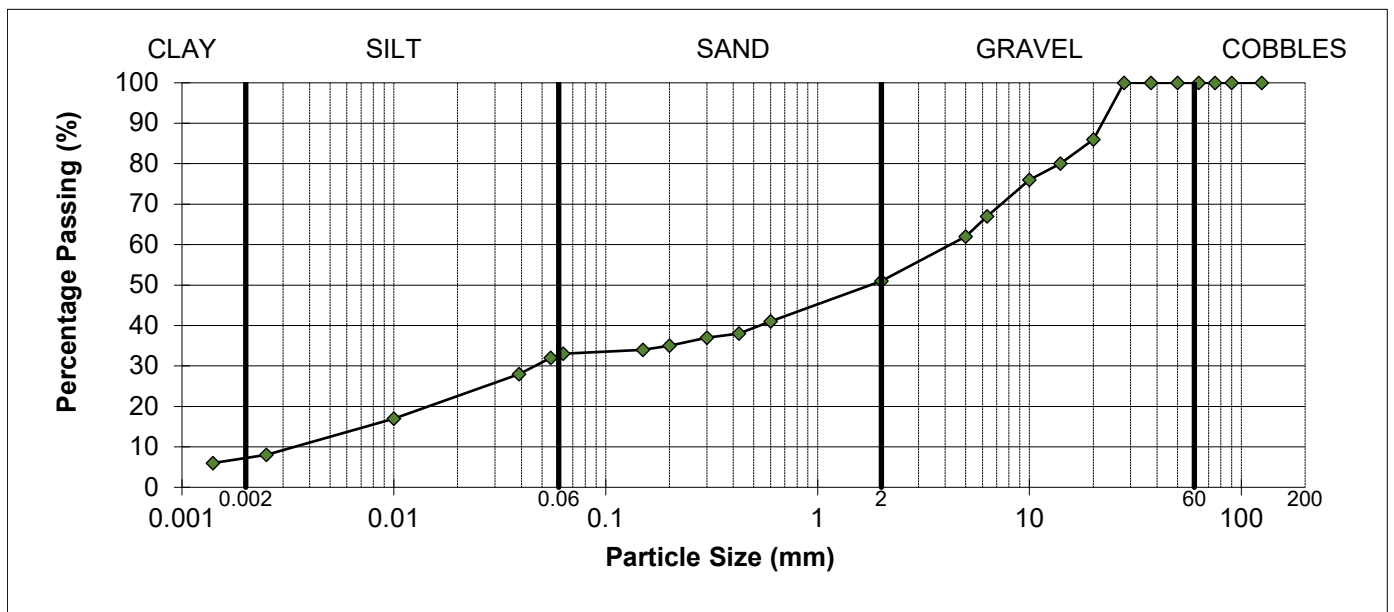
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	VHE Construction Plc
SITE	The Seam, Barnsley
JOB NUMBER	MRN 24328/1

SAMPLE LABEL	TP121 0.8 B	DATE SAMPLED	Not advised
LAB SAMPLE No	525107	DATE RECEIVED	31-Jul-24
DATE TESTED	06-Sep-24	SAMPLED BY	Client

MATERIAL	Made Ground
ADVISED SOURCE	Site Won

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2	51	
90	100		0.6	41	
75	100		0.425	38	
63	100		0.3	37	
50	100		0.2	35	
37.5	100		0.15	34	
28	100		0.063	33	
20	86		0.055	32	
14	80		0.039	28	
10	76		0.01	17	
6.3	67		0.0025	8	
5	62		0.0014	6	



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PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

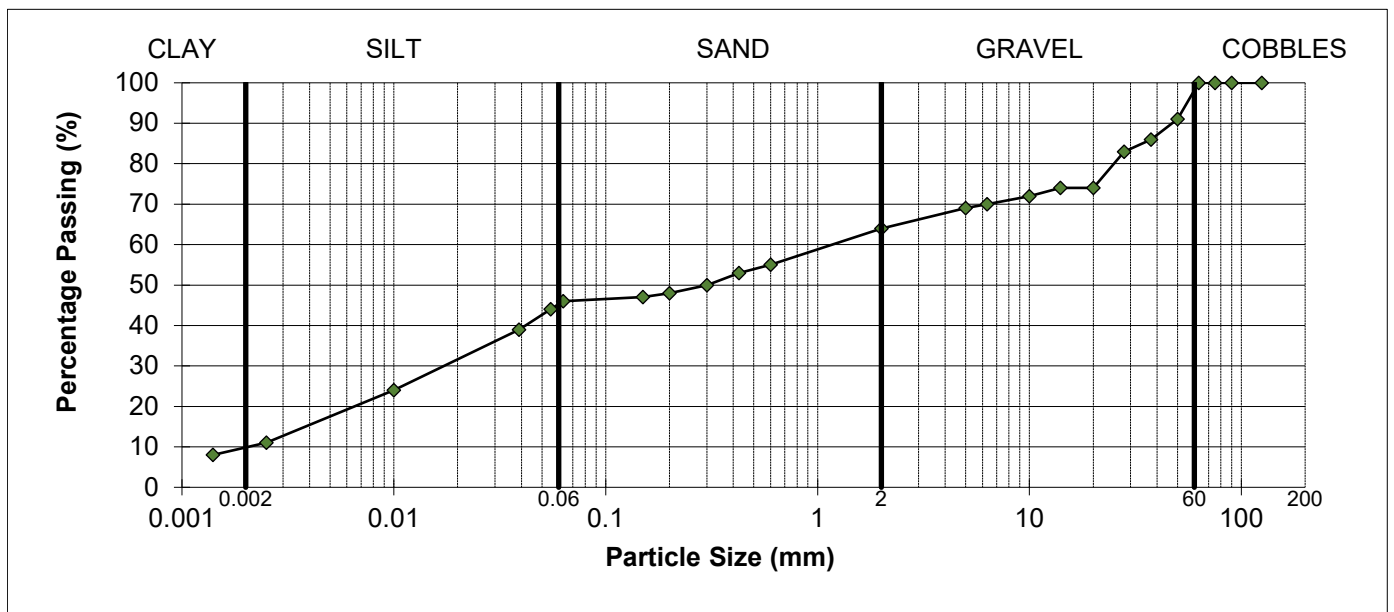
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	VHE Construction Plc
SITE	The Seam, Barnsley
JOB NUMBER	MRN 24328/1

SAMPLE LABEL	TP122 1.3 B	DATE SAMPLED	Not advised
LAB SAMPLE No	525916	DATE RECEIVED	31-Jul-24
DATE TESTED	06-Sep-24	SAMPLED BY	Client

MATERIAL	Made Ground
ADVISED SOURCE	Site Won

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2	64	
90	100		0.6	55	
75	100		0.425	53	
63	100		0.3	50	
50	91		0.2	48	
37.5	86		0.15	47	
28	83		0.063	46	
20	74		0.055	44	
14	74		0.039	39	
10	72		0.01	24	
6.3	70		0.0025	11	
5	69		0.0014	8	



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TEL 0161 475 0870

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BS EN ISO 17892-4:2016

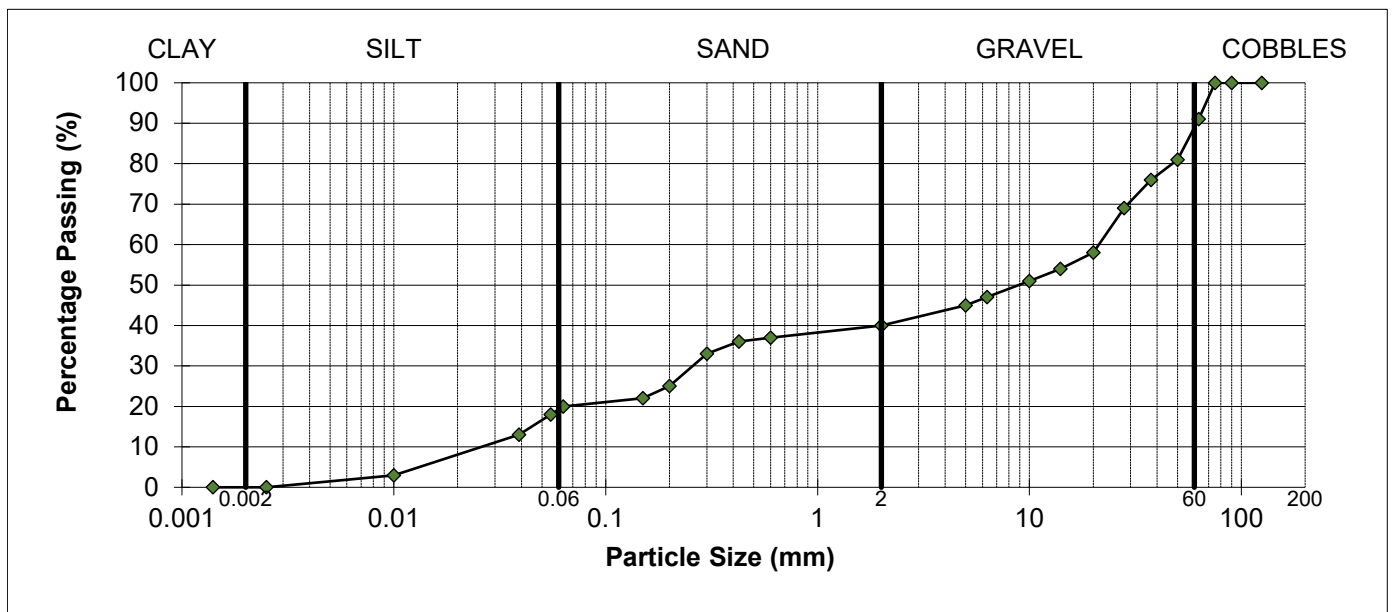
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	VHE Construction Plc
SITE	The Seam, Barnsley
JOB NUMBER	MRN 24328/1

SAMPLE LABEL	TP126 1 B	DATE SAMPLED	Not advised
LAB SAMPLE No	525902	DATE RECEIVED	31-Jul-24
DATE TESTED	06-Sep-24	SAMPLED BY	Client

MATERIAL	Made Ground
ADVISED SOURCE	Site Won

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2	40	
90	100		0.6	37	
75	100		0.425	36	
63	91		0.3	33	
50	81		0.2	25	
37.5	76		0.15	22	
28	69		0.063	20	
20	58		0.055	18	
14	54		0.039	13	
10	51		0.01	3	
6.3	47		0.0025	0	
5	45		0.0014	0	



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TEST CERTIFICATE
PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

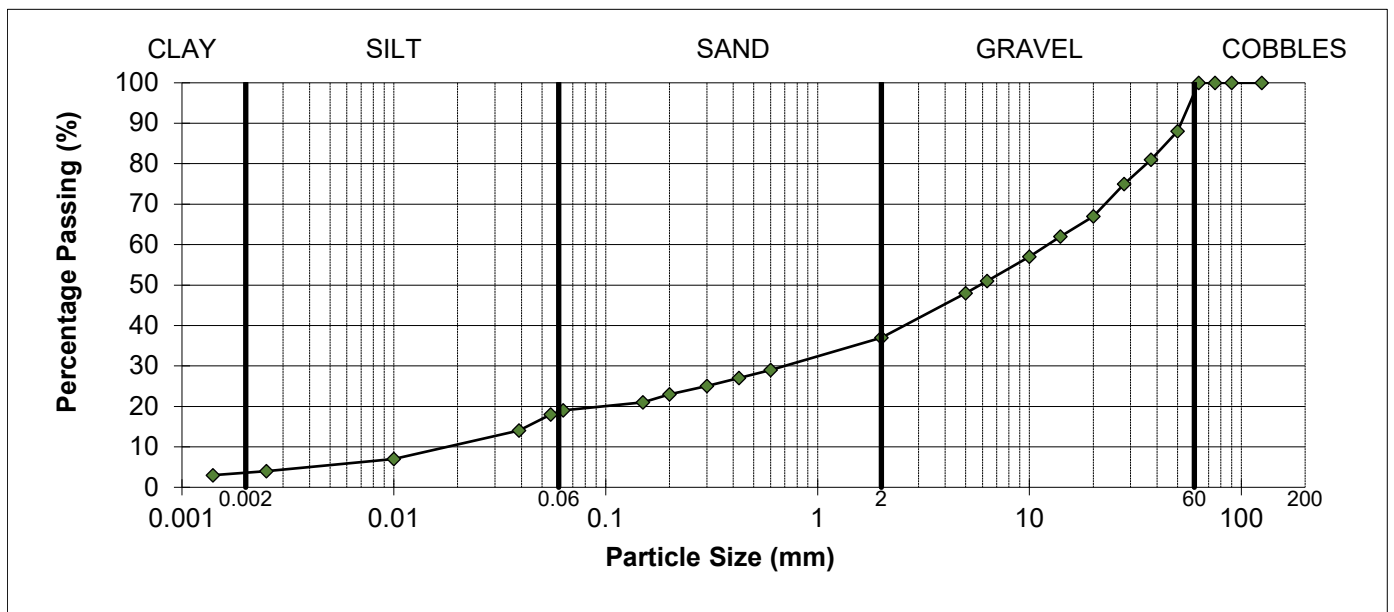
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	VHE Construction Plc
SITE	The Seam, Barnsley
JOB NUMBER	MRN 24328/1

SAMPLE LABEL	HP101 0.9 B	DATE SAMPLED	Not advised
LAB SAMPLE No	523009	DATE RECEIVED	30-Jul-24
DATE TESTED	06-Sep-24	SAMPLED BY	Client

MATERIAL	Made Ground
ADVISED SOURCE	Site Won

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2	37	
90	100		0.6	29	
75	100		0.425	27	
63	100		0.3	25	
50	88		0.2	23	
37.5	81		0.15	21	
28	75		0.063	19	
20	67		0.055	18	
14	62		0.039	14	
10	57		0.01	7	
6.3	51		0.0025	4	
5	48		0.0014	3	



REMARKS

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TEL 0161 475 0870

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PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

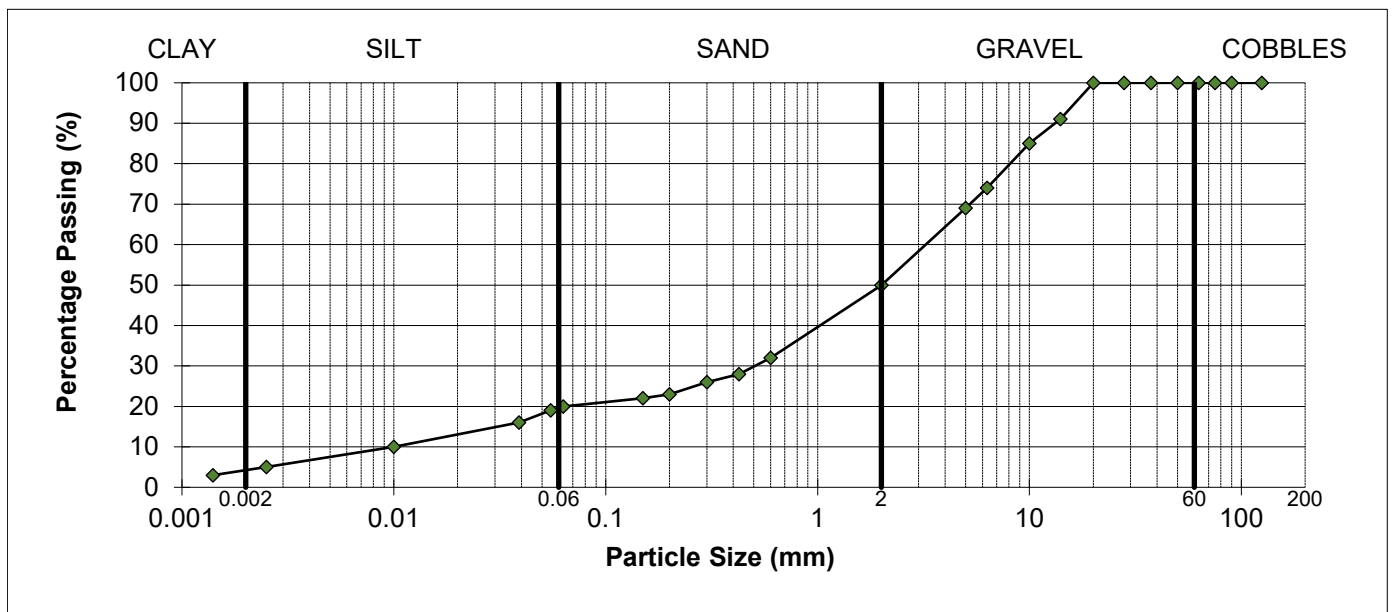
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	VHE Construction Plc
SITE	The Seam, Barnsley
JOB NUMBER	MRN 24328/1

SAMPLE LABEL	HP109 0.3 D	DATE SAMPLED	Not advised
LAB SAMPLE No	523804	DATE RECEIVED	30-Jul-24
DATE TESTED	06-Sep-24	SAMPLED BY	Client

MATERIAL	Made Ground
ADVISED SOURCE	Site Won

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2	50	
90	100		0.6	32	
75	100		0.425	28	
63	100		0.3	26	
50	100		0.2	23	
37.5	100		0.15	22	
28	100		0.063	20	
20	100		0.055	19	
14	91		0.039	16	
10	85		0.01	10	
6.3	74		0.0025	5	
5	69		0.0014	3	



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TEL 0161 475 0870



TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD

PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5

WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

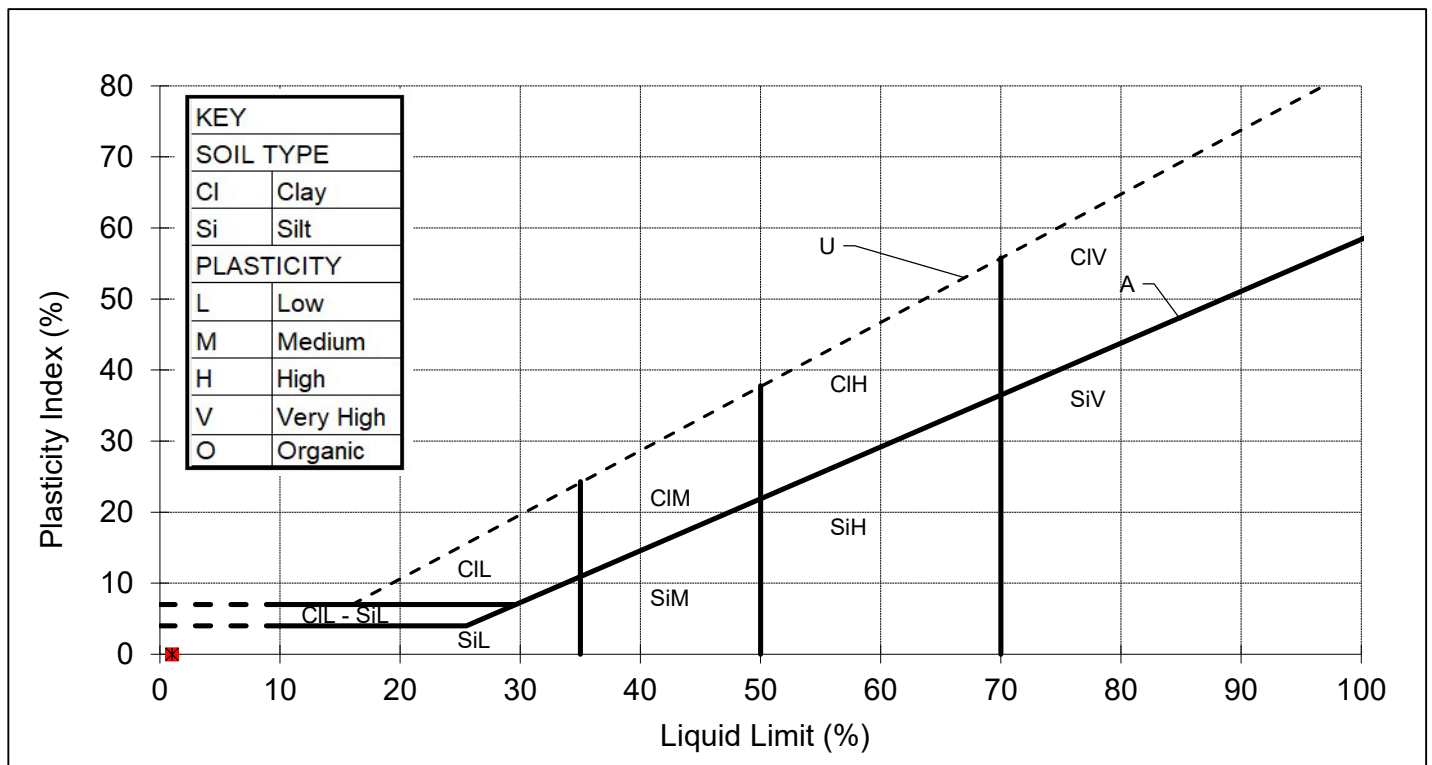
CLIENT	VHE Construction Plc
SITE	The Seam, Barnsley
JOB NUMBER	MRN 24328/1

SAMPLE LABEL	WS102 1.2-1.65 SPT (S)	DATE SAMPLED	Not advised
SAMPLE No.	527801	DATE RECEIVED	06-Aug-24
DATE TESTED	06-Sep-24	SAMPLED BY	Client

MATERIAL	Made Ground		
ADVISED SOURCE	Site Won	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	N/A	N/A	N/A	
Determination 2 (avg)	N/A	N/A		

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
10.7	N/A	Non Plastic	N/A	27



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TEL 0161 475 0870



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LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD

PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5

WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

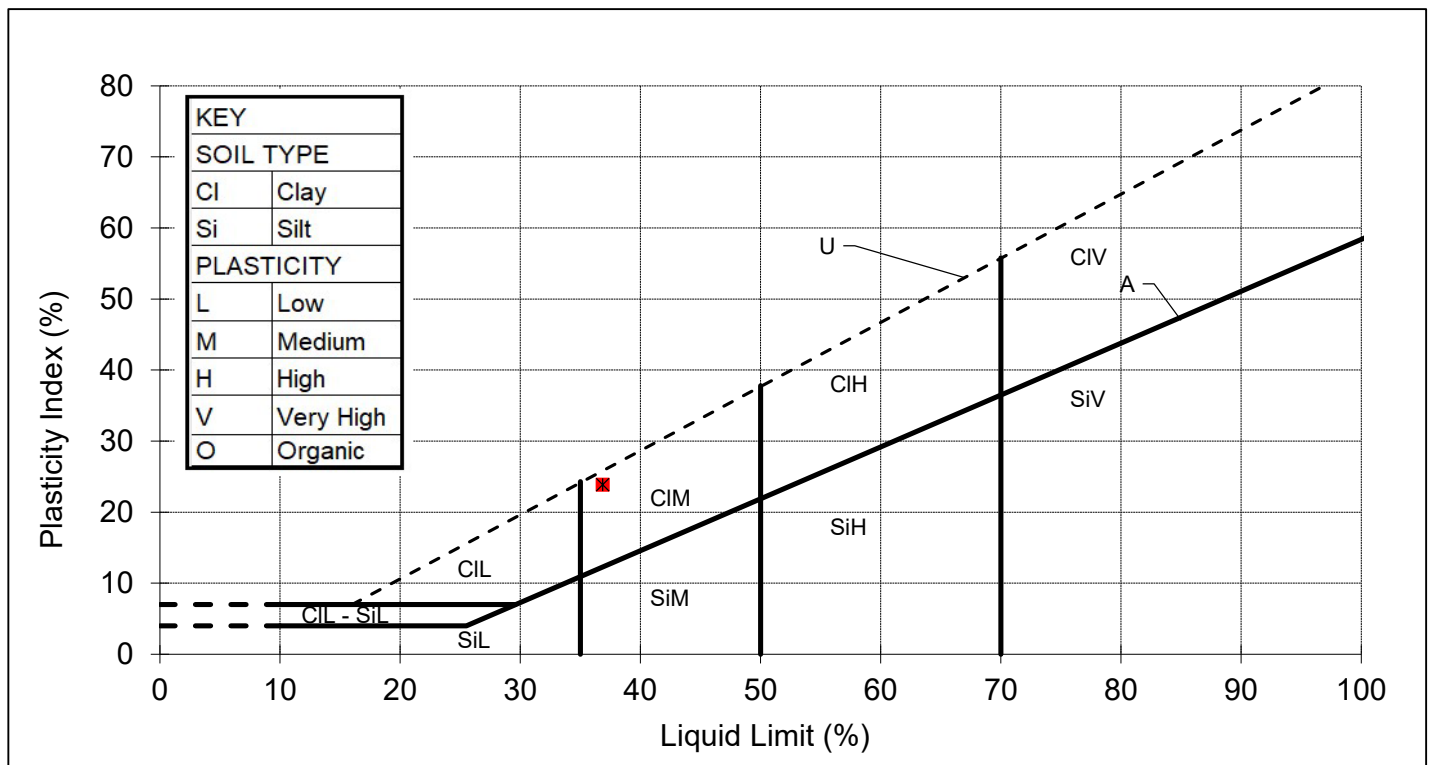
CLIENT	VHE Construction Plc
SITE	The Seam, Barnsley
JOB NUMBER	MRN 24328/1

SAMPLE LABEL	WS103 0.8-1 B	DATE SAMPLED	Not advised
SAMPLE No.	529814	DATE RECEIVED	07-Aug-24
DATE TESTED	06-Sep-24	SAMPLED BY	Client

MATERIAL	Made Ground		
ADVISED SOURCE	Site Won	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	18.9	36.2	1.020	
Determination 2 (avg)	18.7	36.1		

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
22.9	37	13	24	76



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TEL 0161 475 0870



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LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD

PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5

WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

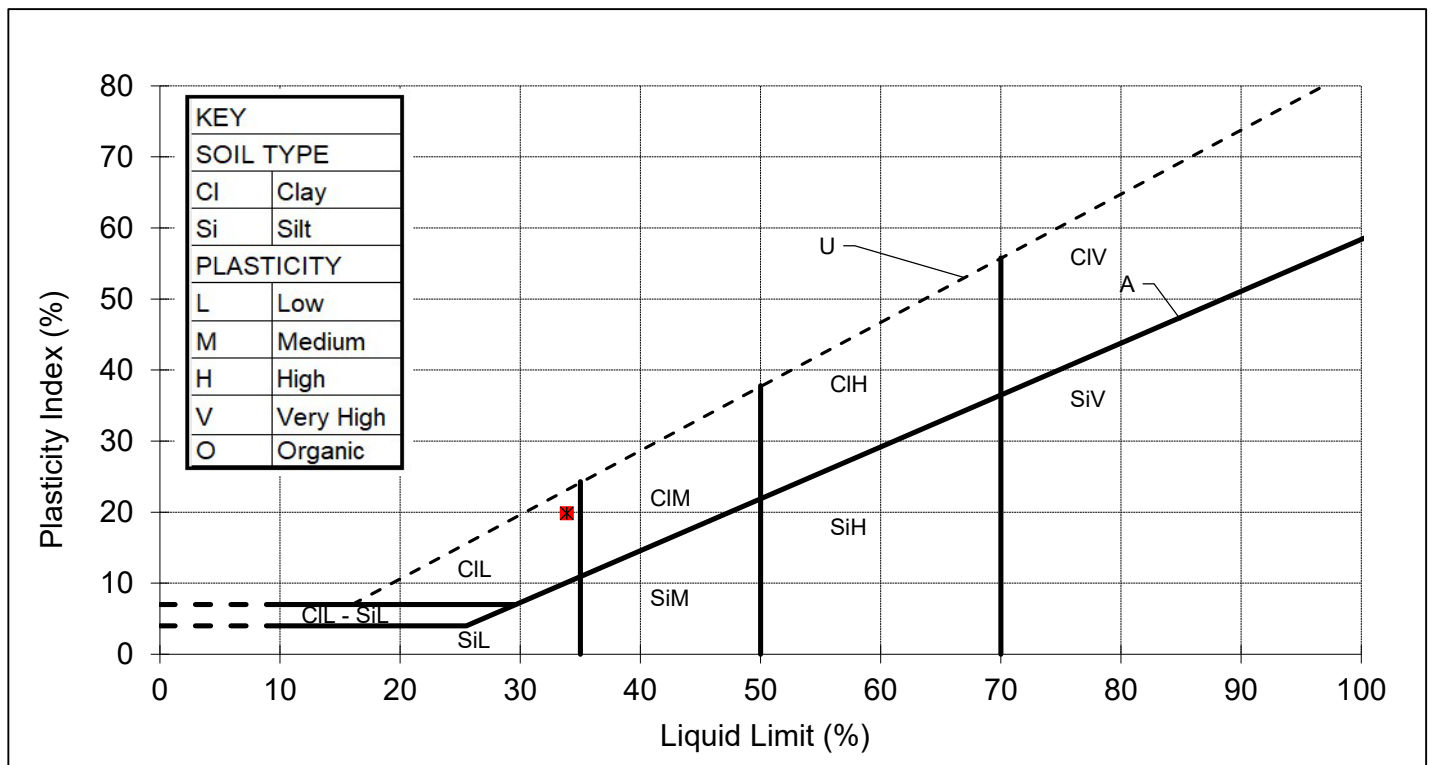
CLIENT	VHE Construction Plc
SITE	The Seam, Barnsley
JOB NUMBER	MRN 24328/1

SAMPLE LABEL	WS107 0.9-1.1 B	DATE SAMPLED	Not advised
SAMPLE No.	527867	DATE RECEIVED	06-Aug-24
DATE TESTED	06-Sep-24	SAMPLED BY	Client

MATERIAL	Made Ground		
ADVISED SOURCE	Site Won	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	19.5	33.8	1.008	
Determination 2 (avg)	19.4	33.4		

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
21.4	34	14	20	68



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TEL 0161 475 0870



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LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD

PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5

WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

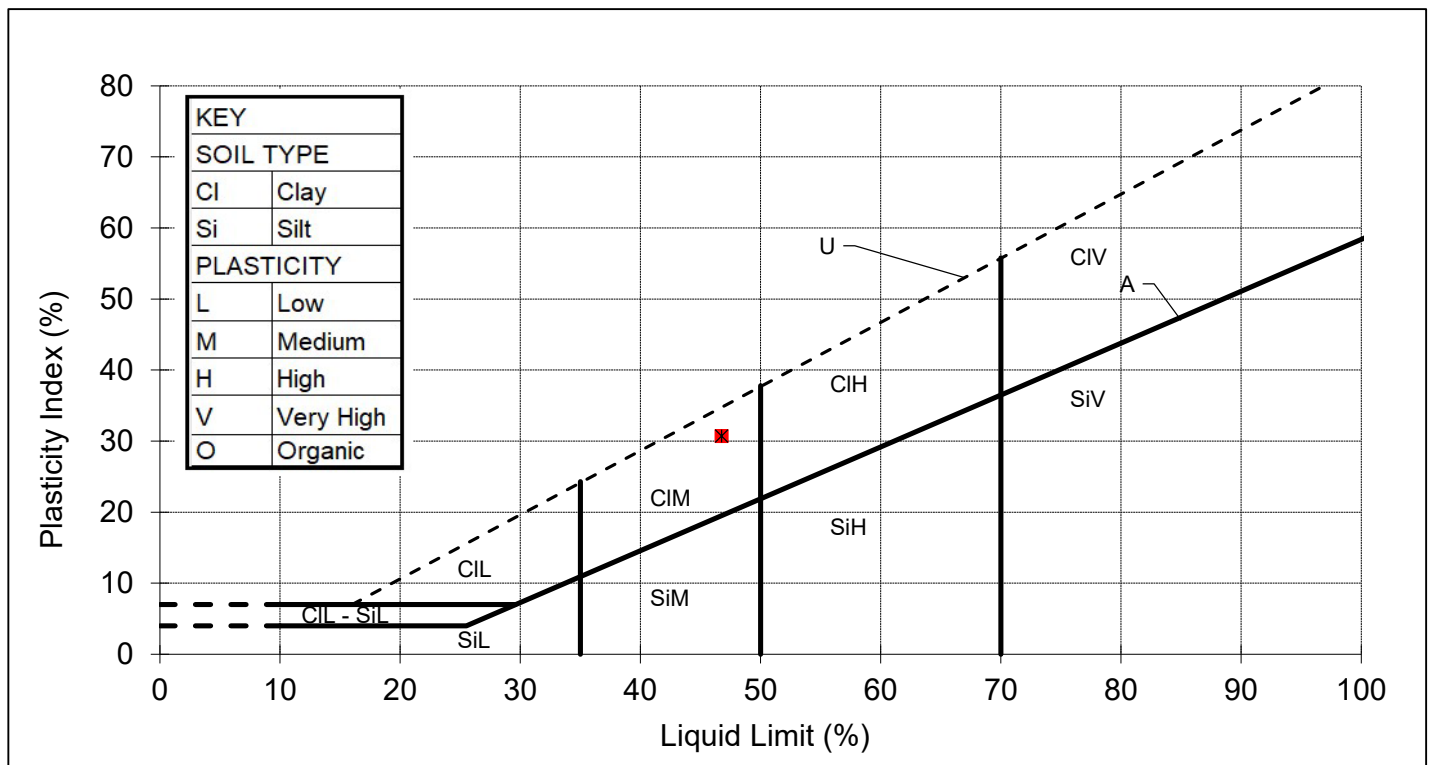
CLIENT	VHE Construction Plc
SITE	The Seam, Barnsley
JOB NUMBER	MRN 24328/1

SAMPLE LABEL	WS109 0.8-1 B	DATE SAMPLED	Not advised
SAMPLE No.	527870	DATE RECEIVED	06-Aug-24
DATE TESTED	06-Sep-24	SAMPLED BY	Client

MATERIAL	Made Ground		
ADVISED SOURCE	Site Won	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	20.0	46.8	1.000	
Determination 2 (avg)	20.0	46.7		

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
31.6	47	16	31	80



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LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD

PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5

WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

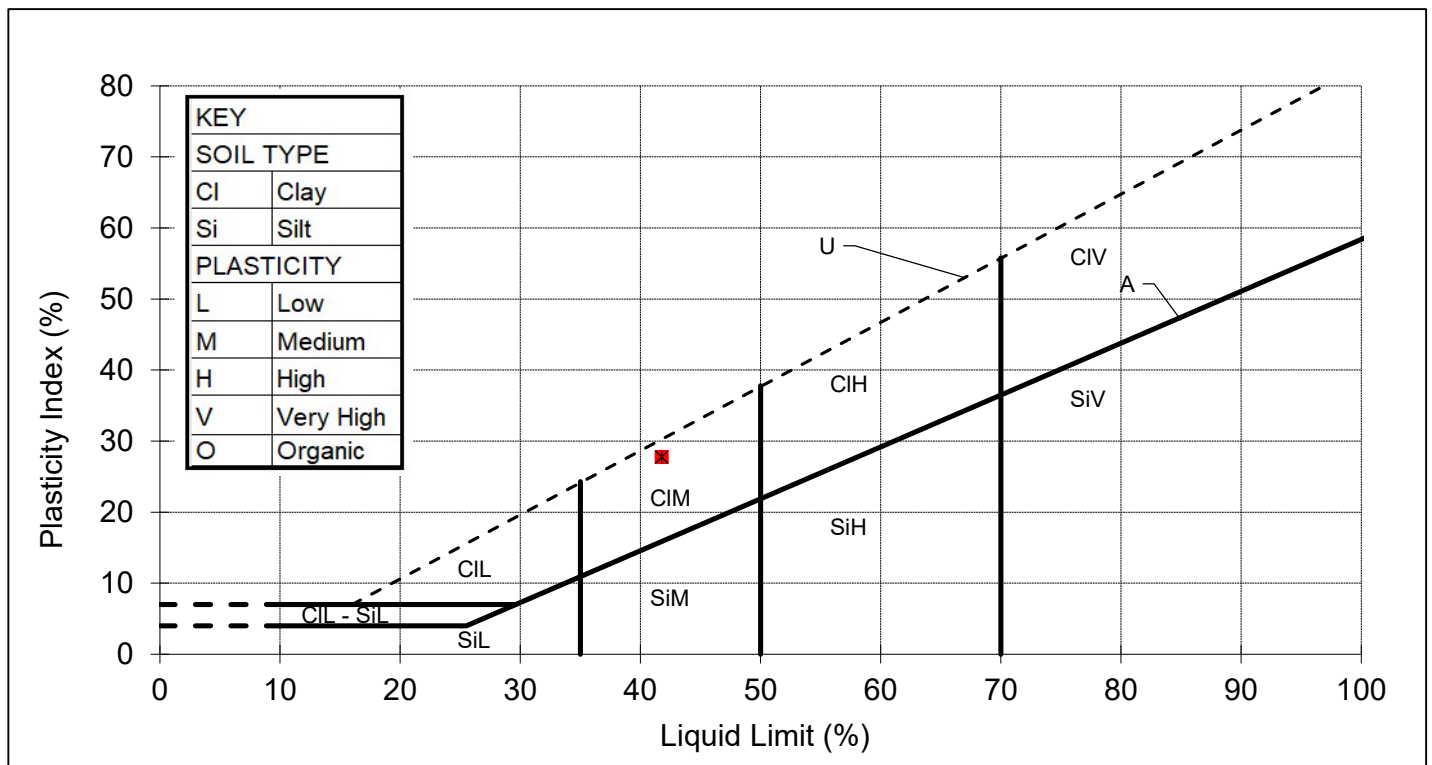
CLIENT	VHE Construction Plc
SITE	The Seam, Barnsley
JOB NUMBER	MRN 24328/1

SAMPLE LABEL	WS110 1.7-2 D	DATE SAMPLED	Not advised
SAMPLE No.	529843	DATE RECEIVED	07-Aug-24
DATE TESTED	06-Sep-24	SAMPLED BY	Client

MATERIAL	Made Ground		
ADVISED SOURCE	Site Won	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	18.9	41.1	1.017	
Determination 2 (avg)	18.9	41.0		

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
26.0	42	14	28	74



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TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD

PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5

WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

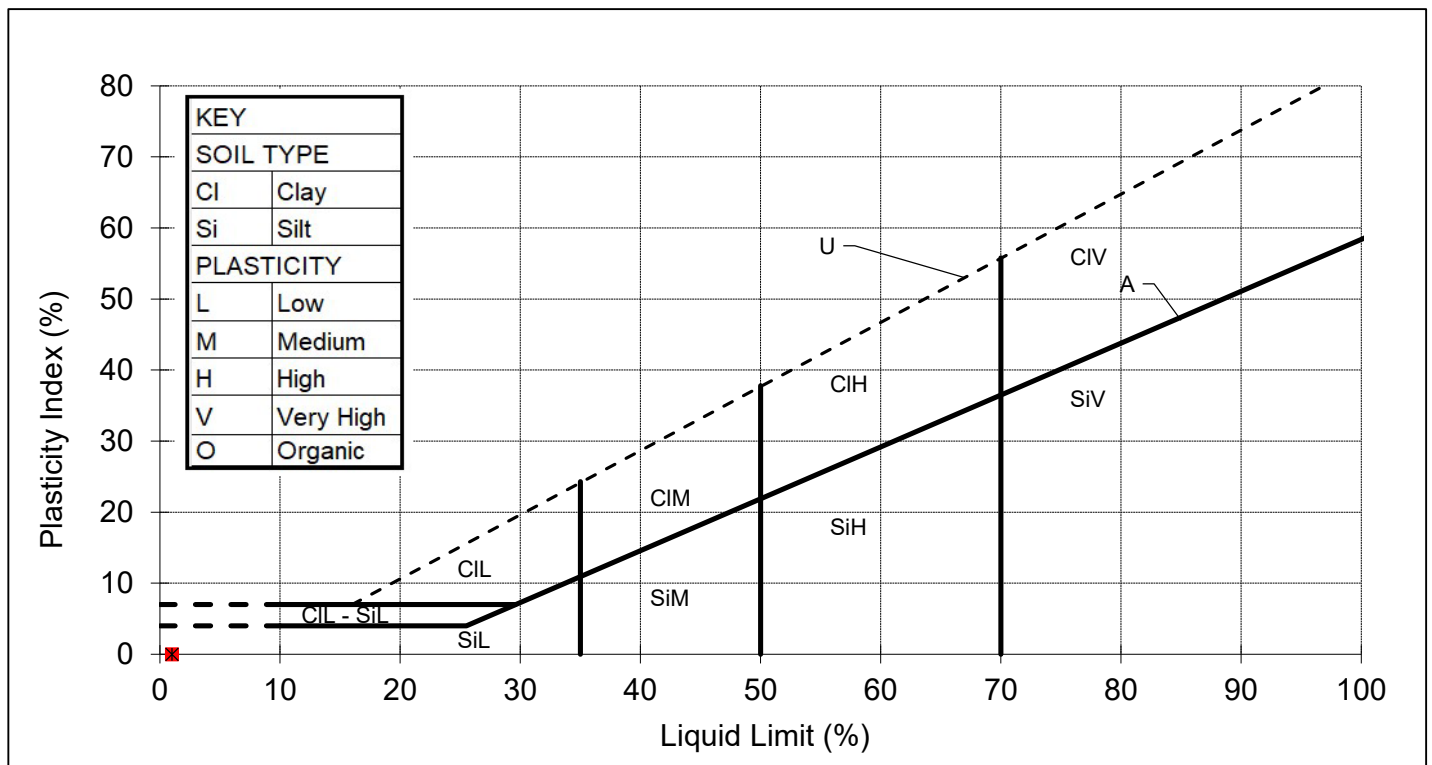
CLIENT	VHE Construction Plc
SITE	The Seam, Barnsley
JOB NUMBER	MRN 24328/1

SAMPLE LABEL	BH103 1.7-2 B	DATE SAMPLED	Not advised
SAMPLE No.	527846	DATE RECEIVED	06-Aug-24
DATE TESTED	06-Sep-24	SAMPLED BY	Client

MATERIAL	Made Ground		
ADVISED SOURCE	Site Won	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	N/A	N/A	N/A	
Determination 2 (avg)	N/A	N/A		

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
10.9	N/A	Non Plastic	N/A	21



REMARKS

SIGNED

NAME

O.P. Davies BA (Hons)
(Director / Head of Laboratory)

DATE

26-Sep-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870



TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD

PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5

WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

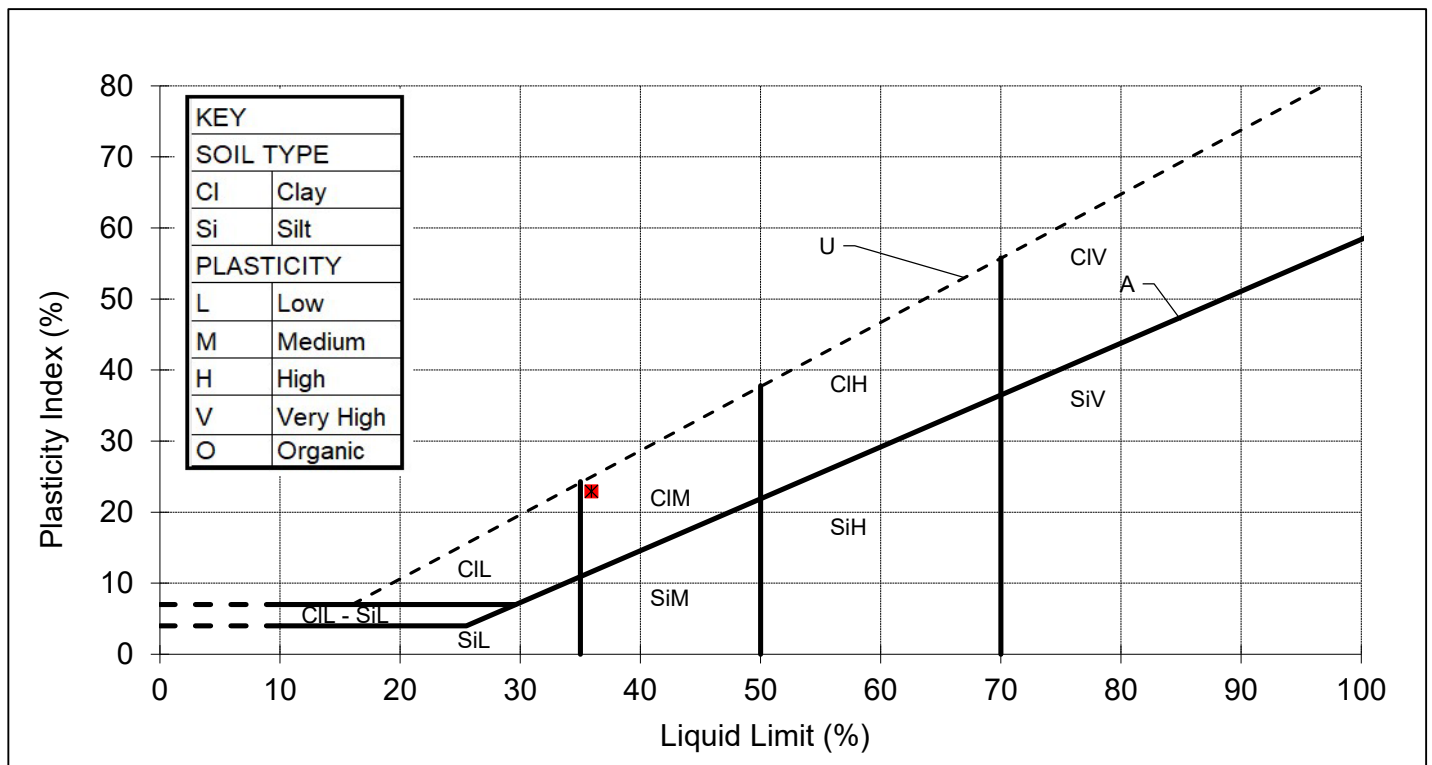
CLIENT	VHE Construction Plc
SITE	The Seam, Barnsley
JOB NUMBER	MRN 24328/1

SAMPLE LABEL	BH104 1.8-2 B	DATE SAMPLED	Not advised
SAMPLE No.	525943	DATE RECEIVED	02-Aug-24
DATE TESTED	06-Sep-24	SAMPLED BY	Client

MATERIAL	Made Ground		
ADVISED SOURCE	Site Won	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	20.1	36.1	0.999	
Determination 2 (avg)	20.0	35.8		

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
23.2	36	13	23	74



REMARKS

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PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5

WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

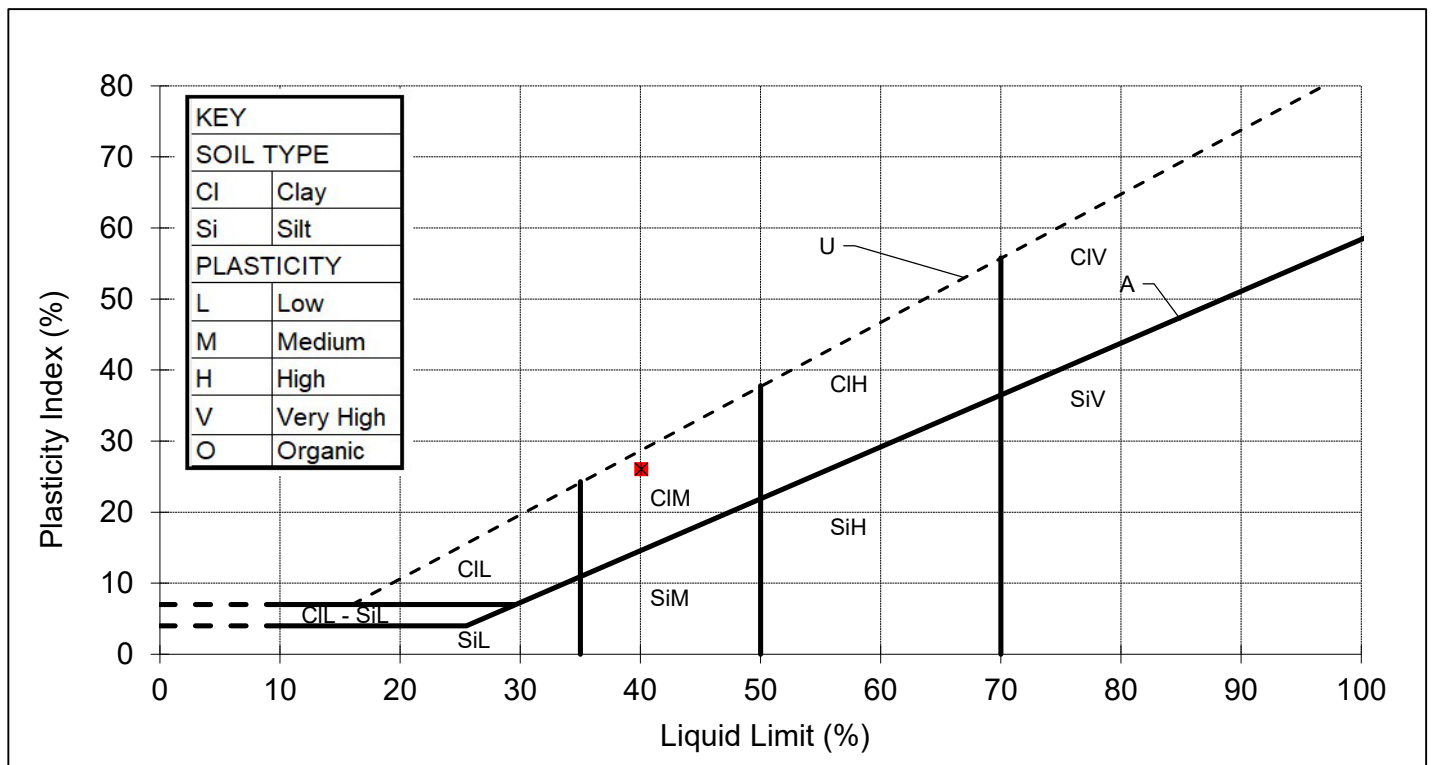
CLIENT	VHE Construction Plc
SITE	The Seam, Barnsley
JOB NUMBER	MRN 24328/1

SAMPLE LABEL	BH105 1.2-1.65 SPT (S)	DATE SAMPLED	Not advised
SAMPLE No.	527824	DATE RECEIVED	02-Aug-24
DATE TESTED	06-Sep-24	SAMPLED BY	Client

MATERIAL	Brown sandy gravelly CLAY		
ADVISED SOURCE	Site Won	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	19.6	39.9	1.009	
Determination 2 (avg)	19.5	39.5		

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
16.4	40	14	26	86



REMARKS

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DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870



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LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD

PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5

WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

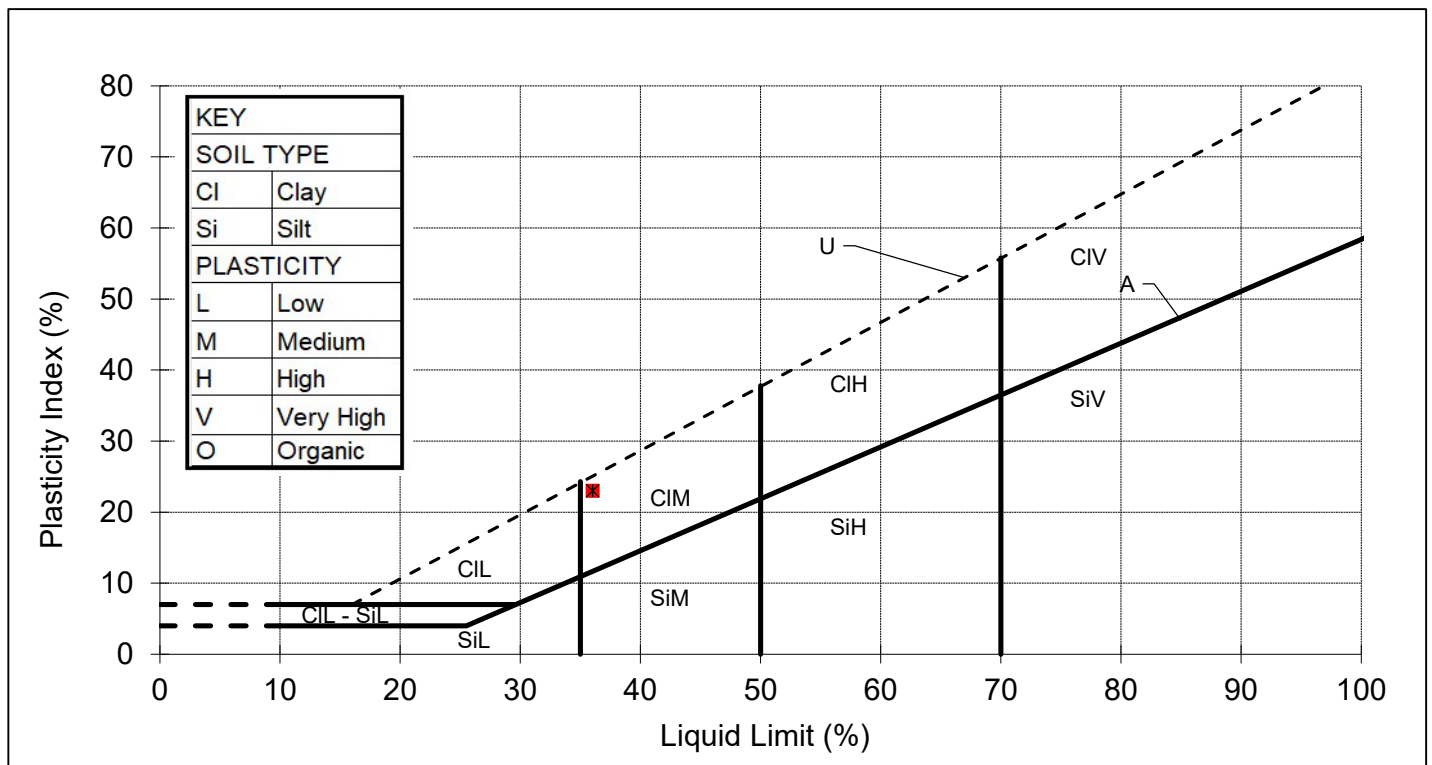
CLIENT	VHE Construction Plc
SITE	The Seam, Barnsley
JOB NUMBER	MRN 24328/1

SAMPLE LABEL	BH106 1.2-1.7 B	DATE SAMPLED	Not advised
SAMPLE No.	525956	DATE RECEIVED	02-Aug-24
DATE TESTED	06-Sep-24	SAMPLED BY	Client

MATERIAL	Made Ground		
ADVISED SOURCE	Site Won	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	21.2	36.6	0.980	
Determination 2 (avg)	21.4	36.9		

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
20.3	36	13	23	73



REMARKS

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TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD

PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5

WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

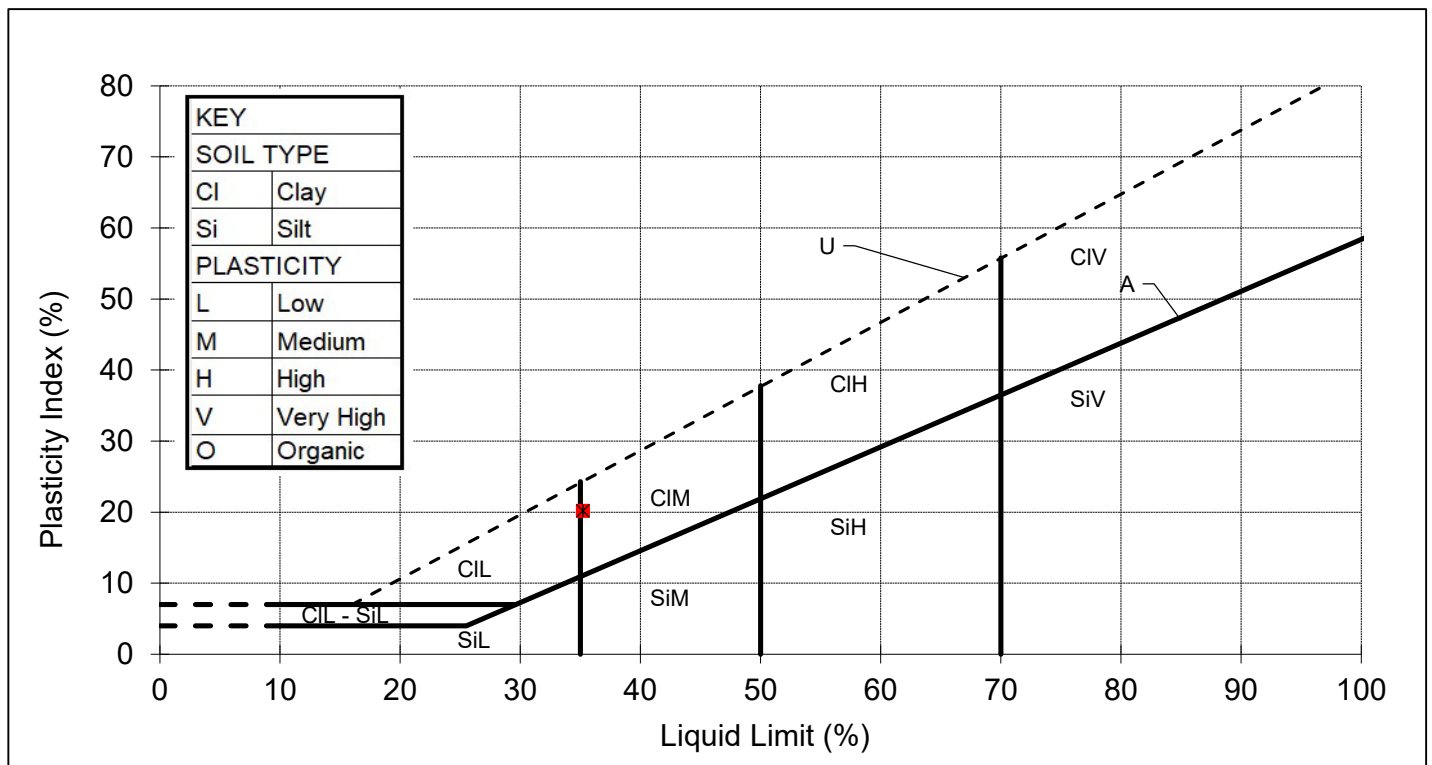
CLIENT	VHE Construction Plc
SITE	The Seam, Barnsley
JOB NUMBER	MRN 24328/1

SAMPLE LABEL	TP107 2 D	DATE SAMPLED	Not advised
SAMPLE No.	523811	DATE RECEIVED	02-Aug-24
DATE TESTED	06-Sep-24	SAMPLED BY	Client

MATERIAL	Made Ground		
ADVISED SOURCE	Site Won	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	20.0	35.3	1.000	
Determination 2 (avg)	20.0	35.1		

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
20.0	35	15	20	68



REMARKS

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TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD

PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5

WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

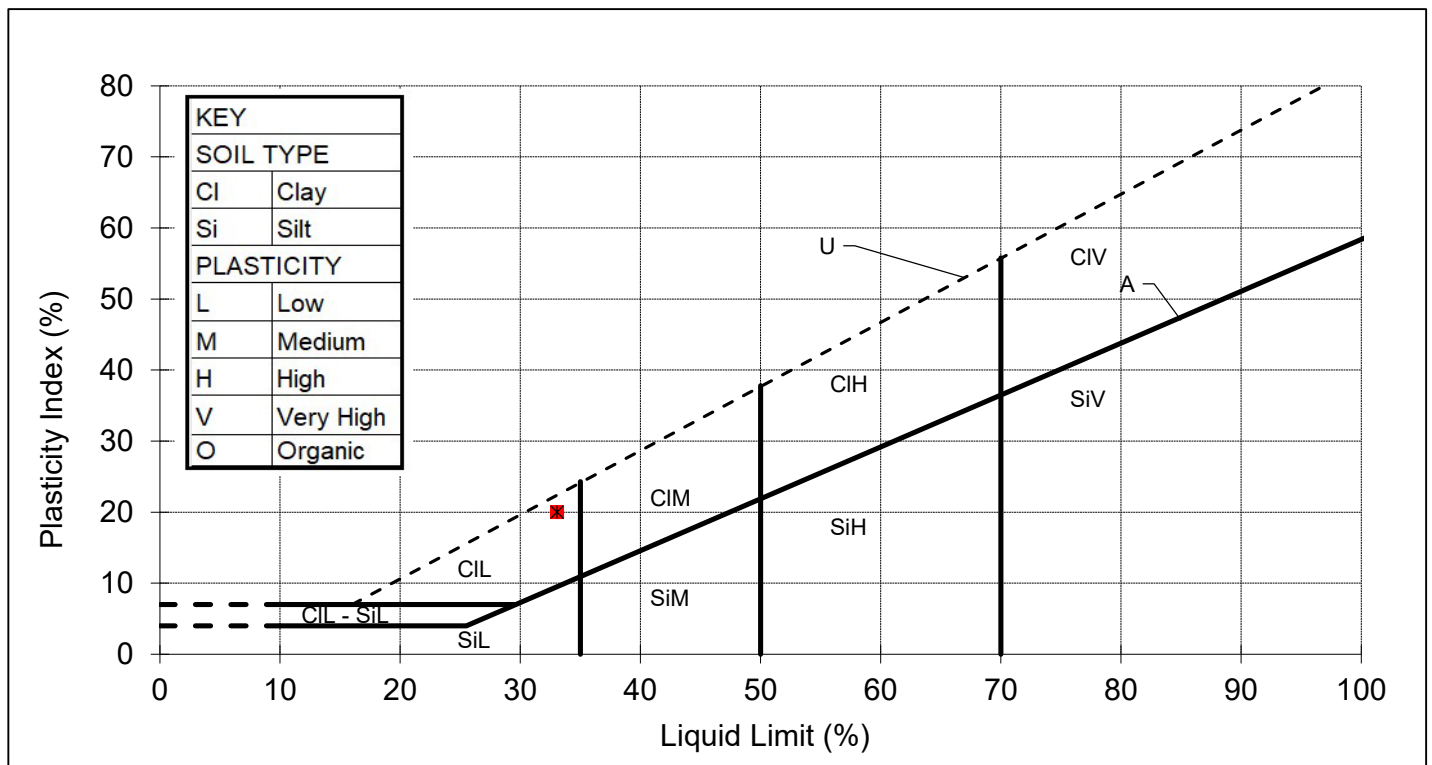
CLIENT	VHE Construction Plc
SITE	The Seam, Barnsley
JOB NUMBER	MRN 24328/1

SAMPLE LABEL	TP111 0.6 B	DATE SAMPLED	Not advised
SAMPLE No.	523814	DATE RECEIVED	02-Aug-24
DATE TESTED	06-Sep-24	SAMPLED BY	Client

MATERIAL	Made Ground		
ADVISED SOURCE	Site Won	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	19.6	32.8	1.006	
Determination 2 (avg)	19.6	32.9		

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
20.0	33	13	20	86



REMARKS

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TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD

PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5

WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

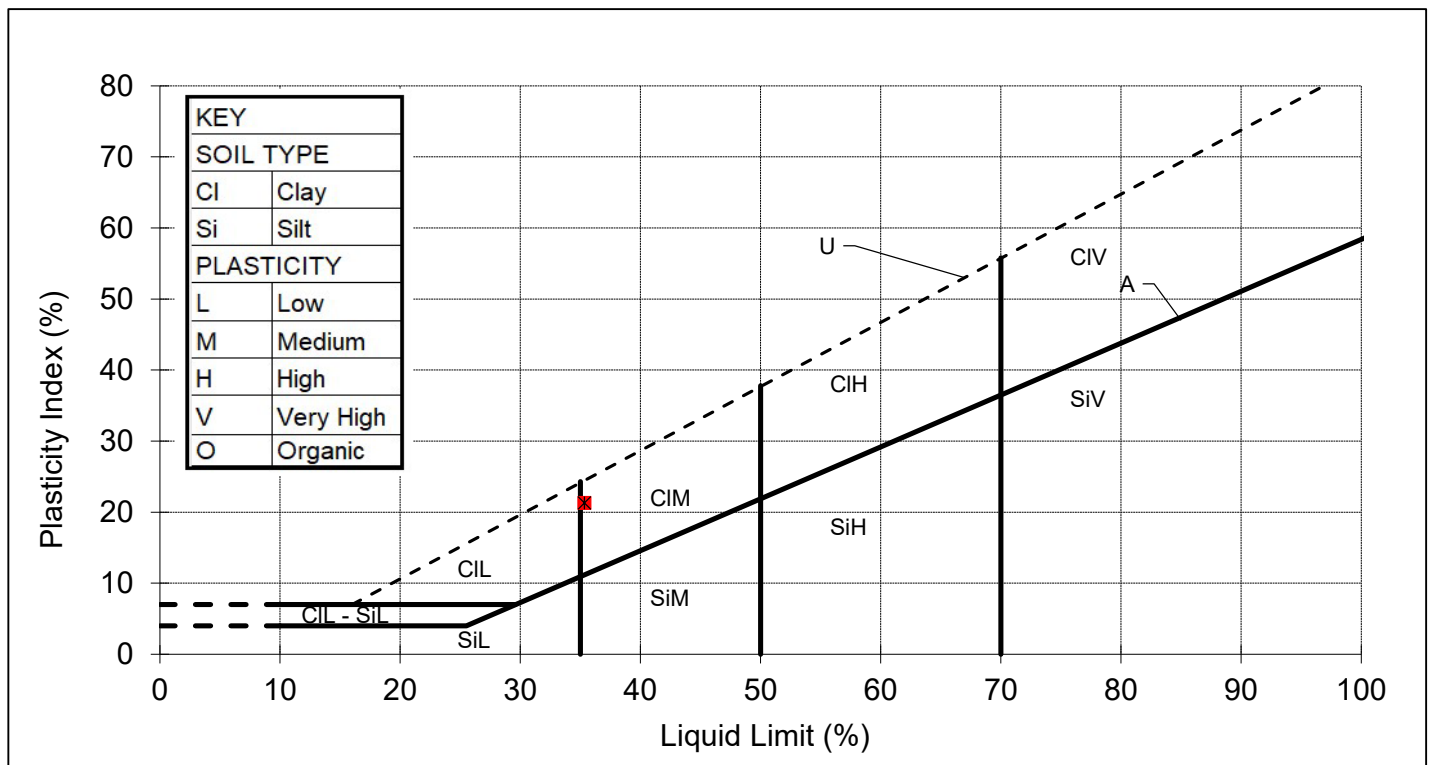
CLIENT	VHE Construction Plc
SITE	The Seam, Barnsley
JOB NUMBER	MRN 24328/1

SAMPLE LABEL	TP120 2.4 B	DATE SAMPLED	Not advised
SAMPLE No.	525932	DATE RECEIVED	02-Aug-24
DATE TESTED	06-Sep-24	SAMPLED BY	Client

MATERIAL	Made Ground		
ADVISED SOURCE	Site Won	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	20.5	35.6	0.994	
Determination 2 (avg)	20.3	35.5		

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
17.8	35	14	21	81



REMARKS

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DATE

26-Sep-24

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ANDREW HOUSE, HADFIELD STREET,
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TEL 0161 475 0870



TEST CERTIFICATE

DRY DENSITY/WATER CONTENT RELATIONSHIP 4.5KG RAMMER

BS 1377-2:2022 Cl.11

PARTICLE DENSITY METHOD BS 1377-2:2022 Cl.9.2

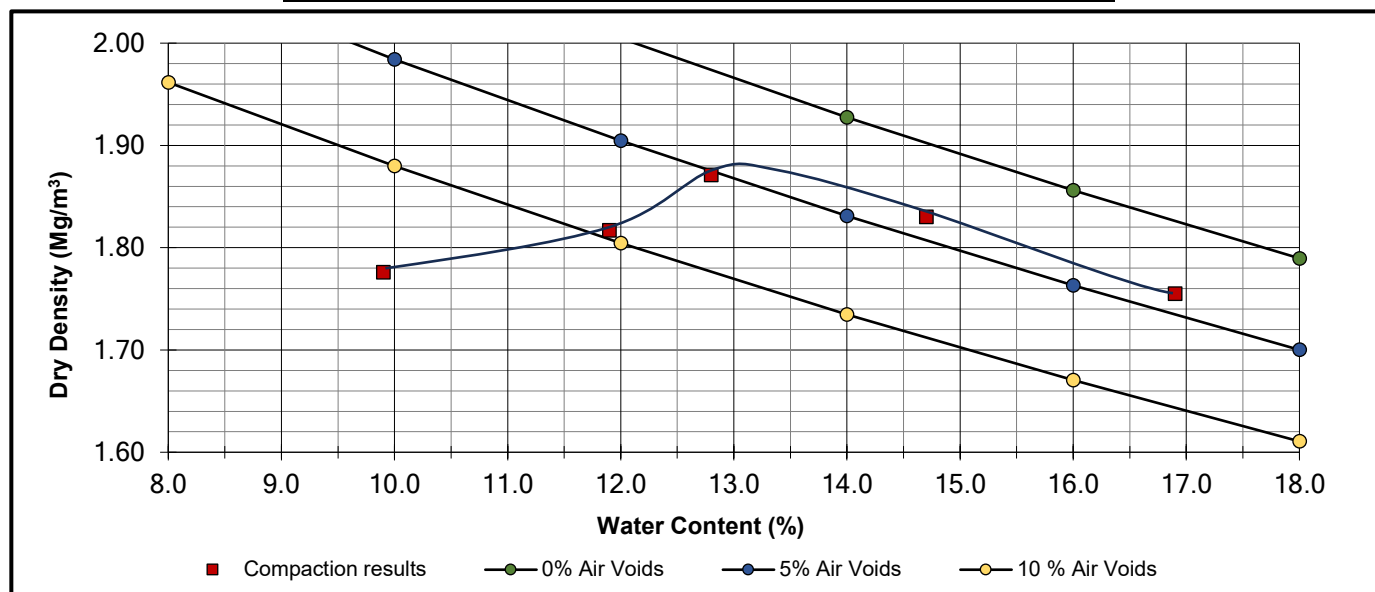
CLIENT	VHE Construction Plc
SITE	The Seam, Barnsley
JOB NUMBER	MRN 24328/1

SAMPLE LABEL	WS101 0.1-0.3 B	DATE SAMPLED	Not advised
SAMPLE NUMBER	527840	DATE RECEIVED	06-Aug-24
DATE TESTED	06-Sep-24	SAMPLED BY	Client

MATERIAL	Made Ground
ADVISED SOURCE	Site won
PRE TREATMENT	Air Dried / Separate Batches

RETAINED 37.5mm	7 %	GRADING ZONE	Zone 5
RETAINED 20mm	26 %	PARTICLE DENSITY	2.64 Mg/m ³ (Measured)

POINT NUMBER	WATER CONTENT (%)	DRY DENSITY (Mg/m ³)
1	9.9	1.776
2	11.9	1.817
3	12.8	1.871
4	14.7	1.830
5	16.9	1.755



OPTIMUM WATER CONTENT	13	(%)
MAXIMUM DRY DENSITY	1.88	(Mg/m ³)

REMARKS

NAME O.P. Davies BA (Hons)
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SIGNED

DATE 26-Sep-24

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TEST CERTIFICATE

DRY DENSITY/WATER CONTENT RELATIONSHIP 4.5KG RAMMER

BS 1377-2:2022 Cl.11

PARTICLE DENSITY METHOD BS 1377-2:2022 Cl.9.2

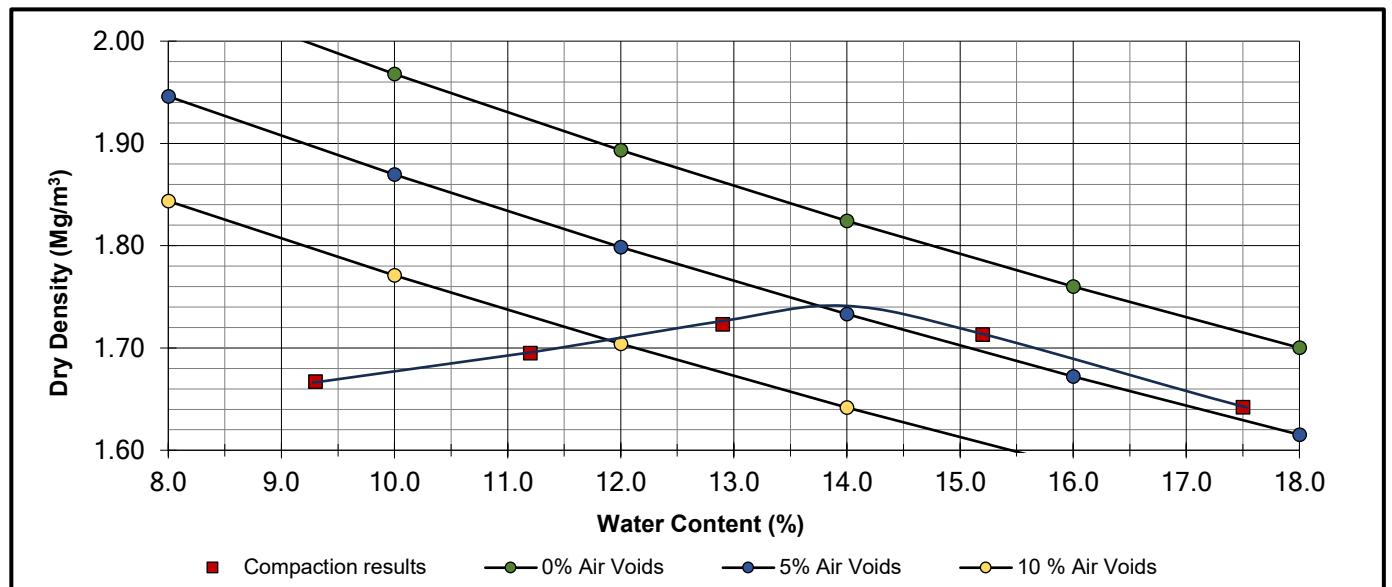
CLIENT	VHE Construction Plc		
SITE	The Seam, Barnsley		
JOB NUMBER	MRN 24328/1		

SAMPLE LABEL	WS101 0.1-0.3 B	DATE SAMPLED	Not advised
SAMPLE NUMBER	527840	DATE RECEIVED	06-Aug-24
DATE TESTED	06-Sep-24	SAMPLED BY	Client

MATERIAL	Made Ground		
ADVISED SOURCE	Site won		
PRE TREATMENT	Air Dried / Separate Batches		

RETAINED 37.5mm	7 %	GRADING ZONE	Zone 5
RETAINED 20mm	26 %	PARTICLE DENSITY	2.45 Mg/m ³ (Measured)

POINT NUMBER	WATER CONTENT (%)	DRY DENSITY (Mg/m ³)
1	9.3	1.667
2	11.2	1.695
3	12.9	1.723
4	15.2	1.713
5	17.5	1.642



OPTIMUM WATER CONTENT	14	(%)
MAXIMUM DRY DENSITY	1.74	(Mg/m ³)

REMARKS

NAME O.P. Davies BA (Hons)
(Director / Head of Laboratory)

SIGNED

DATE 26-Sep-24

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TEST CERTIFICATE

DRY DENSITY/WATER CONTENT RELATIONSHIP 4.5KG RAMMER

BS 1377-2:2022 Cl.11

PARTICLE DENSITY METHOD BS 1377-2:2022 Cl.9.2

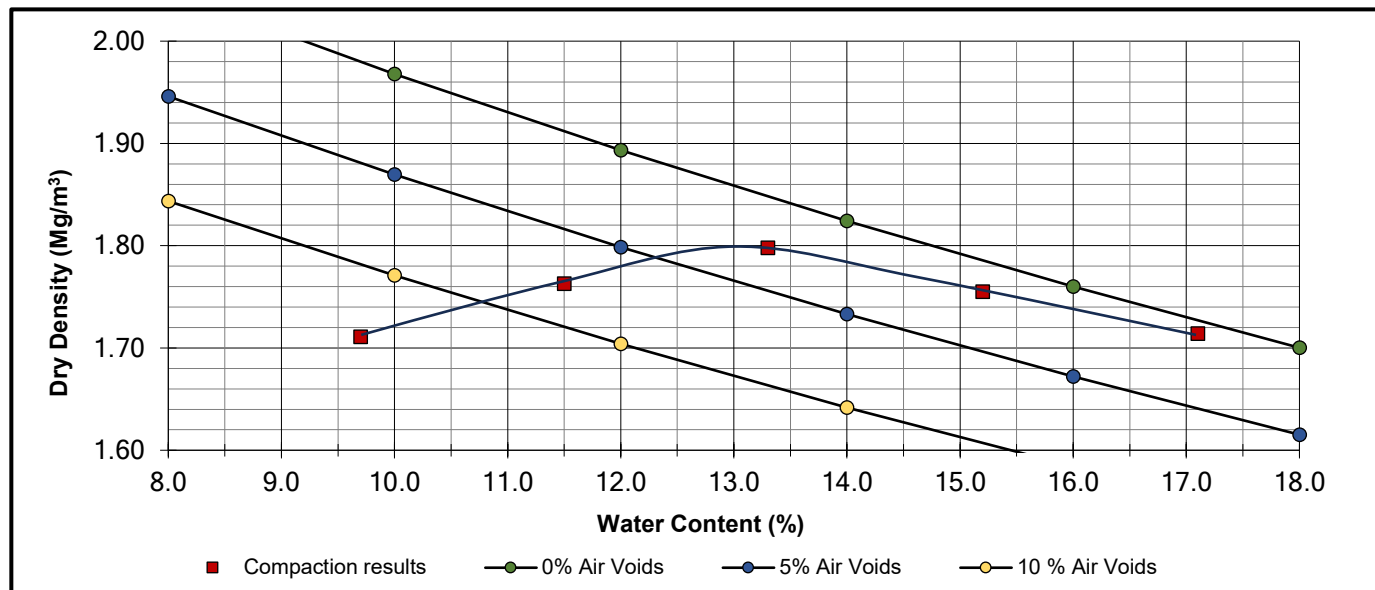
CLIENT	VHE Construction Plc		
SITE	The Seam, Barnsley		
JOB NUMBER	MRN 24328/1		

SAMPLE LABEL	TP109 1 B	DATE SAMPLED	Not advised
SAMPLE NUMBER	525912	DATE RECEIVED	02-Aug-24
DATE TESTED	06-Sep-24	SAMPLED BY	Client

MATERIAL	Weathered Bedrock		
ADVISED SOURCE	Site won		
PRE TREATMENT	Air Dried / Separate Batches		

RETAINED 37.5mm	28 %	GRADING ZONE	Zone X
RETAINED 20mm	38 %	PARTICLE DENSITY	2.45 Mg/m3 (Measured)

POINT NUMBER	WATER CONTENT (%)	DRY DENSITY (Mg/m ³)
1	9.7	1.711
2	11.5	1.763
3	13.3	1.798
4	15.2	1.755
5	17.1	1.714



OPTIMUM WATER CONTENT	13	(%)
MAXIMUM DRY DENSITY	1.80	(Mg/m ³)

REMARKS

NAME O.P. Davies BA (Hons)
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DATE 26-Sep-24

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TEL 0161 475 0870



TEST CERTIFICATE

DRY DENSITY/WATER CONTENT RELATIONSHIP 4.5KG RAMMER

BS 1377-2:2022 Cl.11

PARTICLE DENSITY METHOD BS 1377-2:2022 Cl.9.2

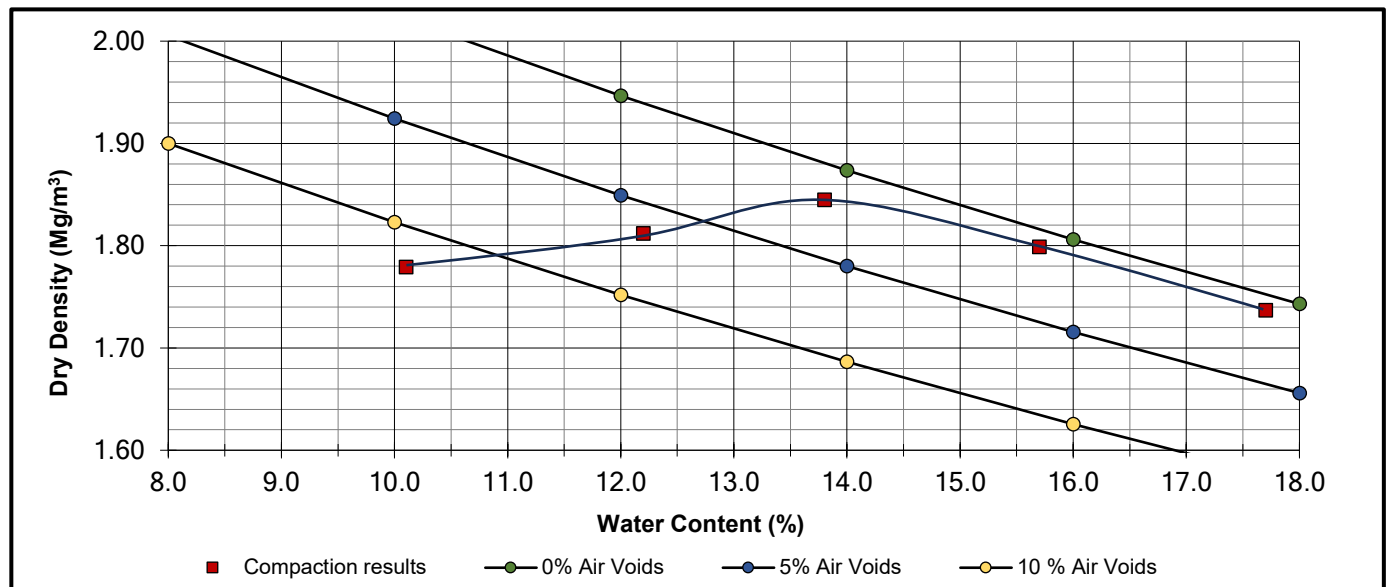
CLIENT	VHE Construction Plc
SITE	The Seam, Barnsley
JOB NUMBER	MRN 24328/1

SAMPLE LABEL	TP111 1.4 B	DATE SAMPLED	Not advised
SAMPLE NUMBER	525915	DATE RECEIVED	02-Aug-24
DATE TESTED	06-Sep-24	SAMPLED BY	Client

MATERIAL	Made Ground
ADVISED SOURCE	Site won
PRE TREATMENT	Air Dried / Separate Batches

RETAINED 37.5mm	35 %	GRADING ZONE	Zone X
RETAINED 20mm	51 %	PARTICLE DENSITY	2.54 Mg/m ³ (Measured)

POINT NUMBER	WATER CONTENT (%)	DRY DENSITY (Mg/m ³)
1	10.1	1.779
2	12.2	1.812
3	13.8	1.845
4	15.7	1.799
5	17.7	1.737



OPTIMUM WATER CONTENT	14	(%)
MAXIMUM DRY DENSITY	1.84	(Mg/m ³)

REMARKS

NAME O.P. Davies BA (Hons)
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TEST CERTIFICATE

DRY DENSITY/WATER CONTENT RELATIONSHIP 4.5KG RAMMER

BS 1377-2:2022 Cl.11

PARTICLE DENSITY METHOD BS 1377-2:2022 Cl.9.2

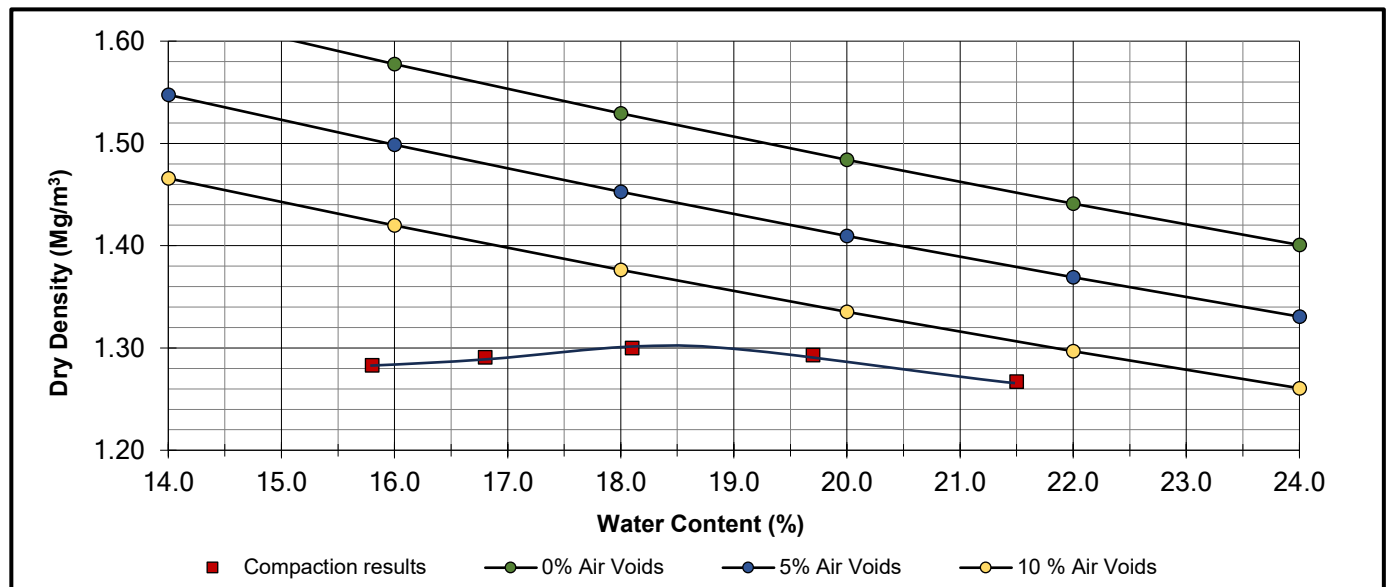
CLIENT	VHE Construction Plc
SITE	The Seam, Barnsley
JOB NUMBER	MRN 24328/1

SAMPLE LABEL	TP112 1.2 B	DATE SAMPLED	Not advised
SAMPLE NUMBER	525921	DATE RECEIVED	02-Aug-24
DATE TESTED	06-Sep-24	SAMPLED BY	Client

MATERIAL	Made Ground
ADVISED SOURCE	Site won
PRE TREATMENT	Air Dried / Separate Batches

RETAINED 37.5mm	35 %	GRADING ZONE	Zone X
RETAINED 20mm	51 %	PARTICLE DENSITY	2.11 Mg/m ³ (Measured)

POINT NUMBER	WATER CONTENT (%)	DRY DENSITY (Mg/m ³)
1	15.8	1.283
2	16.8	1.291
3	18.1	1.300
4	19.7	1.293
5	21.5	1.267



OPTIMUM WATER CONTENT	18 (%)
MAXIMUM DRY DENSITY	1.30 (Mg/m ³)

REMARKS

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TEST CERTIFICATE

DRY DENSITY/WATER CONTENT RELATIONSHIP 4.5KG RAMMER

BS 1377-2:2022 Cl.11

PARTICLE DENSITY METHOD BS 1377-2:2022 Cl.9.2

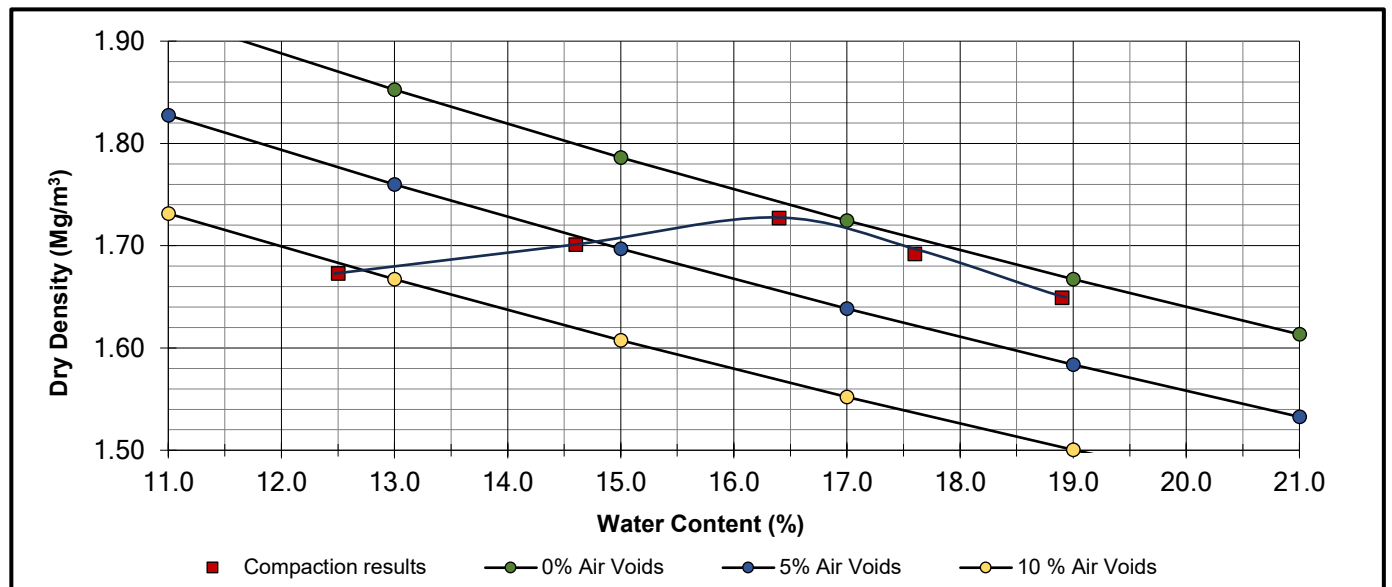
CLIENT	VHE Construction Plc		
SITE	The Seam, Barnsley		
JOB NUMBER	MRN 24328/1		

SAMPLE LABEL	TP121 2 B	DATE SAMPLED	Not advised
SAMPLE NUMBER	525108	DATE RECEIVED	31-Jul-24
DATE TESTED	06-Sep-24	SAMPLED BY	Client

MATERIAL	Made Ground		
ADVISED SOURCE	Site won		
PRE TREATMENT	Air Dried / Separate Batches		

RETAINED 37.5mm	1	%	GRADING ZONE	Zone 4	
RETAINED 20mm	8	%	PARTICLE DENSITY	2.44	Mg/m ³ (Measured)

POINT NUMBER	WATER CONTENT (%)	DRY DENSITY (Mg/m ³)
1	12.5	1.673
2	14.6	1.701
3	16.4	1.727
4	17.6	1.692
5	18.9	1.649



OPTIMUM WATER CONTENT	16	(%)
MAXIMUM DRY DENSITY	1.72	(Mg/m ³)

REMARKS

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TEST CERTIFICATE

DRY DENSITY/WATER CONTENT RELATIONSHIP 4.5KG RAMMER

BS 1377-2:2022 Cl.11

PARTICLE DENSITY METHOD BS 1377-2:2022 Cl.9.2

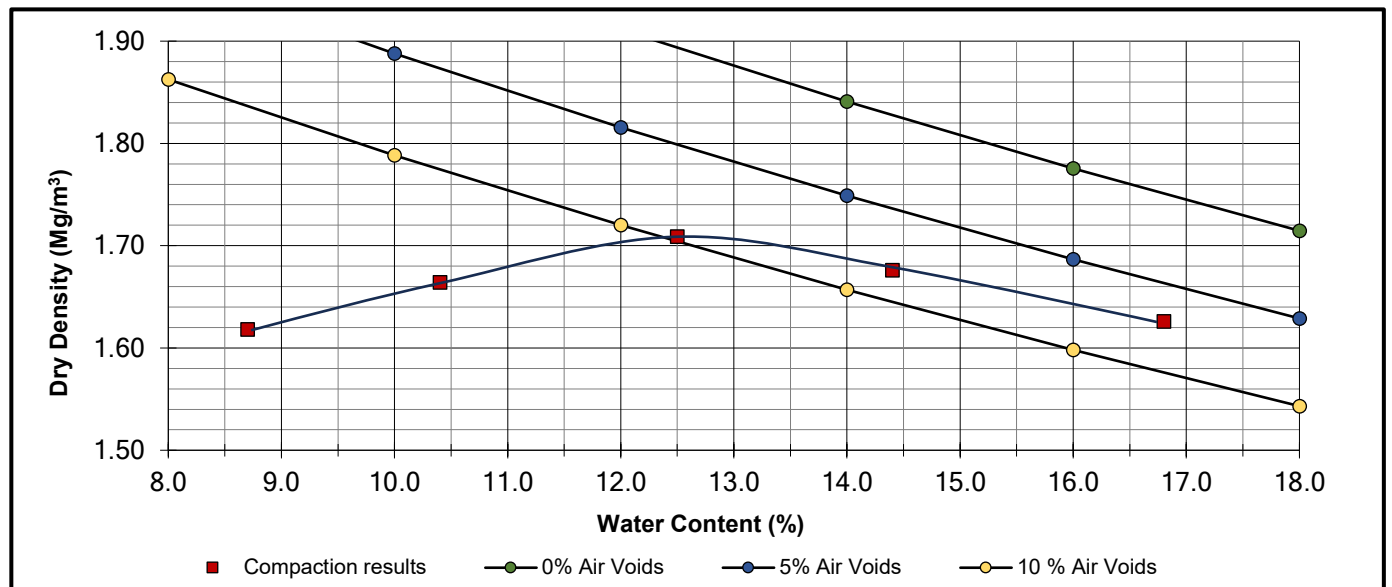
CLIENT	VHE Construction Plc		
SITE	The Seam, Barnsley		
JOB NUMBER	MRN 24328/1		

SAMPLE LABEL	TP124 0.9 B	DATE SAMPLED	Not advised
SAMPLE NUMBER	523005	DATE RECEIVED	30-Jul-24
DATE TESTED	06-Sep-24	SAMPLED BY	Client

MATERIAL	Made Ground		
ADVISED SOURCE	Site won		
PRE TREATMENT	Air Dried / Separate Batches		

RETAINED 37.5mm	41 %	GRADING ZONE	Zone X
RETAINED 20mm	51 %	PARTICLE DENSITY	2.48 Mg/m ³ (Measured)

POINT NUMBER	WATER CONTENT (%)	DRY DENSITY (Mg/m ³)
1	8.7	1.618
2	10.4	1.664
3	12.5	1.709
4	14.4	1.676
5	16.8	1.626



OPTIMUM WATER CONTENT	13	(%)
MAXIMUM DRY DENSITY	1.70	(Mg/m ³)

REMARKS

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TEST CERTIFICATE

DRY DENSITY/WATER CONTENT RELATIONSHIP 4.5KG RAMMER

BS 1377-2:2022 Cl.11

PARTICLE DENSITY METHOD BS 1377-2:2022 Cl.9.2

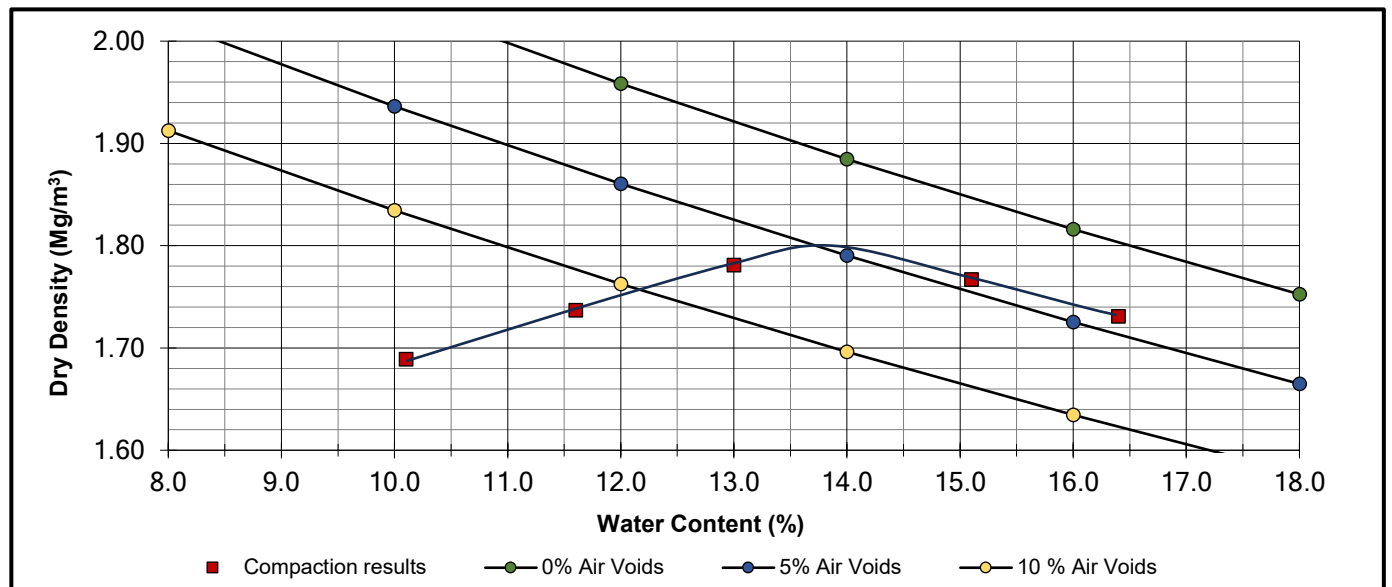
CLIENT	VHE Construction Plc		
SITE	The Seam, Barnsley		
JOB NUMBER	MRN 24328/1		

SAMPLE LABEL	TP126 1.8 B	DATE SAMPLED	Not advised
SAMPLE NUMBER	525901	DATE RECEIVED	02-Aug-24
DATE TESTED	06-Sep-24	SAMPLED BY	Client

MATERIAL	Made Ground		
ADVISED SOURCE	Site won		
PRE TREATMENT	Air Dried / Separate Batches		

RETAINED 37.5mm	17 %	GRADING ZONE	Zone X
RETAINED 20mm	25 %	PARTICLE DENSITY	2.56 Mg/m ³ (Measured)

POINT NUMBER	WATER CONTENT (%)	DRY DENSITY (Mg/m ³)
1	10.1	1.689
2	11.6	1.737
3	13.0	1.781
4	15.1	1.767
5	16.4	1.731



OPTIMUM WATER CONTENT	14	(%)
MAXIMUM DRY DENSITY	1.80	(Mg/m ³)

REMARKS

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TEST CERTIFICATE

DETERMINATION OF DENSITY, ONE POINT COMPACTION 2.5kg RAMMER METHOD

CLIENT	VHE Construction Plc
SITE	The Seam, Barnsley
JOB NUMBER	MRN 24328/1

DATE SAMPLED	Not Advised	DATE RECEIVED	30-Jul-24 - 07-Aug-24
DATE TESTED	11-Sep-24	SAMPLED BY	Client
SAMPLE LOCATION	Not Advised	MATERIAL SOURCE	Site Won

Sample Number	Sample Label	Material	Bulk Density (Mg/m ³)
529801	WS 101 0.1-0.3m B	Made Ground	1.92
529804	WS 101 1.2-1.4m B	Made Ground	2.19
529810	WS 102 1.0-1.2m B	Made Ground	2.10
529814	WS 103 0.8-1.0m B	Made Ground	1.94
527867	WS 107 0.9-1.1m B	Made Ground	1.86
527869	WS 109 0.2-0.4m B	Made Ground	1.94
527872	WS 109 2.4-2.6m B	Made Ground	1.94
529842	WS 110 1.2-1.4m B	Made Ground	1.65
527844	BH103 0.4-0.6m B	Made Ground	2.14
525941	BH 104 0.2-0.4m B	Made Ground	2.19
525952	BH 106 0.2-0.4m B	Made Ground	1.92

REMARKS/ABNORMALITIES

SIGNED 
NAME O.P. Davies BA (Hons)
(Director / Head of Laboratory)

DATE 26-Sep-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

TEST CERTIFICATE

DETERMINATION OF DENSITY, ONE POINT COMPACTION 2.5kg RAMMER METHOD

CLIENT	VHE Construction Plc
SITE	The Seam, Barnsley
JOB NUMBER	MRN 24328/1

DATE SAMPLED	Not Advised	DATE RECEIVED	30-Jul-24 - 07-Aug-24
DATE TESTED	11-Sep-24	SAMPLED BY	Client
SAMPLE LOCATION	Not Advised	MATERIAL SOURCE	Site Won

Sample Number	Sample Label	Material	Bulk Density (Mg/m ³)
525957	BH 106 1.9-2.0m B	Made Ground	1.92
525908	TP 105 0.9m B	Made Ground	2.19
525101	TP 114 1.5m B	Made Ground	2.10
525105	TP 119 1.5m B	Made Ground	1.94

REMARKS/ABNORMALITIES

SIGNED



NAME O.P. Davies BA (Hons)
(Director / Head of Laboratory)

DATE

26-Sep-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870



TEST CERTIFICATE

PARTICLE DENSITY DETERMINATION

BS 1377-2:2022 Cl. 9.2

GAS JAR METHOD

CLIENT	VHE Construction Plc
SITE	The Seam, Barnsley
JOB NUMBER	MRN 24328/1

METHOD OF PREPARATION	Oven Dry	VARIATIONS FROM PROCEDURE	None
DATE OF TEST	11-Sep-24	DATE SAMPLED	Not advised

Laboratory Sample Number	Sample Label	Sample Location	Material	Particle Density (Mg/m ³)
527867	WS 107 0.9-1.1m B	WS 107	Made Ground	2.51
527840	BH102 2.0-2.5m B	BH102	Brown CLAY	2.64
525941	BH 104 0.2-0.4m B	BH 104	Made Ground	2.48
525950	BH 105 1.2-1.7m B	BH 105	Brown CLAY	2.45
525912	TP 109 1.0m B	TP 109	Weathered Bedrock	2.55
525915	TP 111 1.4m B	TP 111	Made Ground	2.54
525921	TP 112 1.2m B	TP 112	Made Ground	2.11
523003	TP 115 2.0m B	TP 115	Brown gravelly CLAY	2.63
525108	TP 121 2.0m B	TP 121	Made Ground	2.44
523005	TP 124 0.9m B	TP 124	Made Ground	2.48
525901	TP 126 1.8m B	TP 126	Grey silty sandy CLAY	2.56

Comment / Anomalies

Particle density reported is the average of two determinations

NAME O.P. Davies BA (Hons)
(Director / Head of Laboratory)

SIGNED

DATE

26-Sep-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870



TEST CERTIFICATE

MOISTURE CONDITION VALUE

BS 1377-2:2022 Cl. 13

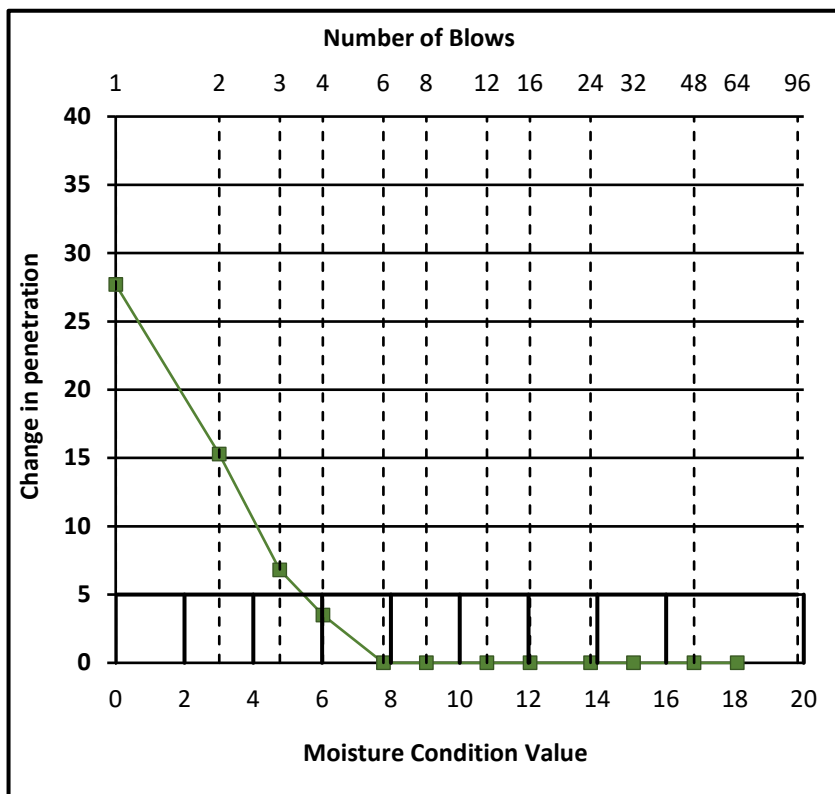
DETERMINATION OF WATER CONTENT - BS EN ISO 17892-1:2014+A1:2022

CLIENT	VHE Construction Plc
SITE	The Seam, Barnsley
JOB NUMBER	MRN 24328/1

SAMPLE LABEL	WS 107 0.9-1.1m B	DATE SAMPLED	Not advised
LAB SAMPLE No	527867	DATE RECEIVED	06-Aug-24
DATE TESTED	06-Sep-24	SAMPLED BY	Client

MATERIAL	Made Ground
ADVISED SOURCE	Site Won
INTERPRETATION OF TEST CURVE	Straight line through 5mm change in penetration
PROPORTION LARGER THAN 20mm	0%

Total number of blows (n)	Penetration (mm)	Change in penetration n to 4 n (mm)
1	102.2	27.7
2	86.9	15.3
3	78.2	6.8
4	74.5	3.5
6	71.8	
8	71.6	
12	71.4	
16	71.0	
24		
32		
48		
64		
96		
128		
192		
256		



MOISTURE CONDITION VALUE	5.2
WATER CONTENT	21.4 %

REMARKS

NAME O.P. Davies BA (Hons) SIGNED
(Director / Head of Laboratory)

DATE 26-Sep-24

MURRAY RIX

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DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870



TEST CERTIFICATE

MOISTURE CONDITION VALUE

BS 1377-2:2022 Cl. 13

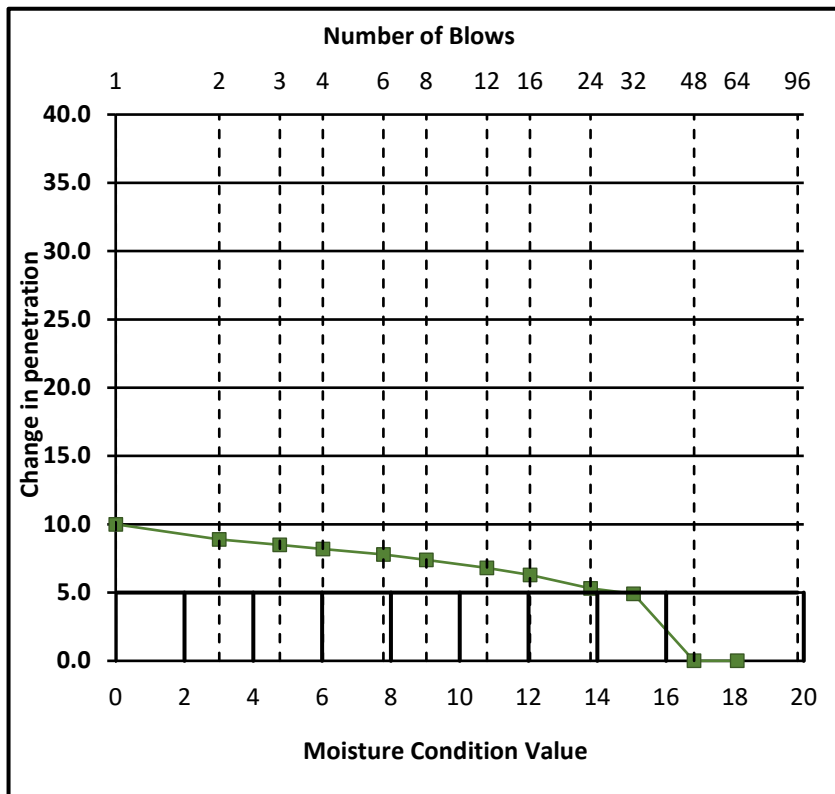
DETERMINATION OF WATER CONTENT - BS EN ISO 17892-1:2014+A1:2022

CLIENT	VHE Construction Plc
SITE	The Seam, Barnsley
JOB NUMBER	MRN 24328/1

SAMPLE LABEL	BH 104 0.2-0.4m B	DATE SAMPLED	Not advised
LAB SAMPLE No	525941	DATE RECEIVED	02-Aug-24
DATE TESTED	06-Sep-24	SAMPLED BY	Client

MATERIAL	Made Ground
ADVISED SOURCE	Site Won
INTERPRETATION OF TEST CURVE	Straight line through 5mm change in penetration
PROPORTION LARGER THAN 20mm	10%

Total number of blows (n)	Penetration (mm)	Change in penetration n to 4 n (mm)
1	91.5	10.0
2	86.0	8.9
3	83.3	8.5
4	81.5	8.2
6	78.8	7.8
8	77.1	7.4
12	74.8	6.8
16	73.3	6.3
24	71.0	5.3
32	69.7	4.9
48	68.0	
64	67.0	
96	65.7	
128	64.8	
192		
256		



MOISTURE CONDITION VALUE	14.5
WATER CONTENT	13.2 %

REMARKS

NAME O.P. Davies BA (Hons) SIGNED
(Director / Head of Laboratory)

DATE 26-Sep-24

MURRAY RIX

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DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870



TEST CERTIFICATE

MOISTURE CONDITION VALUE

BS 1377-2:2022 Cl. 13

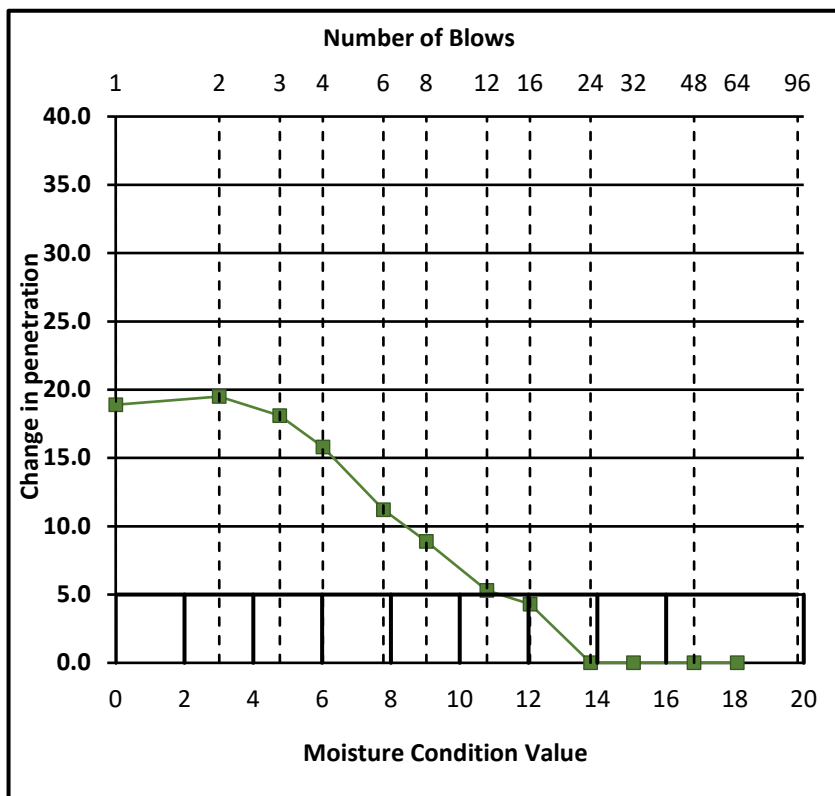
DETERMINATION OF WATER CONTENT - BS EN ISO 17892-1:2014+A1:2022

CLIENT	VHE Construction Plc
SITE	The Seam, Barnsley
JOB NUMBER	MRN 24328/1

SAMPLE LABEL	TP 112 1.2m B	DATE SAMPLED	Not advised
LAB SAMPLE No	525921	DATE RECEIVED	02-Aug-24
DATE TESTED	06-Sep-24	SAMPLED BY	Client

MATERIAL	Made Ground
ADVISED SOURCE	Site Won
INTERPRETATION OF TEST CURVE	Straight line through 5mm change in penetration
PROPORTION LARGER THAN 20mm	51%

Total number of blows (n)	Penetration (mm)	Change in penetration n to 4 n (mm)
1	122.4	18.9
2	113.5	19.5
3	107.5	18.1
4	103.5	15.8
6	97.7	11.2
8	94.0	8.9
12	89.4	5.3
16	87.7	4.3
24	86.5	
32	85.1	
48	84.1	
64	83.4	
96		
128		
192		
256		



MOISTURE CONDITION VALUE	10.4
WATER CONTENT	21.2 %

REMARKS

NAME O.P. Davies BA (Hons) SIGNED
(Director / Head of Laboratory)

DATE 26-Sep-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870



TEST CERTIFICATE

MOISTURE CONDITION VALUE

BS 1377-2:2022 Cl. 13

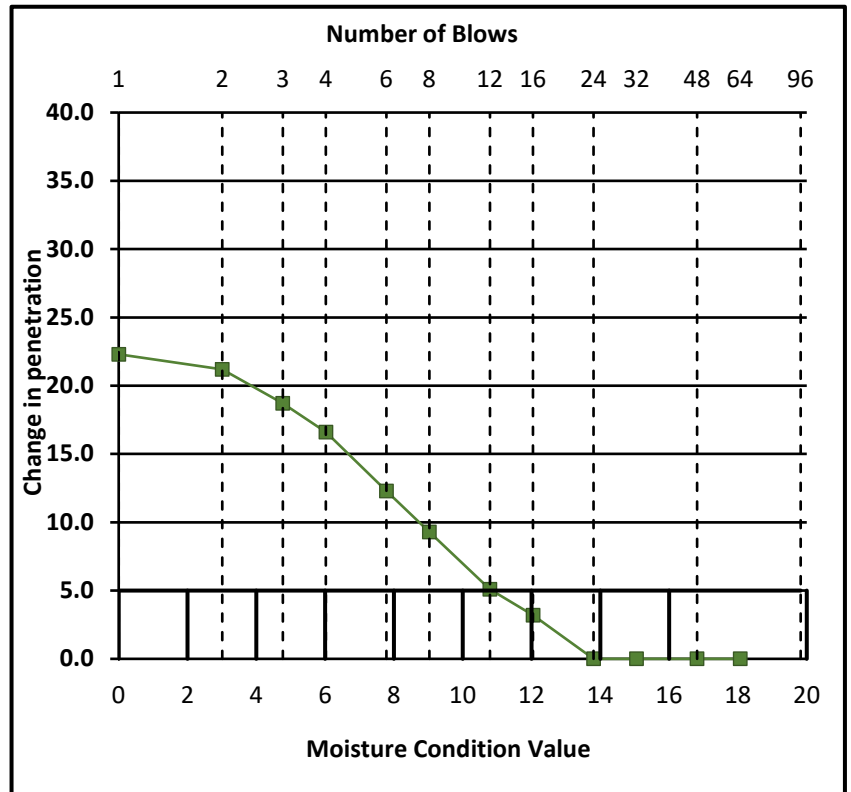
DETERMINATION OF WATER CONTENT - BS EN ISO 17892-1:2014+A1:2022

CLIENT	VHE Construction Plc
SITE	The Seam, Barnsley
JOB NUMBER	MRN 24328/1

SAMPLE LABEL	TP 115 2.0m B	DATE SAMPLED	Not advised
LAB SAMPLE No	523003	DATE RECEIVED	02-Aug-24
DATE TESTED	06-Sep-24	SAMPLED BY	Client

MATERIAL	Made Ground
ADVISED SOURCE	Site Won
INTERPRETATION OF TEST CURVE	Straight line through 5mm change in penetration
PROPORTION LARGER THAN 20mm	6%

Total number of blows (n)	Penetration (mm)	Change in penetration n to 4 n (mm)
1	101.6	22.3
2	90.5	21.2
3	83.5	18.7
4	79.3	16.6
6	73.0	12.3
8	69.3	9.3
12	64.8	5.1
16	62.7	3.2
24	60.7	
32	60.0	
48	59.7	
64	59.5	
96		
128		
192		
256		



MOISTURE CONDITION VALUE	10.8
WATER CONTENT	22.3 %

REMARKS

NAME O.P. Davies BA (Hons) SIGNED
(Director / Head of Laboratory)

DATE 26-Sep-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870



TEST CERTIFICATE

MOISTURE CONDITION VALUE

BS 1377-2:2022 Cl. 13

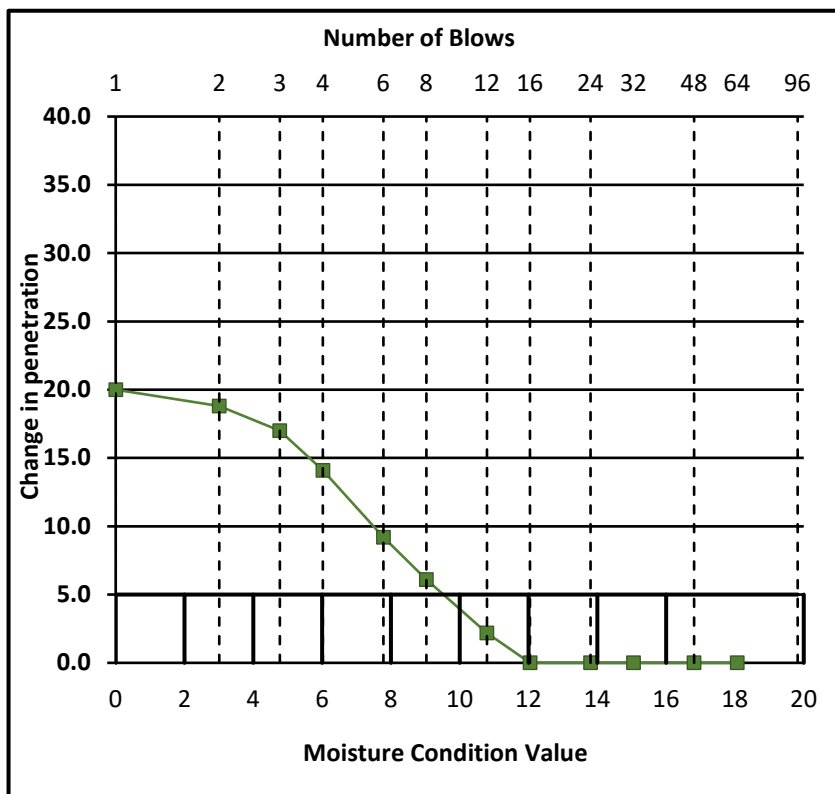
DETERMINATION OF WATER CONTENT - BS EN ISO 17892-1:2014+A1:2022

CLIENT	VHE Construction Plc
SITE	The Seam, Barnsley
JOB NUMBER	MRN 24328/1

SAMPLE LABEL	TP 126 1.8m B	DATE SAMPLED	Not advised
LAB SAMPLE No	525901	DATE RECEIVED	02-Aug-24
DATE TESTED	06-Sep-24	SAMPLED BY	Client

MATERIAL	Made Ground
ADVISED SOURCE	Site Won
INTERPRETATION OF TEST CURVE	Straight line through 5mm change in penetration
PROPORTION LARGER THAN 20mm	13%

Total number of blows (n)	Penetration (mm)	Change in penetration n to 4 n (mm)
1	98.1	20.0
2	88.0	18.8
3	82.2	17.0
4	78.1	14.1
6	72.6	9.2
8	69.2	6.1
12	65.2	2.2
16	64.0	
24	63.4	
32	63.1	
48	63.0	
64		
96		
128		
192		
256		



MOISTURE CONDITION VALUE	9.5
WATER CONTENT	14.1 %

REMARKS

NAME O.P. Davies BA (Hons) SIGNED
(Director / Head of Laboratory)

DATE 26-Sep-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

TEST CERTIFICATE

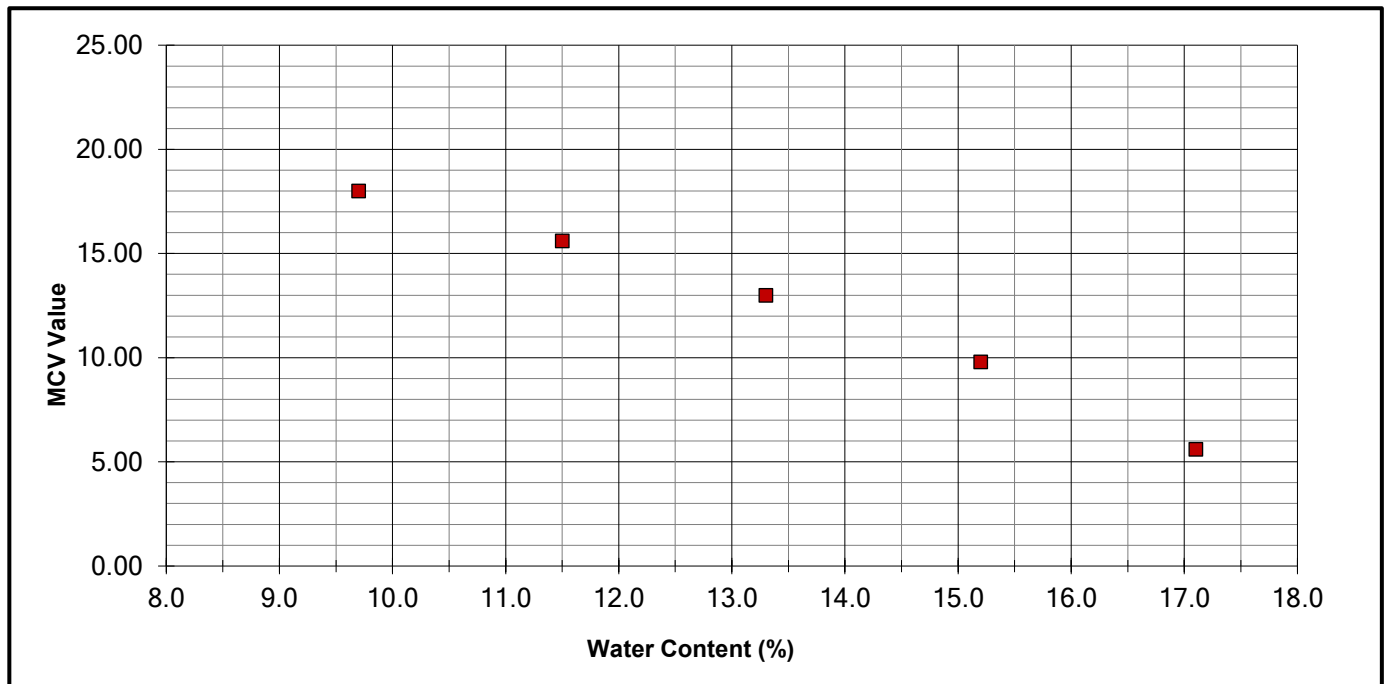
DETERMINATION OF THE MCV/WATER CONTENT RELATION OF A SOIL
BS 1377-2:2022 Cl. 13.5

CLIENT	VHE Construction Plc		
SITE	The Seam, Barnsley		
JOB NUMBER	MRN 24328/1		

SAMPLE LABEL	TP112 1.2 B	DATE SAMPLED	Not advised
SAMPLE NUMBER	525921	DATE RECEIVED	02-Aug-24
DATE TESTED	06-Sep-24	SAMPLED BY	Client

MATERIAL	Weathered Bedrock		
ADVISED SOURCE	Site won		
PRE TREATMENT	Air Dried / Separate Batches		
RETAINED 20mm	38	%	

POINT NUMBER	WATER CONTENT (%)	MCV VALUE
1	9.7	18.0
2	11.5	15.6
3	13.3	13.0
4	15.2	9.8
5	17.1	5.6



REMARKS

SIGNED

NAME O.P. Davies BA (Hons)
(Director / Head of Laboratory)

DATE 26-Sep-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

TEST CERTIFICATE

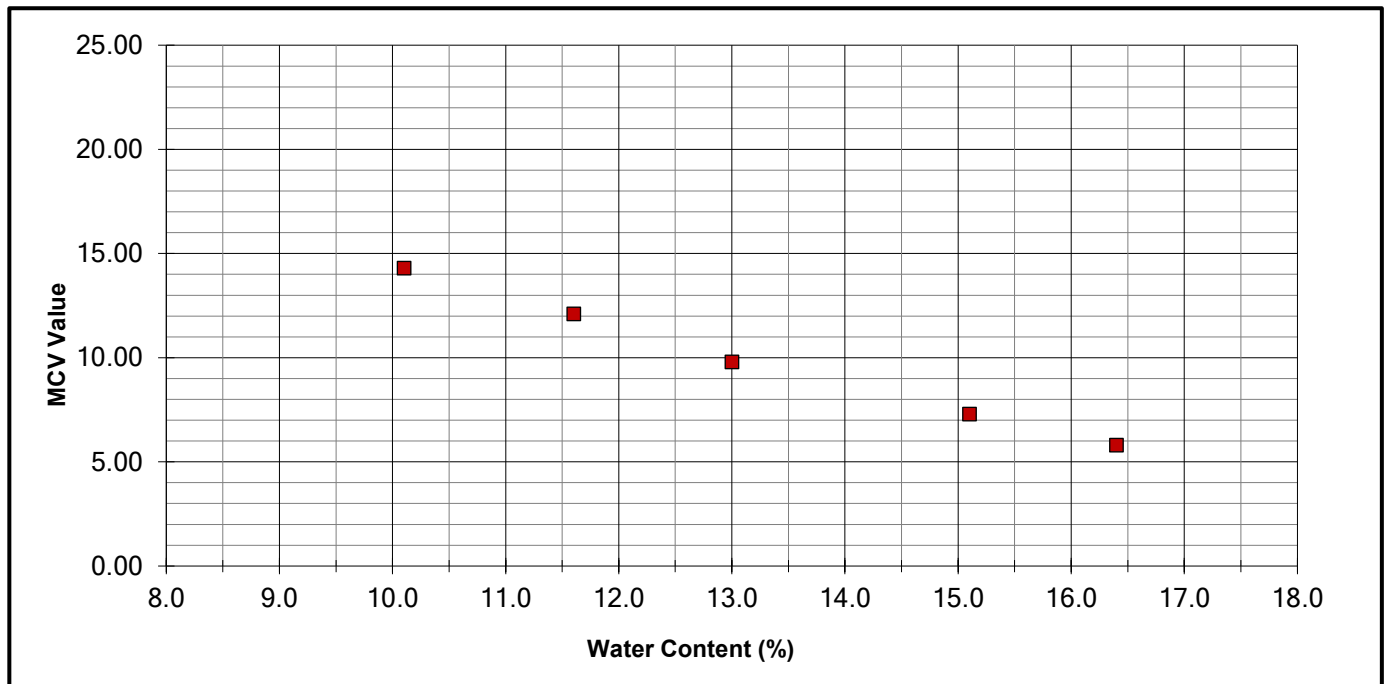
DETERMINATION OF THE MCV/WATER CONTENT RELATION OF A SOIL
BS 1377-2:2022 Cl. 13.5

CLIENT	VHE Construction Plc
SITE	The Seam, Barnsley
JOB NUMBER	MRN 24328/1

SAMPLE LABEL	TP126 1.8 B	DATE SAMPLED	Not advised
SAMPLE NUMBER	525901	DATE RECEIVED	02-Aug-24
DATE TESTED	06-Sep-24	SAMPLED BY	Client

MATERIAL	Made Ground
ADVISED SOURCE	Site won
PRE TREATMENT	Air Dried / Separate Batches
RETAINED 20mm	25 %

POINT NUMBER	WATER CONTENT (%)	MCV VALUE
1	10.1	14.3
2	11.6	12.1
3	13.0	9.8
4	15.1	7.3
5	16.4	5.8



REMARKS

SIGNED

NAME O.P. Davies BA (Hons)
(Director / Head of Laboratory)

DATE 26-Sep-24

MURRAY RIX
ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

TEST CERTIFICATE
DETERMINATION OF ORGANIC CONTENT OF SOIL
BS 1377-3:2018+A1:2021, Cl. 4

CLIENT	VHE Construction Plc		
SITE	The Seam, Barnsley		
JOB NUMBER	MRN 24328/1		

DATE TESTED	10-Sep-24	DATE SAMPLED	Not advised
SAMPLED BY	Client	DATE RECEIVED	06-Aug-24
PRE-TREATMENT	Air Dried	ADVISED SOURCE	Site Won

Sample Number	Sample Label	Material	% Passing 2mm	Mean Organic Content (%)
527813	BH103 2-2.45 SPT (S)	MADE GROUND	64	1.2

REMARKS

SIGNED



NAME

O.P. Davies BA (Hons)
(Director / Head of Laboratory)

DATE

26-Sep-24

MURRAY RIX
ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

TEST CERTIFICATE
DETERMINATION OF THE LOSS ON IGNITION
BS 1377-3:2018+A1:2021, Cl. 6

CLIENT	VHE Construction Plc
SITE	The Seam, Barnsley
JOB NUMBER	MRN 24328/1

DATE TESTED	10-Sep-24	DATE SAMPLED	Not advised
SAMPLED BY	Client	DATE RECEIVED	06-Aug-24
PRE-TREATMENT	Air Dried	ADVISED SOURCE	Site Won

Sample Number	Sample Label	Material	% Passing 2mm	Loss on Ignition (%)
527813	BH103 2-2.45 SPT (S)	MADE GROUND	64	5.6

REMARKS

SIGNED



NAME

O.P. Davies BA (Hons)
(Director / Head of Laboratory)

DATE

26-Sep-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

TEST CERTIFICATE

DETERMINATION OF WATER-SOLUBLE SULPHATE IN SOIL
& DETERMINATION OF THE pH VALUE
BS 1377-3:2018+A1:2021, Cl. 7.3 & Cl. 12

CLIENT	VHE Construction Plc
SITE	The Seam, Barnsley
JOB NUMBER	MRN 24328/1

DATE TESTED	06-Sep-24	DATE SAMPLED	Not advised
SAMPLED BY	Client	DATE RECEIVED	02-Aug-24
PRE-TREATMENT	Air Dried	ADVISED SOURCE	Site Won

Sample Number	Sample Label	Material	% Ret. 2mm	pH Value	Water Soluble Sulphate as SO ₄ (mg/l)
525951	BH105 2 B	Grey gravelly CLAY	16	8.0	70

REMARKS

SIGNED



NAME

O.P. Davies BA (Hons)
(Director / Head of Laboratory)

DATE

26-Sep-24

Issued by Soil Engineering Geoservices Limited,
Parkside Lane,
Dewsbury Road,
Leeds
LS11 5SX.
Tel: 0113 2711111
Fax: 0113 2760472
Email: enquiries@soil-engineering.co.uk

Authorised signatory



P. A. Rogers (Technical Manager)
S. D. Harper (Laboratory Production Manager)
K. A. Walker v (Laboratory Manager)

Customer name Murray Rix (Northern) Ltd
Address Andrew House
 Hadfield Street
 Dukinfield
 Cheshire
 SK16 4QX

Contract name The Seam, Barnsley
Your reference S240526

Dates of receipt of samples 10/09/2024

Dates of testing 16/09/2024 to 18/09/2024

Sampling was not performed by the Laboratory of Soil Engineering.

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

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

Results reported relate only to the samples tested.

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

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

Key to Laboratory Summary Sheets

Common to all summaries

Sample Type	U	Undisturbed sample	D	Small disturbed sample
	P	Piston sample	B	Bulk disturbed sample
	TW	Thin walled sample	BLK	Block sample
	L	Liner sample	C	Rock core
	AMAL	Amalgamated sample		

Test status Any result in *italics* indicates a test that is not within the scope of the UKAS accreditation for this laboratory.

Summary of Laboratory Soil Tests: Index / Classification Tests

Particle density	p	Small pyknometer method	g	Gas jar method
Plastic index	N/P	Non plastic, although liquid limit will have been determined if requested		
Particle size (PSD)	¹	Following value in silt column denotes combined clay and silt fraction		
	p	Following value in clay column denotes sedimentation by pipette, else sedimentation is by hydrometer.		

Summary of Laboratory Soil Tests: Strength and Permeability Tests

Triaxial	UU	Single stage unconsolidated quick undrained	UUM	Multi stage unconsolidated quick undrained
	UU3	Set of 3 unconsolidated quick undrained	CU	Single stage consolidated undrained
	CUM	Multi stage consolidated undrained	CU3	Set of 3 consolidated undrained
	CD	Single stage consolidated drained	CDM	Multi stage consolidated drained
	CD3	Set of 3 consolidated drained		
	Note that single stage tests are reported assuming $f = 0$ for total stress and $c' = 0$ for effective stress			
Consol	Oed	One-dimensional oedometer	Hyd	Hydraulic cell consolidation
	m_v	coefficient of compressibility quoted for p_0 to $p_0 + 100\text{kPa}$, where determined		
Permeability	C	Constant head permeability	T	Triaxial permeability
Shearbox	SSB	Small shear box	LSB	Large shear box
	p	Peak value	r	Residual value
	RS	Ring shear		

Summary of Laboratory Soil Re-Use Test

MCV	s	MCV value at natural or specified moisture content	int	Intercept of calibration line in MCV calibration
-----	---	--	-----	--

Summary of Laboratory Rock Strength Tests

Point Load	Type	D	Diametral	A	Axial
(Combination of)		I	Irregular lump	B	Block
		L	Test performed parallel to planes of weakness		
		P	Test performed perpendicular to planes of weakness		
		X	Invalid failure of point load (not broken between points of load application)		

Summary of Laboratory Rock Materials Tests

Ten% fines	w	Soaked test	d	Dry test
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Point Load Index Result

Point Load	Type	D	Diametral	A	Axial
(Combination of)		I	Irregular lump	B	Block
		L	Parallel to planes of weakness		
		X	Invalid failure of point load (not broken between points of load application)		
Dimensions		W	Diameter of core or average smallest width perpendicular to axis of loading in a block or irregular lump		
		D	Distance between platens when just in contact with specimen		
		D'	Distance between platens at point of failure		
		De	Equivalent core diameter	Is	P/De^2
		Is(50)	$F \times Is$	F	$(De/50)^{0.45}$
		Is(50) point load strength index corrected for a diametral test of core diameter 50mm			
		For Axial/Lump tests $De^2 = (4/\pi) \times (W \times D')$		For Diametral tests $De^2 = D \times D'$	

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

Report number LT1979



Form No. LAB001

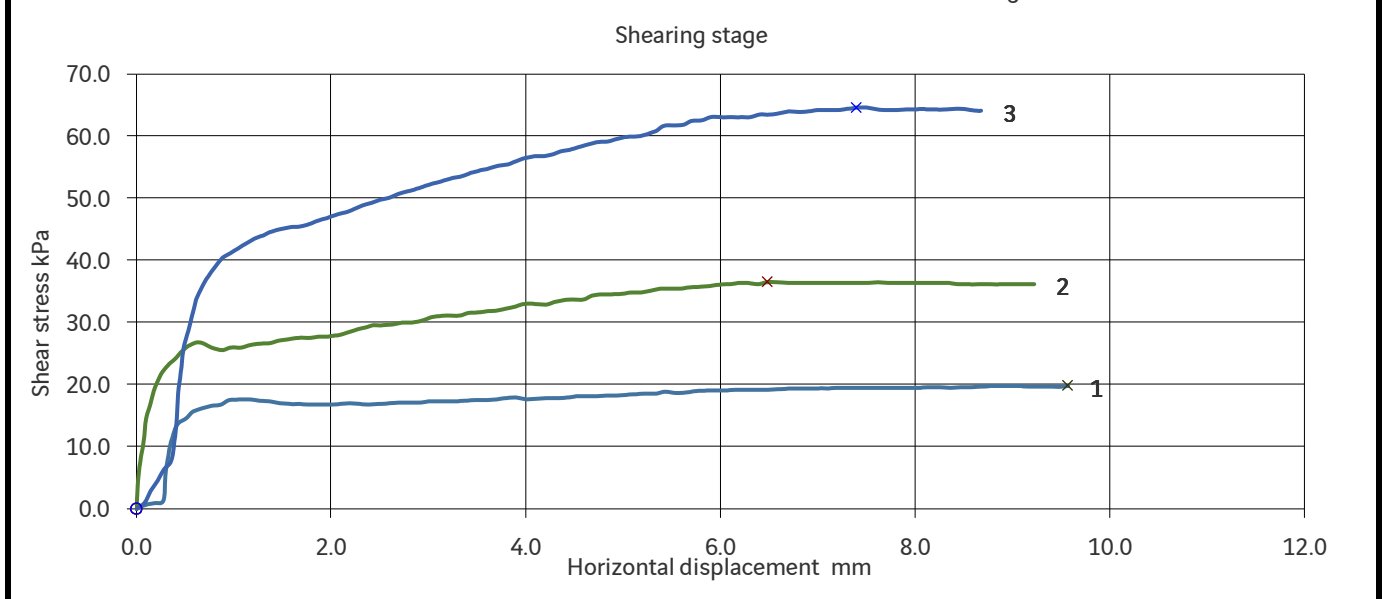
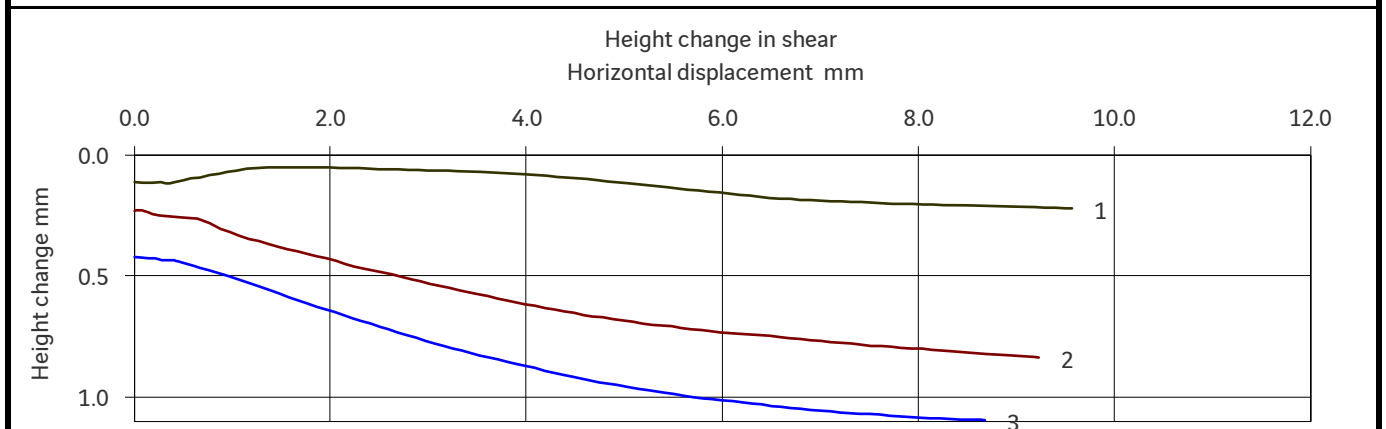
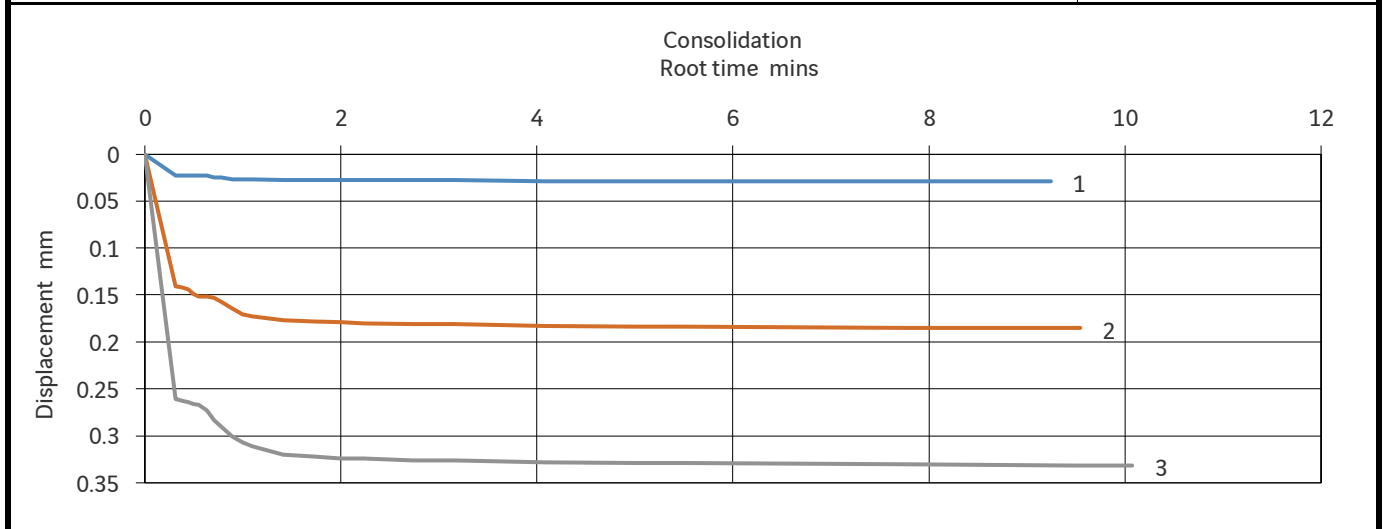
Revision No. 2.02

Issue Date 29/07/2010

Part of the Bachy Soletanche Group

Project Name The Seam, Barnsley						Strength and Permeability Summary													
Project No. LT1979																			
Engineer Murray Rix Ltd																			
Employer Murray Rix Ltd																			
Hole ID	Sample depth m	Sample no.	Sample type	Specimen depth m	Specimen no.	Moisture Content	Bulk Density	Triaxial			Consol		Permeability		Shearbox				
						%	Mg/m³	Type	cu / c' / c'	φ / φ'	Type	mv	Type	K	Type	c'	φ'		
								kPa	°	°	m²/MN	m/s	kPa	°					
BH104	1.20	525949	B	1.2	1									SSB	p5.4	p31.5			
BH105	2.00	525951	B	2	1									SSB	p8.5	p20.5			
TP126	2.70	525903	B	2.7	1									SSB	p4.1	p39			
Approved by:			Leeds Laboratory				Results apply to samples as received.										 SOIL engineering		
Kevin Walker							Print date 19/09/2024												
							Issue Date 01/05/2024												
Revision No.			3.05																

Project Name	The Seam, Barnsley	Shear Strength Using The Small Shearbox BS1377: Part 7: 1990: Clause 4 with Water Content to BS EN ISO 17892-1: 2014	Hole ID BH104
Project No.	LT1979		Sample Depth 1.20m
Engineer	Murray Rix Ltd		Sample Number 525949
Employer	Murray Rix Ltd		Sample Type B
Description	Brown gravelly clayey SAND.		Specimen Depth 1.20m
			Specimen Number 1



Approved by:	Leeds Laboratory	Results apply to samples as received.	 SOIL engineering
Kevin Walker		Print date 19/09/2024	
Revision No. 3.04	Issue Date 01/05/2024		

Project Name The Seam, Barnsley Project No. LT1979 Engineer Murray Rix Ltd Employer Murray Rix Ltd		Shear Strength Using The Small Shearbox BS1377: Part 7: 1990: Clause 4 with Water Content to BS EN ISO 17892-1: 2014		Hole ID BH104 Sample Depth 1.20m Sample Number 525949 Sample Type B	
Description Brown gravelly clayey SAND.				Specimen Depth 1.20m Specimen Number 1	

Coulomb envelope

Peak

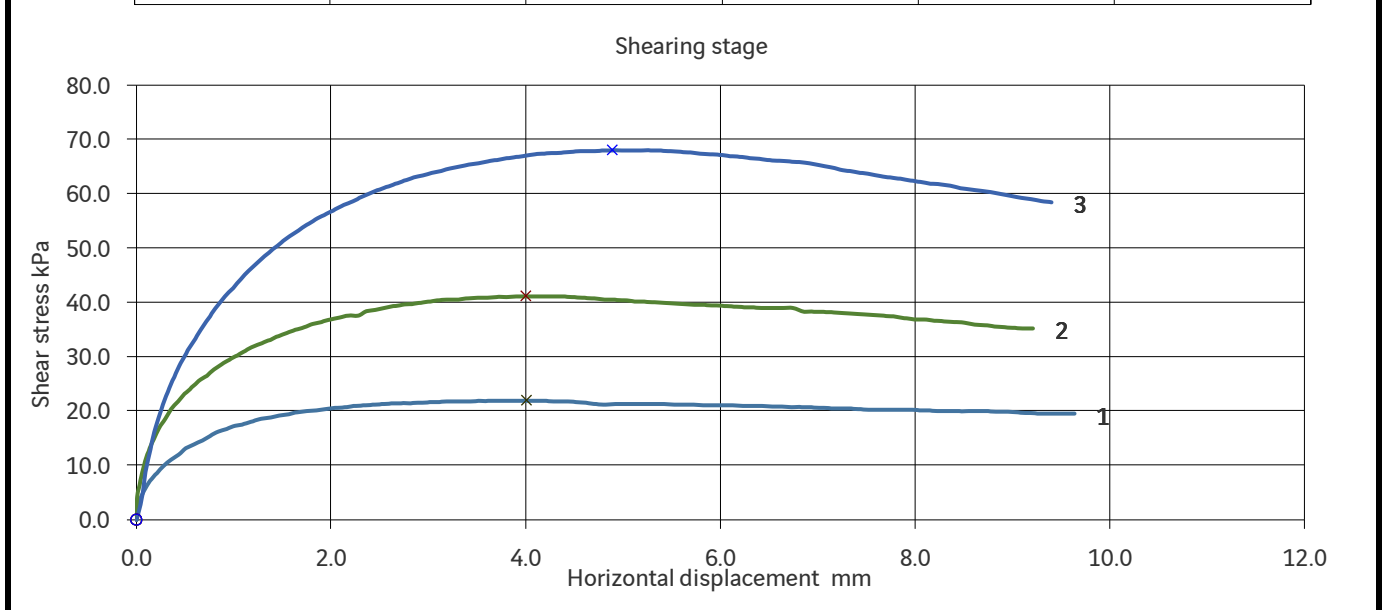
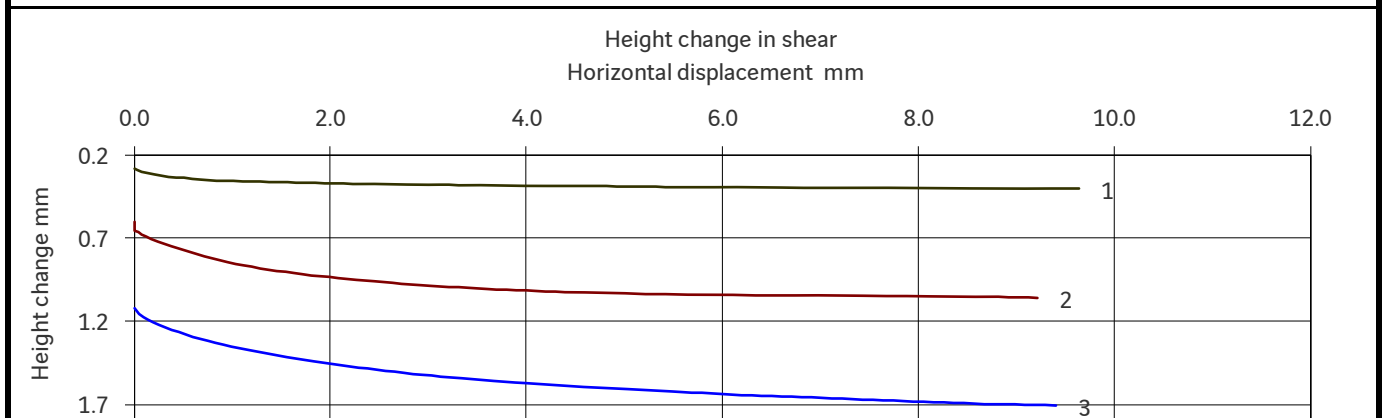
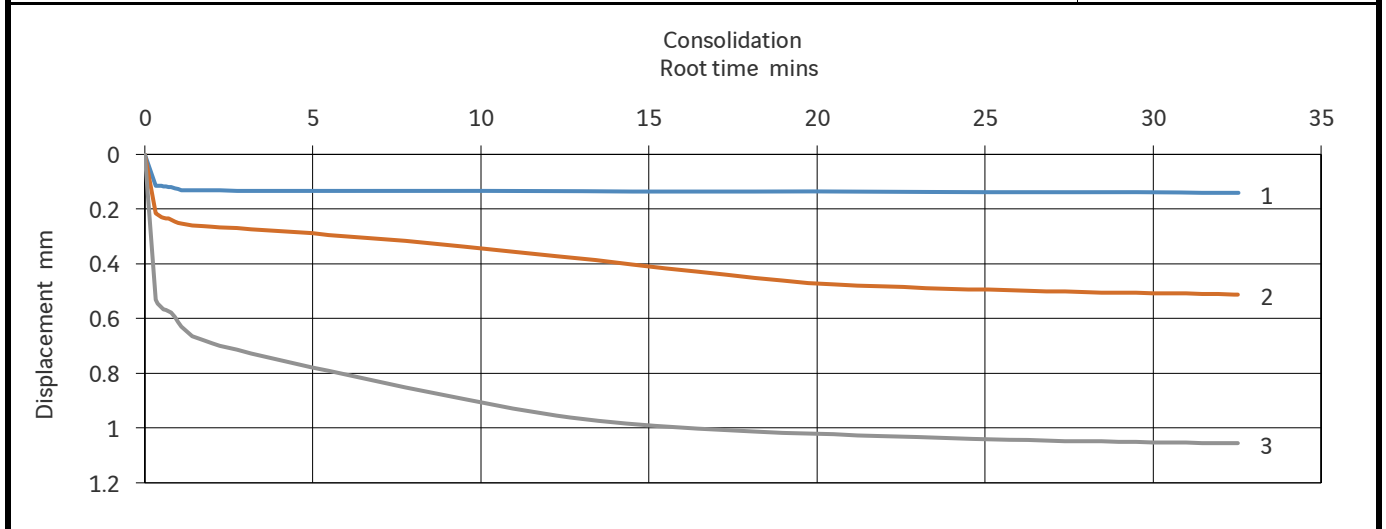
c' 5.4 kPa

φ' 31 1/2 °

Test run number		1	2	3
Normal stress	kPa	24.4	48.6	96.5
Particle density	Assumed Mg/m3	2.65	2.65	2.65
Trimming moisture content	%	12.9	12.9	12.9
Water content of specimen before test	%	13.6	13.6	13.6
Water content of specimen after test	%	21.1	20.6	19.5
Specimen dimensions				
Side 1	mm	60.08	60.12	60.14
Side 2	mm	60.06	60.10	60.10
Height	mm	23.72	23.74	23.30
Bulk density	Mg/m3	1.75	1.75	1.78
Dry density	Mg/m3	1.54	1.54	1.57
Saturation	%	50.3	50.3	52.2
Initial voids ratio		0.72	0.72	0.69
Voids ratio after consolidation		0.71	0.71	0.67
Voids ratio after shear		0.70	0.66	0.61
Rate of displacement	mm/min	0.900	0.900	0.900
Displacement at peak	mm	9.6	6.5	7.4
Shear strength at peak	kPa	19.8	36.5	64.6
Displacement at residual	mm			
Shear strength at residual	kPa			
Final displacement	mm	9.6	9.2	8.7
Method of reversal		Peak only		
Remarks Specimen tested submerged. Specimen lightly tamped into shearbox.				
Deviations from test method:				

Approved by: Kevin Walker	Leeds Laboratory	Results apply to samples as received.	 SOIL engineering
		Print date 19/09/2024	
Revision No. 3.04		Issue Date 01/05/2024	

Project Name	The Seam, Barnsley	Shear Strength Using The Small Shearbox BS1377: Part 7: 1990: Clause 4 with Water Content to BS EN ISO 17892-1: 2014	Hole ID BH105
Project No.	LT1979		Sample Depth 2.00m
Engineer	Murray Rix Ltd		Sample Number 525951
Employer	Murray Rix Ltd		Sample Type B
Description	Grey gravelly CLAY.		Specimen Depth 2.00m
			Specimen Number 1



Approved by:	Leeds Laboratory	Results apply to samples as received.	 SOIL engineering
Kevin Walker		Print date 19/09/2024	
Revision No. 3.04	Issue Date 01/05/2024		

Project Name The Seam, Barnsley		Shear Strength Using The Small Shearbox BS1377: Part 7: 1990: Clause 4 with Water Content to BS EN ISO 17892-1: 2014		Hole ID BH105	
Project No. LT1979				Sample Depth 2.00m	
Engineer Murray Rix Ltd				Sample Number 525951	
Employer Murray Rix Ltd				Sample Type B	
Description Grey gravelly CLAY.				Specimen Depth 2.00m	
				Specimen Number 1	

Peak

c' 8.5 kPa

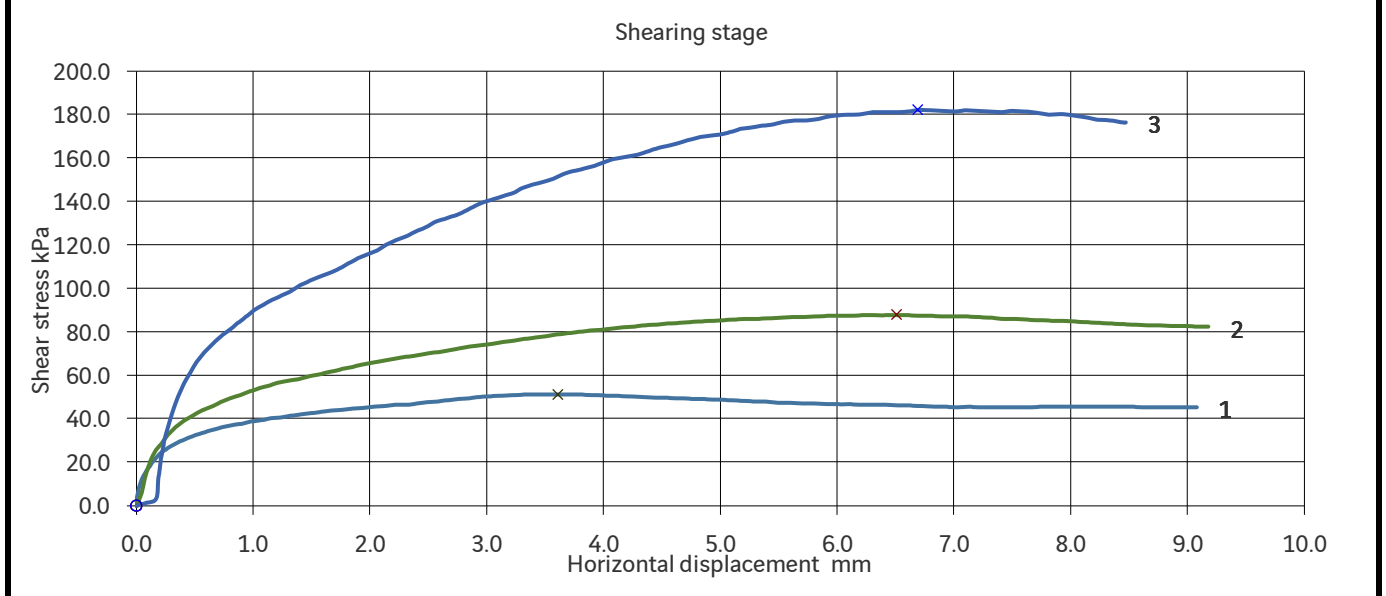
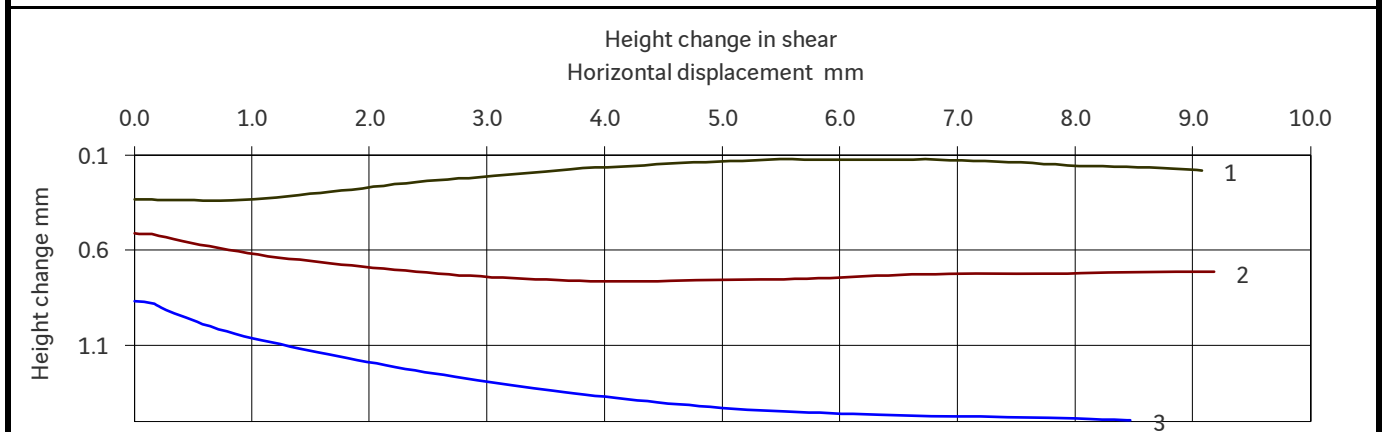
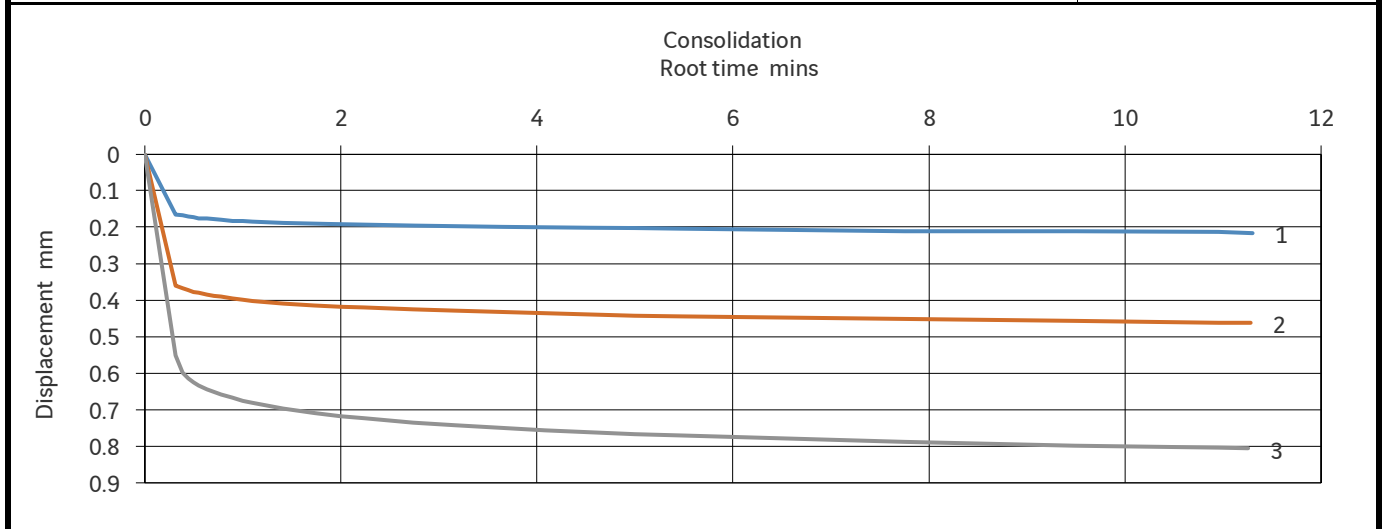
φ' 20 1/2 °

Coulomb envelope

		1	2	3
Test run number		1	2	3
Normal stress	kPa	40.6	79.7	160.8
Particle density	Assumed Mg/m3	2.65	2.65	2.65
Trimming moisture content	%	22.3	22.3	22.3
Water content of specimen before test	%	23.2	23.5	23.4
Water content of specimen after test	%	26.9	25.3	23.5
Specimen dimensions				
Side 1	mm	60.08	60.12	60.14
Side 2	mm	60.06	60.10	60.10
Height	mm	20.76	20.98	20.92
Bulk density	Mg/m3	1.94	1.92	1.92
Dry density	Mg/m3	1.57	1.56	1.56
Saturation	%	90.0	88.3	88.5
Initial voids ratio		0.68	0.70	0.70
Voids ratio after consolidation		0.67	0.66	0.62
Voids ratio after shear		0.65	0.62	0.56
Rate of displacement	mm/min	0.024	0.024	0.024
Displacement at peak	mm	4.0	4.0	4.9
Shear strength at peak	kPa	21.9	41.1	68.0
Displacement at residual	mm			
Shear strength at residual	kPa			
Final displacement	mm	9.6	9.2	9.4
Method of reversal		Peak only		
Remarks Specimen tested submerged. Specimen lightly tamped into shearbox.				
Deviations from test method:				

Approved by:	Leeds Laboratory	Results apply to samples as received.	
Kevin Walker		Print date 19/09/2024	
Revision No. 3.04		Issue Date 01/05/2024	

Project Name	The Seam, Barnsley	Shear Strength Using The Small Shearbox BS1377: Part 7: 1990: Clause 4 with Water Content to BS EN ISO 17892-1: 2014	Hole ID TP126
Project No.	LT1979		Sample Depth 2.70m
Engineer	Murray Rix Ltd		Sample Number 525903
Employer	Murray Rix Ltd		Sample Type B
Description	MADE GROUND: Dark brown gravelly ash.		Specimen Depth 2.70m
			Specimen Number 1



Approved by:	Leeds Laboratory	Results apply to samples as received.	 SOIL engineering
Kevin Walker		Print date 19/09/2024	
Revision No. 3.04	Issue Date 01/05/2024		

Project Name The Seam, Barnsley		Shear Strength Using The Small Shearbox BS1377: Part 7: 1990: Clause 4 with Water Content to BS EN ISO 17892-1: 2014		Hole ID TP126	
Project No. LT1979				Sample Depth 2.70m	
Engineer Murray Rix Ltd				Sample Number 525903	
Employer Murray Rix Ltd				Sample Type B	
Description MADE GROUND: Dark brown gravelly ash.				Specimen Depth 2.70m	
				Specimen Number 1	

Peak

c' 4.1 kPa

φ' 39 °

Coulomb envelope

× Peak shear strength
○ Residual shear strength

Test run number		1	2	3
Normal stress	kPa	54.2	107.8	216.5
Particle density	Assumed Mg/m3	2.65	2.65	2.65
Trimming moisture content	%	31.6	31.6	31.6
Water content of specimen before test	%	31.9	31.7	32.2
Water content of specimen after test	%	34.3	32.9	31.8
Specimen dimensions				
Side 1	mm	60.04	60.12	60.04
Side 2	mm	60.06	60.08	60.08
Height	mm	23.96	24.02	24.10
Bulk density	Mg/m3	1.63	1.62	1.61
Dry density	Mg/m3	1.23	1.23	1.22
Saturation	%	73.5	72.4	72.6
Initial voids ratio		1.15	1.16	1.18
Voids ratio after consolidation		1.13	1.12	1.10
Voids ratio after shear		1.13	1.10	1.04
Rate of displacement	mm/min	0.048	0.048	0.048
Displacement at peak	mm	3.6	6.5	6.7
Shear strength at peak	kPa	51.1	87.7	182.0
Displacement at residual	mm			
Shear strength at residual	kPa			
Final displacement	mm	9.1	9.2	8.5

Method of reversal
Peak only

Remarks Specimen tested submerged.
 Specimen lightly tamped into shearbox.

Deviations from test method:

Approved by:	Leeds Laboratory	Results apply to samples as received.	
Kevin Walker		Print date 19/09/2024	
Revision No. 3.04		Issue Date 01/05/2024	

Appendix I

Plate Load Test Results

TEST REPORT

Client VHE Construction Plc

Address 6 Newton Business Park
Thorncliffe Park Estate
Sheffield
South Yorkshire
S35 2PH

Contract Barnsley, S70 2EQ

Job Number MRN 24288/1
Date of Issue 31 July 2024
Page 1 of 10

Approved Signatories

S J Hutchings, O P Davies

Notes

- 1 All remaining samples and remnants from this contract will be disposed 28 days from the date of this report unless you notify us to the contrary.
- 2 Result certificates, in this report, not bearing a UKAS mark, are not included in our UKAS accreditation schedule.
- 3 Opinions and interpretations expressed herein are outside the scope of our UKAS accreditation.
- 4 Certified that the samples have been examined and tested in accordance with the terms of the contract/order and unless otherwise stated conform to the standards/specifications quoted.
- 5 The results included within the report are representative of the samples submitted for analysis.
- 6 This certificate should not be reproduced, except in full, without the express permission of the laboratory.



Andrew House, Hadfield Street, Dukinfield, Cheshire SK16 4QX Tel: 0161 475 0870
Email: enquiries@murrayrix.com Website: www.murrayrix.com

Also at: London: 020 8523 1999

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MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870



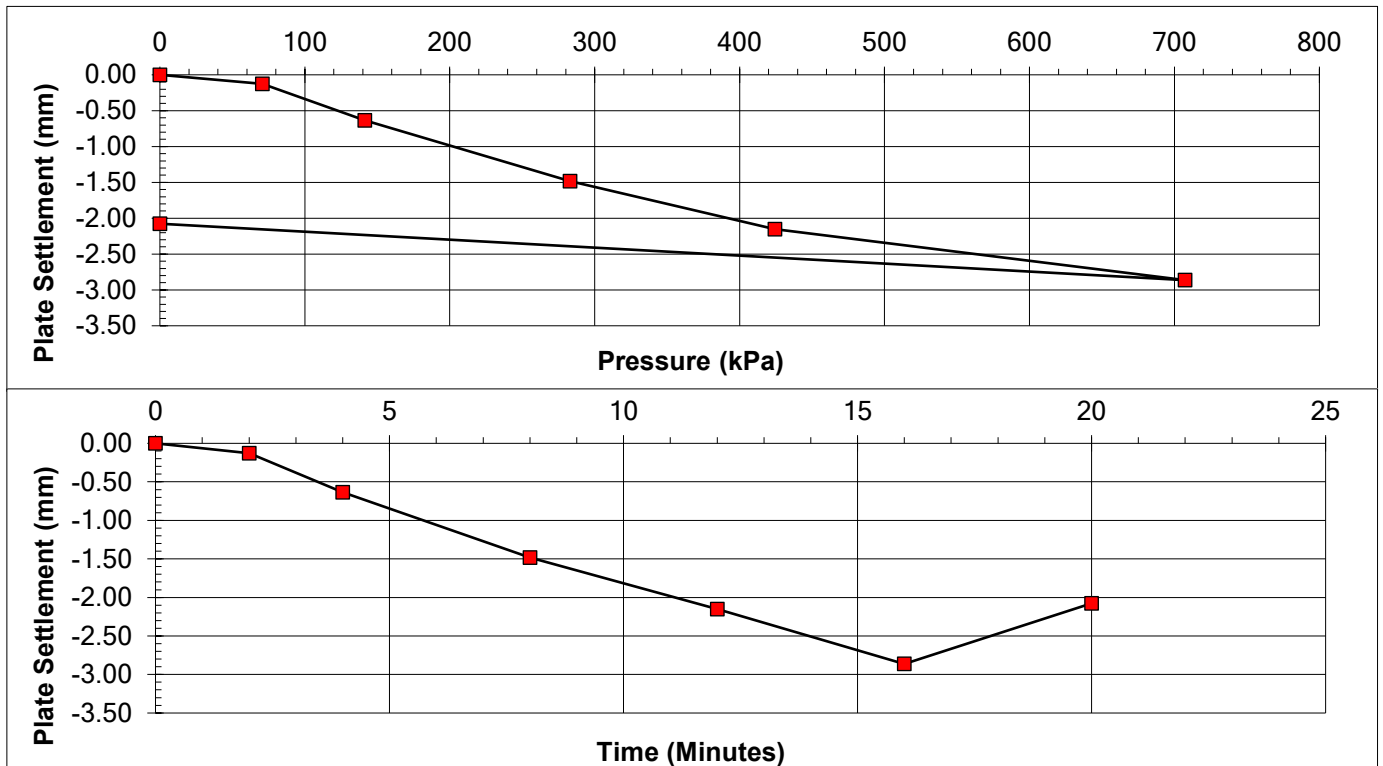
TEST CERTIFICATE

PLATE INCREMENTAL LOAD TEST

BS 1377 : PART 9 : CL 4.1 and IAN 73/06 Rev 1 (2009)

CLIENT	VHE Construction Plc					
SITE	Barnsley, S70 2EQ					
JOB NUMBER	MRN 24288/1					
TEST LOCATION	PL 101	LOADING DEVICE	20 Tonne Enerpac Jack			
TEST DATE	30-Jul-24	PLATE SIZE (mm)	300 diameter			
TEST DEPTH	Surface/ Asphalt	REACTION LOAD USED	Site Plant			
MATERIAL UNDER TEST	Subbase Type 1		MOISTURE CONTENT	Not Required		

Dial Gauge 1 (mmx100)	Dial Gauge 2 (mmx100)	Dial Gauge 3 (mmx100)	Mean Gauge (mmx100)	Mean Deflection (mm)	Load (kN)	Pressure (kPa)
4627	4644	4604	4625	0.00	0.00	0.0
4615	4632	4590	4612	-0.13	5.00	70.7
4564	4582	4539	4562	-0.63	10.00	141.5
4463	4506	4461	4477	-1.48	20.00	282.9
4370	4450	4409	4410	-2.15	30.00	424.4
4281	4379	4356	4339	-2.86	50.00	707.4
4346	4462	4444	4417	-2.08	0.00	0.0



Pressure at 1.25 mm deflexion =	244 kPa
Modulus of subgrade reaction (k) =	195 MPa/m
Equivalent 762 mm plate reaction =	86 MPa/m
Equivalent CBR =	21.8 %

REMARKS

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 31-Jul-24

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ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870



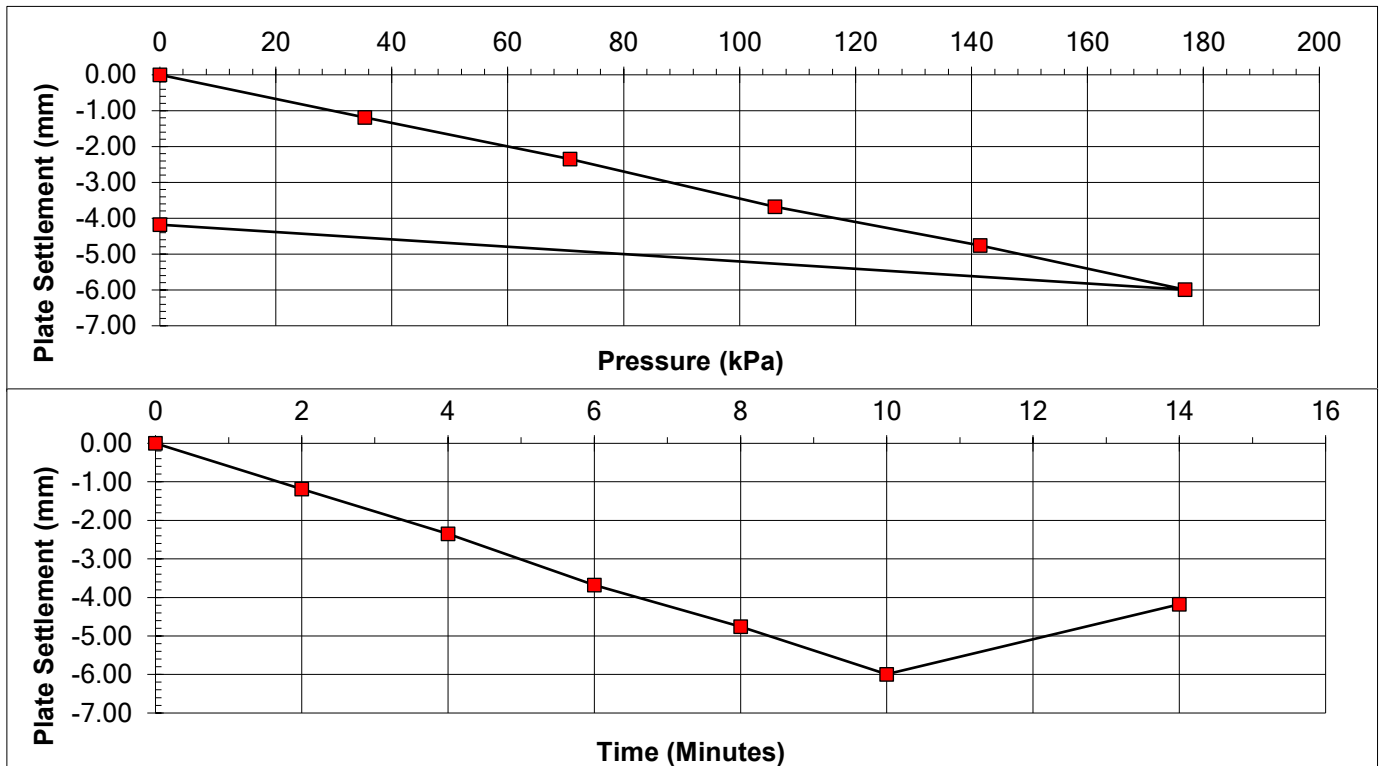
TEST CERTIFICATE

PLATE INCREMENTAL LOAD TEST

BS 1377 : PART 9 : CL 4.1 and IAN 73/06 Rev 1 (2009)

CLIENT	VHE Construction Plc					
SITE	Barnsley, S70 2EQ					
JOB NUMBER	MRN 24288/1					
TEST LOCATION	PL 101	LOADING DEVICE	20 Tonne Enerpac Jack			
TEST DATE	30-Jul-24	PLATE SIZE (mm)	600 diameter			
TEST DEPTH	0.5 BGL	REACTION LOAD USED	Site Plant			
MATERIAL UNDER TEST	Made Ground		MOISTURE CONTENT	Not Required		

Dial Gauge 1 (mmx100)	Dial Gauge 2 (mmx100)	Dial Gauge 3 (mmx100)	Mean Gauge (mmx100)	Mean Deflection (mm)	Load (kN)	Pressure (kPa)
4722	4652	4590	4655	0.00	0.00	0.0
4631	4499	4478	4536	-1.19	10.00	35.4
4509	4390	4361	4420	-2.35	20.00	70.7
4359	4259	4241	4286	-3.68	30.00	106.1
4244	4142	4149	4178	-4.76	40.00	141.5
4117	4019	4030	4055	-5.99	50.00	176.8
4322	4179	4210	4237	-4.18	0.00	0.0



Pressure at 1.25 mm deflexion =	37 kPa
Modulus of subgrade reaction (k) =	30 MPa/m
Equivalent 762 mm plate reaction =	24 MPa/m
Equivalent CBR =	2.4 %

REMARKS

SIGNED 
NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 31-Jul-24

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ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870



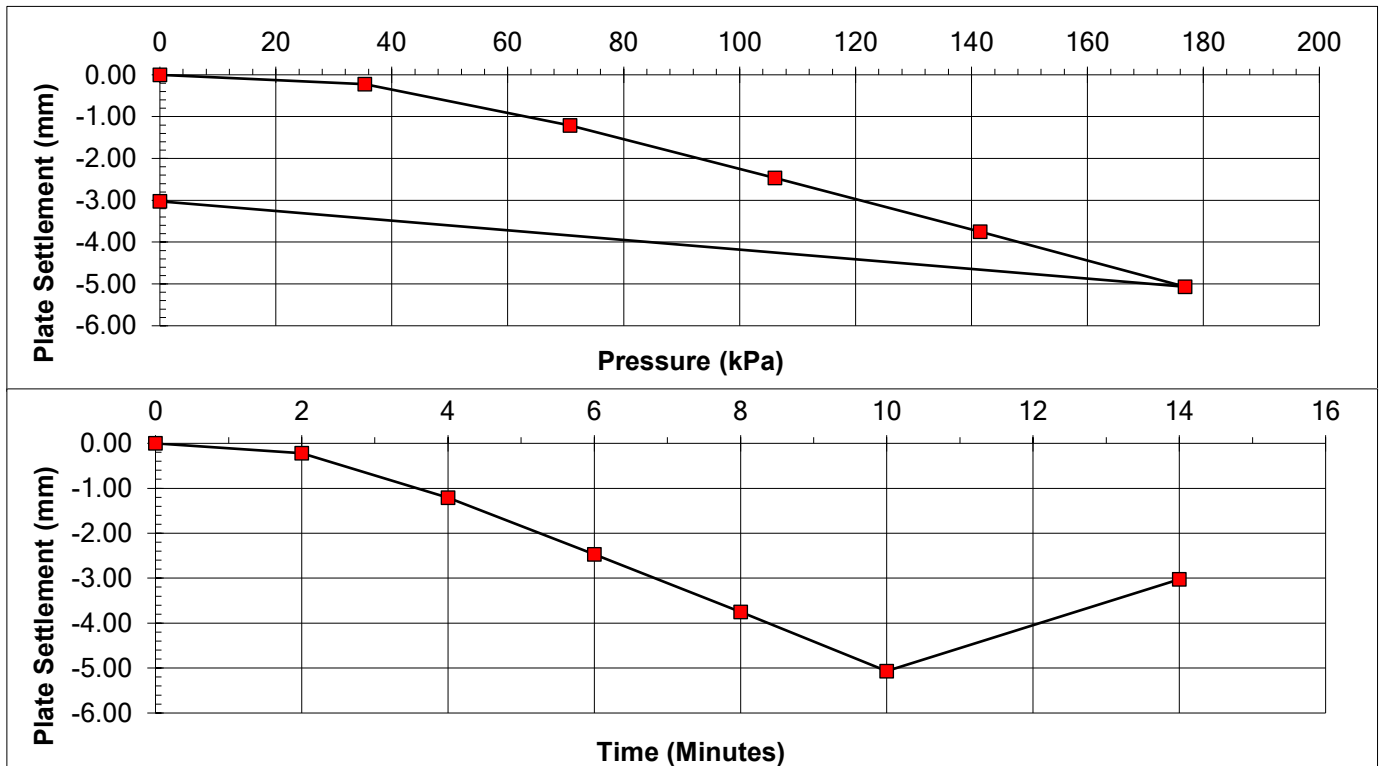
TEST CERTIFICATE

PLATE INCREMENTAL LOAD TEST

BS 1377 : PART 9 : CL 4.1 and IAN 73/06 Rev 1 (2009)

CLIENT	VHE Construction Plc					
SITE	Barnsley, S70 2EQ					
JOB NUMBER	MRN 24288/1					
TEST LOCATION	PL 101	LOADING DEVICE	20 Tonne Enerpac Jack			
TEST DATE	30-Jul-24	PLATE SIZE (mm)	600 diameter			
TEST DEPTH	0.75 BGL	REACTION LOAD USED	Site Plant			
MATERIAL UNDER TEST	Made Ground		MOISTURE CONTENT	Not Required		

Dial Gauge 1 (mmx100)	Dial Gauge 2 (mmx100)	Dial Gauge 3 (mmx100)	Mean Gauge (mmx100)	Mean Deflection (mm)	Load (kN)	Pressure (kPa)
4816	4733	4687	4745	0.00	0.00	0.0
4790	4719	4661	4723	-0.22	10.00	35.4
4704	4629	4540	4624	-1.21	20.00	70.7
4573	4502	4421	4499	-2.47	30.00	106.1
4440	4379	4292	4370	-3.75	40.00	141.5
4306	4251	4159	4239	-5.07	50.00	176.8
4523	4492	4313	4443	-3.03	0.00	0.0



Pressure at 1.25 mm deflexion =	72 kPa
Modulus of subgrade reaction (k) =	57 MPa/m
Equivalent 762 mm plate reaction =	46 MPa/m
Equivalent CBR =	7.4 %

REMARKS

SIGNED
NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 31-Jul-24

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ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870



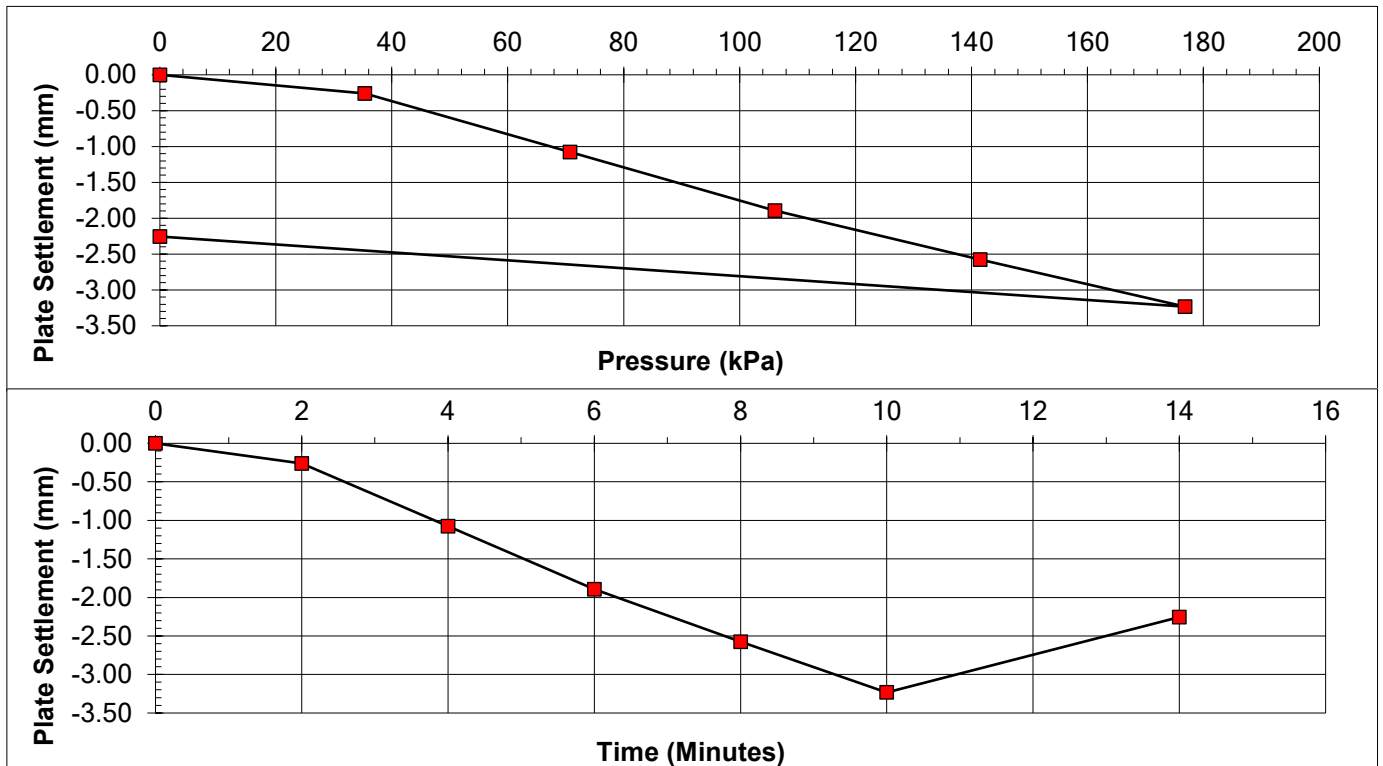
TEST CERTIFICATE

PLATE INCREMENTAL LOAD TEST

BS 1377 : PART 9 : CL 4.1 and IAN 73/06 Rev 1 (2009)

CLIENT	VHE Construction Plc					
SITE	Barnsley, S70 2EQ					
JOB NUMBER	MRN 24288/1					
TEST LOCATION	PL 102	LOADING DEVICE	20 Tonne Enerpac Jack			
TEST DATE	30-Jul-24	PLATE SIZE (mm)	600 diameter			
TEST DEPTH	U/S Asphalt	REACTION LOAD USED	Site Plant			
MATERIAL UNDER TEST	Subbase Type 1		MOISTURE CONTENT	Not Required		

Dial Gauge 1 (mmx100)	Dial Gauge 2 (mmx100)	Dial Gauge 3 (mmx100)	Mean Gauge (mmx100)	Mean Deflection (mm)	Load (kN)	Pressure (kPa)
4472	4454	4481	4469	0.00	0.00	0.0
4456	4421	4452	4443	-0.26	10.00	35.4
4389	4314	4381	4361	-1.08	20.00	70.7
4324	4221	4294	4280	-1.89	30.00	106.1
4258	4150	4226	4211	-2.58	40.00	141.5
4192	4087	4158	4146	-3.23	50.00	176.8
4284	4187	4260	4244	-2.25	0.00	0.0



Pressure at 1.25 mm deflexion =	78 kPa
Modulus of subgrade reaction (k) =	63 MPa/m
Equivalent 762 mm plate reaction =	50 MPa/m
Equivalent CBR =	8.6 %

REMARKS

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 31-Jul-24

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ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870



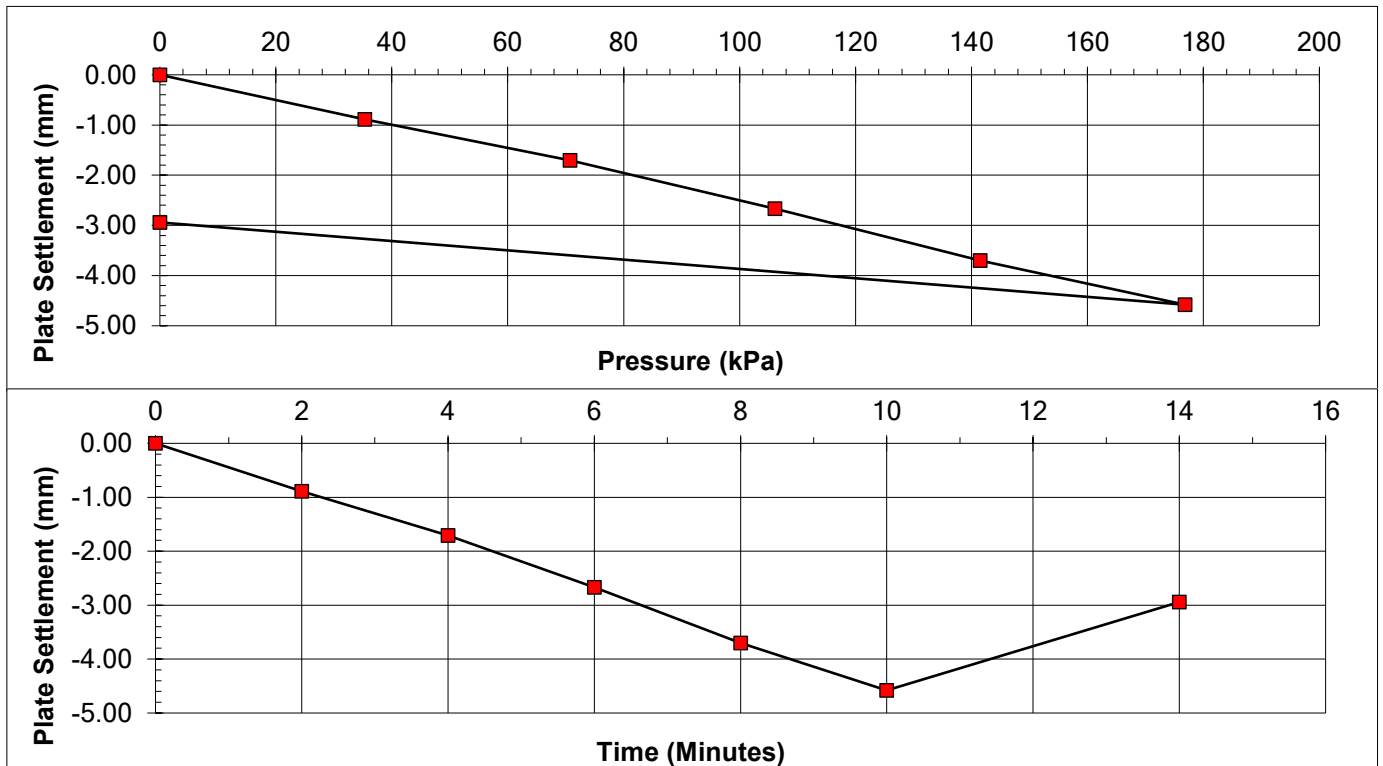
TEST CERTIFICATE

PLATE INCREMENTAL LOAD TEST

BS 1377 : PART 9 : CL 4.1 and IAN 73/06 Rev 1 (2009)

CLIENT	VHE Construction Plc					
SITE	Barnsley, S70 2EQ					
JOB NUMBER	MRN 24288/1					
TEST LOCATION	PL 102	LOADING DEVICE		20 Tonne Enerpac Jack		
TEST DATE	30-Jul-24	PLATE SIZE (mm)		600 diameter		
TEST DEPTH	0.5m BGL	REACTION LOAD USED		Site Plant		
MATERIAL UNDER TEST	Subbase Type 1		MOISTURE CONTENT		Not Required	

Dial Gauge 1 (mmx100)	Dial Gauge 2 (mmx100)	Dial Gauge 3 (mmx100)	Mean Gauge (mmx100)	Mean Deflection (mm)	Load (kN)	Pressure (kPa)
4654	4574	4681	4636	0.00	0.00	0.0
4589	4481	4572	4547	-0.89	10.00	35.4
4519	4396	4482	4466	-1.71	20.00	70.7
4409	4306	4393	4369	-2.67	30.00	106.1
4321	4203	4275	4266	-3.70	40.00	141.5
4247	4109	4179	4178	-4.58	50.00	176.8
4392	4278	4356	4342	-2.94	0.00	0.0



Pressure at 1.25 mm deflexion =	51 kPa
Modulus of subgrade reaction (k) =	41 MPa/m
Equivalent 762 mm plate reaction =	33 MPa/m
Equivalent CBR =	4.1 %

REMARKS

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 31-Jul-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX

TEL 0161 475 0870

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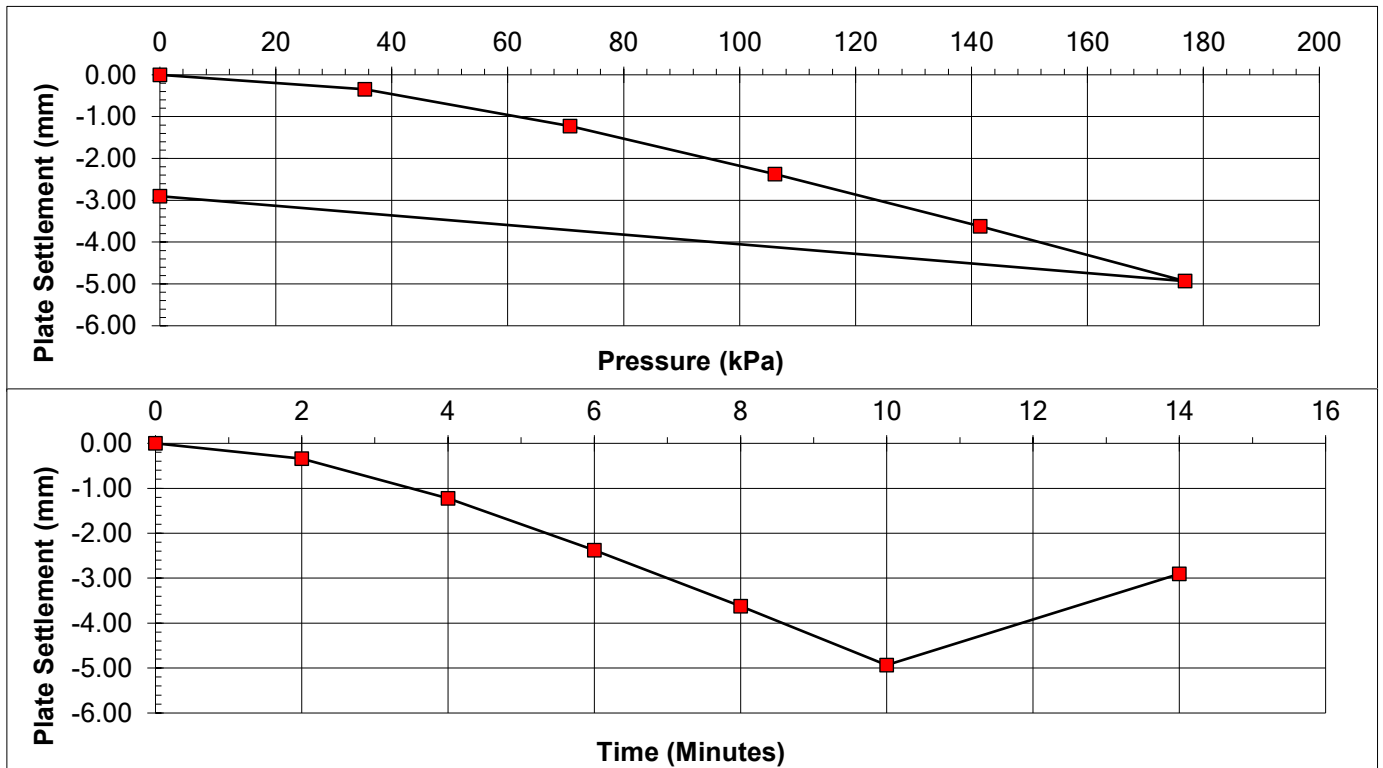
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BS 1377 : PART 9 : CL 4.1 and IAN 73/06 Rev 1 (2009)



CLIENT	VHE Construction Plc					
SITE	Barnsley, S70 2EQ					
JOB NUMBER	MRN 24288/1					
TEST LOCATION	PL 102	LOADING DEVICE	20 Tonne Enerpac Jack			
TEST DATE	30-Jul-24	PLATE SIZE (mm)	600 diameter			
TEST DEPTH	0.75m BGL	REACTION LOAD USED	Site Plant			
MATERIAL UNDER TEST	Made Ground		MOISTURE CONTENT	Not Required		

Dial Gauge 1 (mmx100)	Dial Gauge 2 (mmx100)	Dial Gauge 3 (mmx100)	Mean Gauge (mmx100)	Mean Deflection (mm)	Load (kN)	Pressure (kPa)
4425	4390	4630	4482	0.00	0.00	0.0
4390	4364	4588	4447	-0.34	10.00	35.4
4304	4271	4502	4359	-1.23	20.00	70.7
4190	4156	4386	4244	-2.38	30.00	106.1
4072	4029	4257	4119	-3.62	40.00	141.5
3948	3897	4120	3988	-4.93	50.00	176.8
4112	4109	4353	4191	-2.90	0.00	0.0



Pressure at 1.25 mm deflexion =	71 kPa
Modulus of subgrade reaction (k) =	57 MPa/m
Equivalent 762 mm plate reaction =	46 MPa/m
Equivalent CBR =	7.3 %

REMARKS

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 31-Jul-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870



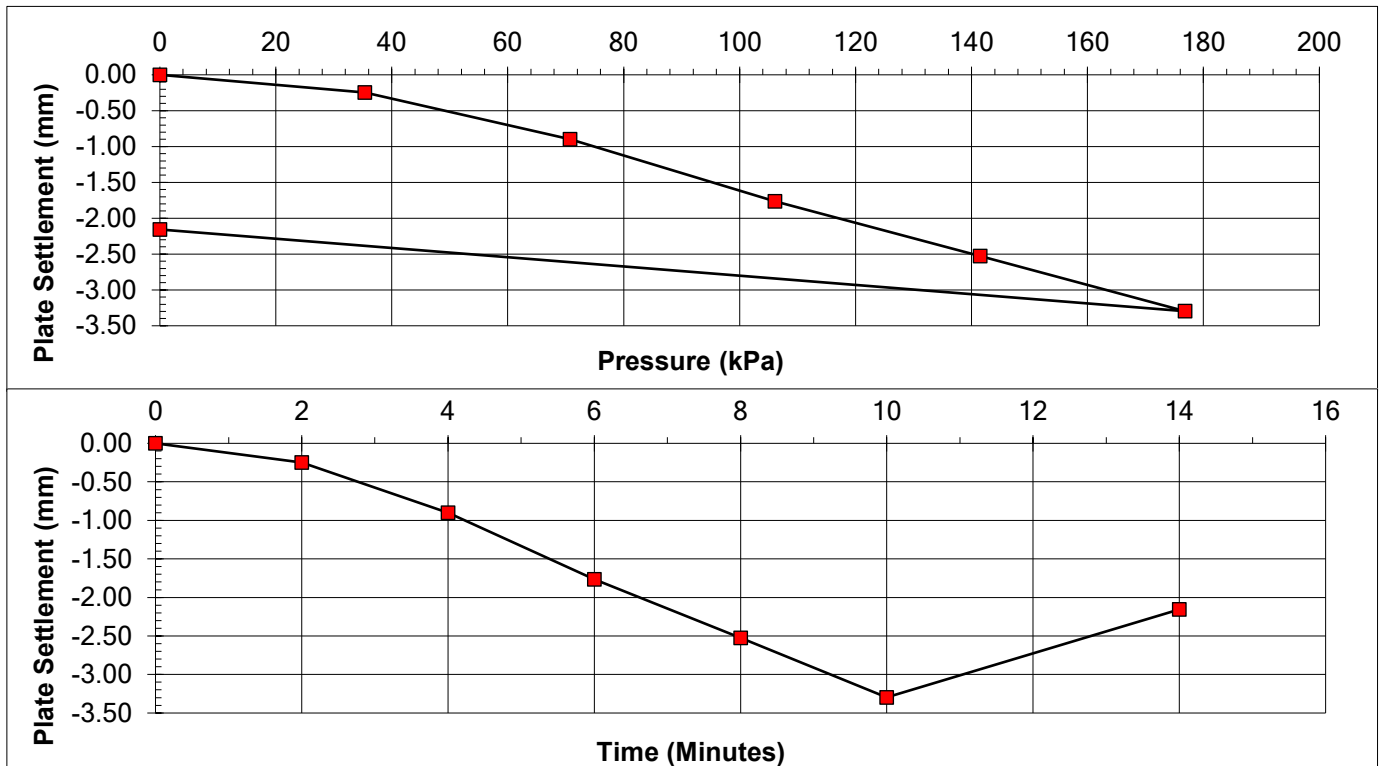
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PLATE INCREMENTAL LOAD TEST

BS 1377 : PART 9 : CL 4.1 and IAN 73/06 Rev 1 (2009)

CLIENT	VHE Construction Plc					
SITE	Barnsley, S70 2EQ					
JOB NUMBER	MRN 24288/1					
TEST LOCATION	PL 103	LOADING DEVICE	20 Tonne Enerpac Jack			
TEST DATE	30-Jul-24	PLATE SIZE (mm)	600 diameter			
TEST DEPTH	U/S Asphalt	REACTION LOAD USED	Site Plant			
MATERIAL UNDER TEST	Subbase Type 1		MOISTURE CONTENT	Not Required		

Dial Gauge 1 (mmx100)	Dial Gauge 2 (mmx100)	Dial Gauge 3 (mmx100)	Mean Gauge (mmx100)	Mean Deflection (mm)	Load (kN)	Pressure (kPa)
4725	4631	4553	4636	0.00	0.00	0.0
4704	4608	4523	4612	-0.25	10.00	35.4
4667	4531	4441	4546	-0.90	20.00	70.7
4578	4452	4350	4460	-1.76	30.00	106.1
4510	4371	4270	4384	-2.53	40.00	141.5
4424	4293	4203	4307	-3.30	50.00	176.8
4553	4401	4308	4421	-2.16	0.00	0.0



Pressure at 1.25 mm deflexion =	85 kPa
Modulus of subgrade reaction (k) =	68 MPa/m
Equivalent 762 mm plate reaction =	55 MPa/m
Equivalent CBR =	9.9 %

REMARKS

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 31-Jul-24

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ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870



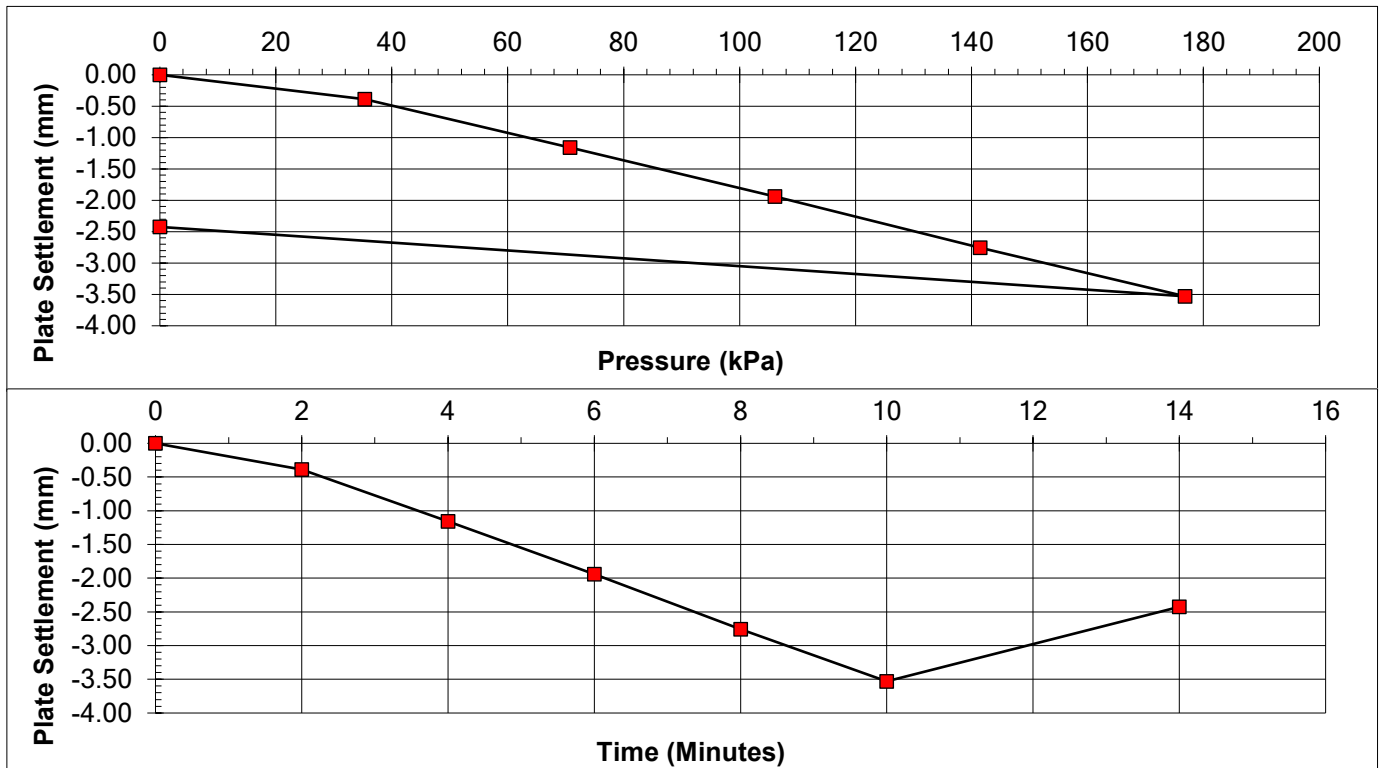
TEST CERTIFICATE

PLATE INCREMENTAL LOAD TEST

BS 1377 : PART 9 : CL 4.1 and IAN 73/06 Rev 1 (2009)

CLIENT	VHE Construction Plc					
SITE	Barnsley, S70 2EQ					
JOB NUMBER	MRN 24288/1					
TEST LOCATION	PL 103	LOADING DEVICE	20 Tonne Enerpac Jack			
TEST DATE	30-Jul-24	PLATE SIZE (mm)	600 diameter			
TEST DEPTH	0.5m BGL	REACTION LOAD USED	Site Plant			
MATERIAL UNDER TEST	Made Ground		MOISTURE CONTENT	Not Required		

Dial Gauge 1 (mmx100)	Dial Gauge 2 (mmx100)	Dial Gauge 3 (mmx100)	Mean Gauge (mmx100)	Mean Deflection (mm)	Load (kN)	Pressure (kPa)
4501	4574	4466	4514	0.00	0.00	0.0
4461	4530	4434	4475	-0.39	10.00	35.4
4377	4458	4359	4398	-1.16	20.00	70.7
4302	4378	4279	4320	-1.94	30.00	106.1
4218	4303	4193	4238	-2.76	40.00	141.5
4140	4228	4114	4161	-3.53	50.00	176.8
4240	4344	4230	4271	-2.42	0.00	0.0



Pressure at 1.25 mm deflexion =	75 kPa
Modulus of subgrade reaction (k) =	60 MPa/m
Equivalent 762 mm plate reaction =	48 MPa/m
Equivalent CBR =	8.0 %

REMARKS

SIGNED
NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 31-Jul-24

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TEL 0161 475 0870



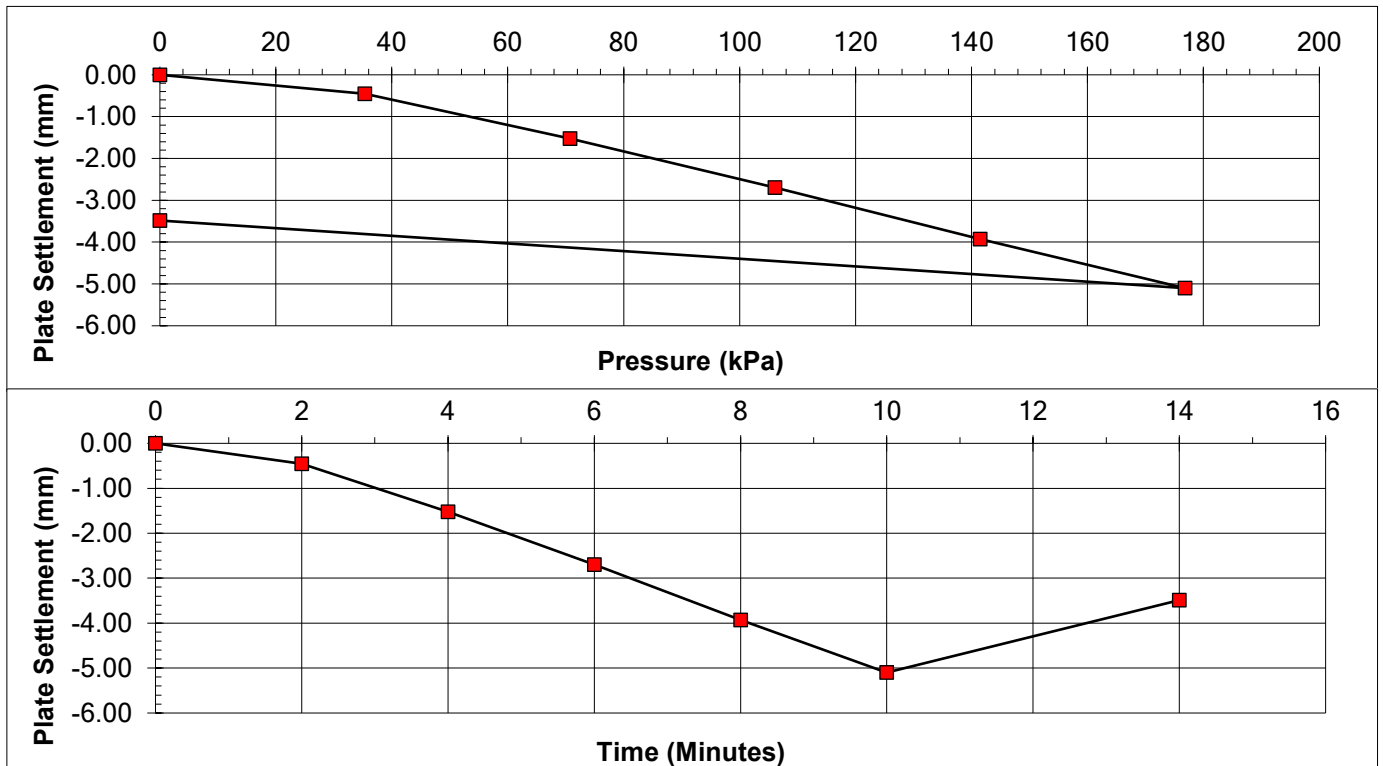
TEST CERTIFICATE

PLATE INCREMENTAL LOAD TEST

BS 1377 : PART 9 : CL 4.1 and IAN 73/06 Rev 1 (2009)

CLIENT	VHE Construction Plc		
SITE	Barnsley, S70 2EQ		
JOB NUMBER	MRN 24288/1		
TEST LOCATION	PL 103	LOADING DEVICE	20 Tonne Enerpac Jack
TEST DATE	30-Jul-24	PLATE SIZE (mm)	600 diameter
TEST DEPTH	0.75m BGL	REACTION LOAD USED	Site Plant
MATERIAL UNDER TEST	Made Ground	MOISTURE CONTENT	Not Required

Dial Gauge 1 (mmx100)	Dial Gauge 2 (mmx100)	Dial Gauge 3 (mmx100)	Mean Gauge (mmx100)	Mean Deflection (mm)	Load (kN)	Pressure (kPa)
4582	4604	4811	4666	0.00	0.00	0.0
4534	4567	4760	4620	-0.45	10.00	35.4
4419	4452	4669	4513	-1.52	20.00	70.7
4301	4336	4551	4396	-2.70	30.00	106.1
4174	4219	4426	4273	-3.93	40.00	141.5
4049	4099	4319	4156	-5.10	50.00	176.8
4181	4260	4510	4317	-3.49	0.00	0.0



Pressure at 1.25 mm deflexion =	62 kPa
Modulus of subgrade reaction (k) =	49 MPa/m
Equivalent 762 mm plate reaction =	40 MPa/m
Equivalent CBR =	5.7 %

REMARKS

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 31-Jul-24

TEST REPORT

Client VHE Construction Plc

Address 6 Newton Business Park
Thorncliffe Park Estate
Sheffield
South Yorkshire
S35 2PH

Contract Barnsley, S70 2EQ

Job Number MRN 24288/2
Date of Issue 02 August 2024
Page 1 of 10

Approved Signatories

S J Hutchings, O P Davies

Notes

- 1 All remaining samples and remnants from this contract will be disposed 28 days from the date of this report unless you notify us to the contrary.
- 2 Result certificates, in this report, not bearing a UKAS mark, are not included in our UKAS accreditation schedule.
- 3 Opinions and interpretations expressed herein are outside the scope of our UKAS accreditation.
- 4 Certified that the samples have been examined and tested in accordance with the terms of the contract/order and unless otherwise stated conform to the standards/specifications quoted.
- 5 The results included within the report are representative of the samples submitted for analysis.
- 6 This certificate should not be reproduced, except in full, without the express permission of the laboratory.



Andrew House, Hadfield Street, Dukinfield, Cheshire SK16 4QX Tel: 0161 475 0870
Email: enquiries@murrayrix.com Website: www.murrayrix.com

Also at: London: 020 8523 1999

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MURRAY RIX

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DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870



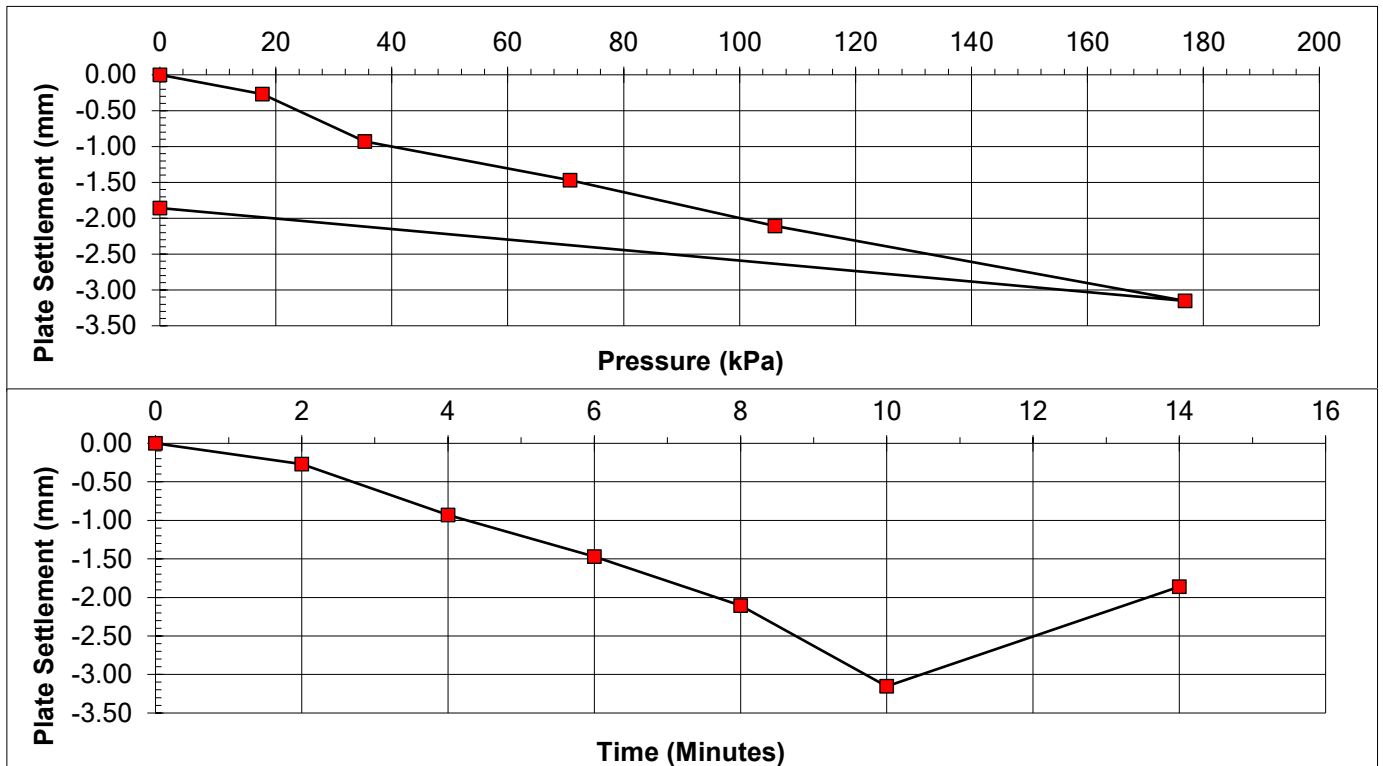
TEST CERTIFICATE

PLATE INCREMENTAL LOAD TEST

BS 1377 : PART 9 : CL 4.1 and IAN 73/06 Rev 1 (2009)

CLIENT	VHE Construction Plc					
SITE	Barnsley, S70 2EQ					
JOB NUMBER	MRN 24288/2					
TEST LOCATION	PL 104	LOADING DEVICE	20 Tonne Enerpac Jack			
TEST DATE	31-Jul-24	PLATE SIZE (mm)	600 diameter			
TEST DEPTH	Asphalt	REACTION LOAD USED	Site Plant			
MATERIAL UNDER TEST	Subbase Type 1		MOISTURE CONTENT	Not Required		

Dial Gauge 1 (mmx100)	Dial Gauge 2 (mmx100)	Dial Gauge 3 (mmx100)	Mean Gauge (mmx100)	Mean Deflection (mm)	Load (kN)	Pressure (kPa)
4621	4837	4854	4771	0.00	0.00	0.0
4584	4815	4832	4744	-0.27	5.00	17.7
4523	4751	4759	4678	-0.93	10.00	35.4
4470	4692	4709	4624	-1.47	20.00	70.7
4407	4621	4652	4560	-2.11	30.00	106.1
4346	4549	4471	4455	-3.15	50.00	176.8
4423	4651	4680	4585	-1.86	0.00	0.0



Pressure at 1.25 mm deflexion =	56 kPa
Modulus of subgrade reaction (k) =	45 MPa/m
Equivalent 762 mm plate reaction =	36 MPa/m
Equivalent CBR =	4.9 %

REMARKS

SIGNED 
NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 02-Aug-24

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TEST CERTIFICATE

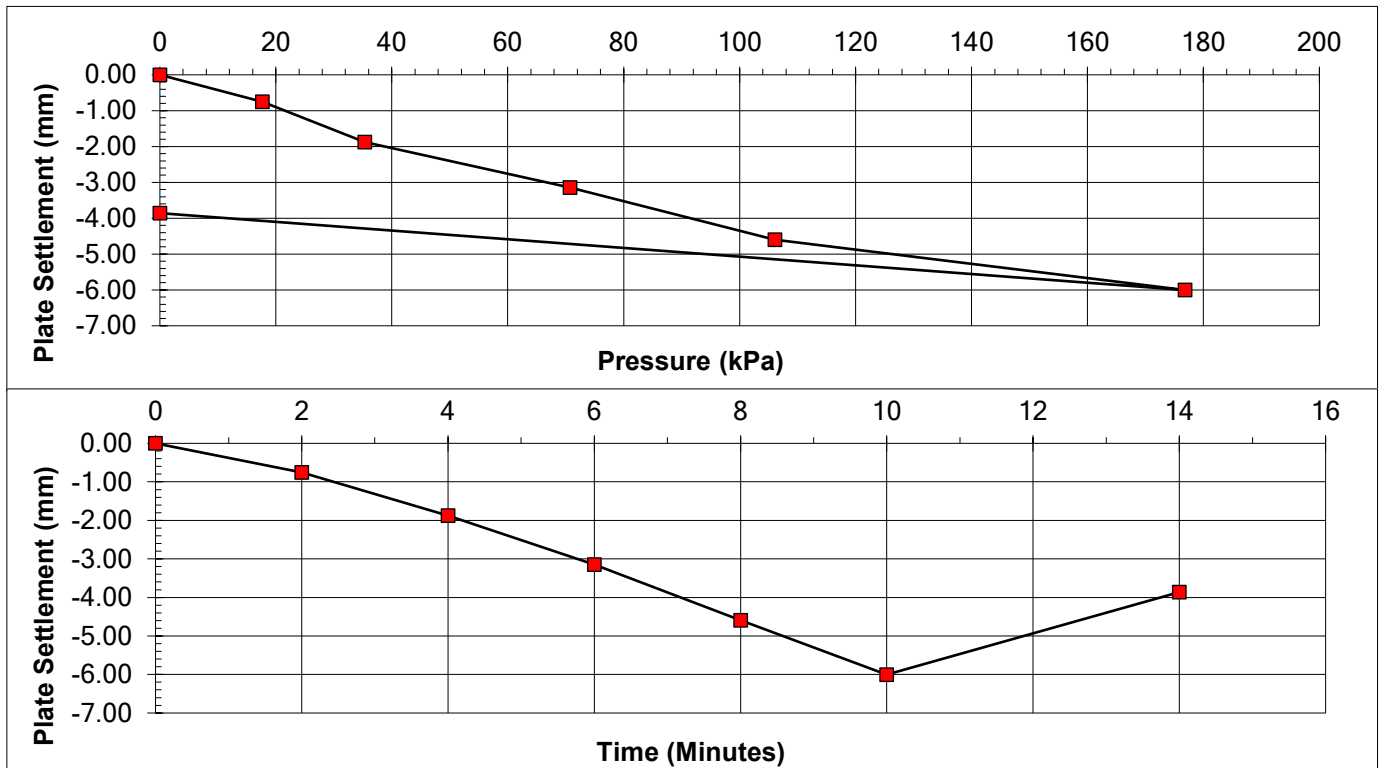
PLATE INCREMENTAL LOAD TEST

BS 1377 : PART 9 : CL 4.1 and IAN 73/06 Rev 1 (2009)



CLIENT	VHE Construction Plc					
SITE	Barnsley, S70 2EQ					
JOB NUMBER	MRN 24288/2					
TEST LOCATION	PL 104	LOADING DEVICE		20 Tonne Enerpac Jack		
TEST DATE	31-Jul-24	PLATE SIZE (mm)		600 diameter		
TEST DEPTH	0.5M BGL	REACTION LOAD USED		Site Plant		
MATERIAL UNDER TEST		Made Ground		MOISTURE CONTENT	Not Required	

Dial Gauge 1 (mmx100)	Dial Gauge 2 (mmx100)	Dial Gauge 3 (mmx100)	Mean Gauge (mmx100)	Mean Deflection (mm)	Load (kN)	Pressure (kPa)
4621	4164	4040	4275	0.00	0.00	0.0
4541	4086	3972	4200	-0.75	5.00	17.7
4433	3970	3860	4088	-1.87	10.00	35.4
4291	3859	3731	3960	-3.15	20.00	70.7
4157	3702	3587	3815	-4.60	30.00	106.1
4011	3574	3439	3675	-6.00	50.00	176.8
4211	3801	3655	3889	-3.86	0.00	0.0



Pressure at 1.25 mm deflexion =	26 kPa
Modulus of subgrade reaction (k) =	20 MPa/m
Equivalent 762 mm plate reaction =	16 MPa/m
Equivalent CBR =	1.2 %

REMARKS

SIGNED
NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 02-Aug-24

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DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870



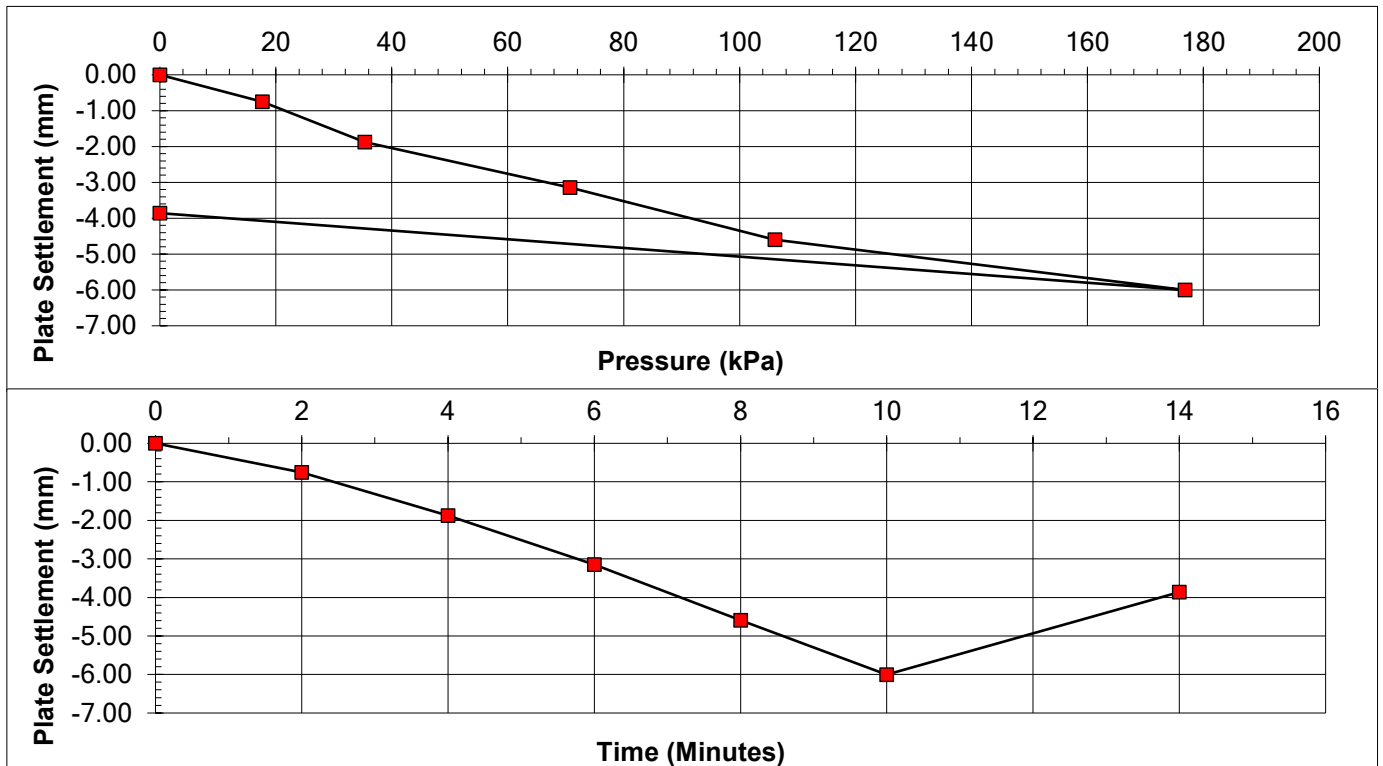
TEST CERTIFICATE

PLATE INCREMENTAL LOAD TEST

BS 1377 : PART 9 : CL 4.1 and IAN 73/06 Rev 1 (2009)

CLIENT	VHE Construction Plc		
SITE	Barnsley, S70 2EQ		
JOB NUMBER	MRN 24288/2		
TEST LOCATION	PL 104	LOADING DEVICE	20 Tonne Enerpac Jack
TEST DATE	31-Jul-24	PLATE SIZE (mm)	600 diameter
TEST DEPTH	0.75m BGL	REACTION LOAD USED	Site Plant
MATERIAL UNDER TEST	Made Ground	MOISTURE CONTENT	Not Required

Dial Gauge 1 (mmx100)	Dial Gauge 2 (mmx100)	Dial Gauge 3 (mmx100)	Mean Gauge (mmx100)	Mean Deflection (mm)	Load (kN)	Pressure (kPa)
4621	4164	4040	4275	0.00	0.00	0.0
4541	4086	3972	4200	-0.75	5.00	17.7
4433	3970	3860	4088	-1.87	10.00	35.4
4291	3859	3731	3960	-3.15	20.00	70.7
4157	3702	3587	3815	-4.60	30.00	106.1
4011	3574	3439	3675	-6.00	50.00	176.8
4211	3801	3655	3889	-3.86	0.00	0.0



Pressure at 1.25 mm deflexion =	26 kPa
Modulus of subgrade reaction (k) =	20 MPa/m
Equivalent 762 mm plate reaction =	16 MPa/m
Equivalent CBR =	1.2 %

REMARKS

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 02-Aug-24

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TEL 0161 475 0870



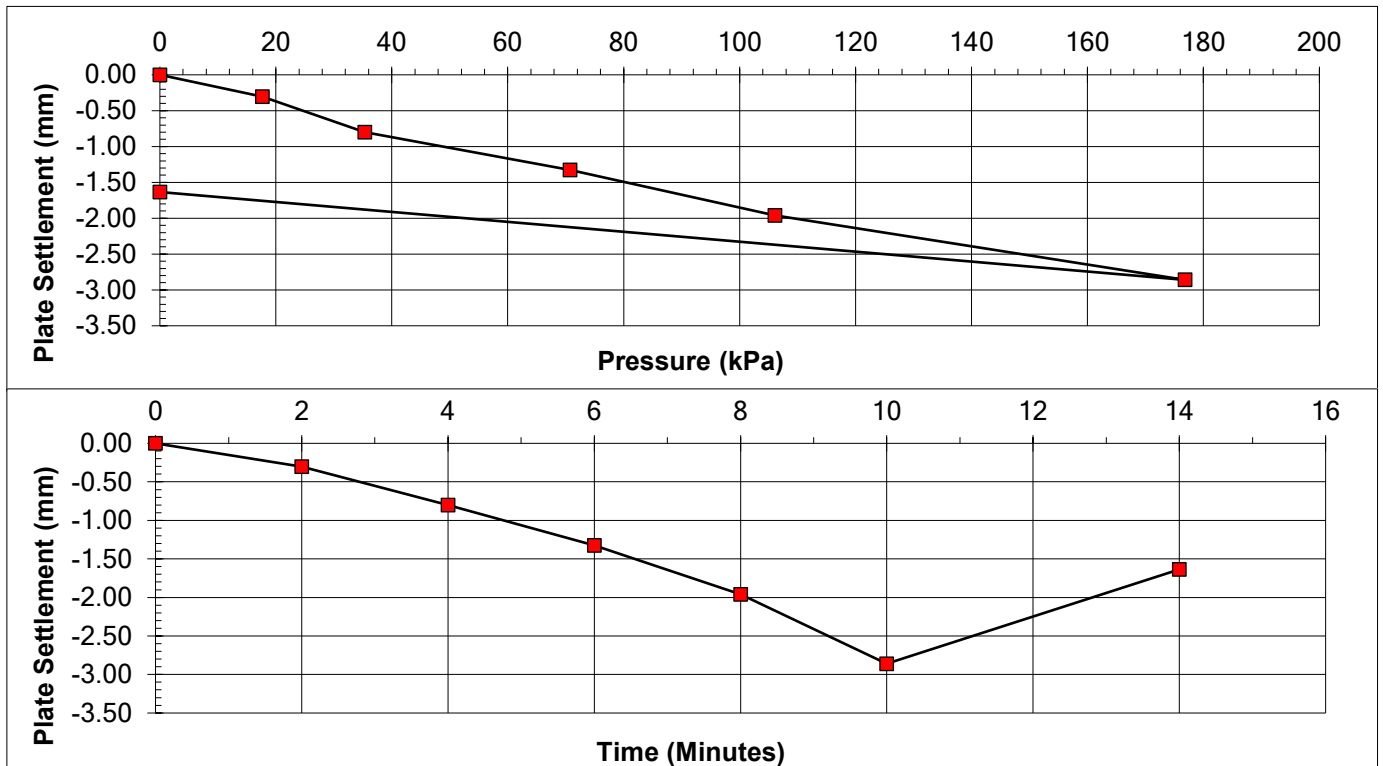
TEST CERTIFICATE

PLATE INCREMENTAL LOAD TEST

BS 1377 : PART 9 : CL 4.1 and IAN 73/06 Rev 1 (2009)

CLIENT	VHE Construction Plc					
SITE	Barnsley, S70 2EQ					
JOB NUMBER	MRN 24288/2					
TEST LOCATION	PL 105	LOADING DEVICE	20 Tonne Enerpac Jack			
TEST DATE	31-Jul-24	PLATE SIZE (mm)	600 diameter			
TEST DEPTH	Asphalt	REACTION LOAD USED	Site Plant			
MATERIAL UNDER TEST	Subbase Type 1		MOISTURE CONTENT	Not Required		

Dial Gauge 1 (mmx100)	Dial Gauge 2 (mmx100)	Dial Gauge 3 (mmx100)	Mean Gauge (mmx100)	Mean Deflection (mm)	Load (kN)	Pressure (kPa)
4776	4645	4583	4668	0.00	0.00	0.0
4739	4620	4554	4638	-0.30	5.00	17.7
4682	4573	4509	4588	-0.80	10.00	35.4
4619	4516	4471	4535	-1.33	20.00	70.7
4561	4449	4406	4472	-1.96	30.00	106.1
4477	4360	4309	4382	-2.86	50.00	176.8
4579	4473	4461	4504	-1.64	0.00	0.0



Pressure at 1.25 mm deflexion =	66 kPa
Modulus of subgrade reaction (k) =	52 MPa/m
Equivalent 762 mm plate reaction =	42 MPa/m
Equivalent CBR =	6.3 %

REMARKS

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 02-Aug-24

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TEL 0161 475 0870



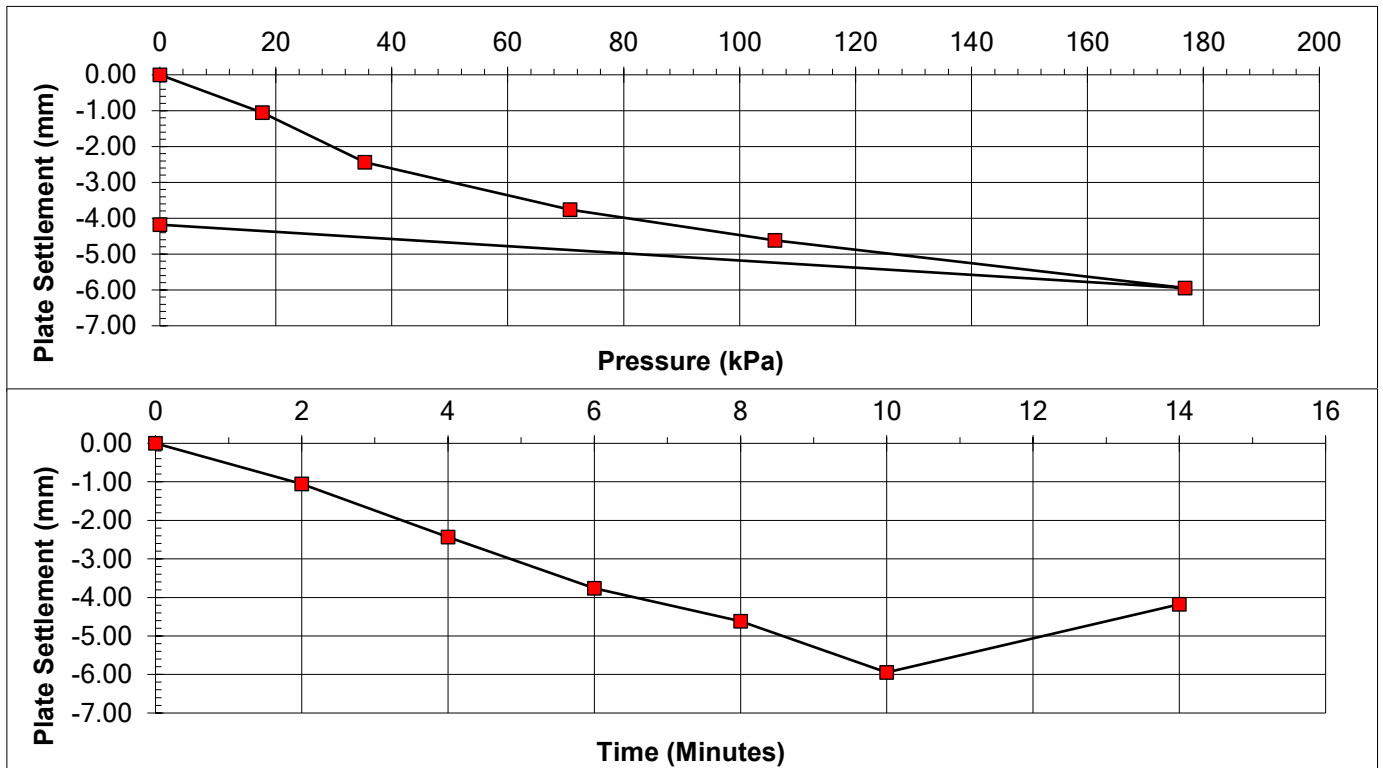
TEST CERTIFICATE

PLATE INCREMENTAL LOAD TEST

BS 1377 : PART 9 : CL 4.1 and IAN 73/06 Rev 1 (2009)

CLIENT	VHE Construction Plc					
SITE	Barnsley, S70 2EQ					
JOB NUMBER	MRN 24288/2					
TEST LOCATION	PL 105	LOADING DEVICE		20 Tonne Enerpac Jack		
TEST DATE	31-Jul-24	PLATE SIZE (mm)		600 diameter		
TEST DEPTH	0.5. BGL	REACTION LOAD USED		Site Plant		
MATERIAL UNDER TEST		Made Ground		MOISTURE CONTENT	Not Required	

Dial Gauge 1 (mmx100)	Dial Gauge 2 (mmx100)	Dial Gauge 3 (mmx100)	Mean Gauge (mmx100)	Mean Deflection (mm)	Load (kN)	Pressure (kPa)
4527	4772	4564	4621	0.00	0.00	0.0
4424	4670	4452	4515	-1.06	5.00	17.7
4261	4542	4329	4377	-2.44	10.00	35.4
4109	4419	4206	4245	-3.76	20.00	70.7
4018	4332	4127	4159	-4.62	30.00	106.1
3878	4198	4003	4026	-5.95	50.00	176.8
4041	4388	4180	4203	-4.18	0.00	0.0



Pressure at 1.25 mm deflexion =	20 kPa
Modulus of subgrade reaction (k) =	16 MPa/m
Equivalent 762 mm plate reaction =	13 MPa/m
Equivalent CBR =	0.8 %

REMARKS

SIGNED
NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 02-Aug-24

MURRAY RIX

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DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870



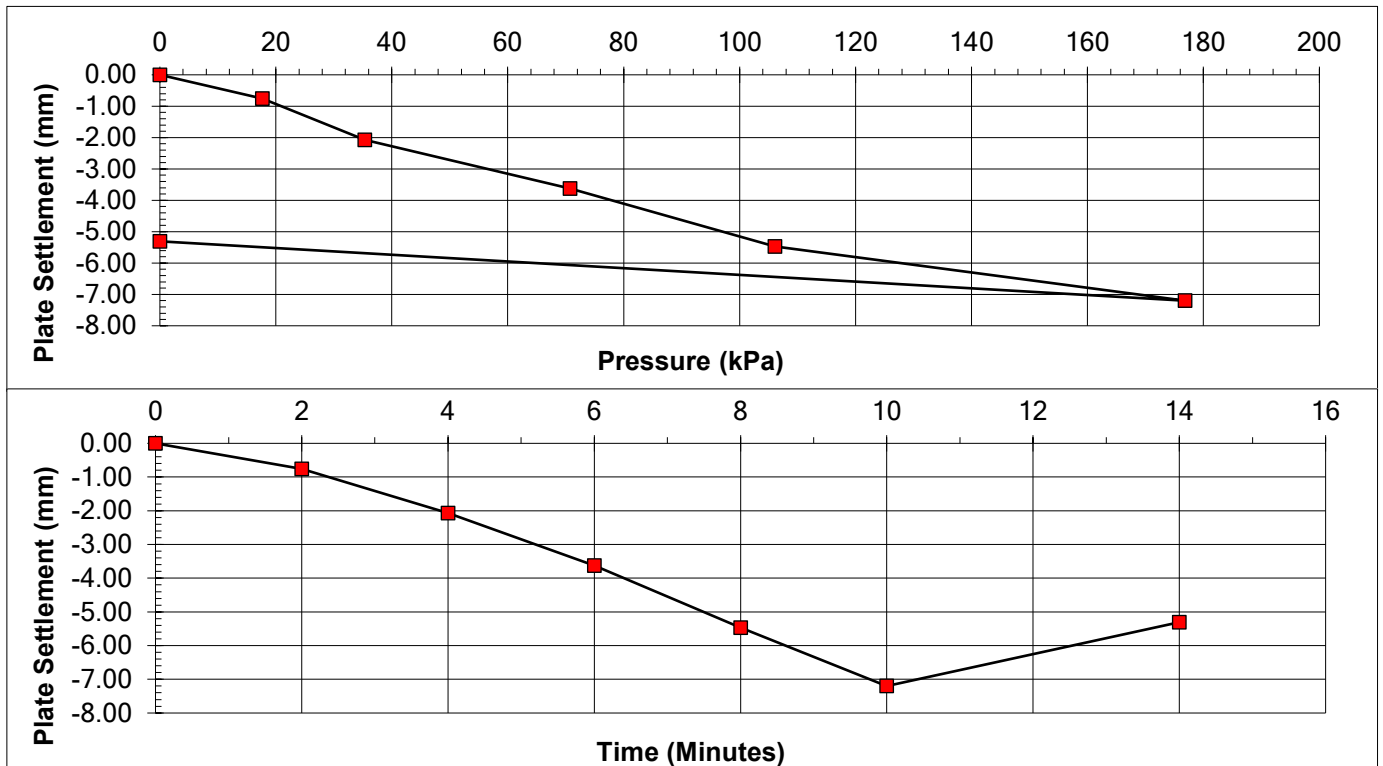
TEST CERTIFICATE

PLATE INCREMENTAL LOAD TEST

BS 1377 : PART 9 : CL 4.1 and IAN 73/06 Rev 1 (2009)

CLIENT	VHE Construction Plc					
SITE	Barnsley, S70 2EQ					
JOB NUMBER	MRN 24288/2					
TEST LOCATION	PL 105	LOADING DEVICE		20 Tonne Enerpac Jack		
TEST DATE	31-Jul-24	PLATE SIZE (mm)		600 diameter		
TEST DEPTH	0.75 BGL	REACTION LOAD USED		Site Plant		
MATERIAL UNDER TEST		Made Ground		MOISTURE CONTENT	Not Required	

Dial Gauge 1 (mmx100)	Dial Gauge 2 (mmx100)	Dial Gauge 3 (mmx100)	Mean Gauge (mmx100)	Mean Deflection (mm)	Load (kN)	Pressure (kPa)
4450	4629	4379	4486	0.00	0.00	0.0
4370	4561	4299	4410	-0.76	5.00	17.7
4251	4429	4157	4279	-2.07	10.00	35.4
4109	4258	4004	4124	-3.62	20.00	70.7
3916	4079	3823	3939	-5.47	30.00	106.1
3739	3903	3656	3766	-7.20	50.00	176.8
4000	4060	3806	3955	-5.31	0.00	0.0



Pressure at 1.25 mm deflexion =	24 kPa
Modulus of subgrade reaction (k) =	19 MPa/m
Equivalent 762 mm plate reaction =	16 MPa/m
Equivalent CBR =	1.1 %

REMARKS

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 02-Aug-24

MURRAY RIX

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TEL 0161 475 0870



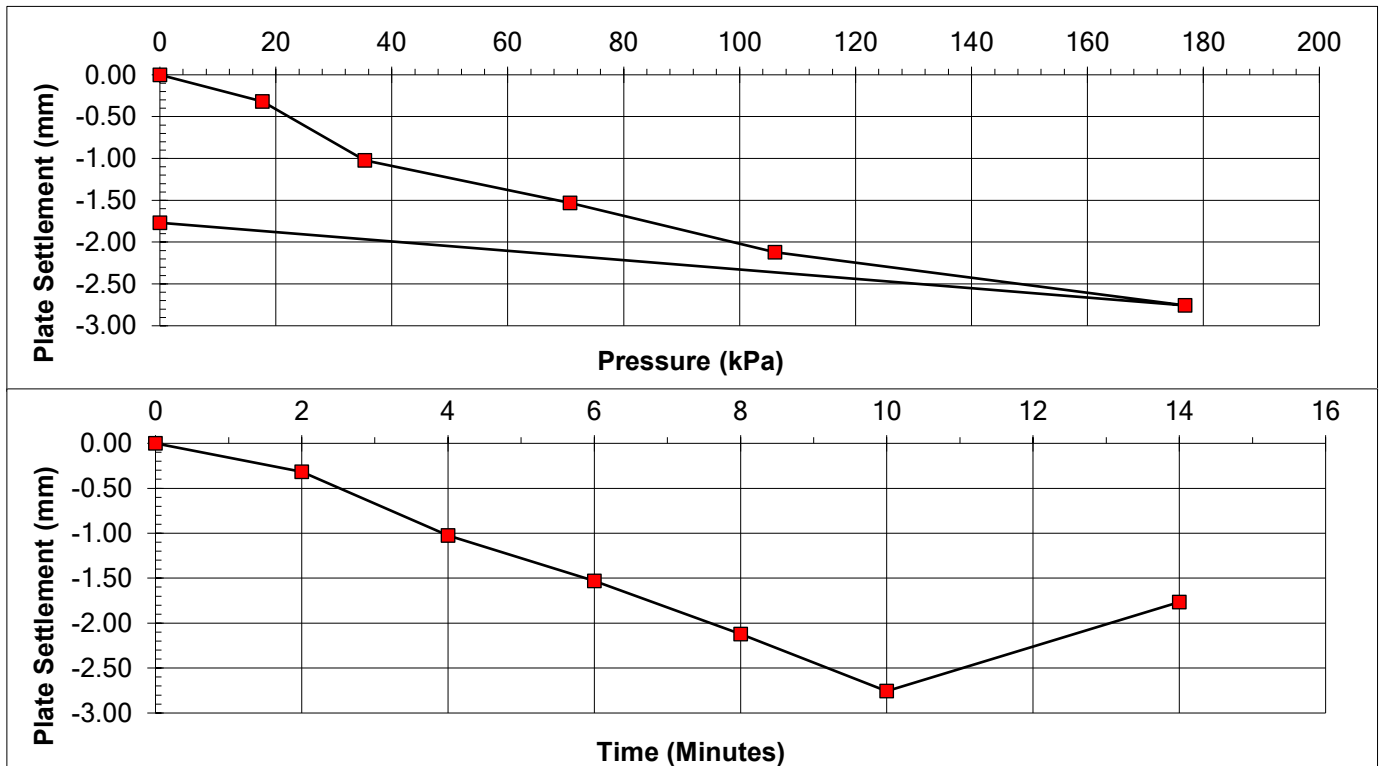
TEST CERTIFICATE

PLATE INCREMENTAL LOAD TEST

BS 1377 : PART 9 : CL 4.1 and IAN 73/06 Rev 1 (2009)

CLIENT	VHE Construction Plc					
SITE	Barnsley, S70 2EQ					
JOB NUMBER	MRN 24288/2					
TEST LOCATION	PL 106	LOADING DEVICE	20 Tonne Enerpac Jack			
TEST DATE	31-Jul-24	PLATE SIZE (mm)	600 diameter			
TEST DEPTH	Asphalt	REACTION LOAD USED	Site Plant			
MATERIAL UNDER TEST	Subbase Type 1		MOISTURE CONTENT	Not Required		

Dial Gauge 1 (mmx100)	Dial Gauge 2 (mmx100)	Dial Gauge 3 (mmx100)	Mean Gauge (mmx100)	Mean Deflection (mm)	Load (kN)	Pressure (kPa)
4368	4392	4411	4390	0.00	0.00	0.0
4341	4356	4379	4359	-0.32	5.00	17.7
4270	4280	4314	4288	-1.02	10.00	35.4
4215	4237	4260	4237	-1.53	20.00	70.7
4151	4177	4207	4178	-2.12	30.00	106.1
4079	4109	4156	4115	-2.76	50.00	176.8
4190	4212	4239	4214	-1.77	0.00	0.0



Pressure at 1.25 mm deflexion =	51 kPa
Modulus of subgrade reaction (k) =	41 MPa/m
Equivalent 762 mm plate reaction =	33 MPa/m
Equivalent CBR =	4.1 %

REMARKS

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 02-Aug-24

MURRAY RIX

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TEL 0161 475 0870



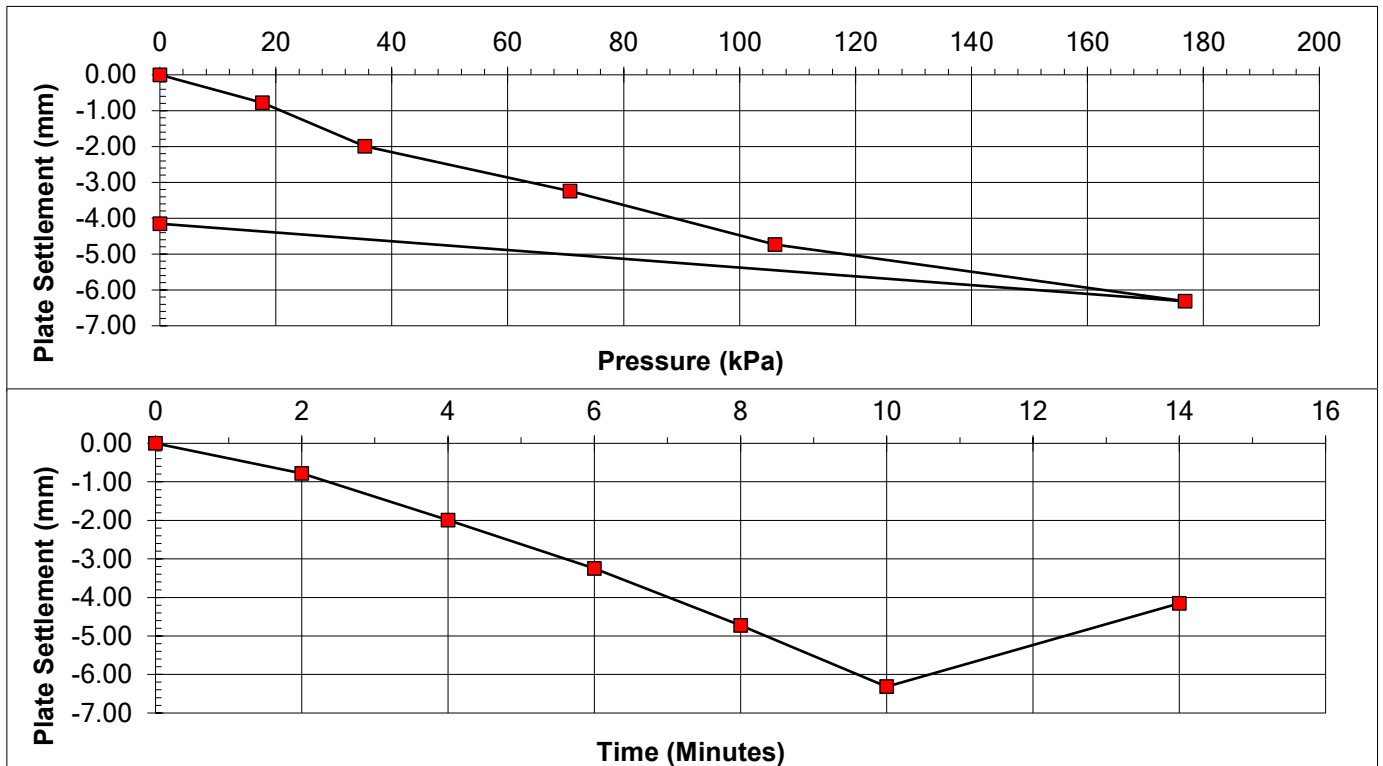
TEST CERTIFICATE

PLATE INCREMENTAL LOAD TEST

BS 1377 : PART 9 : CL 4.1 and IAN 73/06 Rev 1 (2009)

CLIENT	VHE Construction Plc					
SITE	Barnsley, S70 2EQ					
JOB NUMBER	MRN 24288/2					
TEST LOCATION	PL 106	LOADING DEVICE	20 Tonne Enerpac Jack			
TEST DATE	31-Jul-24	PLATE SIZE (mm)	600 diameter			
TEST DEPTH	0.5m BGL	REACTION LOAD USED	Site Plant			
MATERIAL UNDER TEST	Made Ground		MOISTURE CONTENT	Not Required		

Dial Gauge 1 (mmx100)	Dial Gauge 2 (mmx100)	Dial Gauge 3 (mmx100)	Mean Gauge (mmx100)	Mean Deflection (mm)	Load (kN)	Pressure (kPa)
4558	4597	4654	4603	0.00	0.00	0.0
4482	4519	4575	4525	-0.78	5.00	17.7
4373	4391	4447	4404	-1.99	10.00	35.4
4247	4269	4320	4279	-3.24	20.00	70.7
4108	4132	4150	4130	-4.73	30.00	106.1
3947	3961	4006	3971	-6.32	50.00	176.8
4210	4160	4194	4188	-4.15	0.00	0.0



Pressure at 1.25 mm deflexion =	25 kPa
Modulus of subgrade reaction (k) =	20 MPa/m
Equivalent 762 mm plate reaction =	16 MPa/m
Equivalent CBR =	1.2 %

REMARKS

SIGNED
NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 02-Aug-24

MURRAY RIX

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DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870



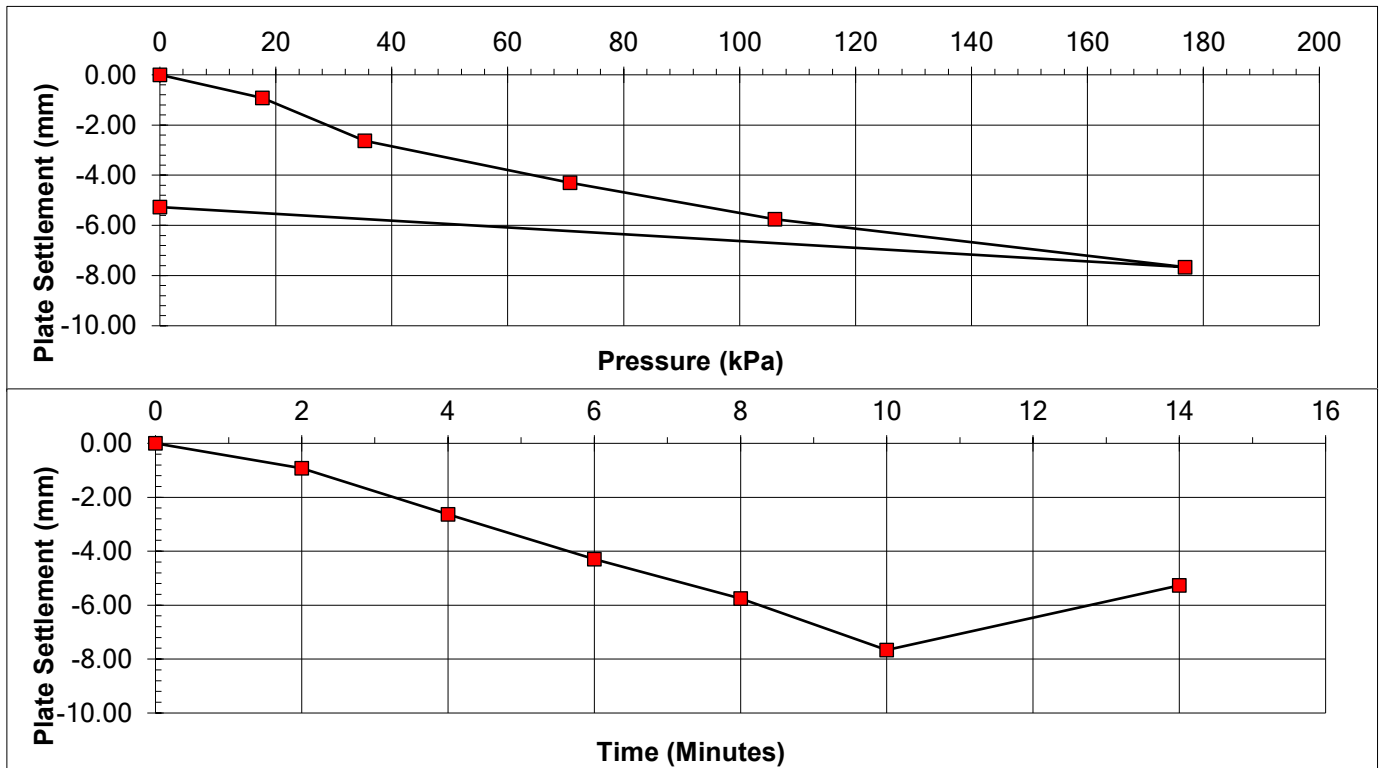
TEST CERTIFICATE

PLATE INCREMENTAL LOAD TEST

BS 1377 : PART 9 : CL 4.1 and IAN 73/06 Rev 1 (2009)

CLIENT	VHE Construction Plc					
SITE	Barnsley, S70 2EQ					
JOB NUMBER	MRN 24288/2					
TEST LOCATION	PL 106	LOADING DEVICE	20 Tonne Enerpac Jack			
TEST DATE	31-Jul-24	PLATE SIZE (mm)	600 diameter			
TEST DEPTH	0.75m BGL	REACTION LOAD USED	Site Plant			
MATERIAL UNDER TEST	Made Ground		MOISTURE CONTENT	Not Required		

Dial Gauge 1 (mmx100)	Dial Gauge 2 (mmx100)	Dial Gauge 3 (mmx100)	Mean Gauge (mmx100)	Mean Deflection (mm)	Load (kN)	Pressure (kPa)
4623	4607	4282	4504	0.00	0.00	0.0
4521	4518	4197	4412	-0.92	5.00	17.7
4358	4356	4009	4241	-2.63	10.00	35.4
4177	4199	3846	4074	-4.30	20.00	70.7
4029	4057	3698	3928	-5.76	30.00	106.1
3829	3870	3514	3738	-7.66	50.00	176.8
4109	4112	3711	3977	-5.27	0.00	0.0



Pressure at 1.25 mm deflexion =	21 kPa
Modulus of subgrade reaction (k) =	17 MPa/m
Equivalent 762 mm plate reaction =	14 MPa/m
Equivalent CBR =	0.9 %

REMARKS

SIGNED
NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 02-Aug-24

TEST REPORT

Client VHE Construction Plc

Address 6 Newton Business Park
Thorncliffe Park Estate
Sheffield
South Yorkshire
S35 2PH

Contract Barnsley, S70 2EQ

Job Number MRN 24288/3
Date of Issue 05 August 2024
Page 1 of 10

Approved Signatories

S J Hutchings, O P Davies

Notes

- 1 All remaining samples and remnants from this contract will be disposed 28 days from the date of this report unless you notify us to the contrary.
- 2 Result certificates, in this report, not bearing a UKAS mark, are not included in our UKAS accreditation schedule.
- 3 Opinions and interpretations expressed herein are outside the scope of our UKAS accreditation.
- 4 Certified that the samples have been examined and tested in accordance with the terms of the contract/order and unless otherwise stated conform to the standards/specifications quoted.
- 5 The results included within the report are representative of the samples submitted for analysis.
- 6 This certificate should not be reproduced, except in full, without the express permission of the laboratory.



Andrew House, Hadfield Street, Dukinfield, Cheshire SK16 4QX Tel: 0161 475 0870
Email: enquiries@murrayrix.com Website: www.murrayrix.com

Also at: London: 020 8523 1999

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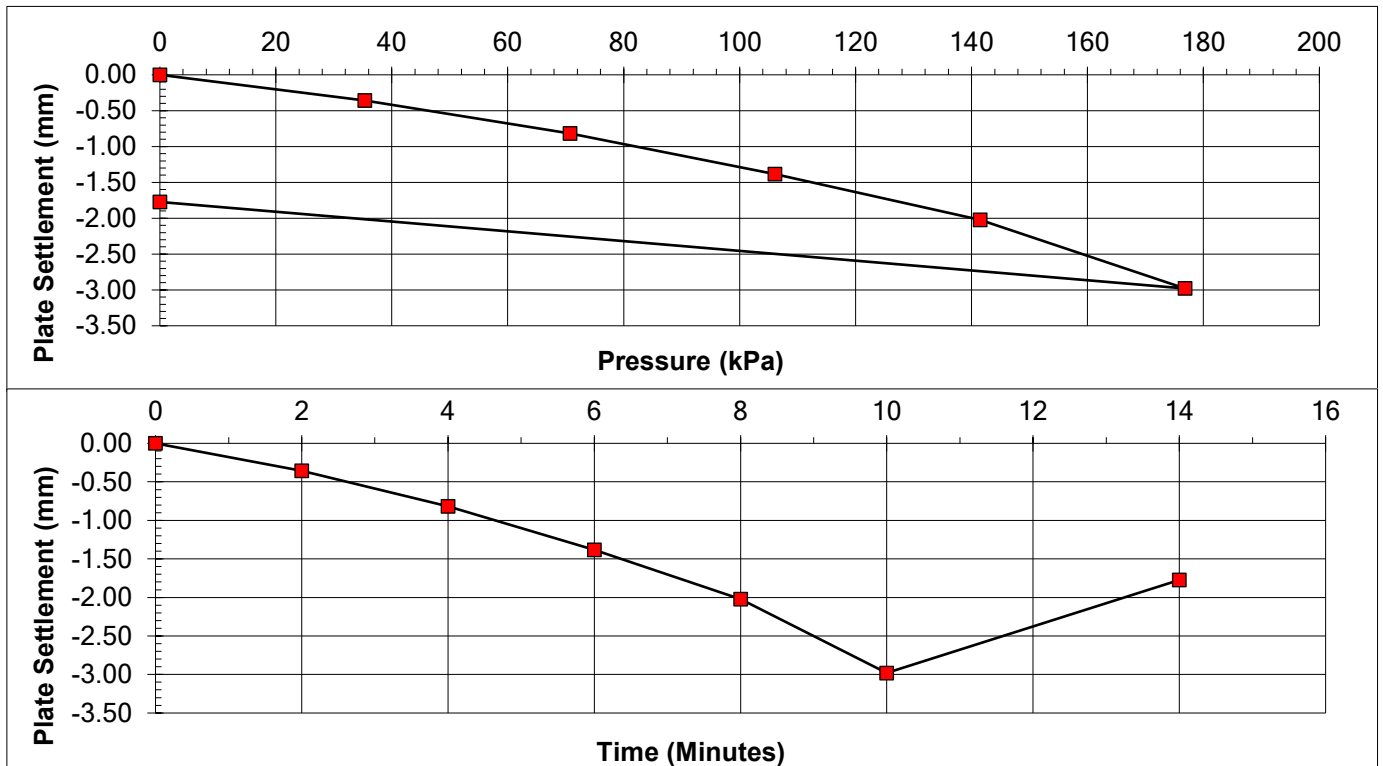
TEST CERTIFICATE

PLATE INCREMENTAL LOAD TEST

BS 1377 : PART 9 : CL 4.1 and IAN 73/06 Rev 1 (2009)

CLIENT	VHE Construction Plc		
SITE	Barnsley, S70 2EQ		
JOB NUMBER	MRN 24288/3		
TEST LOCATION	PL 107	LOADING DEVICE	20 Tonne Enerpac Jack
TEST DATE	02-Aug-24	PLATE SIZE (mm)	600 diameter
TEST DEPTH	U/S Asphalt	REACTION LOAD USED	Site Plant
MATERIAL UNDER TEST	Subbase Type 1	MOISTURE CONTENT	Not Required

Dial Gauge 1 (mmx100)	Dial Gauge 2 (mmx100)	Dial Gauge 3 (mmx100)	Mean Gauge (mmx100)	Mean Deflection (mm)	Load (kN)	Pressure (kPa)
4542	4538	4842	4641	0.00	0.00	0.0
4518	4499	4798	4605	-0.36	10.00	35.4
4461	4456	4760	4559	-0.82	20.00	70.7
4409	4391	4707	4502	-1.38	30.00	106.1
4342	4339	4634	4438	-2.02	40.00	141.5
4249	4250	4529	4343	-2.98	50.00	176.8
4360	4360	4670	4463	-1.77	0.00	0.0



Pressure at 1.25 mm deflexion =	98 kPa
Modulus of subgrade reaction (k) =	78 MPa/m
Equivalent 762 mm plate reaction =	63 MPa/m
Equivalent CBR =	12.6 %

REMARKS

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 05-Aug-24

MURRAY RIX

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DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870



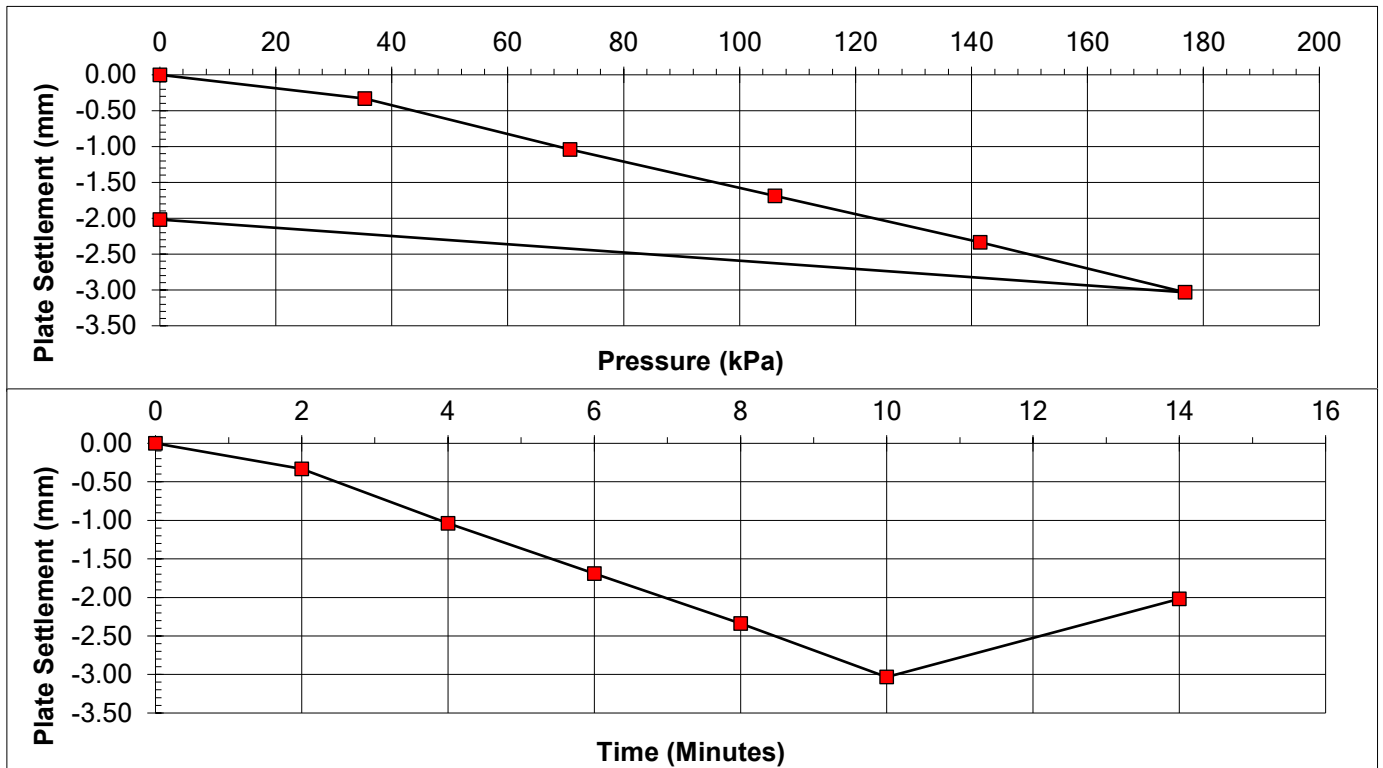
TEST CERTIFICATE

PLATE INCREMENTAL LOAD TEST

BS 1377 : PART 9 : CL 4.1 and IAN 73/06 Rev 1 (2009)

CLIENT	VHE Construction Plc		
SITE	Barnsley, S70 2EQ		
JOB NUMBER	MRN 24288/3		
TEST LOCATION	PL 107	LOADING DEVICE	20 Tonne Enerpac Jack
TEST DATE	02-Aug-24	PLATE SIZE (mm)	600 diameter
TEST DEPTH	0.5m BGL	REACTION LOAD USED	Site Plant
MATERIAL UNDER TEST	Made Ground/Black Ash	MOISTURE CONTENT	Not Required

Dial Gauge 1 (mmx100)	Dial Gauge 2 (mmx100)	Dial Gauge 3 (mmx100)	Mean Gauge (mmx100)	Mean Deflection (mm)	Load (kN)	Pressure (kPa)
4553	4561	4422	4512	0.00	0.00	0.0
4530	4516	4391	4479	-0.33	10.00	35.4
4454	4442	4328	4408	-1.04	20.00	70.7
4380	4378	4271	4343	-1.69	30.00	106.1
4309	4319	4207	4278	-2.34	40.00	141.5
4228	4258	4140	4209	-3.03	50.00	176.8
4360	4329	4242	4310	-2.02	0.00	0.0



Pressure at 1.25 mm deflexion =	82 kPa
Modulus of subgrade reaction (k) =	66 MPa/m
Equivalent 762 mm plate reaction =	53 MPa/m
Equivalent CBR =	9.3 %

REMARKS

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 05-Aug-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870



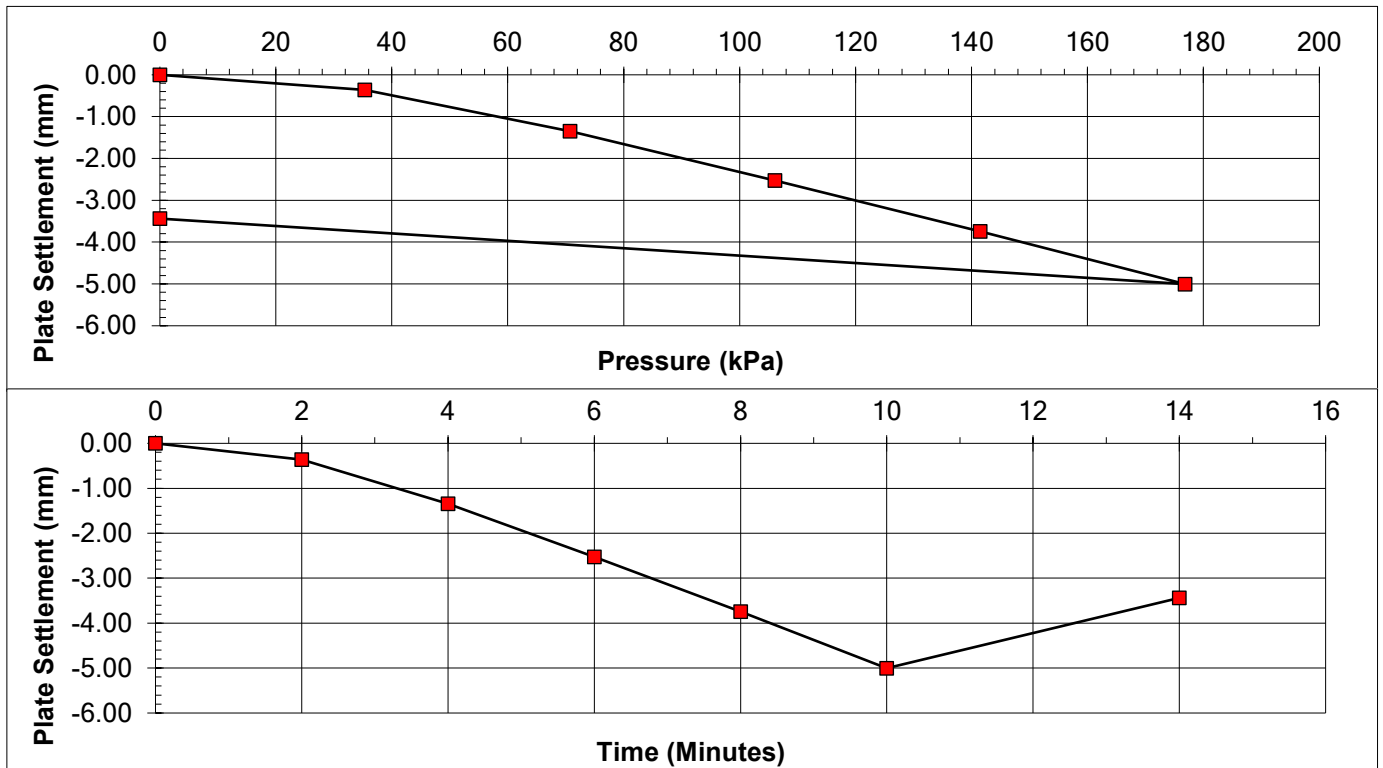
TEST CERTIFICATE

PLATE INCREMENTAL LOAD TEST

BS 1377 : PART 9 : CL 4.1 and IAN 73/06 Rev 1 (2009)

CLIENT	VHE Construction Plc		
SITE	Barnsley, S70 2EQ		
JOB NUMBER	MRN 24288/3		
TEST LOCATION	PL 107	LOADING DEVICE	20 Tonne Enerpac Jack
TEST DATE	02-Aug-24	PLATE SIZE (mm)	600 diameter
TEST DEPTH	0.75m BGL	REACTION LOAD USED	Site Plant
MATERIAL UNDER TEST	Sandy Gravel	MOISTURE CONTENT	Not Required

Dial Gauge 1 (mmx100)	Dial Gauge 2 (mmx100)	Dial Gauge 3 (mmx100)	Mean Gauge (mmx100)	Mean Deflection (mm)	Load (kN)	Pressure (kPa)
4390	4538	4541	4490	0.00	0.00	0.0
4361	4501	4498	4453	-0.36	10.00	35.4
4257	4397	4411	4355	-1.35	20.00	70.7
4140	4271	4299	4237	-2.53	30.00	106.1
4011	4157	4177	4115	-3.75	40.00	141.5
3893	4029	4046	3989	-5.00	50.00	176.8
4041	4174	4223	4146	-3.44	0.00	0.0



Pressure at 1.25 mm deflexion =	67 kPa
Modulus of subgrade reaction (k) =	54 MPa/m
Equivalent 762 mm plate reaction =	43 MPa/m
Equivalent CBR =	6.6 %

REMARKS

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 05-Aug-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870



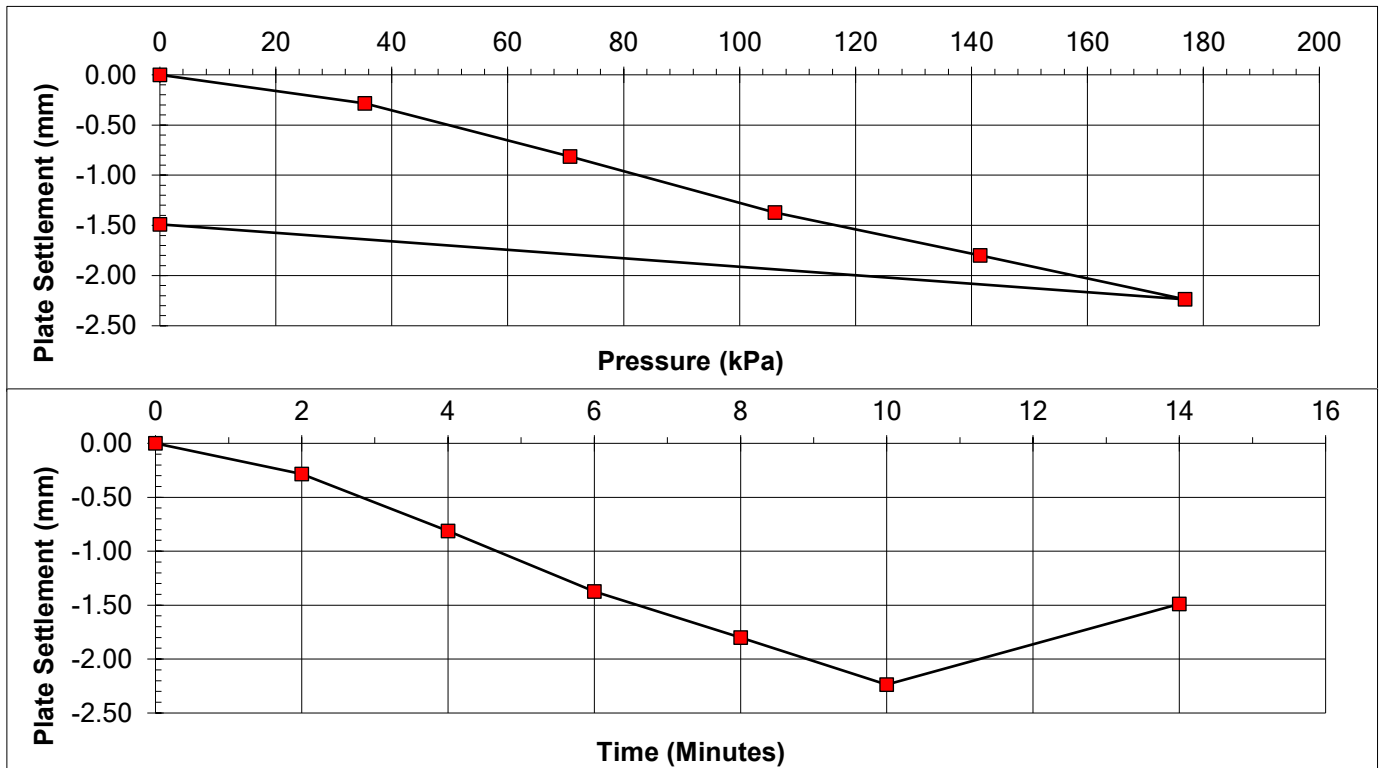
TEST CERTIFICATE

PLATE INCREMENTAL LOAD TEST

BS 1377 : PART 9 : CL 4.1 and IAN 73/06 Rev 1 (2009)

CLIENT	VHE Construction Plc		
SITE	Barnsley, S70 2EQ		
JOB NUMBER	MRN 24288/3		
TEST LOCATION	PL 108	LOADING DEVICE	20 Tonne Enerpac Jack
TEST DATE	02-Aug-24	PLATE SIZE (mm)	600 diameter
TEST DEPTH	U/S Asphalt	REACTION LOAD USED	Site Plant
MATERIAL UNDER TEST	Subbase Type 1	MOISTURE CONTENT	Not Required

Dial Gauge 1 (mmx100)	Dial Gauge 2 (mmx100)	Dial Gauge 3 (mmx100)	Mean Gauge (mmx100)	Mean Deflection (mm)	Load (kN)	Pressure (kPa)
4623	4652	4666	4647	0.00	0.00	0.0
4592	4624	4640	4619	-0.28	10.00	35.4
4540	4567	4590	4566	-0.81	20.00	70.7
4474	4519	4536	4510	-1.37	30.00	106.1
4429	4480	4492	4467	-1.80	40.00	141.5
4388	4428	4454	4423	-2.24	50.00	176.8
4460	4503	4531	4498	-1.49	0.00	0.0



Pressure at 1.25 mm deflexion =	98 kPa
Modulus of subgrade reaction (k) =	79 MPa/m
Equivalent 762 mm plate reaction =	63 MPa/m
Equivalent CBR =	12.8 %

REMARKS

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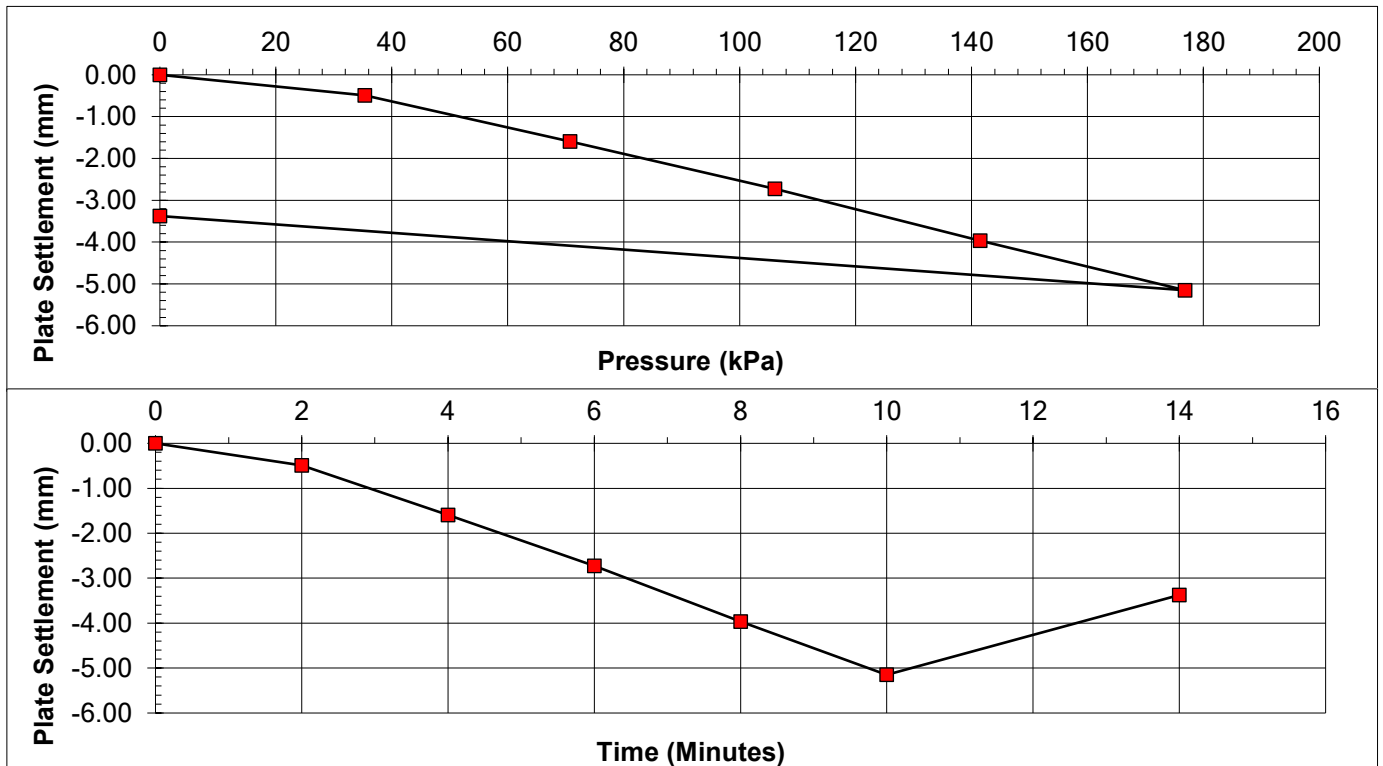
TEST CERTIFICATE

PLATE INCREMENTAL LOAD TEST

BS 1377 : PART 9 : CL 4.1 and IAN 73/06 Rev 1 (2009)

CLIENT	VHE Construction Plc					
SITE	Barnsley, S70 2EQ					
JOB NUMBER	MRN 24288/3					
TEST LOCATION	PL 108	LOADING DEVICE	20 Tonne Enerpac Jack			
TEST DATE	02-Aug-24	PLATE SIZE (mm)	600 diameter			
TEST DEPTH	0.5m BGL	REACTION LOAD USED	Site Plant			
MATERIAL UNDER TEST	Made Ground		MOISTURE CONTENT	Not Required		

Dial Gauge 1 (mmx100)	Dial Gauge 2 (mmx100)	Dial Gauge 3 (mmx100)	Mean Gauge (mmx100)	Mean Deflection (mm)	Load (kN)	Pressure (kPa)
4652	4529	4654	4612	0.00	0.00	0.0
4607	4471	4609	4562	-0.49	10.00	35.4
4511	4359	4486	4452	-1.60	20.00	70.7
4390	4257	4370	4339	-2.73	30.00	106.1
4257	4140	4249	4215	-3.96	40.00	141.5
4133	4011	4146	4097	-5.15	50.00	176.8
4292	4230	4301	4274	-3.37	0.00	0.0



Pressure at 1.25 mm deflexion =	60 kPa
Modulus of subgrade reaction (k) =	48 MPa/m
Equivalent 762 mm plate reaction =	38 MPa/m
Equivalent CBR =	5.4 %

REMARKS

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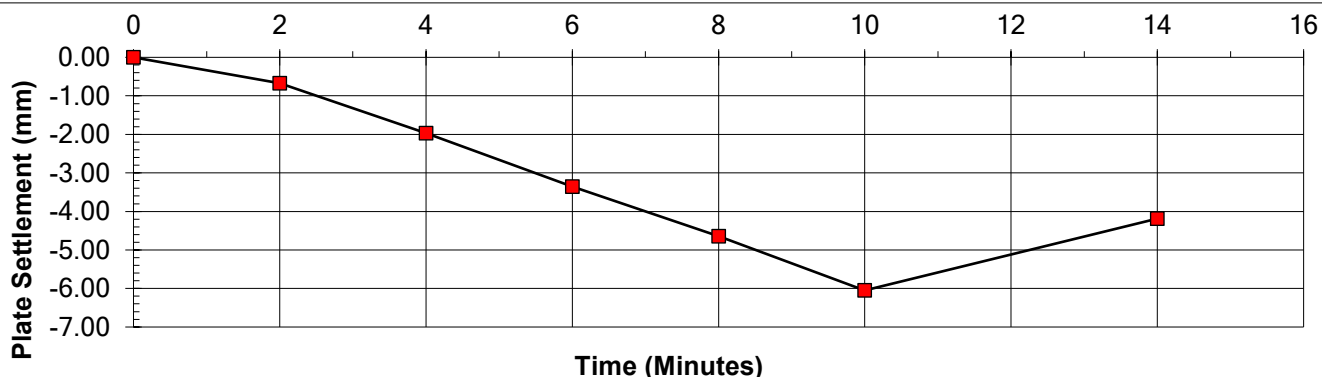
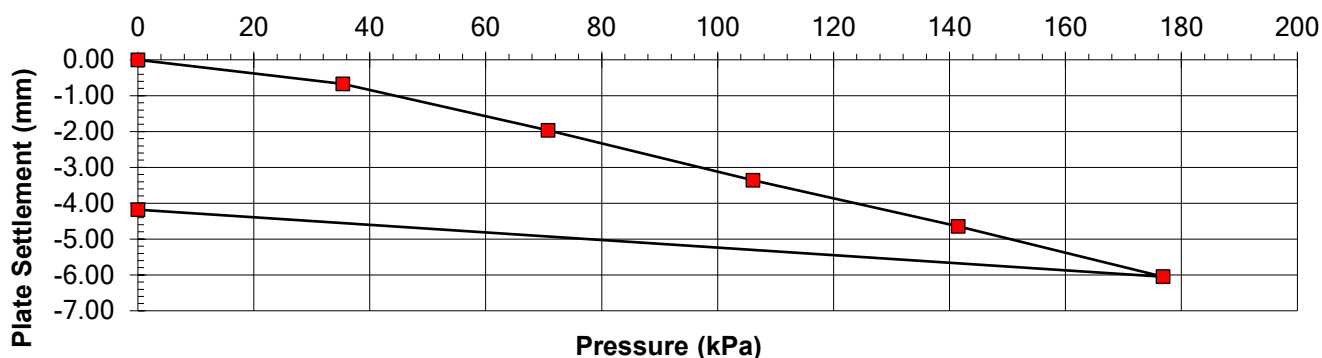
TEST CERTIFICATE

PLATE INCREMENTAL LOAD TEST

BS 1377 : PART 9 : CL 4.1 and IAN 73/06 Rev 1 (2009)

CLIENT	VHE Construction Plc		
SITE	Barnsley, S70 2EQ		
JOB NUMBER	MRN 24288/3		
TEST LOCATION	PL 108	LOADING DEVICE	20 Tonne Enerpac Jack
TEST DATE	02-Aug-24	PLATE SIZE (mm)	600 diameter
TEST DEPTH	0.75m BGL	REACTION LOAD USED	Site Plant
MATERIAL UNDER TEST	Made Ground	MOISTURE CONTENT	Not Required

Dial Gauge 1 (mmx100)	Dial Gauge 2 (mmx100)	Dial Gauge 3 (mmx100)	Mean Gauge (mmx100)	Mean Deflection (mm)	Load (kN)	Pressure (kPa)
4423	4711	4452	4529	0.00	0.00	0.0
4349	4640	4396	4462	-0.67	10.00	35.4
4228	4514	4253	4332	-1.97	20.00	70.7
4089	4381	4109	4193	-3.36	30.00	106.1
3963	4256	3973	4064	-4.65	40.00	141.5
3824	4108	3839	3924	-6.05	50.00	176.8
4020	4280	4031	4110	-4.18	0.00	0.0



Pressure at 1.25 mm deflexion =	51 kPa
Modulus of subgrade reaction (k) =	41 MPa/m
Equivalent 762 mm plate reaction =	33 MPa/m
Equivalent CBR =	4.1 %

REMARKS

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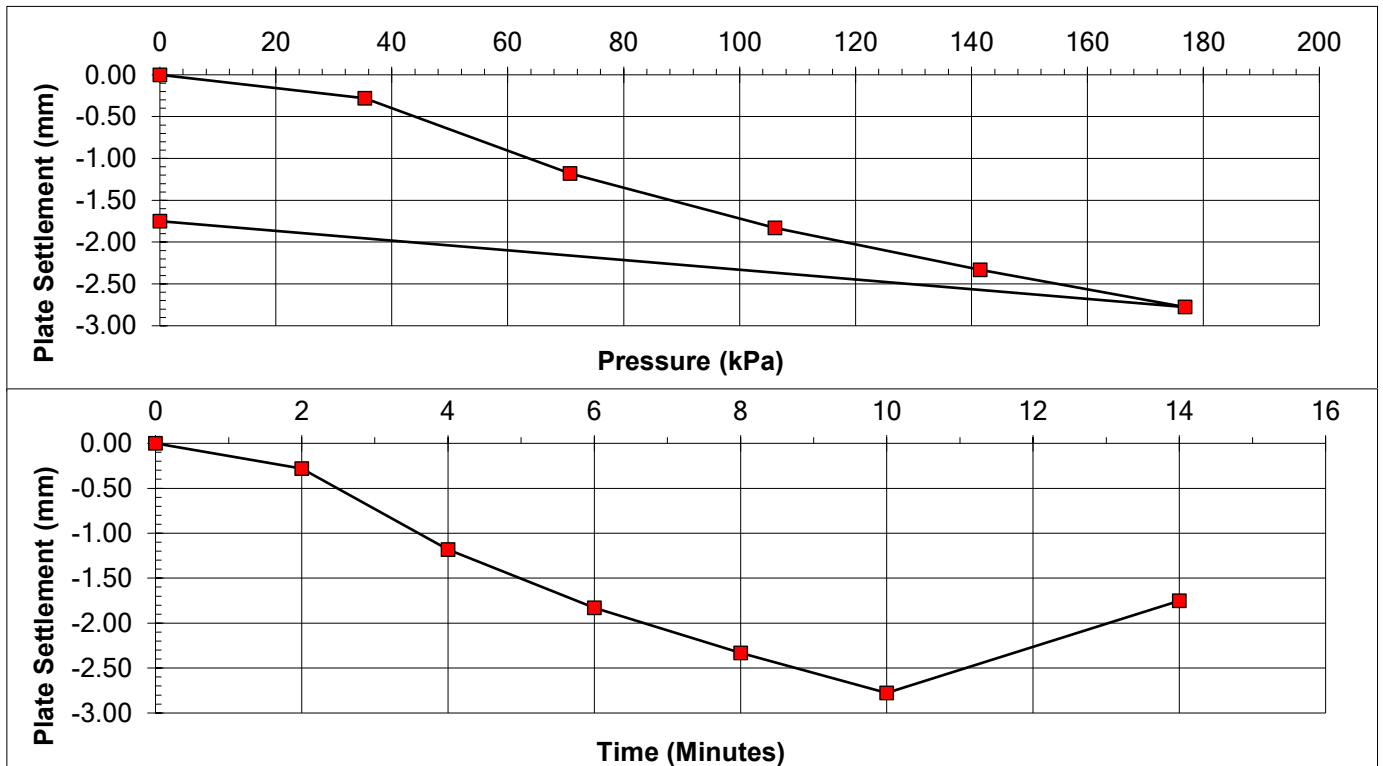
TEST CERTIFICATE

PLATE INCREMENTAL LOAD TEST

BS 1377 : PART 9 : CL 4.1 and IAN 73/06 Rev 1 (2009)

CLIENT	VHE Construction Plc		
SITE	Barnsley, S70 2EQ		
JOB NUMBER	MRN 24288/3		
TEST LOCATION	PL 109	LOADING DEVICE	20 Tonne Enerpac Jack
TEST DATE	02-Aug-24	PLATE SIZE (mm)	600 diameter
TEST DEPTH	Surface/U/S Asphalt	REACTION LOAD USED	Site Plant
MATERIAL UNDER TEST	Subbase Type 1	MOISTURE CONTENT	Not Required

Dial Gauge 1 (mmx100)	Dial Gauge 2 (mmx100)	Dial Gauge 3 (mmx100)	Mean Gauge (mmx100)	Mean Deflection (mm)	Load (kN)	Pressure (kPa)
4463	4528	4441	4477	0.00	0.00	0.0
4441	4490	4417	4449	-0.28	10.00	35.4
4351	4401	4326	4359	-1.18	20.00	70.7
4279	4340	4264	4294	-1.83	30.00	106.1
4231	4297	4205	4244	-2.33	40.00	141.5
4197	4252	4150	4200	-2.78	50.00	176.8
4253	4352	4302	4302	-1.75	0.00	0.0



Pressure at 1.25 mm deflexion =	75 kPa
Modulus of subgrade reaction (k) =	60 MPa/m
Equivalent 762 mm plate reaction =	48 MPa/m
Equivalent CBR =	7.9 %

REMARKS

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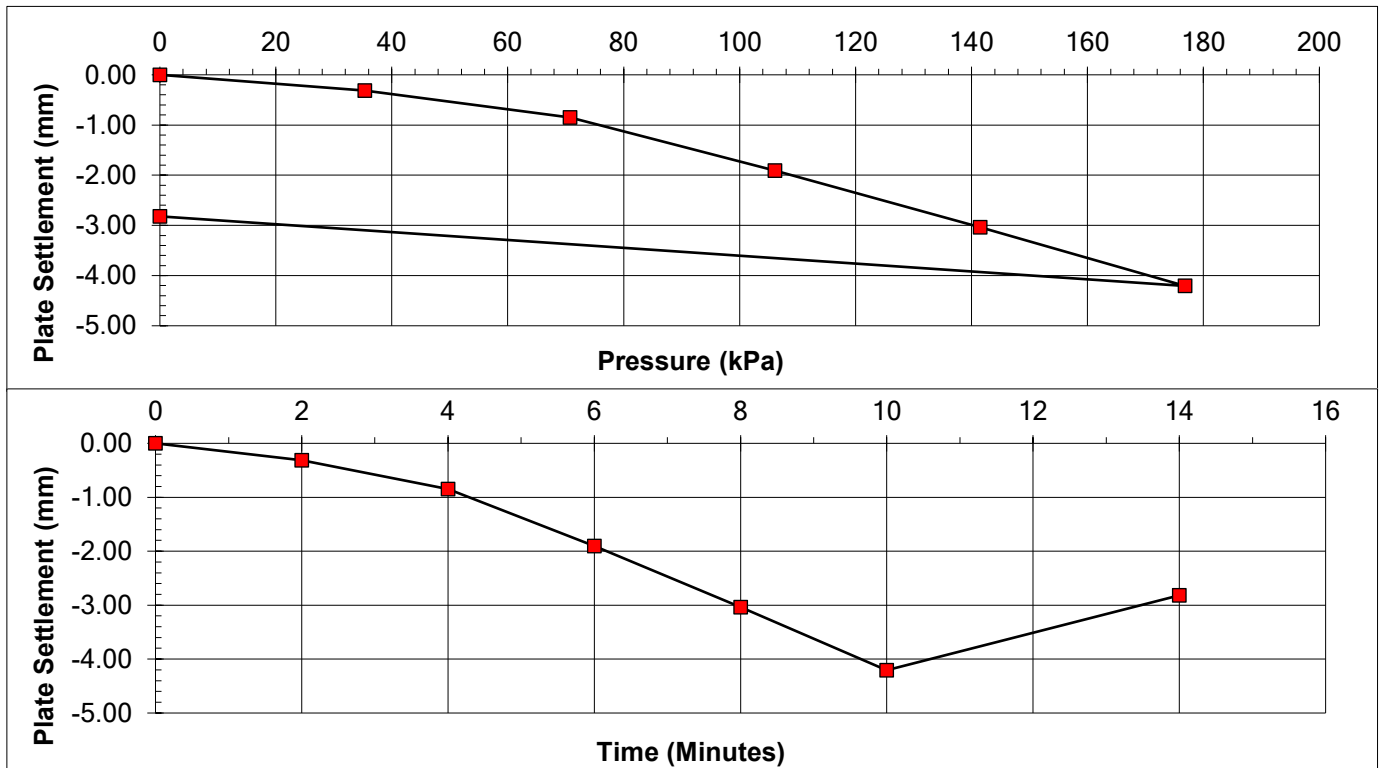
TEST CERTIFICATE

PLATE INCREMENTAL LOAD TEST

BS 1377 : PART 9 : CL 4.1 and IAN 73/06 Rev 1 (2009)

CLIENT	VHE Construction Plc					
SITE	Barnsley, S70 2EQ					
JOB NUMBER	MRN 24288/3					
TEST LOCATION	PL 109	LOADING DEVICE		20 Tonne Enerpac Jack		
TEST DATE	02-Aug-24	PLATE SIZE (mm)		600 diameter		
TEST DEPTH	0.5m BGL	REACTION LOAD USED		Site Plant		
MATERIAL UNDER TEST		Made Ground		MOISTURE CONTENT	Not Required	

Dial Gauge 1 (mmx100)	Dial Gauge 2 (mmx100)	Dial Gauge 3 (mmx100)	Mean Gauge (mmx100)	Mean Deflection (mm)	Load (kN)	Pressure (kPa)
4663	4755	4644	4687	0.00	0.00	0.0
4635	4728	4604	4656	-0.32	10.00	35.4
4583	4672	4552	4602	-0.85	20.00	70.7
4471	4579	4440	4497	-1.91	30.00	106.1
4357	4472	4321	4383	-3.04	40.00	141.5
4239	4361	4200	4267	-4.21	50.00	176.8
4363	4505	4348	4405	-2.82	0.00	0.0



Pressure at 1.25 mm deflexion =	84 kPa
Modulus of subgrade reaction (k) =	67 MPa/m
Equivalent 762 mm plate reaction =	54 MPa/m
Equivalent CBR =	9.7 %

REMARKS

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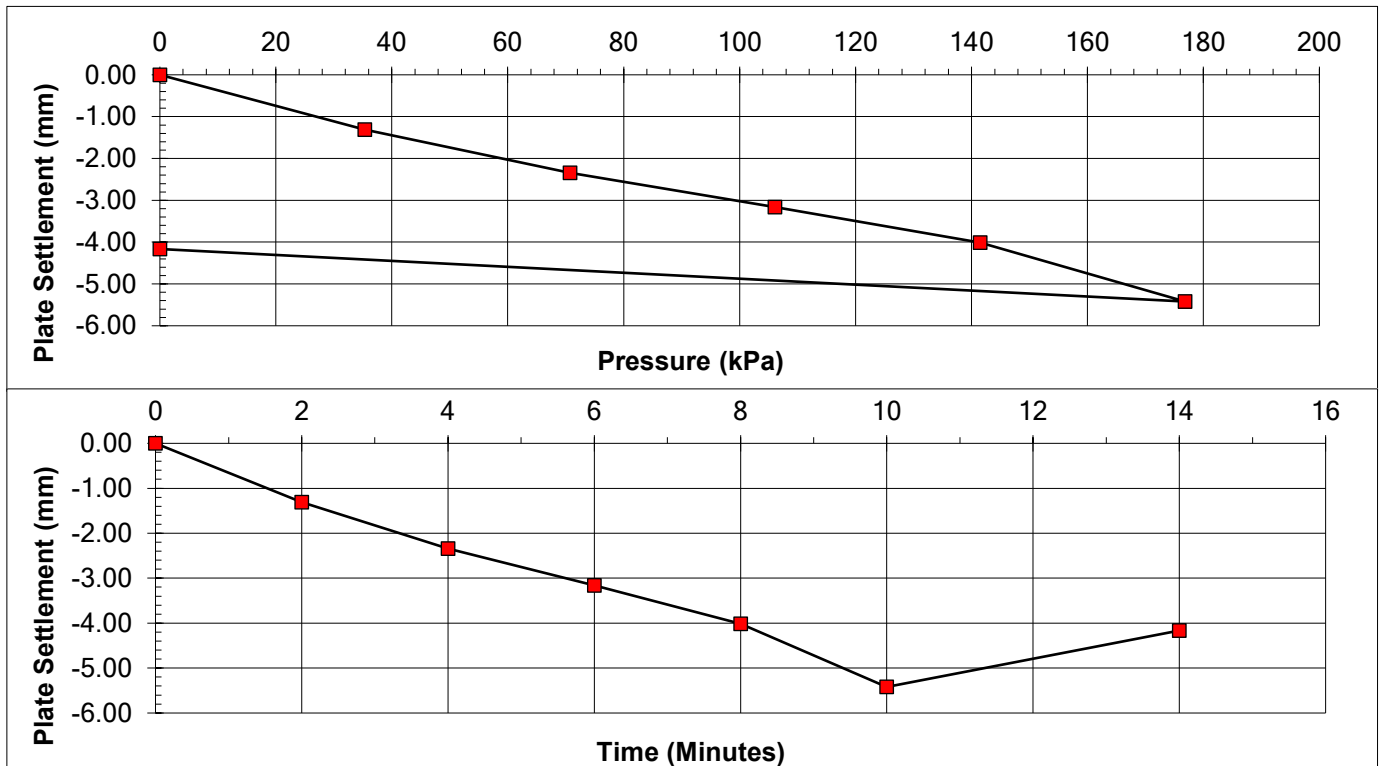
TEST CERTIFICATE

PLATE INCREMENTAL LOAD TEST

BS 1377 : PART 9 : CL 4.1 and IAN 73/06 Rev 1 (2009)

CLIENT	VHE Construction Plc					
SITE	Barnsley, S70 2EQ					
JOB NUMBER	MRN 24288/3					
TEST LOCATION	PL 109	LOADING DEVICE	20 Tonne Enerpac Jack			
TEST DATE	02-Aug-24	PLATE SIZE (mm)	600 diameter			
TEST DEPTH	0.75m BGL	REACTION LOAD USED	Site Plant			
MATERIAL UNDER TEST	Made Ground		MOISTURE CONTENT	Not Required		

Dial Gauge 1 (mmx100)	Dial Gauge 2 (mmx100)	Dial Gauge 3 (mmx100)	Mean Gauge (mmx100)	Mean Deflection (mm)	Load (kN)	Pressure (kPa)
4611	4690	4572	4624	0.00	0.00	0.0
4481	4551	4448	4493	-1.31	10.00	35.4
4371	4429	4370	4390	-2.34	20.00	70.7
4291	4346	4288	4308	-3.16	30.00	106.1
4208	4258	4203	4223	-4.01	40.00	141.5
4110	4151	3986	4082	-5.42	50.00	176.8
4230	4272	4121	4208	-4.17	0.00	0.0



Pressure at 1.25 mm deflexion =	34 kPa
Modulus of subgrade reaction (k) =	27 MPa/m
Equivalent 762 mm plate reaction =	22 MPa/m
Equivalent CBR =	2.0 %

REMARKS

SIGNED 
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(Laboratory Manager)

DATE 05-Aug-24

Appendix J

Ground Gas and Water Level Monitoring Results

