



Geo-Environmental Factual Report

Premier Inn, Deansgate

Whitbread PLC

MAN.160.001.GE.R.001.A



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Geo-Environmental Factual Report for Premier Inn, Deansgate

Project:	Premier Inn, Deansgate
For:	Whitbread PLC.
Ref:	MAN.260.001.GE.R.001.A
Status:	Final
Date:	October 2022
Author:	Nigel Ramsumair MGeo (Hons.) , Senior Geo-Environmental Engineer
Approver:	David Oliver Frayne BSc (Hons.) , C.Geol , FGS , UKRoGEP , Associate Director

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We disclaim any responsibility to the client and others in respect of any matters outside the scope of the above.

This report is confidential to the client and we accept no responsibility of whatsoever nature to third parties to whom this report, or any part thereof, is made known. Any such party relies on the report at their own risk.

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1.0 INTRODUCTION

1.1 Background

1.1.1 Enzygo Geo-Environmental Limited [Enzygo] has been commissioned by Ramboll Ltd [the Consultant] on behalf of Whitbread PLC [client] to prepare a Geo-Environmental Factual Report for a proposed new development on an existing Premier Inn site located off Medlock Street, M15 5FJ.

1.2 Proposed Development

1.2.1 The project consists of the re-development of the Premier Inn to comprise of two large-scale buildings with associated hard and soft landscaping. Further details of the proposed buildings are as followed below:

- One ground, plus twelve storey, plus basement office building providing 26,242m² net internal area (NIA) of office and commercial space in a 36,494 m² gross internal area (GIA) building; and
- One ground, plus 37no. storey purpose-built student residential (PBSA) building providing 1,014 no. student bedrooms, amenity space and a 293m² of flexible community floorspace.

1.2.2 The project consists of the re-development of the Premier Inn Deansgate Locks Hotel site comprising of two large-scale residential buildings (24 and 34-storeys high) and a 13-storey office building.

1.3 Objectives

1.3.1 The objectives of the study are to:

- Undertake a targeted ground investigation;
- Assess ground conditions for foundation design purposes and potential contaminants;
- Determine CBR's for pavement design;
- Determine the permeability of the natural soils onsite;
- Determine ground water and gas levels for a ground gas assessment;
- Provide a full factual report relating to the ground investigation.

2.0 SITE SETTING

Table 2.0 Site Description

Item	Description
Site Address	Medlock Street, Manchester, M15 5FJ
National Grid Reference	E: 383630 N: 397190N

2.1 Current Site Description

2.1.1 The site currently comprises of an existing building [Premier Inn Hotel], associated outbuildings and car park which are bounded by commercial buildings to the north, west and east. The Mancunian Way is located directly south followed by residential dwellings. The site boundary is bounded with wooden fence panels with vehicular access to the west and pedestrian access to the north.

2.1.2 Access is off Medlock Street located to the northeast of site.

2.1.3 The site topography is generally level, with an elevation of approximately between 33-35m above Ordnance Datum (m aOD).

2.2 Surrounding Area

2.2.1 Land uses surrounding the site are summarised as follows:

Table 2.2 Land Use Surrounding the Area

Direction	Land Use
North	Bounded by commercial with commercial and commercial beyond.
East	Bounded by commercial with commercial and commercial beyond.
South	Bounded by the Mancunian Way with residential beyond.
West	Bounded by commercial with commercial beyond.

3.0 SITE INVESTIGATION

3.1 Investigation Rational

3.1.1 The Ground investigation was carried out in accordance to the specification provided by RAMBOLL Ltd (*Document ref: Premier Inn Redevelopment, Manchester, 1620005811-RAM-00-00-SPE-GE-0001, April 2019*).

3.2 General

3.2.1 A site investigation was undertaken by Enzygo from the 28th May until 10th June 2019 comprising six rotary boreholes (BH01 to BH06), nine windowless sampler boreholes (WS01 to WS06B), five plate load tests (PLT01-PLT05) and three machine excavated trial pits for the use of soakaway testing (SA01-SA03).

3.2.2 Locations of exploratory holes advanced by Enzygo are presented on Drawing MAN.260.001.GE.D.001 (Appendix 1); Exploratory holes were generally located in accordance with the Ramboll Specification however alterations were made due to the presence of services. The site works are summarised in the table below.

Table 3.2 Exploratory Holes

Hole	Type*	Depth (m)	Date Started	Date Finished	Backfill Details **	SPT Calibration Certificate Ref
BH01	BH	20.50	05/06/2019	06/06/2019	SP	G2
BH02	BH	23.50	04/06/2019	06/06/2019	SP	G1
BH03	BH	25.00	06/06/2019	07/06/2019	SP	G1
BH04	BH	20.00	28/05/2019	28/05/2019	SP	G1
BH05	BH	19.00	28/05/2019	28/05/2019	SP	G1
BH06	BH	10.50	06/06/2019	07/06/2019	SP	G2
WS01	WS	5.00	30/05/2019	30/05/2019	SP	DART435
WS02	WS	3.00	30/05/2019	30/05/2019	SP	DART435
WS03	WS	2.00	30/05/2019	30/05/2019	SP	DART435
WS04	WS	0.45	30/05/2019	30/05/2019	B	DART435
WS04A	WS	5.00	30/05/2019	30/05/2019	SP	DART435
WS05	WS	5.00	30/05/2019	30/05/2019	A	DART435
WS06	WS	1.20	30/05/2019	30/05/2019	A	DART435
WS06A	WS	1.35	30/05/2019	30/05/2019	SP	DART435
WS06B	WS	0.45	30/05/2019	30/05/2019	B	DART435
PLT01	PLT	0.60	31/05/2019	31/05/2019	A	N/A
PLT02	PLT	0.45	31/05/2019	31/05/2019	A	N/A
PLT03	PLT	0.60	31/05/2019	31/05/2019	A	N/A
PLT04	PLT	0.60	31/05/2019	31/05/2019	A	N/A
PLT05	PLT	0.60	31/05/2019	31/05/2019	A	N/A
SA01	SA	2.50	03/06/2019	03/06/2019	A	N/A
SA02	SA	2.30	03/06/2019	03/06/2019	A	N/A
SA03	SA	2.00	03/06/2019	03/06/2019	A	N/A
*BH= Rotary Borehole, WS= Windowless Sampler, SA= Soakaway, PLT= Plate Load Tests, SA= Soakaway Testing **SP= Standpipe, B= Bentonite, A= Arisings						

3.3 Site Works

- 3.3.1 Six boreholes (designated BH01-BH06) were sunk to depths between 10.50 and 23.50m begl, using a track-mounted rotary coring rig (Appendix 3). The boreholes were initially drilled through overburden by means of dynamic sampling until refusal. This was followed by a rock roller down the hole hammer, producing a 112mm nominal diameter hole, until material suitable for rotary coring was encountered. For coring, a 412 PWF triple-tube core barrel and Wireline Geobore S were used, recovering cores of 76 & 102mm nominal diameter, in a semi rigid plastic liner. Air was used as the flushing medium. The cores were stored in boxes immediately on extraction. Standard penetration tests (SPT's) were conducted in suitable materials. Boreholes were installed with 50mm diameter standpipes and reinstated on completion.
- 3.3.2 Nine windowless (percussive) sampling boreholes (designated WS01 to WS06 including WS04A, WS06A and WS06B) were each sunk to depths between 0.45 to 5.00m begl (Appendix 3). Windowless sampler boring is carried out with a small, track-mounted rig, which uses a chain driven trip hammer to drive sampling tubes or penetrometers into the ground. These tools are coupled to the anvil of the hammer by solid drill rods. Sampling tubes comprise "windowless samplers", which are plain sampler tubes in which a continuous disturbed sample is recovered within a semi-rigid plastic liner. In order to reduce friction within the borehole, sampling tubes of progressively smaller diameter are used as the borehole depth increases. Sampler diameters generally range from between 101mm to 47mm. Boreholes were installed with a 50mm standpipe or backfilled with bentonite and reinstated on completion. Windowless sample locations WS04, WS06 and WS6A were relocated due to early refusal in well compacted fill material.
- 3.3.3 Three trial pits (designated SA01 to SA03) were excavated to a depth between 2.00m and 2.50m begl, using a wheeled excavator (Appendix 3). In situ soakaway testing was carried out in the base of all trial pits, in accordance with the methods described in BRE Digest 365(2007) (Appendix 4). Due the nature of the natural underlying strata, all trial pits with installed with a standpipe and infilled with 20mm gravel in order to ensure the pit sides do not collapse during testing. The trial pits were backfilled immediately and reinstated on completion of testing.
- 3.3.4 Five plate bearing tests (PLT01-PLT05) were carried out at depths between 0.45m and 0.60m begl using a 610mm diameter plate. Testing was carried out in accordance with BS 1377: Part 9 1990 for the aid of pavement design (Appendix 4).
- 3.3.5 All exploratory hole locations were scanned by a MACC International Ltd (MACC) Unexploded Ordinance (UXO) Engineer. All locations were scanned from ground level until a suitably safe depth, as determined by the MACC Engineer.
- 3.3.6 In addition to the review of service plans each exploratory location was scanned using a Cable Avoidance Tool (CAT) in order to locate unrecorded underground services, and the exploratory locations were repositioned if necessary.
- 3.3.7 Representative soil samples were collected for chemical and geotechnical testing. Soil samples destined for chemical analysis were collected in appropriate containers provided by the analytical laboratory. Samples were stored in cool boxes prior to dispatch to the laboratory for analysis. All samples were collected using appropriate sampling equipment that was cleaned at each sampling location.
- 3.3.8 The fieldwork was carried out generally in accordance with BS 5930:2015 Code of Practice for Site Investigations, Eurocode 7, unless otherwise stated.

3.4 Monitoring

3.4.1 Enzygo carried out groundwater/gas monitoring in standpipes after the fieldwork period (commencing 1st July 2019), the results of which are presented in the Appendix 5 of this report. The groundwater/gas monitoring was completed on the 31st July 2019 (6 of 6 visits completed in total).

3.4.2 On completion of the site works all rotary boreholes were developed by means of surging to prepare the wells for water sampling. During a return visit all wells with water were purged three times the well volume before water samples were collected for chemical testing.

3.5 Laboratory Testing

3.5.1 Samples for geotechnical testing were sent to the Envirolab Ltd, which is UKAS accredited, for the following analysis:

- Moisture Content;
- Particle Size Distributions;
- UCS Testing;
- Point Loads;
- Atterberg Limits;
- Consolidation testing; and
- Soluble sulphate and pH.

3.5.2 All geotechnical testing results are included within Appendix 6.

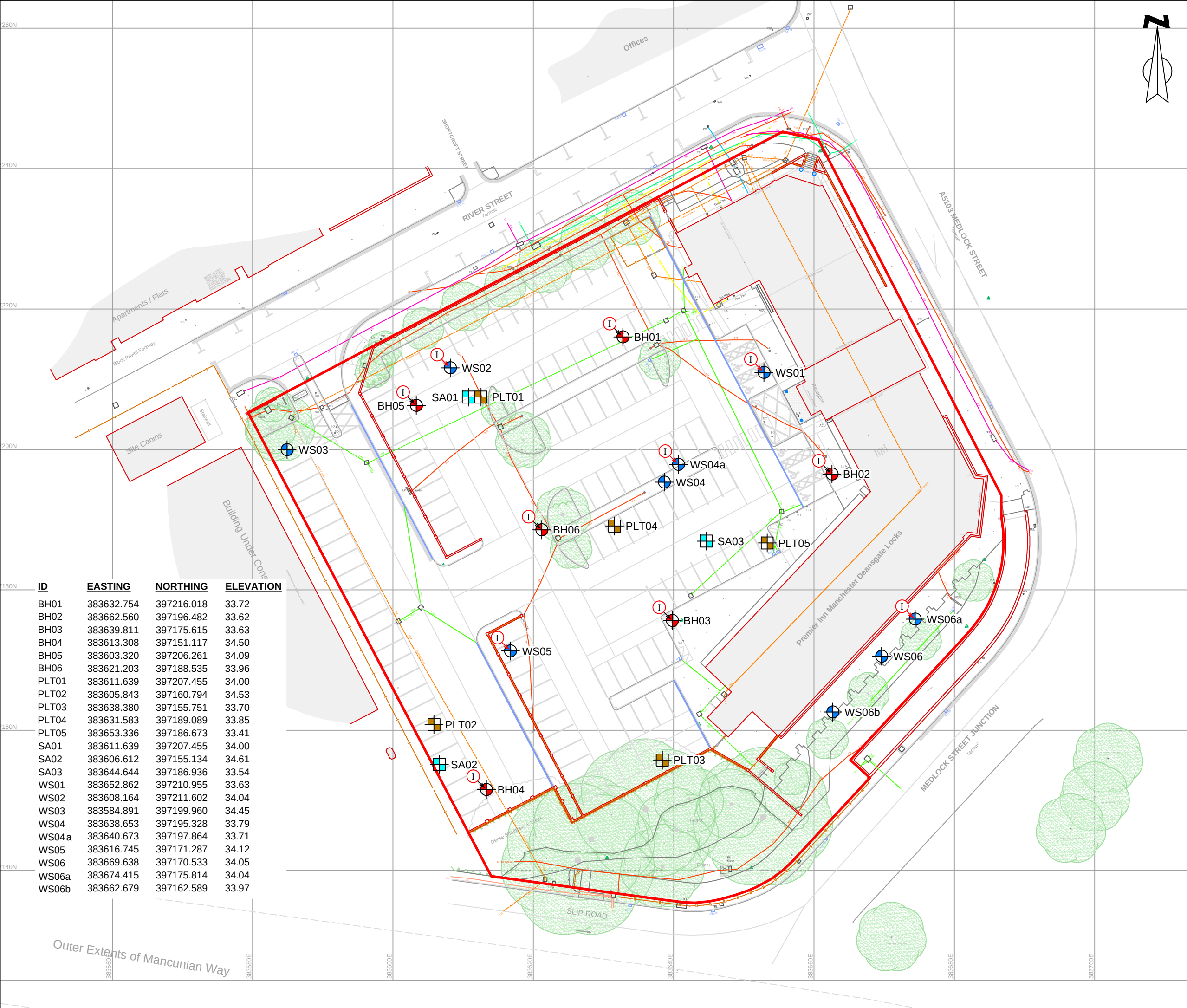
3.5.3 Soil samples were recovered for chemical analysis and were sent to Envirolab Ltd who are NAMAS and MCERTS accredited. Samples were tested for the CLEA metal suite, pH, sulphate, sulphide, cyanide, phenols, speciated Polycyclic Aromatic Hydrocarbons (PAH) and Total Petroleum Hydrocarbon (TPH) and asbestos screen.

3.5.4 Groundwater samples were recovered for chemical analysis and were sent to Envirolab Ltd who are NAMAS and MCERTS accredited. Samples were tested for the CLEA metal suite, pH, sulphate, sulphide, Speciated Polycyclic Aromatic Hydrocarbons (PAH) and Total Petroleum Hydrocarbon (TPH), Ammoniacal Nitrogen and Hardness.

3.5.5 All Chemical testing results are included within Appendix 7.

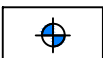
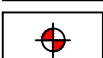
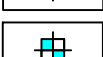
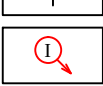


Appendix 1 – Drawings



ID	EASTING	NORTHING	ELEVATION
BH01	383632.754	397216.018	33.72
BH02	383662.560	397196.482	33.62
BH03	383639.811	397175.615	33.63
BH04	383613.308	397151.117	34.50
BH05	383603.320	397206.261	34.09
BH06	383621.203	397188.535	33.96
PLT01	383611.639	397207.455	34.00
PLT02	383605.843	397160.794	34.53
PLT03	383638.380	397155.751	33.70
PLT04	383631.583	397189.089	33.85
PLT05	383653.336	397186.673	33.41
SA01	383611.639	397207.455	34.00
SA02	383606.612	397155.134	34.61
SA03	383644.644	397186.936	33.54
WS01	383652.862	397210.955	33.63
WS02	383608.164	397211.602	34.04
WS03	383584.891	397199.960	34.45
WS04	383638.653	397195.328	33.79
WS04a	383640.673	397197.864	33.71
WS05	383616.745	397171.287	34.12
WS06	383669.638	397170.533	34.05
WS06a	383674.415	397175.814	34.04
WS06b	383662.679	397162.589	33.97

Key

-  Site Boundary
-  Dynamic (Windowless) Sampling Exploratory Holes
-  Rotary Borehole Locations
-  Plate Load Testing
-  Soakaway Testing
-  Borehole Installation (I)

Notes

- Do not scale from this drawing.
- All dimensions are in meters unless stated otherwise.
- This drawing is to be read in conjunction with all relevant drawings and documents associated with this project.
- All existing and proposed dimensions, levels and locations to be checked and verified by the main contractor on site prior to the commencement of the works and any anomalies reported to the engineer.



Samuel House, 5 Fox Valley Way, Stocksbridge, Sheffield, S36 2AA

CLIENT:
Whitbread PLC

SCALE: PROJECT REF:
NTS MAN.260.001

DRAWN: CHECKED: DATE:
MG NR July 2019

PROJECT:
Deansgate, Premier Inn

TITLE:
Exploratory Hole Location Plan

FIGURE NO:
MAN.260.001.GE.D.001



KEY

Application Boundary

HARDWORKS

LINEAR CONCRETE BLOCK

- Product: Hydro lined or equal and approved.

- Colour: grey

LINEAR CONCRETE BLOCK TO VEHICULAR ZONE

- Product: Hydro lined or equal and approved.

- Colour: Dark grey

ASPHALT

- Finish: Coloured chippings

- Location: To adopted carriageway

CONCRETE KERR TO ADOPTED STANDARD - UPSTAND & WIDTH VARIES

HAZARD WARNING PAVING

- To pedestrian crossings and top and bottom of steps. Colour to contrast adjacent material

SOFTWORKS

SINGLE STEM, SEMI-MATURE TREES

- 6m high min at installation

MULTI-STEM TREES

- 4.5m high at installation planted into a raised (0.5m high)

TREE IN RAISED PLANTER

- Planter size: 1.4m x 0.5m

- To form part of wind mitigation

SHRUB PLANTING

- Evergreen species

RAIN GARDEN PLANTING

FURNITURE

PROPOSED SEATING BENCH

- Subject to further design

- Single facing aspect

PROPOSED BOLLARD

- Bollards to provide defensible line

CYCLE HOOPS

- Quantity: tbc

EXISTING ROAD LIGHTING COLUMN RETAINED

EXISTING LIGHTING MAST TO BE RELOCATED

- Future position to be confirmed

FEATURE STREET LIGHTING

- Subject to further design

RECESSED TREE GRILLES

- 100mm in total paving with 300mm aperture to tree trunk

LITTER BIN

- Subject to further design

ELECTRICAL CHARGING POINTS

- To back of parking bays to serve all parking bays along Edge Street

SUBSTATION

- Refer to architects drawings for details

WIND BAFFLES

- Subject to further design

P0307.10.22Updated KeyEFRM

P0221.09.22Updated DrawingCBRM

P0110.08.22First issueSFSF

Revision

Date

Description

Drawn

Apprvd.

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LIVERPOOL

No. 8 Princes Parade, Princes Dock, Liverpool, L3 1DL

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Client

Premier Inn Hotels and Dominvs Group

Project

One Medlock

Drg Title

Landscape Masterplan GA

Created on

Created by

Approved by

10-08-22

SF

SF

Scale

Size

Workstage

1:250

A1

Information

Drg No.

Suitability

Revision

2072-PLA-XX-XX-DR-L-0003

S1

P03

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Appendix 2 – UXO Risk Map

UNEXPLODED BOMB RISK MAP



SITE LOCATION

Location: M15 5FJ,
Map Centre: 383673,397198



LEGEND

- High:** Areas indicated as having a bombing density of 50 bombs per 1000acre or higher.
- Moderate:** Areas indicated as having a bombing density of 15 to 49 bombs per 1000acre.
- Low:** Areas indicated as having 15 bombs per 1000acre or less.

- military
- industry
- UXO find
- transport
- dock
- Luftwaffe targets
- utilities
- other

How to use your Unexploded Bomb (UXB) risk map?

The map indicates the potential for Unexploded Bombs (UXB) to be present as a result of World War Two (WWII) bombing.

You can incorporate the map into your preliminary risk assessment* for potential Unexploded Ordnance (UXO) for a site. Using this map, you can make an informed decision as to whether more in-depth detailed risk assessment* is necessary.

What do I do if my site is in a moderate or high risk area?

Generally, we recommend that a detailed UXO desk study and risk assessment is undertaken for sites in a moderate or high UXB risk area.

More often than not, this further detailed research will conclude that the potential for a significant UXO hazard to be present on your site is actually low.

Never plan site work or undertake a risk assessment using these maps alone. More detail is required, particularly where there may be a source of UXO from other military operations which are not reflected on these maps.

If my site is in a low risk area, do I need to do anything?

If both the map and other research confirms that there is a low potential for UXO to be present on your site then, subject to your own comfort and risk tolerance, works can proceed with no special precautions.

A low risk really means that there is no greater probability of encountering UXO than anywhere else in the UK.

If you are unsure whether other sources of UXO may be present, you can ask for one of our **pre-desk study assessments (PDSA)**

If I have any questions, who do I contact?

tel: **+44 (0) 1993 886682**

email: **uxo@zetica.com**

web: **www.zeticauxo.com**

The information in this UXB risk map is derived from a number of sources and should be used in conjunction with the accompanying notes on our website: (<https://zeticauxo.com/downloads-and-resources/risk-maps/>)

Zetica cannot guarantee the accuracy or completeness of the information or data used and cannot accept any liability for any use of the maps. These maps can be used as part of a technical report or similar publication, subject to acknowledgment. The copyright remains with Zetica Ltd.

It is important to note that this map is not a UXO risk assessment and should not be reported as such when reproduced.

*Preliminary and detailed UXO risk assessments are advocated as good practice by industry guidance such as CIRIA C681 'Unexploded Ordnance (UXO), a guide for the construction industry'.

Commercial in Confidence

SITE DAILY DIARY

Instructions for use

This form is to be completed by hand, continuously during the working day. Client signature, dates or instructions are to be recorded and related to the report. Once completed the report document is to be submitted to MACG Head Office as per the Line Manager's instructions. Customers documents are 'Commercial in Confidence' they not be passed to the any third party and must be signed by the CSR.

Day/Date	Tuesday 28.05.19	Project No	5894	Sheet No	01	STA Initials	LW
Location	Manchester MISSA			Client	ENZYGO		

Time	Event	Remarks
08.15	Arrive on site	
08.20	Meet with site contact Nick Brade	
08.35	Check Vehicle into Premier Inn car park	
08.30	Wait for drillers to arrive	
10.10	Toolbox talk for all site personnel	
10.20	Surface Scan ERM see log	
	Site is a former car park with high levels of	
	Petroleum contamination	
11.40	Test bottom of 1.2 bore pit 53-12 in Made ground	
12.20	Test 6 carried out at 6m due to hole collapsing	
	Geology changed from sand + gravel to Glacial	
	Clay	
	Test 7 carried out at 7m due to hole collapsing hole	
	drilled to 3m	
15.50	Mechanical Failure on rotary rig. Work stops until	
	repairs can be made or replacement rig can be	
	Arranged.	
16.45	Finish for the day	

MACG STA Signature: 

Name: L. Wilkinson Date: 28.05.19

MACG Personnel		EQUIPMENT			TOTAL ITEMS FOUND
Name	Position	Type	Ser No	Serviceable	
L. Wilkinson	STA	MIZOLW	1151	✓	TOTAL EO ITEMS
					TOTAL EO SCRAP
Confirmed with the client the environmental situation on site (Strike out one box [X])			Not Issue	Issue	
			Highlighted	Scrap	

MACG OFFICE USE

Remarks	
Action	

Commercial in Confidence

Endogenous Risk

Day/Date	Wednesday 29.05.14	Project No	5894	Street No	02	STA Initials	LW
Location	Manchester MISS FJ			Client	Enzyad		

MACC STA Signature: William

Name L. Wilkinson

Date: 29.05.19

MACC OFFICE USE	
Remarks	
Action	

Commercial in Confidence

SITE DAILY DIARY

Instructions to use:

This form is to be completed by hand, continuously during the working day. Client variation orders or instructions are to be received and issued by the client. Once completed this original document is to be submitted to MACC Head Office as per the Site Manual's instructions. Completed documents are 'Commercial in Confidence' - may not be issued to the any third party and must be signed by the STA.

Day/Date	Thursday 30.05.19	Project No	5894	Sheet No	03	STA Initials	LW
Location	Manchester MISSFS			Client	ENZ490		

Time	Event	Remarks
08.00	Arrive on site	
08.50	Toolbox talk for 4 mini rig drillers	
09.00	Surface Scan WS04 high readings due to ferrous contamination. Cross parked to both sides of WS locations. Supervised hand dug pit excavation	
09.30	Begin testing both WS rigs	See log
15.00	Rotary rig moves to next BH position	
15.05	Surface Scan BH05	See log
15.30	High reading on WS06 + WS06a @ 1.2m SI+20 Advised readings to high to continue	
16.00	High readings on WS03 @ 2m SI-20 in natural Geology advised reading to high to continue	
16.30	Finish for the day	

MACC STA Signature L. Wilkinson

Name L. Wilkinson Date 30.05.19

MACC Personnel		EQUIPMENT			TOTAL ITEMS FOUND
Name	Position	Type	Ser No	Serviceable	
L. Wilkinson	STA	MIR20 Lhw	V181	✓	TOTAL EO ITEMS
					TOTAL EO SCRAP
Confirmed with the client the environmental situation on site (Strike out one box 03)			Not used Full used	Report Scrap Data	

MACC OFFICE USE	
Remarks	
Action	

Commercial in Confidence

Commercial In Confidence

SITE DAILY DIARY

Instructions for use:

This form is to be completed by hand, contemporaneously during the working day. Client provides copies of instructions and to the contractor and to the client. Once completed the original document is to be submitted to MACC Head Office as per the Job Manager's instructions. Completed documents are Commercial In Confidence, they are not to be issued to any other party and must be securely stored.

Day/Date	Fr. day 31.05.19	Project No	5094	Sheet No	04	STA Initials	LW
Location	Manchester MISSF3			Client	Cn2top		

Time	Event	Remarks
08.00	Arrive on site	
08.15	Tool box talk for JCB operators	
09.00	Tool box talk for engineers and two drillers	
09.15	5x Plate load test pits to be carried out	
	Surface scan PLT03 S2+1/-2	
10.00	BH05 tested @ 2m with the rig (rotary) on high	
	Readings due to rig interference and will be difficult to give clearance the drillers are aware of the risks and are willing to continue.	
	R Taylor	
	A Buckley	
	D Smith	
10.15	Continued testing @ 3m	
10.20	Surface scan PLT05 S2+1/-4	
11.05	Surface scan PLT03 S2+20-1/-6	high reading continue with visual supervision
11.20	PLT02 encountered to 0.45m	

MACC STA Signature: *L. Wilkinson*

Name: *L. Wilkinson* Date: *31.05.19*

MACC Personnel		EQUIPMENT			TOTAL ITEMS FOUND
Name	Position	Type	Ser No	Serviceable	
L. Wilkinson	STA	MIZO LW	1181	✓	TOTAL EO ITEMS
					TOTAL EO SCRAP
Confirmed with the client the environmental situation on site (Strike out one box if)			Not done	Impaired	Issues

MACC OFFICE USE	
Remarks	
Action	

Commercial In Confidence

Instructions for use

Day/ Date	Friday 31.05.19	Project No	5244	Sheet No	04	STA Initials	LLW
Location	Manchester MISSIT			Client	Enzyao		

MACC STA Signature... [Signature]
Name... L. Wilkinson Date... 31.05.19

Commercial in Confidence

Appendix D to
EUSOP 1

SITE DAILY DIARY

Instructions for use

This form is to be completed by hand, contemporaneously during the working day. Client variation orders or instructions are to be recorded and fulfilled by the client. Once completed the original document is to be submitted to MACC Head Office as per the Line Manager's instructions. Completed documents are 'Confidential in confidence', may not be issued to the any third party and must be signed by the STA.

Day/Date	Monday 3-6-19	Project No	5894	Sheet No	01	STA Initials	Go
Location	Removals, Manchester			Client	EUSOP		
Time	Event				Remarks		
0730	Depart site						
0740	Arrive site						
0930	MAG Road Survey 1st of L10000 excavated at 11 - working at E2 INTEREST						
1120	MAG has completed 2 @ 10000 - AC raised due to concrete base fire - move back of LE AG						
1230	- working at E2 INTEREST						
1340	No further excavations taking place						
	Transfer to 1st site back to site						
	Awaiting them to move to new (site)						
1430	Leave site						
	Depart site						

MACC STA Signature *[Signature]*

Name G. Osborne

Date 3-6-19

MACC Personnel		EQUIPMENT			TOTAL ITEMS FOUND
Name	Position	Type	Ser No	Serviceable	
G. Osborne	Sta.	* 12000	1125	Yes	TOTAL ED ITEMS
					TOTAL ED SCRAP
Confirmed with the client the environmental situation on site (strike out one box if)			MACC	☒	-

MACC OFFICE USE

Remarks

Action

Commercial in Confidence

SITE DAILY DIARY

Instructions for use

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Day/Date	Tuesday 4-6-19	Project No	5894	Sheet No	02	STA Initials	Go
Location	Pleasure Way, Mansouria			Client	EN2460		

Time	Event	Remarks
0750	Active Site	
0840	MAG SCAN SURROUNDING PIT N°3	
	- Significant excavations of PT - Nothing of	
	EO-INTEREST	
0935	MAG SCAN BH02 @ Surface	clean to surface
0950	MAG SCAN BH02 @ 1.2m	clean to surface
1010	MAG SCAN BH02 @ 30m	clean to surface
1200	MAG SCAN BH02 @ 5m	clean to surface
1300	MAG SCAN BH02 @ 7.0m	clean to surface
	hit rock at 7.0m	
1400	MAG SCAN Further down for further excavations	
1600	LEAVE SITE	
	DEFINITE SITE	

MACC STA Signature

Name: G.OSTROG

Date: 4-6-19

MACC Personnel		EQUIPMENT			TOTAL ITEMS FOUND
Name	Position	Type	Ser No	Serviceable	
G.OSTROG	SEA	MIZOLIN	125	YES	TOTAL EO ITEMS
					TOTAL EO SCRAP
Confirmed with the client the environmental situation on site (delete out one box)				X	-

MACC OFFICE USE	
Remarks	
Action	

Commercial in Confidence

Annex C to
EUSOP 1

SITE DAILY DIARY

Instructions for use

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Day/Date	Wednesday 5-6-19	Project No	5894	Sheet No	03	STA Initials	G.
Location	Premier Inn Margate Rd			Client	Enzyac		
Time	Event				Remarks		
0750	Arrive Site						
0800	Give E2 briefing to 2 recruits of New GMS						
0800	MAG SCAN BY 01 @ 12m - check to proceed						
0940	MAG SCAN BY 01 @ 3m - check to proceed						
1040	MAG SCAN BY 01 @ 5m - check to proceed						
1300	MAG SCAN BY 01 @ 7m - check to proceed						
	The end @ 7m - no further need to test						
1400	MAG SCAN REMAINING BUILDING - for New GMS						
1530	Scrub down						
	Depart Site						

MACC STA Signature

Name: G. O'SHEA Date: 5-6-19

MACC Personnel		EQUIPMENT			TOTAL ITEMS FOUND
Name	Position	Type	Serial No	Serviceable	
G. O'SHEA	Sta	MIZOLW	1125	YES	TOTAL EO ITEMS
					TOTAL EO SCRAP
Confirmed with the client the environmental situation on site (Initials and date)				X	-

MACC OFFICE USE	
Remarks	
Action	

Commercial in Confidence

Commercial In Confidence

Annex C to
EUSOP 1

SITE DAILY DIARY

Instructions for use

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Day/Date	Thursday 6-6-19	Project No	SEWU	Sheet No	6-4	STA Initials	Gr
Location	Pleasure Park, Maidenhead			Client	EUSOP		

Time	Event	Remarks
0800	Arrive Site	
0925	MAG SCAN BH03 @ 1.2m - check to process	
1115	MAG SCAN BH03 @ 3.0m - check to process	
1200	MAG SCAN BH03 @ 5.0m - check to process	
1420	MAG SCAN BH03 @ 7.0m - check to process	
	- Rainy for scan @ 9.0m	
1600	MAG SCAN SURFACE BH06	
1630	MAG SCAN BH06 @ 1.2m - check to process	
1645	MAG SCAN BH06 @ 3.0m - - - -	
1700	LEAVE WORK	
	DEPART SITE	

MACC STA Signature 

Name G. D'Silva

Date 6-6-19

MACC Personnel		EQUIPMENT			TOTAL ITEMS FOUND
Name	Position	Type	Ser No	Serviceable	
G. D'Silva	STA	MAGNET	105	YES	TOTAL EQ ITEMS
					TOTAL EQ SCRAP
Confirmed with the client the environmental situation on site (Strike out one box)			☒ YES	☒ NO	

MACC OFFICE USE

Remarks	
Action	

Commercial In Confidence

SITE DAILY DIARY

This form is to be completed by hand, contemporaneously during the working day. Client variation orders or instructions are to be recorded and initialed by the client. Once completed the original document is to be submitted to MACC Head Office as per the Line Manager's instructions. Completed documents are "Commercial in confidence", may not be issued to the any third party and must be signed by the ETA.

Day/Date	7-6-19 Friday	Project No	5896	Sheet No	05	OTA Initials	90
Location	Rural to Alameda			Client	EN2105		

[illegible]

Name S. Ojeda

Date 7-6-19

MACC Personnel		EQUIPMENT			TOTAL ITEMS FOUND
Name	Position	Type	Bar No	Serviceable	
GORDON	Asst	MILITARY	1125	YES	TOTAL EO ITEMS
					TOTAL EO SCRIP
Confirmed with the client the environmental situation and all the data was correct.					

MACC OFFICE USE	
Remarks	
Action	

Comments in Confidence

MACC MONTHLY ATTENDANCE/EXPENSE SHEET MONTH/YEAR May 2019 LOCATION Manchester PROJECT NO. S894

NAME

L. Wilkinson

DATE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	TOTAL
ATTENDANCE																																
EXPENSES																																

XXXXXX 4

SUMMARY OF EXPENSES

DATE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	TOTAL
2425600																															
1000000																															
1000000																															

NAME

NAME																																	
Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	TOTAL	
Mileage																																	
Cost																																	
Cost per mile																																	

SUMMARY OF EXPENSES

DATE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	TOTAL
Parking																																
Tolls																																
Costs																																

CLIENT SITE REP

NAME

N. Brad

POSITION

Engineer

SIGNATURE



DATE

3/15/19

MACO MONTHLY ATTENDANCE/EXPENSES SHEET: MONTH/YEAR: June / 14
NO. 20 LOCATION: NAJAF, IRAQ PROJECT: NAJAF

PROJECT

NO ON 5894

[illegible][illegible][illegible][illegible]

CLIENT SITE REP		NAME	POSITION	SIGNATURE	DATE
		W. B. Borchers	Senior Consultant		7/6/99



Appendix 3 – Exploratory Hole Logs

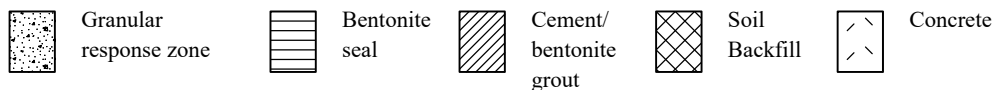


EXPLORATORY HOLE LOG KEY

Logging

The logging of soils and rocks has been carried out in accordance with BS 5930:2015 unless stated otherwise.

Well/Backfill



Water Levels

▽ Strike depth ▼ Standing water

Sample type

D	Small disturbed sample	G	Gas	U	Undisturbed	P	Piston
B	Bulk disturbed sample	ES	Soil sample for environmental testing	UT	Undisturbed thin wall	W	Water
LB	Large bulk disturbed	EW	Water sample for environmental testing	C	Core		

Test type

N SPT/CPT N value
HV Hand vane - direct reading in kPa
PP Pocket penetrometer - direct reading in kg/sq.cm

Core

**	TCR Total Core Recovery as percentage of core run
**	SCR Solid Core Recovery as percentage of core run. Assessment of core is based on full diameter
**	RQD Rock Quality Designation - Amount of solid core greater than 100mm expressed as percentage of core run

I_r

**	Minimum fracture spacing value (cm)
**	Mode fracture spacing value (cm)
**	Maximum fracture spacing value (cm)

Strata boundaries

———— Boundary - - - - - Estimated boundary

General Comments



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Web: www.enzygo.com

Site Premier Inn Deansgate, Manchester				BH01
Job No MAN.260.001	Dates Start 05-06-19 Finish 06-06-19	Ground Level (m)	Co-Ordinates	
Client Whitbread PLC				Sheet 1 of 2

Well	Water Levels	Samples & In Situ Testing			Casing (m)	Core (%)	I _r	Depth (m)	Level (mAD)	Legend	Stratum Description			
		Depth (m)	No/Type	Results										
		0.20	1ES	N=19				0.15	33.57		MADE GROUND: Black macadam.	0		
		0.20 - 0.40	2B					0.50	33.22			MADE GROUND: Brown grey slightly clayey sandy gravel. Gravel is subangular to subrounded fine to coarse of brick, macadam, concrete and sandstone. Sand is fine to coarse.	1	
		0.50	3ES					1.10	32.62					0.50 Landscaping membrane. Orange brown gravelly fine to coarse SAND. Gravel is subangular to subrounded fine to coarse of quartz, sandstone and granite. (Glaciofluvial Sheet Deposits)
		0.80 - 1.00	4B											
		1.00	5ES											
		1.20	SPT											
		1.20 - 1.65	6B	N=14										
		1.20 - 1.70	7B											
		2.00	SPT											
		2.00 - 2.45	8ES	N=10										
		2.00 - 2.50	9D											
		3.00	10B											
		3.00 - 3.45	SPT	N=17										
		3.00 - 3.50	11D											
		4.00	12B											
		4.00 - 4.45	SPT											
		4.80	13D											
		5.00 - 5.45	14D	4.70				29.02		Stiff grey brown slightly sandy gravelly CLAY with a low cobble content of subangular to subrounded quartz, sandstone and granite. Gravel is subangular to subrounded fine to coarse of quartz, sandstone and granite. Sand is fine to coarse. (Glacial Till)	5			
		5.60	16D											
		6.00	17D											
		6.40	SPT									N=36		
		6.40 - 6.85	18D											
		7.00	SPT											
			19D	N=50				7.00	26.72		Very dense red brown slightly gravelly silty fine to coarse SAND. Gravel is subangular to subrounded fine to coarse of quartz and sandstone. (Glaciofluvial Sheet Deposits)	7		
		8.00	20D	7.30									26.42	
								9.10	24.62		Very stiff grey brown slightly sandy gravelly CLAY with a low cobble content of subangular to subrounded quartz, sandstone and granite. Gravel is subangular to subrounded fine to coarse of quartz, sandstone and granite. Sand is fine to coarse. (Glacial Till)	8		
		9.10	21ES	N=50										
		9.50 - 10.00	22D											
		10.00	SPT											
		10.00 - 11.50	C	N=50				33 13 0	NI 60 200	11.00	22.72		Very dense red brown slightly gravelly fine to coarse SAND. Gravel is subangular to subrounded fine to coarse of sandstone quartz and granite. (Residual Chester Formation) 10.00 - 11.00 Assumed zone of core loss.	10
		11.50	SPT	N=50				87 66 7		11.30	22.42		Extremely weak red brown residual SANDSTONE recovered as dense red brown slightly gravelly silty fine to coarse sand. Gravel is subangular to subrounded fine to coarse of quartz and sandstone. (Chester Formation) 11.00 - 11.30 Non intact recovered as red brown sand.	11
		11.50 - 13.00	C											
				C				93 93 47					Medium strong red brown slightly gravelly distinctly weathered fine to coarse SANDSTONE. Gravel is subangular to subrounded fine to coarse of quartz and sandstone. Fractures are subhorizontal (0-25°) very close to closely spaced planar sandy silty. (Chester Formation) 11.50 - 11.70 Assumed zone of core loss. 12.50 - 12.80 Non intact recovered as red brown sand. 13.00 - 13.10 Assumed zone of core loss.	12
		13.00 - 14.50												
14.50 - 17.50	C		90 8	NI NI	14.80	18.92		Continued next sheet	13					
					{15.00}				14					
									15					

General Remarks

1. Hand excavated inspection pit from ground level to 1.20m begl.
2. D - Disturbed Sample; ES - Environmental Sample; B - Bulk Sample; U - U100.
3. Densities and soil consistencies are based on insitu tests.
4. No visual or olfactory evidence of contamination observed.
5. Groundwater was not observed.
6. SPT - Standard Penetration Test; N - Number of blows.
7. Install details: 50mm plain pipe concrete flush cover from 0.00m begl to 0.50m begl; Bentonite seal between 0.50m begl to 17.00m begl; 50mm slotted pipe with gravel between 17.00m begl to 20.00m begl; Bentonite seal from 20.00m begl to 20.50m begl.

Groundwater		Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)
All dimensions in metres Scale 1:93.75					Logged By NB



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Site Premier Inn Deansgate, Manchester				BH01
Job No MAN.260.001	Dates Start 05-06-19 Finish 06-06-19	Ground Level (m)	Co-Ordinates	
Client Whitbread PLC				Sheet 2 of 2

Well	Water Levels	Samples & In Situ Testing			Casing (m)	Core (%)	I _r	Depth (m)	Level (mAD)	Legend	Stratum Description																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
		Depth (m)	No/Type	Results																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
		17.50 - 20.50	C			3	100	17.26	16.46		14.50 - 14.80 Assumed zone of core loss.	15																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
						92 81 38	NI 80 190				Extremely weak red brown destructured fine to coarse SANDSTONE. Recovered as red brown gravelly fine to coarse sand. Gravel is subangular to subrounded fine to coarse of quartz and sandstone. Fractures are subhorizontal (0-25°) very close to closely spaced, rough sand	16																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
										Medium strong red brown gravelly partially weathered fine to coarse SANDSTONE. Gravel is subangular to subrounded fine to coarse of quartz and sandstone. Fractures are subhorizontal (0-25°) very close to closely spaced planar sandy. (Chester Formation) 17.50 - 17.75 Assumed zone of core loss.		17																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
													Borehole completed at 20.50m.	18																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				

General Remarks

1. Hand excavated inspection pit from ground level to 1.20m begl.
2. D - Disturbed Sample; ES - Environmental Sample; B - Bulk Sample; U - U100.
3. Densities and soil consistencies are based on insitu tests.
4. No visual or olfactory evidence of contamination observed.
5. Groundwater was not observed.
6. SPT - Standard Penetration Test; N - Number of blows.
7. Install details: 50mm plain pipe concrete flush cover from 0.00m begl to 0.50m begl; Bentonite seal between 0.50m begl to 17.00m begl; 50mm slotted pipe with gravel between 17.00m begl to 20.00m begl; Bentonite seal from 20.00m begl to 20.50m begl.

Groundwater	Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)
All dimensions in metres Scale 1:93.75				
				Logged By NB



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Site Premier Inn Deansgate, Manchester				BH02
Job No MAN.260.001	Dates Start 04-06-19 Finish 06-06-19	Ground Level (m)	Co-Ordinates	
Client Whitbread PLC				Sheet 1 of 2

Well	Water Levels	Samples & In Situ Testing			Casing (m)	Core (%)	I _r	Depth (m)	Level (mAD)	Legend	Stratum Description											
		Depth (m)	No/Type	Results																		
		0.20	1ES	N=22				0.05	33.57		MADE GROUND: Yellow paving slab.	0										
		0.50	2ES					0.45	33.17		MADE GROUND: Brown grey slightly clayey gravelly fine to coarse sand. Gravel is subangular to subrounded fine to coarse of brick, concrete and sandstone.	1										
		0.50 - 1.00	3B																			
		1.00	4ES																			
		1.20	SPT																			
		1.20 - 1.65	5D																			
		1.20 - 1.90	6B																			
		2.00	7ES																			
		2.70	SPT	N=23																		
		2.70 - 3.15	8D																			
		2.70 - 3.20	9B																			
		4.00	SPT	N=19				4.60	29.02		Stiff grey brown slightly sandy gravelly CLAY. Gravel is subangular to subrounded fine to coarse of quartz, sandstone and granite. Sand is fine to coarse. (Glaciofluvial Sheet Deposits)	5										
		4.00 - 4.45	10D																			
		4.60	11D																			
		5.00 - 5.45	12U																			
		5.60	13D																			
		6.60	14D	N=44																		
		7.00	SPT																			
		7.00 - 7.45	15D																			
		8.00	16D	N=50									8.20	25.42		Very dense red brown slightly gravelly fine to coarse SAND. Gravel is subangular to subrounded fine to coarse of quartz, sandstone and granite. (Glaciofluvial Sheet Deposits)	9					
		8.20	17ES																			
		8.50	SPT																			
		8.50 - 8.95	18D																			
		9.00	19D																			
		9.50	20ES	N=50				10.00	23.62		Very stiff grey brown slightly sandy gravelly CLAY. Gravel is subangular to subrounded fine to coarse of quartz, sandstone and granite. Sand is fine to coarse. (Glacial Till)	10										
		10.00	SPT																			
			21D																			
				53 42 11														10.70	22.92		Very dense red brown slightly gravelly fine to coarse SAND. Gravel is subangular to subrounded fine to coarse of sandstone quartz and granite. (Residual Chester Formation)	11
		11.50	22D										12.50	21.12		Extremely weak red brown residual SANDSTONE recovered as dense red brown slightly gravelly silty fine to coarse sand. Gravel is subangular to subrounded fine to coarse of quartz and sandstone. (Chester Formation)	12					
				66 5 0														NI NI 110				
		13.00	SPT	N=50				0 0 0			Weak to medium strong red brown slightly gravelly distinctly weathered fine to coarse SANDSTONE. Gravel is subangular to subrounded fine to coarse of quartz and sandstone. Fractures are subhorizontal (0-25°) very close to closely spaced planar sandy. (Chester Formation)	13										
		14.50	SPT	N=50				73 30			11.23 - 11.40 Non intact recovered as red brown sand. 11.50 - 12.00 Assumed zone of core loss.	14										
											Continued next sheet	15										

General Remarks

1. Hand excavated inspection pit from ground level to 1.20m begl.
2. D - Disturbed Sample; ES - Environmental Sample; B - Bulk Sample; U - U100.
3. Densities and soil consistencies are based on insitu tests.
4. No visual or olfactory evidence of contamination observed.
5. Groundwater was not observed.
6. SPT - Standard Penetration Test; N - Number of blows.
7. Install details: 50mm plain pipe concrete flush cover from 0.00m begl to 0.50m begl; Bentonite seal between 0.50m begl to 18.00m begl; 50mm slotted pipe with gravel between 18.00m begl and 21.00m begl; Bentonite seal between 21.00m begl to 23.50m.

Groundwater		Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)
All dimensions in metres Scale 1:93.75					Logged By NB



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Site Premier Inn Deansgate, Manchester				BH02
Job No MAN.260.001	Dates Start 04-06-19 Finish 06-06-19	Ground Level (m)	Co-Ordinates	
Client Whitbread PLC				Sheet 2 of 2

Well	Water Levels	Samples & In Situ Testing			Casing (m)	Core (%)	I _r	Depth (m)	Level (mAD)	Legend	Stratum Description			
		Depth (m)	No/Type	Results										
						7	16.85	16.77		Extremely weak red brown gravelly destructured SANDSTONE recovered as red brown slightly gravelly silty fine to coarse sand. Gravel is subangular to subrounded fine to coarse of quartz and sandstone. Fractures are subhorizontal (0-25°) very close to closely spaced planar. (Chester Formation) 13.00 - 14.50 Non intact recovered as subrounded cobbles of granite.	15			
						100 43 11				14.90 - 15.30 Non intact recovered as red brown gravelly sand.	16			
						NI 110 180				15.45 - 15.70 Non intact recovered as red brown gravelly sand.	17			
						93 87 32	19.85	13.77		16.00 - 16.85 Non intact recovered as red brown gravelly sand.	18			
						Medium strong red brown slightly gravelly partially weathered fine to coarse SANDSTONE. Gravel is subangular to subrounded fine to coarse of quartz and sandstone. Fractures are subhorizontal (0-25°) very close to closely spaced planar sandy. (Chester Formation) 17.50 - 17.70 Assumed zone of core loss.					19			
											18.10 - 18.50 Non intact recovered as red brown sandy gravel.	20		
						100 93 64	20.75	12.87		19.52 - 19.57 Non intact recovered as red brown sandy gravel.	21			
						NI 110 340				Weak to medium strong red brown gravelly distinctly weathered fine to coarse SANDSTONE. Gravel is subangular to subrounded fine to coarse of quartz and sandstone. Fractures are subhorizontal (0-25°) very close to closely spaced rough sandy. (Chester Formation)	22			
								23.50	10.12		Medium strong to strong red brown partially weathered slightly fine to coarse SANDSTONE. Fractures are subhorizontal (0-25°) close to medium spaced planar sandy. (Chester Formation)	23		
											Borehole completed at 23.50m.	24		
											25			
											26			
											27			
											28			
											29			
											30			
{30.00}														

General Remarks

1. Hand excavated inspection pit from ground level to 1.20m begl.
2. D - Disturbed Sample; ES - Environmental Sample; B - Bulk Sample; U - U100.
3. Densities and soil consistencies are based on insitu tests.
4. No visual or olfactory evidence of contamination observed.
5. Groundwater was not observed.
6. SPT - Standard Penetration Test; N - Number of blows.
7. Install details: 50mm plain pipe concrete flush cover from 0.00m begl to 0.50m begl; Bentonite seal between 0.50m begl to 18.00m begl; 50mm slotted pipe with gravel between 18.00m begl and 21.00m begl; Bentonite seal between 21.00m begl to 23.50m.

Groundwater	Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)
All dimensions in metres Scale 1:93.75				
				Logged By NB



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Fax: 01454 269760
Web: www.enzygo.com

Site Premier Inn Deansgate, Manchester				BH03
Job No MAN.260.001	Dates Start 06-06-19 Finish 07-06-19	Ground Level (m)	Co-Ordinates	
Client Whitbread PLC				Sheet 1 of 2

Well	Water Levels	Samples & In Situ Testing			Casing (m)	Core (%)	I _r	Depth (m)	Level (mAD)	Legend	Stratum Description				
		Depth (m)	No/Type	Results											
		0.20	1ES	N=19				0.05	33.58		MADE GROUND: Grey concrete paving slab.	0			
		0.50	2ES					0.40	33.23						
		0.50 - 1.00	3B								MADE GROUND: Brown grey slightly clayey sandy gravel. Gravel is subangular to subrounded fine to coarse of brick, concrete and sandstone. Sand is fine to coarse.	1			
		1.00	4ES												
		1.20	SPT	N=14							Medium dense to dense orange brown/yellow slightly clayey gravelly fine to coarse SAND. Gravel is subangular to subrounded fine to coarse of quartz, sandstone and granite. (Glaciofluvial Sheet Deposits)	2			
		1.20 - 1.65	5D												
		1.20 - 1.70	6B												
		2.00	SPT												
		2.00 - 2.45	7ES	N=21											
		2.00 - 2.50	8D												
		3.00	9B												
		3.00 - 3.45	SPT												
		3.00 - 3.50	10D	N=33							3.50 Black gravelly fine to coarse sand. Gravel is subangular fine to coarse of coal.	4			
		4.00	11B												
		4.00 - 4.45	SPT												
		4.00 - 4.50	12D					4.70	28.93						
		4.70	13B	N=26											
		5.00	14D								Firm to stiff brown grey slightly sandy gravelly CLAY. Gravel is subangular to subrounded fine to coarse of quartz, sandstone and granite. Sand is fine to coarse. (Glacial Till)	5			
		5.00 - 5.45	SPT												
			15D												
		6.00	16D	N=32											
		6.50	SPT												
		6.50 - 6.95	17D												
		7.50	18D	N=50											
		8.50	SPT					8.50	25.13						
		8.50 - 8.95	19D								Very dense red brown slightly clayey gravelly fine to coarse SAND. Gravel is subangular to subrounded fine to coarse of quartz, sandstone and granite. (Glaciofluvial Sheet Deposits)	9			
		9.00	20D					9.00	24.63						
											Very stiff grey brown slightly sandy gravelly CLAY. Gravel is subangular to subrounded fine to coarse of quartz, sandstone and granite. Sand is fine to coarse. (Glacial Till)	10			
					27 0 0		NI NI NI	10.50	23.13						
								11.50	22.13		Very dense red brown slightly gravelly fine to coarse SAND. Gravel is subangular to subrounded fine to coarse of sandstone quartz and granite. (Residual Chester Formation)	11			
					17 9 9		180 NI NI				11.50 - 12.75 Assumed zone of core loss. Extremely weak red brown residual SANDSTONE recovered as dense red brown slightly gravelly silty fine to coarse sand. Gravel is subangular to subrounded fine to coarse of quartz and sandstone. Fractures are subhorizontal (0-25°) very close to closely spaced planar. (Chester Formation)	12			
								12.80	20.83		12.75 - 12.80 Non intact recovered as red brown sandy gravel.	13			
					47 33 15						Weak to medium strong red brown slightly gravelly distinctly weathered fine to coarse SANDSTONE. Gravel is subangular to subrounded fine to coarse of quartz and sandstone.	14			
					67 27			{15.00}				15			
								Continued next sheet							

Continued next sheet

General Remarks

1. Hand excavated inspection pit from ground level to 1.20m begl.
2. D - Disturbed Sample; ES - Environmental Sample; B - Bulk Sample; U - U100.
3. Densities and soil consistencies are based on insitu tests.
4. No visual or olfactory evidence of contamination observed.
5. Groundwater was not observed.
6. SPT - Standard Penetration Test; N - Number of blows.
7. Install details: 50mm plain pipe concrete flush cover from 0.00m begl to 0.50m begl; Bentonite seal between 0.50m begl to 19.00m begl; 50mm slotted pipe with gravel between 19.00m begl and 25.00m begl.

Groundwater	Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)
All dimensions in metres Scale 1:93.75				
				Logged By NB



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Site Premier Inn Deansgate, Manchester				BH03
Job No MAN.260.001	Dates Start 06-06-19 Finish 07-06-19	Ground Level (m)	Co-Ordinates	
Client Whitbread PLC				Sheet 2 of 2

Well	Water Levels	Samples & In Situ Testing			Casing (m)	Core (%)	I _r	Depth (m)	Level (mAD)	Legend	Stratum Description											
		Depth (m)	No/Type	Results																		
						12		15.80	17.83		Fractures are subhorizontal (0-25°) very close to closely spaced planar sandy. (Chester Formation) 13.00 - 13.80 Assumed zone of core loss. 13.80 - 14.01 Non intact recovered as red brown sandy gravel. 14.50 - 15.00 Assumed zone of core loss.	15										
						93 85 49	10 180 340					16										
						NI 90 130		17.60	16.03		Medium strong red brown slightly gravelly partially weathered fine to coarse SANDSTONE. Gravel is subangular to subrounded fine to coarse of quartz and sandstone. Fractures are subhorizontal (0-25°) close to medium spaced planar sandy. (Chester Formation) 16.00 - 16.20 Assumed zone of core loss.	17										
												18										
						100 83 59	NI 170 410	19.00	14.63		Weak to medium strong red brown gravelly distinctly weathered fine to coarse SANDSTONE. Gravel is subangular to subrounded fine to coarse of quartz and sandstone. Fractures are subhorizontal (0-25°) very close to closely spaced rough sandy. (Chester Formation)	19										
												20										
						100 93 73		23.50	10.13		Medium strong red brown slightly gravelly partially weathered fine to coarse SANDSTONE. Gravel is subangular to subrounded fine to coarse of quartz and sandstone. Fractures are subhorizontal (0-25°) close to widely spaced planar sandy. (Chester Formation) 19.10 - 19.30 Subvertical fracture 80-90° stepped sandy. 20.35 - 20.45 Band of weak red brown mudstone. 20.70 - 21.00 Non intact recovered as red brown sandy gravel.	21										
												22										
								24.60	9.03		Weak to medium strong red brown gravelly distinctly weathered fine to coarse SANDSTONE. Gravel is subangular to subrounded fine to coarse of quartz and sandstone. Fractures are subhorizontal (0-25°) close to medium spaced planar sandy. (Chester Formation)	23										
												24										
								25.00	8.63		Fractures are subhorizontal (0-25°) close to medium spaced planar sandy. (Chester Formation) 23.80 - 23.89 Band of yellow coarse sandstone.	25										
											Medium strong red brown slightly gravelly partially weathered fine to coarse SANDSTONE. Gravel is subangular to subrounded fine to coarse of quartz and sandstone. Fractures are subhorizontal (0-25°) close to medium spaced planar sandy. (Chester Formation)	26										
											Borehole completed at 25.00m.	27										
												28										
												29										
												30										

General Remarks

1. Hand excavated inspection pit from ground level to 1.20m begl.
2. D - Disturbed Sample; ES - Environmental Sample; B - Bulk Sample; U - U100.
3. Densities and soil consistencies are based on insitu tests.
4. No visual or olfactory evidence of contamination observed.
5. Groundwater was not observed.
6. SPT - Standard Penetration Test; N - Number of blows.
7. Install details: 50mm plain pipe concrete flush cover from 0.00m begl to 0.50m begl; Bentonite seal between 0.50m begl to 19.00m begl; 50mm slotted pipe with gravel between 19.00m begl and 25.00m begl.

Groundwater	Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)
All dimensions in metres Scale 1:93.75				Logged By NB



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Site Premier Inn Deansgate, Manchester				BH04
Job No MAN.260.001	Dates Start 28-05-19 Finish 28-05-19	Ground Level (m)	Co-Ordinates	
Client Whitbread PLC				Sheet 1 of 2

Well	Water Levels	Samples & In Situ Testing			Casing (m)	Core (%)	I _r	Depth (m)	Level (mAD)	Legend	Stratum Description	
		Depth (m)	No/Type	Results								
		0.35	1ES					0.25	34.25		MADE GROUND: Black grey macadam.	0
		0.80 - 1.20	3B					0.80	33.70		MADE GROUND: Red brown slightly clayey sandy gravel. Gravel is subangular to subrounded fine to coarse of brick, macadam, concrete and sandstone. Sand is fine to coarse.	1
		1.00	2ES	N=18				1.30	33.20		0.70 Strata is damp.	
		1.20	SPT									
		1.20 - 1.65	4D									
		1.20 - 1.70	5B	N=7							MADE GROUND: Red brown slightly clayey sandy gravel with a low cobble content of quartz and brick. Gravel is subangular to subrounded fine to coarse of brick, macadam, concrete and sandstone. Sand is fine to coarse.	2
		1.50	6ES					2.50	32.00			
		2.00	SPT									
		2.00 - 2.45	7D									
		2.00 - 2.50	8B	N=10								
		2.50 - 3.00	9B								MADE GROUND: Loose to medium dense brown red slightly clayey gravelly fine to coarse sand. Gravel is subangular to subrounded fine to coarse of brick, concrete and sandstone.	3
		3.00	SPT									
		3.00 - 3.45	10ES	N=16								
		3.00 - 3.50	11D								MADE GROUND: Medium dense orange brown slightly silty gravelly fine to coarse sand. Gravel is subangular to subrounded fine to coarse of brick, concrete and sandstone.	4
		4.00	12B									
		4.00 - 4.45	SPT									
		4.00	13D	N=12				5.20	29.30		2.60 - 2.70 Band of soft brown slightly gravelly sandy clay.	5
		4.00 - 4.50	14ES								4.00 - 4.50 Sand and gravel.	
		4.70	15B								4.60 - 4.90 Locally black.	
		5.00	16ES									
		5.00 - 5.45	SPT								Firm brown mottled orange slightly gravelly slightly sandy CLAY. Gravel is subangular fine to medium of quartz. Sand is medium. (Glacial Till)	6
		5.50	17D	N=13				6.50	28.00			
		6.00	18D					6.70	27.80			
		6.50	19D									
		6.50 - 6.95	SPT	N=30							Dense orange brown SAND and GRAVEL. Gravel is subangular to subrounded fine to coarse of quartz, sandstone and granite. Sand is fine to coarse. (Glaciofluvial Sheet Deposits)	7
		6.50 - 6.70	20D									
		7.10	21B									
		7.50	22D									
		7.50 - 7.95	SPT								Very stiff brown slightly gravelly slightly sandy CLAY. Gravel is subangular fine to coarse of sandstone and coal. Sand is fine to coarse. (Glacial Till)	8
		8.50	23D									
		9.00	24D									
			25D	N=50				9.40	25.10			
		9.50	SPT			75 33 21					Very dense red brown slightly gravelly fine to coarse SAND. Gravel is subangular to subrounded fine to coarse of sandstone quartz and granite. (Residual Chester Formation)	10
		9.50 - 9.95	26D								9.50 - 9.87 Assumed zone of core loss.	
		9.50 - 10.00	27B								9.87 - 10.32 Non intact recovered as red brown gravelly sand.	
								10.40	24.10			
		11.00	SPT	N=50							Medium strong red brown slightly gravelly partially weathered fine to coarse SANDSTONE. Gravel is subangular to subrounded fine to coarse of quartz and sandstone. Fractures are subhorizontal (0-25°) close to medium spaced planar sandy. (Chester Formation)	11
		11.00 - 11.45	28D			100 90 53					11.00 - 11.10 Non intact recovered as red brown gravelly sand.	12
											12.07 - 12.12 Non intact recovered as red brown gravelly sand.	13
						77 33 27					12.50 - 12.85 Assumed zone of core loss.	
											13.24 - 13.85 Non intact recovered as red brown gravelly sand.	14
						100 100 85						
								{15.00}			Continued next sheet	15

General Remarks

1. Hand excavated inspection pit from ground level to 1.20m begl.
2. D - Disturbed Sample; ES - Environmental Sample; B - Bulk Sample; U - U100.
3. Densities and soil consistencies are based on insitu tests.
4. No visual or olfactory evidence of contamination observed.
5. Groundwater was not observed.
6. SPT - Standard Penetration Test; N - Number of blows.
7. Install details: 50mm plain pipe concrete flush cover from 0.00m begl to 0.50m begl; Bentonite seal between 0.50m begl to 10.00m begl; 50mm slotted pipe with gravel between 10.00m begl and 13.00m begl; Bentonite seal between 13.00m begl and 20.00m begl.

Groundwater	Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)
All dimensions in metres Scale 1:93.75				
				Logged By NB



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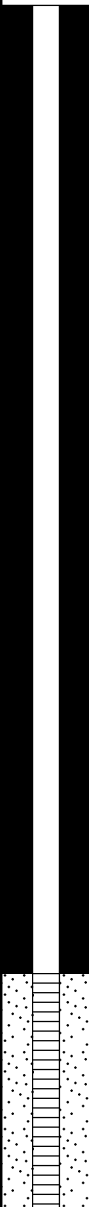
Site Premier Inn Deansgate, Manchester				BH04
Job No MAN.260.001	Dates Start 28-05-19 Finish 28-05-19	Ground Level (m)	Co-Ordinates	
Client Whitbread PLC				Sheet 2 of 2

Well	Water Levels	Samples & In Situ Testing			Casing (m)	Core (%)	I _r	Depth (m)	Level (mAD)	Legend	Stratum Description			
		Depth (m)	No/Type	Results										
								17.00	17.50			15		
						100 100 47							16	
						100 87 47						NI 60 140		17
														18
						100 93 80	NI 110 240	18.40	16.10		Weak to medium strong red brown gravelly partially weathered fine to coarse SANDSTONE. Gravel is subangular to subrounded fine to coarse of quartz and sandstone. Fractures are subhorizontal (0-35°) very close to closely spaced rough sandy. (Chester Formation)	19		
											Medium strong red brown slightly gravelly unweathered fine to coarse SANDSTONE. Gravel is subangular to subrounded fine to coarse of quartz and sandstone. Fractures are subhorizontal (0-25°) close to medium spaced planar sandy. (Chester Formation)	20		
								20.00	14.50		18.50 - 18.60 Non intact recovered as red brown gravelly sand.	21		
											Borehole completed at 20.00m.	22		
												23		
												24		
												25		
												26		
												27		
												28		
												29		
								{30.00}				30		

General Remarks

1. Hand excavated inspection pit from ground level to 1.20m begl.
2. D - Disturbed Sample; ES - Environmental Sample; B - Bulk Sample; U - U100.
3. Densities and soil consistencies are based on insitu tests.
4. No visual or olfactory evidence of contamination observed.
5. Groundwater was not observed.
6. SPT - Standard Penetration Test; N - Number of blows.
7. Install details: 50mm plain pipe concrete flush cover from 0.00m begl to 0.50m begl; Bentonite seal between 0.50m begl to 10.00m begl; 50mm slotted pipe with gravel between 10.00m begl and 13.00m begl; Bentonite seal between 13.00m begl and 20.00m begl.

Groundwater	Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)
All dimensions in metres Scale 1:93.75				
				Logged By NB

Well	Water Levels	Samples & In Situ Testing			Casing (m)	Core (%)	I _r	Depth (m)	Level (mAD)	Legend	Stratum Description	
		Depth (m)	No/Type	Results								
		0.20	1ES					0.15	33.94		MADE GROUND: Black grey macadam.	0
		0.50 - 1.00	2B					0.45	33.64		MADE GROUND: Brown grey sandy gravel. Gravel is subangular to subrounded fine to coarse of brick, macadam, concrete and sandstone. Sand is fine to coarse.	1
		0.50	3ES								0.45 Landscaping membrane.	
		1.00	4ES	N=7							Loose to medium dense orange brown slightly clayey gravelly fine to coarse SAND. Gravel is subangular to subrounded fine to coarse of quartz, sandstone and granite. (Glaciofluvial Sheet Deposits)	2
		1.20	SPT								2.60 - 2.70 Black slightly gravelly fine to medium sand. Gravel is subangular fine to medium of coal.	3
		1.20 - 1.65	5D								Firm to stiff grey brown slightly sandy gravelly CLAY. Gravel is subangular to subrounded fine to coarse of quartz, sandstone and granite. Sand is fine to coarse. (Glacial Till)	4
		1.20 - 1.70	6B	N=14								
		2.00	SPT									
		2.00 - 2.45	7ES									
		2.00 - 2.50	8D									
		3.00	9B	N=13								
		3.00 - 3.45	SPT									
		3.00 - 3.50	10D									
		4.00	11B	N=24								
		4.00 - 4.45	SPT									
		4.00 - 4.50	12D									
			13B									
		5.00	SPT	N=20				5.00	29.09			5
		5.00 - 5.45	14D									
												
		6.00	SPT	N=10								
		6.00 - 6.45	15D									
												
		7.00	SPT	N=50								
		7.00 - 7.45	16D									
												
	8.50	SPT	N=21									
		17D										
												
						100 26 15	NI NI 120	9.00	25.09		Very dense red brown slightly gravelly fine to coarse SAND. Gravel is subangular to subrounded fine to coarse of quartz and sandstone. (Residual Chester Formation)	9
								9.40	24.69			
		10.00	SPT	N=18		83 35 31					Weak to medium strong red brown slightly gravelly distinctly weathered fine to coarse SANDSTONE. Gravel is subangular to subrounded fine to coarse of quartz and sandstone. Fractures are subhorizontal (0-25°) very close to closely spaced planar sandy. (Chester Formation)	10
		10.00 - 10.45	18D								Weak to medium strong red brown slightly gravelly distinctly weathered fine to coarse SANDSTONE. Gravel is subangular to subrounded fine to coarse of quartz and sandstone. Fractures are subhorizontal (0-25°) very close to closely spaced planar sandy. (Chester Formation)	11
							NI 120 330	11.50	22.59		9.46 - 9.51 Non intact recovered as red brown gravelly sand. 9.82 - 9.91 Non intact recovered as red brown gravelly sand. 10.00 - 10.50 Assumed zone of core loss. 10.50 - 11.50 Non intact recovered as red brown gravelly sand.	12
											Medium strong red brown slightly gravelly partially weathered fine to coarse SANDSTONE. Gravel is subangular to subrounded fine to coarse of quartz and sandstone. Fractures are subhorizontal (0-25°) medium to close spaced planar sandy. (Chester Formation)	13
						100 92 51					11.76 - 11.96 Non intact recovered as red brown gravelly sand.	14
								{15.00}			Continued next sheet	15

1. Hand excavated inspection pit from ground level to 1.20m begl.
2. D - Disturbed Sample; ES - Environmental Sample; B - Bulk Sample; U - U100.
3. Densities and soil consistencies are based on insitu tests.
4. No visual or olfactory evidence of contamination observed.
5. Groundwater was not observed.
6. SPT - Standard Penetration Test; N - Number of blows.
7. Install details: 50mm plain pipe concrete flush cover from 0.00m begl to 0.50m begl; Bentonite seal between 0.50m begl to 12.00m begl; 50mm slotted pipe with gravel between 12.00m begl and 15.00m begl; Bentonite seal between 15.00m begl and 19.00m begl.

Groundwater				
Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)	
All dimensions in metres Scale 1:93.75				Logged By NB



Premier Inn Deansgate, Manchester

BH05

Dates

Start 28-05-19
Finish 28-05-19

Ground Level (m)

Co-Ordinates

MAN.260.001

Client

Whitbread PLC

Sheet

2 of 2

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General Remarks

1. Hand excavated inspection pit from ground level to 1.20m begl.
2. D - Disturbed Sample; ES - Environmental Sample; B - Bulk Sample; U - U100.
3. Densities and soil consistencies are based on insitu tests.
4. No visual or olfactory evidence of contamination observed.
5. Groundwater was not observed.
6. SPT - Standard Penetration Test; N - Number of blows.
7. Install details: 50mm plain pipe concrete flush cover from 0.00m begl to 0.50m begl; Bentonite seal between 0.50m begl to 12.00m begl; 50mm slotted pipe with gravel between 12.00m begl and 15.00m begl; Bentonite seal between 15.00m begl and 19.00m begl.

Groundwater

Date _____

Strike Depth
(m)Casing Depth
(m)Depth After
Observation
(m)

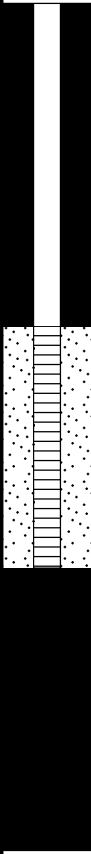
All dimensions in metres
Scale 1:93.75

Logged By
NB



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Site Premier Inn Deansgate, Manchester				BH06
Job No MAN.260.001	Dates Start 06-06-19 Finish 07-06-19	Ground Level (m)	Co-Ordinates	
Client Whitbread PLC				Sheet 1 of 1

Well	Water Levels	Samples & In Situ Testing			Casing (m)	Core (%)	I _r	Depth (m)	Level (mAD)	Legend	Stratum Description				
		Depth (m)	No/Type	Results											
		0.20	1ES	N=16				0.15	33.81		MADE GROUND: Black grey macadam.	0			
		0.20 - 0.40	2B					0.45	33.51						
		0.50	3ES					N=7				MADE GROUND: Grey brown sandy gravel. Gravel is subangular to subrounded fine to coarse of brick, macadam, concrete and sandstone. Sand is fine to coarse.	1		
		0.50 - 1.00	4B												
		1.00	5ES	N=7							MADE GROUND: Loose to medium dense orange brown slightly clayey gravelly fine to coarse SAND. Gravel is subangular to subrounded fine to coarse of brick, concrete and sandstone.	2			
		1.20	SPT					2.10	31.86						
		1.20 - 1.65	6D												
		1.20 - 1.70	7B												
		1.80	8ES	N=24											
		2.00	SPT					3.00	30.96						
		2.00 - 2.45	9D								MADE GROUND: Medium dense orange brown slightly clayey gravelly fine to coarse SAND. Gravel is subangular to subrounded fine to coarse of brick, quartz and sandstone.	3			
		2.10	10ES												
		2.10 - 2.50	11B	N=11											
		3.00	SPT												
		3.00 - 3.45	12D								Medium dense orange brown slightly clayey gravelly fine to coarse SAND. Gravel is subangular to subrounded fine to coarse of quartz, sandstone and granite. (Glaciofluvial Sheet Deposits)	4			
		3.00 - 3.50	13B					4.55	29.41						
		3.10	14ES	N=12											
		4.00	SPT					5.00	28.96						
		4.00 - 4.45	15D								Stiff grey brown slightly sandy gravelly CLAY. Gravel is subangular to subrounded fine to coarse of quartz, sandstone and granite. Sand is fine to coarse. (Glacial Till)	5			
		4.00 - 4.50	16B					5.60	28.36						
		4.10	19ES	N=12											
		4.60	17D												
		5.00	SPT								Brown slightly clayey gravelly fine to coarse SAND. Gravel is subangular to subrounded fine to coarse of quartz, sandstone and granite. (Glaciofluvial Sheet Deposits)	6			
		5.00 - 5.45	18D												
		5.00 - 5.50	21B	N=50											
		5.10	20ES					7.50	26.46						
		6.00	22D								Firm to stiff grey brown slightly sandy gravelly CLAY. Gravel is subangular to subrounded fine to coarse of quartz, sandstone and granite. Sand is fine to coarse. (Glacial Till)	7			
		6.40	SPT												
		7.00	23D	N=50											
		7.50 - 9.00	24B												
								9.00	24.96		Very dense red brown slightly gravelly fine to coarse SAND. Gravel is subangular to subrounded fine to coarse of sandstone quartz and granite. (Residual Chester Formation)	8			
		9.20	SPT	N=50											
		9.20 - 9.30	25D												
								10.50	23.46		Weak red brown SANDSTONE recovered as dense red brown slightly gravelly silty fine to coarse sand. Gravel is subangular to subrounded fine to coarse of quartz and sandstone. Fractures are subhorizontal (0-25°) very close to closely spaced planar. (Chester Formation)	9			
											Borehole completed at 10.50m.	10			
												11			
												12			
												13			
												14			
												15			
						</									

General Remarks

- Hand excavated inspection pit from ground level to 1.20m begl.
- D - Disturbed Sample; ES - Environmental Sample; B - Bulk Sample; U - U100.
- Densities and soil consistencies are based on insitu tests.
- No visual or olfactory evidence of contamination observed.
- Groundwater was not observed.
- SPT - Standard Penetration Test; N - Number of blows.
- Install details: 50mm plain pipe concrete flush cover from 0.00m begl to 0.50m begl; Bentonite seal between 0.50m begl to 4.00m begl; 50mm slotted pipe with gravel between 4.00m begl and 7.00m begl; Bentonite seal between 7.00m begl and 10.50m begl.

Groundwater		Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)
All dimensions in metres Scale 1:93.75					Logged By NB

SPT Hammer Energy Test Report

In accordance with BSEN ISO 22476-3:2005

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

SPT Hammer Ref: G1
Test Date: 14/02/2019
Report Date: 14/02/2019
File Name: G1.spl
Test Operator: CM

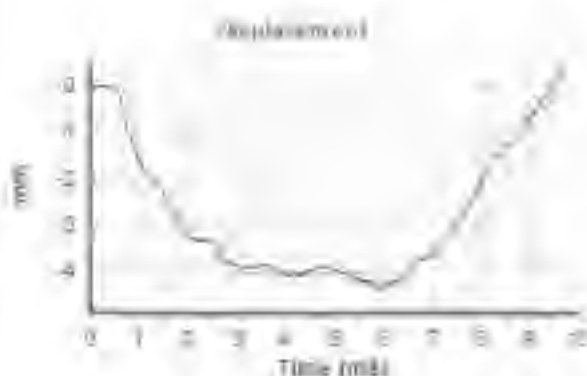
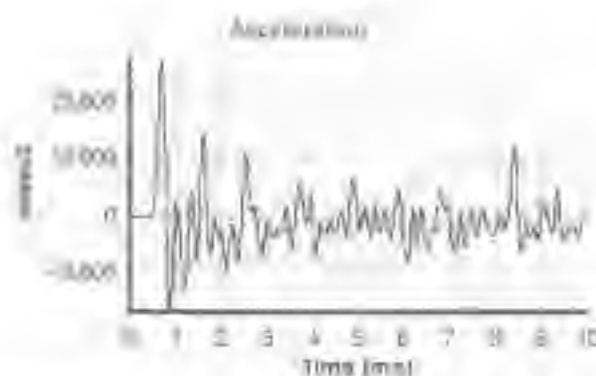
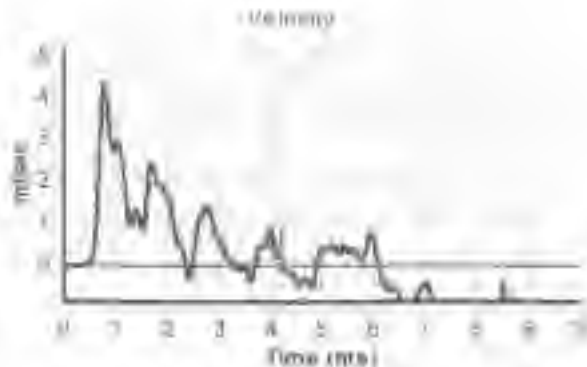
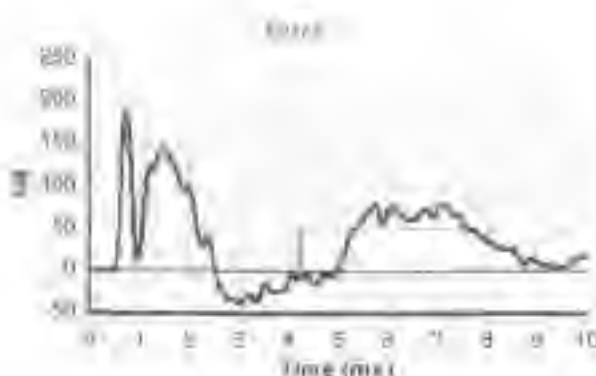
Instrumented Rod Data

Diameter d_r (mm): 54
Wall Thickness t_r (mm): 6.0
Assumed Modulus E_s (GPa): 208
Accelerometer No. 1: 7087
Accelerometer No. 2: 14605

SPT Hammer Information

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

Comments / Location



Calculations

Area of Rod A_r (mm²): 983
Theoretical Energy E_{theo} (J): 473
Measured Energy E_{rod} (J): 337

Energy Ratio E_r (%): **71**

Signed: C. MCCLUSKEY
Title: FITTER

The recommended calibration interval is 12 months

SPT Hammer Energy Test Report

In accordance with BS EN ISO 22476-3:2005

ARCHWAY ENGINEERING
AINLEY'S INDUSTRIAL ESTATE
ELLAND
WEST YORKSHIRE
HX5 9JP

SPT Hammer Ref: G2
Test Date: 18/04/2018
Report Date: 18/04/2018
File Name: G2.spt
Test Operator: SH

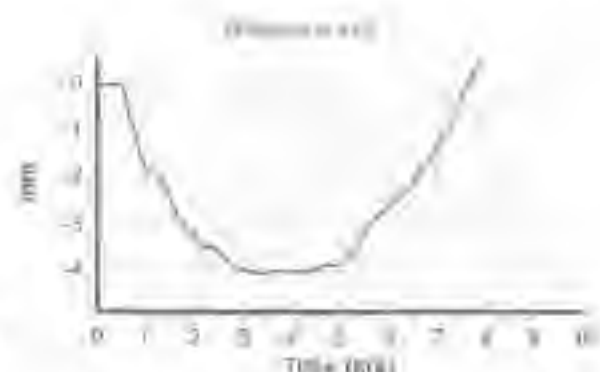
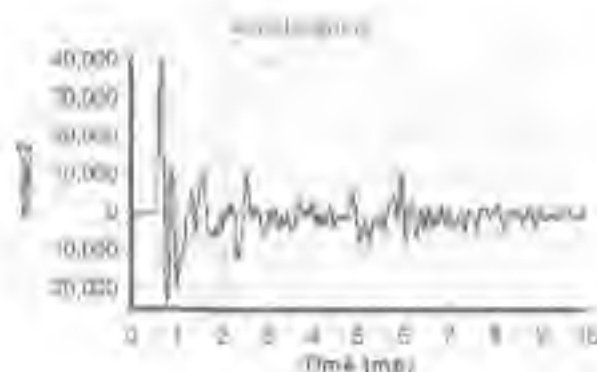
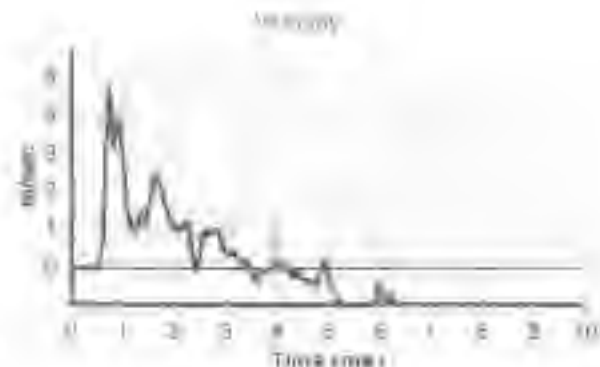
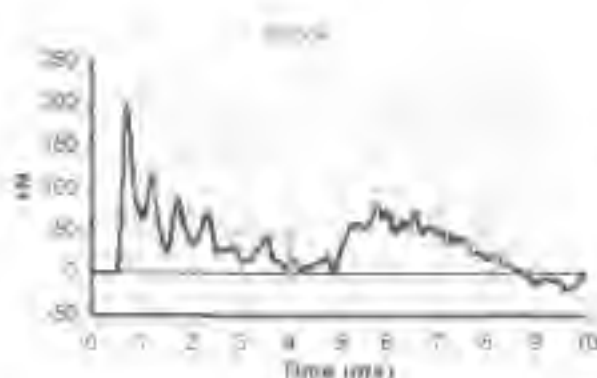
Instrumented Rod Data

Diameter d_r (mm): 54
Wall Thickness t_r (mm): 5.3
Assumed Modulus E_s (GPa): 200
Accelerometer No.1: 7080
Accelerometer No.2: 11609

SPT Hammer Information

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

Comments / Location



Calculations

Area of Rod A (mm²): 244
Theoretical Energy E_{theor} (J): 473
Measured Energy E_{meas} (J): 348

Energy Ratio E_r (%):

71

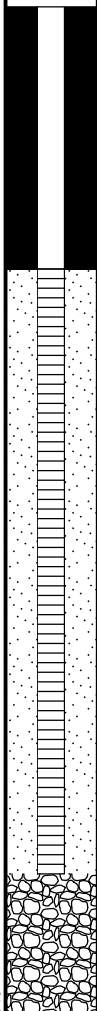
Signed: M. GARDNER
Title: FITTER

The recommended calibration interval is 12 months



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Web: www.enzygo.com

Site Premier Inn Deansgate, Manchester				WS01
Job No MAN.260.001	Dates Start 30-05-19 Finish 30-05-19	Ground Level (m)	Co-Ordinates	
Client Whitbread PLC				Sheet 1 of 1

Well	Water Levels	Samples & In Situ Testing			Depth (m)	Level (mAD)	Legend	Stratum Description	
		Depth (m)	No/Type	Results					
		0.20	1ES		0.15	33.48		MADE GROUND: Black macadam.	0
		0.50	2ES		0.40	33.23		MADE GROUND: Grey brown slightly clayey sandy gravel. Gravel is subangular to subrounded fine to coarse of brick. Sand is fine to coarse.	
		0.50 - 0.80	3B		0.80	32.83		MADE GROUND: Red brown slightly silty sandy gravel. Gravel is subangular to subrounded fine to coarse of brick. Sand is fine to coarse.	
		1.00	4ES		1.10	32.53		MADE GROUND: Orange brown sandy gravel. Gravel is subangular to subrounded fine to coarse of quartz and sandstone. Sand is fine to coarse.	1
		1.20	SPT	N=18				Medium dense orange brown slightly silty gravelly fine to coarse SAND. Gravel is subangular to subrounded fine to coarse of quartz and sandstone. (Glaciofluvial Sheet Deposits)	
		1.20 - 1.70	5ES 6B		1.80	31.83		Medium dense orange brown slightly clayey SAND and GRAVEL. Gravel is subangular to subrounded fine to coarse of quartz and sandstone. Sand is fine to coarse. (Glaciofluvial Sheet Deposits)	2
		2.00	SPT	N=14					
		2.20	7ES						
		2.20 - 2.70	8B						
		3.00	SPT	N=17					3
		3.00 - 4.00	9B						
		4.00	SPT	N=26					4
		4.50	10D		4.40	29.23		Stiff grey brown slightly gravelly CLAY with a low cobble content of subangular to subrounded sandstone and granite. Gravel is subangular to subrounded fine to coarse of quartz and sandstone. (Glacial Till)	
		5.00	11D		5.00	28.63		Borehole completed at 5.00m.	5
					{6.00}				6

General Remarks

1. Hand excavated inspection pit from ground level to 1.20m begl.
2. D - Disturbed Sample; ES - Environmental Sample; B - Bulk Sample.
3. Densities and soil consistencies are based on insitu tests.
4. No visual or olfactory evidence of contamination observed.
5. Groundwater was not observed.
6. SPT - Standard Penetration Test; N - Number of blows.
7. Install details: 50mm plain pipe concrete flush cover from 0.00m begl to 0.50m begl; Bentonite seal between 0.50m begl to 1.30m begl; 50mm slotted pipe with gravel between 1.30m begl to 4.30m begl; Borehole collapse between 4.30m begl to 5.00m begl.

Groundwater				
	Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)
All dimensions in metres Scale 1:37.5				
				Logged By NB



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Site Premier Inn Deansgate, Manchester				WS02
Job No MAN.260.001	Dates Start 30-05-19 Finish 30-05-19	Ground Level (m)	Co-Ordinates	

Client Whitbread PLC	Sheet 1 of 1
-------------------------	-----------------

Well	Water Levels	Samples & In Situ Testing			Depth (m)	Level (mAD)	Legend	Stratum Description	
		Depth (m)	No/Type	Results					
		0.20	1ES		0.10	33.94		MADE GROUND: Black macadam.	0
		0.50	2ES		0.45	33.59		MADE GROUND: Brown grey sandy gravel. Gravel is subangular to subrounded fine to coarse of brick, macadam and concrete. Sand is fine to coarse.	
		0.70 - 1.00	3B					0.45 Landscaping membrane.	
		1.00	4ES					Loose orange brown slightly clayey gravelly fine to coarse SAND with a low cobble content of subangular to subrounded granite and sandstone. Gravel is subangular to subrounded fine to coarse of granite, quartz and sandstone. (Glaciofluvial Sheet Deposits)	1
		1.20	SPT	N=4					
		1.20 - 1.65	5B						
		2.00	SPT	N=4					2
		2.00 - 2.50	6ES 7B						
					3.00	31.04			3
								Borehole completed at 3.00m.	
					{6.00}				4
									5
									6

General Remarks

1. Hand excavated inspection pit from ground level to 1.20m begl.
2. D - Disturbed Sample; ES - Environmental Sample; B - Bulk Sample.
3. Densities and soil consistencies are based on insitu tests.
4. No visual or olfactory evidence of contamination observed.
5. Groundwater was not observed.
6. SPT - Standard Penetration Test; N - Number of blows.
7. Install details: 50mm plain pipe concrete flush cover from 0.00m begl to 0.50m begl; Bentonite seal between 0.50m begl to 1.00m begl; 50mm slotted pipe with gravel between 1.00m begl to 3.00m begl.

Groundwater	Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)
All dimensions in metres Scale 1:37.5				Logged By NB



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Site Premier Inn Deansgate, Manchester				WS03
Job No MAN.260.001	Dates Start 30-05-19 Finish 30-05-19	Ground Level (m)	Co-Ordinates	

Client Whitbread PLC	Sheet 1 of 1
-------------------------	-----------------

Well	Water Levels	Samples & In Situ Testing			Depth (m)	Level (mAD)	Legend	Stratum Description		
		Depth (m)	No/Type	Results						
		0.20	1ES	N=4	0.15	34.30		MADE GROUND: Black macadam.	0	
		0.50 0.50 - 1.00	2ES 3B		0.30	34.15		MADE GROUND: Brown grey sandy gravel. Gravel is subangular to subrounded fine to coarse of brick, macadam and concrete. Sand is fine to coarse.	1	
								MADE GROUND: Loose red brown slightly clayey sandy gravel. Gravel is subangular to subrounded fine to coarse of brick, macadam and concrete. Sand is fine to coarse.		
		1.00	4ES					Loose orange brown slightly clayey gravelly fine to coarse SAND with a low cobble content of subangular to subrounded granite and sandstone. Gravel is subangular to subrounded fine to coarse of granite, quartz and sandstone. (Glaciofluvial Sheet Deposits)		
		1.20	SPT		1.40	33.05				
		1.50	5ES							
		1.50 - 2.00	6B		2.00	32.45			2	
								Borehole completed at 2.00m.		
									3	
									4	
									5	
									6	

General Remarks

1. Hand excavated inspection pit from ground level to 1.20m begl.
2. D - Disturbed Sample; ES - Environmental Sample; B - Bulk Sample.
3. Densities and soil consistencies are based on insitu tests.
4. No visual or olfactory evidence of contamination observed.
5. Groundwater was not observed.
6. SPT - Standard Penetration Test; N - Number of blows.
7. Install details: 50mm plain pipe concrete flush cover from 0.00m begl to 0.50m begl; Bentonite seal between 0.50m begl to 1.00m begl; 50mm slotted pipe with gravel between 1.00m begl to 2.00m begl.

Groundwater				
	Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)
All dimensions in metres Scale 1:37.5				
				Logged By NB



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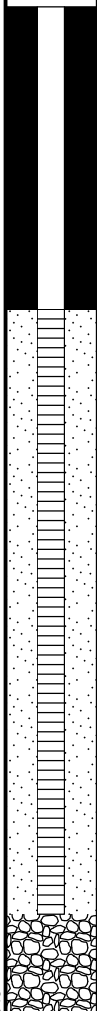
Site Premier Inn Deansgate, Manchester							WS04		
Job No MAN.260.001		Dates Start 30-05-19 Finish 30-05-19		Ground Level (m)		Co-Ordinates			
Client Whitbread PLC							Sheet 1 of 1		
Well	Water Levels	Samples & In Situ Testing			Depth (m)	Level (mAD)	Legend	Stratum Description	
		Depth (m)	No/Type	Results					
		0.20	1ES		0.05	33.66		MADE GROUND: Yellow paving slab.	0
					0.45	33.26		MADE GROUND: Brown grey gravelly fine to coarse sand. Gravel is subangular to subrounded fine to coarse of brick.	
								Borehole completed at 0.45m.	
									1
									2
									3
									4
									5
									6
General Remarks 1. Hand excavated inspection pit from ground level to 0.45m begl. 2. D - Disturbed Sample; ES - Environmental Sample; B - Bulk Sample. 3. Densities and soil consistencies are based on insitu tests. 4. No visual or olfactory evidence of contamination observed. 5. Groundwater was not observed. 6.SPT - Standard Penetration Test; N - Number of blows. 7. Backfilled with arisings and reinstated.									
Groundwater Date Strike Depth (m) Casing Depth (m) Depth After Observation (m)									
All dimensions in metres Scale 1:37.5		Logged By NB							



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Site Premier Inn Deansgate, Manchester				WS04A
Job No MAN.260.001	Dates Start 30-05-19 Finish 30-05-19	Ground Level (m)	Co-Ordinates	

Client Whitbread PLC	Sheet 1 of 1
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Well	Water Levels	Samples & In Situ Testing			Depth (m)	Level (mAD)	Legend	Stratum Description	
		Depth (m)	No/Type	Results					
								MADE GROUND: Black macadam.	0
		0.50 0.50 - 0.70	1ES 2B		0.45	33.26		0.45 Landscaping membrane.	
		1.00 1.20 1.20 - 1.70	3ES SPT 4B	N=18				Medium dense orange brown slightly silty gravelly fine to coarse SAND. Gravel is subangular to subrounded fine to coarse of quartz and sandstone. (Glaciofluvial Sheet Deposits)	1
		2.00 2.20 - 2.70	SPT 5ES 6B	N=15	1.50	32.21		Medium dense orange brown slightly clayey sandy GRAVEL. Gravel is subangular to subrounded fine to coarse of quartz and sandstone. Sand is fine to coarse. (Glaciofluvial Sheet Deposits)	2
		3.00 3.00 - 3.40	SPT 7ES 8B	N=19					3
		4.00	SPT	N=13					4
		4.80 - 5.00	9D		4.50	29.21		Firm grey brown slightly sandy gravelly CLAY. Gravel is subangular to subrounded fine to coarse of quartz and sandstone. Sand is fine to coarse. (Glacial Till)	
		5.00	SPT	N=19	5.00	28.71			5
								Borehole completed at 5.00m.	
					{6.00}				6

General Remarks

1. Hand excavated inspection pit from ground level to 1.20m begl.
2. D - Disturbed Sample; ES - Environmental Sample; B - Bulk Sample.
3. Densities and soil consistencies are based on insitu tests.
4. No visual or olfactory evidence of contamination observed.
5. Groundwater was not observed.
6. SPT - Standard Penetration Test; N - Number of blows.
7. Install details: 50mm plain pipe concrete flush cover from 0.00m begl to 0.50m begl; Bentonite seal between 0.50m begl to 1.50m begl; 50mm slotted pipe with gravel between 1.50m begl to 4.50m begl; Borehole collapse between 4.50m begl to 5.00m begl.

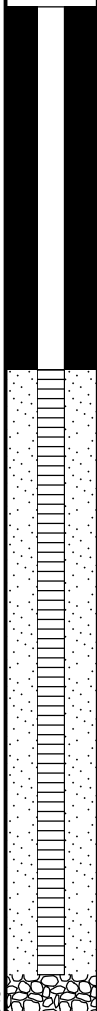
Groundwater				
	Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)
All dimensions in metres Scale 1:37.5				
				Logged By NB



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Site Premier Inn Deansgate, Manchester				WS05
Job No MAN.260.001	Dates Start 30-05-19 Finish 30-05-19	Ground Level (m)	Co-Ordinates	

Client Whitbread PLC	Sheet 1 of 1
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Well	Water Levels	Samples & In Situ Testing			Depth (m)	Level (mAD)	Legend	Stratum Description	
		Depth (m)	No/Type	Results					
		0.25	1ES		0.20	33.92		MADE GROUND: Black macadam.	0
		0.25 - 0.40	2B		0.40	33.72		MADE GROUND: Brown grey slightly silty sandy gravel. Gravel is subangular to subrounded fine to coarse of brick, macadam and concrete. Sand is fine to coarse.	
		0.50	3ES						
		0.50 - 1.00	4B					MADE GROUND: Loose orange brown gravelly fine to coarse sand with a low cobble content of subangular to subrounded brick. Gravel is subangular to subrounded fine to coarse of brick, quartz and sandstone.	
		1.00	5ES						1
		1.20	SPT	N=1					
		1.20 - 1.65	6D					1.20 - 1.50 Strata becomes clayey.	
		1.70	7ES		1.75	32.37		Medium dense orange brown slightly silty gravelly fine to coarse SAND. Gravel is subangular to subrounded fine to coarse of quartz and sandstone. (Glaciofluvial Sheet Deposits)	2
		2.00	SPT	N=15					
		2.00 - 2.50	8B						
		2.70	9ES						
		3.00	SPT	N=14					3
		3.00 - 3.50	10B						
		3.90 - 4.50	11B					3.70 - 3.80 Black gravelly fine to coarse sand. Gravel is subangular fine to medium of coal.	4
		4.00	SPT	N=19					
		5.00	SPT	N=12	5.00	29.12		Borehole completed at 5.00m.	5
			12D						
					{6.00}				6

General Remarks

1. Hand excavated inspection pit from ground level to 1.20m begl.
2. D - Disturbed Sample; ES - Environmental Sample; B - Bulk Sample.
3. Densities and soil consistencies are based on insitu tests.
4. No visual or olfactory evidence of contamination observed.
5. Groundwater was not observed.
6. SPT - Standard Penetration Test; N - Number of blows.
7. Install details: 50mm plain pipe concrete flush cover from 0.00m begl to 0.50m begl; Bentonite seal between 0.50m begl to 2.00m begl; 50mm slotted pipe with gravel between 2.00mbegl to 5.00m begl.

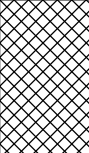
Groundwater				
	Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)
All dimensions in metres Scale 1:37.5				
				Logged By NB



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Site Premier Inn Deansgate, Manchester				WS06
Job No MAN.260.001	Dates Start 30-05-19 Finish 30-05-19	Ground Level (m)	Co-Ordinates	

Client Whitbread PLC	Sheet 1 of 1
-------------------------	-----------------

Well	Water Levels	Samples & In Situ Testing			Depth (m)	Level (mAD)	Legend	Stratum Description	
		Depth (m)	No/Type	Results					
		0.20	1ES		0.80	33.25		MADE GROUND: Brown grey slightly clayey gravelly fine to coarse sand with a high cobble content brick. Gravel is subangular to subrounded fine to coarse of brick, macadam, concrete and sandstone. Sand is ash.	0
		0.50 0.60 - 0.80	2ES 3B						
		1.00	4ES		1.20	32.85		MADE GROUND: Brown grey gravelly fine to coarse sand. Gravel is subangular to subrounded fine to coarse of brick, sandstone and quartz.	1
								Borehole completed at 1.20m.	
									2
									3
									4
									5
									6

General Remarks

1. Hand excavated inspection pit from ground level to 1.20m begl.
2. D - Disturbed Sample; ES - Environmental Sample; B - Bulk Sample.
3. Densities and soil consistencies are based on insitu tests.
4. No visual or olfactory evidence of contamination observed.
5. Groundwater was not observed.
6. SPT - Standard Penetration Test; N - Number of blows.
7. Backfilled with arisings and reinstated.

Groundwater	Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)
All dimensions in metres Scale 1:37.5				Logged By NB



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Site Premier Inn Deansgate, Manchester				WS06A
Job No MAN.260.001	Dates Start 30-05-19 Finish 30-05-19	Ground Level (m)	Co-Ordinates	

Client Whitbread PLC	Sheet 1 of 1
-------------------------	-----------------

Well	Water Levels	Samples & In Situ Testing			Depth (m)	Level (mAD)	Legend	Stratum Description	
		Depth (m)	No/Type	Results					
					0.05	33.99		MADE GROUND: Grey concrete paving slab.	0
					0.80	33.24		MADE GROUND: Brown grey slightly clayey gravelly fine to coarse sand with a high cobble content brick. Gravel is subangular to subrounded fine to coarse of brick, macadam, concrete and sandstone. Sand is ash.	
					1.35	32.69		MADE GROUND: Brown gravelly fine to coarse sand. Gravel is subangular to subrounded fine to coarse of brick, sandstone and quartz.	1
								Borehole completed at 1.35m.	
									2
									3
									4
									5
									6
					{6.00}				

General Remarks

1. Hand excavated inspection pit from ground level to 1.20m begl.
2. D - Disturbed Sample; ES - Environmental Sample; B - Bulk Sample.
3. Densities and soil consistencies are based on insitu tests.
4. No visual or olfactory evidence of contamination observed.
5. Groundwater was not observed.
6. SPT - Standard Penetration Test; N - Number of blows.
7. Install details: 50mm plain pipe concrete flush cover from 0.00m begl to 0.20m begl; Bentonite seal between 0.20m begl to 0.80m begl; 50mm slotted pipe with gravel between 0.80mbegl to 1.35m begl.

Groundwater				
	Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)
All dimensions in metres Scale 1:37.5				
				Logged By NB



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Site Premier Inn Deansgate, Manchester				WS06B
Job No MAN.260.001	Dates Start 30-05-19 Finish 30-05-19	Ground Level (m)	Co-Ordinates	

Client Whitbread PLC	Sheet 1 of 1
-------------------------	-----------------

Well	Water Levels	Samples & In Situ Testing			Depth (m)	Level (mAD)	Legend	Stratum Description	
		Depth (m)	No/Type	Results					
					0.45	33.52		MADE GROUND: Brown grey slightly clayey gravelly fine to coarse sand with a high cobble content brick. Gravel is subangular to subrounded fine to coarse of brick, macadam, concrete and sandstone. Sand is fine to coarse.	0
								Borehole completed at 0.45m.	1
									2
									3
									4
									5
					{6.00}				6

General Remarks

1. Hand excavated inspection pit from ground level to 1.20m begl.
2. D - Disturbed Sample; ES - Environmental Sample; B - Bulk Sample.
3. Densities and soil consistencies are based on insitu tests.
4. No visual or olfactory evidence of contamination observed.
5. Groundwater was not observed.
6. SPT - Standard Penetration Test; N - Number of blows.
7. Backfilled with arisings and reinstated.

Groundwater	Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)
All dimensions in metres Scale 1:37.5				
				Logged By NB

SPT Hammer Energy Test Report

in accordance with BS EN ISO 22476-3:2005

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

SPT Hammer Ref: DART435
Test Date: 02/05/2019
Report Date: 02/05/2019
File Name: DART435.spt
Test Operator: CN

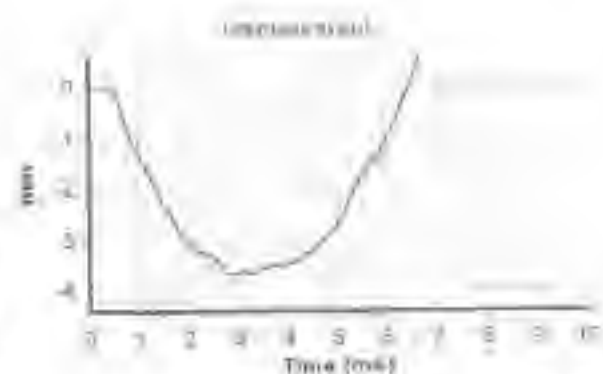
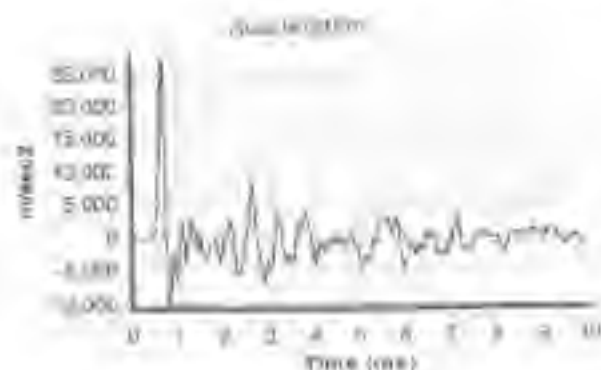
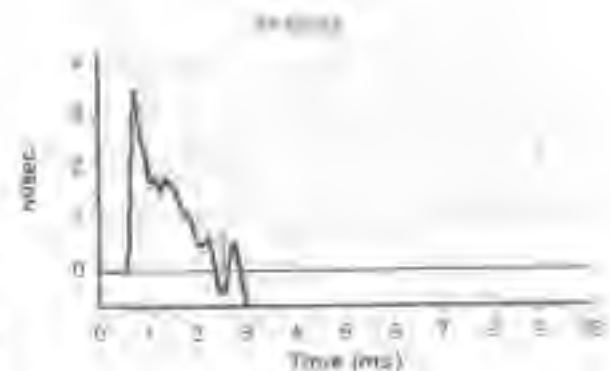
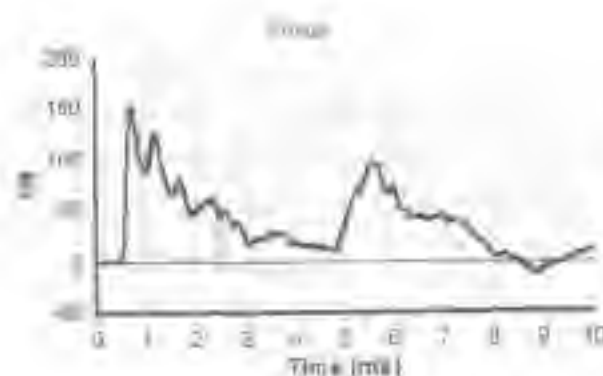
Instrumented Rod Data

Diameter d_r (mm): 54
Wall Thickness t_r (mm): 6.5
Assumed Modulus E_r (GPa): 208
Accelerometer No.1: 7014
Accelerometer No.2: 10008

SPT Hammer Information

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

Comments / Location



Calculations

Area of Rod A_r (mm²): 270
Theoretical Energy E_{theor} (J): 473
Measured Energy E_{meas} (J): 287

Energy Ratio E_r (%): **61**

Signed: S. HOWARTH
Title: FITTER

The recommended calibration interval is 12 months



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Site Premier Inn Deansgate, Manchester				SA01 NF
Job No MAN.260.001	Dates Start 03-06-19 Finish 03-06-19	Ground Level (m)	Co-Ordinates	

Client Whitbread PLC	Sheet 1 of 1
-------------------------	-----------------

Water Levels	Samples & In Situ Testing			Depth (m)	Level (mAD)	Legend	Stratum Description	
	Depth (m)	No/Type	Results					
				0.08	33.92		MADE GROUND: Tarmac.	0
				0.35	33.65		MADE GROUND: Dark grey slightly clayey sandy angular fine to coarse gravel of sandstone, concrete, brick, clinker and coal with a moderate cobble content. Cobbles are angular of brick. Sand is fine to coarse.	
				0.50	33.50		MADE GROUND: Yellow brown slightly sandy angular fine to coarse gravel of dolomite. Sand is fine to coarse.	
				0.75	33.25		Firm consistency orange brown mottled grey sandy CLAY with some orange brown silty sandy bands. Sand is fine to coarse. (Glacial Till)	
				1.35	32.65		Light brown very gravelly coarse SAND. Gravel is subangular to rounded of quartz and sandstone. (Glaciofluvial Sheet Deposits)	1
				2.50 (2.50)	31.50		Light brown slightly gravelly slightly silty medium SAND. Gravel is subangular to rounded of quartz and sandstone. (Glaciofluvial Sheet Deposits)	2
							Trial Pit completed at 2.50m.	

General Remarks

Dimensions: 1.55x0.50x2.50

1. Machine excavated inspection pit from ground level to 2.50m begl.
2. No visual or olfactory evidence of contamination observed.
3. Groundwater was not observed.
4. Trial pit was backfilled with arisings after testing.

All dimensions in metres
Scale 1:15.625

Logged By
EL



Enzygo Ltd
Tel: 01454 269237
Fax: 01454 269760
Web: www.enzygo.com

Site Premier Inn Deansgate, Manchester						SA01 SF		
Job No MAN.260.001		Dates Start 03-06-19 Finish 03-06-19		Ground Level (m)				Co-Ordinates
Client Whitbread PLC						Sheet 1 of 1		
Water Levels	Samples & In Situ Testing			Depth (m)	Level (mAD)	Legend	Stratum Description	
	Depth (m)	No/Type	Results					
				0.08	33.92		MADE GROUND: Tarmac.	0
				0.25	33.75		MADE GROUND: Dark grey slightly clayey sandy angular fine to coarse gravel of sandstone, concrete, brick, clinker and coal with a low cobble content. Cobbles are angular of brick. Sand is fine to coarse.	
							MADE GROUND: Dark grey cobbles with some slightly clayey gravelly coarse sand. Cobbles are angular of brick. Gravel is angular fine to coarse of sandstone, concrete, brick, clinker and coal.	
				1.40	32.60			1
							Light brown slightly gravelly slightly silty medium SAND. Gravel is subangular to rounded of quartz and sandstone. (Glaciofluvial Sheet Deposits)	
				2.50 (2.50)	31.50			2
Trial Pit completed at 2.50m.								
General Remarks Dimensions: 1.55x0.50x2.50 1. Machine excavated inspection pit from ground level to 2.50m begl. 2. No visual or olfactory evidence of contamination observed. 3. Groundwater was not observed. 4. Trial pit was backfilled with arisings after testing.								
All dimensions in metres Scale 1:15.625						Logged By EL		

1.1 ENZYGO TP LOG MAN.260.001 LOGS NEW/GPJ GINT STD AGS 3.1 ENZYGO.GPJ 2/8/19



Enzygo Ltd
Tel: 01454 269237
Fax: 01454 269760
Web: www.enzygo.com

Site Premier Inn Deansgate, Manchester						SA02		
Job No MAN.260.001		Dates Start 03-06-19 Finish 03-06-19		Ground Level (m)				Co-Ordinates
Client Whitbread PLC						Sheet 1 of 1		
Water Levels	Samples & In Situ Testing			Depth (m)	Level (mAD)	Legend	Stratum Description	
	Depth (m)	No/Type	Results					
				0.18	34.43		MADE GROUND: Tarmac.	0
				0.55	34.06		MADE GROUND: Brown slightly clayey very gravelly coarse sand with a medium cobble content. Cobbles are angular of brick and concrete. Gravel is angular fine to coarse of sandstone, concrete, brick and limestone.	
				1.05	33.56		MADE GROUND: Relict brick structure (possible old foundation).	1
				1.40	33.21		Firm consistency orange brown mottled grey slightly sandy CLAY with some orange brown silty sandy bands. Sand is fine to coarse. (Glacial Till)	
				2.30	32.31		Orange brown very gravelly medium SAND with a medium cobble content. Cobbles are subrounded of quartz. Gravel is subangular fine to coarse of quartz and sandstone. (Glaciofluvial Sheet Deposits)	2
				{2.50}			Trial Pit completed at 2.30m.	
General Remarks Dimensions: 1.55x0.50x2.30 1. Machine excavated inspection pit from ground level to 2.30m begl. 2. No visual or olfactory evidence of contamination observed. 3. Groundwater was not observed. 4. Trial pit was backfilled with arisings after testing.								
All dimensions in metres Scale 1:15.625						Logged By EL		

1.1 ENZYGO TP LOG MAN.260.001 LOGS NEW/GPJ GINT STD AGS 3. 1 ENZYGO.GPJ 2/8/19



Enzygo Ltd
Tel: 01454 269237
Fax: 01454 269760
Web: www.enzygo.com

Site Premier Inn Deansgate, Manchester						SA03		
Job No MAN.260.001		Dates Start 03-06-19 Finish 03-06-19		Ground Level (m)				Co-Ordinates
Client Whitbread PLC						Sheet 1 of 1		
Water Levels	Samples & In Situ Testing			Depth (m)	Level (mAD)	Legend	Stratum Description	
	Depth (m)	No/Type	Results					
				0.14	33.40		MADE GROUND: Tarmac.	0
				0.40	33.14		MADE GROUND: Light grey slightly sandy gravel. Gravel is angular fine to coarse of limestone.	
				0.95	32.59		Orange brown very sandy subangular fine to coarse GRAVEL of quartz and sandstone with a low cobble content. Cobbles are subrounded of quartz. Sand is fine to coarse. (Glaciofluvial Sheet Deposits)	
				1.80	31.74		Red brown slightly silty gravelly medium SAND. Gravel is subangular fine to coarse of quartz and sandstone. (Glaciofluvial Sheet Deposits)	1
				2.00	31.54		Red brown very sandy subangular fine to coarse GRAVEL of quartz and sandstone. Sand is fine to coarse. (Glaciofluvial Sheet Deposits)	2
				{2.50}			Trial Pit completed at 2.00m.	
General Remarks Dimensions: 1.60x0.55x2.00 1. Machine excavated inspection pit from ground level to 2.00m begl. 2. No visual or olfactory evidence of contamination observed. 3. Groundwater was not observed. 4. Trial pit was backfilled with arisings after testing.								
All dimensions in metres Scale 1:15.625						Logged By EL		

1.1 ENZYGO TP LOG MAN.260.001 LOGS NEW/GPJ GINT STD AGS 3.1 ENZYGO.GPJ 2/8/19



Appendix 4 – In-Situ Testing Results



LABORATORY REPORT



4043

Contract Number: PSL19/3377

Report Date: 03 June 2019
Client's Reference: 63524
Client Name: Geocore Site Investigations Ltd
Tralee Close
Kirkleatham Business Park
Redcar
Cleveland
TS10 5SG

For the attention of: Michelle Woodhead

Contract Title: Manchester, M15 5FJ
Date Received: 31/5/2019
Date Commenced: 31/5/2019
Date Completed: 03/6/2019

Notes: Opinions and Interpretations are outside the UKAS Accreditation

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

Checked and Approved Signatories:

R Gunson
(Director)

A Watkins
(Director)

R Berriman
(Quality Manager)

L Knight
(Senior Technician)


S Eyre
(Senior Technician)

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awatkins@prosoils.co.uk

Page 1 of

VERTICAL DEFORMATION TESTS.

BS 1377 : Part 9 : 1990.

Date of Test: 31-May-19

Test Position: PLT 01

Depth (m): 0.60

Plate Area (m2): 0.2922467

Type of Kentledge: Wheeled

Maximum Applied Pressure (kPa):

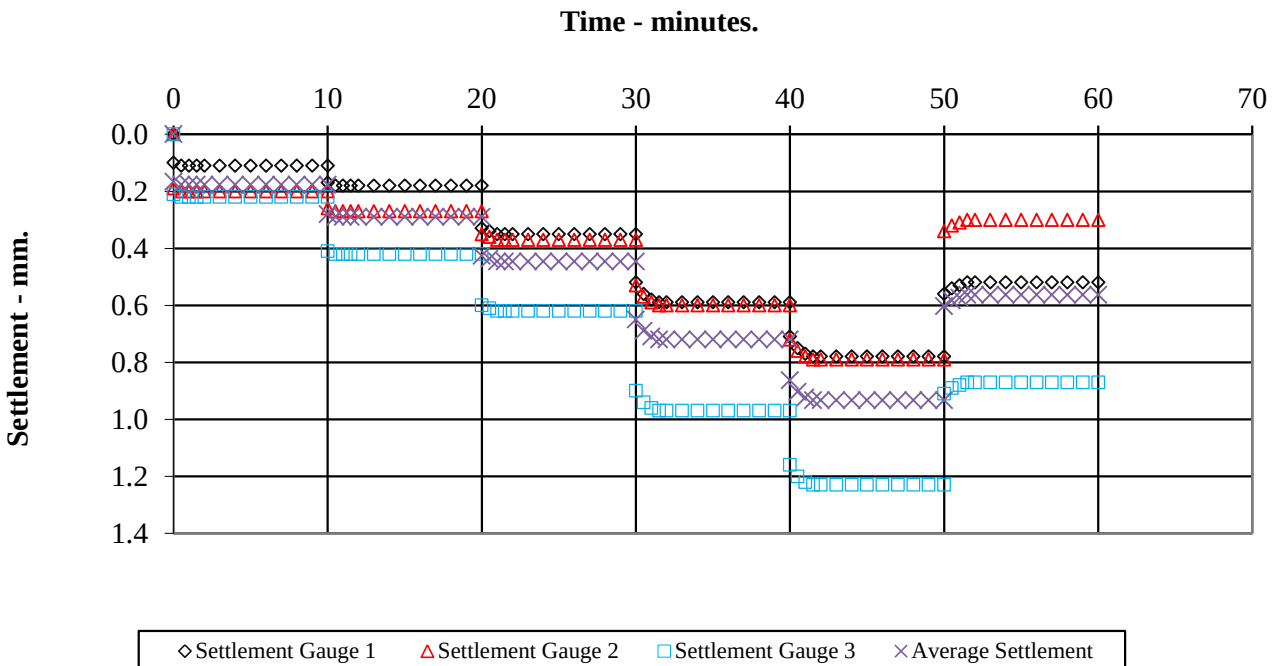
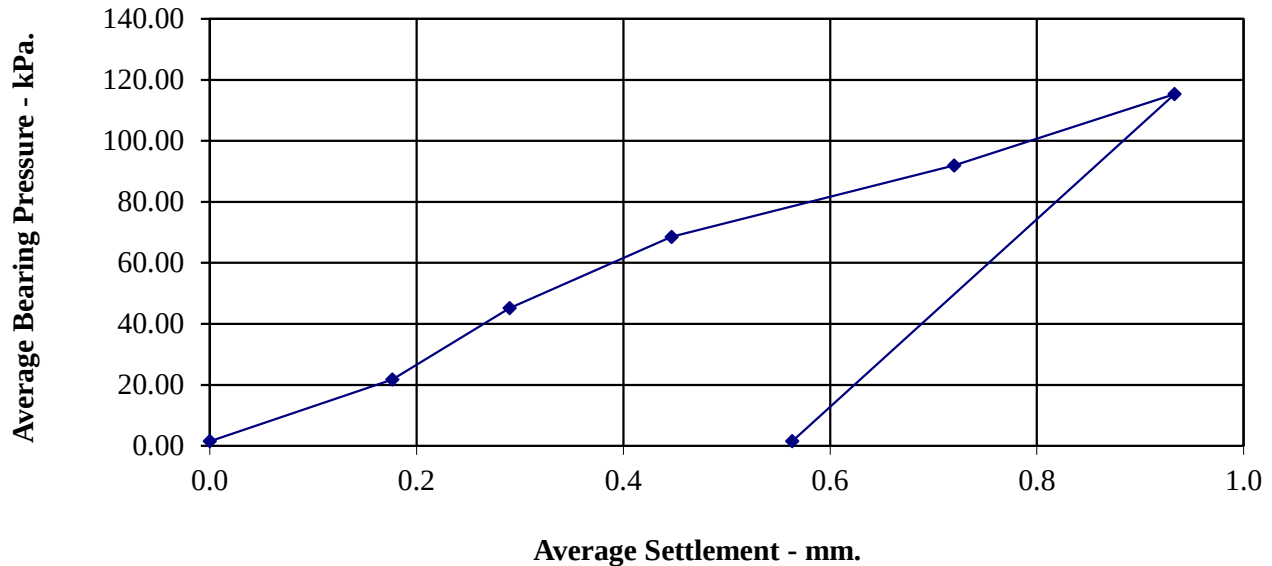
115.35

Maximum Deformation (mm):

0.93

Description:

Brown slightly gravelly very sandy CLAY.



Calculation of Equivalent CBR Value from Plate Bearing Test

Design Manual for Roads and Bridges Volume 7 Section 2 Chapter 4

Incorporating IAN 73/06

Date of Test	31-May-19	
Test Position	PLT 01	
Depth (m)	0.60	
Description	Brown slightly gravelly very sandy CLAY.	
Maximum Deflection	0.93	mm
Deflection required for CBR value	1.25	mm
Load at 0.93mm	115	kN/m ²
Plate diameter	610	mm
Conversion factor for plate diameter	0.816	
K ₇₆₂ (modulus of subgrade reaction)	75.3	kN/m ² /mm
CBR Value	> 17.3	%



Manchester, M15 5FJ.

Contract No:

PSL19/3377

Client Ref:

63524

VERTICAL DEFORMATION TESTS.

BS 1377 : Part 9 : 1990.

Date of Test: 31-May-19

Test Position: PLT 02

Depth (m): 0.45

Plate Area (m2): 0.2922467

Type of Kentledge: Wheeled

Maximum Applied Pressure (kPa):

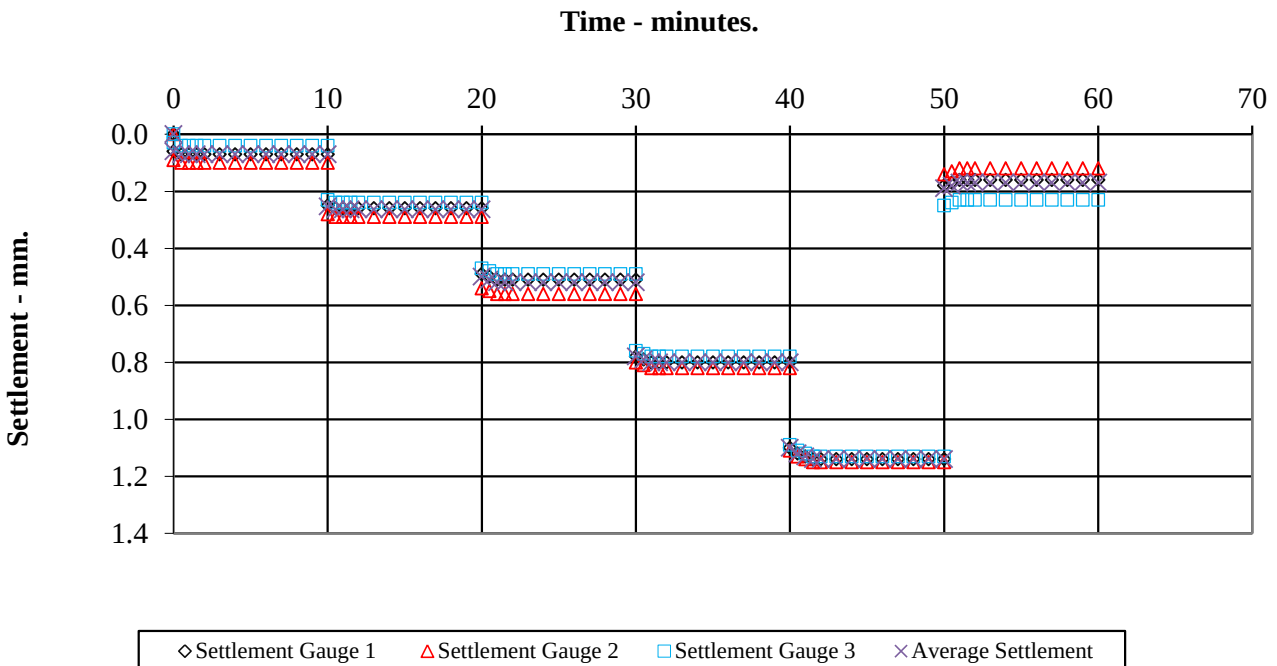
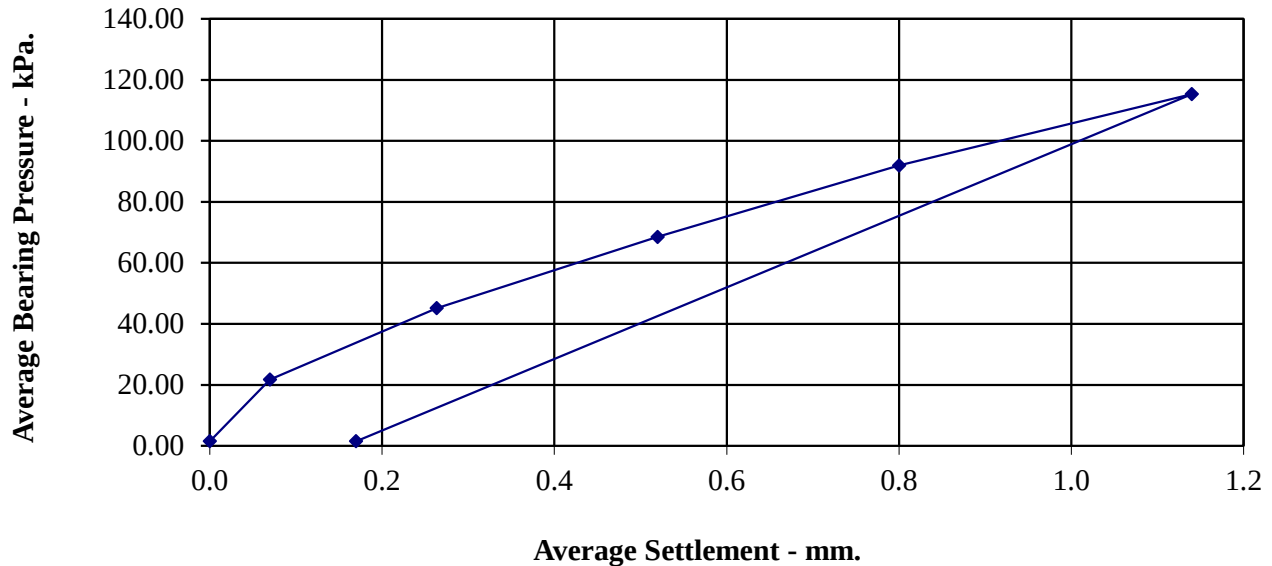
115.35

Maximum Deformation (mm):

1.14

Description:

Brown gravelly Fill (MADE GROUND)



◇ Settlement Gauge 1 △ Settlement Gauge 2 □ Settlement Gauge 3 × Average Settlement

Calculation of Equivalent CBR Value from Plate Bearing Test

Design Manual for Roads and Bridges Volume 7 Section 2 Chapter 4

Incorporating IAN 73/06

Date of Test	31-May-19	
Test Position	PLT 02	
Depth (m)	0.45	
Description	Brown gravelly Fill (MADE GROUND)	
Maximum Deflection	1.14	mm
Deflection required for CBR value	1.25	mm
Load at 1.14mm	115	kN/m ²
Plate diameter	610	mm
Conversion factor for plate diameter	0.816	
K ₇₆₂ (modulus of subgrade reaction)	75.3	kN/m ² /mm
CBR Value	> 17.3	%



Manchester, M15 5FJ.

Contract No:

PSL19/3377

Client Ref:

63524

VERTICAL DEFORMATION TESTS.

BS 1377 : Part 9 : 1990.

Date of Test: 31-May-19

Test Position: PLT 03

Depth (m): 0.60

Plate Area (m²): 0.2922467

Type of Kentledge: Wheeled

Maximum Applied Pressure (kPa):

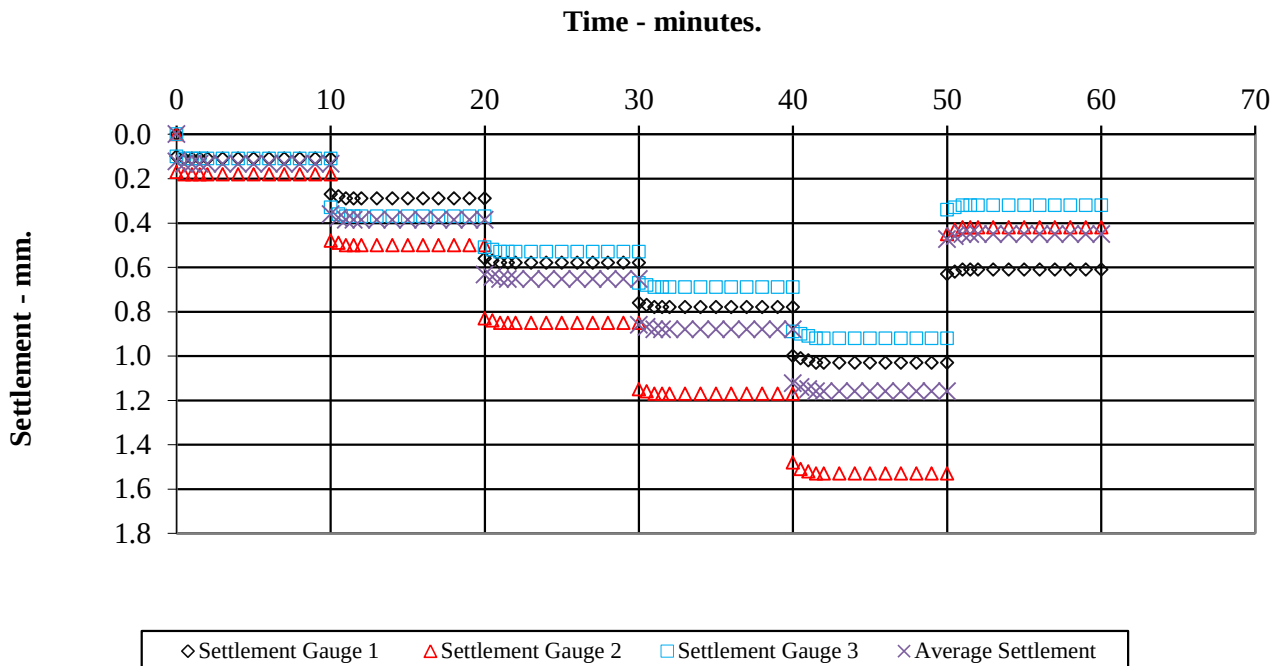
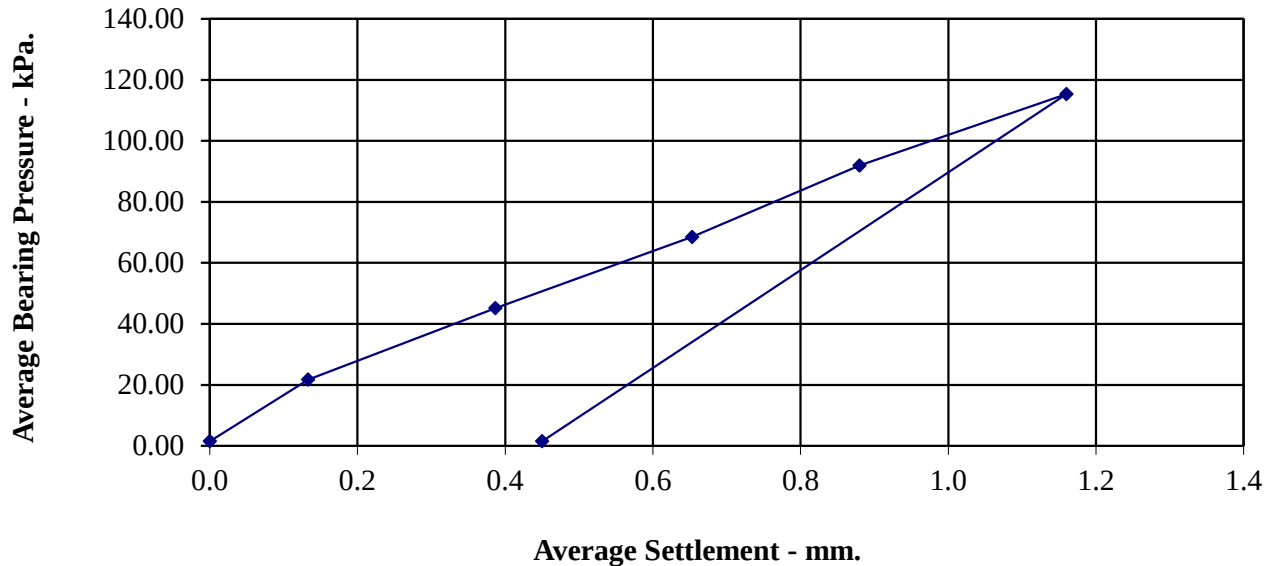
115.35

Maximum Deformation (mm):

1.16

Description:

Brown very sandy CLAY.



Calculation of Equivalent CBR Value from Plate Bearing Test

Design Manual for Roads and Bridges Volume 7 Section 2 Chapter 4

Incorporating IAN 73/06

Date of Test 31-May-19

Test Position PLT 03

Depth (m) 0.60

Description Brown very sandy CLAY.

Maximum Deflection 1.16 mm

Deflection required for CBR value 1.25 mm

Load at 1.16mm 115 kN/m²

Plate diameter 610 mm

Conversion factor for plate diameter 0.816

K₇₆₂(modulus of subgrade reaction) 75.3 kN/m²/mm

CBR Value > 17.3 %



Manchester, M15 5FJ.

Contract No:

PSL19/3377

Client Ref:

63524

VERTICAL DEFORMATION TESTS.

BS 1377 : Part 9 : 1990.

Date of Test: 31-May-19

Test Position: PLT 04

Depth (m): 0.60

Plate Area (m²): 0.2922467

Type of Kentledge: Wheeled

Maximum Applied Pressure (kPa):

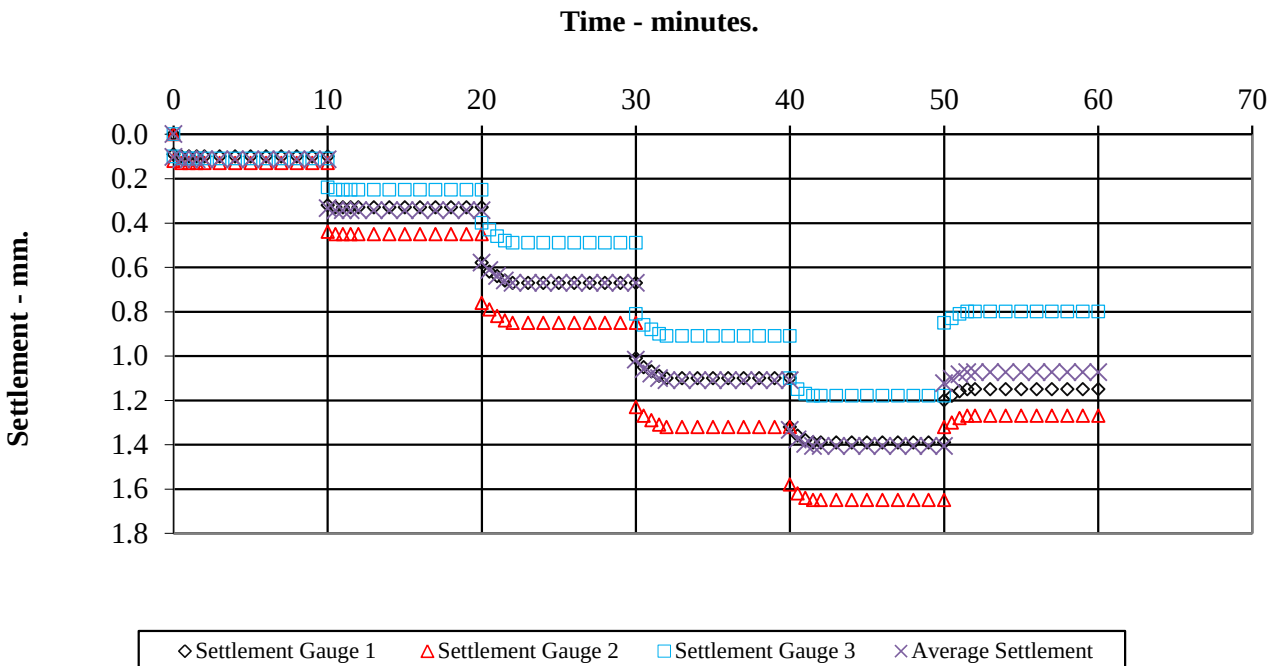
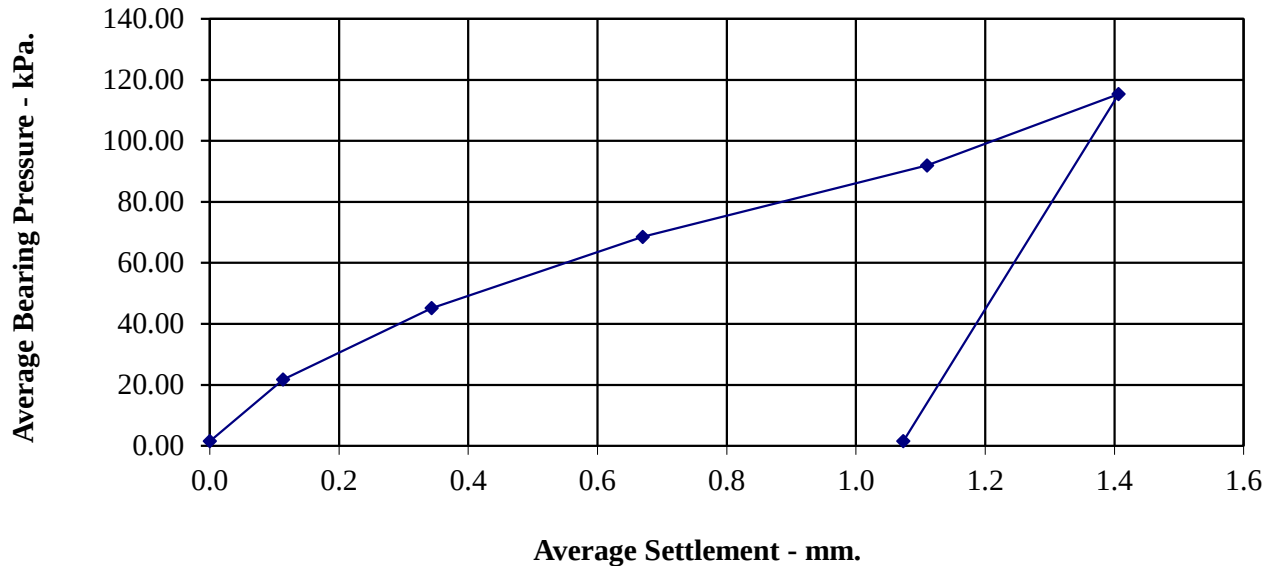
115.35

Maximum Deformation (mm):

1.41

Description:

Brown slightly gravelly very sandy CLAY.



Calculation of Equivalent CBR Value from Plate Bearing Test

Design Manual for Roads and Bridges Volume 7 Section 2 Chapter 4

Incorporating IAN 73/06

Date of Test	31-May-19	
Test Position	PLT 04	
Depth (m)	0.60	
Description	Brown slightly gravelly very sandy CLAY.	
Maximum Deflection	1.41	mm
Deflection required for CBR value	1.25	mm
Load at 1.25mm	103	kN/m ²
Plate diameter	610	mm
Conversion factor for plate diameter	0.816	
K ₇₆₂ (modulus of subgrade reaction)	67.3	kN/m ² /mm
CBR Value	14.2	%



Manchester, M15 5FJ.

Contract No:

PSL19/3377

Client Ref:

63524

VERTICAL DEFORMATION TESTS.

BS 1377 : Part 9 : 1990.

Date of Test: 31-May-19

Test Position: PLT 05

Depth (m): 0.60

Plate Area (m²): 0.2922467

Type of Kentledge: Wheeled

Maximum Applied Pressure (kPa):

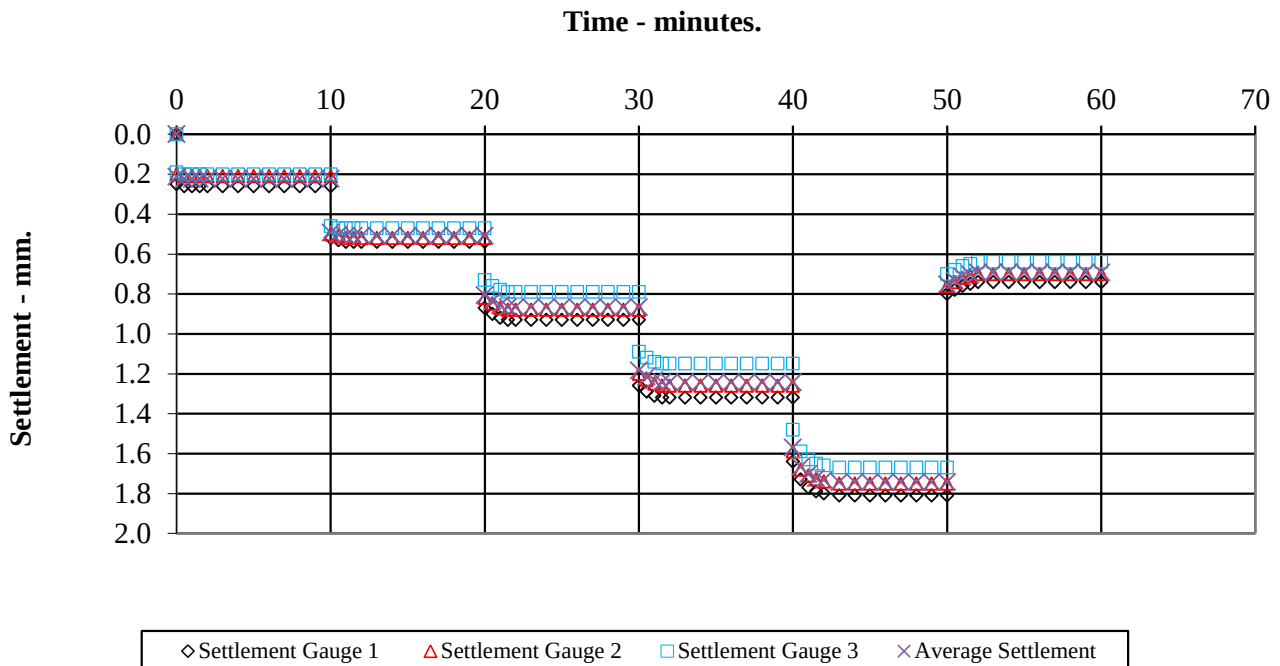
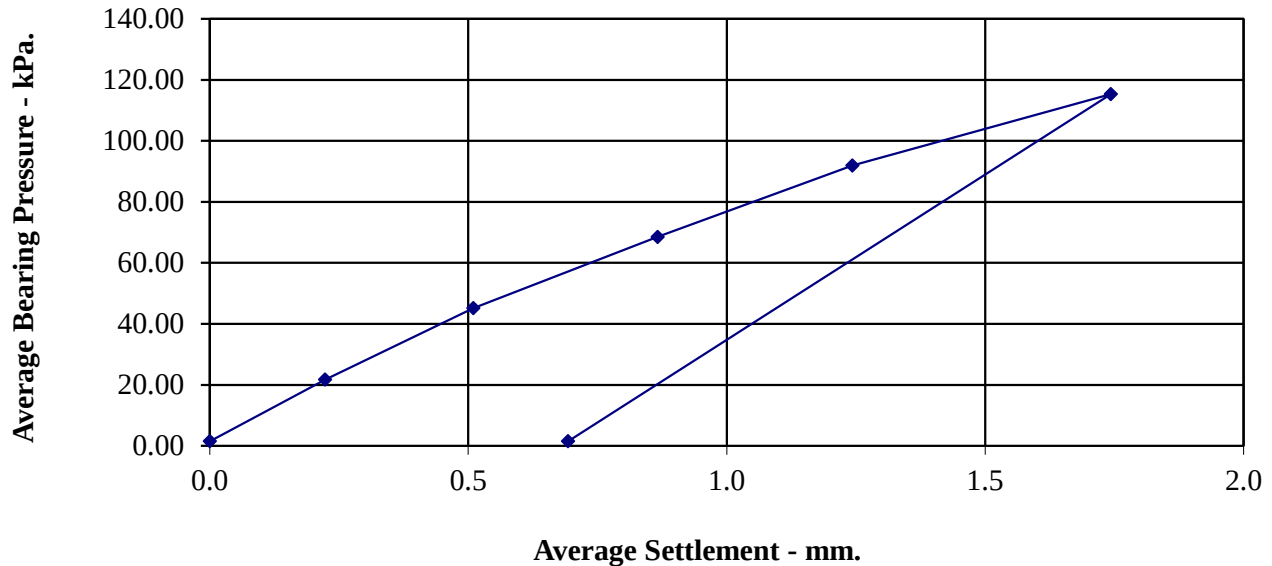
115.35

Maximum Deformation (mm):

1.74

Description:

Brown slightly gravelly very sandy CLAY.



Calculation of Equivalent CBR Value from Plate Bearing Test

Design Manual for Roads and Bridges Volume 7 Section 2 Chapter 4

Incorporating IAN 73/06

Date of Test	31-May-19	
Test Position	PLT 05	
Depth (m)	0.60	
Description	Brown slightly gravelly very sandy CLAY.	
Maximum Deflection	1.74	mm
Deflection required for CBR value	1.25	mm
Load at 1.25mm	92	kN/m ²
Plate diameter	610	mm
Conversion factor for plate diameter	0.816	
K ₇₆₂ (modulus of subgrade reaction)	60.3	kN/m ² /mm
CBR Value	11.7	%



Manchester, M15 5FJ.

Contract No:

PSL19/3377

Client Ref:

63524



Site: Premier Inn, Deansgate
Job Number : MAN.260.001
Date: 03/06/2019

Soakaway Number..... SA01
Pit Length..... 1.55 m
Pit Width..... 0.50 m
Pit Depth..... 2.50 m
Gravel Void Ratio..... 0.30
(Gravel used = 0.30, No Gravel = 1.00)

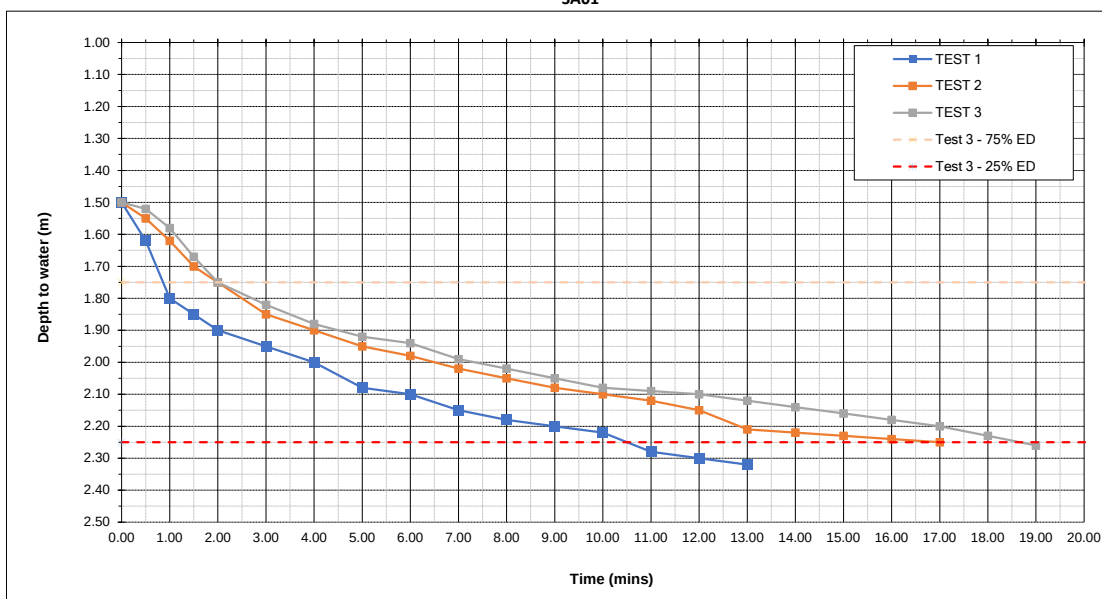
SOIL INFILTRATION RATE TEST

BRE Digest 365, DG365, February 2016

Remarks: - Encountered Geology Refer to SA01 Log for encountered ground condition. Groundwater None encountered	TEST 1		TEST 2		TEST 3	
	Time(min)	Depth to Water (m)	Time(min)	Depth to Water (m)	Time(min)	Depth to Water (m)
	0.00	1.50	0.00	1.50	0.00	1.50
	0.50	1.62	0.50	1.55	0.50	1.52
	1.00	1.80	1.00	1.62	1.00	1.58
	1.50	1.85	1.50	1.70	1.50	1.67
	2.00	1.90	2.00	1.75	2.00	1.75
	3.00	1.95	3.00	1.85	3.00	1.82
	4.00	2.00	4.00	1.90	4.00	1.88
	5.00	2.08	5.00	1.95	5.00	1.92
	6.00	2.10	6.00	1.98	6.00	1.94
	7.00	2.15	7.00	2.02	7.00	1.99
	8.00	2.18	8.00	2.05	8.00	2.02
	9.00	2.20	9.00	2.08	9.00	2.05
	10.00	2.22	10.00	2.10	10.00	2.08
	11.00	2.28	11.00	2.12	11.00	2.09
	12.00	2.30	12.00	2.15	12.00	2.10
	13.00	2.32	13.00	2.21	13.00	2.12
			14.00	2.22	14.00	2.14
			15.00	2.23	15.00	2.16
			16.00	2.24	16.00	2.18
			17.00	2.25	17.00	2.20
					18.00	2.23
					19.00	2.26
Effective Depth	m	1.00	1.00	1.00	1.00	1.00
75% Effective Depth	m	0.75	0.75	0.75	0.75	0.75
(i.e. depth below GL)	m	1.75	1.75	1.75	1.75	1.75
50% Effective depth	m	0.50	0.50	0.50	0.50	0.50
(i.e. depth below GL)	m	2.00	2.00	2.00	2.00	2.00
25% Effective Depth	m	0.25	0.25	0.25	0.25	0.25
(i.e. depth below GL)	m	2.25	2.25	2.25	2.25	2.25
Effective Storage Depth 75%-25%	m	0.50	0.50	0.50	0.50	0.50
Time to fall to 75% effective depth	mins	1.80	2.00	2.00	2.00	2.00
Time to fall to 25% effective depth	mins	10.50	17.00	18.60	18.60	18.60
Vp (75%-25%)	m ³	0.12	0.12	0.12	0.12	0.12
ap50 (50%)	m ²	2.83	2.83	2.83	2.83	2.83
tp(75%-25%)	mins	8.70	15.00	16.60	16.60	16.60
SOIL INFILTRATION RATE	m/s	7.9E-05	4.6E-05	4.1E-05	4.1E-05	4.1E-05

DESIGN SOIL INFILTRATION RATE, f m/s 4.13E-05

SA01



Compiled By:	Date:	Approved By:	Date:
N Ramsumair	11/07/2019		



Site: Premier Inn, Deansgate
Job Number : MAN.260.001
Date: 03/06/2019

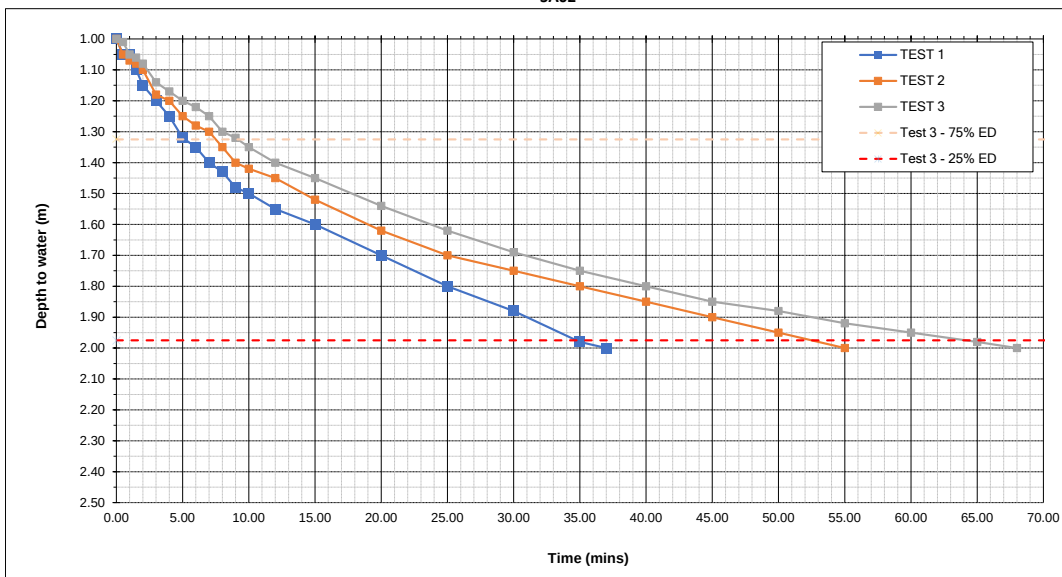
Soakaway Number..... SA02
Pit Length..... 1.55 m
Pit Width..... 0.50 m
Pit Depth..... 2.30 m
Gravel Void Ratio..... 0.30
(Gravel used = 0.30, No Gravel = 1.00)

SOIL INFILTRATION RATE TEST
BRE Digest 365, DG365, February 2016

Remarks: - <u>Encountered Geology</u> Refer to SA02 Log for encountered ground condition. <u>Groundwater</u> None encountered	TEST 1		TEST 2		TEST 3	
	Time(min)	Depth to Water (m)	Time(min)	Depth to Water (m)	Time(min)	Depth to Water (m)
	0.00	1.00	0.00	1.00	0.00	1.00
	0.50	1.05	0.50	1.05	0.50	1.01
	1.00	1.05	1.00	1.07	1.00	1.05
	1.50	1.10	1.50	1.08	1.50	1.06
	2.00	1.15	2.00	1.10	2.00	1.08
	3.00	1.20	3.00	1.18	3.00	1.14
	4.00	1.25	4.00	1.20	4.00	1.17
	5.00	1.32	5.00	1.25	5.00	1.20
	6.00	1.35	6.00	1.28	6.00	1.22
	7.00	1.40	7.00	1.30	7.00	1.25
	8.00	1.43	8.00	1.35	8.00	1.30
	9.00	1.48	9.00	1.40	9.00	1.32
	10.00	1.50	10.00	1.42	10.00	1.35
	12.00	1.55	12.00	1.45	12.00	1.40
	15.00	1.60	15.00	1.52	15.00	1.45
	20.00	1.70	20.00	1.62	20.00	1.54
	25.00	1.80	25.00	1.70	25.00	1.62
	30.00	1.88	30.00	1.75	30.00	1.69
	35.00	1.98	35.00	1.80	35.00	1.75
	37.00	2.00	40.00	1.85	40.00	1.80
			45.00	1.90	45.00	1.85
			50.00	1.95	50.00	1.88
			55.00	2.00	55.00	1.92
					60.00	1.95
					65.00	1.98
				68.00	2.00	
Effective Depth	m	1.30	1.30	1.30		
75% Effective Depth	m	0.98	0.98	0.98		
(i.e. depth below GL)	m	1.33	1.33	1.33		
50% Effective depth	m	0.65	0.65	0.65		
(i.e. depth below GL)	m	1.65	1.65	1.65		
25% Effective Depth	m	0.33	0.33	0.33		
(i.e. depth below GL)	m	1.98	1.98	1.98		
Effective Storage Depth 75%-25%	m	0.65	0.65	0.65		
Time to fall to 75% effective depth	mins	5.00	7.50	9.00		
Time to fall to 25% effective depth	mins	35.00	53.00	65.00		
Vp (75%-25%)	m ³	0.15	0.15	0.15		
ap50 (50%)	m ²	3.44	3.44	3.44		
tp(75%-25%)	mins	30.00	45.50	56.00		
SOIL INFILTRATION RATE	m/s	2.4E-05	1.6E-05	1.3E-05		

DESIGN SOIL INFILTRATION RATE, f m/s **1.31E-05**

SA02



Compiled By:	Date:	Approved By:	Date:
N Ramsumair	11/07/2019		



Site: Premier Inn, Deansgate
Job Number : MAN.260.001
Date: 03/06/2019

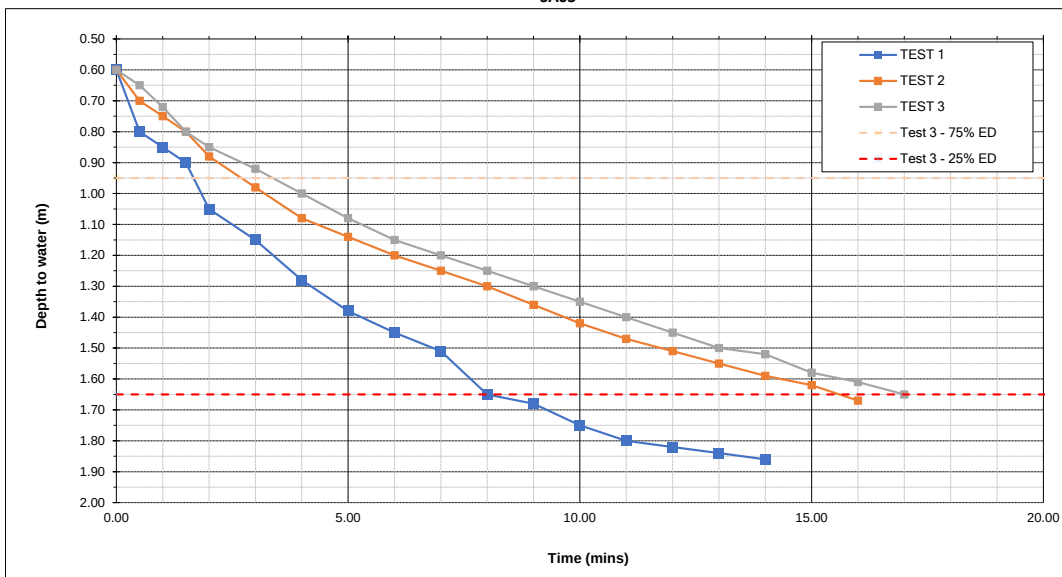
Soakaway Number..... SA03
Pit Length..... 1.60 m
Pit Width..... 0.55 m
Pit Depth..... 2.00 m
Gravel Void Ratio..... 0.30
(Gravel used = 0.30, No Gravel = 1.00)

SOIL INFILTRATION RATE TEST
BRE Digest 365, DG365, February 2016

Remarks: - <u>Encountered Geology</u> Refer to SA03 Log for encountered ground condition. <u>Groundwater</u> None encountered	TEST 1		TEST 2		TEST 3	
	Time(min)	Depth to Water (m)	Time(min)	Depth to Water (m)	Time(min)	Depth to Water (m)
	0.00	0.60	0.00	0.60	0.00	0.60
	0.50	0.80	0.50	0.70	0.50	0.65
	1.00	0.85	1.00	0.75	1.00	0.72
	1.50	0.90	1.50	0.80	1.50	0.80
	2.00	1.05	2.00	0.88	2.00	0.85
	3.00	1.15	3.00	0.98	3.00	0.92
	4.00	1.28	4.00	1.08	4.00	1.00
	5.00	1.38	5.00	1.14	5.00	1.08
	6.00	1.45	6.00	1.20	6.00	1.15
	7.00	1.51	7.00	1.25	7.00	1.20
	8.00	1.65	8.00	1.30	8.00	1.25
	9.00	1.68	9.00	1.36	9.00	1.30
	10.00	1.75	10.00	1.42	10.00	1.35
	11.00	1.80	11.00	1.47	11.00	1.40
	12.00	1.82	12.00	1.51	12.00	1.45
	13.00	1.84	13.00	1.55	13.00	1.50
	14.00	1.86	14.00	1.59	14.00	1.52
			15.00	1.62	15.00	1.58
		16.00	1.67	16.00	1.61	
				17.00	1.65	
Effective Depth	m	1.40	1.40	1.40		
75% Effective Depth	m	1.05	1.05	1.05		
(i.e. depth below GL)	m	0.95	0.95	0.95		
50% Effective depth	m	0.70	0.70	0.70		
(i.e. depth below GL)	m	1.30	1.30	1.30		
25% Effective Depth	m	0.35	0.35	0.35		
(i.e. depth below GL)	m	1.65	1.65	1.65		
Effective Storage Depth 75%-25%	m	0.70	0.70	0.70		
Time to fall to 75% effective depth	mins	1.60	2.60	4.50		
Time to fall to 25% effective depth	mins	8.00	15.50	17.00		
Vp (75%-25%)	m ³	0.18	0.18	0.18		
ap50 (50%)	m ²	3.89	3.89	3.89		
tp(75%-25%)	mins	6.40	12.90	12.50		
SOIL INFILTRATION RATE	m/s	1.2E-04	6.1E-05	6.3E-05		

DESIGN SOIL INFILTRATION RATE, f m/s 6.14E-05

SA03



Compiled By:	Date:	Approved By:	Date:
N Ramsumair	11/07/2019		



Appendix 5 – Monitoring Results

Ground Gas and Groundwater Monitoring Record Sheet

JOB DETAILS:

Client: Whitbread PLC
Site: Deansgate PI
Date: 01/07/2019

Job No: MAN.260.001
Visit No: 1 of 6
Operator: DL

Project Manager: Nigel Ramsumair



	GAS CONCENTRATIONS										VOLATILES		FLOW DATA				WELL AND WATER DATA					Comments
Monitoring Point	Methane (%v/v)		Carbon dioxide (%v/v)		Carbon Monoxide (ppm)		Hydrogen sulphide (ppm)		Oxygen (%v/v)		PID Peak (ppm)	Product thickness (mm)	Flow rate (l/hr)		Differential borehole Pressure (Pa)	Time for flow to equalise (secs)	Water level (mbgl)	Depth of well (m)	Reduced level (mAOD)	Water level (mAOD)	Free phase Hydrocarbons (LNAPL's or DNAPL's)	
	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Min.	Steady			Peak	Steady								
BH1	N/A										N/A		N/A	N/A	N/A	N/A	9.17	20.08	33.72	24.55	ND	Missing Bung.
BH2	0.1	0.1	0.3	0.3	>500	>500	1.0	1.0	20.2	20.2	ND	ND	0.7	0.6	ND	ND	9.00	20.12	33.62	24.62	ND	Silty.
BH3	0.1	0.1	0.4	0.4	13.4	13.4	ND	ND	17.6	17.7	ND	ND	0.9	0.7	ND	ND	7.88	20.50	33.63	25.75	ND	Silty.
BH4	0.1	0.1	3.0	3.0	11.0	11.0	ND	ND	15.3	15.6	ND	ND	0.9	0.8	ND	ND	10.13	11.73	34.50	24.37	ND	Silty.
BH5	4.2	4.2	2.0	2.0	9.0	9.0	ND	ND	9.5	9.5	ND	ND	0.6	0.5	ND	ND	9.90	15.10	34.09	24.19	ND	Silty.
BH6	0.1	0.1	3.4	2.1	1.0	1.0	ND	ND	18.0	18.6	ND	ND	0.7	0.5	ND	ND	5.11	7.25	33.96	28.85	ND	Silty.
WS1	0.1	0.0	0.3	0.1	8.0	8.0	ND	ND	19.8	20.9	ND	ND	0.1	0.1	ND	ND	N/A	N/A	33.63	N/A	ND	Bung stuck.
WS2	0.4	0.0	4.1	4.0	1.0	1.0	ND	ND	11.5	12.4	ND	ND	0.3	0.3	ND	ND	Dry	3.10	34.04	N/A	ND	Silty.
WS3	ND	ND	1.9	1.9	2.0	2.0	ND	ND	19.5	19.5	ND	ND	0.8	0.7	ND	ND	Dry	2.06	34.45	N/A	ND	Silty.
WS4A	ND	ND	3.0	3.0	3.0	3.0	ND	ND	16.7	17.3	ND	ND	0.9	0.8	ND	ND	Dry	4.58	33.71	N/A	ND	Silty.
WS5	ND	ND	3.4	3.2	3.0	3.0	ND	ND	17.4	18.6	ND	ND	0.3	0.2	ND	ND	Dry	4.93	34.12	N/A	ND	
WS6A	0.1	ND	1.8	1.7	6.0	6.0	ND	ND	16.2	20.4	ND	ND	0.3	0.2	ND	ND	Dry	1.35	34.04	N/A	ND	
Max	4.2	4.2	4.1	4.0	13.4	13.4	1.0	1.0	20.2	20.9	0.0	0.0	0.9	0.8	0.0	0.0	10.13	20.5	34.5	28.85		
Min	0.1	0.0	0.3	0.1	1.0	1.0	1.0	1.0	9.5	9.5	0.0	0.0	0.1	0.1	0.0	0.0	5.11	1.35	33.62	24.19		
GSV (l/hr)	0.0378		0.032																			

METEOROLOGICAL AND SITE INFORMATION:

(Select correct box with X or enter data, as applicable)

State of ground:	Dry	☒	Moist	☐	Wet	☐	Snow	☐
Wind:	Calm	☐	Light	☒	Moderate	☐	Strong	☐
Cloud cover:	None	☐	Slight	☐	Cloudy	☐	Overcast	☒
Precipitation:	None	☐	Slight	☒	Moderate	☐	Heavy	☐
Barometric pressure (mbar):			Before	1015		1016	After	1016
Pressure trend:			Falling		Steady		Rising	☒
Air Temperature (Deg. C):			Before	18		18	After	18

Ground Gas and Groundwater Monitoring Record Sheet

JOB DETAILS:

Client: Whitbread PLC
Site: Deansgate PI
Date: 09/07/2019

Job No: MAN.260.001
Visit No: 2 of 6
Operator: DL

Project Manager: Nigel Ramsumair



	GAS CONCENTRATIONS										VOLATILES		FLOW DATA				WELL AND WATER DATA					Comments
Monitoring Point	Methane (%v/v)		Carbon dioxide (%v/v)		Carbon Monoxide (ppm)		Hydrogen sulphide (ppm)		Oxygen (%v/v)		PID Peak (ppm)	Product thickness (mm)	Flow rate (l/hr)		Differential borehole Pressure (Pa)	Time for flow to equalise (secs)	Water level (mbgl)	Depth of well (m)	Reduced level (mAOD)	Water level (mAOD)	Free phase Hydrocarbons (LNAPL's or DNAPL's)	
	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Min.	Steady			Peak	Steady								
BH1	ND	ND	0.3	ND	2.0	2.0	ND	ND	20.1	21.0	ND	ND	0.9	1.0	ND	ND	9.25	20.08	33.72	24.47	ND	Car parked over well.
BH2	ND	ND	0.1	ND	18.0	18.0	ND	ND	19.6	20.9	ND	ND	1.2	1.3	ND	ND	9.03	20.12	33.62	24.59	ND	Rapid recharge.
BH3	ND	ND	0.1	ND	3.0	3.0	ND	ND	19.8	20.7	ND	ND	1.2	1.3	ND	ND	9.26	20.50	33.63	24.37	ND	Rapid recharge.
BH4	0.1	0.1	3.4	3.4	2.0	2.0	ND	ND	15.3	17.8	ND	ND	0.8	1.0	ND	ND	10.15	11.73	34.50	24.35	ND	Rapid recharge.
BH5	ND	ND	0.2	ND	ND	ND	ND	ND	20.8	21.0	ND	ND	1.0	1.1	ND	ND	9.94	15.10	34.09	24.15	ND	Rapid recharge.
BH6	ND	ND	1.3	0.9	3.0	4.0	ND	ND	19.5	19.8	ND	ND	0.8	0.9	ND	ND	4.80	7.25	33.96	29.16	ND	Rapid recharge.
WS1	ND	ND	0.9	0.6	ND	ND	ND	ND	19.3	20.7	ND	ND	0.9	1.2	ND	ND	4.31	4.41	33.63	29.32	ND	Silty.
WS2	ND	ND	1.2	0.9	ND	ND	ND	ND	19.6	20.6	ND	ND	0.9	1.1	ND	ND	Dry	3.10	34.04	N/A	ND	
WS3	ND	ND	1.1	0.5	ND	ND	ND	ND	19.8	20.6	ND	ND	1.0	1.1	ND	ND	Dry	2.06	34.45	N/A	ND	
WS4A	ND	ND	1.1	1.1	ND	ND	ND	ND	19.6	19.6	ND	ND	1.3	1.4	ND	ND	Dry	4.58	33.71	N/A	ND	
WS5	ND	ND	3.1	3.0	ND	ND	ND	ND	18.6	18.6	ND	ND	1.1	1.1	ND	ND	Dry	4.93	34.12	N/A	ND	
WS6A	ND	ND	2.3	2.2	ND	ND	ND	ND	17.3	17.3	ND	ND	0.9	1.1	ND	ND	Dry	1.35	34.04	N/A	ND	
Max	0.1	0.1	3.4	3.4	18.0	18.0	0.0	0.0	20.8	21.0	0.0	0.0	1.3	1.4	0.0	0.0	10.15	20.50	34.50	29.32		
Min	0.1	0.1	0.1	0.5	2.0	2.0	0.0	0.0	15.3	17.3	0.0	0.0	0.8	0.9	0.0	0.0	4.31	1.35	33.62	24.15		
GSV (l/hr)	0.0013		0.0476																			

METEOROLOGICAL AND SITE INFORMATION:

(Select correct box with X or enter data, as applicable)

State of ground:	Dry	☒	Moist	☐	Wet	☐	Snow	☐
Wind:	Calm	☒	Light	☐	Moderate	☐	Strong	☐
Cloud cover:	None	☐	Slight	☐	Cloudy	☐	Overcast	☒
Precipitation:	None	☒	Slight	☐	Moderate	☐	Heavy	☐
Barometric pressure (mbar):			Before	1017			After	1017
Pressure trend:			Falling		Steady	☐	Rising	☒
Air Temperature (Deg. C):			Before	14			After	14

Ground Gas and Groundwater Monitoring Record Sheet

JOB DETAILS:

Client: Whitbread PLC
Site: Deansgate PI
Date: 12/07/2019

Job No: MAN.260.001
Visit No: 3 of 6
Operator: NB

Project Manager: Nigel Ramsumair



	GAS CONCENTRATIONS										VOLATILES		FLOW DATA				WELL AND WATER DATA					Comments
Monitoring Point	Methane (%v/v)		Carbon dioxide (%v/v)		Carbon Monoxide (ppm)		Hydrogen sulphide (ppm)		Oxygen (%v/v)		PID Peak (ppm)	Product thickness (mm)	Flow rate (l/hr)		Differential borehole Pressure (Pa)	Time for flow to equalise (secs)	Water level (mbgl)	Depth of well (m)	Reduced level (mAOD)	Water level (mAOD)	Free phase Hydrocarbons (LNAPL's or DNAPL's)	
	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Min.	Steady			Peak	Steady								
BH1	ND	ND	0.2	ND	1.0	1.0	ND	ND	20.0	20.0	ND	ND	0.9	0.9	ND	ND	9.35	20.05	33.72	24.37	ND	
BH2	ND	ND	ND	ND	33.0	33.0	ND	ND	20.8	20.8	ND	ND	0.6	0.6	ND	ND	9.03	20.12	33.62	24.59	ND	Install damaged.
BH3	ND	ND	ND	ND	2.0	2.0	ND	ND	20.6	20.6	ND	ND	0.5	0.5	ND	ND	9.25	20.50	33.63	24.38	ND	Install damaged.
BH4	0.1	0.1	2.5	2.1	4.0	4.0	ND	ND	17.1	17.1	ND	ND	0.5	0.5	ND	ND	10.01	11.73	34.50	24.49	ND	
BH5	ND	ND	0.6	0.6	1.0	1.0	ND	ND	18.7	18.7	ND	ND	1.3	1.2	ND	ND	9.44	15.10	34.09	24.65	ND	
BH6	ND	ND	1.2	1.2	4.0	4.0	ND	ND	19.7	19.7	ND	ND	1.1	1.0	ND	ND	4.85	7.25	33.96	29.11	ND	
WS1	ND	ND	1.0	1.0	4.0	4.0	ND	ND	18.9	18.9	ND	ND	0.7	0.7	ND	ND	Dry	4.41	33.63	N/A	ND	
WS2	16	ND	2.3	2.1	ND	ND	ND	ND	18.1	18.1	ND	ND	0.8	0.8	ND	ND	Dry	3.10	34.04	N/A	ND	
WS3	0.1	0.1	1.5	1.5	2.0	2.0	ND	ND	19.3	19.3	ND	ND	0.5	0.4	ND	ND	Dry	2.06	34.45	N/A	ND	
WS4A	ND	ND	0.7	0.7	1.0	1.0	ND	ND	20.0	20.0	ND	ND	1.2	1.2	ND	ND	Dry	4.58	33.71	N/A	ND	
WS5	ND	ND	2.3	2.3	ND	ND	ND	ND	17.3	17.3	ND	ND	1.0	0.9	ND	ND	Dry	4.93	34.12	N/A	ND	
WS6A	ND	ND	2.5	2.3	1.0	1.0	ND	ND	15.3	15.3	ND	ND	0.8	0.8	ND	ND	Dry	1.35	34.04	N/A	ND	
Max	16.0	0.1	2.5	2.3	33.0	33.0	0.0	0.0	20.8	20.8	0.0	0.0	1.3	1.2	0.0	0.0	10.01	20.5	34.5	29.11		
Min	0.1	0.1	0.2	0.6	1.0	1.0	0.0	0.0	15.3	15.3	0.0	0.0	0.5	0.4	0.0	0.0	4.85	1.35	33.62	24.37		
GSV (l/hr)	0.208		0.0276																			

METEOROLOGICAL AND SITE INFORMATION:

State of ground: Dry ☐
Wind: Calm ☐
Cloud cover: None ☐
Precipitation: None ☐
Barometric pressure (mbar):
Pressure trend:
Air Temperature (Deg. C):

(Select correct box with X or enter data, as applicable)

Moist	☐	Wet	☒	Snow	☐
Light	☒	Moderate	☐	Strong	☐
Slight	☐	Cloudy	☒	Overcast	☒
Slight	☐	Moderate	☒	Heavy	☐
Before				After	
Falling		Steady	☐	Rising	☒
Before				After	

Ground Gas and Groundwater Monitoring Record Sheet

JOB DETAILS:

Client: Whitbread PLC
Site: Deansgate PI
Date: 16/07/2019

Job No: MAN.260.001
Visit No: 4 of 6
Operator: NB

Project Manager: Nigel Ramsumair



	GAS CONCENTRATIONS										VOLATILES		FLOW DATA				WELL AND WATER DATA					Comments
Monitoring Point	Methane (%v/v)		Carbon dioxide (%v/v)		Carbon Monoxide (ppm)		Hydrogen sulphide (ppm)		Oxygen (%v/v)		PID Peak (ppm)	Product thickness (mm)	Flow rate (l/hr)		Differential borehole Pressure (Pa)	Time for flow to equalise (secs)	Water level (mbgl)	Depth of well (m)	Reduced level (mAOD)	Water level (mAOD)	Free phase Hydrocarbons (LNAPL's or DNAPL's)	
	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Min.	Steady			Peak	Steady								
BH1	0.8	ND	ND	ND	1.0	ND	ND	ND	20.2	20.2	ND	ND	0.3	0.3	ND	ND	9.22	20.05	33.72	24.5	ND	
BH2	0.1	ND	0.1	0.1	125.0	125.0	ND	ND	20.0	20.0	ND	ND	1.8	1.7	ND	ND	8.89	20.12	33.62	24.73	ND	
BH3	0.1	ND	ND	ND	1.0	1.0	ND	ND	20.6	20.6	ND	ND	0.4	0.4	ND	ND	9.26	20.50	33.63	24.37	ND	
BH4	0.1	0.1	2.4	2.4	8.0	8.0	ND	ND	16.1	16.1	ND	ND	0.4	0.4	ND	ND	10.15	11.73	34.50	24.35	ND	
BH5	0.8	0.8	1.4	1.4	4.0	3.0	ND	ND	16.5	16.5	ND	ND	0.9	0.8	ND	ND	9.93	15.10	34.09	24.16	ND	
BH6	ND	ND	3.1	3.1	1.0	1.0	ND	ND	17.4	17.4	ND	ND	0.4	0.3	ND	ND	4.82	7.25	33.96	29.14	ND	
WS1	0.1	ND	0.9	0.8	4.0	1.0	ND	ND	18.7	18.7	ND	ND	0.2	0.2	ND	ND	Dry	4.41	33.63	N/A	ND	
WS2	0.8	ND	3.0	2.8	ND	ND	ND	ND	16.5	16.5	ND	ND	0.5	0.5	ND	ND	Dry	3.10	34.04	N/A	ND	
WS3	0.1	0.1	1.7	1.7	2.0	1.0	ND	ND	19.0	19.0	ND	ND	0.6	0.6	ND	ND	Dry	2.06	34.45	N/A	ND	
WS4A																						Car parked over position >2 hours.
WS5	ND	ND	3.1	3.1	1.0	1.0	ND	ND	16.5	16.5	ND	ND	0.3	0.3	ND	ND	Dry	4.93	34.12	N/A	ND	
WS6A	0.1	ND	2.5	2.4	2.0	ND	ND	ND	15.3	15.3	ND	ND	ND	ND	ND	ND	Dry	1.35	34.04	N/A	ND	
Max	0.8	0.8	3.1	3.1	125.0	125.0	0.0	0.0	20.6	20.6	0.0	0.0	1.8	1.7	0.0	0.0	10.15	20.5	34.5	29.14		
Min	0.1	0.1	0.1	0.1	1.0	1.0	0.0	0.0	15.3	15.3	0.0	0.0	0.2	0.2	0.0	0.0	4.82	1.35	33.62	24.16		
GSV (l/hr)	0.0144		0.0527																			

METEOROLOGICAL AND SITE INFORMATION:

State of ground:
Wind:
Cloud cover:
Precipitation:
Barometric pressure (mbar):
Pressure trend:
Air Temperature (Deg. C):

Dry ☒
Calm ☒
None ☐
None ☒

(Select correct box with X or enter data, as applicable)

Moist ☐
Light ☐
Slight ☒
Slight ☐
Before 1015
Falling ☒
Before 23

Wet ☐
Moderate ☐
Cloudy ☐
Moderate ☐
Steady ☐

Snow ☐
Strong ☐
Overcast ☐
Heavy ☐
After 1015
Rising ☐
After 23

Ground Gas and Groundwater Monitoring Record Sheet

JOB DETAILS:

Client: Whitbread PLC
Site: Deansgate PI
Date: 25/07/2019

Job No: MAN.260.001
Visit No: 5 of 6
Operator: NR

Project Manager: Nigel Ramsumair



	GAS CONCENTRATIONS										VOLATILES		FLOW DATA				WELL AND WATER DATA					Comments
Monitoring Point	Methane (%v/v)		Carbon dioxide (%v/v)		Carbon Monoxide (ppm)		Hydrogen sulphide (ppm)		Oxygen (%v/v)		PID Peak (ppm)	Product thickness (mm)	Flow rate (l/hr)		Differential borehole Pressure (Pa)	Time for flow to equalise (secs)	Water level (mbgl)	Depth of well (m)	Reduced level (mAOD)	Water level (mAOD)	Free phase Hydrocarbons (LNAPL's or DNAPL's)	
	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Min.	Steady			Peak	Steady								
BH1	0.2	ND	0.3	0.1	3.0	2.0	ND	ND	20.8	20.8	ND	ND	0.8	0.4	ND	ND	9.20	20.05	33.72	24.52	ND	
BH2	0.1	0.1	0.2	0.2	32.0	20.0	ND	ND	19.7	19.7	ND	ND	1.8	1.2	ND	ND	9.00	20.12	33.62	24.62	ND	
BH3	0.1	0.1	0.4	0.2	10.0	9.0	ND	ND	18.0	18.2	ND	ND	0.3	0.3	ND	ND	9.22	20.50	33.63	24.41	ND	
BH4	0.1	ND	0.3	0.2	7.0	7.0	ND	ND	15.1	15.1	ND	ND	0.7	0.4	ND	ND	10.14	11.73	34.50	24.36	ND	
BH5	4.0	3.3	2.5	2.4	4.0	3.0	ND	ND	9.0	9.0	ND	ND	0.8	0.2	ND	ND	9.58	15.10	34.09	24.51	ND	
BH6																						Access unavailable.
WS1	0.1	0.1	1.0	1.0	2.0	1.0	ND	ND	18.6	18.6	ND	ND	0.3	0.2	ND	ND	Dry	4.41	33.63	N/A	ND	
WS2	ND	ND	5.4	5.4	3.0	1.0	ND	ND	10.3	10.8	ND	ND	0.5	0.4	ND	ND	Dry	3.10	34.04	N/A	ND	
WS3	ND	ND	ND	ND	1.0	1.0	ND	ND	20.5	20.5	ND	ND	0.5	0.1	ND	ND	Dry	2.06	34.45	N/A	ND	
WS4A	ND	ND	2.8	2.6	2.0	1.0	ND	ND	17.0	17.3	ND	ND	0.4	0.2	ND	ND	Dry	4.58	33.71	N/A	ND	
WS5	ND	ND	3.2	3.2	3.0	1.0	ND	ND	16.0	16.0	ND	ND	0.2	0.1	ND	ND	Dry	4.93	34.12	N/A	ND	
WS6A	0.1	0.1	3.2	3.2	3.0	3.0	ND	ND	12.8	13.4	ND	ND	0.2	0.1	ND	ND	Dry	1.35	34.04	N/A	ND	
Max	4.0	3.3	5.4	5.4	32.0	20.0	0.0	0.0	20.8	20.8	0.0	0.0	1.8	1.2	0.0	0.0	10.14	20.5	34.5	24.62		
Min	0.1	0.1	0.2	0.1	1.0	1.0	0.0	0.0	9.0	9.0	0.0	0.0	0.2	0.1	0.0	0.0	9	1.35	33.62	24.36		
GSV (l/hr)	0.072		0.0648																			

METEOROLOGICAL AND SITE INFORMATION:

(Select correct box with X or enter data, as applicable)

State of ground:	Dry	☒	Moist	☐	Wet	☐	Snow	☐
Wind:	Calm	☒	Light	☐	Moderate	☐	Strong	☐
Cloud cover:	None	☒	Slight	☐	Cloudy	☐	Overcast	☐
Precipitation:	None	☒	Slight	☐	Moderate	☐	Heavy	☐
Barometric pressure (mbar):			Before	1007			After	1007
Pressure trend:			Falling		Steady	☒	Rising	
Air Temperature (Deg. C):			Before	24			After	25

Ground Gas and Groundwater Monitoring Record Sheet

JOB DETAILS:

Client: Whitbread PLC
Site: Deansgate PI
Date: 30/07/2019

Job No: MAN.260.001
Visit No: 6 of 6
Operator: NR

Project Manager: Nigel Ramsumair



	GAS CONCENTRATIONS										VOLATILES		FLOW DATA				WELL AND WATER DATA					Comments
Monitoring Point	Methane (%v/v)		Carbon dioxide (%v/v)		Carbon Monoxide (ppm)		Hydrogen sulphide (ppm)		Oxygen (%v/v)		PID Peak (ppm)	Product thickness (mm)	Flow rate (l/hr)		Differential borehole Pressure (Pa)	Time for flow to equalise (secs)	Water level (mbgl)	Depth of well (m)	Reduced level (mAOD)	Water level (mAOD)	Free phase Hydrocarbons (LNAPL's or DNAPL's)	
	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Min.	Steady			Peak	Steady								
BH1	ND	ND	0.3	0.1	20.0	12.0	ND	ND	ND	20.0	ND	ND	0.9	0.6	ND	ND	9.14	20.05	33.72	24.58	ND	
BH2	ND	ND	0.2	0.2	14.0	5.0	ND	ND	19.7	20.2	ND	ND	0.5	0.4	ND	ND	8.92	20.12	33.62	24.7	ND	
BH3	0.2	0.1	0.3	0.2	3.0	8.0	ND	ND	18.3	18.4	ND	ND	0.7	0.4	ND	ND	9.15	20.50	33.63	24.48	ND	
BH4	ND	ND	3.6	3.2	7.0	5.0	ND	ND	16.1	16.1	ND	ND	0.8	0.7	ND	ND	10.1	11.73	34.50	24.4	ND	
BH5	3.1	2.1	1.9	1.9	4.0	3.0	ND	ND	9.9	10.1	ND	ND	0.4	0.2	ND	ND	9.55	15.10	34.09	24.54	ND	
BH6	0.1	ND	2.5	2.0	5.0	5.0	ND	ND	18.9	19.9	ND	ND	0.5	0.3	ND	ND	4.80	7.25	33.96	29.16	ND	
WS1	0.2	ND	1.1	1.1	ND	ND	ND	ND	19.0	19.0	ND	ND	0.2	0.1	ND	ND	Dry	4.41	33.63	N/A	ND	
WS2	0.1	ND	0.8	0.8	ND	ND	ND	ND	20.2	20.2	ND	ND	0.5	0.4	ND	ND	Dry	3.10	34.04	N/A	ND	
WS3	ND	ND	2.1	1.6	ND	ND	ND	ND	20.0	20.1	ND	ND	0.7	0.5	ND	ND	Dry	2.06	34.45	N/A	ND	
WS4A	0.2	ND	1.5	0.9	3.0	1.0	ND	ND	19.6	19.9	ND	ND	0.7	0.4	ND	ND	Dry	4.58	33.71	N/A	ND	
WS5	ND	ND	3.1	2.5	ND	ND	ND	ND	17.1	17.1	ND	ND	0.3	0.1	ND	ND	Dry	4.93	34.12	N/A	ND	
WS6A	ND	ND	2.3	2.3	5.0	2.0	ND	ND	16.1	16.2	ND	ND	0.5	0.1	ND	ND	Dry	1.35	34.04	N/A	ND	
Max	3.1	2.1	3.6	3.2	20.0	12.0	0.0	0.0	20.2	20.2	0.0	0.0	0.9	0.7	0.0	0.0	10.1	20.5	34.5	29.16		
Min	0.1	0.1	0.2	0.1	3.0	1.0	0.0	0.0	9.9	10.1	0.0	0.0	0.2	0.1	0.0	0.0	4.8	1.35	33.62	24.40		
GSV (l/hr)	0.0279		0.0224																			

METEOROLOGICAL AND SITE INFORMATION:

(Select correct box with X or enter data, as applicable)

State of ground:	Dry	☐	Moist	☐	Wet	☒	Snow	☐	
Wind:	Calm	☐	Light	☒	Moderate	☐	Strong	☐	
Cloud cover:	None	☐	Slight	☐	Cloudy	☐	Overcast	☒	
Precipitation:	None	☐	Slight	☒	Moderate	☐	Heavy	☐	
Barometric pressure (mbar):			Before		1005		After		
Pressure trend:			Falling			Steady		Rising	☒
Air Temperature (Deg. C):			Before		20		After		

Appendix 6 – Geotechnical Laboratory Results



LABORATORY REPORT



4043

Contract Number: PSL19/3802

Report Date: 03 July 2019

Client's Reference: 63524

Client Name: Geocore Site Investigations Ltd
Tralee Close
Kirkleatham Business Park
Redcar
Cleveland
TS10 5SG

For the attention of: Eddie Lodge

Contract Title: Premier Inn Deansgate

Date Received: 21/6/2019

Date Commenced: 21/6/2019

Date Completed: 3/7/2019

Notes: Opinions and Interpretations are outside the UKAS Accreditation

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

Checked and Approved Signatories:

R Gunson
(Director)

S Royle
(Laboratory Manager)

A Watkins
(Director)

S Eyre
(Senior Technician)

R Berriman
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Page 1 of

SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Description of Sample
BH01	6	B	1.20		Brown gravelly silty SAND.
BH01	9	D	2.00		Brown gravelly silty SAND.
BH01	15	U	5.00		Stiff brown gravelly very sandy CLAY.
BH01	20	D	8.00		Brown gravelly very sandy CLAY.
BH01	22	D	9.50		Reddish brown very gravelly silty SAND.
BH02	6	B	1.20		Brown very gravelly silty SAND.
BH02	8	D	2.70		Brown very gravelly silty SAND.
BH02	12	U	5.00		Very stiff brown gravelly very sandy CLAY.
BH02	15	D	7.00		Brown very sandy CLAY.
BH03	3	B	0.50		Brown very sandy silty GRAVEL.
BH03	5	D	1.20		Brown very gravelly silty SAND.
BH03	16	D	6.00		Brown slightly gravelly sandy CLAY.
BH03	20	D	9.00		Brown slightly gravelly sandy CLAY.
BH04	5	B	1.20		MADE GROUND brown clayey silty sand & gravel.
BH04	12	B	3.00		Brown very gravelly silty SAND.
BH04	19	D	6.00		Brown slightly gravelly sandy CLAY.
BH04	24	D	8.50		Brown slightly gravelly sandy CLAY.
BH04	27	B	9.50		Reddish brown very sandy slightly silty GRAVEL with many cobbles.
BH05	8	D	2.00		Brown very gravelly silty SAND.



4043



Premier Inn Deansgate

Contract No:

PSL19/3802

Client Ref:

63524

SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Description of Sample
BH05	11	B	3.00		Brown very sandy silty GRAVEL.
BH05	15	D	6.00		Brown gravelly very sandy CLAY.
BH06	4	B	0.50		MADE GROWN brown very gravelly very sandy clay.
BH06	13	B	3.00		Brown very gravelly silty SAND.
BH06	22	D	6.00		Brown slightly gravelly very sandy CLAY.
BH06	24	B	7.50		Reddish brown slightly gravelly clayey very silty SAND.
WS01	3	B	0.50		MADE GROUND brown very sandy silty gravel.
WS01	6	B	1.20		Brown very sandy silty GRAVEL.
WS01	8	B	2.20		Brown very sandy silty GRAVEL.
WS02	3	B	0.70		Brown slightly gravelly very sandy CLAY.
WS02	7	B	2.00		Brown slightly gravelly sandy CLAY.
WS03	3	B	0.50		MADE GROUND brown very sandy clayey silty gravel with cobbles.
WS03	6	B	1.50		Brown gravelly silty SAND.
WS04A	4	B	1.20		Brown very sandy slightly clayey silty GRAVEL.
WS04A	6	B	2.20		Brown very sandy slightly silty GRAVEL.
WS05	4	B	0.50		Brown very sandy slightly silty GRAVEL.
WS05	8	B	2.00		Brown very gravelly silty SAND.
WS06	3	B	0.60		MADE GROUND brown very sandy slightly clayey silty gravel with cobbles.

		Premier Inn Deansgate	Contract No:
			PSL19/3802
			Client Ref:
			63524

SUMMARY OF SOIL CLASSIFICATION TESTS

(BS1377 : PART 2 : 1990)

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Moisture Content % Clause 3.2	Linear Shrinkage % Clause 6.5	Particle Density Mg/m ³ Clause 8.2	Liquid Limit % Clause 4.3/4	Plastic Limit % Clause 5.3	Plasticity Index % Clause 5.4	Passing .425mm %	Remarks
BH01	9	D	2.00		4.4							
BH01	15	U	5.00		12			31	16	15	77	Low plasticity CL.
BH01	20	D	8.00		19			34	17	17	81	Low plasticity CL.
BH01	22	D	9.50		15							
BH02	8	D	2.70		7.5							
BH02	12	U	5.00		12			33	17	16	81	Low plasticity CL.
BH02	15	D	7.00		13			35	18	17	100	Intermediate plasticity CI.
BH03	5	D	1.20		6.1							
BH03	16	D	6.00		11			39	19	20	94	Intermediate plasticity CI.
BH03	20	D	9.00		12			37	18	19	90	Intermediate plasticity CI.
BH04	19	D	6.00		12			38	19	19	91	Intermediate plasticity CI.
BH04	24	D	8.50		13			40	21	19	94	Intermediate plasticity CI.
BH05	8	D	2.00		7.8							
BH05	15	D	6.00		7.6			32	16	16	81	Low plasticity CL.
BH06	4	B	0.50		9.8							
BH06	13	B	3.00		4.1							
BH06	22	D	6.00		12			35	17	18	85	Intermediate plasticity CI.
BH06	24	B	7.50		9.1							
WS01	3	B	0.50		16							

SYMBOLS : NP : Non Plastic

* : Liquid Limit and Plastic Limit Wet Sieved.



Premier Inn Deansgate

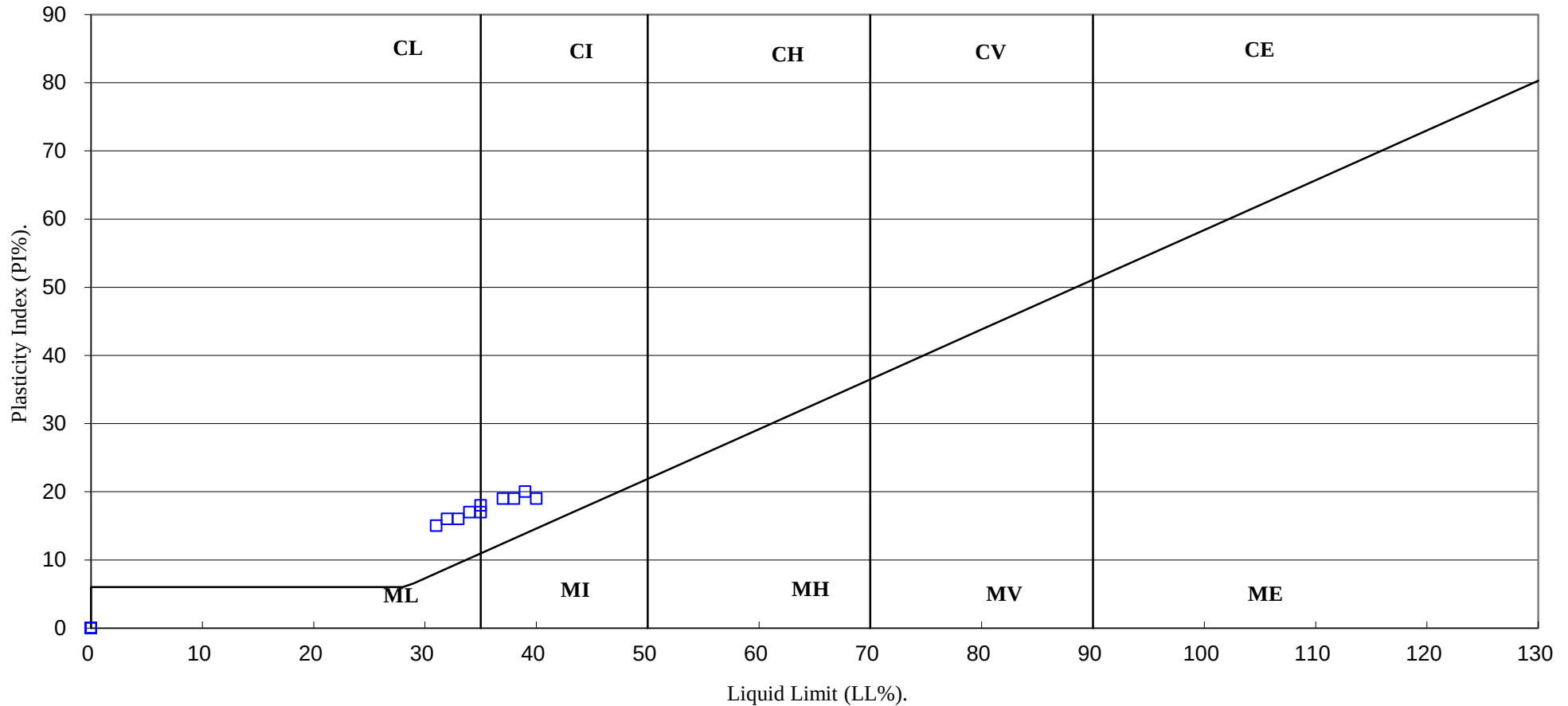
Contract No:

PSL19/3802

Client Ref:

63524

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.



4043

PSL
Professional Soils Laboratory

Premier Inn Deansgate

Contract No:

PSL19/3802

Client Ref:

63524

SUMMARY OF SOIL CLASSIFICATION TESTS

(BS1377 : PART 2 : 1990)

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Moisture Content % Clause 3.2	Linear Shrinkage % Clause 6.5	Particle Density Mg/m ³ Clause 8.2	Liquid Limit % Clause 4.3/4	Plastic Limit % Clause 5.3	Plasticity Index % Clause 5.4	Passing .425mm %	Remarks
WS01	6	B	1.20		12							
WS01	8	B	2.20		12							
WS02	3	B	0.70		16							
WS02	7	B	2.00		21							
WS03	3	B	0.50		12							
WS03	6	B	1.50		6.1							
WS04A	4	B	1.20		12							
WS04A	6	B	2.20		8.8							
WS05	4	B	0.50		9.4							
WS05	8	B	2.00		7.0							
WS06	3	B	0.60		13							

SYMBOLS : NP : Non Plastic

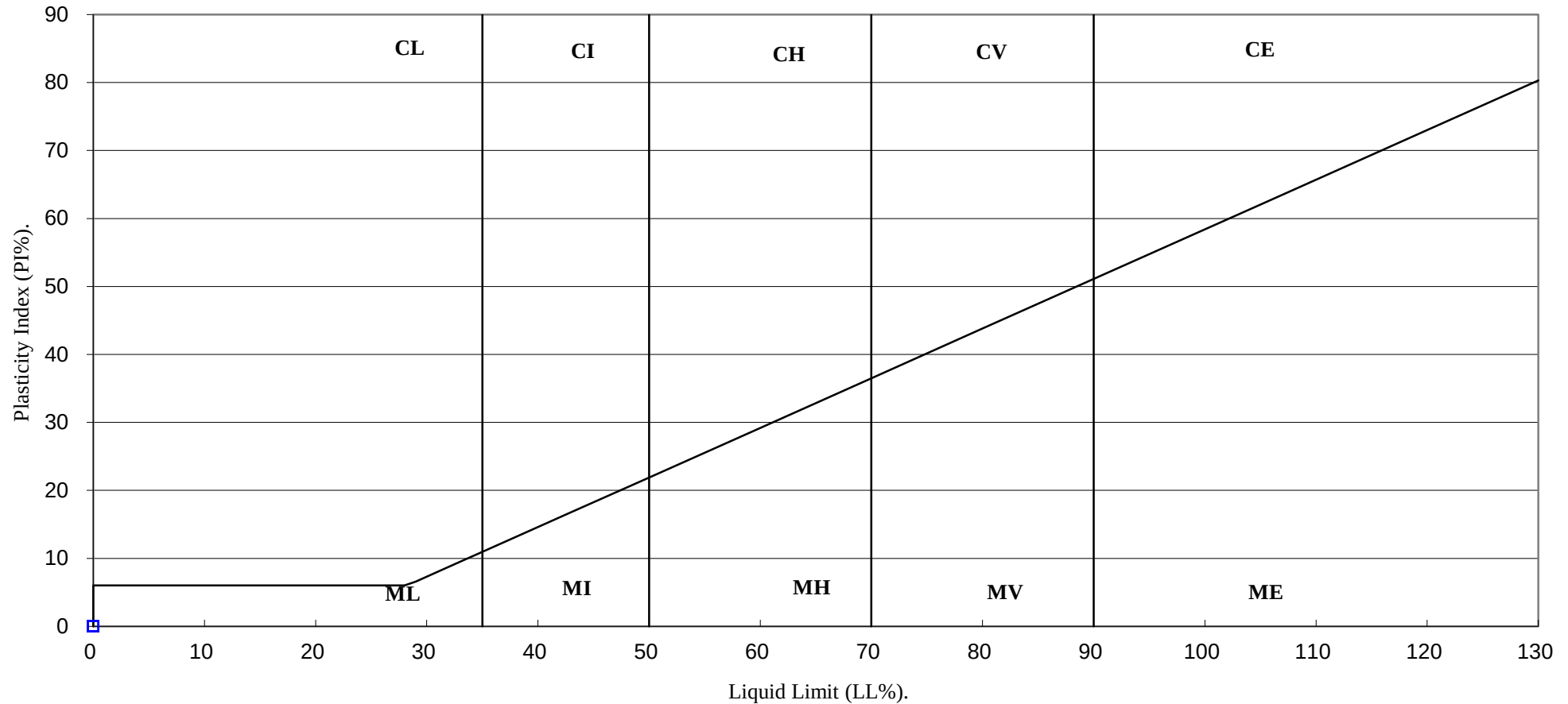
* : Liquid Limit and Plastic Limit Wet Sieved.



Premier Inn Deansgate

Contract No:
PSL19/3802
Client Ref:
63524

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.



4043

PSL
Professional Soils Laboratory

Premier Inn Deansgate

Contract No:

PSL19/3802

Client Ref:

63524

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

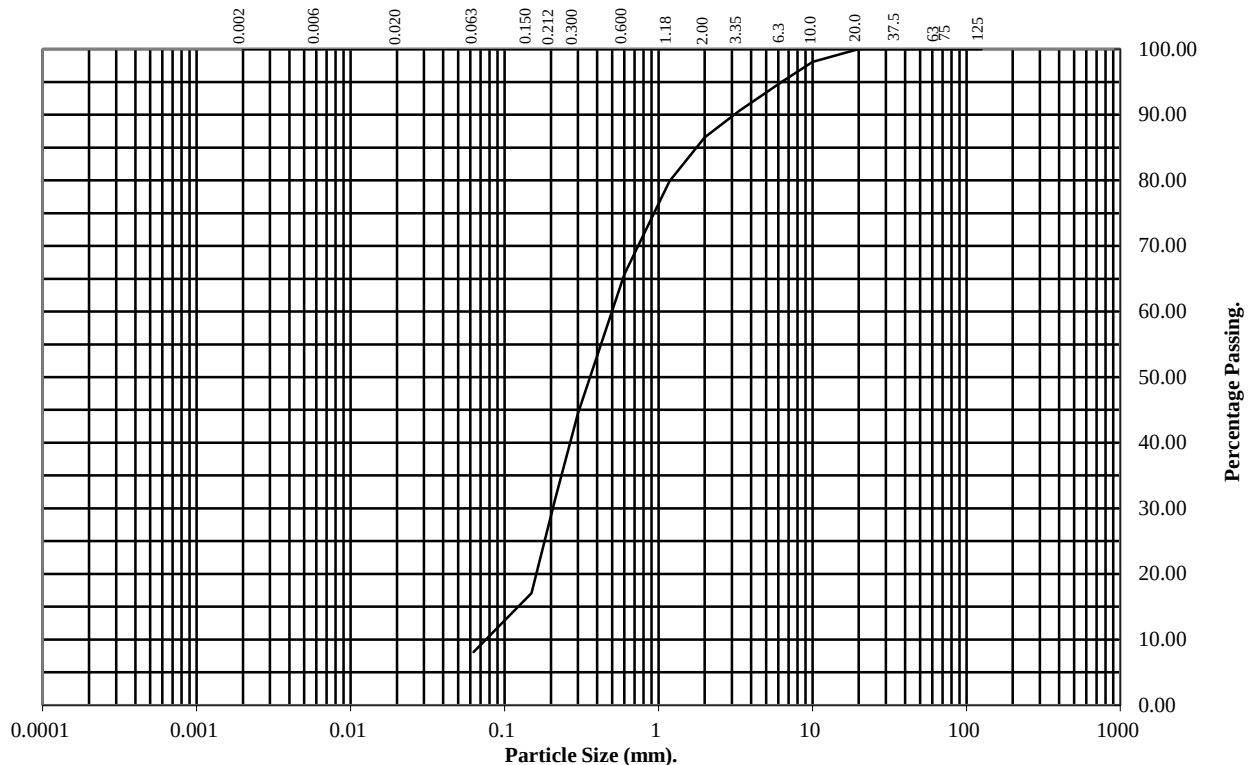
Hole Number: BH01

Top Depth (m): 1.20

Sample Number: 6

Base Depth(m):

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	100
10	98
6.3	95
3.35	91
2	87
1.18	80
0.6	66
0.3	44
0.212	31
0.15	17
0.063	8

Soil Fraction	Total Percentage
Cobbles	0
Gravel	13
Sand	79
Silt/Clay	8

Remarks:

See Summary of Soil Descriptions



Premier Inn Deansgate

Contract No:
PSL19/3802
Client Ref:
63524

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

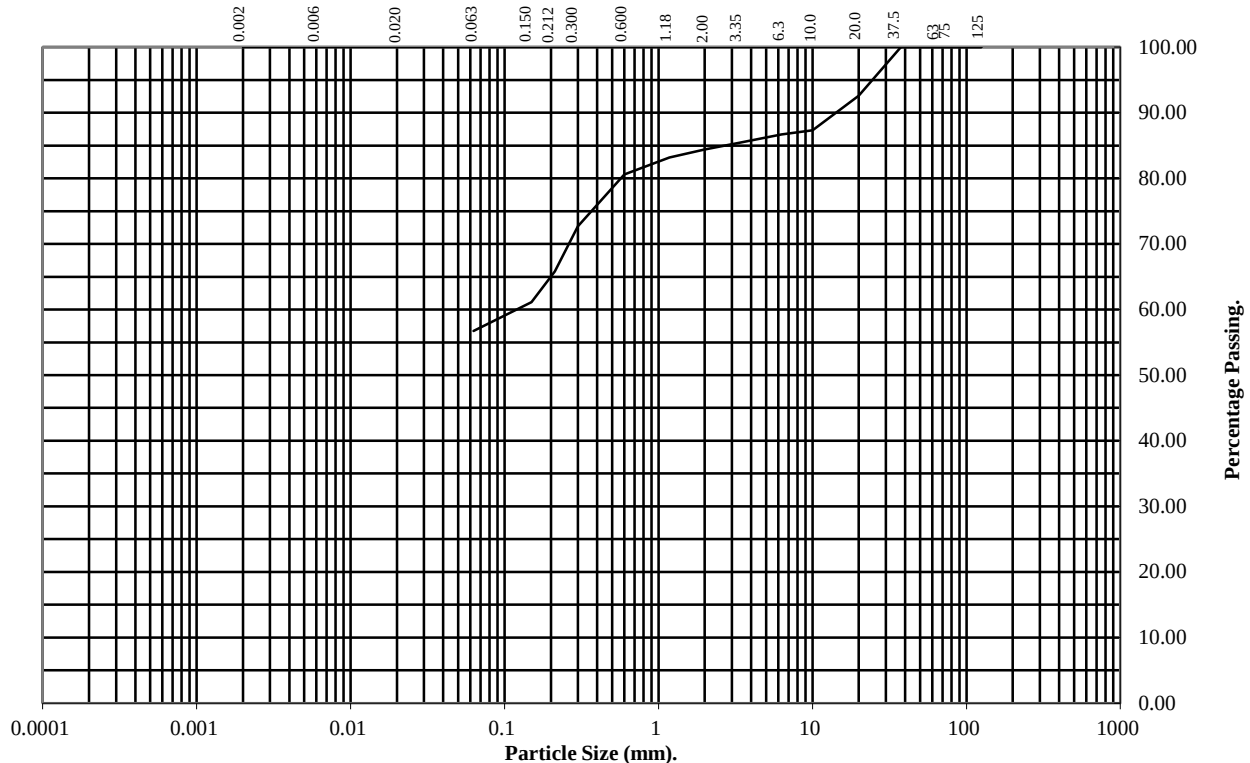
Hole Number: BH01

Top Depth (m): 5.00

Sample Number: 15

Base Depth(m):

Sample Type: U



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	93
10	87
6.3	87
3.35	85
2	84
1.18	83
0.6	81
0.3	73
0.212	66
0.15	61
0.063	57

Soil Fraction	Total Percentage
Cobbles	0
Gravel	16
Sand	27
Silt/Clay	57

Remarks:

See Summary of Soil Descriptions



Premier Inn Deansgate

Contract No:
PSL19/3802
Client Ref:
63524

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

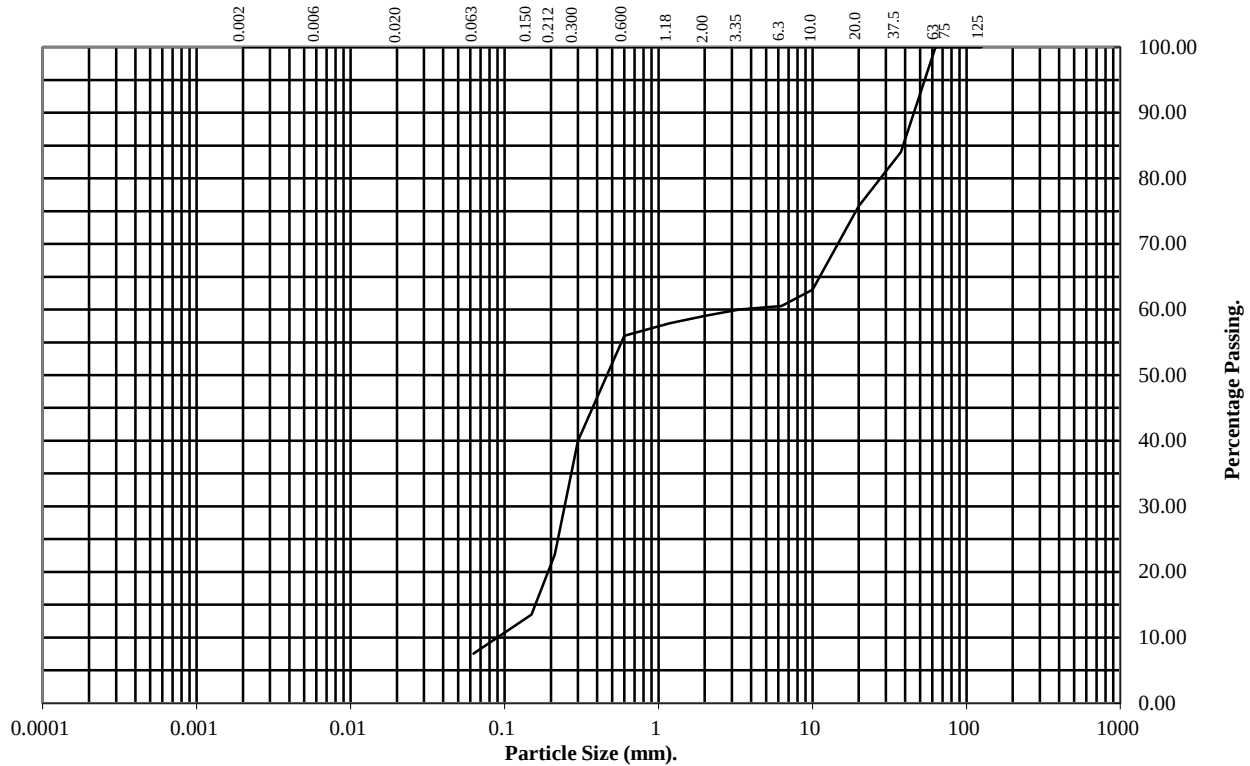
Hole Number: BH01

Top Depth (m): 9.50

Sample Number: 22

Base Depth(m):

Sample Type: D



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	84
20	76
10	63
6.3	61
3.35	60
2	59
1.18	58
0.6	56
0.3	40
0.212	23
0.15	14
0.063	8

Soil Fraction	Total Percentage
Cobbles	0
Gravel	41
Sand	51
Silt/Clay	8

Remarks:

See Summary of Soil Descriptions



Premier Inn Deansgate

Contract No:

PSL19/3802

Client Ref:

63524

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

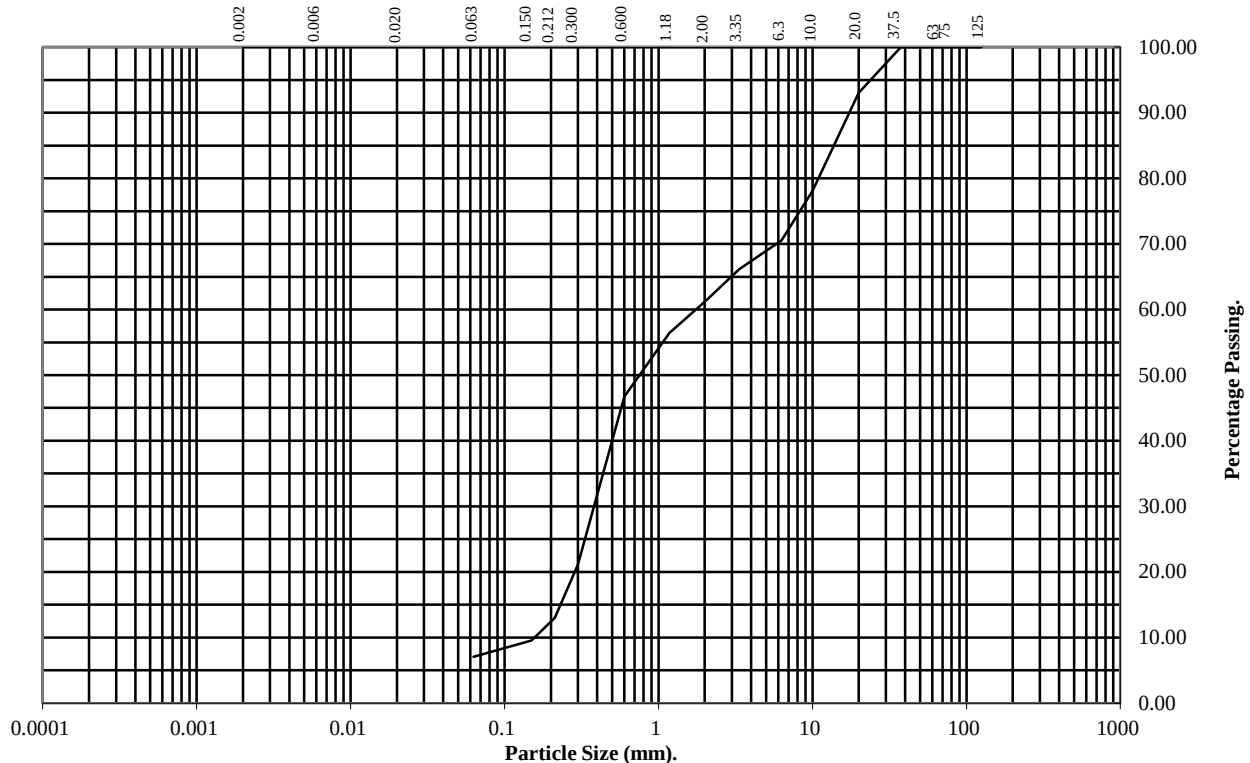
Hole Number: BH02

Top Depth (m): 1.20

Sample Number: 6

Base Depth(m):

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	93
10	78
6.3	71
3.35	66
2	61
1.18	56
0.6	47
0.3	21
0.212	13
0.15	10
0.063	7

Soil Fraction	Total Percentage
Cobbles	0
Gravel	39
Sand	54
Silt/Clay	7

Remarks:

See Summary of Soil Descriptions



Premier Inn Deansgate

Contract No:
PSL19/3802
Client Ref:
63524

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

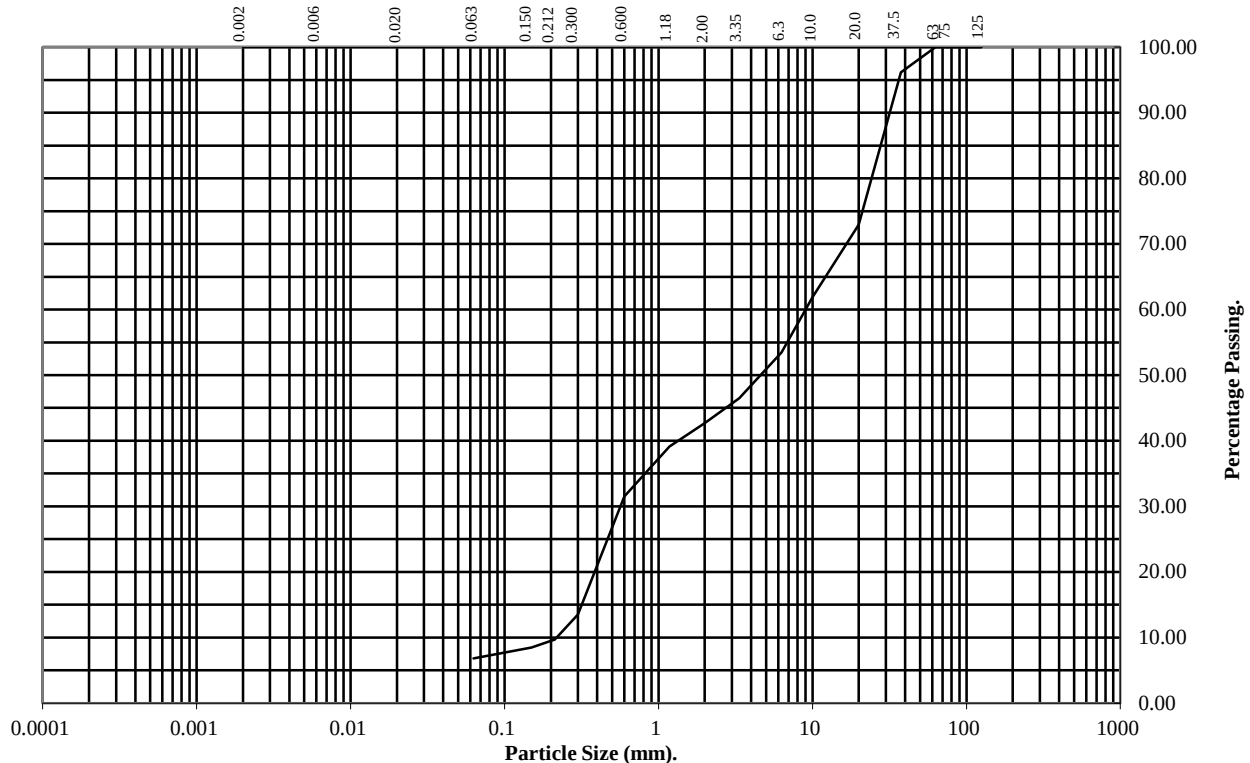
Hole Number: BH03

Top Depth (m): 0.50

Sample Number: 3

Base Depth(m):

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	96
20	73
10	62
6.3	53
3.35	46
2	43
1.18	39
0.6	32
0.3	14
0.212	10
0.15	8
0.063	7

Soil Fraction	Total Percentage
Cobbles	0
Gravel	57
Sand	36
Silt/Clay	7

Remarks:

See Summary of Soil Descriptions



Premier Inn Deansgate

Contract No:
PSL19/3802
Client Ref:
63524

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

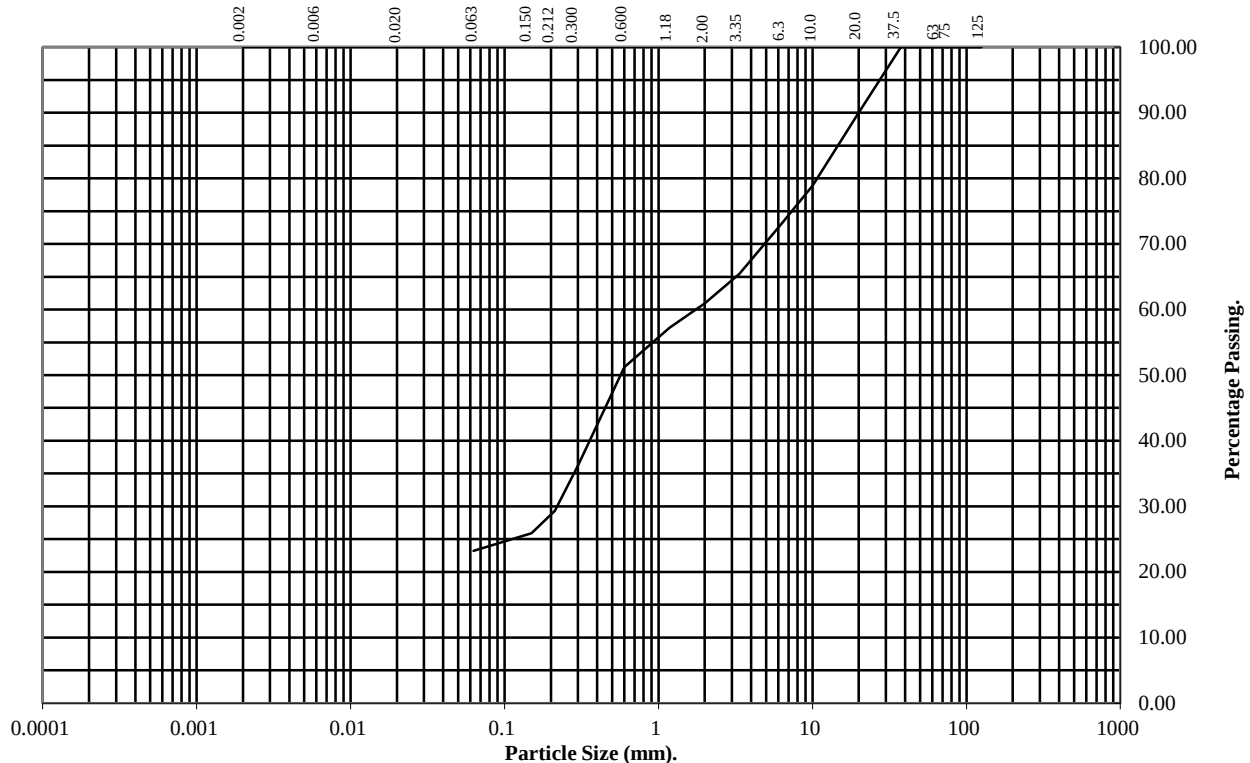
Hole Number: BH04

Top Depth (m): 1.20

Sample Number: 5

Base Depth(m):

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	90
10	79
6.3	73
3.35	65
2	61
1.18	57
0.6	51
0.3	36
0.212	29
0.15	26
0.063	23

Soil Fraction	Total Percentage
Cobbles	0
Gravel	39
Sand	38
Silt/Clay	23

Remarks:

See Summary of Soil Descriptions



Premier Inn Deansgate

Contract No:
PSL19/3802
Client Ref:
63524

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

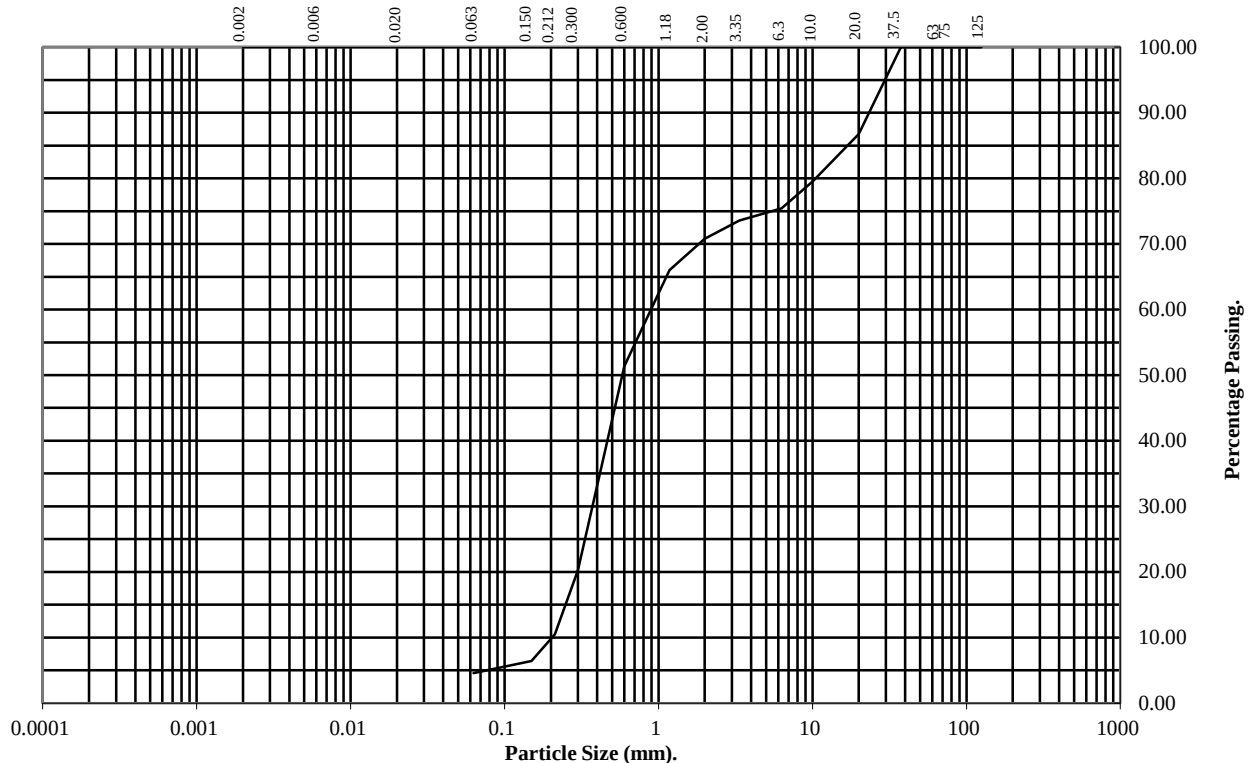
Hole Number: BH04

Top Depth (m): 3.00

Sample Number: 12

Base Depth(m):

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	87
10	80
6.3	75
3.35	74
2	71
1.18	66
0.6	51
0.3	20
0.212	10
0.15	6
0.063	5

Soil Fraction	Total Percentage
Cobbles	0
Gravel	29
Sand	66
Silt/Clay	5

Remarks:

See Summary of Soil Descriptions



Premier Inn Deansgate

Contract No:
PSL19/3802
Client Ref:
63524

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

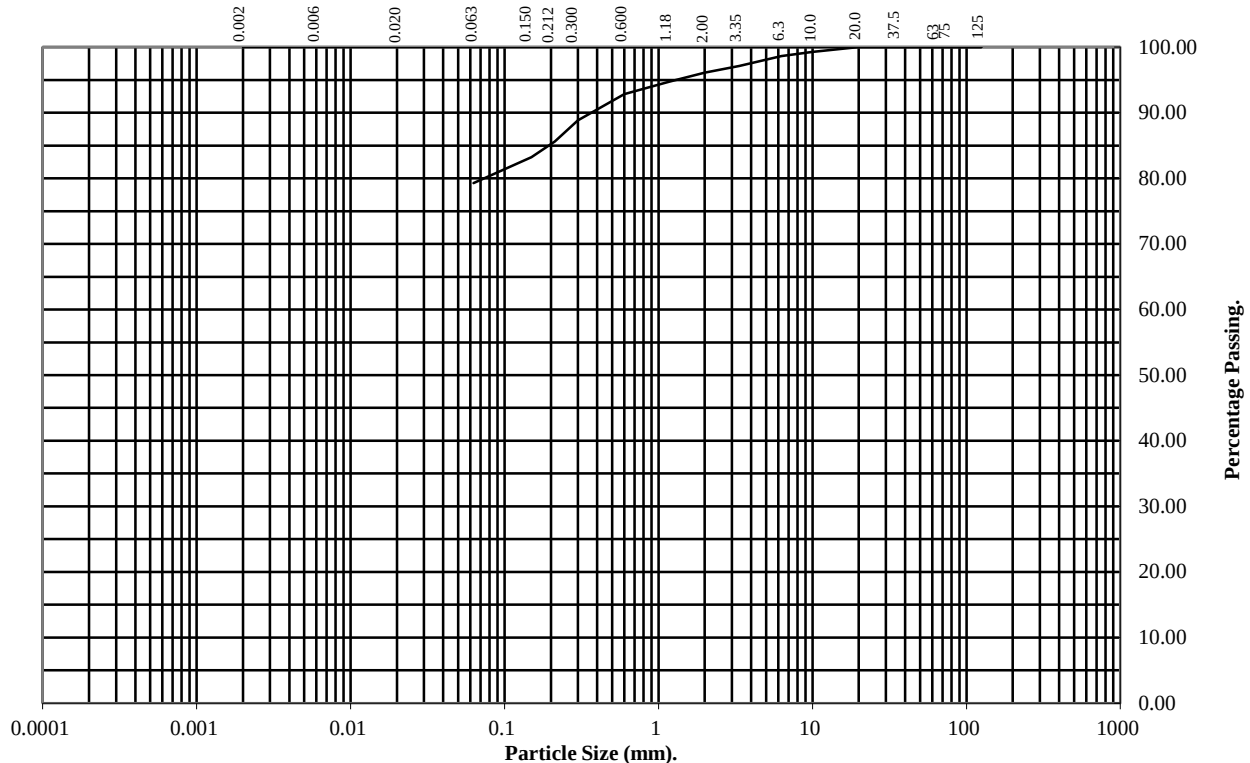
Hole Number: BH04

Top Depth (m): 6.00

Sample Number: 19

Base Depth(m):

Sample Type: D



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	100
10	99
6.3	99
3.35	97
2	96
1.18	95
0.6	93
0.3	89
0.212	86
0.15	83
0.063	79

Soil Fraction	Total Percentage
Cobbles	0
Gravel	4
Sand	17
Silt/Clay	79

Remarks:

See Summary of Soil Descriptions



Premier Inn Deansgate

Contract No:
PSL19/3802
Client Ref:
63524

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

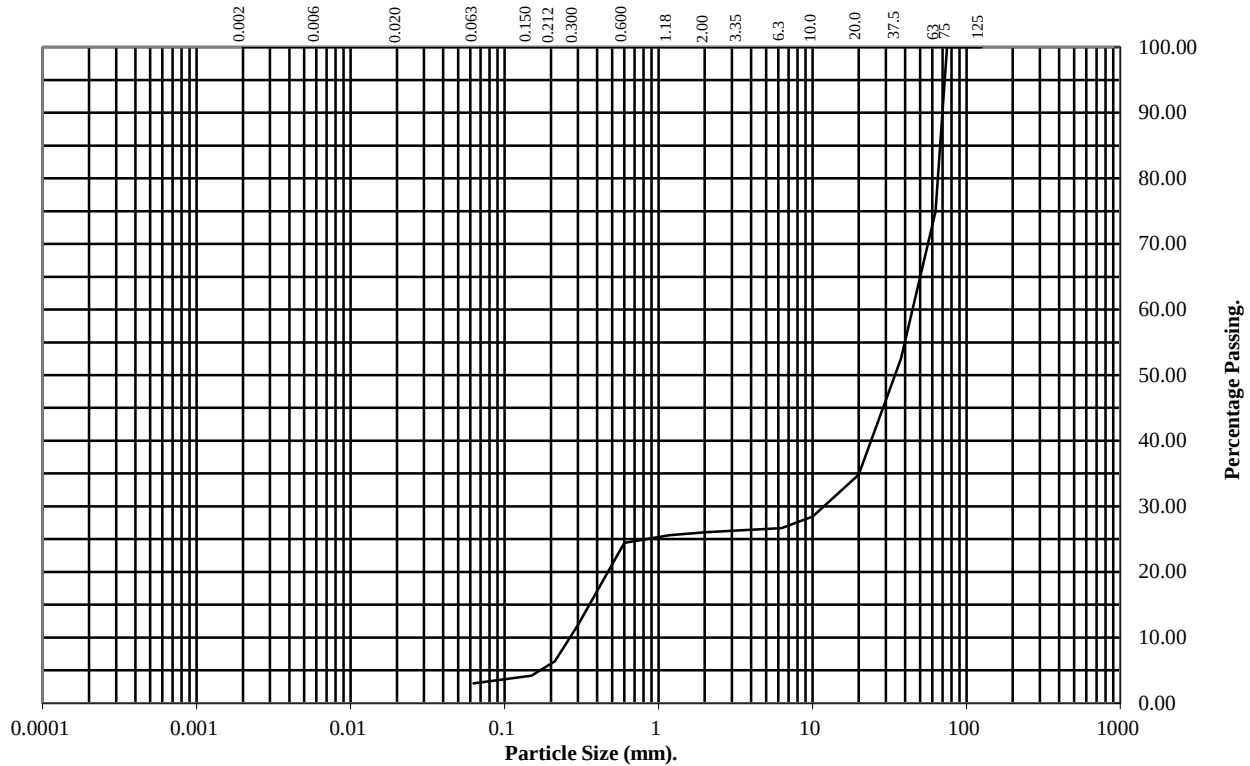
Hole Number: BH04

Top Depth (m): 9.50

Sample Number: 27

Base Depth(m):

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	75
37.5	53
20	35
10	28
6.3	27
3.35	26
2	26
1.18	26
0.6	24
0.3	12
0.212	6
0.15	4
0.063	3

Soil Fraction	Total Percentage
Cobbles	25
Gravel	49
Sand	23
Silt/Clay	3

Remarks:

See Summary of Soil Descriptions



Premier Inn Deansgate

Contract No:
PSL19/3802
Client Ref:
63524

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

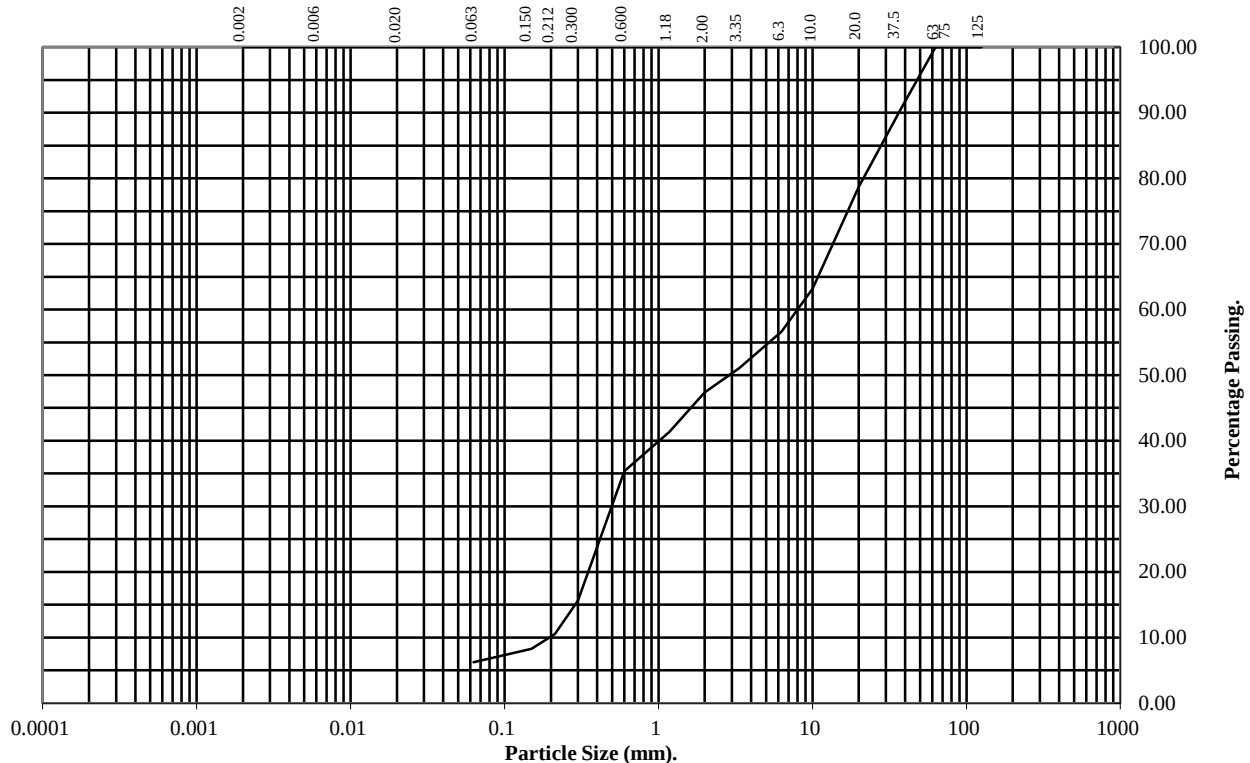
Hole Number: BH05

Top Depth (m): 3.00

Sample Number: 11

Base Depth(m):

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	91
20	79
10	63
6.3	57
3.35	51
2	47
1.18	41
0.6	35
0.3	16
0.212	11
0.15	8
0.063	6

Soil Fraction	Total Percentage
Cobbles	0
Gravel	53
Sand	41
Silt/Clay	6

Remarks:

See Summary of Soil Descriptions



Premier Inn Deansgate

Contract No:
PSL19/3802
Client Ref:
63524

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

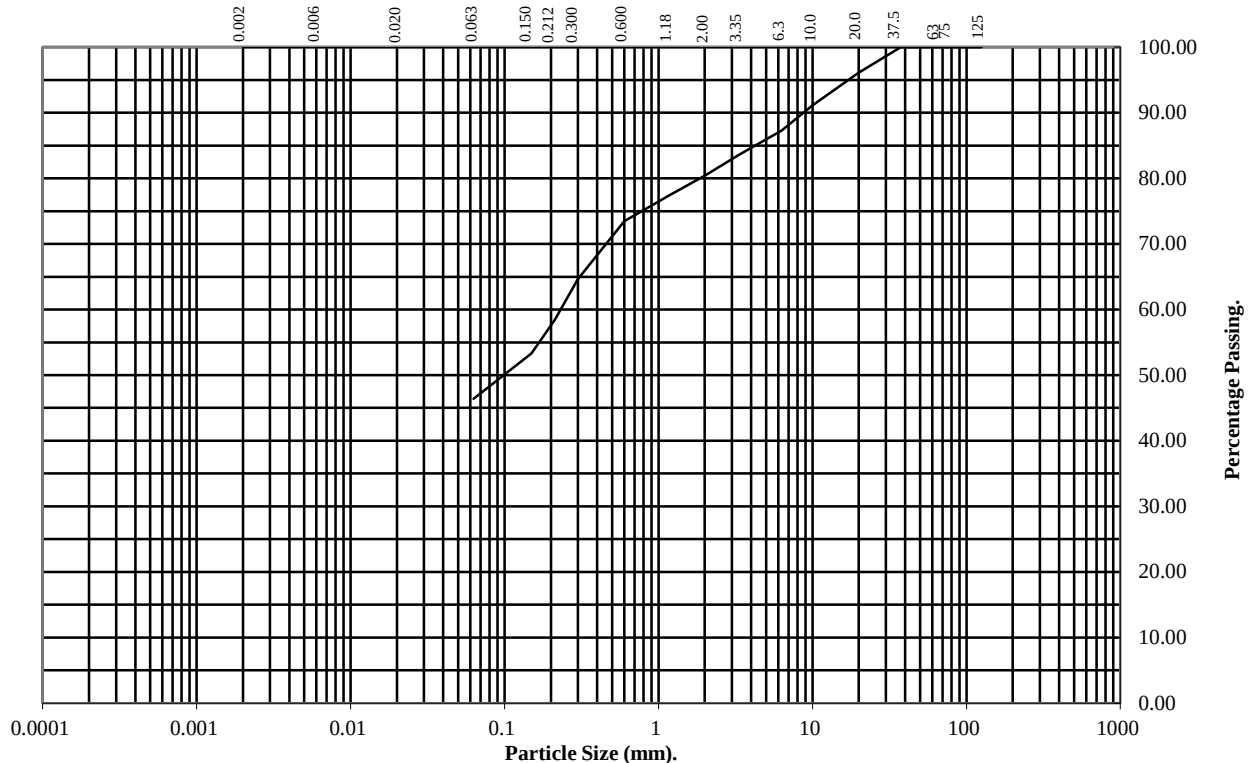
Hole Number: BH06

Top Depth (m): 0.50

Sample Number: 4

Base Depth(m):

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	96
10	91
6.3	87
3.35	84
2	80
1.18	77
0.6	73
0.3	65
0.212	58
0.15	53
0.063	46

Soil Fraction	Total Percentage
Cobbles	0
Gravel	20
Sand	34
Silt/Clay	46

Remarks:

See Summary of Soil Descriptions



Premier Inn Deansgate

Contract No:
PSL19/3802
Client Ref:
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PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

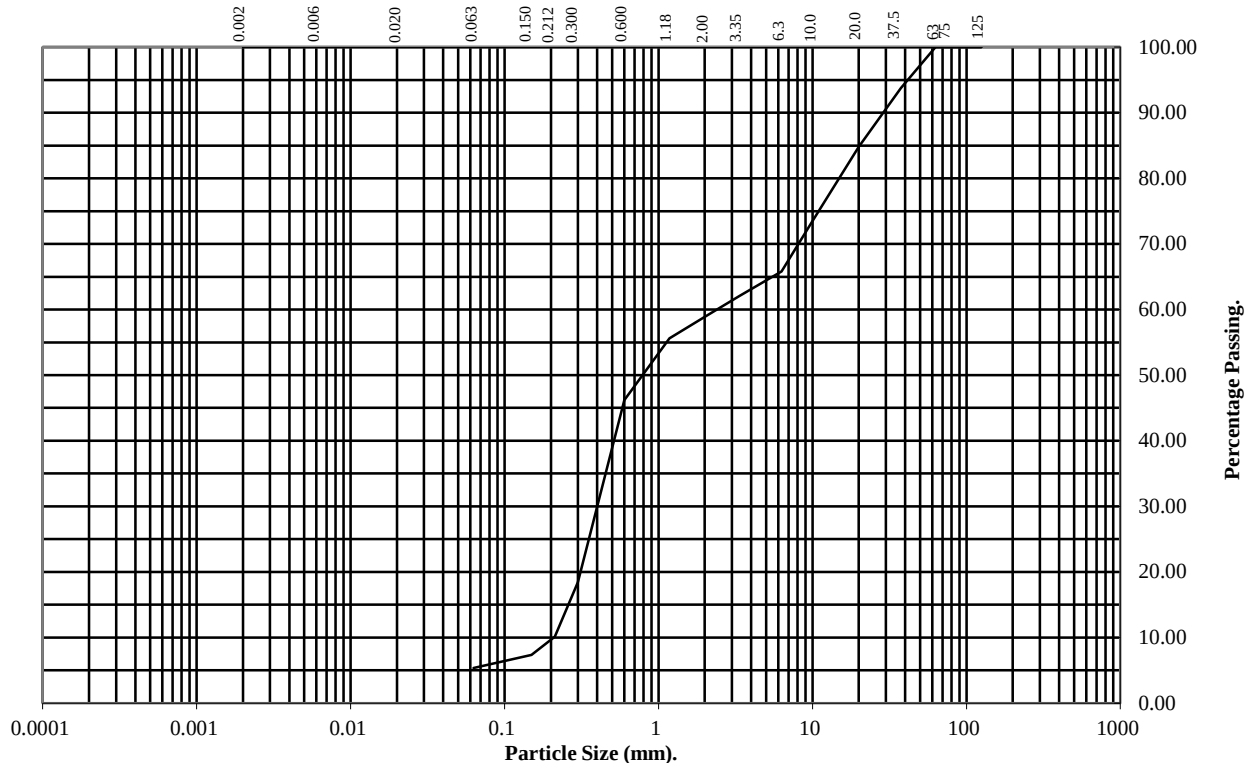
Hole Number: BH06

Top Depth (m): 3.00

Sample Number: 13

Base Depth(m):

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	94
20	85
10	74
6.3	66
3.35	62
2	59
1.18	56
0.6	46
0.3	18
0.212	10
0.15	7
0.063	5

Soil Fraction	Total Percentage
Cobbles	0
Gravel	41
Sand	54
Silt/Clay	5

Remarks:

See Summary of Soil Descriptions



Premier Inn Deansgate

Contract No:
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PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

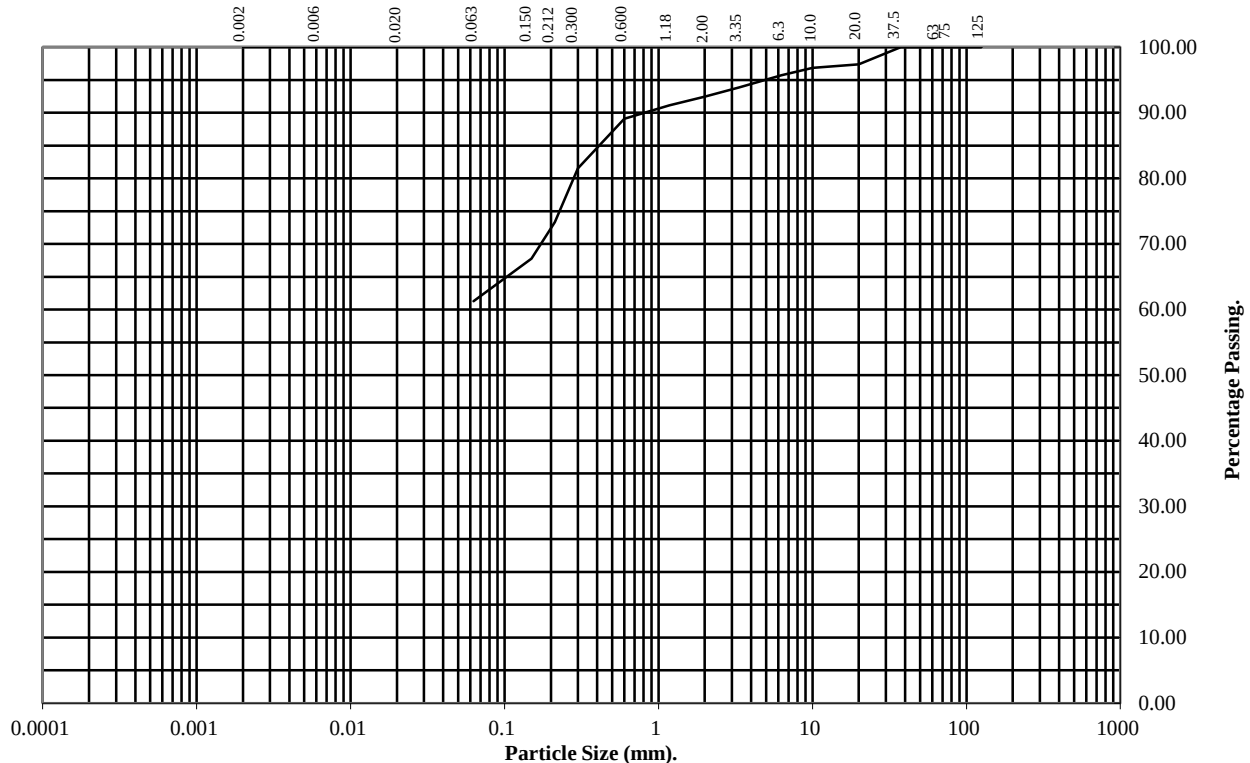
Hole Number: BH06

Top Depth (m): 6.00

Sample Number: 22

Base Depth(m):

Sample Type: D



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	97
10	97
6.3	96
3.35	94
2	92
1.18	91
0.6	89
0.3	82
0.212	73
0.15	68
0.063	61

Soil Fraction	Total Percentage
Cobbles	0
Gravel	8
Sand	31
Silt/Clay	61

Remarks:

See Summary of Soil Descriptions



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PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

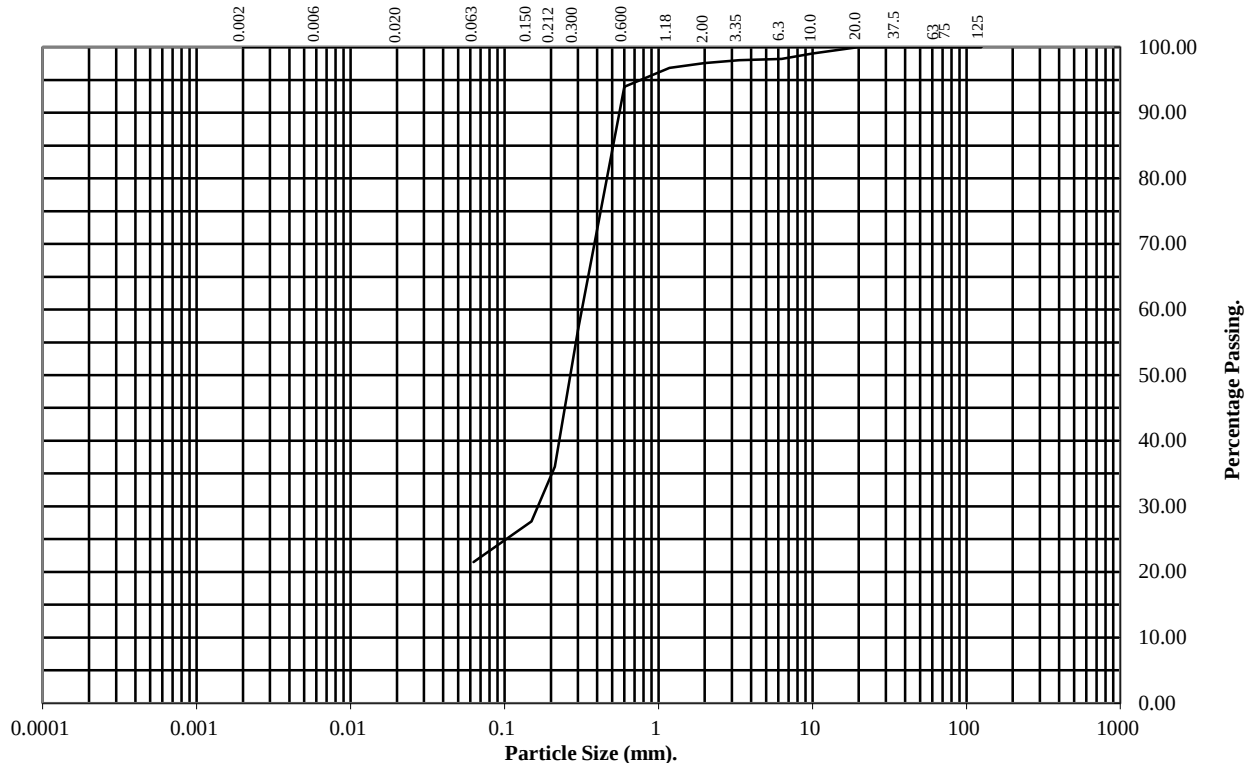
Hole Number: BH06

Top Depth (m): 7.50

Sample Number: 24

Base Depth(m):

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	100
10	99
6.3	98
3.35	98
2	98
1.18	97
0.6	94
0.3	57
0.212	36
0.15	28
0.063	22

Soil Fraction	Total Percentage
Cobbles	0
Gravel	2
Sand	76
Silt/Clay	22

Remarks:

See Summary of Soil Descriptions



Premier Inn Deansgate

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PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

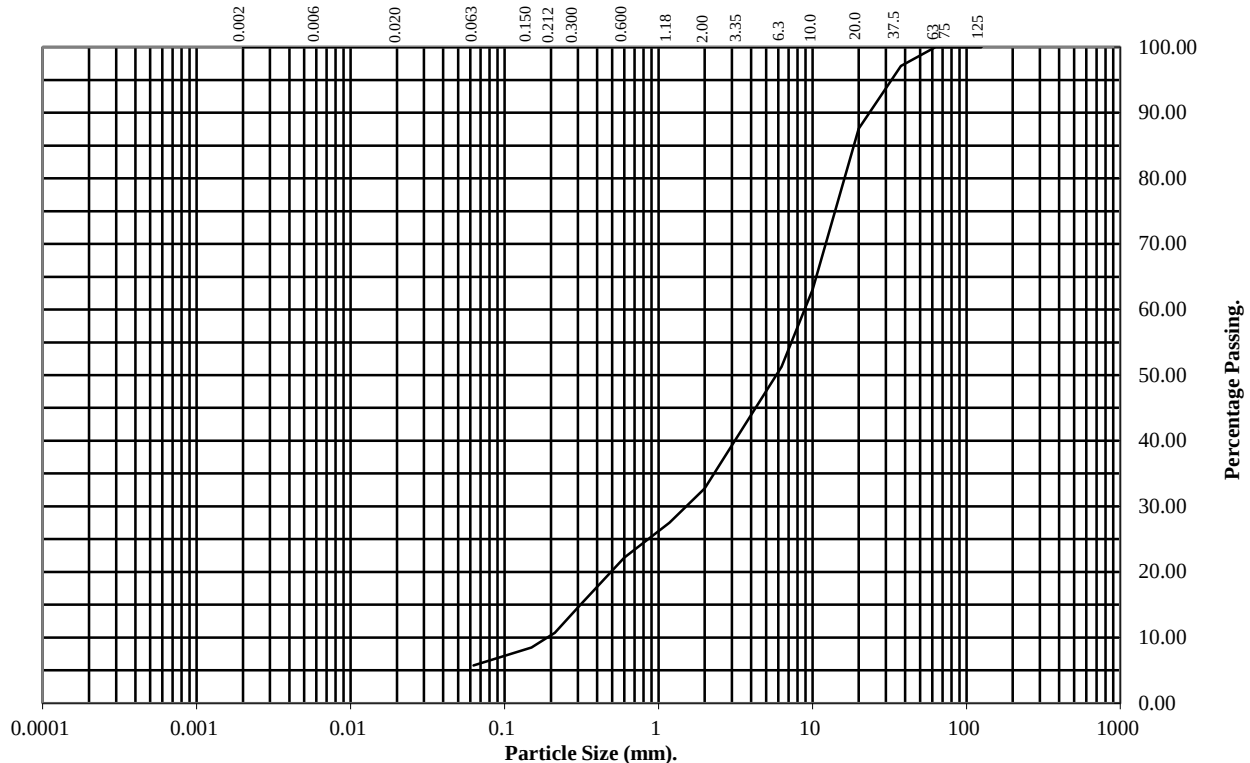
Hole Number: WS01

Top Depth (m): 0.50

Sample Number: 3

Base Depth(m):

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	97
20	88
10	63
6.3	51
3.35	41
2	33
1.18	28
0.6	22
0.3	15
0.212	11
0.15	8
0.063	6

Soil Fraction	Total Percentage
Cobbles	0
Gravel	67
Sand	27
Silt/Clay	6

Remarks:

See Summary of Soil Descriptions



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PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

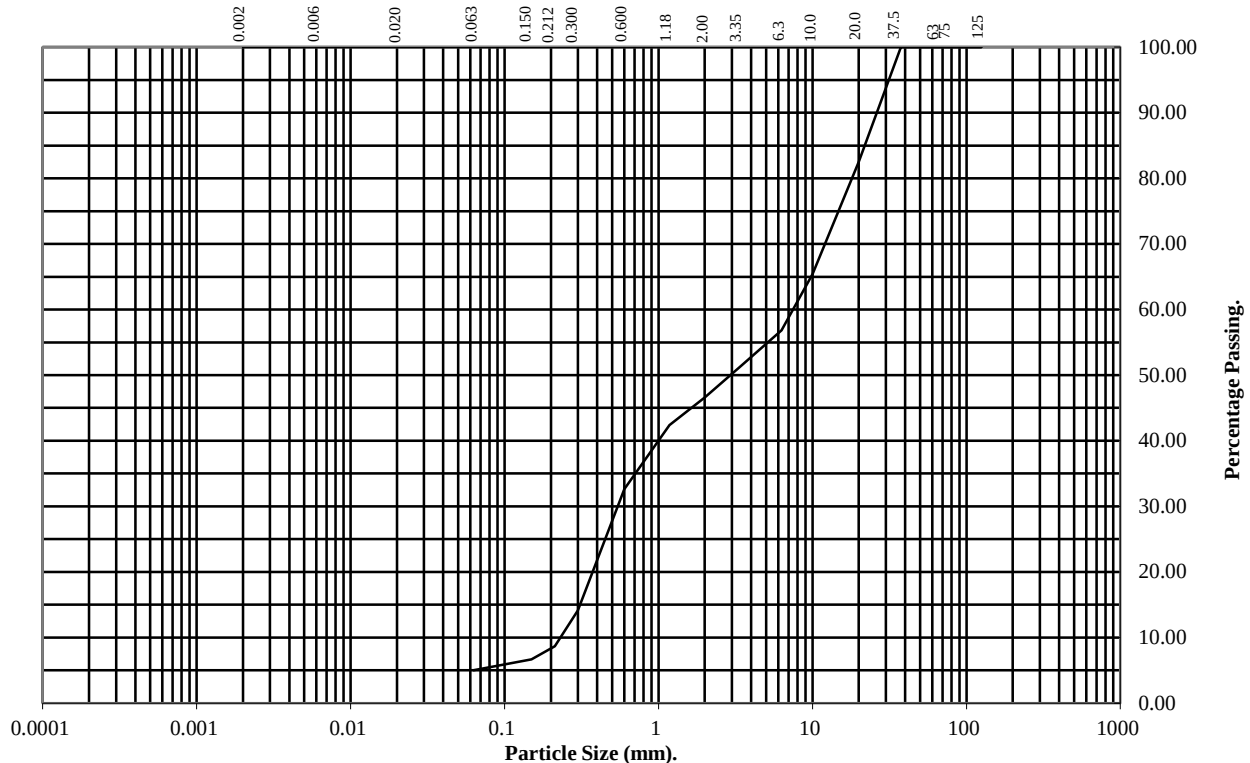
Hole Number: WS01

Top Depth (m): 2.20

Sample Number: 8

Base Depth(m):

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	83
10	65
6.3	57
3.35	51
2	47
1.18	42
0.6	33
0.3	14
0.212	9
0.15	7
0.063	5

Soil Fraction	Total Percentage
Cobbles	0
Gravel	53
Sand	42
Silt/Clay	5

Remarks:

See Summary of Soil Descriptions



Premier Inn Deansgate

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PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

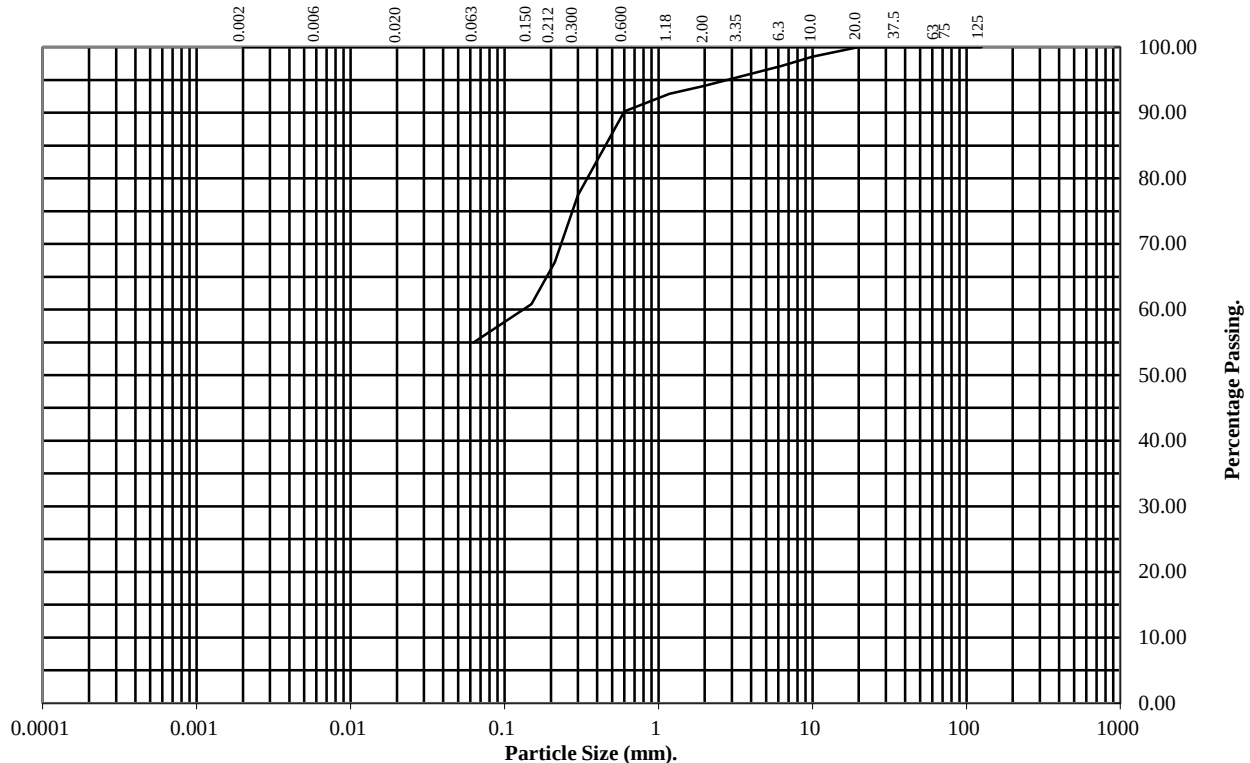
Hole Number: WS02

Top Depth (m): 0.70

Sample Number: 3

Base Depth(m):

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	100
10	99
6.3	97
3.35	95
2	94
1.18	93
0.6	90
0.3	77
0.212	67
0.15	61
0.063	55

Soil Fraction	Total Percentage
Cobbles	0
Gravel	6
Sand	39
Silt/Clay	55

Remarks:

See Summary of Soil Descriptions



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PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

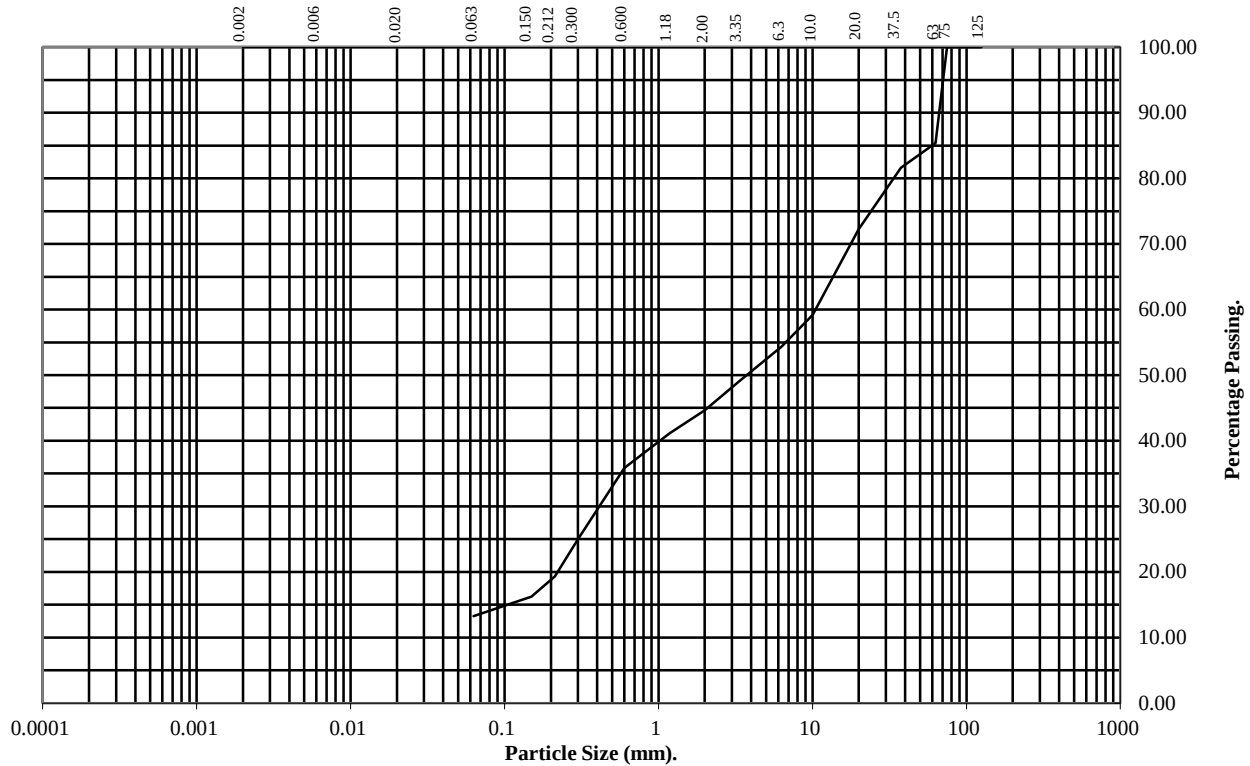
Hole Number: WS03

Top Depth (m): 0.50

Sample Number: 3

Base Depth(m):

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	85
37.5	82
20	72
10	59
6.3	54
3.35	49
2	45
1.18	41
0.6	36
0.3	25
0.212	19
0.15	16
0.063	13

Soil Fraction	Total Percentage
Cobbles	15
Gravel	40
Sand	32
Silt/Clay	13

Remarks:

See Summary of Soil Descriptions



Premier Inn Deansgate

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PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

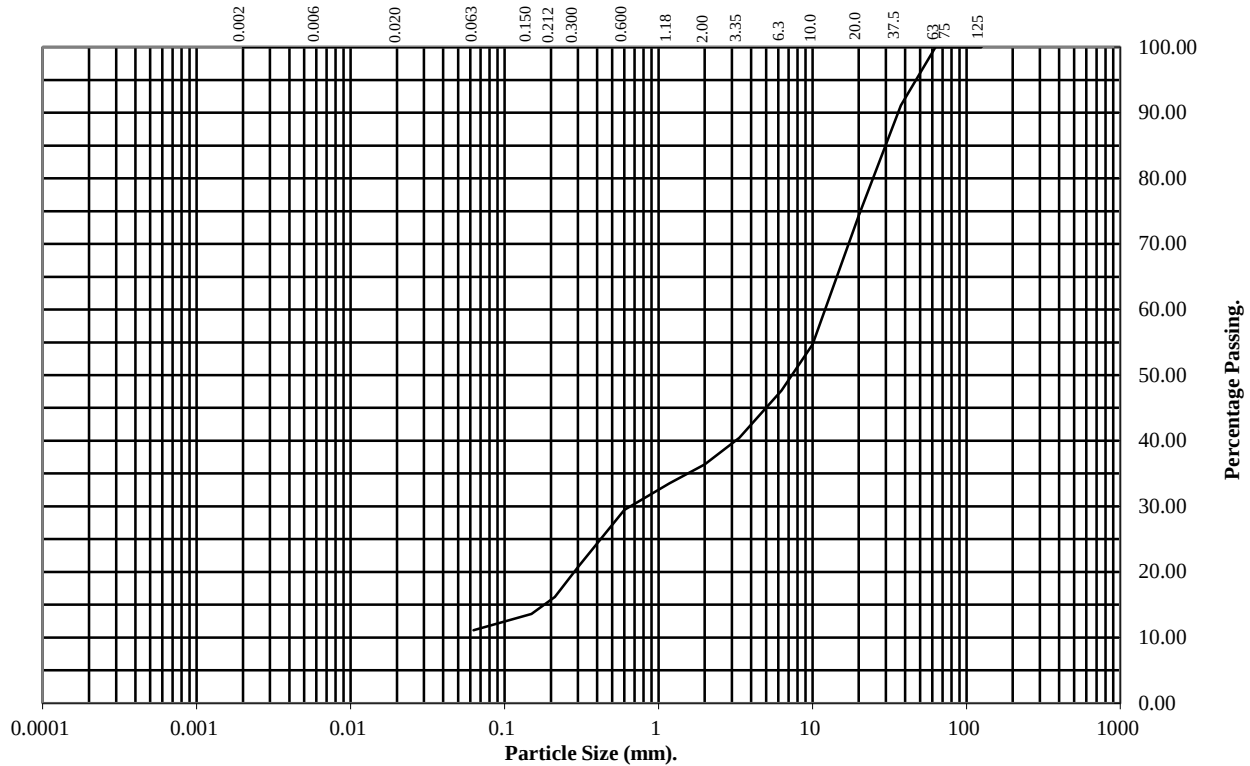
Hole Number: WS04A

Top Depth (m): 1.20

Sample Number: 4

Base Depth(m):

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	91
20	74
10	55
6.3	48
3.35	40
2	36
1.18	34
0.6	29
0.3	21
0.212	16
0.15	14
0.063	11

Soil Fraction	Total Percentage
Cobbles	0
Gravel	64
Sand	25
Silt/Clay	11

Remarks:

See Summary of Soil Descriptions



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PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

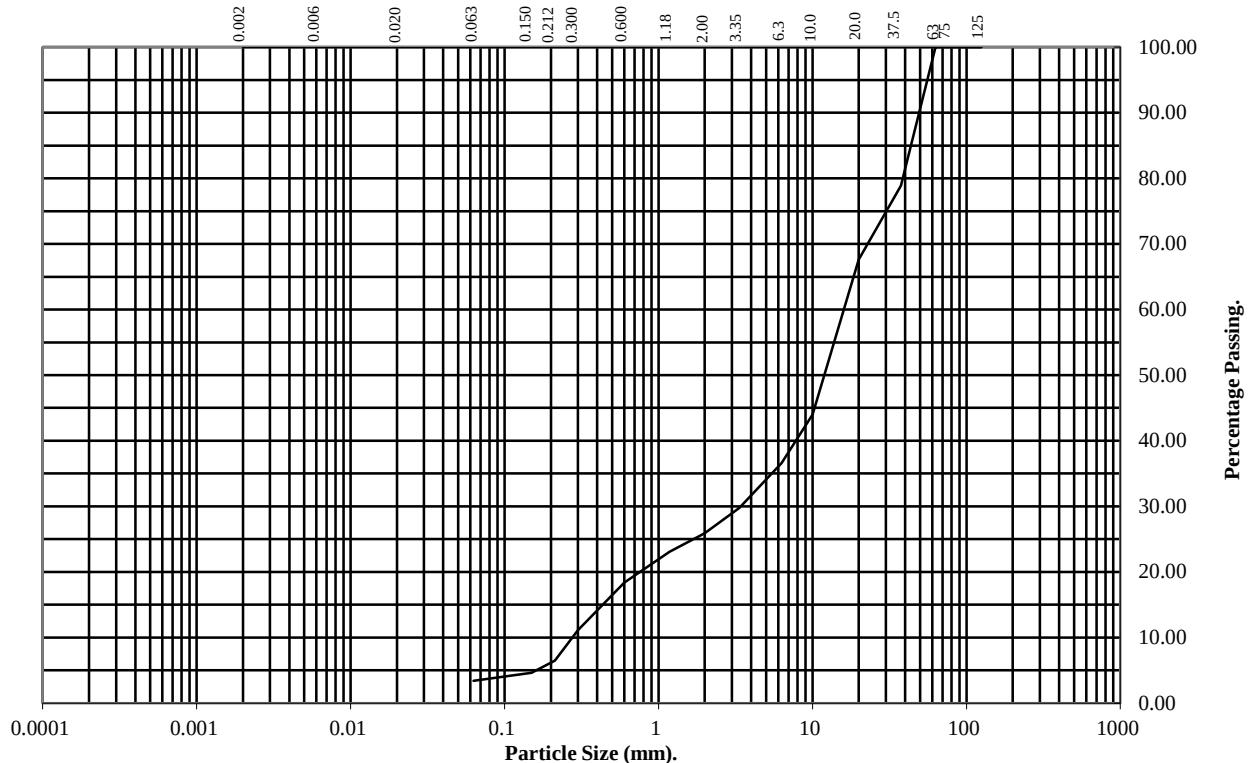
Hole Number: WS04A

Top Depth (m): 2.20

Sample Number: 6

Base Depth(m):

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	79
20	68
10	44
6.3	37
3.35	30
2	26
1.18	23
0.6	18
0.3	11
0.212	6
0.15	5
0.063	3

Soil Fraction	Total Percentage
Cobbles	0
Gravel	74
Sand	23
Silt/Clay	3

Remarks:

See Summary of Soil Descriptions



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PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

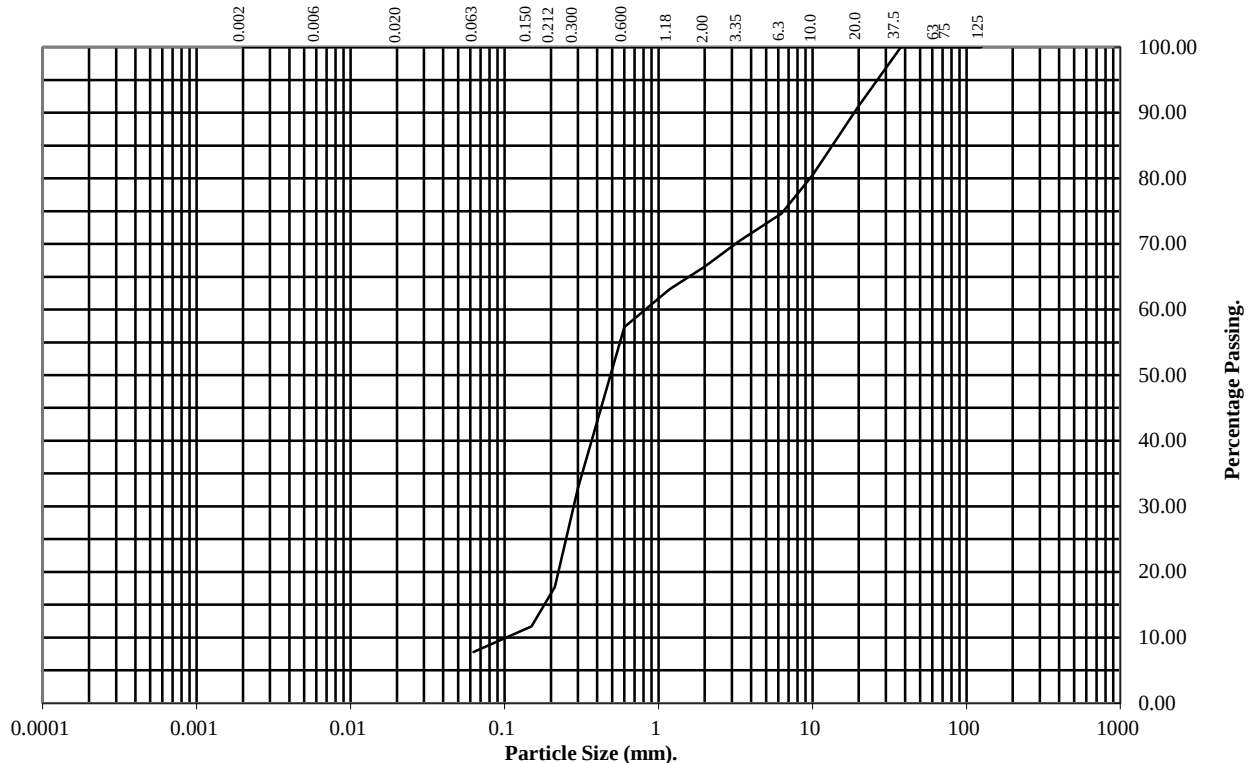
Hole Number: WS05

Top Depth (m): 2.00

Sample Number: 8

Base Depth(m):

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	91
10	80
6.3	75
3.35	70
2	67
1.18	63
0.6	57
0.3	33
0.212	18
0.15	12
0.063	8

Soil Fraction	Total Percentage
Cobbles	0
Gravel	33
Sand	59
Silt/Clay	8

Remarks:

See Summary of Soil Descriptions



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PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

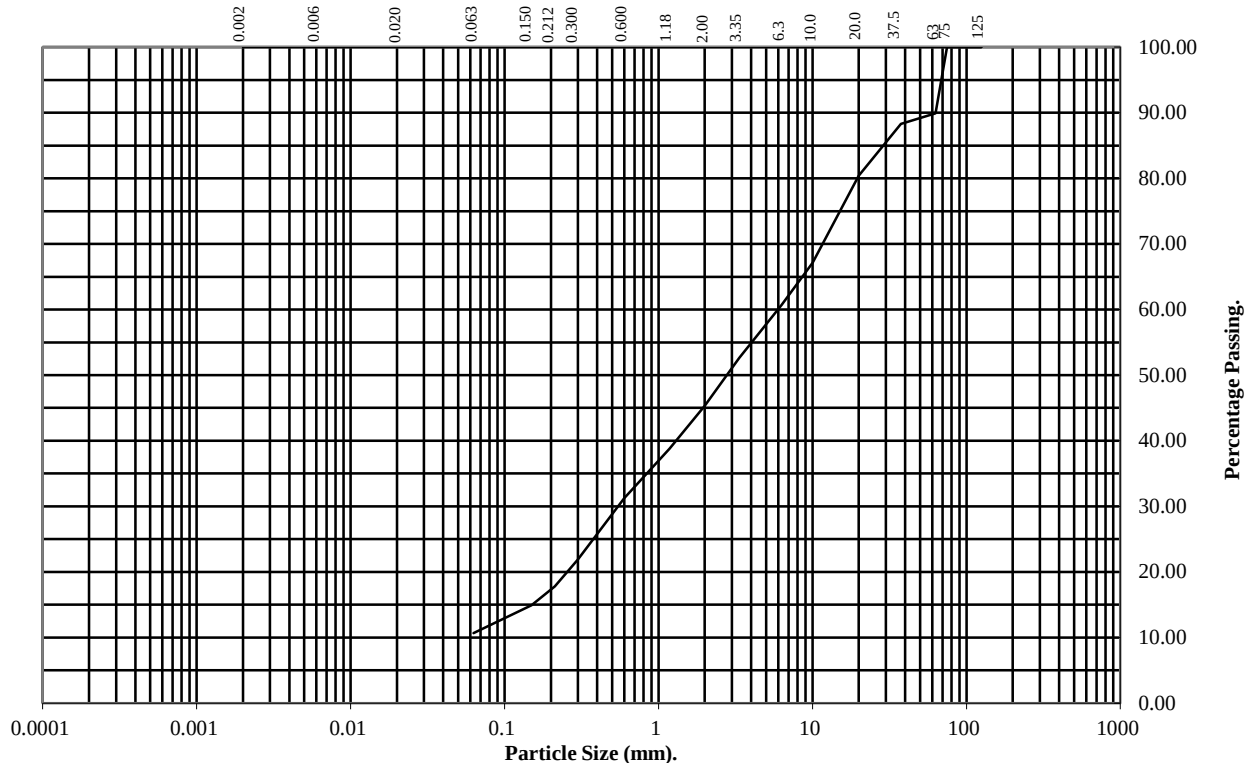
Hole Number: WS06

Top Depth (m): 0.60

Sample Number: 3

Base Depth(m):

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	90
37.5	88
20	80
10	67
6.3	61
3.35	53
2	45
1.18	39
0.6	31
0.3	22
0.212	18
0.15	15
0.063	11

Soil Fraction	Total Percentage
Cobbles	10
Gravel	45
Sand	34
Silt/Clay	11

Remarks:

See Summary of Soil Descriptions



Premier Inn Deansgate

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UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

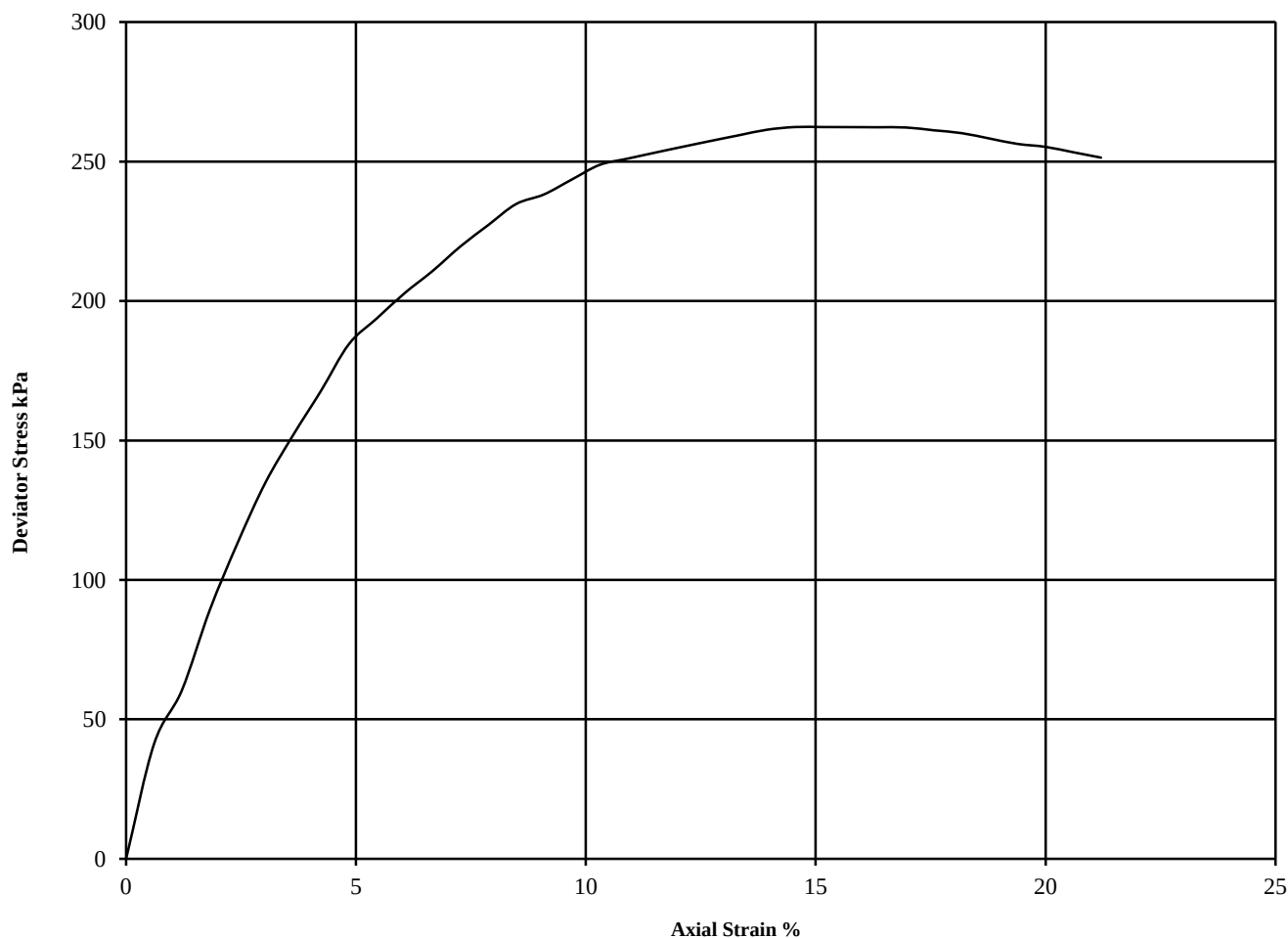
Hole Number: BH01

Top Depth (m): 5.00

Sample Number: 15

Base Depth (m):

Sample Type U



Diameter (mm):		103	Height (mm):		170	Test:	UU Single Stage		Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m ³)	Dry Density (Mg/m ³)	Cell Pressure (kPa)	Corr. Max. Deviator Stress (kPa)	Shear Strength Cu (kPa)	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.34 See summary of soil descriptions
				θ_3	$(\theta_1 - \theta_3)_f$	$\frac{1}{2}(\theta_1 - \theta_3)_f$			
1	12	2.20	1.96	100	262	131	15.1	Plastic	



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PSL

Professional Soils Laboratory

Premier Inn Deansgate

Contract No:

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Client Ref:

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UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

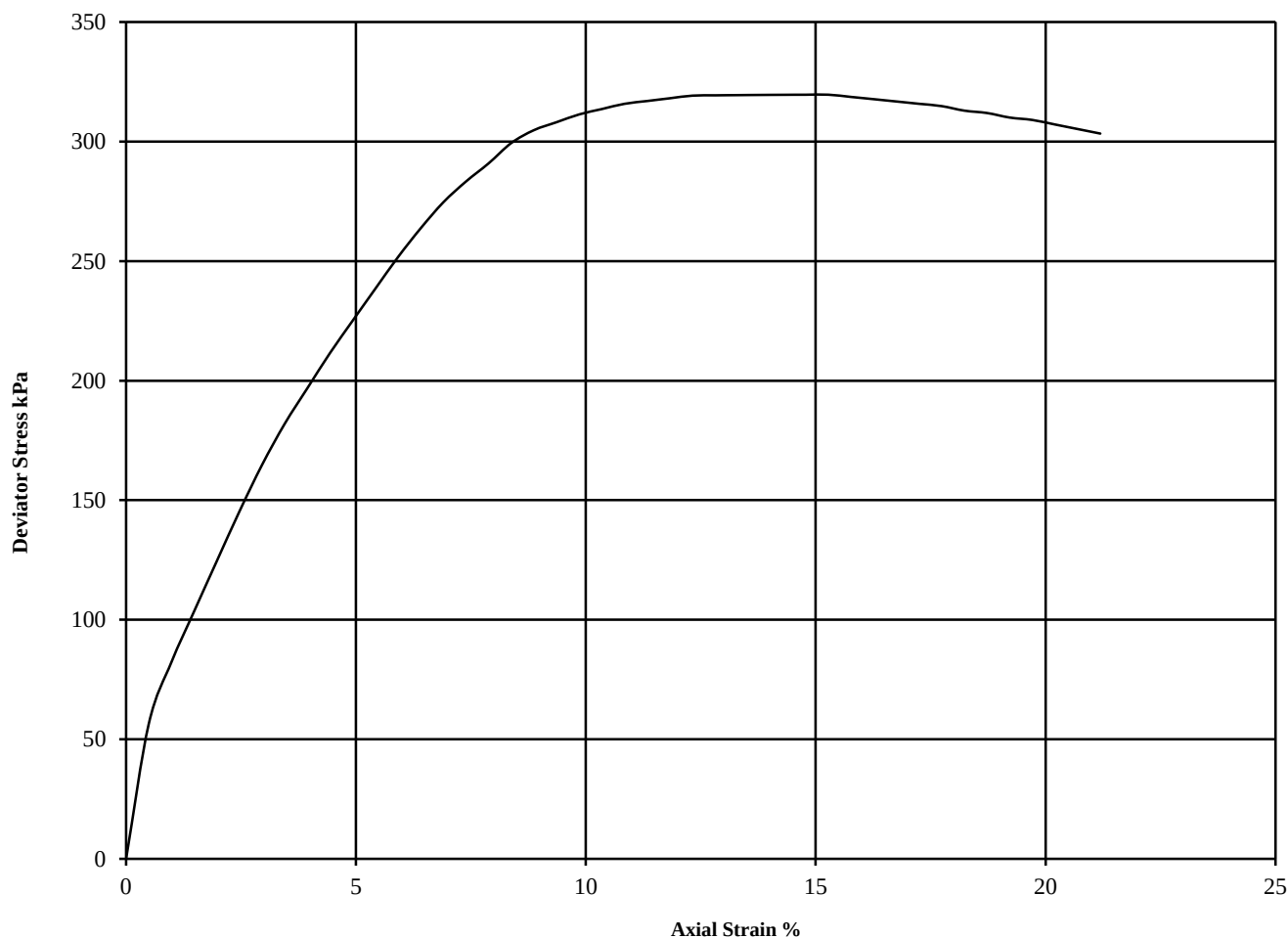
Hole Number: BH02

Top Depth (m): 5.00

Sample Number: 12

Base Depth (m):

Sample Type U



Diameter (mm):		103	Height (mm):		209	Test:	UU Single Stage		Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa)	Corr. Max. Deviator Stress (kPa)	Shear Strength Cu (kPa)	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.34 See summary of soil descriptions
				θ_3	$(\theta_1 - \theta_3)_f$	$\frac{1}{2}(\theta_1 - \theta_3)_f$			
1	12	2.20	1.98	100	320	160	15.3	Plastic	



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PSL
Professional Soils Laboratory

Premier Inn Deansgate

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ONE DIMENSIONAL CONSOLIDATION TEST

BS 1377: Part 5: 1990: Clause 3

Hole Number: BH01

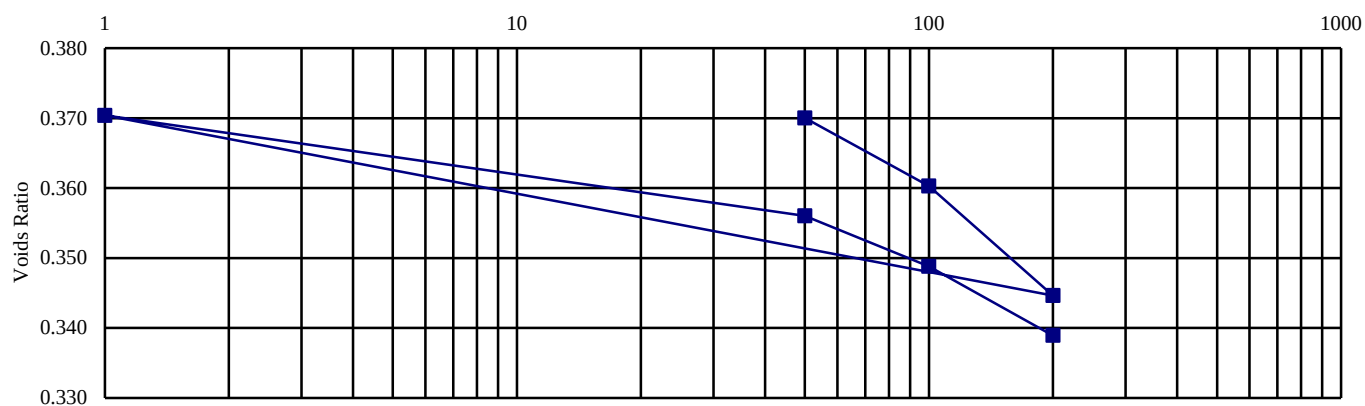
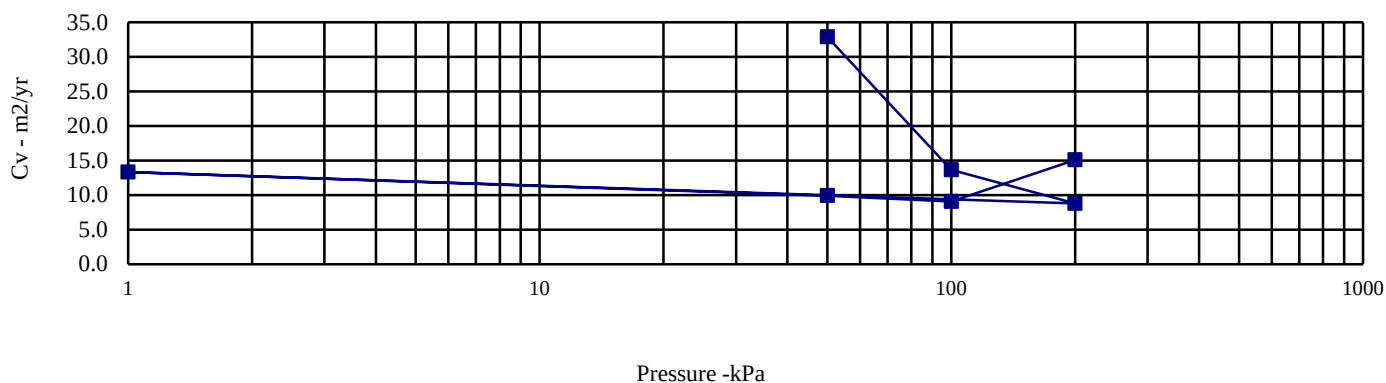
Top Depth (m): 5.00

Sample Number: 15

Base Depth (m) :

Sample Type: U

Initial Conditions		Pressure Range		Mv	Cv	Specimen location	
Moisture Content (%):	14	kPa		m2/MN	m2/yr	within tube:	Top
Bulk Density (Mg/m3):	2.17	0	50	0.249	32.871	Method used to	
Dry Density (Mg/m3):	1.91	50	100	0.142	13.650	determine CV:	T90
Voids Ratio:	0.387	100	200	0.115	8.796	Nominal temperature	
Degree of saturation:	93.9	200	1	0.096	13.302	during test ' C:	20
Height (mm):	19.94	1	50	0.213	9.915	Remarks:	
Diameter (mm)	75.033	50	100	0.107	9.061	See summary of soil descriptions	
Particle Density (Mg/m3):	2.65	100	200	0.073	15.093		
Assumed							



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ONE DIMENSIONAL CONSOLIDATION TEST

BS 1377: Part 5: 1990: Clause 3

Hole Number: BH02

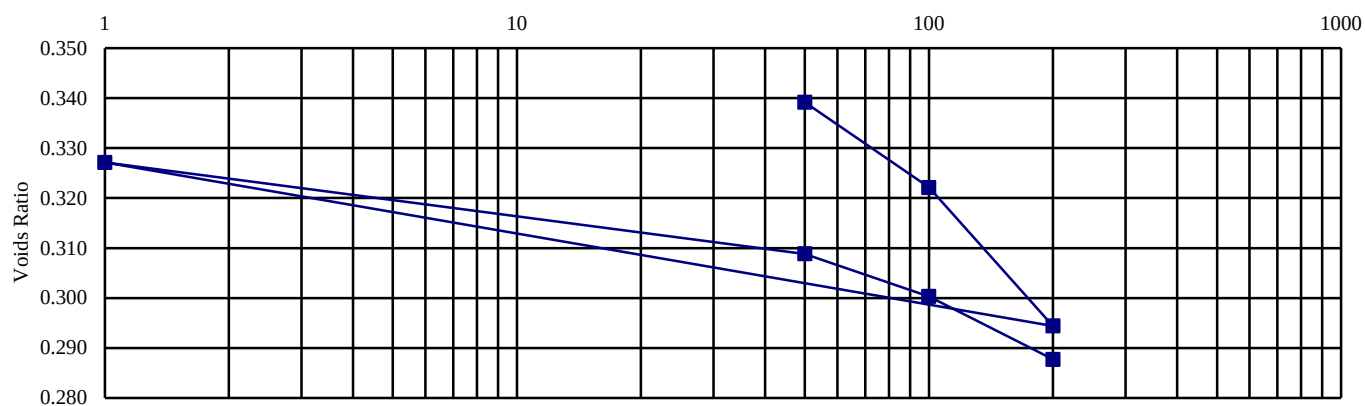
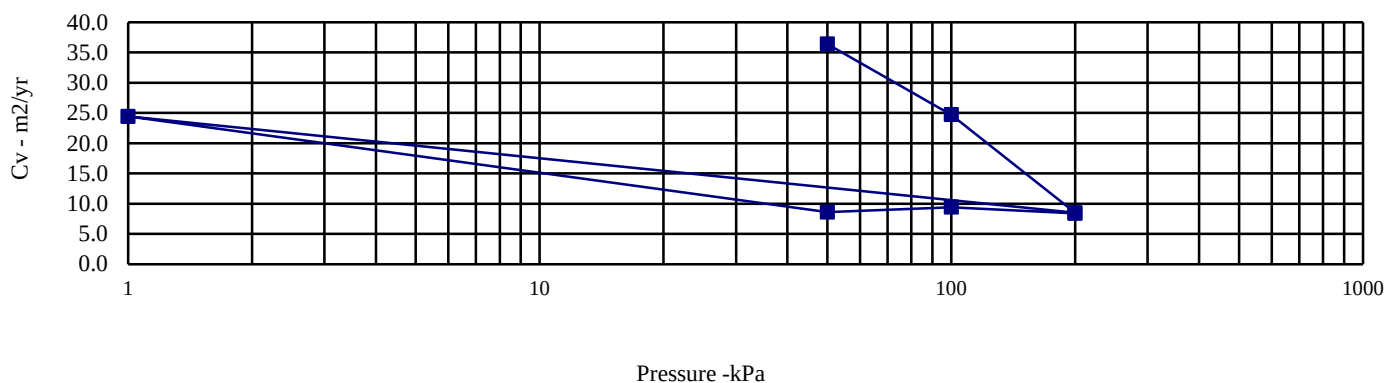
Top Depth (m): 5.00

Sample Number: 12

Base Depth (m) :

Sample Type: U

Initial Conditions		Pressure Range		Mv	Cv	Specimen location	
Moisture Content (%):	14	kPa		m2/MN	m2/yr	within tube:	Top
Bulk Density (Mg/m3):	2.21	0	50	0.411	36.396	Method used to	
Dry Density (Mg/m3):	1.94	50	100	0.255	24.701	determine CV:	T90
Voids Ratio:	0.367	100	200	0.209	8.487	Nominal temperature	
Degree of saturation:	99.5	200	1	0.127	24.430	during test ' C:	20
Height (mm):	19.95	1	50	0.281	8.595	Remarks:	
Diameter (mm)	75.035	50	100	0.130	9.406	See summary of soil descriptions	
Particle Density (Mg/m3):	2.65	100	200	0.097	8.378		
Assumed							



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SUMMARY OF POINT LOAD TEST RESULTS

ISRM Suggested Methods : 2007

Borehole Number	Depth (m)	Sample Ref	Test Type	Orientation Par / Perp	Dimensions (mm)		Area (mm ²)	D _c ²	D _e (mm)	Failure Load (P)		I _s (MPa)	Corr Fac F	I _{s50} (MPa)	Failure Type	Remarks
					W	D				(Mpa)	(kN)					
BH01	11.70		A	U	85	29	2465	3138.54	56.02	-	0.53	0.17	1.053	0.18	Valid	
BH01	13.10		A	U	85	41	3485	4437.24	66.61	-	1.66	0.37	1.138	0.43	Valid	
BH02	14.50		A	U	80	35	2800	3565.07	59.71	-	0.55	0.15	1.083	0.17	Valid	
BH02	16.00		I	U	74	37	2738	3486.13	59.04	-	0.45	0.13	1.078	0.14	Valid	
BH02	17.50		A	U	85	53	4505	5735.94	75.74	-	0.69	0.12	1.205	0.15	Valid	
BH02	20.50		A	U	85	48	4080	5194.82	72.08	-	1.01	0.19	1.179	0.23	Valid	
BH03	14.50		I	U	68	60	4080	5194.82	72.08	-	0.51	0.10	1.179	0.12	Valid	
BH03	16.00		A	U	85	32	2720	3463.21	58.85	-	1.47	0.42	1.076	0.46	Valid	
BH03	19.00		A	U	85	44	3740	4761.92	69.01	-	1.30	0.27	1.156	0.32	Valid	
BH04	12.50		A	U	100	40	4000	5092.96	71.36	-	2.27	0.45	1.174	0.52	Valid	
BH04	15.50		A	U	100	47	4700	5984.23	77.36	-	1.28	0.21	1.217	0.26	Valid	
BH04	17.00		A	U	100	64	6400	8148.73	90.27	-	3.69	0.45	1.305	0.59	Valid	
BH04	18.50		A	U	100	41	4100	5220.28	72.25	-	1.39	0.27	1.180	0.31	Valid	
BH05	11.50		A	U	85	38	3230	4112.56	64.13	-	1.28	0.31	1.119	0.35	Valid	
BH05	13.50		A	U	85	41	3485	4437.24	66.61	-	0.87	0.20	1.138	0.22	Valid	
BH05	16.50		A	U	80	36	2880	3666.93	60.56	-	0.55	0.15	1.090	0.16	Valid	

***Note** All testing carried out on samples at as received water content

Par = parallel, Perp = perpendicular, U = Random

A = Axial, D = Diametral, I = Irregular

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			PSL19/3802
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SUMMARY OF POINT LOAD TEST RESULTS

ISRM Suggested Methods : 2007

Borehole Number	Depth (m)	Sample Ref	Test Type	Orientation	Dimensions (mm)		D_c^2	D_c (mm)	Failure Load		I_s (MPa)	Corr Fac F	I_{s50} (MPa)	Failure Type	Remarks
				Par / Perp	L	D			(Mpa)	(kN)					
BH01	11.70		D	U	-	85	7225	85.00	-	0.69	0.096	1.270	0.12	Valid	
BH01	13.10		D	U	-	85	7225	85.00	-	1.78	0.246	1.270	0.31	Valid	
BH02	14.50		D	U	-	80	6400	80.00	-	0.30	0.047	1.236	0.06	Valid	
BH02	17.50		D	U	-	85	7225	85.00	-	0.52	0.072	1.270	0.09	Valid	
BH02	20.50		D	U	-	85	7225	85.00	-	0.98	0.136	1.270	0.17	Valid	
BH03	16.00		D	U	-	85	7225	85.00	-	0.96	0.133	1.270	0.17	Valid	
BH03	19.00		D	U	-	85	7225	85.00	-	1.11	0.154	1.270	0.20	Valid	
BH04	12.50		D	U	-	100	10000	100.00	-	2.77	0.277	1.366	0.38	Valid	
BH04	15.50		D	U	-	100	10000	100.00	-	1.60	0.160	1.366	0.22	Valid	
BH04	17.00		D	U	-	100	10000	100.00	-	2.89	0.289	1.366	0.39	Valid	
BH04	18.50		D	U	-	100	10000	100.00	-	1.07	0.107	1.366	0.15	Valid	
BH05	11.50		D	U	-	85	7225	85.00	-	0.98	0.136	1.270	0.17	Valid	
BH05	13.50		D	U	-	85	7225	85.00	-	0.69	0.096	1.270	0.12	Valid	
BH05	16.50		D	U	-	80	6400	80.00	-	0.70	0.109	1.236	0.14	Valid	

***Note** All testing carried out on samples at as received water content

Par = parallel, Perp = perpendicular, U = Random



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DETERMINATION OF UNCONFINED COMPRESSIVE STRENGTH

ISRM Suggested Methods, pp 111 –116, 1981.

Hole Number	Sample Number	Sample Type	Top Depth (m)	Base Depth (m)	Sample Diameter (mm)	Sample Length (mm)	Height Ratio	Initial Mass (g)	Bulk Density (Mg/m)	Moisture Content (%)	Dry Density (Mg/m)	Load Failure (kN)	UCS (MPa)	Failure Mode	Date Tested	Remarks
BH01		C	13.10		85	127	1.5	1622	2.25	14	1.98	43.8	7.7	Brittle	02/07/19	
BH01		C	14.80		75	150	2.0	1615	2.44	14	2.13	26.2	5.9	Brittle	02/07/19	
BH02		C	17.00		80	160	2.0	1946	2.42	13	2.15	22.9	4.6	Brittle	02/07/19	
BH02		C	21.50		85	170	2.0	2156	2.23	10	2.03	36.9	6.5	Brittle	02/07/19	
BH03		C	11.50		80	120	1.5	1424	2.36	15	2.06	20.8	4.1	Brittle	02/07/19	
BH03		C	13.00		80	120	1.5	1471	2.44	15	2.13	29.2	5.8	Brittle	02/07/19	
BH03		C	22.00		85	170	2.0	2254	2.34	13	2.07	60.2	10.6	Brittle	02/07/19	
BH04		C	12.50		100	200	2.0	3524	2.24	12	2.01	88.5	11.3	Brittle	02/07/19	
BH04		C	14.00		100	200	2.0	3456	2.20	11	1.98	51.8	6.6	Brittle	02/07/19	
BH04		C	19.10		100	150	1.5	2521	2.14	10	1.94	47.2	6.0	Brittle	02/07/19	
BH05		C	11.50		85	170	2.0	2132	2.21	13	1.96	38.5	6.8	Brittle	02/07/19	
BH05		C	13.00		85	170	2.0	2222	2.30	13	2.04	36.3	6.4	Brittle	02/07/19	
BH05		C	16.00		80	160	2.0	2080	2.59	10	2.35	76.2	15.2	Brittle	02/07/19	



Premier Inn Deansgate

Contract No:

PSL19/3802

Client Ref:

63524



Certificate of Analysis

Certificate Number 19-12412

08-Jul-19

Client Professional Soils Laboratory Ltd
5/7 Hexthorpe Road
Hexthorpe
DN4 0AR

Our Reference 19-12412

Client Reference PSL19/3802

Order No (not supplied)

Contract Title Premier Inn Deansgate

Description 30 Soil samples.

Date Received 02-Jul-19

Date Started 02-Jul-19

Date Completed 08-Jul-19

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

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

Approved By

A handwritten signature in black ink, appearing to read "A Fenwick", is positioned above the printed name.

Adam Fenwick
Contracts Manager



Summary of Chemical Analysis Soil Samples

Our Ref 19-12412

Client Ref PSL19/3802

Contract Title Premier Inn Deansgate

Lab No	1525203	1525204	1525205	1525206	1525207	1525208	1525209	1525210	1525211	1525212	1525213
Sample ID	BH01	BH01	BH01	BH01	BH02	BH02	BH02	BH02	BH03	BH03	BH03
Depth	0.20	1.20	3.00	9.50	0.50	2.70	5.60	11.50	0.50	2.00	6.00
Other ID	2	6	12	22	3	9	13	22	3	9	16
Sample Type	B	B	B	D	B	B	D	D	B	B	D
Sampling Date	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units											
Metals														
Magnesium Aqueous Extract	DETSC 2076*	10	mg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Inorganics														
pH	DETSC 2008#			11.1	8.0	8.0	8.2	7.5	7.1	8.1	7.8	7.7	7.4	8.3
Chloride Aqueous Extract	DETSC 2055	1	mg/l	13	9.7	5.3	11	2.7	3.7	6.5	8.7	3.7	4.9	4.5
Nitrate Aqueous Extract as NO3	DETSC 2055	1	mg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.2	< 1.0	< 1.0	< 1.0
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	130	36	41	19	27	77	93	29	18	50	73
Sulphur as S, Total	DETSC 2320	0.01	%	0.07	0.02	0.01	< 0.01	< 0.01	0.01	0.23	0.01	< 0.01	0.02	0.09
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.14	0.02	0.02	0.01	0.01	0.04	0.02	0.02	0.01	0.02	0.04

Summary of Chemical Analysis Soil Samples

Our Ref 19-12412

Client Ref PSL19/3802

Contract Title Premier Inn Deansgate

Lab No	1525214	1525215	1525216	1525217	1525218	1525219	1525220	1525221	1525222	1525223	1525224
Sample ID	BH04	BH04	BH04	BH04	BH05	BH05	BH05	BH06	BH06	BH06	WS01
Depth	1.20	3.00	6.50	9.50	1.20	3.00	6.00	0.50	3.00	6.00	0.50
Other ID	5	12	21	27	6	11	15	4	13	22	3
Sample Type	B	B	B	B	B	B	D	B	B	D	B
Sampling Date	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units											
Metals														
Magnesium Aqueous Extract	DETSC 2076*	10	mg/l	10	10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Inorganics														
pH	DETSC 2008#			8.1	7.7	8.2	8.5	8.2	7.3	8.3	8.3	7.7	8.2	8.2
Chloride Aqueous Extract	DETSC 2055	1	mg/l	6.4	4.3	11	5.3	5.8	5.7	6.1	9.8	8.8	4.8	12
Nitrate Aqueous Extract as NO3	DETSC 2055	1	mg/l	< 1.0	2.6	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.7	< 1.0	< 1.0	1.6
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	220	130	90	17	29	20	76	150	31	58	370
Sulphur as S, Total	DETSC 2320	0.01	%	0.03	0.02	0.01	< 0.01	0.02	< 0.01	0.09	0.02	0.01	0.15	0.09
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.07	0.04	0.03	0.01	0.05	0.01	0.04	0.04	0.05	0.05	0.03

Summary of Chemical Analysis Soil Samples

Our Ref 19-12412

Client Ref PSL19/3802

Contract Title Premier Inn Deansgate

Lab No	1525225	1525226	1525227	1525228	1525229	1525230	1525231	1525232
Sample ID	WS01	WS01	WS02	WS03	WS04A	WS05	WS05	WS06
Depth	1.20	2.20	0.70	0.50	1.20	0.50	2.00	0.60
Other ID	6	8	3	3	4	4	8	3
Sample Type	B	B	B	B	B	B	B	B
Sampling Date	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units								
Metals											
Magnesium Aqueous Extract	DETSC 2076*	10	mg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Inorganics											
pH	DETSC 2008#			8.2	8.3	7.1	8.4	7.9	8.1	8.2	9.2
Chloride Aqueous Extract	DETSC 2055	1	mg/l	3.4	5.3	4.2	6.8	4.1	7.0	3.3	6.4
Nitrate Aqueous Extract as NO3	DETSC 2055	1	mg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	43	52	38	40	12	18	18	110
Sulphur as S, Total	DETSC 2320	0.01	%	< 0.01	< 0.01	< 0.01	0.02	< 0.01	0.02	< 0.01	0.14
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.18	0.02	0.02	0.04	0.02	0.02	0.01	0.07

Information in Support of the Analytical Results

Our Ref 19-12412
 Client Ref PSL19/3802
 Contract Premier Inn Deansgate

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1525203	BH01 0.20 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	
1525204	BH01 1.20 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	
1525205	BH01 3.00 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	
1525206	BH01 9.50 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	
1525207	BH02 0.50 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	
1525208	BH02 2.70 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	
1525209	BH02 5.60 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	
1525210	BH02 11.50 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	
1525211	BH03 0.50 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	
1525212	BH03 2.00 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	
1525213	BH03 6.00 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	
1525214	BH04 1.20 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	

Information in Support of the Analytical Results

Our Ref 19-12412
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Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1525215	BH04 3.00 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	
1525216	BH04 6.50 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	
1525217	BH04 9.50 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	
1525218	BH05 1.20 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	
1525219	BH05 3.00 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	
1525220	BH05 6.00 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	
1525221	BH06 0.50 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	
1525222	BH06 3.00 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	
1525223	BH06 6.00 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	
1525224	WS01 0.50 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	
1525225	WS01 1.20 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	
1525226	WS01 2.20 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	

Information in Support of the Analytical Results

Our Ref 19-12412
 Client Ref PSL19/3802
 Contract Premier Inn Deansgate

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1525227	WS02 0.70 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	
1525228	WS03 0.50 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	
1525229	WS04A 1.20 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	
1525230	WS05 0.50 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	
1525231	WS05 2.00 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	
1525232	WS06 0.60 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	

Key: P-Plastic T-Tub

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

Soil Analysis Notes

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

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

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

Disposal

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

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



Appendix 7 – Chemical Laboratory Results

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 19/05585
Issue Number: 1

Date: 21 June, 2019

Client: Enzygo Ltd (Manchester)
First Floor,
3 Hardman Square,
Manchester,
M3 3EB

Project Manager: Nick Brook
Project Name: Not specified
Project Ref: MAN.260.001
Order No: MAN.260.001
Date Samples Received: 05/06/19
Date Instructions Received: 11/06/19
Date Analysis Completed: 21/06/19

Prepared by:



Melanie Marshall
Laboratory Coordinator

Approved by:



Richard Wong
Client Manager



Envirolab Job Number: 19/05585

Client Project Name: Not specified

Client Project Ref: MAN.260.001

Lab Sample ID	19/05585/4	19/05585/6	19/05585/8	19/05585/14	19/05585/15	19/05585/16	19/05585/17	Units	Limit of Detection	Method ref
Client Sample No	2									
Client Sample ID	BH03	BH03	BH06	BH06	BH01	BH01	BH02			
Depth to Top	0.50	2.00	0.50	5.10	0.50	1.00	0.20			
Depth To Bottom										
Date Sampled	06-Jun-19	06-Jun-19	06-Jun-19	07-Jun-19	05-Jun-19	04-Jun-19	04-Jun-19			
Sample Type	Soil - ES	Soil	Soil	Soil	Soil	Soil	Soil			
Sample Matrix Code	4A	4A	6AE	4AE	4AE	4A	4AE			
% Stones >10mm _A	20.8	13.0	2.1	41.6	12.3	0.1	26.3	% w/w	0.1	A-T-044
pH _D ^{M#}	8.63	7.87	7.79	8.16	8.41	8.30	9.74	pH	0.01	A-T-031s
Sulphate (water sol 2:1) _D ^{M#}	<0.01	0.02	0.13	0.02	0.04	<0.01	0.16	g/l	0.01	A-T-026s
Cyanide (total) _A ^{M#}	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC _A	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	0.2	A-T-050s
Sulphide _A	<5	<5	<5	<5	<5	<5	<5	mg/kg	5	A-T-S2-s
Arsenic _D ^{M#}	3	3	4	2	3	3	4	mg/kg	1	A-T-024s
Boron (water soluble) _D ^{M#}	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	mg/kg	1	A-T-027s
Cadmium _D ^{M#}	0.6	0.6	0.9	<0.5	1.0	<0.5	<0.5	mg/kg	0.5	A-T-024s
Copper _D ^{M#}	12	8	23	6	25	3	23	mg/kg	1	A-T-024s
Chromium _D ^{M#}	10	10	21	6	12	5	9	mg/kg	1	A-T-024s
Chromium (hexavalent) _D	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-040s
Chromium (trivalent)	10	10	21	6	12	5	9	mg/kg	1	Calc
Lead _D ^{M#}	7	6	20	5	26	4	21	mg/kg	1	A-T-024s
Mercury _D	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	10	10	19	10	13	7	9	mg/kg	1	A-T-024s
Selenium _D ^{M#}	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-024s
Zinc _D ^{M#}	24	25	66	21	68	13	35	mg/kg	5	A-T-024s
EPH Total (>C10-C40) _A [#]	28	13	1580	20	1880	14	354	mg/kg	10	A-T-007s
Leachate Prep BS EN 12457-2 (10:1) _A	*	-	-	-	-	*	*			A-T-001
pH (leachable) _A [#]	7.52	-	-	-	-	7.39	8.99	pH	0.01	A-T-031w
Hardness Total (leachable) _A	20	-	-	-	-	50	83	mg/l Ca CO3	2	A-T-049w
Ammoniacal nitrogen as N (leachable) _A	<0.02	-	-	-	-	<0.02	<0.02	mg/l	0.02	A-T-033w
Sulphate (leachable) _A [#]	7.15	-	-	-	-	5.11	32.08	mg/l	1	A-T-026w
Sulphide (leachable) _A	<0.1	-	-	-	-	<0.1	<0.1	mg/l	0.1	A-T-S2-w
DOC (leachable) _A [#]	7.7	-	-	-	-	1.9	1.8	mg/l	0.2	A-T-032w
Arsenic (leachable) _A [#]	1	-	-	-	-	1	5	µg/l	1	A-T-025w
Boron (leachable) _A [#]	20	-	-	-	-	37	47	µg/l	10	A-T-025w
Cadmium (leachable) _A [#]	<1	-	-	-	-	<1	<1	µg/l	1	A-T-025w
Copper (leachable) _A [#]	6	-	-	-	-	2	3	µg/l	1	A-T-025w
Chromium (leachable) _A [#]	<1	-	-	-	-	<1	7	µg/l	1	A-T-025w
Chromium (hexavalent) (leachable) _A	<0.05	-	-	-	-	<0.05	<0.05	mg/l	0.05	A-T-040w
Chromium (trivalent) (leachable)	<0.05	-	-	-	-	<0.05	<0.05	mg/l	0.05	Calc

Envirolab Job Number: 19/05585

Client Project Name: Not specified

Client Project Ref: MAN.260.001

Lab Sample ID	19/05585/4	19/05585/6	19/05585/8	19/05585/14	19/05585/15	19/05585/16	19/05585/17	Units	Limit of Detection	Method ref
Client Sample No	2									
Client Sample ID	BH03	BH03	BH06	BH06	BH01	BH01	BH02			
Depth to Top	0.50	2.00	0.50	5.10	0.50	1.00	0.20			
Depth To Bottom										
Date Sampled	06-Jun-19	06-Jun-19	06-Jun-19	07-Jun-19	05-Jun-19	04-Jun-19	04-Jun-19			
Sample Type	Soil - ES	Soil	Soil	Soil	Soil	Soil	Soil			
Sample Matrix Code	4A	4A	6AE	4AE	4AE	4A	4AE			
Lead (leachable) _A [#]	4	-	-	-	-	9	<1	µg/l	1	A-T-025w
Mercury (leachable) _A [#]	<0.1	-	-	-	-	<0.1	<0.1	µg/l	0.1	A-T-025w
Nickel (leachable) _A [#]	2	-	-	-	-	<1	<1	µg/l	1	A-T-025w
Selenium (leachable) _A [#]	<1	-	-	-	-	<1	<1	µg/l	1	A-T-025w
Zinc (leachable) _A [#]	6	-	-	-	-	2	2	µg/l	1	A-T-025w
EPH Total (>C10-C40) (leachable) _A	<80	-	-	-	-	<80	89	µg/l	80	A-T-007w

Envirolab Job Number: 19/05585

Client Project Name: Not specified

Client Project Ref: MAN.260.001

Lab Sample ID	19/05585/4	19/05585/6	19/05585/8	19/05585/14	19/05585/15	19/05585/16	19/05585/17	Units	Limit of Detection	Method ref
Client Sample No	2									
Client Sample ID	BH03	BH03	BH06	BH06	BH01	BH01	BH02			
Depth to Top	0.50	2.00	0.50	5.10	0.50	1.00	0.20			
Depth To Bottom										
Date Sampled	06-Jun-19	06-Jun-19	06-Jun-19	07-Jun-19	05-Jun-19	04-Jun-19	04-Jun-19			
Sample Type	Soil - ES	Soil	Soil	Soil	Soil	Soil	Soil			
Sample Matrix Code	4A	4A	6AE	4AE	4AE	4A	4AE			
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil [#]	NAD	-	NAD	-	NAD	-	NAD			A-T-045
Asbestos ACM - Suitable for Water Absorption Test?	N/A	-	N/A	-	N/A	-	N/A			

Envirolab Job Number: 19/05585

Client Project Name: Not specified

Client Project Ref: MAN.260.001

Lab Sample ID	19/05585/4	19/05585/6	19/05585/8	19/05585/14	19/05585/15	19/05585/16	19/05585/17	Units	Limit of Detection	Method ref
Client Sample No	2									
Client Sample ID	BH03	BH03	BH06	BH06	BH01	BH01	BH02			
Depth to Top	0.50	2.00	0.50	5.10	0.50	1.00	0.20			
Depth To Bottom										
Date Sampled	06-Jun-19	06-Jun-19	06-Jun-19	07-Jun-19	05-Jun-19	04-Jun-19	04-Jun-19			
Sample Type	Soil - ES	Soil	Soil	Soil	Soil	Soil	Soil			
Sample Matrix Code	4A	4A	6AE	4AE	4AE	4A	4AE			
PAH-16MS										
Acenaphthene _A ^{M#}	<0.01	<0.01	3.42	<0.01	0.78	<0.01	0.12	mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	<0.01	<0.01	0.20	<0.01	0.10	<0.01	0.03	mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	<0.02	<0.02	3.59	<0.02	1.37	<0.02	0.23	mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	<0.04	<0.04	5.12	<0.04	4.55	<0.04	0.64	mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	<0.04	<0.04	5.17	<0.04	5.24	<0.04	0.70	mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	<0.05	<0.05	6.44	<0.05	6.44	<0.05	0.84	mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	<0.05	<0.05	2.23	<0.05	2.55	<0.05	0.32	mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	<0.07	<0.07	2.21	<0.07	2.30	<0.07	0.31	mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	<0.06	<0.06	5.43	<0.06	4.83	<0.06	0.72	mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	<0.04	<0.04	0.58	<0.04	0.61	<0.04	0.08	mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	<0.08	<0.08	15.3	<0.08	10.5	<0.08	1.38	mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	<0.01	<0.01	2.16	<0.01	0.56	<0.01	0.13	mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	<0.03	<0.03	2.70	<0.03	2.92	<0.03	0.38	mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	<0.03	<0.03	4.52	<0.03	0.15	<0.03	0.10	mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	<0.03	<0.03	14.7	<0.03	5.36	<0.03	1.07	mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	<0.07	<0.07	13	<0.07	10.6	<0.07	1.31	mg/kg	0.07	A-T-019s
Total PAH-16MS _A ^{M#}	<0.08	<0.08	86.8	<0.08	58.9	<0.08	8.36	mg/kg	0.01	A-T-019s

Envirolab Job Number: 19/05585

Client Project Name: Not specified

Client Project Ref: MAN.260.001

Lab Sample ID	19/05585/4	19/05585/6	19/05585/8	19/05585/14	19/05585/15	19/05585/16	19/05585/17	Units	Limit of Detection	Method ref
Client Sample No	2									
Client Sample ID	BH03	BH03	BH06	BH06	BH01	BH01	BH02			
Depth to Top	0.50	2.00	0.50	5.10	0.50	1.00	0.20			
Depth To Bottom										
Date Sampled	06-Jun-19	06-Jun-19	06-Jun-19	07-Jun-19	05-Jun-19	04-Jun-19	04-Jun-19			
Sample Type	Soil - ES	Soil	Soil	Soil	Soil	Soil	Soil			
Sample Matrix Code	4A	4A	6AE	4AE	4AE	4A	4AE			
PAH 16MS (leachable)										
Acenaphthene (leachable) _A	0.18	-	-	-	-	0.25	1.22	µg/l	0.02	A-T-019w
Acenaphthylene (leachable) _A	<0.02	-	-	-	-	<0.02	0.02	µg/l	0.02	A-T-019w
Anthracene (leachable) _A	0.05	-	-	-	-	0.05	0.16	µg/l	0.02	A-T-019w
Benzo(a)anthracene (leachable) _A	<0.02	-	-	-	-	<0.02	0.04	µg/l	0.02	A-T-019w
Benzo(a)pyrene (leachable) _A	<0.02	-	-	-	-	<0.02	0.04	µg/l	0.02	A-T-019w
Benzo(b)fluoranthene (leachable) _A	<0.02	-	-	-	-	<0.02	0.04	µg/l	0.02	A-T-019w
Benzo(ghi)perylene (leachable) _A	<0.02	-	-	-	-	<0.02	<0.02	µg/l	0.02	A-T-019w
Benzo(k)fluoranthene (leachable) _A	<0.02	-	-	-	-	<0.02	<0.02	µg/l	0.02	A-T-019w
Chrysene (leachable) _A	<0.02	-	-	-	-	<0.02	0.05	µg/l	0.02	A-T-019w
Dibenzo(ah)anthracene (leachable) _A	<0.02	-	-	-	-	<0.02	<0.02	µg/l	0.02	A-T-019w
Fluoranthene (leachable) _A	0.11	-	-	-	-	0.09	0.18	µg/l	0.02	A-T-019w
Fluorene (leachable) _A	0.12	-	-	-	-	0.11	0.40	µg/l	0.02	A-T-019w
Indeno(123-cd)pyrene (leachable) _A	<0.02	-	-	-	-	<0.02	0.02	µg/l	0.02	A-T-019w
Naphthalene (leachable) _A	0.38	-	-	-	-	0.20	4.15	µg/l	0.02	A-T-019w
Phenanthrene (leachable) _A	0.22	-	-	-	-	0.19	0.49	µg/l	0.02	A-T-019w
Pyrene (leachable) _A	0.08	-	-	-	-	0.06	0.14	µg/l	0.02	A-T-019w
Total PAH 16MS (leachable) _A	1.14	-	-	-	-	0.95	6.95	µg/l	0.02	A-T-019w

Envirolab Job Number: 19/05585

Client Project Name: Not specified

Client Project Ref: MAN.260.001

Lab Sample ID	19/05585/4	19/05585/6	19/05585/8	19/05585/14	19/05585/15	19/05585/16	19/05585/17	Units	Limit of Detection	Method ref
Client Sample No	2									
Client Sample ID	BH03	BH03	BH06	BH06	BH01	BH01	BH02			
Depth to Top	0.50	2.00	0.50	5.10	0.50	1.00	0.20			
Depth To Bottom										
Date Sampled	06-Jun-19	06-Jun-19	06-Jun-19	07-Jun-19	05-Jun-19	04-Jun-19	04-Jun-19			
Sample Type	Soil - ES	Soil	Soil	Soil	Soil	Soil	Soil			
Sample Matrix Code	4A	4A	6AE	4AE	4AE	4A	4AE			
SVOC										
Hexachlorobenzene _A	<100	-	<100	-	<100	-	<100	µg/kg	100	A-T-052s
Diethyl phthalate _A	<100	-	<100	-	<100	-	<100	µg/kg	100	A-T-052s
Dimethyl phthalate _A	<100	-	<100	-	<100	-	<100	µg/kg	100	A-T-052s
Dibenzofuran _A	<100	-	1390	-	285	-	<100	µg/kg	100	A-T-052s
Carbazole _A	<100	-	880	-	375	-	<100	µg/kg	100	A-T-052s
Butylbenzyl phthalate _A	<100	-	<100	-	<100	-	<100	µg/kg	100	A-T-052s
Bis(2-ethylhexyl)phthalate _A	<500	-	<500	-	<500	-	<500	µg/kg	500	A-T-052s
Bis(2-chloroethoxy)methane _A	<100	-	<100	-	<100	-	<100	µg/kg	100	A-T-052s
Bis(2-chloroethyl)ether _A	<100	-	<100	-	<100	-	<100	µg/kg	100	A-T-052s
4-Nitrophenol _A	<100	-	<100	-	<100	-	<100	µg/kg	100	A-T-052s
3+4-Methylphenol _A	<100	-	<100	-	<100	-	<100	µg/kg	100	A-T-052s
4-Chloro-3-methylphenol _A	<100	-	<100	-	<100	-	<100	µg/kg	100	A-T-052s
2-Nitrophenol _A	<100	-	<100	-	<100	-	<100	µg/kg	100	A-T-052s
2-Methylphenol _A	<100	-	<100	-	<100	-	<100	µg/kg	100	A-T-052s
2-Chlorophenol _A	<100	-	<100	-	<100	-	<100	µg/kg	100	A-T-052s
2,6-Dinitrotoluene _A	<100	-	<100	-	<100	-	<100	µg/kg	100	A-T-052s
2,4-Dinitrotoluene _A	<100	-	<100	-	<100	-	<100	µg/kg	100	A-T-052s
2,4-Dimethylphenol _A	<100	-	<100	-	<100	-	<100	µg/kg	100	A-T-052s
2,4-Dichlorophenol _A	<100	-	<100	-	<100	-	<100	µg/kg	100	A-T-052s
2,4,6-Trichlorophenol _A	<100	-	<100	-	<100	-	<100	µg/kg	100	A-T-052s
2,4,5-Trichlorophenol _A	<100	-	<100	-	<100	-	<100	µg/kg	100	A-T-052s
2-Chloronaphthalene _A	<100	-	<100	-	<100	-	<100	µg/kg	100	A-T-052s
2-Methylnaphthalene _A	<100	-	1480	-	111	-	<100	µg/kg	100	A-T-052s
Bis(2-chloroisopropyl)ether _A	<100	-	<100	-	<100	-	<100	µg/kg	100	A-T-052s
Phenol _A	<100	-	<100	-	<100	-	<100	µg/kg	100	A-T-052s
Pentachlorophenol (SVOC) _A	<100	-	<100	-	<100	-	<100	µg/kg	100	A-T-052s
n-Nitroso-n-dipropylamine _A	<100	-	<100	-	<100	-	<100	µg/kg	100	A-T-052s
n-Diethylphthalate _A	<500	-	<500	-	<500	-	<500	µg/kg	500	A-T-052s
n-Dibutylphthalate _A	<100	-	<100	-	<100	-	<100	µg/kg	100	A-T-052s
Nitrobenzene _A	<100	-	<100	-	<100	-	<100	µg/kg	100	A-T-052s
Isophorone _A	<100	-	<100	-	<100	-	<100	µg/kg	100	A-T-052s
Hexachloroethane _A	<100	-	<100	-	<100	-	<100	µg/kg	100	A-T-052s

Envirolab Job Number: 19/05585

Client Project Name: Not specified

Client Project Ref: MAN.260.001

Lab Sample ID	19/05585/4	19/05585/6	19/05585/8	19/05585/14	19/05585/15	19/05585/16	19/05585/17	Units	Limit of Detection	Method ref
Client Sample No	2									
Client Sample ID	BH03	BH03	BH06	BH06	BH01	BH01	BH02			
Depth to Top	0.50	2.00	0.50	5.10	0.50	1.00	0.20			
Depth To Bottom										
Date Sampled	06-Jun-19	06-Jun-19	06-Jun-19	07-Jun-19	05-Jun-19	04-Jun-19	04-Jun-19			
Sample Type	Soil - ES	Soil	Soil	Soil	Soil	Soil	Soil			
Sample Matrix Code	4A	4A	6AE	4AE	4AE	4A	4AE			
Hexachlorocyclopentadiene _A	<100	-	<100	-	<100	-	<100	µg/kg	100	A-T-052s
Perylene _A	<100	-	918	-	2010	-	153	µg/kg	100	A-T-052s

Envirolab Job Number: 19/05585

Client Project Name: Not specified

Client Project Ref: MAN.260.001

Lab Sample ID	19/05585/4	19/05585/6	19/05585/8	19/05585/14	19/05585/15	19/05585/16	19/05585/17	Units	Limit of Detection	Method ref
Client Sample No	2									
Client Sample ID	BH03	BH03	BH06	BH06	BH01	BH01	BH02			
Depth to Top	0.50	2.00	0.50	5.10	0.50	1.00	0.20			
Depth To Bottom										
Date Sampled	06-Jun-19	06-Jun-19	06-Jun-19	07-Jun-19	05-Jun-19	04-Jun-19	04-Jun-19			
Sample Type	Soil - ES	Soil	Soil	Soil	Soil	Soil	Soil			
Sample Matrix Code	4A	4A	6AE	4AE	4AE	4A	4AE			
VOC										
Dichlorodifluoromethane _A	<1	-	<1	-	<1	-	<1	µg/kg	1	A-T-006s
Chloromethane _A	<10	-	<10	-	<10	-	<10	µg/kg	10	A-T-006s
Vinyl Chloride (Chloroethene) _A [#]	<1	-	<1	-	<1	-	<1	µg/kg	1	A-T-006s
Bromomethane _A [#]	<1	-	<1	-	<1	-	<1	µg/kg	1	A-T-006s
Chloroethane _A [#]	<1	-	<1	-	<1	-	<1	µg/kg	1	A-T-006s
Trichlorofluoromethane _A [#]	<1	-	<1	-	<1	-	<1	µg/kg	1	A-T-006s
1,1-Dichloroethene _A [#]	<1	-	<1	-	<1	-	<1	µg/kg	1	A-T-006s
Carbon Disulphide _A [#]	<1	-	<1	-	<1	-	<1	µg/kg	1	A-T-006s
Dichloromethane _A	<5	-	<5	-	<5	-	<5	µg/kg	5	A-T-006s
trans 1,2-Dichloroethene _A [#]	<1	-	<1	-	<1	-	<1	µg/kg	1	A-T-006s
1,1-Dichloroethane _A [#]	<1	-	<1	-	<1	-	<1	µg/kg	1	A-T-006s
cis 1,2-Dichloroethene _A [#]	<1	-	<1	-	<1	-	<1	µg/kg	1	A-T-006s
2,2-Dichloropropane _A [#]	<1	-	<1	-	<1	-	<1	µg/kg	1	A-T-006s
Bromochloromethane _A [#]	<5	-	<5	-	<5	-	<5	µg/kg	5	A-T-006s
Chloroform _A [#]	<1	-	<1	-	<1	-	<1	µg/kg	1	A-T-006s
1,1,1-Trichloroethane _A [#]	<1	-	<1	-	<1	-	<1	µg/kg	1	A-T-006s
1,1-Dichloropropene _A [#]	<1	-	<1	-	<1	-	<1	µg/kg	1	A-T-006s
Carbon Tetrachloride _A [#]	<1	-	<1	-	<1	-	<1	µg/kg	1	A-T-006s
1,2-Dichloroethane _A [#]	<2	-	<2	-	<2	-	<2	µg/kg	2	A-T-006s
Benzene _A [#]	<1	-	<1	-	<1	-	<1	µg/kg	1	A-T-006s
Trichloroethene _A [#]	<1	-	<1	-	<1	-	<1	µg/kg	1	A-T-006s
1,2-Dichloropropane _A [#]	<1	-	<1	-	<1	-	<1	µg/kg	1	A-T-006s
Dibromomethane _A [#]	<1	-	<1	-	<1	-	<1	µg/kg	1	A-T-006s
Bromodichloromethane _A [#]	<10	-	<10	-	<10	-	<10	µg/kg	10	A-T-006s
cis 1,3-Dichloropropene _A [#]	<1	-	<1	-	<1	-	<1	µg/kg	1	A-T-006s
Toluene _A [#]	<1	-	1	-	<1	-	<1	µg/kg	1	A-T-006s
trans 1,3-Dichloropropene _A [#]	<1	-	<1	-	<1	-	<1	µg/kg	1	A-T-006s
1,1,2-Trichloroethane _A [#]	<1	-	<1	-	<1	-	<1	µg/kg	1	A-T-006s
1,3-Dichloropropane _A [#]	<1	-	<1	-	<1	-	<1	µg/kg	1	A-T-006s
Tetrachloroethene _A [#]	<1	-	<1	-	<1	-	<1	µg/kg	1	A-T-006s
Dibromochloromethane _A [#]	<3	-	<3	-	<3	-	<3	µg/kg	3	A-T-006s
1,2-Dibromoethane _A [#]	<1	-	<1	-	<1	-	<1	µg/kg	1	A-T-006s

Envirolab Job Number: 19/05585

Client Project Name: Not specified

Client Project Ref: MAN.260.001

Lab Sample ID	19/05585/4	19/05585/6	19/05585/8	19/05585/14	19/05585/15	19/05585/16	19/05585/17	Units	Limit of Detection	Method ref
Client Sample No	2									
Client Sample ID	BH03	BH03	BH06	BH06	BH01	BH01	BH02			
Depth to Top	0.50	2.00	0.50	5.10	0.50	1.00	0.20			
Depth To Bottom										
Date Sampled	06-Jun-19	06-Jun-19	06-Jun-19	07-Jun-19	05-Jun-19	04-Jun-19	04-Jun-19			
Sample Type	Soil - ES	Soil	Soil	Soil	Soil	Soil	Soil			
Sample Matrix Code	4A	4A	6AE	4AE	4AE	4A	4AE			
Chlorobenzene _A [#]	<1	-	<1	-	<1	-	<1	µg/kg	1	A-T-006s
1,1,1,2-Tetrachloroethane _A	<1	-	<1	-	<1	-	<1	µg/kg	1	A-T-006s
Ethylbenzene _A [#]	<1	-	<1	-	<1	-	<1	µg/kg	1	A-T-006s
m & p Xylene _A [#]	<1	-	2	-	<1	-	<1	µg/kg	1	A-T-006s
o-Xylene _A [#]	<1	-	<1	-	<1	-	<1	µg/kg	1	A-T-006s
Styrene _A [#]	<1	-	<1	-	<1	-	<1	µg/kg	1	A-T-006s
Bromoform _A [#]	<1	-	<1	-	<1	-	<1	µg/kg	1	A-T-006s
Isopropylbenzene _A [#]	<1	-	<1	-	<1	-	<1	µg/kg	1	A-T-006s
1,1,2,2-Tetrachloroethane _A	<1	-	<1	-	<1	-	<1	µg/kg	1	A-T-006s
1,2,3-Trichloropropane _A [#]	<1	-	<1	-	<1	-	<1	µg/kg	1	A-T-006s
Bromobenzene _A [#]	<1	-	<1	-	<1	-	<1	µg/kg	1	A-T-006s
n-Propylbenzene _A [#]	<1	-	<1	-	<1	-	<1	µg/kg	1	A-T-006s
2-Chlorotoluene _A [#]	<1	-	<1	-	<1	-	<1	µg/kg	1	A-T-006s
1,3,5-Trimethylbenzene _A [#]	<1	-	2	-	<1	-	<1	µg/kg	1	A-T-006s
4-Chlorotoluene _A [#]	<1	-	<1	-	<1	-	<1	µg/kg	1	A-T-006s
tert-Butylbenzene _A [#]	<2	-	<2	-	<2	-	<2	µg/kg	2	A-T-006s
1,2,4-Trimethylbenzene _A [#]	<1	-	3	-	<1	-	<1	µg/kg	1	A-T-006s
sec-Butylbenzene _A [#]	<1	-	<1	-	<1	-	<1	µg/kg	1	A-T-006s
4-Isopropyltoluene _A [#]	<1	-	<1	-	<1	-	<1	µg/kg	1	A-T-006s
1,3-Dichlorobenzene _A	<1	-	<1	-	<1	-	<1	µg/kg	1	A-T-006s
1,4-Dichlorobenzene _A [#]	<1	-	<1	-	<1	-	<1	µg/kg	1	A-T-006s
n-Butylbenzene _A [#]	<1	-	<1	-	<1	-	<1	µg/kg	1	A-T-006s
1,2-Dichlorobenzene _A [#]	<1	-	<1	-	<1	-	<1	µg/kg	1	A-T-006s
1,2-Dibromo-3-chloropropane (DCBP) _A	<2	-	<2	-	<2	-	<2	µg/kg	2	A-T-006s
1,2,4-Trichlorobenzene _A	<3	-	<3	-	<3	-	<3	µg/kg	3	A-T-006s
Hexachlorobutadiene _A [#]	<1	-	<1	-	<1	-	<1	µg/kg	1	A-T-006s
1,2,3-Trichlorobenzene _A	<3	-	<3	-	<3	-	<3	µg/kg	3	A-T-006s

Envirolab Job Number: 19/05585

Client Project Name: Not specified

Client Project Ref: MAN.260.001

Lab Sample ID	19/05585/4	19/05585/6	19/05585/8	19/05585/14	19/05585/15	19/05585/16	19/05585/17	Units	Limit of Detection	Method ref
Client Sample No	2									
Client Sample ID	BH03	BH03	BH06	BH06	BH01	BH01	BH02			
Depth to Top	0.50	2.00	0.50	5.10	0.50	1.00	0.20			
Depth To Bottom										
Date Sampled	06-Jun-19	06-Jun-19	06-Jun-19	07-Jun-19	05-Jun-19	04-Jun-19	04-Jun-19			
Sample Type	Soil - ES	Soil	Soil	Soil	Soil	Soil	Soil			
Sample Matrix Code	4A	4A	6AE	4AE	4AE	4A	4AE			
TPH CWG										
Ali >C5-C6 _A [#]	-	-	<0.01	-	<0.01	-	<0.01	mg/kg	0.01	A-T-022s
Ali >C6-C8 _A [#]	-	-	<0.01	-	<0.01	-	<0.01	mg/kg	0.01	A-T-022s
Ali >C8-C10 _A	-	-	<1	-	<1	-	<1	mg/kg	1	A-T-055s
Ali >C10-C12 _A ^{M#}	-	-	3	-	2	-	<1	mg/kg	1	A-T-055s
Ali >C12-C16 _A ^{M#}	-	-	15	-	9	-	<1	mg/kg	1	A-T-055s
Ali >C16-C21 _A ^{M#}	-	-	18	-	11	-	3	mg/kg	1	A-T-055s
Ali >C21-C35 _A	-	-	116	-	124	-	40	mg/kg	1	A-T-055s
Total Aliphatics _A	-	-	152	-	146	-	44	mg/kg	1	A-T-055s
Aro >C5-C7 _A [#]	-	-	<0.01	-	<0.01	-	<0.01	mg/kg	0.01	A-T-022s
Aro >C7-C8 _A [#]	-	-	<0.01	-	<0.01	-	<0.01	mg/kg	0.01	A-T-022s
Aro >C8-C10 _A	-	-	3	-	2	-	2	mg/kg	1	A-T-055s
Aro >C10-C12 _A ^{M#}	-	-	21	-	3	-	3	mg/kg	1	A-T-055s
Aro >C12-C16 _A	-	-	78	-	20	-	6	mg/kg	1	A-T-055s
Aro >C16-C21 _A ^{M#}	-	-	186	-	79	-	16	mg/kg	1	A-T-055s
Aro >C21-C35 _A ^{M#}	-	-	530	-	426	-	72	mg/kg	1	A-T-055s
Total Aromatics _A	-	-	818	-	530	-	99	mg/kg	1	A-T-055s
TPH (Ali & Aro >C5-C35) _A	-	-	970	-	676	-	143	mg/kg	1	A-T-055s
BTEX - Benzene _A [#]	-	-	<0.01	-	<0.01	-	<0.01	mg/kg	0.01	A-T-022s
BTEX - Toluene _A [#]	-	-	<0.01	-	<0.01	-	<0.01	mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene _A [#]	-	-	<0.01	-	<0.01	-	<0.01	mg/kg	0.01	A-T-022s
BTEX - m & p Xylene _A [#]	-	-	<0.01	-	<0.01	-	<0.01	mg/kg	0.01	A-T-022s
BTEX - o Xylene _A [#]	-	-	<0.01	-	<0.01	-	<0.01	mg/kg	0.01	A-T-022s
MTBE _A [#]	-	-	<0.01	-	<0.01	-	<0.01	mg/kg	0.01	A-T-022s

Envirolab Job Number: 19/05585

Client Project Name: Not specified

Client Project Ref: MAN.260.001

Lab Sample ID	19/05585/18							Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	BH02									
Depth to Top	8.20									
Depth To Bottom										
Date Sampled	04-Jun-19									
Sample Type	Soil									
Sample Matrix Code	4A									
% Stones >10mm _A	22.8							% w/w	0.1	A-T-044
pH _D ^{M#}	8.49							pH	0.01	A-T-031s
Sulphate (water sol 2:1) _D ^{M#}	0.02							g/l	0.01	A-T-026s
Cyanide (total) _A ^{M#}	<1							mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC _A	<0.2							mg/kg	0.2	A-T-050s
Sulphide _A	<5							mg/kg	5	A-T-S2-s
Arsenic _D ^{M#}	<1							mg/kg	1	A-T-024s
Boron (water soluble) _D ^{M#}	<1.0							mg/kg	1	A-T-027s
Cadmium _D ^{M#}	<0.5							mg/kg	0.5	A-T-024s
Copper _D ^{M#}	3							mg/kg	1	A-T-024s
Chromium _D ^{M#}	5							mg/kg	1	A-T-024s
Chromium (hexavalent) _D	<1							mg/kg	1	A-T-040s
Chromium (trivalent)	5							mg/kg	1	Calc
Lead _D ^{M#}	5							mg/kg	1	A-T-024s
Mercury _D	<0.17							mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	7							mg/kg	1	A-T-024s
Selenium _D ^{M#}	<1							mg/kg	1	A-T-024s
Zinc _D ^{M#}	11							mg/kg	5	A-T-024s
EPH Total (>C10-C40) _A [#]	14							mg/kg	10	A-T-007s

Envirolab Job Number: 19/05585

Client Project Name: Not specified

Client Project Ref: MAN.260.001

Lab Sample ID	19/05585/18							Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	BH02									
Depth to Top	8.20									
Depth To Bottom										
Date Sampled	04-Jun-19									
Sample Type	Soil									
Sample Matrix Code	4A									
PAH-16MS										
Acenaphthene _A ^{M#}	<0.01							mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	<0.01							mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	<0.02							mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	<0.04							mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	<0.04							mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	<0.05							mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	<0.05							mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	<0.07							mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	<0.06							mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	<0.04							mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	<0.08							mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	<0.01							mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	<0.03							mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	<0.03							mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	<0.03							mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	<0.07							mg/kg	0.07	A-T-019s
Total PAH-16MS _A ^{M#}	<0.08							mg/kg	0.01	A-T-019s

REPORT NOTES

General

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

The results reported herein relate only to the material supplied to the laboratory.

The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.

Analytical results reflect the quality of the sample at the time of analysis only.

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

If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.

A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

Soil chemical analysis:

All results are reported as dry weight (<40°C).

For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.

For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts

All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.

Stones etc. are not removed from the sample prior to analysis.

Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample.

Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,

E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.

US indicates Unsuitable Sample for analysis.

NDP indicates No Determination Possible.

NAD indicates No Asbestos Detected.

N/A indicates Not Applicable.

Superscript # indicates method accredited to ISO 17025.

Superscript "M" indicates method accredited to MCERTS.

Subscript "A" indicates analysis performed on the sample as received.

Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve

Please contact us if you need any further information.

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: Enzygo Ltd (Manchester) , First Floor, 3 Hardman Square, Manchester, M3 3EB **Project No:** 19/05585
Date Received: 11/06/2019 (am)
Cool Box Temperatures (°C): 6.7 - 14.8
Project:
Clients Project No: MAN.260.001

Lab Sample ID	19/05585/15	19/05585/16	19/05585/17	19/05585/18
Client Sample No				
Client Sample ID/Depth	BH01 0.50m	BH01 1.00m	BH02 0.20m	BH02 8.20m
Date Sampled	05/06/19	04/06/19	04/06/19	04/06/19
Deviation Code				
F	✓	✓	✓	✓

Key

F Maximum holding time exceeded between sampling date and analysis for analytes listed below

HOLDING TIME EXCEEDANCES

Lab Sample ID	19/05585/15	19/05585/16	19/05585/17	19/05585/18
Client Sample No				
Client Sample ID/Depth	BH01 0.50m	BH01 1.00m	BH02 0.20m	BH02 8.20m
Date Sampled	05/06/19	04/06/19	04/06/19	04/06/19
Sulphide	✓	✓	✓	✓

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 19/05398
Issue Number: 1
Date: 21 June, 2019

Client: Enzygo Ltd (Manchester)
First Floor,
3 Hardman Square,
Manchester,
M3 3EB

Project Manager: Nick Brook
Project Name: Not specified
Project Ref: MAN.260.001
Order No: MAN.260.001
Date Samples Received: 29/05/19
Date Instructions Received: 05/06/19
Date Analysis Completed: 21/06/19

Prepared by:



Melanie Marshall
Laboratory Coordinator

Approved by:



Georgia King
Admin & Client Services Supervisor



Envirolab Job Number: 19/05398

Client Project Name: Not specified

Client Project Ref: MAN.260.001

Lab Sample ID	19/05398/2	19/05398/4	19/05398/6	19/05398/9	19/05398/10	19/05398/12	19/05398/16	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	BH05	BH05	WS01	WS01	WS02	WS02	WS03			
Depth to Top	0.50	2.00	0.50	2.20	0.20	1.00	1.00			
Depth To Bottom										
Date Sampled	30-May-19	31-May-19	30-May-19	30-May-19	30-May-19	30-May-19	30-May-19			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Sample Matrix Code	4A	4A	4AB	4A	4AB	4A	4AB			
% Stones >10mm _A	28.7	32.6	24.1	27.3	35.7	11.5	40.3	% w/w	0.1	A-T-044
pH _D ^{M#}	7.91	8.03	8.81	7.67	9.24	8.11	8.22	pH	0.01	A-T-031s
Sulphate (water sol 2:1) _D ^{M#}	<0.01	0.01	0.15	0.04	0.08	0.02	0.01	g/l	0.01	A-T-026s
Cyanide (total) _A ^{M#}	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC _A	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	0.2	A-T-050s
Sulphide _A	<5	<5	<5	<5	<5	<5	<5	mg/kg	5	A-T-S2-s
Arsenic _D ^{M#}	4	1	4	2	1	2	4	mg/kg	1	A-T-024s
Boron (water soluble) _D ^{M#}	<1.0	<1.0	1.4	<1.0	<1.0	<1.0	<1.0	mg/kg	1	A-T-027s
Cadmium _D ^{M#}	<0.5	<0.5	0.5	<0.5	0.6	<0.5	<0.5	mg/kg	0.5	A-T-024s
Copper _D ^{M#}	6	6	34	5	17	10	13	mg/kg	1	A-T-024s
Chromium _D ^{M#}	7	7	17	7	9	14	11	mg/kg	1	A-T-024s
Chromium (hexavalent) _D	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-040s
Chromium (trivalent)	7	7	17	7	9	14	11	mg/kg	1	Calc
Lead _D ^{M#}	5	4	101	4	35	9	33	mg/kg	1	A-T-024s
Mercury _D	<0.17	<0.17	<0.17	<0.17	0.28	<0.17	<0.17	mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	7	7	12	9	7	11	11	mg/kg	1	A-T-024s
Selenium _D ^{M#}	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-024s
Zinc _D ^{M#}	21	19	133	21	71	28	30	mg/kg	5	A-T-024s
EPH Total (>C10-C40) _A [#]	18	11	959	17	1320	248	185	mg/kg	10	A-T-007s
Leachate Prep BS EN 12457-2 (10:1) _A	-	*	-	-	-	-	*			A-T-001
pH (leachable) _A [#]	-	7.44	-	-	-	-	7.51	pH	0.01	A-T-031w
Hardness Total (leachable) _A	-	35	-	-	-	-	16	mg/l Ca CO3	2	A-T-049w
Ammoniacal nitrogen as N (leachable) _A	-	<0.02	-	-	-	-	<0.02	mg/l	0.02	A-T-033w
Sulphate (leachable) _A [#]	-	<1.00	-	-	-	-	<1.00	mg/l	1	A-T-026w
Sulphide (leachable) _A	-	<0.1	-	-	-	-	<0.1	mg/l	0.1	A-T-S2-w
DOC (leachable) _A [#]	-	2.9	-	-	-	-	3.8	mg/l	0.2	A-T-032w
Arsenic (leachable) _A [#]	-	<1	-	-	-	-	<1	µg/l	1	A-T-025w
Boron (leachable) _A [#]	-	14	-	-	-	-	11	µg/l	10	A-T-025w
Cadmium (leachable) _A [#]	-	<1	-	-	-	-	<1	µg/l	1	A-T-025w
Copper (leachable) _A [#]	-	1	-	-	-	-	3	µg/l	1	A-T-025w
Chromium (leachable) _A [#]	-	<1	-	-	-	-	<1	µg/l	1	A-T-025w
Chromium (hexavalent) (leachable) _A	-	<0.05	-	-	-	-	<0.05	mg/l	0.05	A-T-040w
Chromium (trivalent) (leachable)	-	<0.05	-	-	-	-	<0.05	mg/l	0.05	Calc

Envirolab Job Number: 19/05398

Client Project Name: Not specified

Client Project Ref: MAN.260.001

Lab Sample ID	19/05398/2	19/05398/4	19/05398/6	19/05398/9	19/05398/10	19/05398/12	19/05398/16	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	BH05	BH05	WS01	WS01	WS02	WS02	WS03			
Depth to Top	0.50	2.00	0.50	2.20	0.20	1.00	1.00			
Depth To Bottom										
Date Sampled	30-May-19	31-May-19	30-May-19	30-May-19	30-May-19	30-May-19	30-May-19			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Sample Matrix Code	4A	4A	4AB	4A	4AB	4A	4AB			
Lead (leachable) _A [#]	-	<1	-	-	-	-	2	µg/l	1	A-T-025w
Mercury (leachable) _A [#]	-	<0.1	-	-	-	-	<0.1	µg/l	0.1	A-T-025w
Nickel (leachable) _A [#]	-	<1	-	-	-	-	2	µg/l	1	A-T-025w
Selenium (leachable) _A [#]	-	<1	-	-	-	-	<1	µg/l	1	A-T-025w
Zinc (leachable) _A [#]	-	4	-	-	-	-	5	µg/l	1	A-T-025w
EPH Total (>C10-C40) (leachable) _A	-	<80	-	-	-	-	<80	µg/l	80	A-T-007w

Envirolab Job Number: 19/05398

Client Project Name: Not specified

Client Project Ref: MAN.260.001

Lab Sample ID	19/05398/2	19/05398/4	19/05398/6	19/05398/9	19/05398/10	19/05398/12	19/05398/16	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	BH05	BH05	WS01	WS01	WS02	WS02	WS03			
Depth to Top	0.50	2.00	0.50	2.20	0.20	1.00	1.00			
Depth To Bottom										
Date Sampled	30-May-19	31-May-19	30-May-19	30-May-19	30-May-19	30-May-19	30-May-19			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Sample Matrix Code	4A	4A	4AB	4A	4AB	4A	4AB			
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil [#]	NAD	-	NAD	-	NAD	-	NAD			A-T-045
Asbestos ACM - Suitable for Water Absorption Test?	N/A	-	N/A	-	N/A	-	N/A			

Envirolab Job Number: 19/05398

Client Project Name: Not specified

Client Project Ref: MAN.260.001

Lab Sample ID	19/05398/2	19/05398/4	19/05398/6	19/05398/9	19/05398/10	19/05398/12	19/05398/16	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	BH05	BH05	WS01	WS01	WS02	WS02	WS03			
Depth to Top	0.50	2.00	0.50	2.20	0.20	1.00	1.00			
Depth To Bottom										
Date Sampled	30-May-19	31-May-19	30-May-19	30-May-19	30-May-19	30-May-19	30-May-19			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Sample Matrix Code	4A	4A	4AB	4A	4AB	4A	4AB			
PAH-16MS										
Acenaphthene _A ^{M#}	<0.01	<0.01	0.10	<0.01	0.26	0.01	0.19	mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	<0.01	<0.01	0.02	<0.01	0.08	<0.01	0.03	mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	<0.02	<0.02	0.18	<0.02	0.71	0.03	0.26	mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	<0.04	<0.04	0.70	<0.04	1.76	0.06	1.25	mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	<0.04	<0.04	0.80	<0.04	1.69	0.04	1.25	mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	<0.05	<0.05	0.92	<0.05	1.89	<0.05	1.48	mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	<0.05	<0.05	0.46	<0.05	0.82	<0.05	0.61	mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	<0.07	<0.07	0.33	<0.07	0.70	<0.07	0.52	mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	<0.06	<0.06	0.76	<0.06	1.85	0.06	1.31	mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	<0.04	<0.04	0.10	<0.04	0.22	<0.04	0.16	mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	<0.08	<0.08	1.56	<0.08	4.10	0.15	2.70	mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	<0.01	<0.01	0.07	<0.01	0.42	0.02	0.13	mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	<0.03	<0.03	0.50	<0.03	0.90	<0.03	0.67	mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	<0.03	<0.03	<0.03	<0.03	0.24	<0.03	<0.03	mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	0.04	<0.03	0.77	<0.03	3.22	0.16	1.23	mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	<0.07	<0.07	1.44	<0.07	4.16	0.13	2.66	mg/kg	0.07	A-T-019s
Total PAH-16MS _A ^{M#}	<0.08	<0.08	8.71	<0.08	23	0.66	14.4	mg/kg	0.01	A-T-019s

Envirolab Job Number: 19/05398

Client Project Name: Not specified

Client Project Ref: MAN.260.001

Lab Sample ID	19/05398/2	19/05398/4	19/05398/6	19/05398/9	19/05398/10	19/05398/12	19/05398/16	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	BH05	BH05	WS01	WS01	WS02	WS02	WS03			
Depth to Top	0.50	2.00	0.50	2.20	0.20	1.00	1.00			
Depth To Bottom										
Date Sampled	30-May-19	31-May-19	30-May-19	30-May-19	30-May-19	30-May-19	30-May-19			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Sample Matrix Code	4A	4A	4AB	4A	4AB	4A	4AB			
PAH 16MS (leachable)										
Acenaphthene (leachable) _A	-	0.20	-	-	-	-	0.60	µg/l	0.02	A-T-019w
Acenaphthylene (leachable) _A	-	<0.02	-	-	-	-	0.04	µg/l	0.02	A-T-019w
Anthracene (leachable) _A	-	0.06	-	-	-	-	0.23	µg/l	0.02	A-T-019w
Benzo(a)anthracene (leachable) _A	-	<0.02	-	-	-	-	<0.02	µg/l	0.02	A-T-019w
Benzo(a)pyrene (leachable) _A	-	<0.02	-	-	-	-	<0.02	µg/l	0.02	A-T-019w
Benzo(b)fluoranthene (leachable) _A	-	<0.02	-	-	-	-	<0.02	µg/l	0.02	A-T-019w
Benzo(ghi)perylene (leachable) _A	-	<0.02	-	-	-	-	<0.02	µg/l	0.02	A-T-019w
Benzo(k)fluoranthene (leachable) _A	-	<0.02	-	-	-	-	<0.02	µg/l	0.02	A-T-019w
Chrysene (leachable) _A	-	<0.02	-	-	-	-	<0.02	µg/l	0.02	A-T-019w
Dibenzo(ah)anthracene (leachable) _A	-	<0.02	-	-	-	-	<0.02	µg/l	0.02	A-T-019w
Fluoranthene (leachable) _A	-	0.06	-	-	-	-	0.22	µg/l	0.02	A-T-019w
Fluorene (leachable) _A	-	0.12	-	-	-	-	0.43	µg/l	0.02	A-T-019w
Indeno(123-cd)pyrene (leachable) _A	-	<0.02	-	-	-	-	<0.02	µg/l	0.02	A-T-019w
Naphthalene (leachable) _A	-	0.29	-	-	-	-	0.23	µg/l	0.02	A-T-019w
Phenanthrene (leachable) _A	-	0.23	-	-	-	-	0.94	µg/l	0.02	A-T-019w
Pyrene (leachable) _A	-	0.04	-	-	-	-	0.20	µg/l	0.02	A-T-019w
Total PAH 16MS (leachable) _A	-	1.00	-	-	-	-	2.89	µg/l	0.02	A-T-019w

Envirolab Job Number: 19/05398

Client Project Name: Not specified

Client Project Ref: MAN.260.001

Lab Sample ID	19/05398/2	19/05398/4	19/05398/6	19/05398/9	19/05398/10	19/05398/12	19/05398/16	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	BH05	BH05	WS01	WS01	WS02	WS02	WS03			
Depth to Top	0.50	2.00	0.50	2.20	0.20	1.00	1.00			
Depth To Bottom										
Date Sampled	30-May-19	31-May-19	30-May-19	30-May-19	30-May-19	30-May-19	30-May-19			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Sample Matrix Code	4A	4A	4AB	4A	4AB	4A	4AB			
TPH CWG										
Ali >C5-C6 _A [#]	<0.01	-	<0.01	-	<0.01	-	<0.01	mg/kg	0.01	A-T-022s
Ali >C6-C8 _A [#]	<0.01	-	<0.01	-	<0.01	-	<0.01	mg/kg	0.01	A-T-022s
Ali >C8-C10 _A	<1	-	<1	-	<5	-	<1	mg/kg	1	A-T-055s
Ali >C10-C12 _A ^{M#}	<1	-	<1	-	<5	-	<1	mg/kg	1	A-T-055s
Ali >C12-C16 _A ^{M#}	<1	-	<1	-	<5	-	1	mg/kg	1	A-T-055s
Ali >C16-C21 _A ^{M#}	<1	-	<1	-	<5	-	3	mg/kg	1	A-T-055s
Ali >C21-C35 _A	2	-	19	-	349	-	23	mg/kg	1	A-T-055s
Total Aliphatics _A	2	-	19	-	354	-	27	mg/kg	1	A-T-055s
Aro >C5-C7 _A [#]	<0.01	-	<0.01	-	<0.01	-	<0.01	mg/kg	0.01	A-T-022s
Aro >C7-C8 _A [#]	<0.01	-	<0.01	-	<0.01	-	<0.01	mg/kg	0.01	A-T-022s
Aro >C8-C10 _A	<1	-	<1	-	6	-	<1	mg/kg	1	A-T-055s
Aro >C10-C12 _A ^{M#}	<1	-	<1	-	<5	-	<1	mg/kg	1	A-T-055s
Aro >C12-C16 _A	<1	-	<1	-	8	-	16	mg/kg	1	A-T-055s
Aro >C16-C21 _A ^{M#}	<1	-	<1	-	21	-	125	mg/kg	1	A-T-055s
Aro >C21-C35 _A ^{M#}	5	-	10	-	290	-	260	mg/kg	1	A-T-055s
Total Aromatics _A	5	-	14	-	324	-	401	mg/kg	1	A-T-055s
TPH (Ali & Aro >C5-C35) _A	8	-	33	-	678	-	428	mg/kg	1	A-T-055s
BTEX - Benzene _A [#]	<0.01	-	<0.01	-	<0.01	-	<0.01	mg/kg	0.01	A-T-022s
BTEX - Toluene _A [#]	<0.01	-	<0.01	-	<0.01	-	<0.01	mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene _A [#]	<0.01	-	<0.01	-	<0.01	-	<0.01	mg/kg	0.01	A-T-022s
BTEX - m & p Xylene _A [#]	<0.01	-	<0.01	-	<0.01	-	<0.01	mg/kg	0.01	A-T-022s
BTEX - o Xylene _A [#]	<0.01	-	<0.01	-	<0.01	-	<0.01	mg/kg	0.01	A-T-022s
MTBE _A [#]	<0.01	-	<0.01	-	<0.01	-	<0.01	mg/kg	0.01	A-T-022s

Envirolab Job Number: 19/05398

Client Project Name: Not specified

Client Project Ref: MAN.260.001

Lab Sample ID	19/05398/17	19/05398/18	19/05398/22	19/05398/23	19/05398/27	19/05398/29	19/05398/33	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS03	WS04	WS04A	WS05	WS05	BH04	BH04			
Depth to Top	1.50	0.20	3.00	0.25	2.70	1.00	4.70			
Depth To Bottom										
Date Sampled	30-May-19	30-May-19	30-May-19	30-May-19	30-May-19	28-May-19	28-May-19			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Sample Matrix Code	4E	4AB	4A	4AB	4AB	4AB	4			
% Stones >10mm _A	<0.1	47.1	10.8	<0.1	21.8	20.5	24.1	% w/w	0.1	A-T-044
pH _D ^{M#}	8.33	10.63	8.77	8.89	8.34	8.42	8.27	pH	0.01	A-T-031s
Sulphate (water sol 2:1) _D ^{M#}	<0.01	0.04	<0.01	0.02	0.02	0.08	0.07	g/l	0.01	A-T-026s
Cyanide (total) _A ^{M#}	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC _A	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	0.2	A-T-050s
Sulphide _A	<5	<5	<5	<5	<5	<5	<5	mg/kg	5	A-T-S2-s
Arsenic _D ^{M#}	<1	2	2	1	2	3	<1	mg/kg	1	A-T-024s
Boron (water soluble) _D ^{M#}	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	mg/kg	1	A-T-027s
Cadmium _D ^{M#}	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.8	mg/kg	0.5	A-T-024s
Copper _D ^{M#}	2	14	4	12	5	17	5	mg/kg	1	A-T-024s
Chromium _D ^{M#}	3	12	5	9	5	10	8	mg/kg	1	A-T-024s
Chromium (hexavalent) _D	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-040s
Chromium (trivalent)	3	12	5	9	5	10	8	mg/kg	1	Calc
Lead _D ^{M#}	6	44	4	26	5	53	5	mg/kg	1	A-T-024s
Mercury _D	<0.17	0.20	<0.17	0.33	<0.17	0.27	<0.17	mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	2	10	6	9	7	11	13	mg/kg	1	A-T-024s
Selenium _D ^{M#}	<1	<1	<1	<1	<1	<1	2	mg/kg	1	A-T-024s
Zinc _D ^{M#}	9	42	18	36	20	56	22	mg/kg	5	A-T-024s
EPH Total (>C10-C40) _A [#]	<10	946	143	14	<10	192	4370	mg/kg	10	A-T-007s
Leachate Prep BS EN 12457-2 (10:1) _A	-	-	-	-	-	-	*			A-T-001
pH (leachable) _A [#]	-	-	-	-	-	-	7.40	pH	0.01	A-T-031w
Hardness Total (leachable) _A	-	-	-	-	-	-	22	mg/l Ca CO3	2	A-T-049w
Ammoniacal nitrogen as N (leachable) _A	-	-	-	-	-	-	<0.02	mg/l	0.02	A-T-033w
Sulphate (leachable) _A [#]	-	-	-	-	-	-	25.73	mg/l	1	A-T-026w
Sulphide (leachable) _A	-	-	-	-	-	-	<0.1	mg/l	0.1	A-T-S2-w
DOC (leachable) _A [#]	-	-	-	-	-	-	1.3	mg/l	0.2	A-T-032w
Arsenic (leachable) _A [#]	-	-	-	-	-	-	<1	µg/l	1	A-T-025w
Boron (leachable) _A [#]	-	-	-	-	-	-	41	µg/l	10	A-T-025w
Cadmium (leachable) _A [#]	-	-	-	-	-	-	<1	µg/l	1	A-T-025w
Copper (leachable) _A [#]	-	-	-	-	-	-	<1	µg/l	1	A-T-025w
Chromium (leachable) _A [#]	-	-	-	-	-	-	<1	µg/l	1	A-T-025w
Chromium (hexavalent) (leachable) _A	-	-	-	-	-	-	<0.05	mg/l	0.05	A-T-040w
Chromium (trivalent) (leachable)	-	-	-	-	-	-	<0.05	mg/l	0.05	Calc

Envirolab Job Number: 19/05398

Client Project Name: Not specified

Client Project Ref: MAN.260.001

Lab Sample ID	19/05398/17	19/05398/18	19/05398/22	19/05398/23	19/05398/27	19/05398/29	19/05398/33	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS03	WS04	WS04A	WS05	WS05	BH04	BH04			
Depth to Top	1.50	0.20	3.00	0.25	2.70	1.00	4.70			
Depth To Bottom										
Date Sampled	30-May-19	30-May-19	30-May-19	30-May-19	30-May-19	28-May-19	28-May-19			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Sample Matrix Code	4E	4AB	4A	4AB	4AB	4AB	4			
Lead (leachable) _A [#]	-	-	-	-	-	-	<1	µg/l	1	A-T-025w
Mercury (leachable) _A [#]	-	-	-	-	-	-	<0.1	µg/l	0.1	A-T-025w
Nickel (leachable) _A [#]	-	-	-	-	-	-	<1	µg/l	1	A-T-025w
Selenium (leachable) _A [#]	-	-	-	-	-	-	<1	µg/l	1	A-T-025w
Zinc (leachable) _A [#]	-	-	-	-	-	-	2	µg/l	1	A-T-025w
EPH Total (>C10-C40) (leachable) _A	-	-	-	-	-	-	<80	µg/l	80	A-T-007w

Envirolab Job Number: 19/05398

Client Project Name: Not specified

Client Project Ref: MAN.260.001

Lab Sample ID	19/05398/17	19/05398/18	19/05398/22	19/05398/23	19/05398/27	19/05398/29	19/05398/33	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS03	WS04	WS04A	WS05	WS05	BH04	BH04			
Depth to Top	1.50	0.20	3.00	0.25	2.70	1.00	4.70			
Depth To Bottom										
Date Sampled	30-May-19	30-May-19	30-May-19	30-May-19	30-May-19	28-May-19	28-May-19			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Sample Matrix Code	4E	4AB	4A	4AB	4AB	4AB	4			
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil [#]	-	NAD	-	Amosite	-	NAD	NAD			A-T-045
Asbestos Matrix (microscope) ^o	-	-	-	Loose Fibres	-	-	-			A-T-045
Asbestos ACM - Suitable for Water Absorption Test?	-	N/A	-	N/A	-	N/A	N/A			
Asbestos in Soil Quantification % (Hand Picking & Weighing)										
Asbestos in soil % composition (hand picking and weighing) ^o	-	-	-	<0.001	-	-	-	% w/w	0.001	A-T-054

Envirolab Job Number: 19/05398

Client Project Name: Not specified

Client Project Ref: MAN.260.001

Lab Sample ID	19/05398/17	19/05398/18	19/05398/22	19/05398/23	19/05398/27	19/05398/29	19/05398/33	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS03	WS04	WS04A	WS05	WS05	BH04	BH04			
Depth to Top	1.50	0.20	3.00	0.25	2.70	1.00	4.70			
Depth To Bottom										
Date Sampled	30-May-19	30-May-19	30-May-19	30-May-19	30-May-19	28-May-19	28-May-19			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Sample Matrix Code	4E	4AB	4A	4AB	4AB	4AB	4			
PAH-16MS										
Acenaphthene _A ^{M#}	<0.01	0.15	<0.01	0.36	<0.01	0.12	<0.01	mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	<0.01	0.05	<0.01	0.05	<0.01	0.02	<0.01	mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	<0.02	0.40	<0.02	0.67	<0.02	0.18	<0.02	mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	<0.04	2.41	<0.04	2.92	<0.04	0.54	<0.04	mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	<0.04	2.79	<0.04	3.50	<0.04	0.51	<0.04	mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	<0.05	3.22	<0.05	4.09	<0.05	0.63	<0.05	mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	<0.05	1.66	<0.05	2.18	<0.05	0.27	<0.05	mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	<0.07	1.23	<0.07	1.49	<0.07	0.21	<0.07	mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	<0.06	2.45	<0.06	3.01	<0.06	0.59	<0.06	mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	<0.04	0.41	<0.04	0.48	<0.04	0.07	<0.04	mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	<0.08	4.66	<0.08	6.07	<0.08	1.35	<0.08	mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	<0.01	0.10	<0.01	0.30	<0.01	0.10	<0.01	mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	<0.03	1.83	<0.03	2.40	<0.03	0.29	<0.03	mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	<0.03	<0.03	<0.03	0.21	<0.03	0.10	<0.03	mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	<0.03	1.35	<0.03	2.67	<0.03	1.05	<0.03	mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	<0.07	4.61	<0.07	5.72	<0.07	1.23	<0.07	mg/kg	0.07	A-T-019s
Total PAH-16MS _A ^{M#}	<0.08	27.3	<0.08	36.1	<0.08	7.26	<0.08	mg/kg	0.01	A-T-019s

Envirolab Job Number: 19/05398

Client Project Name: Not specified

Client Project Ref: MAN.260.001

Lab Sample ID	19/05398/17	19/05398/18	19/05398/22	19/05398/23	19/05398/27	19/05398/29	19/05398/33	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS03	WS04	WS04A	WS05	WS05	BH04	BH04			
Depth to Top	1.50	0.20	3.00	0.25	2.70	1.00	4.70			
Depth To Bottom										
Date Sampled	30-May-19	30-May-19	30-May-19	30-May-19	30-May-19	28-May-19	28-May-19			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Sample Matrix Code	4E	4AB	4A	4AB	4AB	4AB	4			
PAH 16MS (leachable)										
Acenaphthene (leachable) _A	-	-	-	-	-	-	<0.02	µg/l	0.02	A-T-019w
Acenaphthylene (leachable) _A	-	-	-	-	-	-	<0.02	µg/l	0.02	A-T-019w
Anthracene (leachable) _A	-	-	-	-	-	-	<0.02	µg/l	0.02	A-T-019w
Benzo(a)anthracene (leachable) _A	-	-	-	-	-	-	<0.02	µg/l	0.02	A-T-019w
Benzo(a)pyrene (leachable) _A	-	-	-	-	-	-	<0.02	µg/l	0.02	A-T-019w
Benzo(b)fluoranthene (leachable) _A	-	-	-	-	-	-	<0.02	µg/l	0.02	A-T-019w
Benzo(ghi)perylene (leachable) _A	-	-	-	-	-	-	<0.02	µg/l	0.02	A-T-019w
Benzo(k)fluoranthene (leachable) _A	-	-	-	-	-	-	<0.02	µg/l	0.02	A-T-019w
Chrysene (leachable) _A	-	-	-	-	-	-	<0.02	µg/l	0.02	A-T-019w
Dibenzo(ah)anthracene (leachable) _A	-	-	-	-	-	-	<0.02	µg/l	0.02	A-T-019w
Fluoranthene (leachable) _A	-	-	-	-	-	-	<0.02	µg/l	0.02	A-T-019w
Fluorene (leachable) _A	-	-	-	-	-	-	<0.02	µg/l	0.02	A-T-019w
Indeno(123-cd)pyrene (leachable) _A	-	-	-	-	-	-	<0.02	µg/l	0.02	A-T-019w
Naphthalene (leachable) _A	-	-	-	-	-	-	<0.02	µg/l	0.02	A-T-019w
Phenanthrene (leachable) _A	-	-	-	-	-	-	<0.02	µg/l	0.02	A-T-019w
Pyrene (leachable) _A	-	-	-	-	-	-	<0.02	µg/l	0.02	A-T-019w
Total PAH 16MS (leachable) _A	-	-	-	-	-	-	<0.02	µg/l	0.02	A-T-019w

Envirolab Job Number: 19/05398

Client Project Name: Not specified

Client Project Ref: MAN.260.001

Lab Sample ID	19/05398/17	19/05398/18	19/05398/22	19/05398/23	19/05398/27	19/05398/29	19/05398/33	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS03	WS04	WS04A	WS05	WS05	BH04	BH04			
Depth to Top	1.50	0.20	3.00	0.25	2.70	1.00	4.70			
Depth To Bottom										
Date Sampled	30-May-19	30-May-19	30-May-19	30-May-19	30-May-19	28-May-19	28-May-19			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Sample Matrix Code	4E	4AB	4A	4AB	4AB	4AB	4			
TPH CWG										
Ali >C5-C6 _A [#]	-	<0.01	-	<0.01	-	-	<0.01	mg/kg	0.01	A-T-022s
Ali >C6-C8 _A [#]	-	<0.01	-	<0.01	-	-	<0.01	mg/kg	0.01	A-T-022s
Ali >C8-C10 _A	-	<1	-	<5	-	-	<1	mg/kg	1	A-T-055s
Ali >C10-C12 _A ^{M#}	-	<1	-	<5	-	-	<1	mg/kg	1	A-T-055s
Ali >C12-C16 _A ^{M#}	-	2	-	<5	-	-	<1	mg/kg	1	A-T-055s
Ali >C16-C21 _A ^{M#}	-	6	-	10	-	-	<1	mg/kg	1	A-T-055s
Ali >C21-C35 _A	-	143	-	756	-	-	2	mg/kg	1	A-T-055s
Total Aliphatics _A	-	152	-	766	-	-	2	mg/kg	1	A-T-055s
Aro >C5-C7 _A [#]	-	<0.01	-	<0.01	-	-	<0.01	mg/kg	0.01	A-T-022s
Aro >C7-C8 _A [#]	-	<0.01	-	<0.01	-	-	<0.01	mg/kg	0.01	A-T-022s
Aro >C8-C10 _A	-	<1	-	<5	-	-	<1	mg/kg	1	A-T-055s
Aro >C10-C12 _A ^{M#}	-	<1	-	<5	-	-	<1	mg/kg	1	A-T-055s
Aro >C12-C16 _A	-	5	-	12	-	-	<1	mg/kg	1	A-T-055s
Aro >C16-C21 _A ^{M#}	-	35	-	47	-	-	<1	mg/kg	1	A-T-055s
Aro >C21-C35 _A ^{M#}	-	312	-	674	-	-	4	mg/kg	1	A-T-055s
Total Aromatics _A	-	353	-	732	-	-	4	mg/kg	1	A-T-055s
TPH (Ali & Aro >C5-C35) _A	-	505	-	1500	-	-	6	mg/kg	1	A-T-055s
BTEX - Benzene _A [#]	-	<0.01	-	<0.01	-	-	<0.01	mg/kg	0.01	A-T-022s
BTEX - Toluene _A [#]	-	<0.01	-	<0.01	-	-	<0.01	mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene _A [#]	-	<0.01	-	<0.01	-	-	<0.01	mg/kg	0.01	A-T-022s
BTEX - m & p Xylene _A [#]	-	<0.01	-	<0.01	-	-	<0.01	mg/kg	0.01	A-T-022s
BTEX - o Xylene _A [#]	-	<0.01	-	<0.01	-	-	<0.01	mg/kg	0.01	A-T-022s
MTBE _A [#]	-	<0.01	-	<0.01	-	-	<0.01	mg/kg	0.01	A-T-022s

Envirolab Job Number: 19/05398

Client Project Name: Not specified

Client Project Ref: MAN.260.001

Lab Sample ID	19/05398/34	19/05398/36						Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS06	WS06								
Depth to Top	0.20	1.00								
Depth To Bottom										
Date Sampled	30-May-19	30-May-19								
Sample Type	Soil	Soil								
Sample Matrix Code	4A	4AB								
% Stones >10mm _A	15.2	22.3						% w/w	0.1	A-T-044
pH _D ^{M#}	8.40	8.23						pH	0.01	A-T-031s
Sulphate (water sol 2:1) _D ^{M#}	0.04	0.02						g/l	0.01	A-T-026s
Cyanide (total) _A ^{M#}	<1	<1						mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC _A	<0.2	<0.2						mg/kg	0.2	A-T-050s
Sulphide _A	<5	<5						mg/kg	5	A-T-S2-s
Arsenic _D ^{M#}	4	5						mg/kg	1	A-T-024s
Boron (water soluble) _D ^{M#}	<1.0	<1.0						mg/kg	1	A-T-027s
Cadmium _D ^{M#}	0.7	<0.5						mg/kg	0.5	A-T-024s
Copper _D ^{M#}	28	27						mg/kg	1	A-T-024s
Chromium _D ^{M#}	20	9						mg/kg	1	A-T-024s
Chromium (hexavalent) _D	<1	<1						mg/kg	1	A-T-040s
Chromium (trivalent)	20	9						mg/kg	1	Calc
Lead _D ^{M#}	124	186						mg/kg	1	A-T-024s
Mercury _D	<0.17	<0.17						mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	19	12						mg/kg	1	A-T-024s
Selenium _D ^{M#}	<1	<1						mg/kg	1	A-T-024s
Zinc _D ^{M#}	92	38						mg/kg	5	A-T-024s
EPH Total (>C10-C40) _A [#]	2210	30						mg/kg	10	A-T-007s
Leachate Prep BS EN 12457-2 (10:1) _A	-	*								A-T-001
pH (leachable) _A [#]	-	7.42						pH	0.01	A-T-031w
Hardness Total (leachable) _A	-	40						mg/l Ca CO3	2	A-T-049w
Ammoniacal nitrogen as N (leachable) _A	-	<0.02						mg/l	0.02	A-T-033w
Sulphate (leachable) _A [#]	-	4.01						mg/l	1	A-T-026w
Sulphide (leachable) _A	-	<0.1						mg/l	0.1	A-T-S2-w
DOC (leachable) _A [#]	-	1.5						mg/l	0.2	A-T-032w
Arsenic (leachable) _A [#]	-	2						µg/l	1	A-T-025w
Boron (leachable) _A [#]	-	18						µg/l	10	A-T-025w
Cadmium (leachable) _A [#]	-	<1						µg/l	1	A-T-025w
Copper (leachable) _A [#]	-	3						µg/l	1	A-T-025w
Chromium (leachable) _A [#]	-	2						µg/l	1	A-T-025w
Chromium (hexavalent) (leachable) _A	-	<0.05						mg/l	0.05	A-T-040w
Chromium (trivalent) (leachable)	-	<0.05						mg/l	0.05	Calc

Envirolab Job Number: 19/05398

Client Project Name: Not specified

Client Project Ref: MAN.260.001

Lab Sample ID	19/05398/34	19/05398/36						Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS06	WS06								
Depth to Top	0.20	1.00								
Depth To Bottom										
Date Sampled	30-May-19	30-May-19								
Sample Type	Soil	Soil								
Sample Matrix Code	4A	4AB								
Lead (leachable) _A [#]	-	3						µg/l	1	A-T-025w
Mercury (leachable) _A [#]	-	<0.1						µg/l	0.1	A-T-025w
Nickel (leachable) _A [#]	-	<1						µg/l	1	A-T-025w
Selenium (leachable) _A [#]	-	<1						µg/l	1	A-T-025w
Zinc (leachable) _A [#]	-	2						µg/l	1	A-T-025w
EPH Total (>C10-C40) (leachable) _A	-	112						µg/l	80	A-T-007w

Envirolab Job Number: 19/05398

Client Project Name: Not specified

Client Project Ref: MAN.260.001

Lab Sample ID	19/05398/34	19/05398/36						Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS06	WS06								
Depth to Top	0.20	1.00								
Depth To Bottom										
Date Sampled	30-May-19	30-May-19								
Sample Type	Soil	Soil								
Sample Matrix Code	4A	4AB								
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil [#]	NAD	NAD								A-T-045
Asbestos ACM - Suitable for Water Absorption Test?	N/A	N/A								

Envirolab Job Number: 19/05398

Client Project Name: Not specified

Client Project Ref: MAN.260.001

Lab Sample ID	19/05398/34	19/05398/36						Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS06	WS06								
Depth to Top	0.20	1.00								
Depth To Bottom										
Date Sampled	30-May-19	30-May-19								
Sample Type	Soil	Soil								
Sample Matrix Code	4A	4AB								
PAH-16MS										
Acenaphthene _A ^{M#}	0.22	0.03						mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	0.03	<0.01						mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	0.56	0.05						mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	1.81	0.18						mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	1.76	0.19						mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	2.24	0.24						mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	1.02	0.10						mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	0.78	0.09						mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	1.84	0.20						mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	0.23	<0.04						mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	4.65	0.38						mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	0.15	0.03						mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	1.09	0.11						mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	0.05	<0.03						mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	2.04	0.26						mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	4.00	0.34						mg/kg	0.07	A-T-019s
Total PAH-16MS _A ^{M#}	22.5	2.20						mg/kg	0.01	A-T-019s

Envirolab Job Number: 19/05398

Client Project Name: Not specified

Client Project Ref: MAN.260.001

Lab Sample ID	19/05398/34	19/05398/36						Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS06	WS06								
Depth to Top	0.20	1.00								
Depth To Bottom										
Date Sampled	30-May-19	30-May-19								
Sample Type	Soil	Soil								
Sample Matrix Code	4A	4AB								
PAH 16MS (leachable)										
Acenaphthene (leachable) _A	-	0.38						µg/l	0.02	A-T-019w
Acenaphthylene (leachable) _A	-	0.03						µg/l	0.02	A-T-019w
Anthracene (leachable) _A	-	0.11						µg/l	0.02	A-T-019w
Benzo(a)anthracene (leachable) _A	-	<0.02						µg/l	0.02	A-T-019w
Benzo(a)pyrene (leachable) _A	-	<0.02						µg/l	0.02	A-T-019w
Benzo(b)fluoranthene (leachable) _A	-	<0.02						µg/l	0.02	A-T-019w
Benzo(ghi)perylene (leachable) _A	-	<0.02						µg/l	0.02	A-T-019w
Benzo(k)fluoranthene (leachable) _A	-	<0.02						µg/l	0.02	A-T-019w
Chrysene (leachable) _A	-	<0.02						µg/l	0.02	A-T-019w
Dibenzo(ah)anthracene (leachable) _A	-	<0.02						µg/l	0.02	A-T-019w
Fluoranthene (leachable) _A	-	0.15						µg/l	0.02	A-T-019w
Fluorene (leachable) _A	-	0.27						µg/l	0.02	A-T-019w
Indeno(123-cd)pyrene (leachable) _A	-	<0.02						µg/l	0.02	A-T-019w
Naphthalene (leachable) _A	-	0.24						µg/l	0.02	A-T-019w
Phenanthrene (leachable) _A	-	0.60						µg/l	0.02	A-T-019w
Pyrene (leachable) _A	-	0.11						µg/l	0.02	A-T-019w
Total PAH 16MS (leachable) _A	-	1.89						µg/l	0.02	A-T-019w

Envirolab Job Number: 19/05398

Client Project Name: Not specified

Client Project Ref: MAN.260.001

Lab Sample ID	19/05398/34	19/05398/36						Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS06	WS06								
Depth to Top	0.20	1.00								
Depth To Bottom										
Date Sampled	30-May-19	30-May-19								
Sample Type	Soil	Soil								
Sample Matrix Code	4A	4AB								
TPH CWG										
Ali >C5-C6 _A [#]	0.03	-						mg/kg	0.01	A-T-022s
Ali >C6-C8 _A [#]	<0.01	-						mg/kg	0.01	A-T-022s
Ali >C8-C10 _A	<5	-						mg/kg	1	A-T-055s
Ali >C10-C12 _A ^{M#}	<5	-						mg/kg	1	A-T-055s
Ali >C12-C16 _A ^{M#}	<5	-						mg/kg	1	A-T-055s
Ali >C16-C21 _A ^{M#}	9	-						mg/kg	1	A-T-055s
Ali >C21-C35 _A	401	-						mg/kg	1	A-T-055s
Total Aliphatics _A	416	-						mg/kg	1	A-T-055s
Aro >C5-C7 _A [#]	<0.01	-						mg/kg	0.01	A-T-022s
Aro >C7-C8 _A [#]	<0.01	-						mg/kg	0.01	A-T-022s
Aro >C8-C10 _A	<5	-						mg/kg	1	A-T-055s
Aro >C10-C12 _A ^{M#}	<5	-						mg/kg	1	A-T-055s
Aro >C12-C16 _A	17	-						mg/kg	1	A-T-055s
Aro >C16-C21 _A ^{M#}	68	-						mg/kg	1	A-T-055s
Aro >C21-C35 _A ^{M#}	451	-						mg/kg	1	A-T-055s
Total Aromatics _A	536	-						mg/kg	1	A-T-055s
TPH (Ali & Aro >C5-C35) _A	952	-						mg/kg	1	A-T-055s
BTEX - Benzene _A [#]	<0.01	-						mg/kg	0.01	A-T-022s
BTEX - Toluene _A [#]	<0.01	-						mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene _A [#]	<0.01	-						mg/kg	0.01	A-T-022s
BTEX - m & p Xylene _A [#]	<0.01	-						mg/kg	0.01	A-T-022s
BTEX - o Xylene _A [#]	<0.01	-						mg/kg	0.01	A-T-022s
MTBE _A [#]	<0.01	-						mg/kg	0.01	A-T-022s

REPORT NOTES

General

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

The results reported herein relate only to the material supplied to the laboratory.

The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.

Analytical results reflect the quality of the sample at the time of analysis only.

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

If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.

A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

Soil chemical analysis:

All results are reported as dry weight (<40°C).

For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.

For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts

All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.

Stones etc. are not removed from the sample prior to analysis.

Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample.

Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,

E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.

US indicates Unsuitable Sample for analysis.

NDP indicates No Determination Possible.

NAD indicates No Asbestos Detected.

N/A indicates Not Applicable.

Superscript # indicates method accredited to ISO 17025.

Superscript "M" indicates method accredited to MCERTS.

Subscript "A" indicates analysis performed on the sample as received.

Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve

Please contact us if you need any further information.

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: Enzygo Ltd (Manchester) , First Floor, 3 Hardman Square, Manchester, M3 3EB **Project No:** 19/05398
Project: **Date Received:** 05/06/2019 (am)
Clients Project No: MAN.260.001 **Cool Box Temperatures (°C):** 23.6, 22.9, 23.4, 14.6

Lab Sample ID	19/05398/29	19/05398/33
Client Sample No		
Client Sample ID/Depth	BH04 1.00m	BH04 4.70m
Date Sampled	28/05/19	28/05/19
Deviation Code		
F	✓	✓

Key

F Maximum holding time exceeded between sampling date and analysis for analytes listed below

HOLDING TIME EXCEEDANCES

Lab Sample ID	19/05398/29	19/05398/33
Client Sample No		
Client Sample ID/Depth	BH04 1.00m	BH04 4.70m
Date Sampled	28/05/19	28/05/19
Sulphide	✓	✓

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 19/06662

Issue Number: 1

Date: 22 July, 2019

Client: Enzygo Ltd (Manchester)
First Floor,
3 Hardman Square,
Manchester,
M3 3EB

Project Manager: Nigel Ramsumair

Project Name: Deansgate

Project Ref: MAN.260.001

Order No: P002703

Date Samples Received: 11/07/19

Date Instructions Received: 12/07/19

Date Analysis Completed: 22/07/19

Prepared by:



Melanie Marshall
Laboratory Coordinator

Approved by:



Richard Wong
Client Manager

Envirolab Job Number: 19/06662

Client Project Name: Deansgate

Client Project Ref: MAN.260.001

Lab Sample ID	19/06662/1	19/06662/3	19/06662/4					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	BH2	BH4	BH5							
Depth to Top										
Depth To Bottom										
Date Sampled	09-Jul-19	09-Jul-19	09-Jul-19							
Sample Type	Water - EW	Water - EW	Water - EW							
Sample Matrix Code	N/A	N/A	N/A							
pH (w) _A [#]	8.01	7.73	8.02					pH	0.01	A-T-031w
Hardness Total _A [#]	713	583	636					mg/l Ca CO ₃	2	A-T-049w
Ammoniacal nitrogen as N (w) _A [#]	1.34	0.27	0.10					mg/l	0.02	A-T-033w
Sulphate (w) _A [#]	481	235	334					mg/l	1	A-T-026w
Sulphide (w) _A	<0.1	<0.1	<0.1					mg/l	0.1	A-T-S2-w
Arsenic (dissolved) _A [#]	<1	2	<1					µg/l	1	A-T-025w
Boron (dissolved) _A [#]	85	148	127					µg/l	10	A-T-025w
Cadmium (dissolved) _A [#]	<0.2	<0.2	<0.2					µg/l	0.2	A-T-025w
Copper (dissolved) _A [#]	2	3	5					µg/l	1	A-T-025w
Chromium (dissolved) _A [#]	<1	<1	<1					µg/l	1	A-T-025w
Chromium (hexavalent) (w) _A [#]	<0.01	<0.01	<0.01					mg/l	0.01	A-T-040w
Chromium (trivalent) (w)	<0.01	<0.01	<0.01					mg/l	0.01	Calc
Lead (dissolved) _A [#]	<1	<1	<1					µg/l	1	A-T-025w
Mercury (dissolved) _A [#]	<0.1	<0.1	<0.1					µg/l	0.1	A-T-025w
Nickel (dissolved) _A [#]	2	8	10					µg/l	1	A-T-025w
Selenium (dissolved) _A [#]	<1	<1	<1					µg/l	1	A-T-025w
Zinc (dissolved) _A [#]	3	3	3					µg/l	1	A-T-025w
EPH Total (>C10-C40) (w) _A	<40	<40	<40					µg/l	40	A-T-007w

Envirolab Job Number: 19/06662

Client Project Name: Deansgate

Client Project Ref: MAN.260.001

Lab Sample ID	19/06662/1	19/06662/3	19/06662/4					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	BH2	BH4	BH5							
Depth to Top										
Depth To Bottom										
Date Sampled	09-Jul-19	09-Jul-19	09-Jul-19							
Sample Type	Water - EW	Water - EW	Water - EW							
Sample Matrix Code	N/A	N/A	N/A							
PAH 16MS (w)										
Acenaphthene (w) _A [#]	<0.01	0.06	<0.01					µg/l	0.01	A-T-019w
Acenaphthylene (w) _A [#]	<0.01	<0.01	<0.01					µg/l	0.01	A-T-019w
Anthracene (w) _A [#]	<0.01	0.02	<0.01					µg/l	0.01	A-T-019w
Benzo(a)anthracene (w) _A [#]	<0.01	0.02	<0.01					µg/l	0.01	A-T-019w
Benzo(a)pyrene (w) _A [#]	<0.01	0.02	<0.01					µg/l	0.01	A-T-019w
Benzo(b)fluoranthene (w) _A [#]	<0.01	0.02	<0.01					µg/l	0.01	A-T-019w
Benzo(ghi)perylene (w) _A [#]	<0.01	0.02	<0.01					µg/l	0.01	A-T-019w
Benzo(k)fluoranthene (w) _A [#]	<0.01	<0.01	<0.01					µg/l	0.01	A-T-019w
Chrysene (w) _A [#]	<0.01	0.03	<0.01					µg/l	0.01	A-T-019w
Dibenzo(ah)anthracene (w) _A [#]	<0.01	<0.01	<0.01					µg/l	0.01	A-T-019w
Fluoranthene (w) _A [#]	<0.01	0.07	<0.01					µg/l	0.01	A-T-019w
Fluorene (w) _A [#]	<0.01	0.03	<0.01					µg/l	0.01	A-T-019w
Indeno(123-cd)pyrene (w) _A [#]	<0.01	0.02	<0.01					µg/l	0.01	A-T-019w
Naphthalene (w) _A [#]	<0.01	0.17	<0.01					µg/l	0.01	A-T-019w
Phenanthrene (w) _A [#]	<0.01	0.11	<0.01					µg/l	0.01	A-T-019w
Pyrene (w) _A [#]	<0.01	0.07	<0.01					µg/l	0.01	A-T-019w
Total PAH 16MS (w) _A [#]	<0.01	0.66	<0.01					µg/l	0.01	A-T-019w

REPORT NOTES

General

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

The results reported herein relate only to the material supplied to the laboratory.

The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.

Analytical results reflect the quality of the sample at the time of analysis only.

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

If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.

A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

Soil chemical analysis:

All results are reported as dry weight (<40°C).

For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.

For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts. All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.

Stones etc. are not removed from the sample prior to analysis.

Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample.

Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,

E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.

US indicates Unsuitable Sample for analysis.

NDP indicates No Determination Possible.

NAD indicates No Asbestos Detected.

N/A indicates Not Applicable.

Superscript # indicates method accredited to ISO 17025.

Superscript "M" indicates method accredited to MCERTS.

Subscript "A" indicates analysis performed on the sample as received.

Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve

Please contact us if you need any further information.

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: Enzygo Ltd (Manchester) , First Floor, 3 Hardman Square, Manchester, M3 3EB **Project No:** 19/06662
Project: Deansgate **Date Received:** 12/07/2019 (am)
Clients Project No: MAN.260.001 **Cool Box Temperatures (°C):** 20.0

Lab Sample ID	19/06662/1	19/06662/3	19/06662/4
Client Sample No			
Client Sample ID/Depth	BH2	BH4	BH5
Date Sampled	09/07/19	09/07/19	09/07/19
Deviation Code			
A7 (no HNO3)	✓	✓	✓
A8 (no NaOH)	✓	✓	✓
A9 (no H2SO4)	✓	✓	✓

Key

A7 (no HNO3) No HNO3 preserved bottle provided (dissolved metals will be deviating)
A8 (no NaOH) No NaOH preserved bottle provided (cyanides, sulphide will be deviating)
A9 (no H2SO4) No H2SO4 preserved bottle provided (phenols, ammonia, DOC, COD will be deviating)

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.



Appendix 8 – Core Photos



Enzygo GeoEnvironmental Ltd
Manchester
3 Hardman Square
Tel: 0161 413 6444

Project

Premier Inn, Deansgate

Client

Whitbread PLC

Drawing Title

Rotary Core Photos

Project No.

MAN.260.001



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