

2 & 3 Angel Square and NOMA Marketing Suite, Manchester

Report on Ground Investigation

Project No: 765325

Client: MEPC Ltd

OCTOBER 2021

STRUCTURAL SOILS LTD

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1 INTRODUCTION

This investigation was carried out by Structural Soils Ltd (SSL) on the instructions of Buro Happold (the Engineer) on behalf of MEPC Ltd (Client). The purpose of the work was to obtain geotechnical and geoenvironmental information for the proposed redevelopment of the site with a mixture of commercial and office properties, and in advance of this the erection of a temporary marketing suite.

The scope of the intrusive investigation comprised four cable percussion boreholes, with rotary follow on drilling, twelve machine excavated trial pits and five window sample holes. The report contains a description of the site and the works carried out, the exploratory hole logs, and in-situ and laboratory testing results.

The ground investigation has been carried out in accordance with the contract specification, and the general requirements of BS 5930:2015+A1:2020, BS 10175:2011+A2:2017, BS EN 1997-2 (2007), BS EN ISO 22475-1 (2006) and other relevant standards.

All information, comments and opinions given in this report are based on the ground conditions encountered during the site work, and on the results of laboratory and field tests performed during the investigation. Whilst every attempt is made to record full details of the strata encountered in the exploratory holes, techniques of hole formation and sampling will inevitably lead to disturbance, mixing or loss of material in some soils and rocks. All information given in this report is based on the ground conditions encountered during the site work, and on the results of laboratory and field tests performed during the investigation. However, there may be conditions at the site that have not been taken into account, such as unpredictable soil strata, contaminant concentrations and water conditions between or below exploratory holes.

This report was prepared by SSL for the sole and exclusive use of MEPC Ltd in response to particular instructions. Any other parties using the information contained in this report do so at their own risk and any duty of care to those parties is excluded. No liability will be accepted after a period of 6 years from the date of the report.

2 SITE DESCRIPTION

2.1 Location and Topography

The site is located in Manchester City centre, 220 m east of Manchester Victoria station, (see Site Location Map in Appendix A). The British National Grid Reference of the site is SJ 844 990.

The site is currently occupied by an unsurfaced car park on three terraces, with the ground level dropping from north east to south west. The site is bordered to the north east by Angel Street, and to the south west by Miller Street. To the north west it is bordered by Angel Square, a road accessed from Angel Street, but which does not extend all the way along the western boundary, the south western end is landscaped grounds with footpaths. To the east the site is bordered by a development referred to as Angel Gardens which has a service road forming part of the site border accessed from Miller Street.

At the time of the investigation the car park was still operational.

2.2 Geology

Information on the geology of the site was obtained from the following sources published by the British Geological Survey (BGS):

- BGS map (sheet 85, Manchester, scale 1:50,000, Bedrock and Superficial published 2011).
- The BGS digital geology map, which utilises the most up to date names for geological units (www.bgs.ac.uk/data).
- The BGS Lexicon of Named Rock Units, which provides typical descriptions for most geological units (www.bgs.ac.uk/lexicon).

The site is shown to be underlain by the following descending sequence of strata:

TABLE 1 : SUMMARY OF EXPECTED SITE GEOLOGY	
Geological Unit Name	**Description**
ANTHROPOGENIC GROUND	
Made Ground (undivided)	Artificially raised ground
SUPERFICIAL DEPOSITS	
Till (Devensian)	Clay to sandy clay, unsorted, with common pebbles, cobbles and some boulders (diamicton)
SOLID GEOLOGY	
Chester Formation (Sherwood Sandstone Group)	Sandstone, reddish brown moderately cemented

3 FIELDWORK

3.1 General

The ground investigation was carried out by SSL between 19 July and 5 August 2021. The investigation was supervised by an engineer from SSL. The scope of works and positions were selected by the Client, set out by SSL and adjusted where necessary to take account of buried or overhead services, or other restrictions. The exploratory hole locations are shown on the Exploratory Hole Location Plan presented in Appendix A.

3.2 Exploratory Holes

The exploratory holes are listed in the following table.

TABLE 2 :SCOPE OF INTRUSIVE WORKS			
Quantity	**Exploratory Hole Type**	**Maximum depth (m)**	**Hole / Test Numbers**
4	Cable Percussion Boreholes extended by Rotary Coring	31.00	BH101 to BH104
5	Window sample holes	6.45	WS101 to WS105
12	Machine Dug Trial Pits	3.50	TP101 & TP112
5*	Insitu Dynamic Cone Penetration Tests (DCP)		TP105DCP & TP109DCP

* Three tests proved unsuccessful see section 3.8.3

The exploratory hole logs are presented in Appendix B. These provide information including the equipment and methods used, samples taken, tests carried out, water observations and descriptions of the strata encountered. Explanation of the terms and abbreviations used on the logs is given in the Key to Exploratory Hole Records in Appendix B, together with other explanatory information.

Prior to the commencement of any exploratory hole all positions were checked for buried services by a specialist utility surveyor using a cable avoidance tool (CAT), signal generator ('genny'), and ground penetrating radar (GPR). Also the hole locations and the immediate vicinity were scanned by a specialist UXO (Unexploded Ordnance) officer using a magnetometer to check for buried ferrous objects that could possibly be UXO.

A down hole UXO survey was also undertaken during drilling with the magnetometer being lowered to the base of the holes at regular intervals until past the maximum probable penetration depth of air dropped ordnance

Inspection pits were hand dug at borehole and window sample locations where noted on the relevant exploratory hole logs.

On completion of the works, a survey of the exploratory hole locations was undertaken using specialist Global Positioning System (GPS) equipment. The coordinates of each

exploratory hole were measured relative to British National Grid, and the level relative to Ordnance Datum. These are shown on the exploratory hole logs contained in Appendix B.

The holes were logged by an engineer in general accordance with the recommendations of BS 5930:2015+A1:2020 (which incorporates the requirements of BS EN ISO 14688-1, 14688-2 and 14689-1. Detailed descriptions, together with relevant comments, are given on the logs.

3.3 Cable Percussion Boreholes

The boreholes were drilled using a cable tool percussion drilling rig equipped with 200mm and 150 mm diameter casing and tools. Steel casing was inserted where necessary to offer temporary support to the holes; the lead lengths (3m) of casing used was stainless steel to allow the UXO survey to be carried out ahead of the drilling.

Small and bulk disturbed soil samples were taken from the boreholes at regular intervals.

100 mm diameter undisturbed samples were recovered from suitable strata in accordance with BS EN ISO 22475-1 using a thin walled UT100 sampler.

Standard Penetration Tests (SPT) were carried out at regular intervals (see In-Situ Testing, below).

3.4 Rotary Boreholes

The four boreholes were extended by rotary drilling using a tracked rotary drilling rig. Rotary coring techniques were used. Steel casing was inserted where necessary to offer temporary support to the holes.

Rotary coring was carried out using a double tube Geobore S core barrel to produce a hole of 140mm diameter. A clear perspex liner was incorporated within the inner barrel to maximise the quality of core recovery where required, to produce a core of 102 mm diameter. Water flush was used, the flush being recirculated to minimise the volume of water used.

The recovered core was placed in sequence in wooden core boxes and transported back to SSL Castleford depot for photographing and logging. The core photographs are attached to the relevant borehole log in Appendix B.

3.5 Window Sampling

The window sample exploratory holes were drilled using a tracked rig with chain driven drop weight to drive sample tubes. Windowless steel sample tubes containing a plastic sample liner were used. The holes reduce in diameter with depth, as reported on the logs.

Small and bulk disturbed soil samples were subsampled from the window samples at regular intervals.

Standard Penetration Tests (SPT) were carried out at selected intervals in the window sample holes using the rig's integral drop weight/hammer (see In-Situ Testing, below).

TRL Dynamic Cone Penetrometer (DCP) testing was carried out in or adjacent to the pits where safe to do so.

3.6 Trial Pits

The machine dug trial pits were excavated using a wheeled mechanical excavator and were up to 3.5 m deep.

Small and bulk disturbed soil samples were taken from the trial pits at regular intervals. Hand vane tests were carried out in the cohesive strata (within the pit where safe to do so, else on excavated material).

3.7 Chemical Contamination Sampling

Samples for contamination testing were taken from the exploratory holes where indicated on the exploratory hole logs, recorded as sample types ES for soil.

All samples were placed in appropriate contamination sample containers that were supplied by the laboratory. Containers for volatiles testing of soil samples were filled to capacity. All samples were then kept in cool boxes with ice packs and were transported to the laboratories under Chain of Custody documentation, as promptly as possible to maintain sample integrity.

3.8 Backfill, Monitoring Wells and Installations

On completion 19mm groundwater monitoring standpipes were installed in three boreholes and 50 mm diameter gas/groundwater monitoring wells were installed in the four boreholes and the window sample holes, the design having been decided by the Engineer. The installation details are shown on the exploratory hole logs in Appendix B. The well details are also summarised below:

TABLE 3 : SUMMARY OF MONITORING WELL INSTALLATIONS

Location	Well Diameter (mm)	Well Depth (m bgl)	Well Response Zone (m bgl)	Type of Protective Cover	Notes
BH101	19	25.00	17.00 – 29.00	Flush	
	50	2.00	1.00 – 2.00	Flush	
BH102	19	24.00	20.00 – 28.00	Flush	
BH103	19	25.00	18.00 – 25.00	Flush	
	50	4.00	2.00 – 4.00	Flush	
BH104	19	21.1	15.00 – 21.10	Flush	
WS101	50	4	1.00 – 5.25	Flush	
WS102	50	1	0.20 – 1.00	Flush	
WS103	50	1	0.20 – 1.00	Flush	

TABLE 3 : SUMMARY OF MONITORING WELL INSTALLATIONS					
WS104	50	1	0.20 – 1.00	Flush	
WS105	50	4	1.00 – 4.00	Flush	

3.9 In-Situ Testing

3.9.1 Standard Penetration Test (SPT)

SPTs were carried out in the boreholes and window sample holes, where noted in the preceding sections, in accordance with BS EN ISO 22476-3 using hammers which have been calibrated for efficiency. The calibration certificates are included in Appendix F. Seating drives have been recorded in increments of 75 mm in accordance with recommended UK practice.

The SPT N-values are reported on the borehole logs, on which the calibration number of the hammer used is recorded. The full results are presented in tabular format on the Summary of Standard Penetration Tests in Appendix C, on which the normalised N_{60} values are also reported, which are the equivalent N-value for a hammer delivering 60% of the theoretical drop energy. Plots showing N and N_{60} values versus depth and elevation are also included Appendix C.

In rock where 50 test blows failed to achieve 300 mm of penetration, the SPT N-value equivalent to that for 300 mm of penetration has been extrapolated and reported on the exploratory hole logs using the guidance contained in CIRIA Report R143 The Standard Penetration Test (SPT) - Methods and Use (1995).

3.9.2 Hand Shear Vane

The undrained shear strength of fine soils was measured using a hand shear vane in the trial pits. The results are presented on the trial pit logs in Appendix B.

3.9.3 California Bearing Ratio (CBR)

The in-situ CBR correlation tests were conducted, where ground conditions permitted, using a TRL Dynamic Cone Penetrometer in accordance with the manufacturer's guidance. The results are contained in Appendix C. Two tests were carried out in the trial pits within the natural clay, three tests were carried out from surface of the car park and met refusal at shallow depth.

3.10 Post Fieldwork Monitoring

Monitoring the installations for ground gas (oxygen, methane, carbon dioxide, carbon monoxide and hydrogen sulphide) and groundwater levels has been carried out on six return visits following completion of the fieldwork. The results of the monitoring visits are tabulated in Appendix G with dates. On the sixth visit a gas sample was obtained from WS102 on the instructions of the Engineer. This was sent to an external laboratory, Element Materials Technology, for testing. The results are included in Appendix E.

4 LABORATORY TESTING

Samples for potential geotechnical testing were returned to one of the Company's UKAS accredited laboratories, and those for potential contamination testing were sent to a sister company Envirolab Limited, a MCERTS and UKAS accredited chemical testing laboratory. Laboratory tests were scheduled by Buro Happold.

4.1 Geotechnical Laboratory Testing

Geotechnical laboratory testing was generally carried out in accordance with the relevant part of BS1377: 1990, *Methods of Test for Soils for Civil Engineering Purposes*, or, where superseded, by the relevant part of BS EN ISO 17892:2014+ *Geotechnical investigation and testing – Laboratory Testing of Soil*.

The tests completed are:

Soil

- Moisture content
- Atterberg limits
- Particle size distribution (PSD
- Water soluble sulphate and pH

Rock

- Moisture content
- Point load
- Unconfined compressive strength (UCS)

The results are reported in tabular and/or graphical form and included as Appendix D of this report.

4.2 Contamination Laboratory Testing

The contamination testing carried out is summarised below. The results are included as Appendix E of this report.

- SSL HHB Human – Made Ground - Assessment suite
    - Comprises arsenic, cadmium, chromium (total), lead, mercury, selenium, copper, nickel, zinc, speciated polycyclic aromatic hydrocarbons (PAH), total petroleum hydrocarbons (TPHCWG (speciated)), soluble organic matter, soluble sulphate and pH
- Asbestos
- WAC testing

5 REFERENCES

5.1 BS 5930:2015+A1:2020 *Code of practice for ground investigations*

5.2 BS EN 1997-1:2004 *Eurocode 7 — Geotechnical Design Part 1 - General Rules* incorporating corrigendum Feb 2009 and Amemdment A1 2013

5.3 BS EN 1997-2:2007 Eurocode 7 — *Geotechnical design Part 2: Ground Investigation and testing*

5.4 BS 10175:2011 *Investigation of potentially contaminated sites: Code of practice*, including amendment A2 2017

5.5 British Geological Survey sheet 85, Manchester, scale 1:50,000, Bedrock and Superficial published 2011

5.6 British Geological Survey online digital geological map, www.bgs.ac.uk/data

5.7 British Geological Survey Lexicon of Named Rock Units, www.bgs.ac.uk/lexicon

5.8 BS EN ISO 14688-1:2018 Geotechnical investigation and testing – Identification and classification of soil: Part 1: Identification and description

5.9 BS EN ISO 14688-2:2018 *Geotechnical investigation and testing – Identification and classification of soil: Part 2: Principles for a classification*

5.10 BS EN ISO 14689-1:2018 *Geotechnical investigation and testing – Identification and classification of rock: Part 1: Identification and description*

5.11 BS EN ISO 22475-1:2006 *Geotechnical Investigation and Testing – Sampling methods and groundwater measurements, Part 1 Technical principals for execution*

5.12 BS EN ISO 22476-3:2005 (updated February 2007) *Geotechnical Investigation and Testing – Field Testing Part 3: Standard Penetration Test*, including Amendment A1 (2011)

5.13 CIRIA Report R143 (1995) *The Standard Penetration Test (SPT) - Methods and Use*

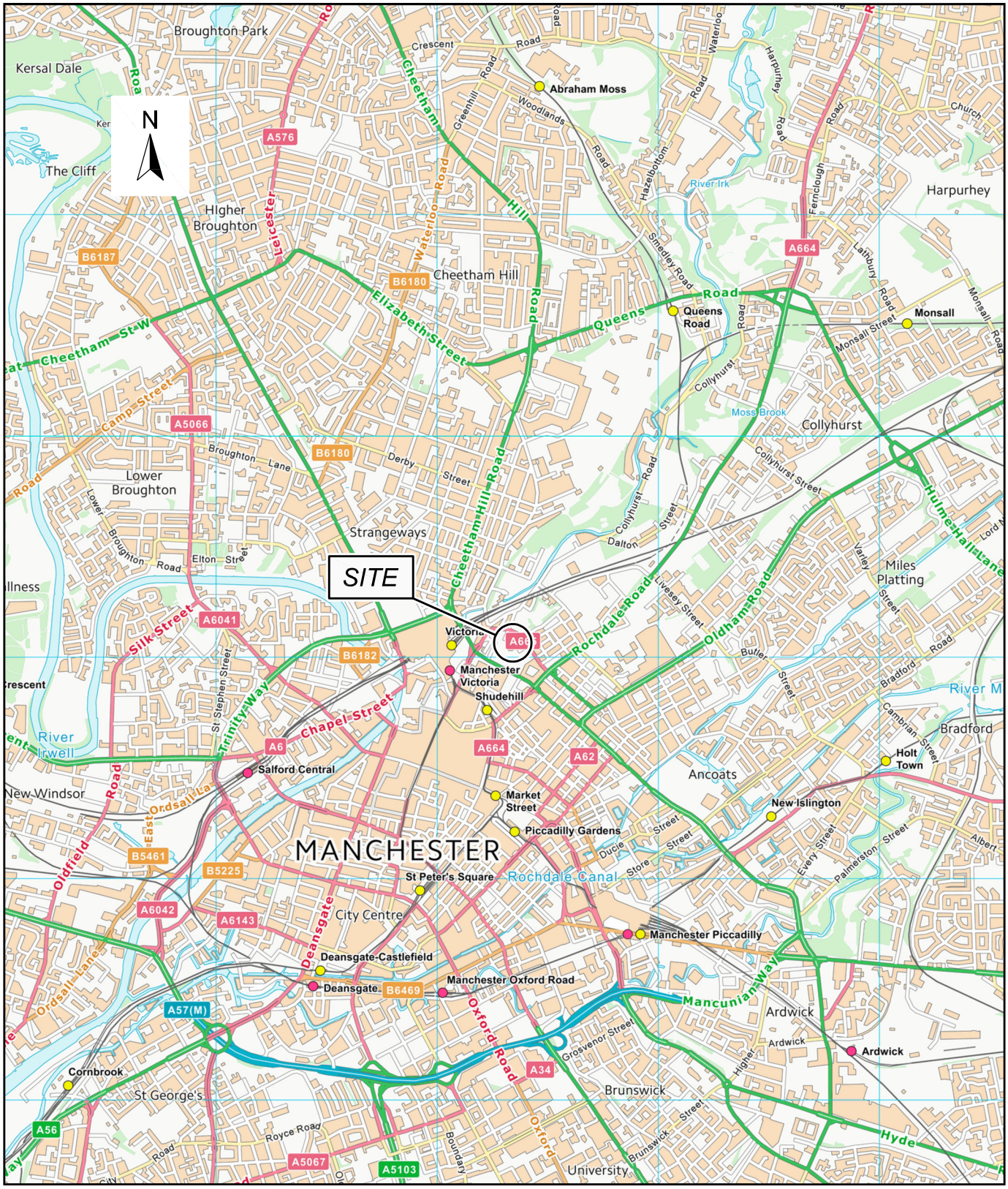
5.14 BS 1377:1990 *Method of Test for Soils for Civil Engineering Purposes*

5.15 BS EN ISO 17892:2014 *Geotechnical investigation and testing – Laboratory Testing of Soil*

APPENDIX A -
PLANS AND DRAWINGS

(i) Site Location Plan

(ii) Exploratory Hole Location Plan



Contains Ordnance Survey data © Crown copyright and database right 2013

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REV.	DATE	DESCRIPTION	BY	CHD.	APR.
00	28.09.2021	-	NP	JMC	-

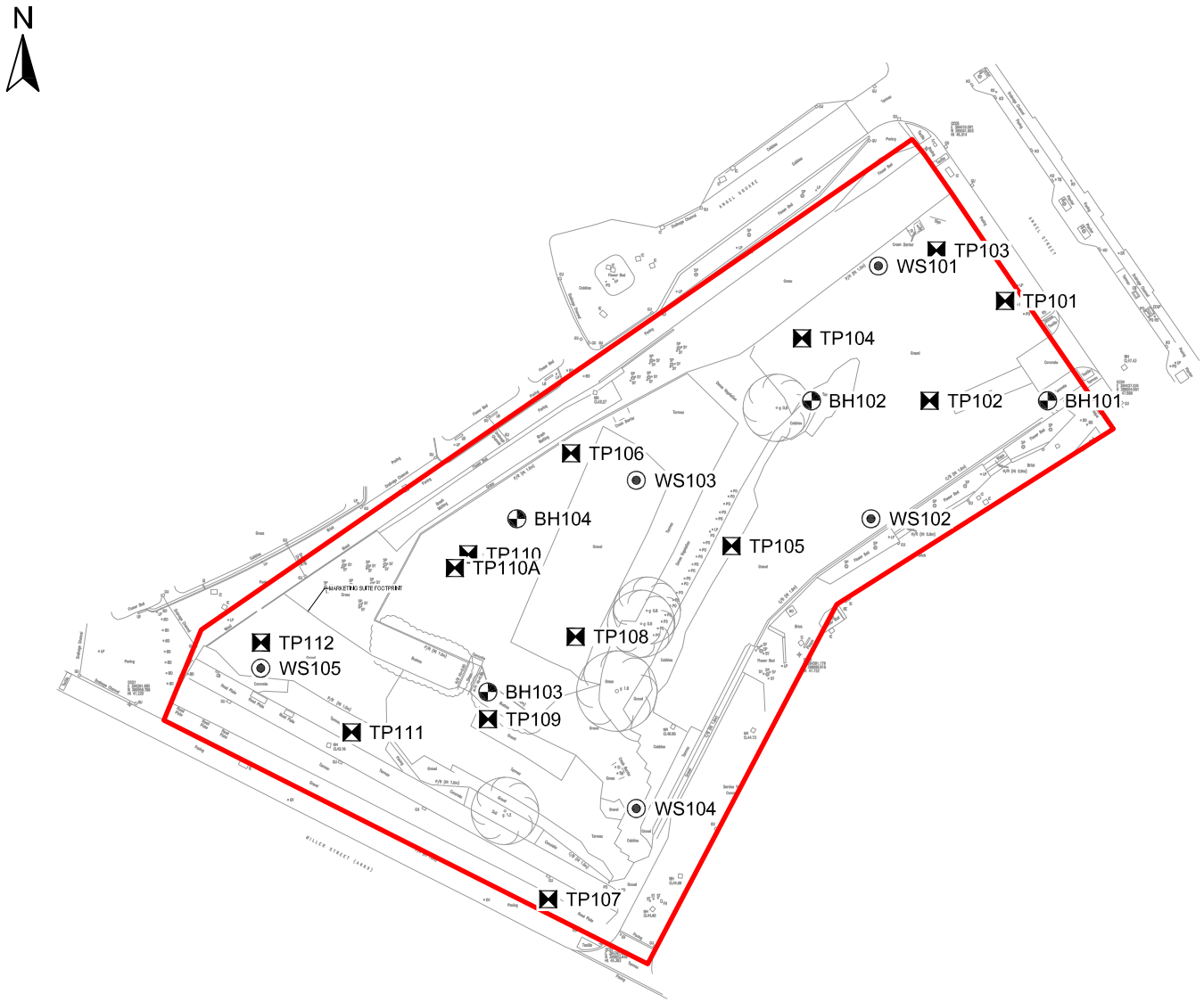
DIMENSION	SCALE	DRAWING STATUS
m	1:25,000	-

CLIENT
MEPC Ltd

PROJECT
2 & 3 Angel Square and NOMA Marketing Suite, Manchester

TITLE
SITE LOCATION MAP

JOB NO	GRID REF	SCALE BAR	ORIGIN SIZE	FIGURE
765325	SJ 844 990	0 250 500 750 1,000m	A4	1



LEGEND

- Trial Pit Location
- Borehole Location
- Window Sample Location

REV	DATE	DESCRIPTION	BY	CHD	APR
00	29.09.2021	-	NP	JMC	-

DIMENSION	SCALE	ORIGIN SIZE
m	1:1000	A4

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CLIENT

MEPC Ltd

PROJECT

2 & 3 Angel Square and
NOMA Marketing Suite, Manchester

TITLE

EXPLORATORY HOLE LOCATION PLAN

JOB NO	FIGURE
765325	2

DRAWING STATUS	REV
-	00

SCALE BAR

0 10 20 30 40 50m

APPENDIX B - EXPLORATORY HOLE RECORDS

(i) Key to Exploratory Hole Logs

(ii) Borehole Logs

(iii) Window Sample Logs

(iv) Trial Pit Logs

KEY TO EXPLORATORY HOLE LOGS - SUMMARY OF ABBREVIATIONS

SAMPLING

Sample type codes

B	=	Bulk disturbed sample.
C	=	Core sample.
D	=	Small disturbed sample.
D-NR	=	Small disturbed sample - no recovery.
DSPT	=	Small disturbed sample originating from SPT test.
ES	=	Soil sample for environmental testing.
LB	=	Large bulk disturbed sample.
UT	=	Undisturbed thin wall sample.
UT100	=	Undisturbed sample UT100.

IN-SITU TESTING

$SPT_{(c)}$	=	Standard Penetration Test using a solid 60 degree cone.
SPT	=	Standard Penetration Test using split spoon sampler. ($_{(NR)}$ indicates 'No Sample Recovery').
	=	* denotes extrapolated N value. NP denotes 'No Penetration'.
V	=	Field Vane Test. Peak value (c_u) & Residual value (c_r), given as shear strength in kPa.

ROTARY DRILLING INFORMATION

W	=	Water flush returns (%)
TCR	=	Total core recovery (%)
SCR	=	Solid core recovery (%)
RQD	=	Rock quality designations (%)
If	=	Fracture spacing (mm). Where variable the minimum - mode - maximum spacing may be quoted.

In fracture column (i) denotes discontinuity is infilled (refer to Fracture Table for details).
'NI' denotes non-intact core. 'NA' denotes not applicable.

- All lengths used to determine rock core mechanical properties taken along the centre line of the core.
- Obvious induced fractures have been ignored.
- The assessment of solid core is based on lengths that show a full diameter and not necessarily a full circumference.

AZCL = Assessed zone of core loss.

ADDITIONAL NOTES

1. All soil and rock descriptions and legends in general accordance with BS EN ISO 14688-1, 14688-2, 14689-1, and BS5930:2015.
2. Material types divided by a broken line (- - -) indicates an unclear boundary.
3. Fracture spacings (If) quoted in the Description of Strata for specific strata or specific fracture sets are also quoted in mm, e.g. (25/80/230) referring to (Min/Avg/Max).
4. The data on any sheet within the report showing the AGS icon is available in the AGS format.

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STRUCTURAL SOILS

Contract Reference: **765325**

KEY TO EXPLORATORY HOLE LOGS - SUMMARY OF GRAPHIC SYMBOLS

WATER COLUMN SYMBOLS



First water strike, second water strike etc.



Standing water level following first strike, standing water level following second strike etc.


Seepage.


Standing water level recorded at documented date.

MATERIAL GRAPHIC LEGENDS


CLAY


Clayey gravelly SAND with COBBLES


GRAVEL


GRAVEL with COBBLES


Gravelly CLAY


Gravelly SAND


MADE GROUND


Possible MADE GROUND


SAND


Sandstone


Sandy CLAY


Sandy silty CLAY


Gravelly sandy CLAY


Sandy gravelly CLAY


Gravelly sandy CLAY with COBBLES


Gravelly silty SAND

INSTRUMENTATION SYMBOLS


Backfill


Bentonite seal


Concrete


Gravel filter


Plain pipe


Slotted pipe

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
2 & 3 Angel Square	**MEPC Ltd**	**BH101**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
765325	**28.07.21** End: **03.08.21**	**47.52**	**E:384428.0 N:399004.2**	**1** of **7**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
0.20-0.50	1	B								MADE GROUND: Blackish brown gravelly fine to coarse SAND. Gravel is angular to subangular of brick, concrete, hardcore and sandstone. Low cobble content of brick.	(1.90)	
0.90-1.20	2	B										
1.50-1.95		SPT	N=13									
1.50-1.95	4	B										
2.10-2.50	5	B									2.10	
2.10-2.50	5	B								Stiff brown slightly gravelly CLAY. Gravel is fine to coarse of sandstone, quartzite and mudstone.		
2.50-2.95	6	UT100	100 blows 89% recovery									
2.95-3.10	7	D										
3.50-3.95		SPT	N=23									
3.50-3.95	10	B										
3.50-3.95	9	D										
3.50-3.95	9	DSPT									(4.15)	
4.50-4.95	11	UT100	100 blows 100% recovery									
4.95-5.10	12	D										
5.50	13	D										
6.00-6.30		SPT	N=100*									
6.00-6.30	15	DSPT										
6.00-6.25	16	B										
6.25-6.50	17	B									6.25	
6.25-6.50	17	B								Very dense light brown sandy fine to coarse subrounded to rounded GRAVEL of quartzite and sandstone. Sand is fine to coarse. Medium cobble content of sandstone and quartzite.		
7.00	18	D									(1.35)	
7.50-7.72		SPT(c)	N=125*									
7.50-8.00	20	B									7.60	
7.50-8.00	20	B								Very dense orangish brown slightly gravelly fine to coarse SAND. Gravel is subrounded to rounded fine to coarse of quartzite, sandstone and mudstone.		
8.50	21	D										

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth
28/07/21	17:44	1.20	None	200	Dry
29/07/21	08:00	1.20	None	200	
29/07/21	18:00	12.22	12.00	150	11.70
30/07/21	08:00	12.22	12.00	150	-
30/07/21	15:00	16.50	16.50	150	13.10
02/08/21	08:00	16.50	16.50	150	-
02/08/21	12:00	18.00	18.00	150	14.50

Chiselling / Slow Progress

From	To	Duration (hh:mm)
6.25	7.60	03:00
9.50	11.00	02:00
16.64	18.00	01:30

General Remarks

1. Scanned with CAT and Genny before breaking ground.
2. Hand dug pit to 1.20m.
3. Cable percussion drilling to 18.00m with 200mm and 150mm diameter casing and tools.
4. Stainless steel casing (3m lead lengths) used to allow UXO scan to be carried out as borehole is

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Dando 2500 + Massenza M-I-3**	**Robert Foster**	**IHayes**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
2 & 3 Angel Square	**MEPC Ltd**	**BH101**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
765325	**28.07.21** End: **03.08.21**	**47.52**	**E:384428.0 N:399004.2**	**2** of **7**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
9.00-9.33		SPT	N=83*							Very dense orangish brown slightly gravelly fine to coarse SAND. Gravel is subrounded to rounded fine to coarse of quartzite, sandstone and mudstone. *(stratum copied from 7.60m from previous sheet)*	(4.30)	
9.00-9.33	23	DSPT										
9.00-9.50	24	B										
10.00	25	D										
10.50-10.80		SPT	N=100*									
10.50-10.80	27	DSPT										
10.50-11.00	28	B										
11.50	29	D									11.90	
12.00-12.22		SPT	N=214*							Stiff brown slightly gravelly very sandy CLAY.	(3.10)	
12.00-12.22	31	DSPT										
12.00-12.50	32	B										
13.00	33	D										
13.50-13.80	34	UT100	150 blows 67% recovery									
14.00	35	D										
14.50	36	D									15.00	
15.00-15.16		SPT	N=250*							Very dense reddish brown slightly gravelly fine to coarse SAND. Gravel is subrounded to rounded fine to coarse of quartzite and sandstone.	(1.60)	
15.00-15.50	39	B										
16.00	40	D									16.60	
16.50-16.64		SPT	N=214*							Extremely to very weak red brown medium grained SANDSTONE.	(1.40)	
16.50-17.00	43	B										
17.50	44	D									18.00	

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

drilled.
5. Rotary coring from 18.00m to 29.00m using water flush.
6. Installation as shown.
7. Cable percussion rig re-erected to complete installation and pull casing.
8. SPT hammer AR1862-2021 (E_r = 95.00%)

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Dando 2500 + Massenza M-I-3**	**Robert Foster**	**IHayes**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
2 & 3 Angel Square	**MEPC Ltd**	**BH101**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
765325	End: **03.08.21**	**47.52**	**E:384428.0 N:399004.2**	**3** of **7**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
18.00-18.50 18.00-18.07		SPT	N=375*	36	0	0	NI			Very weak laminated red brown medium grained SANDSTONE. Very closely to closely spaced horizontal discontinuities.		
18.50-19.00				100	74	0				. . . 18.00 to 18.50m core run mainly medium sand, bottom 180 mm extremely weak sandstone.		
19.00-19.50				100	62	20	50			. . . 18.00 to 18.95m 45° rough planar discontinuity. . . . 19.00 to 19.10m 60° smooth planar discontinuity.		
19.50-20.50				80	55	10	100			. . . 19.00 to 19.57m extremely weak, recovered as sand with medium gravel sized fragments of sandstone. . . . 19.45 to 19.46m redbrown mudstone / clay . . . 19.70 to 19.80m extremely weak, recovered as sand with medium gravel sized fragments of sandstone.	(3.50)	
20.50-21.50 20.50		C		90	80	37	NI 50 180			. . . 20.30 to 20.50m 50° rough planar discontinuity. . . . 20.33 to 20.53m 50° rough planar discontinuity. . . . below 20.60m thinly bedded.	21.50	
21.50-23.00				100	93	70	NI 280			Very weak to weak red brown medium to coarse grained SANDSTONE. Closely to medium spaced horizontal discontinuities.	(3.10)	
23.00-24.50 23.00		C		87	67	20				. . . 23.55 to 23.70 m medium grained sandstone. . . . 23.70 to 24.10 m medium to coarse, mainly coarse grained sandstone. . . . 24.10 to 24.50 m exremely to weak weak core non intact.	24.60	
24.50-26.00				98	80	73	NI NI NI			Extremely weak red brown fine and medium grained SANDSTONE. Frequent high angled rough planar discontinuities.	24.90	
25.50		C								Very weak red brown medium grained SANDSTONE. . . . 24.93 to 25.10m 80°smooth planar discontinuity. . . . 25.10 to 25.17m 80°smooth planar discontinuity, terminates against underlying discontinuity. . . . 25.15 to 25.20m 50°smooth planar discontinuity.	25.20	
26.00-27.50				92	92	81	50 200 380			. . . 25.30m high angled rough planar discontinuity at 90° to overlying discontinuities.		
26.60		C								*Description on next sheet.*		

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	To	Duration (hh:mm)	used.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Dando 2500 + Massenza M-I-3**	**Robert Foster**	**IHayes**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
2 & 3 Angel Square	**MEPC Ltd**	**BH101**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
765325	**28.07.21** End: **03.08.21**	**47.52**	**E:384428.0 N:399004.2**	**4** of **7**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
				92	92	81				Very weak to weak red brown medium to coarse SANDSTONE. Closely to medium spaced sub horizontal discontinuities.	(3.80)	
27.50-29.00										. . . 25.20 to 25.35m 50°smooth planar discontinuity.*(stratum copied from 25.20m from* previous sheet)		
27.65		C					50					
				84	84	73	200					
28.30		C					380					
											29.00	
29.00		C								Borehole terminated at 29.00 m		

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Dando 2500 + Massenza M-I-3**	**Robert Foster**	**IHayes**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
2 & 3 Angel Square		**MEPC Ltd**		**BH101**
Contract Ref:	Start: **28.07.21**	Ground Level:	National Grid Co-ordinate:	Sheet:
765325	End: **03.08.21**	**47.52**	**E:384428.0 N:399004.2**	**5** of **7**

BH101 18.00-19.50m





BH101 19.50-21.50m

Method Used:	**Inspection pit + Cable Percussion + Rotary Cored**	Plant Used:	**Dando 2500 + Massenza M-I-3**	Drilled By:	**Robert Foster**	Logged By:	**IHayes**	Checked By:

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
2 & 3 Angel Square		MEPC Ltd		BH101
Contract Ref:	Start: 28.07.21	Ground Level:	National Grid Co-ordinate:	Sheet:
765325	End: 03.08.21	47.52	E:384428.0 N:399004.2	6 of 7

BH101 21.50-24.50m





BH101 24.50-27.50m

Method Used:	Inspection pit + Cable Percussion + Rotary Cored	Plant Used:	Dando 2500 + Massenza M-I-3	Drilled By:	Robert Foster	Logged By:	IHayes	Checked By:	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
2 & 3 Angel Square		**MEPC Ltd**		**BH101**
Contract Ref:	Start: **28.07.21**	Ground Level:	National Grid Co-ordinate:	Sheet:
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BH101 27.50-29.00m



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Method Used:	**Inspection pit + Cable Percussion + Rotary Cored**	Plant Used:	**Dando 2500 + Massenza M-I-3**	Drilled By:	**Robert Foster**	Logged By:	**IHayes**	Checked By:	JM2 AGS

STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
2 & 3 Angel Square	**MEPC Ltd**	**BH102**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
765325	End: **03.08.21**	**46.88**	**E:384393.0 N:399004.2**	**1** of **6**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
										MADE GROUND: Tarmac	0.10	
0.30-0.50	1	B								MADE GROUND: Grey medium to coarse angular GRAVEL.	0.30	
0.30-0.50	2	D										
0.70-1.00	3	B								MADE GROUND: Blackish brown gravelly fine to coarse SAND. Gravel is angular to subangular of brick, concrete, hardcore, sandstone with low cobble content of brick.	0.70	
1.00-1.00	4	D										
1.20-1.35	5	UT	46 blows 300% recovery							Stiff brown slightly gravelly CLAY. Gravel is fine to coarse of sandstone, quartzite and mudstone.		
1.20-1.70	6	B										
1.70-1.70	7	D										
2.00-2.45		SPT	N=16									
2.00-2.45	8	DSPT										
2.00-2.50	9	B										
2.50	10	D										
3.00-3.45	11	UT	50 blows 89% recovery								(5.30)	
4.00-4.45		SPT	N=16							. . . 4.00 to 4.50m thin bed of stiff lminated brown CLAY		
4.00-4.45	12	DSPT										
4.00	13	B										
4.50	14	D								. . . below 4.50m becomes dark brown.		
5.00-5.45	15	UT	68 blows 0% recovery									
5.45	16	D										
5.50-6.00	17	B									6.00	
6.00	18	D								Very dense orangish brown slightly gravelly fine to coarse SAND. Gravel is subangular too rounded fine of sandstone, mudstone and quartzite.		
6.50-6.77		SPT	N=97*									
6.50	19	DSPT										
6.50-7.00	20	B										
7.00	21	D									(2.60)	
8.00-8.21		SPT	N=117*									
8.00-8.45	22	DSPT								. . . 8.00 to 8.60 m thin bed of stiff slightly gravelly very sandy CLAY.		
8.00-8.50	23	B										
8.50	24	D									8.60	
8.60-9.00	25	B								*Description on next sheet*		

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth
29/07/21	17:30	9.00	8.00	200	Dry
30/07/21	08:00	9.00	8.00	200	Dry
30/07/21	17:30	12.00	11.00	150	Dry
02/08/21	08:00	12.00	11.00	150	Dry
02/08/21	17:30	18.00	17.00	150	Dry

Chiselling / Slow Progress

From	To	Duration (hh:mm)
10.00	10.30	00:30
11.10	11.30	00:30
16.00	16.30	00:45
18.00	18.10	01:00
18.10	18.20	01:00

General Remarks

1. Scanned with CAT and Genny before breaking ground.
2. Hand dug pit to 1.20m.
3. Cable percussion drilling to 18.20m with 200mm and 150mm diameter casing and tools.
4. Stainless steel casing (3m lead lengths) used to allow UXO scan to be carried out as borehole is

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Dando 2500 + Massenza M-I-3**	**Robert Foster**	**IHayes**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
2 & 3 Angel Square	**MEPC Ltd**	**BH102**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
765325	**29.07.21** End: **03.08.21**	**46.88**	**E:384393.0 N:399004.2**	**2** of **6**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
9.00	26	D								Very dense light brown sandy fine to coarse subrounded to rounded GRAVEL of quartzite and sandstone. Sand is fine to coarse. Medium cobble content of quartzite. *(stratum copied from 8.60m from previous sheet)*	(2.40)	
9.50-9.88		SPT	N=65*									
9.50-10.00	28	B										
9.55-9.95	27	DSPT										
10.00	29	D									11.00	
11.00-11.26		SPT	N=143*							Medium dense orangish brown slightly gravelly fine to coarse SAND. Gravel is subrounded to rounded fine to coarse of quartzite, sandstone and mudstone.		
11.00	30	DSPT										
11.00-11.50	31	B										
11.50	32	D									(2.00)	
										. . . At 12.00m becomes slightly clayey.		
12.50-12.95		SPT	N=13									
12.50-13.00	34	B									13.00	
13.00	35	D-NR								Medium dense reddish brown brown slightly gravelly fine to coarse SAND. Gravel is subrounded to rounded fine to coarse of quartzite and sandstone. and occasional black mudstone.		
14.00-14.45		SPT	N=23									
14.00-14.50	37	B									(2.50)	
14.50	38	D										
											15.50	
15.50-15.85		SPT	N=75*							Very dense reddish brown fine to medium SAND with occssional angular fine to medium gravel of extremely weak sandstone.		
15.50-15.50	40	B										
16.00	41	D									(2.70)	
17.00-17.12		SPT	N=259*									
17.00-17.50	43	B										
17.50	44	D										

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

Chiselling / Slow Progress

From	To	Duration (hh:mm)

General Remarks

drilled.
5. Rotary coring from 18.20m to 28.00m using water flush.
6. Installation as shown.
7. Cable percussion rig re-erected to complete installation and pull casing.
8. SPT hammer CD-1 2020 (E_r = 60.00%) used.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Dando 2500 + Massenza M-I-3**	**Robert Foster**	**IHayes**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
2 & 3 Angel Square	**MEPC Ltd**	**BH102**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
765325	**29.07.21** End: **03.08.21**	**46.88**	**E:384393.0 N:399004.2**	**3** of **6**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
18.00	45	D								. . . below 18.00 m gravel size fragments become medium to coarse and more frequent. Gravel is tabular, suggesting very thinly bedded sandstone.	18.20	
18.20-19.00				94	87	25				Very weak to weak red brown medium to coarse grained SANDSTONE. Very closely to closely spaced sub horizontal rough planar to undulating discontinuities.		
19.00-20.00												
19.00		C		100	88	43				. . . 19.30 to 19.34m extremely weak red brown mudstone.		
20.00-21.50				100	97	52						
21.50-23.00										. . . 21.43 to 21.45m extremely weak red brown mudstone dip 30°, 50 mm thick.		
21.50		C		97	93	38	NI 93 280					
23.00-24.50											(9.80)	
24.00		C		93	93	63						
24.50-26.00										. . . 24.55 to 25.15m some medium elongate gravel of mudstone, becomes more frequent with depth, shows some current bedding.		
26.00-27.50				100	100	38				. . . 25.95 to 26.00m extremely weak		
26.00		C										
26.50		C		93	73	43				. . . 26.35m 20mm lamination of extremely weak mudstone dip 80° . . . 26.52 to 26.64m 70° rough planar discontinuity		

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	To	Duration (hh:mm)	

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Dando 2500 + Massenza M-I-3**	**Robert Foster**	**IHayes**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
2 & 3 Angel Square	**MEPC Ltd**	**BH102**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
765325	**29.07.21** End: **03.08.21**	**46.88**	**E:384393.0 N:399004.2**	**4** of **6**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
27.50-28.00				93 / 86	73 / 86	43 / 86	NI 93 280			. . . 26.65 to 26.74m lamination of red brown clay / mudstone, dip 70°/80° estimated, over medium sand . . . Below 26.86m coarse sand more frequent. . . . 26.87 to 27.00m 70° rough planar discontinuity		
28.00		C								Very weak to weak red brown medium to coarse grained SANDSTONE. Very closely to closely spaced sub horizontal rough planar to undulating discontinuities. *(stratum copied from 18.20m from previous sheet)* . . . 27.20 to 27.40m 70° rough planar discontinuity	28.00	
										Borehole terminated at 28.00 m		

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Dando 2500 + Massenza M-I-3**	**Robert Foster**	**IHayes**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
2 & 3 Angel Square		**MEPC Ltd**		**BH102**
Contract Ref:	Start: **29.07.21**	Ground Level:	National Grid Co-ordinate:	Sheet:
765325	End: **03.08.21**	**46.88**	**E:384393.0 N:399004.2**	**5** of **6**

BH102 18.20-20.00m





BH102 20.00-23.00m

Method Used:	**Inspection pit + Cable Percussion + Rotary Cored**	Plant Used:	**Dando 2500 + Massenza M-I-3**	Drilled By:	**Robert Foster**	Logged By:	**IHayes**	Checked By:	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
2 & 3 Angel Square		**MEPC Ltd**		**BH102**
Contract Ref:	Start: **29.07.21**	Ground Level:	National Grid Co-ordinate:	Sheet:
765325	End: **03.08.21**	**46.88**	**E:384393.0 N:399004.2**	**6** of **6**

BH102 23.00-26.00m





BH102 26.00-28.00m

Method Used:	**Inspection pit + Cable Percussion + Rotary Cored**	Plant Used:	**Dando 2500 + Massenza M-I-3**	Drilled By:	**Robert Foster**	Logged By:	**IHayes**	Checked By:

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
2 & 3 Angel Square	**MEPC Ltd**	**BH103**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
765325	**21.07.21** End: **26.07.21**	**43.00**	**E:384345.0 N:398961.0**	**1** of **6**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
0.10-0.40	1	B								MADE GROUND: Brown sandy angular to subangular fine to coarse GRAVEL of concrete sandstone brick mudstone and hardcore. Sand is fine to coarse. Low cobble content of brick.	(1.10)	
0.10-0.95	101	ES									1.20	
0.90-1.20	2	B										
1.20-2.00	102	ES								MADE GROUND: Blackish brown slightly gravelly clayey fine to coarse SAND. Gravel is angular to subangular is fine to coarse of sandstone hardcore concrete and asphalt. Low cobble content of sandstone. Occasional rootlets present.	(1.75)	
1.50-1.95		SPT	N=17									
1.50-1.95	5	B									2.95	
2.00-2.95	103	ES										
2.50-2.95		SPT	N=27									
2.50-2.95	8	B										
3.50-3.95		SPT	N=12							MADE GROUND: Firm orangish brown gravelly CLAY. Gravel is angular to subangular fine to coarse of brick concrete quartzite and sandstone. Low cobble content of brick and concrete.	(2.05)	
3.50-4.00	104	ES										
3.50-3.95	11	B									5.00	
4.50-4.61		SPT	N=600*									
4.50-5.00	105	ES										
4.50-5.00	13	B										
5.00-5.50	14	B								Very dense reddish brown slightly gravelly fine to coarse SAND. Gravel is subrounded to rounded fine of sandstone quartz and mudstone.	(0.50)	
6.00-6.43		SPT	N=54*							Very dense reddish brown sandy subrounded to rounded fine to coarse GRAVEL of various lithologies including quartz and sandstone.	5.50	
6.00-6.43	17	B									(1.50)	
7.00-7.50	18	B									7.00	
7.50-7.95	19	UT100	150 blows 67% recovery							Stiff reddish brown slightly gravelly sandy CLAY. Gravel is sub rounded to rounded fine to coarse of quartz and sandstone. . . . 7.00m becomes slightly clayey	(1.00)	
8.00-8.50	20	B								Very dense reddish brown slightly gravelly fine to coarse SAND. Gravel is subrounded to rounded fine to medium of sandstone, quartz and mudstone.	8.00	

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth
21/07/21	17:09	6.45	6.20	200	5.70
22/07/21	08:15	6.45	6.20	200	Dry
22/07/21	16:29	12.00	12.00	150	6.00

Chiselling / Slow Progress

From	To	Duration (hh:mm)
4.00	5.00	01:30
11.30	12.00	01:00

General Remarks

1. Scanned with CAT and Genny before breaking ground.
2. Hand dug pit to 1.20m.
3. Cable percussion drilling to 12.00m with 200mm and 150mm diameter casing and tools.
4. Stainless steel casing (3m lead lengths) used to allow UXO scan to be carried out as borehole is

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Dando 2500 + Massenza M-I-3**	**Robert Foster**	**CBailey**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
2 & 3 Angel Square	**MEPC Ltd**	**BH103**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
765325	**21.07.21** End: **26.07.21**	**43.00**	**E:384345.0 N:398961.0**	**2** of **6**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
9.00-9.21 9.00-9.50	23	SPT B	N=188*							Very dense reddish brown slightly gravelly fine to coarse SAND. Gravel is subrounded to rounded fine to medium of sandstone, quartz and mudstone. *(stratum copied from 8.00m from previous sheet)*	(3.10)	
10.00	24	D									11.10	
10.50-10.67 10.50-11.00	27	SPT B	N=214*									
11.10-12.00	28	B								Extremely to very weak red brown medium grained SANDSTONE.	(0.90)	
12.00-13.50 12.00-12.08		SPT	N=375*	30	23	7	NI 60 100			Very weak to weak red brown medium to coarse grained SANDSTONE. Very closely to closely spaced sub horizontal rough planar and undulating discontinuities.	12.00	
13.50-14.50				96	96	66	20 120 170					
14.50-16.00 14.60		C		96	96	49	NI 80 140			. . . 14.50 to 14.70m with occasional angular flat fine to medium gravel of red brown mudstone.		
15.50		C								. . . Below 15.30m discontinuities mainly closely to medium spaced.		
16.00-17.50				98	98	83	NI 145 390					
16.80		C										
17.20		C										
17.50-19.00				100	98	92						

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

drilled.
5. Rotary coring from 12.00m to 25.00m using water flush.
6. Installation as shown.
7. Cable percussion rig re-erected to complete installation and pull casing.
8. SPT hammer AR1862-2021 (E_r = 95.00%)

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Dando 2500 + Massenza M-I-3**	**Robert Foster**	**CBailey**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
2 & 3 Angel Square	**MEPC Ltd**	**BH103**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
765325	**21.07.21** End: **26.07.21**	**43.00**	**E:384345.0 N:398961.0**	**3** of **6**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
17.95		C								Very weak to weak red brown medium to coarse grained SANDSTONE. Very closely to closely spaced sub horizontal rough planar and undulating discontinuities. *(stratum copied from 12.00m from previous sheet)*	(13.00)	
				100	98	92				. . . 18.35 to 18.30m core non intact recovered as coarse angular gravel sized fragments.		
19.00-20.50										. . . Below 19.00m more coarse sand size grains.		
				100	100	77						
19.80		C										
20.50-22.00												
				95	91	63	NI 145 390			. . . 20.95 to 21.00m with some medium sub rounded gravel of quartzite.		
22.00-23.50												
22.40		C								. . . 22.10 to 22.20m 45° rough undulating discontinuity.		
				100	97	70						
23.50-25.00												
24.17		C		100	100	90						
25.00		C								Borehole terminated at 25.00 m	25.00	

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	To	Duration (hh:mm)	used.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Dando 2500 + Massenza M-I-3**	**Robert Foster**	**CBailey**	JMC

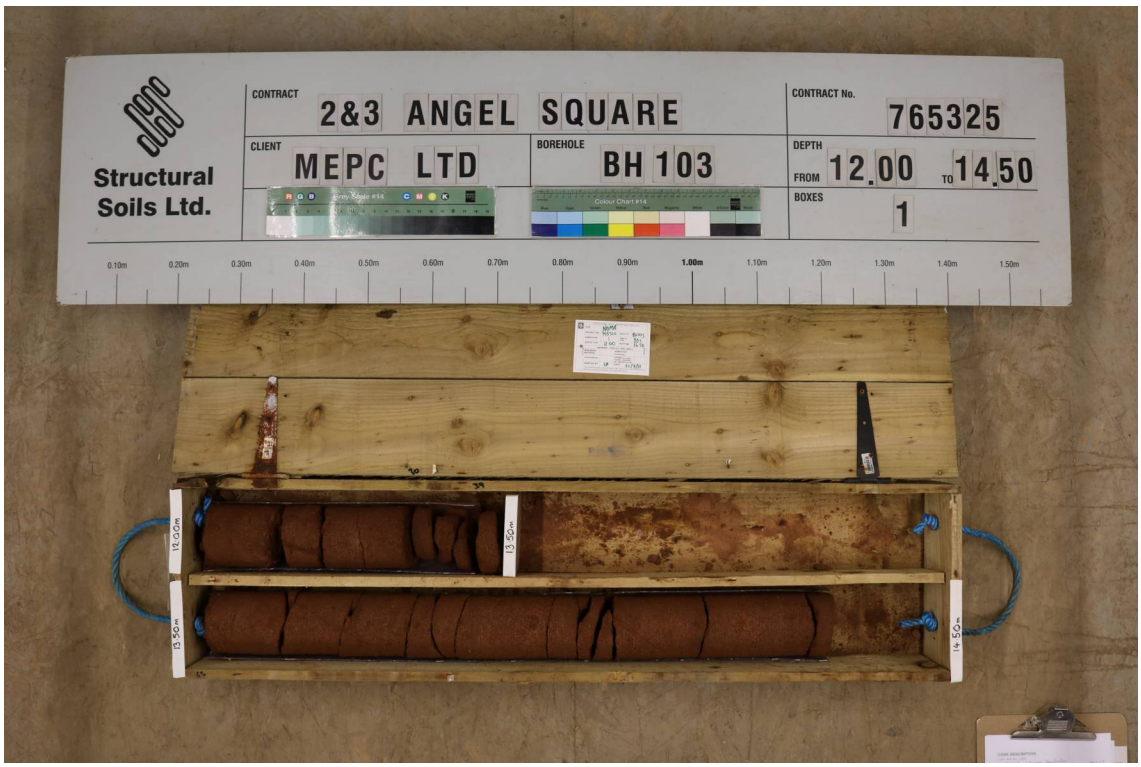
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STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
2 & 3 Angel Square		**MEPC Ltd**		**BH103**
Contract Ref:	Start: **21.07.21**	Ground Level:	National Grid Co-ordinate:	Sheet:
765325	End: **26.07.21**	**43.00**	**E:384345.0 N:398961.0**	**4** of **6**

BH103 12.00-14.50m





BH103 14.50-17.50m

Method Used:	**Inspection pit + Cable Percussion + Rotary Cored**	Plant Used:	**Dando 2500 + Massenza M-I-3**	Drilled By:	**Robert Foster**	Logged By:	**CBailey**	Checked By:

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
2 & 3 Angel Square		**MEPC Ltd**		**BH103**
Contract Ref:	Start: **21.07.21**	Ground Level:	National Grid Co-ordinate:	Sheet:
765325	End: **26.07.21**	**43.00**	**E:384345.0 N:398961.0**	**5** of **6**

BH103 17.50-20.50m





BH103 20.50-23.50m

Method Used:	**Inspection pit + Cable Percussion + Rotary Cored**	Plant Used:	**Dando 2500 + Massenza M-I-3**	Drilled By:	**Robert Foster**	Logged By:	**CBailey**	Checked By:

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
2 & 3 Angel Square		**MEPC Ltd**		**BH103**
Contract Ref:	Start: **21.07.21**	Ground Level:	National Grid Co-ordinate:	Sheet:
765325	End: **26.07.21**	**43.00**	**E:384345.0 N:398961.0**	**6** of **6**

BH103 23.50-25.00m



Method Used:	**Inspection pit + Cable Percussion + Rotary Cored**	Plant Used:	**Dando 2500 + Massenza M-I-3**	Drilled By:	**Robert Foster**	Logged By:	**CBailey**	Checked By:	JMC

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
2 & 3 Angel Square	**MEPC Ltd**	**BH104**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
765325	**22.07.21** End: **29.07.21**	**44.40**	**E:384349.3 N:398986.7**	**1** of **6**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
0.10-0.40	1	B								MADE GROUND: Blackish brown gravelly fine to coarse SAND. Gravel is angular to subangular fine to coarse of sandstone quartz concrete and hardcore.	0.45	
0.10-0.40	101	ES										
0.50-0.80	2	B								Firm orangish brown sandy CLAY. Sand is fine to medium.	(0.55) 1.00	
1.00-1.20	3	B								Firm brown CLAY mottled grey present on fissures and frequent root traces.	1.20	
1.50-1.65		SPT	N=200*							Firm orangish brown slightly gravelly sandy CLAY. Gravel is angular to subangular fine to coarse of sandstone and mudstone. Sand is fine to coarse. Low cobble content of sandstone.	(0.70) 1.90	
1.50-1.65	5	DSPT										
1.50-1.80	6	B										
2.00-2.50	7	B								Very dense reddish brown slightly gravelly fine to coarse SAND. Gravel is subrounded to rounded fine of sandstone quartz and mudstone.	(2.10) 4.00	
2.50-2.70		SPT	N=150*									
2.50-3.00	9	B										
3.50-3.83		SPT	N=83*									
3.50-3.83	11	DSPT										
3.50-4.00	12	B										
4.00-4.40	13	B								Very dense reddish brown sandy subrounded to rounded fine to coarse GRAVEL of various lithologies including quartzite sandstone.	(2.80) 6.80	
4.50-4.70		SPT	N=214*							. . . 4.50 to 4.60m driller records thin bed of slightly gravelly CLAY.		
4.50-4.70	15	DSPT										
4.50-5.00	16	B										
5.50	17	D										
6.00-6.21		SPT(c)	N=250*									
6.00-6.50	19	B										
6.80-7.30	20	B								Very dense orangish brown slightly gravelly fine to coarse SAND. Gravel is subrounded to rounded fine of sandstone and quartz.	(1.70) 8.50	
7.50-7.85		SPT	N=75*									
7.50-7.85	22	DSPT										
7.50-8.00	23	B										
8.50-9.00	24	B								*Description on next sheet*		

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth
22/07/21	18:08	1.20	None	200	Dry
23/07/21	08:05	1.20	None	200	Dry
23/07/21	14:00	5.30	5.30	200	5.20
26/07/21	09:59	5.30	5.30	200	Dry
26/07/21	17:33	13.80	13.50	150	10.50
27/07/21	08:05	13.80	13.50	150	13.10
27/07/21	17:57	22.58	22.50	150	14.10
28/07/21	08:00	22.50	22.50	150	15.10

Chiselling / Slow Progress

From	To	Duration (hh:mm)
4.50	5.30	03:00
5.30	6.00	01:00
6.00	6.80	01:00
14.20	15.00	01:00
15.00	16.50	01:30
21.90	22.50	01:15
22.58	24.00	01:30

General Remarks

1. Scanned with CAT and Genny before breaking ground.
2. Hand dug pit to 1.20m.
3. Cable percussion drilling to 24.00m with 200mm and 150mm diameter casing and tools.
4. Stainless steel casing (3m lead lengths) used to allow UXO scan to be carried out as borehole is

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Dando 2500 + Massenza M-I-3**	**Robert Foster**	**IHayes**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
2 & 3 Angel Square	**MEPC Ltd**	**BH104**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
765325	**22.07.21** End: **29.07.21**	**44.40**	**E:384349.3 N:398986.7**	**2** of **6**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
9.00-9.30	25	UT100	150 blows 67% recovery							Very stiff brown slightly gravelly sandy CLAY. Gravel is subrounded to rounded fine of quartz, mudstone and sandstone. *(stratum copied from 8.50m from previous sheet)*	(3.00)	
9.50-10.00	26	B										
10.50-10.74		SPT	N=115*									
10.50-10.74	28	DSPT										
10.50-11.00	29	B										
											11.50	
11.50-12.00	30	B								Very dense reddish brown slightly gravelly fine to coarse SAND. Gravel is fine of quartz, sandstone and mudstone.		
12.00-12.15		SPT	N=200*									
12.00-12.15	32	DSPT										
12.00-12.50	33	B									(2.70)	
13.00	34	D										
13.50-13.80		SPT	N=100*									
13.50-13.80	36	DSPT										
13.50-14.00	37	B										
											14.20	
14.20-14.50	38	B								Very dense reddish brown fine to coarse SAND (driller records it as cemented sand)		
15.00-15.18		SPT	N=231*									
15.00-15.18	40	DSPT										
15.00-15.50	41	B										
16.00	42	D										
16.50-16.66		SPT	N=176*									
16.50-16.66	44	DSPT										
16.50-17.00	45	B										
17.50	46	D										

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth
28/07/21	12:21	24.07	22.50	150	16.20

Chiselling / Slow Progress

From	To	Duration (hh:mm)

General Remarks

drilled.
5. Rotary coring from 24.00m to 31.00m using water flush.
6. Installation as shown.
7. Cable percussion rig re-erected to complete installation and pull casing.
8. SPT hammer AR1862-2021 (E_r = 95.00%)

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Dando 2500 + Massenza M-I-3**	**Robert Foster**	**IHayes**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
2 & 3 Angel Square	**MEPC Ltd**	**BH104**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
765325	**22.07.21** End: **29.07.21**	**44.40**	**E:384349.3 N:398986.7**	**3** of **6**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
18.00-18.14		SPT	N=200*							Very dense reddish brown fine to coarse SAND (driller records it as cemented sand) *(stratum copied from 14.20m from previous sheet)*	(7.70)	
18.00-18.14	48	DSPT										
18.00-18.50	49	B										
19.00	50	D										
19.50-19.65		SPT	N=200*									
19.50-19.65	52	DSPT										
19.50-20.00	53	B										
20.50	54	D										
21.00-21.25		SPT	N=150*									
21.00-21.25	56	DSPT										
21.00-21.50	57	B									21.90	
22.00-22.50	58	D								Extremely weak to very weak reddish brown medium grained SANDSTONE.	(2.10)	
22.50-22.58		SPT	N=375*									
22.50-22.58	60	DSPT										
22.50-23.50	61	B									24.00	
24.00-25.00				85	84	25	NI 77 130			Very weak to weak red brown medium to coarse grained SANDSTONE. Very closely to closely spaced sub horizontal rough planar and undulating discontinuities. . . . 24.55 to 24.70m with some angular fine gravel of quartzite and mudstone, occasional sub rounded coarse gravel of quartzite.		
24.00-24.07		SPT(c)	N=375*									
25.00-26.50				87	82	53	NI 130 370			. . . 25.55 to 26.50m ocassional angular fine and medium gravel of grey mudstone, sandstone and quartzite.		
25.40		C										
26.50-28.00				93	77	60						
26.80		C										

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

used.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Dando 2500 + Massenza M-I-3**	**Robert Foster**	**IHayes**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
2 & 3 Angel Square	**MEPC Ltd**	**BH104**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
765325	**22.07.21** End: **29.07.21**	**44.40**	**E:384349.3 N:398986.7**	**4** of **6**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
										. . . 26.90m single sub rounded coarse gravel of quartzite. Very weak to weak red brown medium to coarse grained SANDSTONE. Very closely to closely spaced sub horizontal rough planar and undulating discontinuities. *(stratum copied from 24.00m from previous sheet)*	(7.00)	
27.65		C		93	77	60				. . . 28.10 to 28.32m vertical, rough planar discontinuity.		
28.00-29.50												
28.20		C		91	83	77	NI 130 370			. . . 29.20 to 29.60m some sub rounded fine gravel of quartzite, mainly more coarse sand.		
29.50-31.00												
29.90		C		100	96	72				. . . 30.65 to 30.70m extremely closley spaced sub vertical and sub horizontal rough discontinuities, core is non intact.	31.00	
31.00		C								. . . 30.85 to 31.00m 80° rough planar discontiniuty.		
										Borehole terminated at 31.00 m		

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	To	Duration (hh:mm)	

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Dando 2500 + Massenza M-I-3**	**Robert Foster**	**IHayes**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
2 & 3 Angel Square		**MEPC Ltd**		**BH104**
Contract Ref:	Start: **22.07.21**	Ground Level:	National Grid Co-ordinate:	Sheet:
765325	End: **29.07.21**	**44.40**	**E:384349.3 N:398986.7**	**5** of **6**

BH104 24.00-26.50m





BH104 26.50-29.50m

Method Used:	**Inspection pit + Cable Percussion + Rotary Cored**	Plant Used:	**Dando 2500 + Massenza M-I-3**	Drilled By:	**Robert Foster**	Logged By:	**IHayes**	Checked By:

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log COMPOSITE LOG - A4P | 765325-2-AND-3-ANGEL-SQUARE.GPJ - v10_01.
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STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
2 & 3 Angel Square		**MEPC Ltd**		**BH104**
Contract Ref:	Start: **22.07.21**	Ground Level:	National Grid Co-ordinate:	Sheet:
765325	End: **29.07.21**	**44.40**	**E:384349.3 N:398986.7**	**6** of **6**

BH104 29.50-31.00m



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Method Used:	**Inspection pit + Cable Percussion + Rotary Cored**	Plant Used:	**Dando 2500 + Massenza M-I-3**	Drilled By:	**Robert Foster**	Logged By:	**IHayes**	Checked By:	JM

STRUCTURAL SOILS

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
2 & 3 Angel Square	**MEPC Ltd**	**WS101**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
765325	End: **21.07.21**	**46.90**	**E:384402.9 N:399024.2**	**1** of **2**

Progress	Samples / Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
							MADE GROUND: Weak to medium strong greyish black ASPHALT. Matrix is angular to subrounded fine to medium, 20-25% voids. (ROAD SURFACE)	0.10 (0.30)	
							MADE GROUND: Cream angular to subrounded fine to coarse sandy GRAVEL of limestone, occasional sandstone and quartz. (HARDCORE TYPE 1)	0.40	
							MADE GROUND: Light brown slightly gravelly fine to coarse SAND. Gravel is subangular to subrounded fine to coarse of sandstone and occasional concrete.	(0.75)	
	1.00	6	D					1.15	
	1.15	7	B				MADE GROUND: Dark brown mottled black gravelly clayey fine to coarse SAND of ash. Gravel is angular to subrounded of ash, brick.		
	1.20-1.65		SPT	N=9					
	1.20	1	DSPT						
1.00 - 2.00 (101mm dia) 90% rec	1.50	101	ES					(0.95)	
							. . . From 1.85m to 2.00m depth: Brick cobbles, angular to subrounded.		
	2.00-2.45		SPT	N=15				2.10	
	2.00	2	DSPT						
	2.10	8	B				MADE GROUND: Firm brown slightly sandy slightly gravelly silty CLAY. Gravel is angular to subrounded fine to coarse brick, occasional sandstone and mudstone.		
2.00 - 3.00 (89mm dia) 80% rec	2.50	102	ES						
	3.00-3.45		SPT	N=30				(1.85)	
	3.00	3	DSPT						
3.00 - 4.00 (79mm dia) 90% rec	3.40	9	B				. . . From 3.40m to 3.95m depth: Gravel content increases predominantly angular to subangular fine to medium of brick.		
	3.50	103	ES						
								3.95	
	3.95	10	D				Very stiff slightly sandy silty CLAY. (TILL)		
	4.00-4.45		SPT	N=39					
	4.00	4	DSPT						
4.00 - 4.75 (69mm dia)									

Drilling Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
21/07/21		2.30	-	89	

General Remarks

1. Scanned with CAT and Genny before breaking ground.
2. Hand dug pit to 1.00m.
3. UXO scan carried out as hole drilled.
4. Water strike at 2.30 m depth
5. SPT refusal at 5.15 m depth.
6. Installed with 50mm standpipe - GL to 1.00m plain - 1.00m to 4.00m slotted.
7. SPT hammer DART384-2021 (E_r = 76.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Tracked window	**Archway Dart 383**	**B Pine**	**IHayes**	

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STRUCTURAL SOILS

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
2 & 3 Angel Square	**MEPC Ltd**	**WS101**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
765325	**21.07.21** End: **21.07.21**	**46.90**	**E:384402.9 N:399024.2**	**2** of **2**

Progress	Samples / Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
4.00 - 4.75 (69mm dia)	4.95-5.28 4.95	5	SPT DSPT	N=86*			Very stiff slightly sandy silty CLAY. (TILL) *(stratum copied from 3.95m from previous sheet)*	(1.33)	
							Window sample hole terminated at 5.28m depth.	5.28	

Drilling Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Tracked window	**Archway Dart 383**	**B Pine**	**IHayes**	

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STRUCTURAL SOILS

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
2 & 3 Angel Square	**MEPC Ltd**	**WS102**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
765325	End: **21.07.21**	**47.20**	**E:384401.8 N:398986.7**	**1** of **2**

Progress	Samples / Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
	1.00-1.45		SPT	N=7			MADE GROUND: Brownish cream very gravelly slightly clayey fine to coarse SAND. Gravel is angular to subrounded of limestone, sandstone and occasional quartz. (HARDCORE TYPE 1)	(0.35)	
								0.35	
	1.00	1	DSPT				MADE GROUND: Brownish black gravelly slightly clayey fine to coarse SAND of predominantly ash. Gravel is angular to subrounded fine to coarse of brick, ash, occasional sandstone and rare mudstone. Low cobble content, angular to subangular of brick.	(1.00)	
	1.00-1.35	101	ES						
	1.00-1.35	6	D						
1.00 - 2.00 (101mm dia) 100% rec	1.35-4.00	7	B					1.35	
	2.00-2.45		SPT	N=17			Very stiff brown slightly sandy slightly gravelly indistinctly laminated CLAY. Gravel rare angular to rounded fine to coarse of sandstone. (TILL)		
	2.00	2	DSPT						
2.00 - 3.00 (89mm dia) 100% rec									
	3.00-3.45		SPT	N=19				(3.70)	
	3.00	3	DSPT						
3.00 - 4.00 (79mm dia) 100% rec									
	4.00-4.45		SPT	N=21					
	4.00	4	DSPT						
4.00 - 4.80 (69mm dia) 100% rec									

Drilling Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

1. Scanned with CAT and Genny before breaking ground.
2. Hand dug pit to 1.00m.
3. UXO scan carried out as hole drilled.
4. Installed with 50mm standpipe - slotted GL to 1.00m, bentonite backfill 1.00m to 5.05m.
5. SPT hammer DART384-2021 (E_r = 76.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Tracked window	**Archway Dart 383**	**B Pine**	**IHayes**	

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STRUCTURAL SOILS

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
2 & 3 Angel Square	**MEPC Ltd**	**WS102**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
765325	End: **21.07.21**	**47.20**	**E:384401.8 N:398986.7**	**2** of **2**

Progress	Samples / Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
4.00 - 4.80 (69mm dia) 100% rec	4.80-5.03 4.80	5	SPT DSPT	N=200*			Very stiff brown slightly sandy slightly gravelly indistinctly laminated CLAY. Gravel rare angular to rounded fine to coarse of sandstone. (TILL) *(stratum copied from 1.35m from previous sheet)*	5.05	
							Window sample hole refused at 5.05m depth.		

Drilling Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Tracked window	**Archway Dart 383**	**B Pine**	**IHayes**	

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STRUCTURAL SOILS

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
2 & 3 Angel Square	**MEPC Ltd**	**WS103**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
765325	**22.07.21** End: **22.07.21**	**44.55**	**E:384367.0 N:398992.4**	**1** of **1**

Progress	Samples / Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
							MADE GROUND: Grey and cream fine to coarse SAND and angular to subrounded fine to coarse GRAVEL of limestone, concrete and sandstone. (HARDCORE)	0.10	
	0.20	1	D				MADE GROUND: Black gravelly fine to coarse SAND. Gravel is angular to rounded fine to coarse of ash and occasional sandstone and concrete.	0.35	
	0.20	101	ES						
	0.40	102	ES						
	0.40	2	D				Firm to stiff brown occasionally mottled dark brown slightly sandy silty CLAY with occasional pockets of silt. 20-50mm diameter. (TILL)		
	1.00-2.00	5	B						
1.20 - 2.00 (101mm dia) 100% rec	1.20-1.65		SPT	N=15			. . . From 1.00m to 2.40m depth: Firm to stiff slightly gravelly dark brown slightly sandy CLAY with indistinct laminations and closely spaced partings of silt. Gravel is angular to rounded fine to coarse of sandstone, occasional quartz and mudstone.	(2.10)	
	1.20	3	DSPT						
	2.00-2.45		SPT	N=51*					
	2.00	4	DSPT						
							Window sample hole terminated at 2.45m depth.	2.45	

Drilling Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

1. Scanned with CAT and Genny before breaking ground.
2. Hand dug pit to 1.20m.
3. UXO scan carried out as hole drilled.
4. SPT refusal at 2.40 m depth.
5. Installed with 50mm standpipe - slotted GL to 1.00m, bentonite backfill 1.00m to 2.40m.
6. SPT hammer DART384-2021 (E_r = 76.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Tracked window	**Archway Dart 383**	**B Pine**	**IHayes**	

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STRUCTURAL SOILS

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
2 & 3 Angel Square	**MEPC Ltd**	**WS104**

Contract Ref:	Start: **22.07.21**	Ground Level:	National Grid Co-ordinate:	Sheet:
765325	End: **22.07.21**	**45.20**	**E:384367.0 N:398943.7**	**1** of **1**

Progress	Samples / Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
	0.25-0.60	2	B				MADE GROUND: Cream and grey fine to coarse SAND and angular to subrounded fine to coarse GRAVEL of limestone and occasional concrete. (HARDCORE)	0.25	
	0.30	1	D				MADE GROUND: Black gravelly fine to coarse SAND of ash. Gravel is angular to subrounded fine to coarse of ash.	(0.35)	
	0.30	101	ES					0.60	
	0.60-1.20	4	B				Stiff to very stiff dark brown slightly sandy slightly gravelly indistinctly laminated CLAY. Gravel is angular to rounded fine to coarse of sandstone and mudstone. (TILL)		
	0.70	102	ES						
	0.70	3	D						
	1.00-1.45		SPT	N=12					
1.00 - 2.00 (101mm dia) 100% rec	1.00-2.00	8	B						
	2.00-2.45		SPT	N=12			. . . At 2.00m depth: Dark brown very stiff.	(2.80)	
2.00 - 3.00 (89mm dia) 100% rec	2.00-3.00	9	B						
	3.00-3.38		SPT	N=67*					
								3.40	
							Window sample hole terminated at 3.40m depth.		

Drilling Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

1. Scanned with CAT and Genny before breaking ground.
2. Hand dug pit to 1.00m.
3. UXO scan carried out as hole drilled.
4. Installed with 50mm standpipe - slotted GL to 1.00m, bentonite backfill 1.00m to 3.40m.
5. SPT hammer DART384-2021 (E_r = 76.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Tracked window sampling	**Archway Dart 383**	**B Pine**	**IHayes**	

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STRUCTURAL SOILS

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
2 & 3 Angel Square	**MEPC Ltd**	**WS105**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
765325	**22.07.21** End: **22.07.21**	**41.70**	**E:384311.3 N:398964.5**	**1** of **2**

Progress	Samples / Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
							MADE GROUND: Grass over black gravelly fine to coarse SAND of ash. Gravel is angular to subrounded fine to coarse of ash, occasional concrete and brick. Low cobble content, angular to subangular of brick.	(2.80)	
1.00 - 2.00 (89mm dia) 100% rec	1.00-1.45 1.00 1.00-1.50 1.00-2.70	 1 101 8	SPT DSPT ES B	N=18					
2.00 - 2.70 (79mm dia) 100% rec	2.00-2.45 2.00	 2	SPT DSPT	N=39					
2.70 - 4.00 (69mm dia) 100% rec	2.70-3.15 2.70 2.80-3.50	 3 7	SPT DSPT D	N=33				2.80	
							MADE GROUND: Soft to firm brown sandy gravelly CLAY. Gravel is angular to subrounded fine to coarse of brick, sandstone, quartz and occasional concrete.	(0.70)	
	3.50-4.65	9	B				MADE GROUND: Orangish brown mottled yellow slightly gravelly fine to coarse SAND. Gravel is subangular to rounded of quartz, brick, sandstone and mudstone.	3.50	
4.00 - 5.00 (69mm dia) 100% rec	4.00-4.45 4.00-4.65 4.00	 102 4	SPT ES DSPT	N=22				(1.15)	

Drilling Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

1. Scanned with CAT and Genny before breaking ground.
2. Hand dug pit to 1.20m.
3. UXO scan carried out as hole drilled.
4. Installed with 50mm standpipe - GL to 1.00m plain - 1.00m to 4.00m slotted, bentonite backfill 4.00m to 5.45m.
5. SPT hammer DART384-2021 (E_r = 76.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Tracked window	**Archway Dart 383**	**B Pine**	**IHayes**	

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STRUCTURAL SOILS

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
2 & 3 Angel Square	**MEPC Ltd**	**WS105**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
765325	**22.07.21** End: **22.07.21**	**41.70**	**E:384311.3 N:398964.5**	**2** of **2**

Progress	Samples / Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
4.00 - 5.00 (69mm dia) 100% rec								4.65	
	5.00-5.45 5.00	5	SPT DSPT	N=16			Orangish brown gravelly fine to coarse SAND. Gravel is subangular to rounded fine to coarse of sandstone, mudstone and quartz. (TILL)	(1.80)	
5.00 - 6.00 (59mm dia) 0% rec								6.45	
	6.00-6.45 6.00	6	SPT DSPT	N=35			Window sample hole terminated at 6.45m depth.		

Drilling Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Tracked window	**Archway Dart 383**	**B Pine**	**IHayes**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log WINDOW SAMPLE LOG - A4P | 765325-2-AND-3-ANGEL-SQUARE.GPJ - v10_01.
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STRUCTURAL SOILS

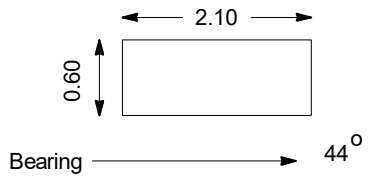
TRIAL PIT LOG

Contract:		Client:		Trial Pit:
2 & 3 Angel Square		**MEPC Ltd**		**TP101**
Contract Ref:	Start: **22.07.21**	Ground Level:	National Grid Co-ordinate:	Sheet:
765325	End: **22.07.21**	**47.00**	**E:384421.7 N:399019.0**	**1** of **2**

Description of strata by stratum code and associated diagrams

Stratum code	Stratum description
a	MADE GROUND: Light brown very sandy medium to coarse angular GRAVEL of limestone.
b	MADE GROUND: Dark grey very sandy fine to coarse angular to sub rounded GRAVEL with whole and half bricks. Gravel is mainly sandstone and brick fragments, with some fragments of glass, plastic and pottery. .....Bricks more frequent with depth. .....0.90 - 1.20 m earthenware drain pipe. Southern end .....0.10-0.90m: MADE GROUND: Mass concrete block, reinforcment bar protruding from top of block. .....25 mm diameter vertical pipe in south west corner. Central and northern end .....0.50-2.20m: MADE GROUND: Sandstone blocks, presumed masonary wall .....0.50-2.20 m masonry wall visible in west face of trial pit. .....0.50-1.30 m brick wall visible in east face of trial pit. .....1.30-2.20 m masonry wall visible in east face of trial pit.
c	MADE GROUND: Bricks, presumed to be a brick floor.
d	Firm to stiff brown slightly gravelly CLAY. Gravel is fine to medium sub rounded of quartzite. Fissures are closely spaced.

Plan (Not to Scale)



General Remarks

1. Excavation location scanned with GPR and CAT and Genny prior to excavation.
2. Trial pit dry whilst excavating.
3. Trial pit sides stable whilst excavating.
4. On completion, backfilled with arisings and compacted aggregate.
5. Trial pit terminated at 2.20m depth.

All dimensions in metres | Scale: **1:50**

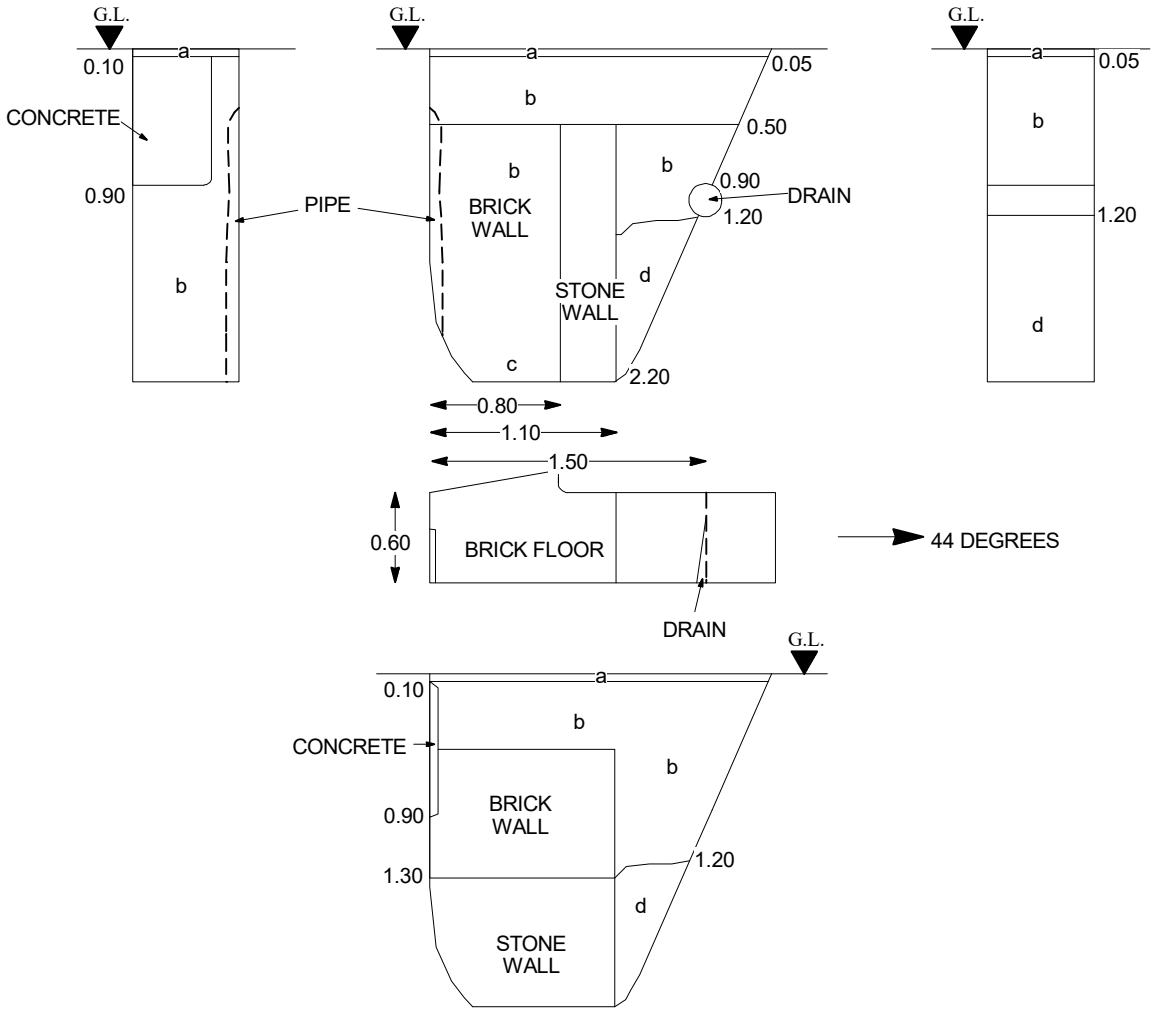
Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Tracked excavator**	**JMcCarthy**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log X1 - TP LOG - LOGGED BY STRATUM - A4 | 765325-2-AND-3-ANGEL-SQUARE.GPJ - v10_01.
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STRUCTURAL SOILS

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
2 & 3 Angel Square		**MEPC Ltd**		**TP101**
Contract Ref:	Start: **22.07.21**	Ground Level:	National Grid Co-ordinate:	Sheet:
765325	End: **22.07.21**	**47.00**	**E:384421.7 N:399019.0**	**2** of **2**



Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Tracked excavator**	**JMcCarthy**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log X1 - TP LOG - LOGGED BY STRATUM - A4 | 765325-2-AND-3-ANGEL-SQUARE.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Castleford: The Potteries, Pottery Street, Castleford, West Yorkshire, WF10 1NJ. Tel: 01977-552255, Fax: 01977-552299, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 01/11/21 - 14:46 | JM2 |

STRUCTURAL SOILS

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
2 & 3 Angel Square		**MEPC Ltd**		**TP102**
Contract Ref:	Start: **22.07.21**	Ground Level:	National Grid Co-ordinate:	Sheet:
765325	End: **22.07.21**	**47.10**	**E:384410.5 N:399004.2**	**1** of **2**

Description of strata by stratum code and associated diagrams

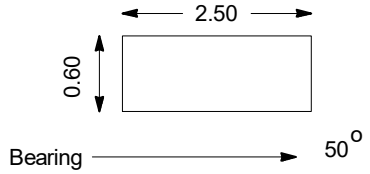
Stratum code	Stratum description
a	MADE GROUND: Brown slightly clayey very sandy fine to coarse angular GRAVEL of mainly sandstone and brick fragments.
b	MADE GROUND: Brown slightly clayey very sandy fine to coarse angular GRAVEL of mainly sandstone and brick fragments. Medium cobble content of mainly brick fragments (upto half bricks).
c	MADE GROUND: Angular blocks of sandstone 200mm x 200mm x 200mm. Presumed former road surface?

…..0.50-0.70 m line of blocks visible in east face of trial pit.

…..0.40-0.90 m brick wall visible in west face of trial pit.

d	MADE GROUND: Dark brown very sandy fine to coarse angular GRAVEL of mainly sandstone fragments. Some sand size ash.
e	POSSIBLE MADE GROUND: Very stiff brown occassinally mottled grey slightly gravelly CLAY. Gravel is fine to medium angular of brick fragments. Reworked material.
f	Very stiff fissured thinly bedded brown occasionally mottled grey along bedding and fissures slightly gravelly CLAY. Gravel is fine to medium sub rounded of quartzite. Fissures are closely spaced.

Plan (Not to Scale)



General Remarks

1. Excavation location scanned with GPR and CAT and Genny prior to excavation.
2. Trial pit dry whilst excavating.
3. Trial pit sides stable whilst excavating.
4. On completion, backfilled with arisings and compacted aggregate.
5. Trial pit terminated at 1.60m depth.

All dimensions in metres | Scale: **1:50**

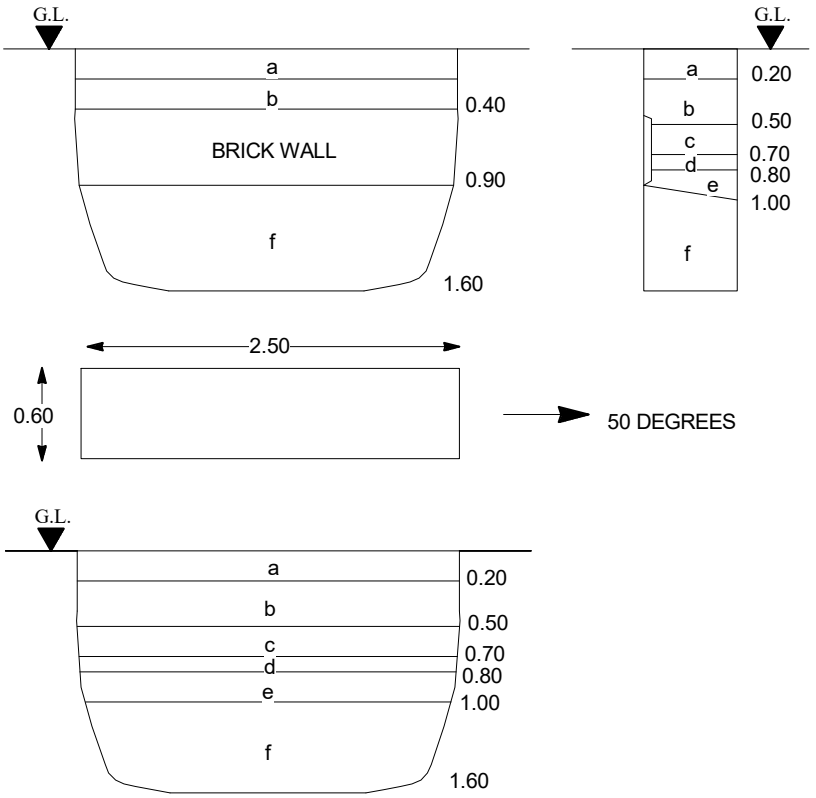
Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Tracked excavator**	**JMcCarthy**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log X1 - TP LOG - LOGGED BY STRATUM - A4 | 765325-2-AND-3-ANGEL-SQUARE.GPJ - v10_01.
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STRUCTURAL SOILS

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
2 & 3 Angel Square		**MEPC Ltd**		**TP102**
Contract Ref:	Start: **22.07.21**	Ground Level:	National Grid Co-ordinate:	Sheet:
765325	End: **22.07.21**	**47.10**	**E:384410.5 N:399004.2**	**2** of **2**



Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Tracked excavator**	**JMcCarthy**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log X1 - TP LOG - LOGGED BY STRATUM - A4 | 765325-2-AND-3-ANGEL-SQUARE.GPJ - v10_01.
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STRUCTURAL SOILS

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
2 & 3 Angel Square		**MEPC Ltd**		**TP103**
Contract Ref:	Start: **22.07.21**	Ground Level:	National Grid Co-ordinate:	Sheet:
765325	End: **22.07.21**	**46.70**	**E:384411.5 N:399026.5**	**1** of **2**

Description of strata by stratum code and associated diagrams

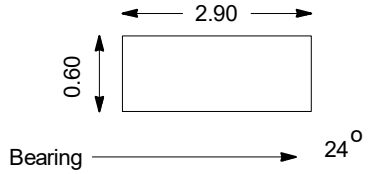
Stratum code	Stratum description
a	MADE GROUND: Light brown very sandy medium to coarse angular GRAVEL of limestone.
b	MADE GROUND: Brown very sandy fine to coarse angular GRAVEL of mainly sandstone and brick fragments. Medium cobble content of mainly brick fragments (upto half bricks).

…...gravel seen to extend down to 1.70 m in west side of pit.

c	MADE GROUND: Bricks, presumed to be a brick foundation.

…..1.05 - 1.70 m brick wall visible in west face of trial pit.

Plan (Not to Scale)



General Remarks

1. Excavation location scanned with GPR and CAT and Genny prior to excavation.
2. Trial pit dry whilst excavating.
3. Trial pit sides stable whilst excavating.
4. On completion, backfilled with arisings and compacted aggregate.
5. Trial pit terminated at 1.70m depth.

All dimensions in metres | Scale: **1:50**

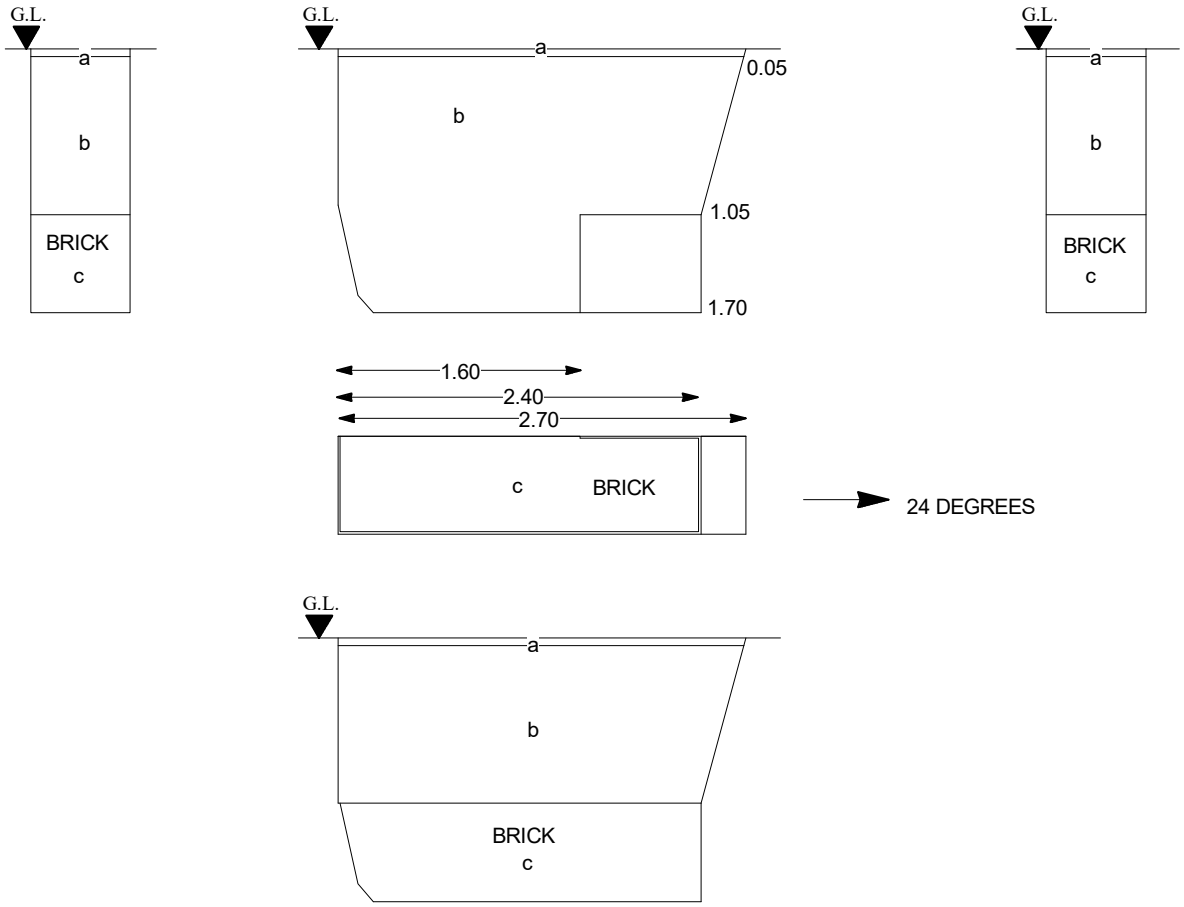
Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Tracked excavator**	**JMcCarthy**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log X1 - TP LOG - LOGGED BY STRATUM - A4 | 765325-2-AND-3-ANGEL-SQUARE.GPJ - v10_01.
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STRUCTURAL SOILS

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
2 & 3 Angel Square		**MEPC Ltd**		**TP103**
Contract Ref:	Start: **22.07.21**	Ground Level:	National Grid Co-ordinate:	Sheet:
765325	End: **22.07.21**	**46.70**	**E:384411.5 N:399026.5**	**2** of **2**



Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Tracked excavator**	**JMcCarthy**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log X1 - TP LOG - LOGGED BY STRATUM - A4 | 765325-2-AND-3-ANGEL-SQUARE.GPJ - v10_01.
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STRUCTURAL SOILS

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
2 & 3 Angel Square		**MEPC Ltd**		**TP104**
Contract Ref:	Start: **22.07.21**	Ground Level:	National Grid Co-ordinate:	Sheet:
765325	End: **22.07.21**	**46.85**	**E:384391.6 N:399013.5**	**1** of **2**

Description of strata by stratum code and associated diagrams

Stratum code	Stratum description
a	MADE GROUND: Light brown very sandy medium to coarse angular GRAVEL of limestone.
b	MADE GROUND: Dark brown brown slightly clayey very sandy fine to coarse angular GRAVEL of mainly sandstone and brick fragments. Whole and half bricks become more frequent with depth.

…...0.05m metal manhole cover.

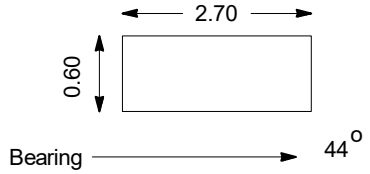
…...0.05-0.80m 2 x sandstone flags 70 mm x 200 x 300 m.

c	MADE GROUND Dark brown slightly clayey SAND and GRAVEL. Sand is firn to coarse, Gravel is fine to coarse angular to sub angular of mainly sandstone and brick fragments, some fragments of pottery and coal.
d	Very stiff fissured thinly bedded brown occasionally mottled grey along bedding and fissures slightly gravelly CLAY. Gravel is fine to medium sub rounded of quartzite. Fissures are closely spaced.

…...below 0.50 m brick wall visible in southern end of pit.

…...below 0.05 m light grey medium angular gravel exposed at northern end presumably surround to drain or duct. Pit dug between exposed gravel and wall.

Plan (Not to Scale)



General Remarks

1. Excavation location scanned with GPR and CAT and Genny prior to excavation.
2. Trial pit dry whilst excavating.
3. Trial pit sides stable whilst excavating.
4. On completion, backfilled with arisings and compacted aggregate.
5. Trial pit terminated at 2.10m depth.

All dimensions in metres | Scale: **1:50**

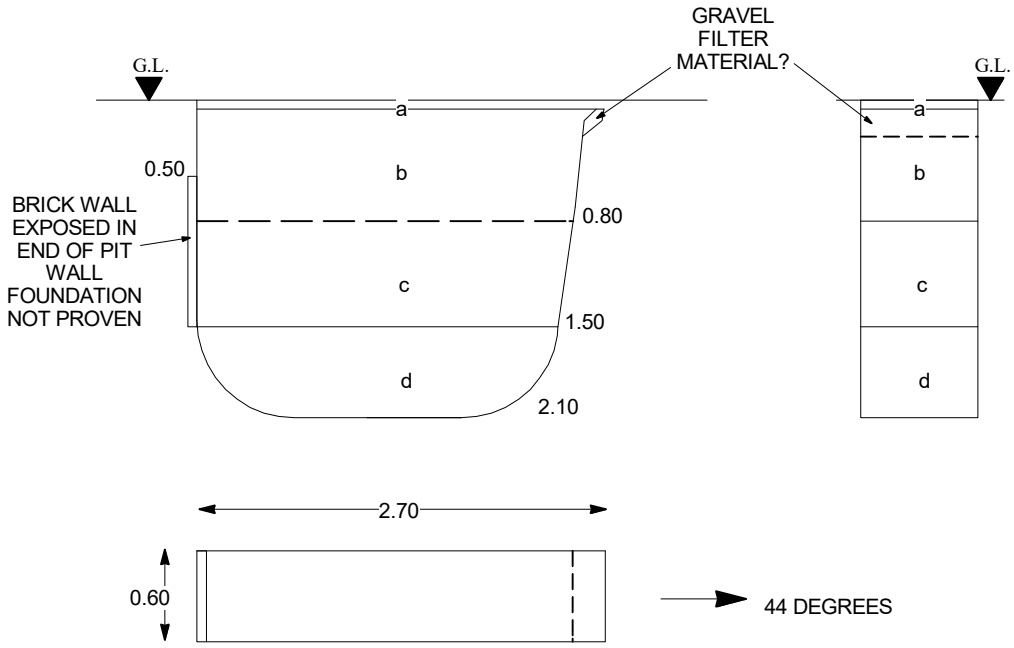
Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Tracked excavator**	**JMcCarthy**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log X1 - TP LOG - LOGGED BY STRATUM - A4 | 765325-2-AND-3-ANGEL-SQUARE.GPJ - v10_01.
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STRUCTURAL SOILS

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
2 & 3 Angel Square		**MEPC Ltd**		**TP104**
Contract Ref:	Start: **22.07.21**	Ground Level:	National Grid Co-ordinate:	Sheet:
765325	End: **22.07.21**	**46.85**	**E:384391.6 N:399013.5**	**2** of **2**



Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Tracked excavator**	**JMcCarthy**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log X1 - TP LOG - LOGGED BY STRATUM - A4 | 765325-2-AND-3-ANGEL-SQUARE.GPJ - v10_01.
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STRUCTURAL SOILS

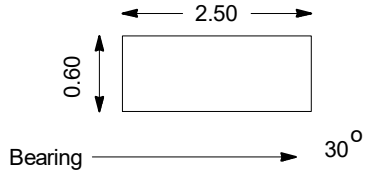
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
2 & 3 Angel Square	**MEPC Ltd**	**TP105**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
765325	End: **22.07.21**	**46.50**	**E:384381.1 N:398982.6**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.05	1	B				MADE GROUND: Light brown very sandy medium to coarse angular GRAVEL of limestone.	0.10	
0.05	101	ES				MADE GROUND: Dark brown slightly clayey very sandy fine to coarse angular GRAVEL of mainly sandstone and brick fragments. Medium cobble content of mainly brick fragments (whole and half bricks). . . . 0.10m: geotextile.	(0.80)	
0.30	102	ES						
0.30	2	B					0.90	
0.85	103	ES				Very stiff fissured very thinly to thinly bedded brown occasionally mottled grey along bedding and fissures slightly gravelly CLAY. Gravel is fine to medium sub rounded of quartzite, some angular gravel of coal. Fissures are very closely to closely spaced. Medium to coarse to sand on some bedding planes.	(0.60)	
0.85	3	B						
1.00		V	c_u=>130/>130					
1.20	104	ES						
1.20	4	B						
1.20	5	D					1.50	
1.50	6	B				Trial pit terminated at 1.50m depth.		
1.50	7	D						

Plan (Not to Scale)



General Remarks

1. Excavation location scanned with GPR and CAT and Genny prior to excavation.
2. Trial pit dry whilst excavating.
3. Trial pit sides stable whilst excavating.
4. On completion, backfilled with arisings and compacted aggregate.
5. Trial pit terminated at 1.50m depth.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Tracked excavator**	**JMcCarthy**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765325-2-AND-3-ANGEL-SQUARE.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Castleford: The Potteries, Pottery Street, Castleford, West Yorkshire, WF10 1NJ. Tel: 01977-552255, Fax: 01977-552299, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 01/11/21 - 15:09 | JM2 |

STRUCTURAL SOILS

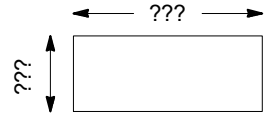
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
2 & 3 Angel Square	**MEPC Ltd**	**TP106**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
765325	**21.07.21** End: **21.07.21**	**44.45**	**E:384357.3 N:398996.4**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.20	1	D				MADE GROUND: Weak black ASPHALT. Matrix is angular to subrounded fine to medium. Voids of 25-30%	(0.62)	
							0.62	
0.70	4	D				MADE GROUND: Stiff brown slightly gravelly CLAY. Gravel is subangular to rounded fine to medium of mudstone, sandstone and quartz.	0.70	
						MADE GROUND: Light grey slightly sandy gravelly subangular to subrounded COBBLES of brick and sandstone. sand is fine to coarse. Gravel is subangular to subrounded fine to coarse of sandstone, mudstone, quartzite, brick and tarmacadam.	(0.92)	
							1.62	
1.70	6	D				Reddish brown slightly gravelly slightly clayey fine to medium SAND. Gravel is fine to medium subrounded to rounded of quartz. Low cobble content. Assessed as very dense sand.	(0.48)	
							2.10	
						Trial pit terminated at 2.10m depth.		

Plan (Not to Scale)



General Remarks

1. Excavation location scanned with GPR and CAT and Genny prior to excavation.
2. Trial pit dry whilst excavating.
3. Trial pit sides stable whilst excavating.
4. On completion, backfilled with arisings and compacted aggregate.
5. Trial pit terminated at 2.10m depth.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**JCB-3CX**	**CBailey**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765325-2-AND-3-ANGEL-SQUARE.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Castleford: The Potteries, Pottery Street, Castleford, West Yorkshire, WF10 1NJ. Tel: 01977-552255, Fax: 01977-552299, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 01/11/21 - 15:09 | JM2 |

STRUCTURAL SOILS

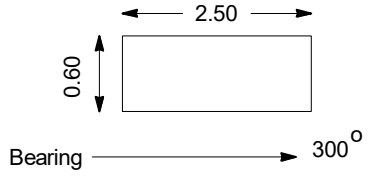
TRIAL PIT LOG

Contract:		Client:		Trial Pit:
2 & 3 Angel Square		**MEPC Ltd**		**TP107**
Contract Ref:	Start: **22.07.21**	Ground Level:	National Grid Co-ordinate:	Sheet:
765325	End: **22.07.21**	**44.20**	**E:384354.0 N:398930.2**	**1** of **2**

Description of strata by stratum code and associated diagrams

Stratum code	Stratum description
a	MADE GROUND: Tarmac
b	MADE GROUND: Brown very sandy fine to coarse angular GRAVEL of mainly sandstone. Medium cobble content of mainly brick fragments (whole and half bricks).
c	MADE GROUND: Tarmac
d	MADE GROUND: Light brown very sandy fine to coarse angular GRAVEL of mainly sandstone some brick fragments. Occasional whole and half bricks.
e	MADE GROUND: Angular cobbles and boulders, of sandstone and brick with fines. Fines comprise light brown very sandy fine to coarse angular gravel of sandstone and brick fragments.
f	MADE GROUND: Concrete, coarse gravel size aggregate including brick fragments up to half bricks.
g	MADE GROUND: Brick rubble, whole and half bricks.
…...base of the made ground becomes deeper in the central eastern end of pit, proved to 1.80 m on the north side and 2.00 m on the south side.	
…...below 0.95 m brick walls exposed in eastern end of pit in both the north and south faces and at the end.	
h	Stiff fissured very thinly to thinly bedded brown occasionally mottled grey along bedding and fissures slightly gravelly CLAY. Gravel is fine to medium sub rounded of quartzite. Fissures are very closely to closely spaced. Fine to medium sand on some bedding planes.

Plan (Not to Scale)



General Remarks

1. Excavation location scanned with GPR and CAT and Genny prior to excavation.
2. Trial pit dry whilst excavating.
3. Trial pit sides stable whilst excavating.
4. On completion, backfilled with arisings and compacted aggregate.
5. Trial pit terminated at 2.50m depth.

All dimensions in metres | Scale: **1:50**

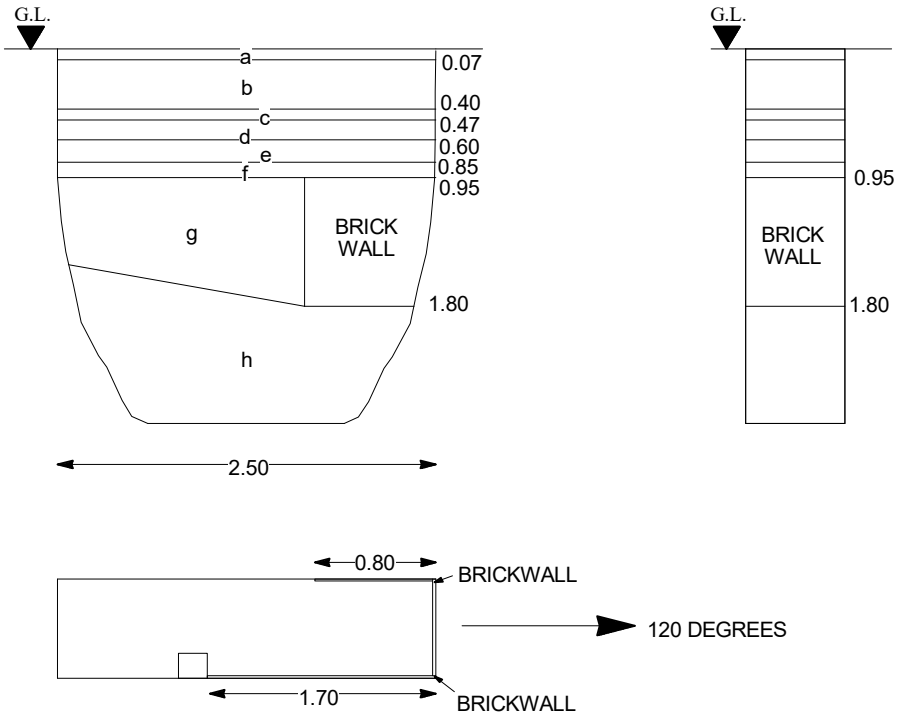
Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Tracked excavator**	**JMcCarthy**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log X1 - TP LOG - LOGGED BY STRATUM - A4 | 765325-2-AND-3-ANGEL-SQUARE.GPJ - v10_01.
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STRUCTURAL SOILS

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
2 & 3 Angel Square		**MEPC Ltd**		**TP107**
Contract Ref:	Start: **22.07.21**	Ground Level:	National Grid Co-ordinate:	Sheet:
765325	End: **22.07.21**	**44.20**	**E:384354.0 N:398930.2**	**2** of **2**



Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Tracked excavator**	**JMcCarthy**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log X1 - TP LOG - LOGGED BY STRATUM - A4 | 765325-2-AND-3-ANGEL-SQUARE.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Castleford: The Potteries, Pottery Street, Castleford, West Yorkshire, WF10 1NJ. Tel: 01977-552255, Fax: 01977-552299, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 01/11/21 - 14:46 | JM2 |

STRUCTURAL SOILS

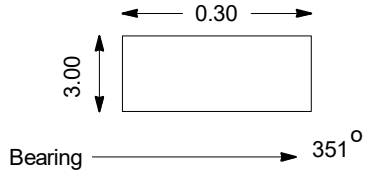
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
2 & 3 Angel Square	**MEPC Ltd**	**TP108**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
765325	**20.07.21** End: **20.07.21**	**44.60**	**E:384358.0 N:398969.2**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.10	1	D				MADE GROUND: Grey sandy angular to subangular fine to coarse GRAVEL of limestone and concrete.	0.25	
0.25-0.55	3	B				MADE GROUND: Cream sandy gravelly angular to subrounded COBBLES of sandstone.	(0.30)	
0.30	2	D					0.55	
0.55-0.85	5	B				. . . Possible brick foundations encountetered in southern end of trial pit at 0.50m.		
0.60	101	ES				MADE GROUND: Black very gravelly fine to coarse SAND of ash. Gravel is angular to subrounded fine to coarse of ash, occasional brick and concrete.	(0.30)	
0.60	4	D					0.85	
0.85-1.25	7	B				Stiff very thinly bedded brown mottled grey on bedding CLAY with fine sand / silt on bedding. Very occasional fine angular gravel of coal.		
0.90	102	ES					(0.40)	
0.90	6	D					1.25	
1.25-1.85	9	B				Very stiff dark brown mottled grey slightly sandy CLAY with indistinct laminations, some grey mottling on laminations.		
1.30	103	ES						
1.30	8	D					(1.05)	
1.85-2.30	11	B				. . . 1.85m - 2.30m: slightly gravelly with low cobble content. Cobbles subrounded to rounded of mudstone. Gravel subrounded to rounded fine to coarse of mudstone and sandstone.		
2.00	10	D					2.30	
2.30-2.50	13	B				Orangish brown gravelly silty fine to medium SAND. Gravel is subangular to rounded fine to coarse of sandstone and occasional mudstone and quartz. Assessed as dense sand.	2.50	
2.35	12	D				Trial pit terminated at 2.50m depth.		

Plan (Not to Scale)



General Remarks

1. Excavation location scanned with GPR and CAT and Genny prior to excavation.
2. Trial pit dry whilst excavating.
3. Trial pit sides stable whilst excavating.
4. On completion, backfilled with arisings and compacted aggregate.
5. Trial pit terminated at 2.50m depth.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**JCB-3CX**	**IHayes**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765325-2-AND-3-ANGEL-SQUARE.GPJ - v10_01.
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STRUCTURAL SOILS

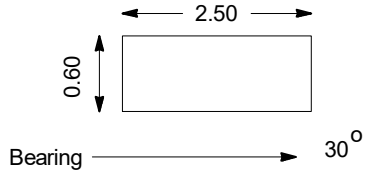
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
2 & 3 Angel Square	**MEPC Ltd**	**TP109**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
765325	End: **22.07.21**	**46.20**	**E:384375.5 N:398969.2**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Light brown very sandy medium to coarse angular GRAVEL of limestone.	0.25	
0.20	1	B						
0.20	101	ES						
0.30	102	ES				MADE GROUND: Brown slightly clayey very sandy fine to coarse angular GRAVEL of mainly sandstone and brick fragments. Medium cobble content of mainly brick fragments (up to half bricks).	0.40	
0.30	2	B						
0.50	103	ES				POSSIBLE MADE GROUND: Very stiff brown occassionally mottled grey slightly gravelly CLAY. Gravel is fine to medium angular of brick fragments. Reworked material.	0.60	
0.50	3	B						
0.60		V	c_u=>130/>130			Very stiff fissured thinly bedded brown occasionally mottled grey along bedding and fissures slightly gravelly CLAY. Gravel is fine to medium sub rounded of quartzite. Fissures are closely spaced.	(0.90)	
1.20	104	ES						
1.20	4	B						
1.20	5	D						
							1.50	
						Trial pit terminated at 1.50m depth.		

Plan (Not to Scale)



General Remarks

1. Excavation location scanned with GPR and CAT and Genny prior to excavation.
2. Trial pit dry whilst excavating.
3. Trial pit sides stable whilst excavating.
4. On completion, backfilled with arisings and compacted aggregate.
5. Trial pit terminated at 1.50m depth.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Tracked excavator**	**JMcCarthy**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765325-2-AND-3-ANGEL-SQUARE.GPJ - v10_01.
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STRUCTURAL SOILS

TRIAL PIT LOG

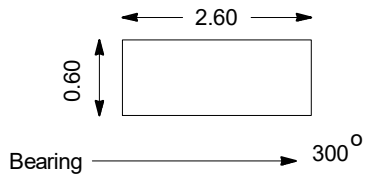
Contract:		Client:		Trial Pit:
2 & 3 Angel Square		**MEPC Ltd**		**TP110**
Contract Ref:	Start: **20.07.21**	Ground Level:	National Grid Co-ordinate:	Sheet:
765325	End: **20.07.21**	**44.40**	**E:384342.1 N:398981.4**	**1** of **2**

Description of strata by stratum code and associated diagrams

Stratum code	Stratum description
a	MADE GROUND: Brown sandy slightly clayey fine to coarse angular GRAVEL of mainly sandstone.
b	MADE GROUND: Light brown angular COBBLE and BOULDER with fines. Fines comprise light brown sandy fine to coarse angular GRAVEL of mainly sandstone. Cobbles and boulders of sandstone up to 100mm x 150mm x 200mm.
c	MADE GROUND: Firm to stiff brown sandy CLAY with fragments of timber and half bricks. Some dark grey discoluration in places.
d	MADE GROUND: Firm brown gravelly CLAY. Gravel is fine to coarse angular of brick and sandstone fragments, with some fragments of tarmac along boundaries.
e	Possible MADE GROUND: Stiff brown slightly gravelly CLAY with some partings of fine and medium sand.

…...at western edge becomes very sandy.

Plan (Not to Scale)



General Remarks

1. Excavation location scanned with GPR and CAT and Genny prior to excavation.
2. Trial pit dry whilst excavating.
3. Trial pit sides stable whilst excavating.
4. On completion, backfilled with arisings and compacted aggregate.
5. Trial pit terminated at 1.50m depth.

All dimensions in metres | Scale: **1:50**

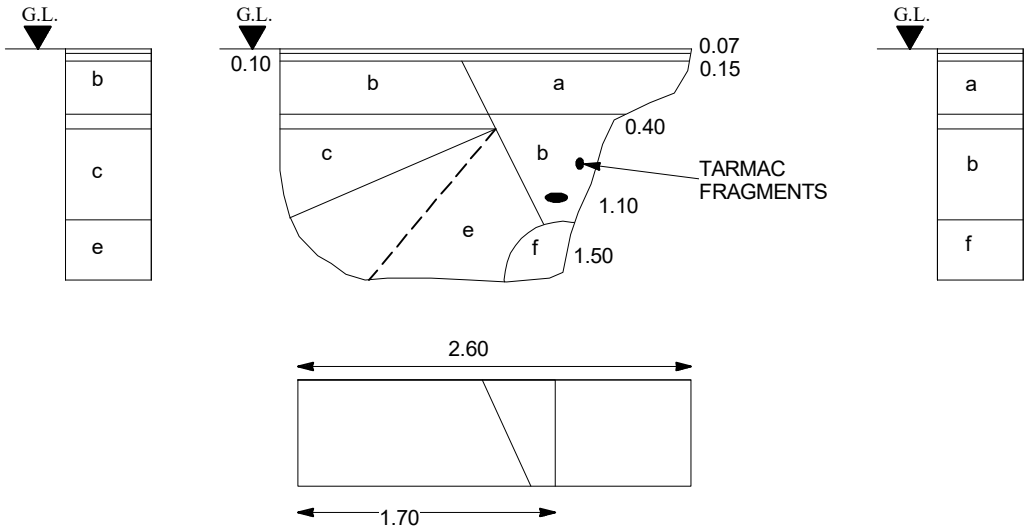
Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Tracked excavator**	**JMcCarthy**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log X1 - TP LOG - LOGGED BY STRATUM - A4 | 765325-2-AND-3-ANGEL-SQUARE.GPJ - v10_01.
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STRUCTURAL SOILS

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
2 & 3 Angel Square		**MEPC Ltd**		**TP110**
Contract Ref:	Start: **20.07.21**	Ground Level:	National Grid Co-ordinate:	Sheet:
765325	End: **20.07.21**	**44.40**	**E:384342.1 N:398981.4**	**2** of **2**



Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Tracked excavator**	**JMcCarthy**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log X1 - TP LOG - LOGGED BY STRATUM - A4 | 765325-2-AND-3-ANGEL-SQUARE.GPJ - v10_01.
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STRUCTURAL SOILS

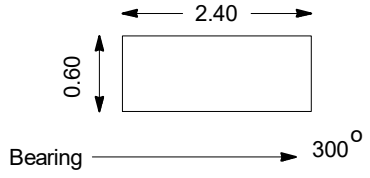
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
2 & 3 Angel Square	**MEPC Ltd**	**TP110A**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
765325	**20.07.21** End: **20.07.21**	**44.40**	**E:384340.1 N:398979.4**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Tarmac	0.07	
						MADE GROUND: Brown sandy slightly clayey fine to coarse angular GRAVEL of mainly sandstone.	0.10 0.15	
						MADE GROUND: Tarmac	0.30	
						MADE GROUND: Brown sandy slightly clayey fine to coarse angular GRAVEL of mainly sandstone.	0.31	
						MADE GROUND: Concrete . . . 0.30-3.20m: the chamber is of brick construction with metal rungs in wall		
						Partially open entrance to a chamber. Metal cover visible in the excavation side. Chamber dipped to 2.90 m below concrete level 3.20m below ground level.	(2.89)	
							3.20	
						Trial pit terminated at 0.31m, base of chamber probed to 3.20m depth.		

Plan (Not to Scale)



General Remarks

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Tracked excavator**	**JMcCarthy**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765325-2-AND-3-ANGEL-SQUARE.GPJ - v10_01.
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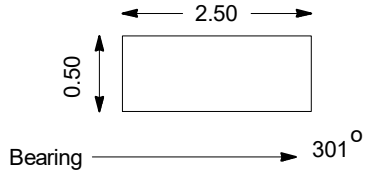
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
2 & 3 Angel Square	**MEPC Ltd**	**TP111**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
765325	End: **21.07.21**	**42.50**	**E:384324.8 N:398955.0**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Weak greyish black ASPHALT. Matrix is angular to subrounded fine to medium ~20-25% voids	0.10	
0.20	1	D				MADE GROUND: Brown slightly clayey gravelly fine to coarse SAND with high cobble content angular to subangular of brick and occasionally concrete. Frequent metal fragments cotton reels and plastic sheeting.		
0.20	101	ES						
0.20-1.00	2	LB				. . . 0.50m: gravel angular to subrounded fine to coarse of brick occasionally concrete sandstone and quartz		
1.00	102	ES						
1.00	3	D						
							(3.40)	
1.80	103	ES						
1.80	4	D						
1.80-2.70	5	LB				. . . 2.00m: gravel becoming subrounded predominantly.		
						. . . Potential brick floor/basement.		
2.70	104	ES						
2.70	6	D						
							3.50	
						Trial pit terminated at 3.50m depth.		

Plan (Not to Scale)



General Remarks

1. Excavation location scanned with GPR and CAT and Genny prior to excavation.
2. Trial pit dry whilst excavating.
3. Trial pit sides stable whilst excavating.
4. On completion, backfilled with arisings and compacted aggregate.
5. Trial pit terminated at 3.50m depth.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**JCB-3CX**	**IHayes**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765325-2-AND-3-ANGEL-SQUARE.GPJ - v10_01.
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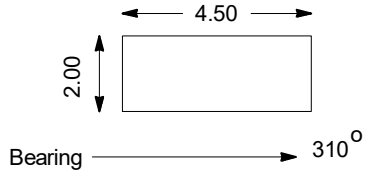
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
2 & 3 Angel Square	**MEPC Ltd**	**TP112**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
765325	**23.07.21** End: **23.07.21**	**41.70**	**E:384311.3 N:398968.3**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADEGROUND: Light grey sandy angular to subangular fine to coarse GRAVEL. Sand is fine to coarse. (Hardcore)	0.20	
						MADE GROUND: Black ASPHALT, aggregate is angular to subangular fine to medium gravel sized, matrix 30%	0.28	
						MADE GROUND: Light brown sandy angular to subangular fine to coarse GRAVEL of brick hardcore sandstone and wood. Low cobble content of brick and sandstone. Frequent fabric content and low boulder content or concrete.	(0.80) 1.08	
						MADE GROUND: Blackish brown slightly clayey slightly gravelly fine to coarse SAND. Gravel is angular to rounded fine to coarse of brick sandstone quartz low cobble content or brick and low fabric content.	(1.22) 2.30	
						Trial pit terminated at 2.30m depth.		

Plan (Not to Scale)



General Remarks

1. Excavation location scanned with GPR and CAT and Genny prior to excavation.
2. Trial pit dry whilst excavating.
3. Partial collapse of sides whilst excavating.
4. On completion, backfilled with arisings and compacted aggregate.
5. Trial pit terminated at 2.30m depth.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**JCB-3CX**	**CBailey**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765325-2-AND-3-ANGEL-SQUARE.GPJ - v10_01.
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APPENDIX C -
IN-SITU TESTING

(i) Standard Penetration Test (SPT) Summary Sheet

(ii) SPT N Value v Depth

(iii) SPT N_{60} Value v Depth

(iv) SPT N Value v Elevation

(v) SPT N_{60} Value v Elevation

(vi) In-Situ CBR Test Results (DCP)

STANDARD PENETRATION TEST SUMMARY TABLE

Exploratory Position ID	Depth (m)	Hole Dia (mm)	Casing Depth (m)	Water Depth (m)	Seating Drive		Test Drive			Hammer ID	Calibration Date	Energy Ratio (%)	N_{60}	Comments
					Blows	Pen (mm)	Blows	R (mm)	Result					
BH101	1.50	200	1.50	Dry	2,2	150	3,7,1,2		N=13	AR1862-2021	28/05/2021	95	21	
	3.50	200	3.00	Dry	4,3	150	4,5,6,8		N=23	AR1862-2021	28/05/2021	95	36	
	6.00	200	4.50	Dry	6,8	150	12,38	150	N=100*	AR1862-2021	28/05/2021	95	158	
	7.50	200	7.50	7.30	15,10	100	30,20+	120	N=125*	AR1862-2021	28/05/2021	95	198	SPT(c)
	9.00	150	9.00	6.00	5,10	150	12,23,15+	180	N=83*	AR1862-2021	28/05/2021	95	131	
	10.50	150	10.50	7.30	10,13	150	20,30	150	N=100*	AR1862-2021	28/05/2021	95	158	
	12.00	150	12.00	11.50	7,15	150	50+	70	N=214*	AR1862-2021	28/05/2021	95	339	
	15.00		15.00	13.50	15,10	100	50+	60	N=250*	AR1862-2021	28/05/2021	95	396	
	16.50		16.50	13.10	25	70	50+	70	N=214*	AR1862-2021	28/05/2021	95	339	
	18.00		18.00	14.50	25	30	50+	40	N=375*	AR1862-2021	28/05/2021	95	594	
BH102	2.00		1.50	Dry	2,3	150	3,5,4,4		N=16	CD-1 2020	04/12/2020	60	16	
	4.00		3.00	Dry	4,3	150	4,4,4,4		N=16	CD-1 2020	04/12/2020	60	16	
	6.50		6.50	Dry	8,17	119	20,24,6+	154	N=97*	CD-1 2020	04/12/2020	60	97	
	8.00		8.00	Dry	22,3	81	20,30+	128	N=117*	CD-1 2020	04/12/2020	60	117	
	9.50		9.50	Dry	2,3	150	4,8,30,8+	231	N=65*	CD-1 2020	04/12/2020	60	65	
	11.00		11.00	Dry	5,11	150	26,24+	105	N=143*	CD-1 2020	04/12/2020	60	143	
	12.50		12.00	Dry	2,2	150	2,3,3,5		N=13	CD-1 2020	04/12/2020	60	13	

Notes:
1. Tests carried out in general accordance with BS EN ISO 22476-3:2005, including amendment A1 (2011).
2. Reported blows are for 75mm penetration unless indicated "+".
3. Where full test drive was not achieved, actual penetration (R) and total test drive blows are reported.
4. Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.
5. Entries in the water depth column reflects the measured water depth at time of test.

N_{60} = (Measured hammer energy ratio / 60) x N value

STRUCTURAL SOILS
The Potteries
Pottery Street
Castleford
W. Yorkshire WF10 1NJ

Compiled By		Date	Contract Ref:
JMcCarthy	**JMCCARTHY**	**29.09.21**	**765325**
Contract: **2 & 3 Angel Square**			Page: **1** of **5**

STANDARD PENETRATION TEST SUMMARY TABLE

Exploratory Position ID	Depth (m)	Hole Dia (mm)	Casing Depth (m)	Water Depth (m)	Seating Drive		Test Drive			Hammer ID	Calibration Date	Energy Ratio (%)	N_{60}	Comments
					Blows	Pen (mm)	Blows	R (mm)	Result					
BH102	14.00		12.00	Dry	3,4	150	4,5,6,8		N=23	CD-1 2020	04/12/2020	60	23	
	15.50		12.00	Dry	8,9	150	13,24,13+	200	N=75*	CD-1 2020	04/12/2020	60	75	
	17.00		12.00	Dry	25	60	50+	58	N=259*	CD-1 2020	04/12/2020	60	259	
BH103	1.50		1.50	Dry	2,4	150	2,2,6,7		N=17	AR1862-2021	28/05/2021	95	27	
	2.50		1.50	Dry	2,3	150	2,2,3,20		N=27	AR1862-2021	28/05/2021	95	43	
	3.50		3.00	Dry	2,3	150	2,2,3,5		N=12	AR1862-2021	28/05/2021	95	19	
	4.50		4.50	Dry	10,15	85	50+	25	N=600*	AR1862-2021	28/05/2021	95	950	
	6.00		6.00	5.50	3,4	150	5,15,17,13+	280	N=54*	AR1862-2021	28/05/2021	95	86	
	9.00		8.00	8.70	10,15	130	40,10+	80	N=188*	AR1862-2021	28/05/2021	95	298	
	10.50		10.50	9.00	15,10	100	50+	70	N=214*	AR1862-2021	28/05/2021	95	339	
	12.00		11.70	6.00	25	40	50+	40	N=375*	AR1862-2021	28/05/2021	95	594	
BH104	1.50	200	1.50	Dry	25	75	50	75	N=200*	AR1862-2021	28/05/2021	95	317	
	2.50	200	2.50	2.00	15,10	100	35,15+	100	N=150*	AR1862-2021	28/05/2021	95	238	
	3.50	200	3.50	3.00	3,10	150	15,25,10+	180	N=83*	AR1862-2021	28/05/2021	95	131	
	4.50	200	4.50	4.20	6,19	130	50+	70	N=214*	AR1862-2021	28/05/2021	95	339	
	6.00	200	6.00	5.70	6,17	150	50+	60	N=250*	AR1862-2021	28/05/2021	95	396	SPT(c)

Notes:
1. Tests carried out in general accordance with BS EN ISO 22476-3:2005, including amendment A1 (2011).
2. Reported blows are for 75mm penetration unless indicated "+".
3. Where full test drive was not achieved, actual penetration (R) and total test drive blows are reported.
4. Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.
5. Entries in the water depth column reflects the measured water depth at time of test.

N_{60} = (Measured hammer energy ratio / 60) x N value

STRUCTURAL SOILS
The Potteries
Pottery Street
Castleford
W. Yorkshire WF10 1NJ

Compiled By		Date	Contract Ref:
JMcCarthy	**JMCCARTHY**	**29.09.21**	**765325**
Contract: **2 & 3 Angel Square**			Page: **2** of **5**

STANDARD PENETRATION TEST SUMMARY TABLE

Exploratory Position ID	Depth (m)	Hole Dia (mm)	Casing Depth (m)	Water Depth (m)	Seating Drive		Test Drive			Hammer ID	Calibration Date	Energy Ratio (%)	N_{60}	Comments
					Blows	Pen (mm)	Blows	R (mm)	Result					
BH104	7.50	200	7.50	6.70	5,6	150	14,16,20+	200	N=75*	AR1862-2021	28/05/2021	95	119	
	10.50	150	10.50	10.40	15,10	110	30,20+	130	N=115*	AR1862-2021	28/05/2021	95	182	
	12.00	150	12.00	10.50	25	75	50	75	N=200*	AR1862-2021	28/05/2021	95	317	
	13.50	150	13.50	10.50	10,15	150	20,30	150	N=100*	AR1862-2021	28/05/2021	95	158	
	15.00	150	15.00	12.10	14,11	115	50+	65	N=231*	AR1862-2021	28/05/2021	95	366	
	16.50	150	16.50	13.50	25	75	40,10+	85	N=176*	AR1862-2021	28/05/2021	95	279	
	18.00	150	18.00	13.50	25	65	50	75	N=200*	AR1862-2021	28/05/2021	95	317	
	19.50	150	19.50	14.20	25	75	50	75	N=200*	AR1862-2021	28/05/2021	95	317	
	21.00	150	21.00	13.00	10,12	150	35,15+	100	N=150*	AR1862-2021	28/05/2021	95	238	
	22.50	150	22.50	14.10	25	40	50+	40	N=375*	AR1862-2021	28/05/2021	95	594	
	24.00	150	22.50	16.20	25	30	50+	40	N=375*	AR1862-2021	28/05/2021	95	594	SPT(c)
WS101	1.20				2,1	150	2,3,2,2		N=9	DART384-2021	21/06/2021	76	11	
	2.00				2,4	150	4,3,4,4		N=15	DART384-2021	21/06/2021	76	19	
	3.00				4,4	150	5,7,8,10		N=30	DART384-2021	21/06/2021	76	38	
	4.00				4,6	150	7,9,9,14		N=39	DART384-2021	21/06/2021	76	49	
	4.95				5,7	150	13,25,12+	175	N=86*	DART384-2021	21/06/2021	76	109	

Notes:
1. **Tests carried out in general accordance with BS EN ISO 22476-3:2005, including amendment A1 (2011).**
2. **Reported blows are for 75mm penetration unless indicated "+".**
3. **Where full test drive was not achieved, actual penetration (R) and total test drive blows are reported.**
4. **Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.**
5. **Entries in the water depth column reflects the measured water depth at time of test.**

N_{60} = (Measured hammer energy ratio / 60) x N value

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JMcCarthy	**JMCCARTHY**	**29.09.21**	**765325**
Contract: **2 & 3 Angel Square**			Page: **3** of **5**

STANDARD PENETRATION TEST SUMMARY TABLE

Exploratory Position ID	Depth (m)	Hole Dia (mm)	Casing Depth (m)	Water Depth (m)	Seating Drive		Test Drive			Hammer ID	Calibration Date	Energy Ratio (%)	N_{60}	Comments
					Blows	Pen (mm)	Blows	R (mm)	Result					
WS102	1.00				1,1	150	2,1,2,2		N=7	DART384-2021	21/06/2021	76	9	
	2.00				1,3	150	4,4,5,4		N=17	DART384-2021	21/06/2021	76	22	
	3.00				3,4	150	4,5,5,5		N=19	DART384-2021	21/06/2021	76	24	
	4.00				3,4	150	4,6,5,6		N=21	DART384-2021	21/06/2021	76	27	
	4.80				8,14	150	50	75	N=200*	DART384-2021	21/06/2021	76	253	
WS103	1.20	101			2,2	150	4,3,4,4		N=15	DART384-2021	21/06/2021	76	19	
	2.00	101			3,6	150	11,15,21,3+	295	N=51*	DART384-2021	21/06/2021	76	65	
WS104	1.00				2,3	150	2,3,4,3		N=12	DART384-2021	21/06/2021	76	15	
	2.00				1,2	150	1,3,4,4		N=12	DART384-2021	21/06/2021	76	15	
	3.00				4,6	150	14,20,16	225	N=67*	DART384-2021	21/06/2021	76	85	
WS105	1.00	89			2,5	150	4,6,4,4		N=18	DART384-2021	21/06/2021	76	23	
	2.00	79			4,4	150	8,12,10,9		N=39	DART384-2021	21/06/2021	76	49	
	2.70	69			5,7	150	9,9,6,9		N=33	DART384-2021	21/06/2021	76	42	
	4.00	69			3,4	150	4,5,7,6		N=22	DART384-2021	21/06/2021	76	28	
	5.00	59			4,3	150	3,4,5,4		N=16	DART384-2021	21/06/2021	76	20	

Notes:
1. Tests carried out in general accordance with BS EN ISO 22476-3:2005, including amendment A1 (2011).
2. Reported blows are for 75mm penetration unless indicated "+".
3. Where full test drive was not achieved, actual penetration (R) and total test drive blows are reported.
4. Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.
5. Entries in the water depth column reflects the measured water depth at time of test.

N_{60} = (Measured hammer energy ratio / 60) x N value

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Contract: **2 & 3 Angel Square**			Page: **4** of **5**

STANDARD PENETRATION TEST SUMMARY TABLE

Exploratory Position ID	Depth (m)	Hole Dia (mm)	Casing Depth (m)	Water Depth (m)	Seating Drive		Test Drive			Hammer ID	Calibration Date	Energy Ratio (%)	N_{60}	Comments
					Blows	Pen (mm)	Blows	R (mm)	Result					
WS105	6.00	59			4,4	150	7,10,8,10		N=35	DART384-2021	21/06/2021	76	44	

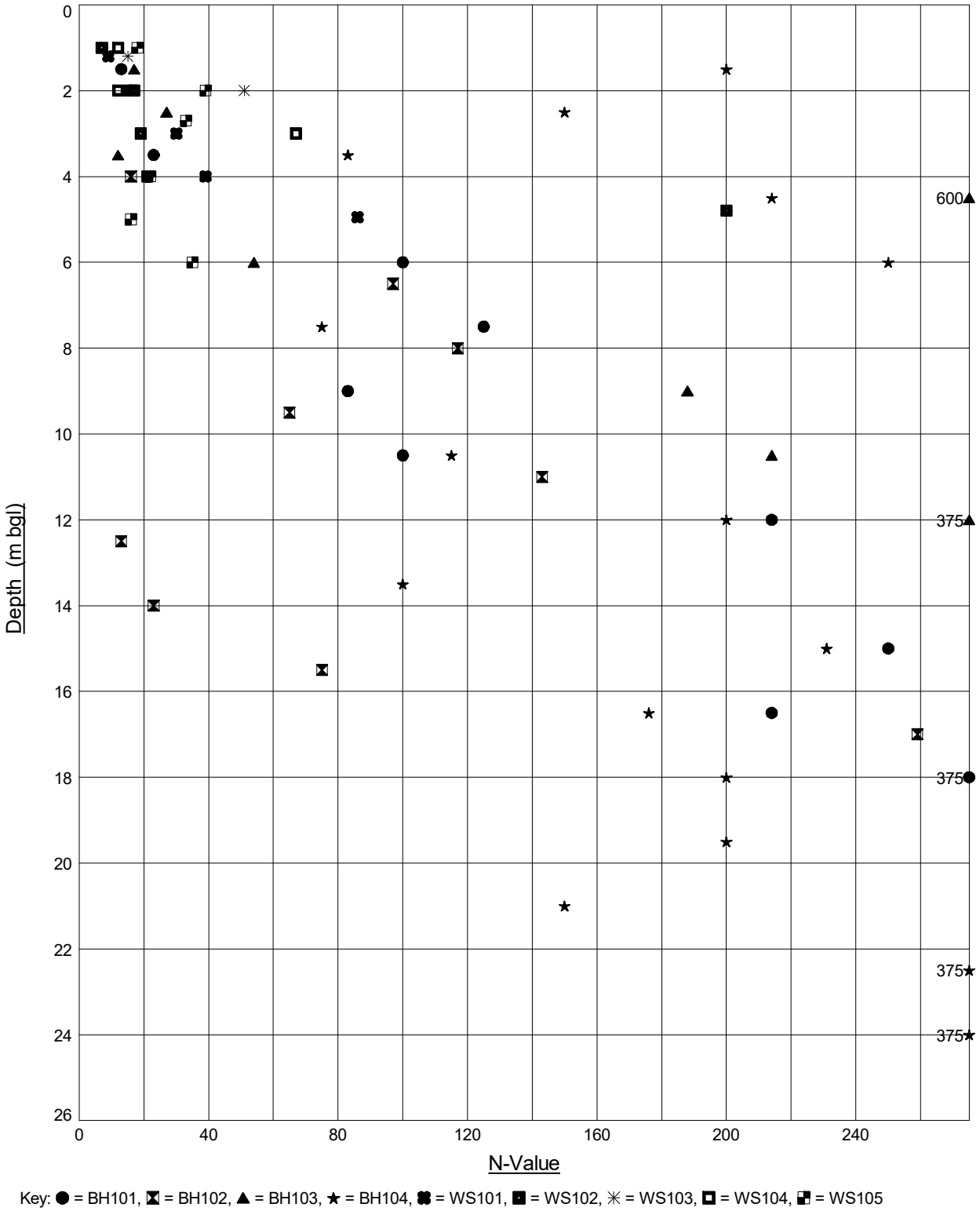
Notes:
1. Tests carried out in general accordance with BS EN ISO 22476-3:2005, including amendment A1 (2011).
2. Reported blows are for 75mm penetration unless indicated "+".
3. Where full test drive was not achieved, actual penetration (R) and total test drive blows are reported.
4. Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.
5. Entries in the water depth column reflects the measured water depth at time of test.

N_{60} = (Measured hammer energy ratio / 60) x N value

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Contract: **2 & 3 Angel Square**			Page: **5** of **5**

STANDARD PENETRATION TEST (SPT N-Value) vs DEPTH

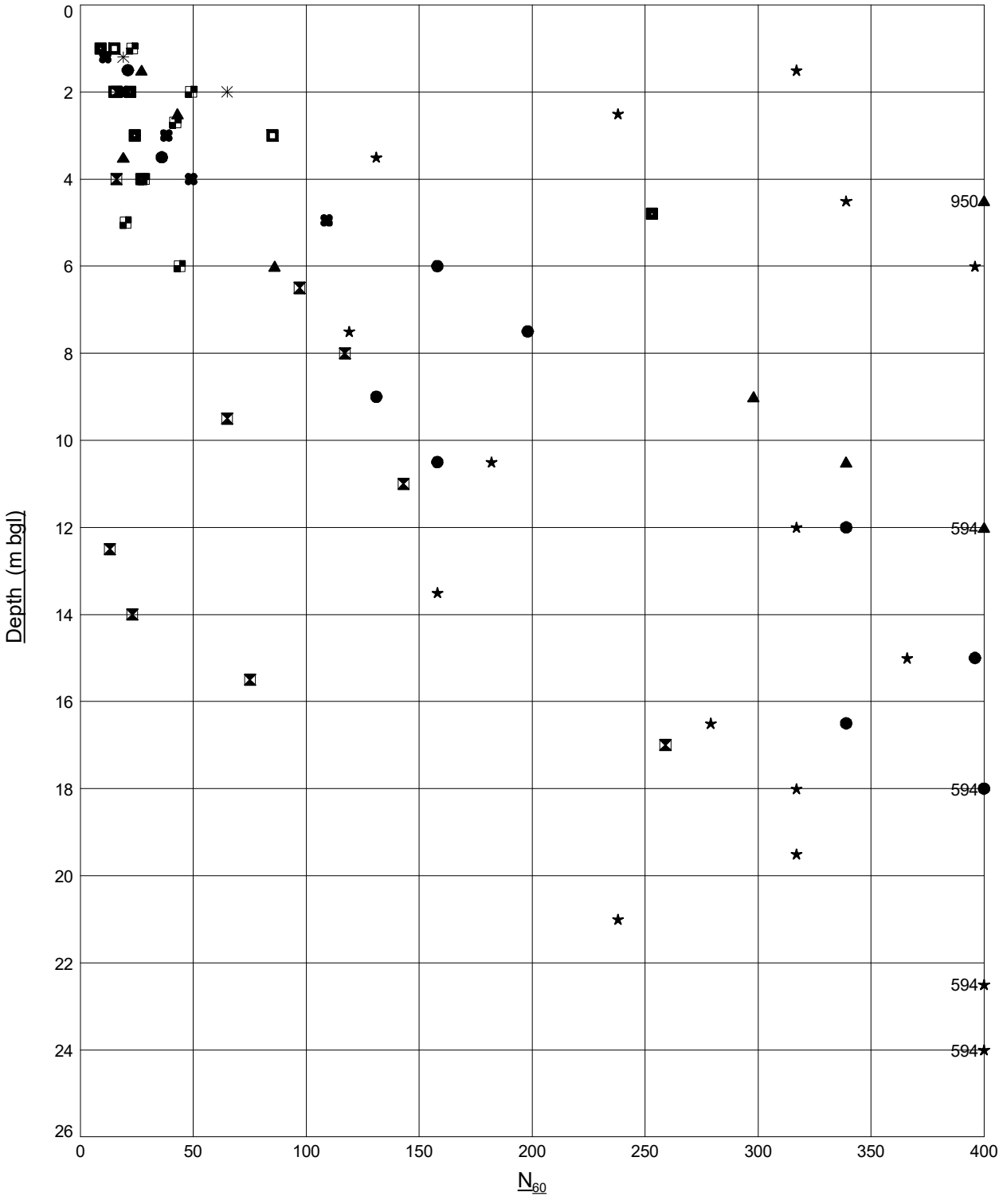


Key: ● = BH101, ⊠ = BH102, ▲ = BH103, ★ = BH104, ✱ = WS101, ■ = WS102, ✳ = WS103, □ = WS104, ▪ = WS105

STRUCTURAL SOILS The Potteries Pottery Street Castleford W. Yorkshire WF10 1NJ	Contract **2 & 3 Angel Square**	Date **29.09.21**	Compiled By JWC
	Client **MEPC Ltd**	Contract Ref: **765325**	AGS

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - GENERAL - A4P | 765325-2-AND-3-ANGEL-SQUARE.GPJ - v10_01. | 29/09/21 - 23:50 | JM2 |

STANDARD PENETRATION TEST (SPT N_{60}) vs DEPTH

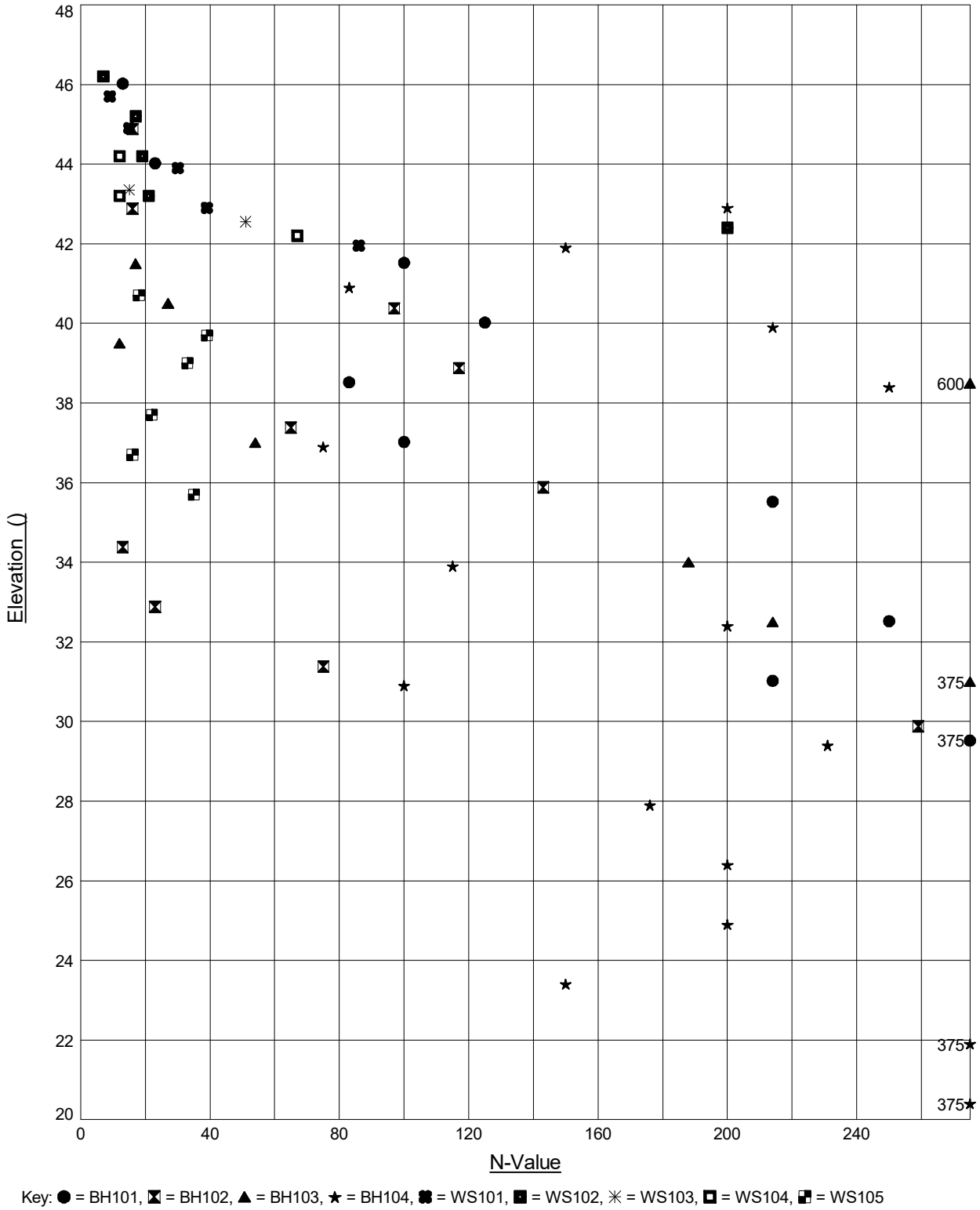


Key: ● = BH101, ⧓ = BH102, ▲ = BH103, ★ = BH104, ✱ = WS101, ■ = WS102, ✳ = WS103, □ = WS104, ▪ = WS105

STRUCTURAL SOILS The Potteries Pottery Street Castleford W. Yorkshire WF10 1NJ	Contract **2 & 3 Angel Square**	Date **29.09.21**	Compiled By JMC
	Client **MEPC Ltd**	Contract Ref: **765325**	AGS

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - GENERAL - A4P | 765325-2-AND-3-ANGEL-SQUARE.GPJ - v10_01. | 29/09/21 - 23:54 | JM2 |

STANDARD PENETRATION TEST (SPT N-Value) vs ELEVATION

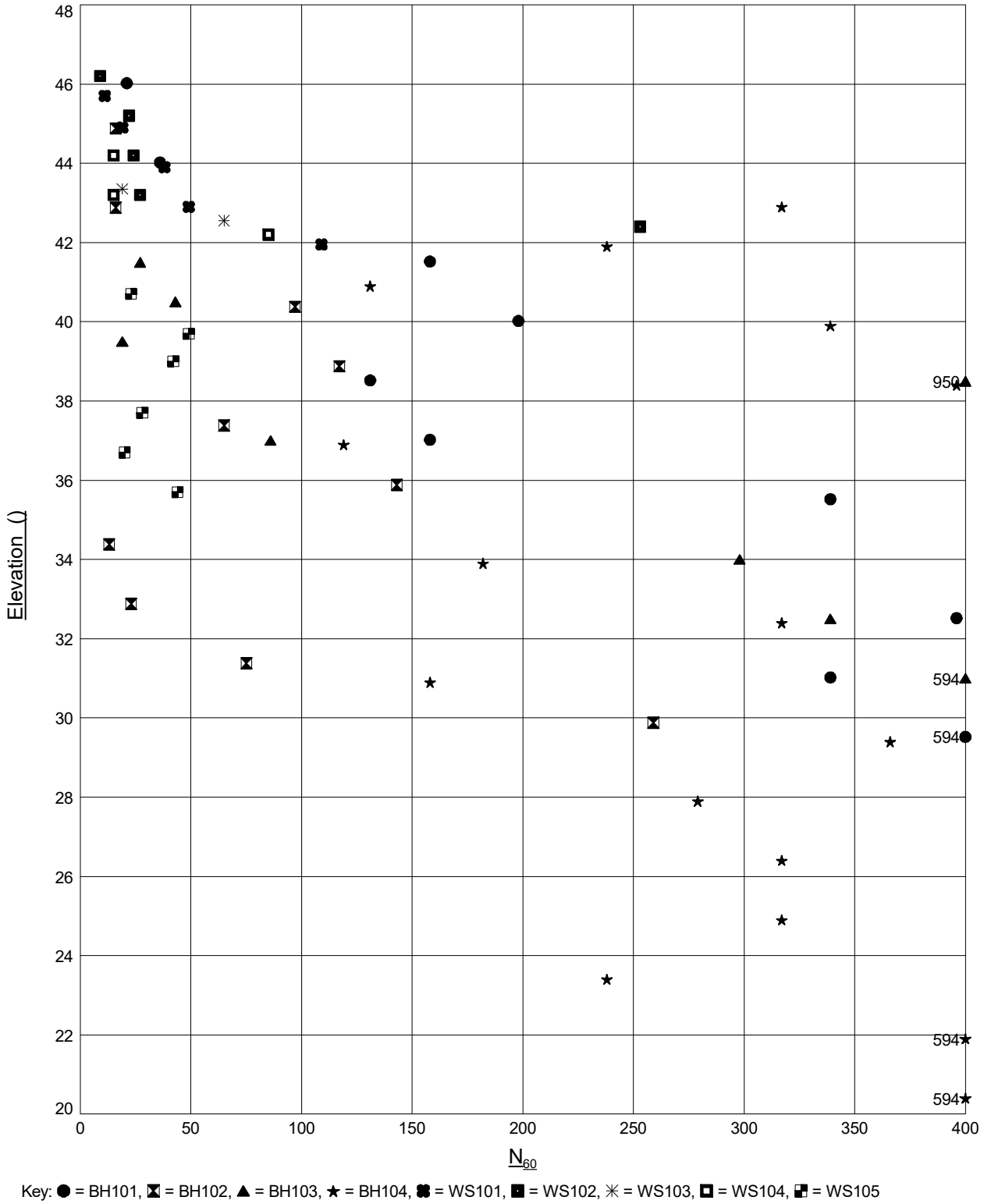


Key: ● = BH101, ⊠ = BH102, ▲ = BH103, ★ = BH104, ✱ = WS101, ■ = WS102, ✳ = WS103, □ = WS104, ▪ = WS105

STRUCTURAL SOILS The Potteries Pottery Street Castleford W. Yorkshire WF10 1NJ	Contract **2 & 3 Angel Square**	Date **29.09.21**	Compiled By JWL
	Client **MEPC Ltd**	Contract Ref: **765325**	AGS

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - GENERAL - A4P | 765325-2-AND-3-ANGEL-SQUARE.GPJ - v10_01. | 29/09/21 - 23:51 | JM2 |

STANDARD PENETRATION TEST (SPT N_{60}) vs ELEVATION

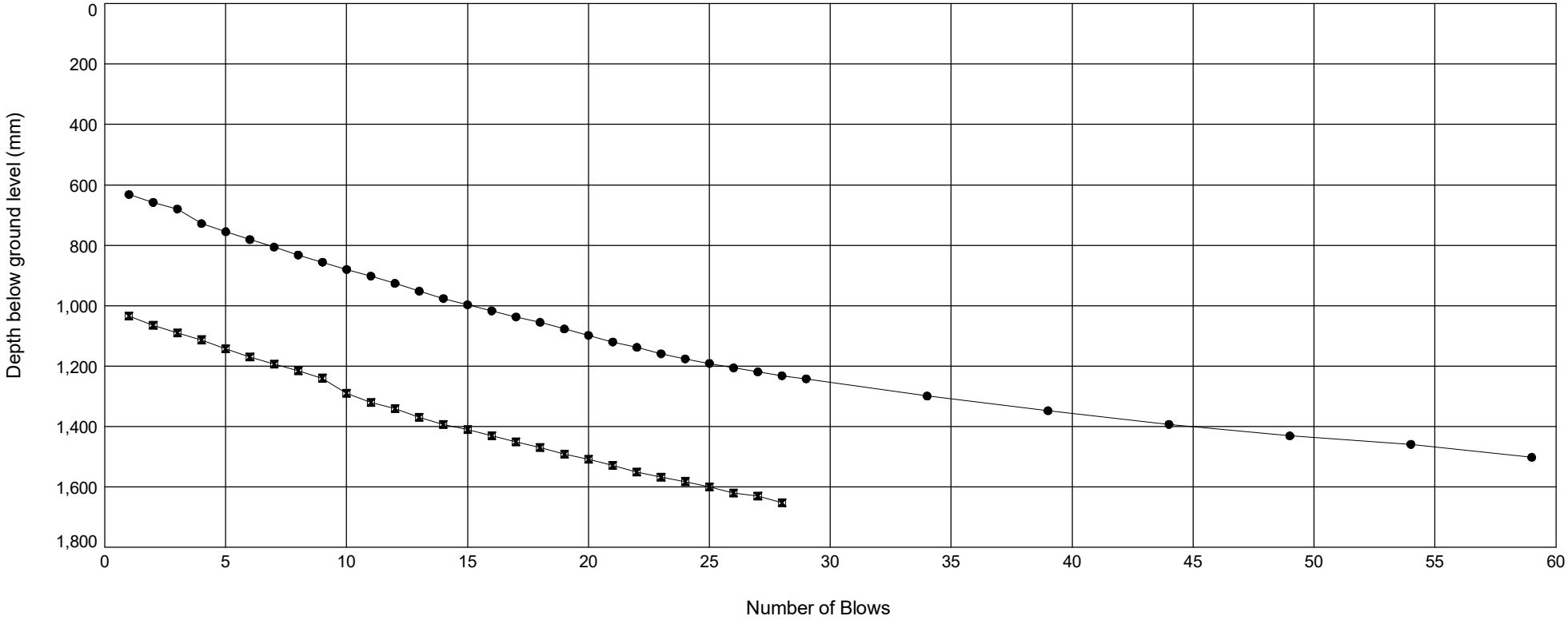


Key: ● = BH101, ⧓ = BH102, ▲ = BH103, ★ = BH104, ❀ = WS101, ■ = WS102, ✳ = WS103, □ = WS104, ▞ = WS105

STRUCTURAL SOILS The Potteries Pottery Street Castleford W. Yorkshire WF10 1NJ	Contract **2 & 3 Angel Square**	Date **01.11.21**	Compiled By JM
	Client **MEPC Ltd**	Contract Ref: **765325**	AGS

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - GENERAL - A4P | 765325-2-AND-3-ANGEL-SQUARE.GPJ - v10_01. | 01/11/21 - 16:57 | JM2 |

DCP TEST RESULTS - DEPTH vs NUMBER OF BLOWS



LEGEND

● - TP109 DCP ⊠ - TP105 DCP

STRUCTURAL SOILS The Potteries Pottery Street Castleford W. Yorkshire WF10 1NJ	Compiled By	Date	Checked By	Date	Contract Ref:
	dMcCarthy	30/09/21			765325
	Contract **2 & 3 Angel Square**				

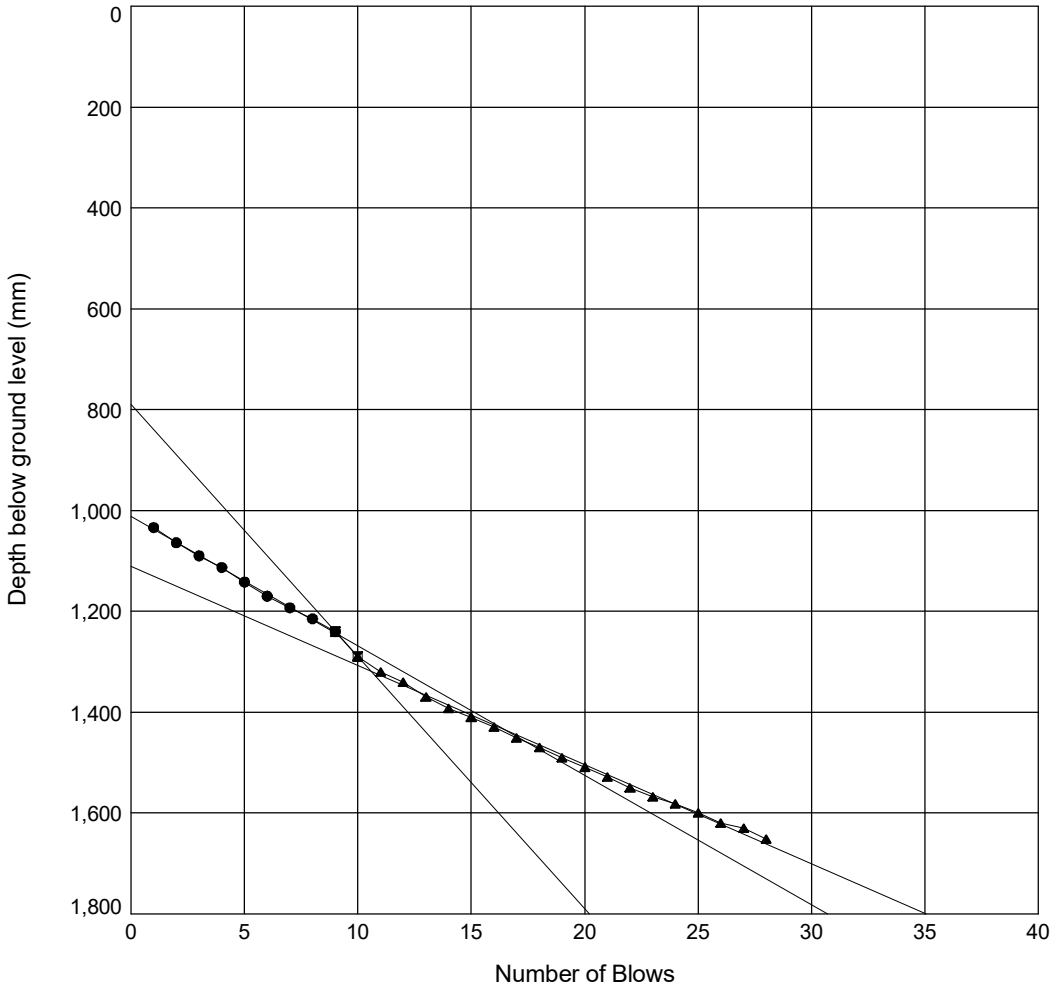
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GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph I - DCP - 4 - INTERP BLOWS V DEPTH - A4L | 765325-2-AND-3-ANGEL-SQUARE.GPJ - v10_01. | 30/09/21 - 00:11 | JM2

DCP TEST RESULTS - DEPTH vs NUMBER OF BLOWS

Position Ref : **TP105 DCP**

Test Date : **22.07.21**



CBR Determinations

Subset 1

Thickness 206
DCP = 25.7 mm/blow
CBR = 9.8

Subset 2

Thickness 50
DCP = 50.0 mm/blow
CBR = 4.8

Subset 3

Thickness 362
DCP = 19.7 mm/blow
CBR = 13.0

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dMcCarthy	30/09/21		

Contract

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Contract Ref:

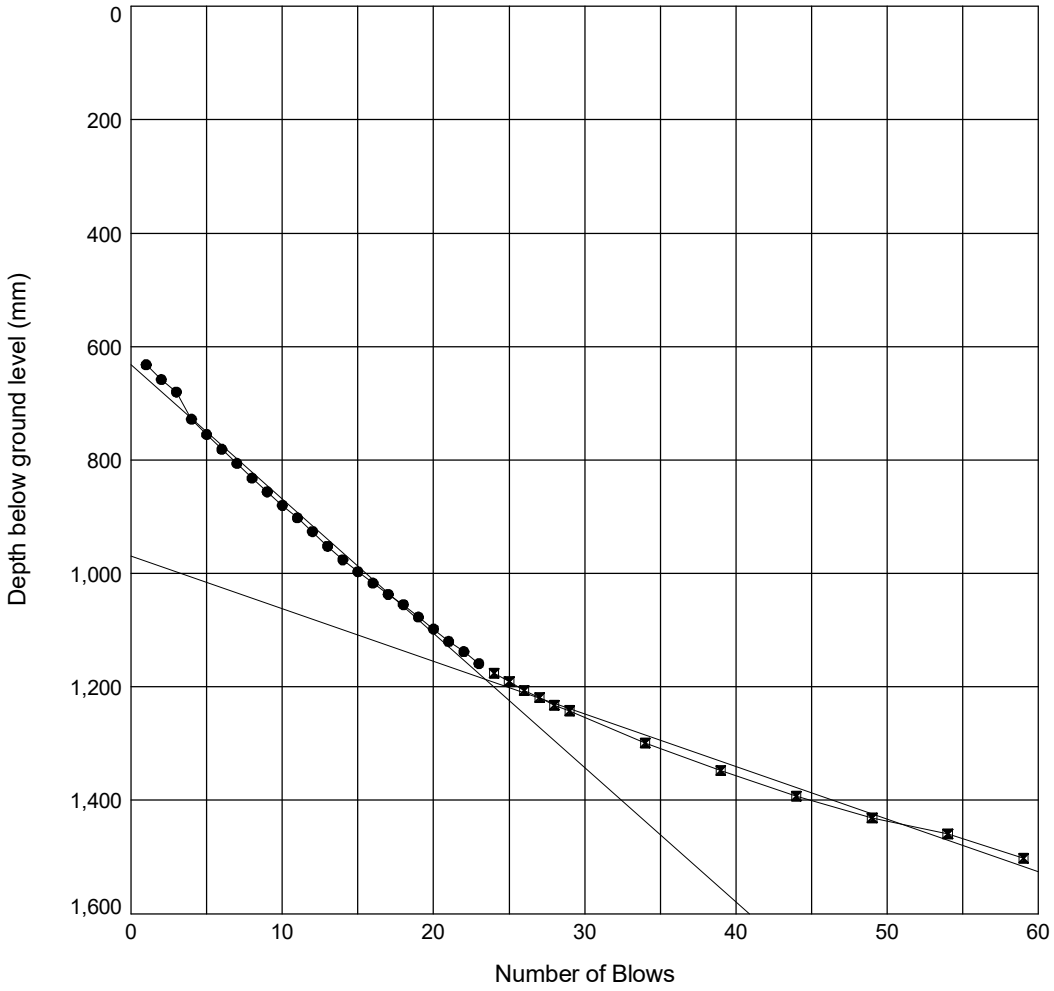
765325

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph I - DCP - 4 - INTERP BLOWS V DEPTH - A4L | 765325-2-AND-3-ANGEL-SQUARE.GPJ - v10_01. | 30/09/21 - 00:10 | JM2

DCP TEST RESULTS - DEPTH vs NUMBER OF BLOWS

Position Ref : **TP109 DCP**

Test Date : **22.07.21**



CBR Determinations

Subset 1

Thickness 527
DCP = 23.7 mm/blow
CBR = 10.6

Subset 2

Thickness 326
DCP = 9.3 mm/blow
CBR = 28.7

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Compiled By	Date	Checked By	Date	Contract Ref:
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Contract

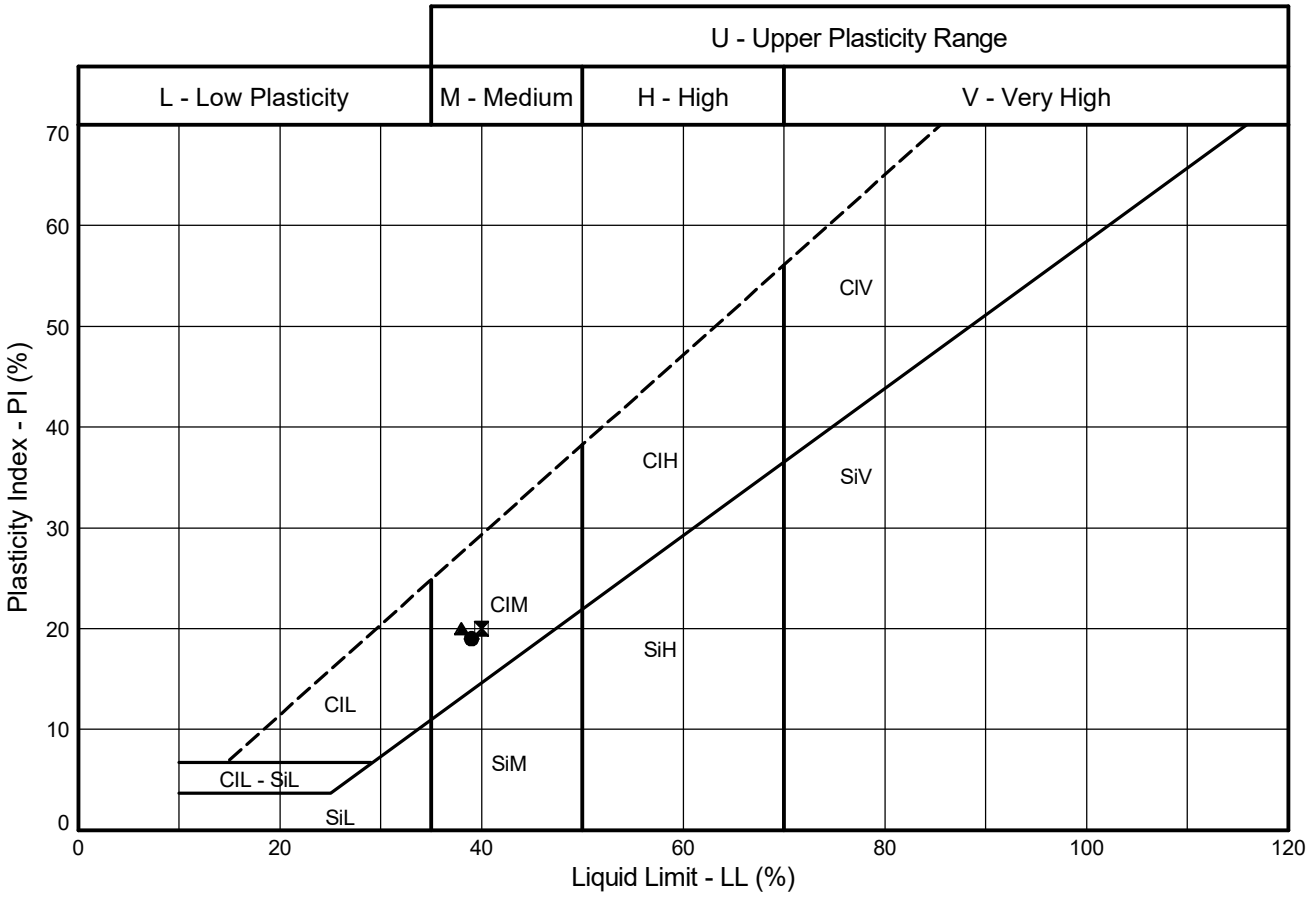
2 & 3 Angel Square

APPENDIX D - GEOTECHNICAL LABORATORY TESTING

(i) Laboratory Test Results

PI vs LL CHART

According to BS EN 14688-2:2018
Testing in accordance with BS EN ISO 17892-12:2018



Sample Identification				Test Method #	Preparation Method +	WC %	LL %	PL %	PI %	<425µm %	Lab location	Notes
	Exploratory Position ID	Sample	Depth (m)									
●	TP102	6D	1.50	5.3/5.5/6.5	5.2.7	20.3	39	20	19	97	C	I
⊠	TP104	4B	1.60	5.3/5.5/6.5	5.2.7	17.2	40	20	20	100	C	I
▲	WS104	9B	2.00	5.3/5.5/6.5	5.2.7	19.6	38	18	20	92	C	I

Tested in accordance with the following clauses of BS EN ISO 17892-12:2018.

5.3 - Cone Penetrometer Method
5.3.14 - One-Point Cone Penetrometer Method
5.4 - Casagrande Method
5.5 - Plastic Limit Method
6.5 - Plasticity Index

Water Content (WC) tested in accordance with BS EN ISO 17892-1:2014

+ Tested in accordance with the following clauses of BS EN ISO 17892-12:2018.

5.2.1 - Natural State
5.2.7 - Wet Sieved

Key: * = Non-standard test, NP = Non plastic,
I = Increasing WC, D = Decreasing WC.

Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tonbridge (TN11 9HU)

STRUCTURAL SOILS
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Castleford
W. Yorkshire WF10 1NJ

Compiled By		Date
D. Richards	DAISY RICHARDS	20/09/21

Contract	Contract Ref:
2 & 3 Angel Square	765325

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GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - ALINE STANDARD - 17892 - A4P | 765325-2-AND-3-ANGEL-SQUARE.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Castleford: The Potteries, Pottery Street, Castleford, West Yorkshire, WF10 1NJ. Tel: 01977-552255, Fax: 01977-552299, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 20/09/21 - 13:18 | DR1 |

SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with Part 1,Part 12 of BS EN ISO 17892

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Water Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425um	Description of Sample
TP102	6	D	1.50	20.3	39	20	19	97	Brown slightly sandy slightly gravelly CLAY
TP104	4	B	1.60	17.2	40	20	20	100	Brown slightly sandy slightly gravelly CLAY
WS104	9	B	2.00	19.6	38	18	20	92	Brown slightly sandy slightly gravelly CLAY

SYMBOLS: * denotes BS 1377

STRUCTURAL SOILS LTD

Contract:

2 & 3 Angel Square

Contract Ref:

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PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Trial Pit: **TP104** Sample Ref: **4** Sample Type: **B** Depth (m): **1.60**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	16%	16%	24%	8%	4%	1%	1%	0%	0%	
	SILT			SAND			GRAVEL			
30%	56%			13%			1%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**100**
6.30	**100**
3.35	**100**
2.00	**99**
1.18	**99**
0.630	**98**
0.425	**97**
0.200	**94**
0.150	**92**
0.063	**86**

Particle Diameter (mm)	Percent Passing (%)
0.02	**62**
0.006	**46**
0.002	**30**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**NA**
D_{30} (mm)	**0.002**
D_{50} (mm)	**0.008**
D_{60} (mm)	**0.017**
D_{85} (mm)	**0.060**
D_{90} (mm)	**0.112**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown slightly sandy slightly gravelly CLAY

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2

STRUCTURAL SOILS
The Potteries
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Castleford
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Compiled By	Date
DAISY RICHARDS	20/09/21

Contract	Contract Ref:
2 & 3 Angel Square	**765325**

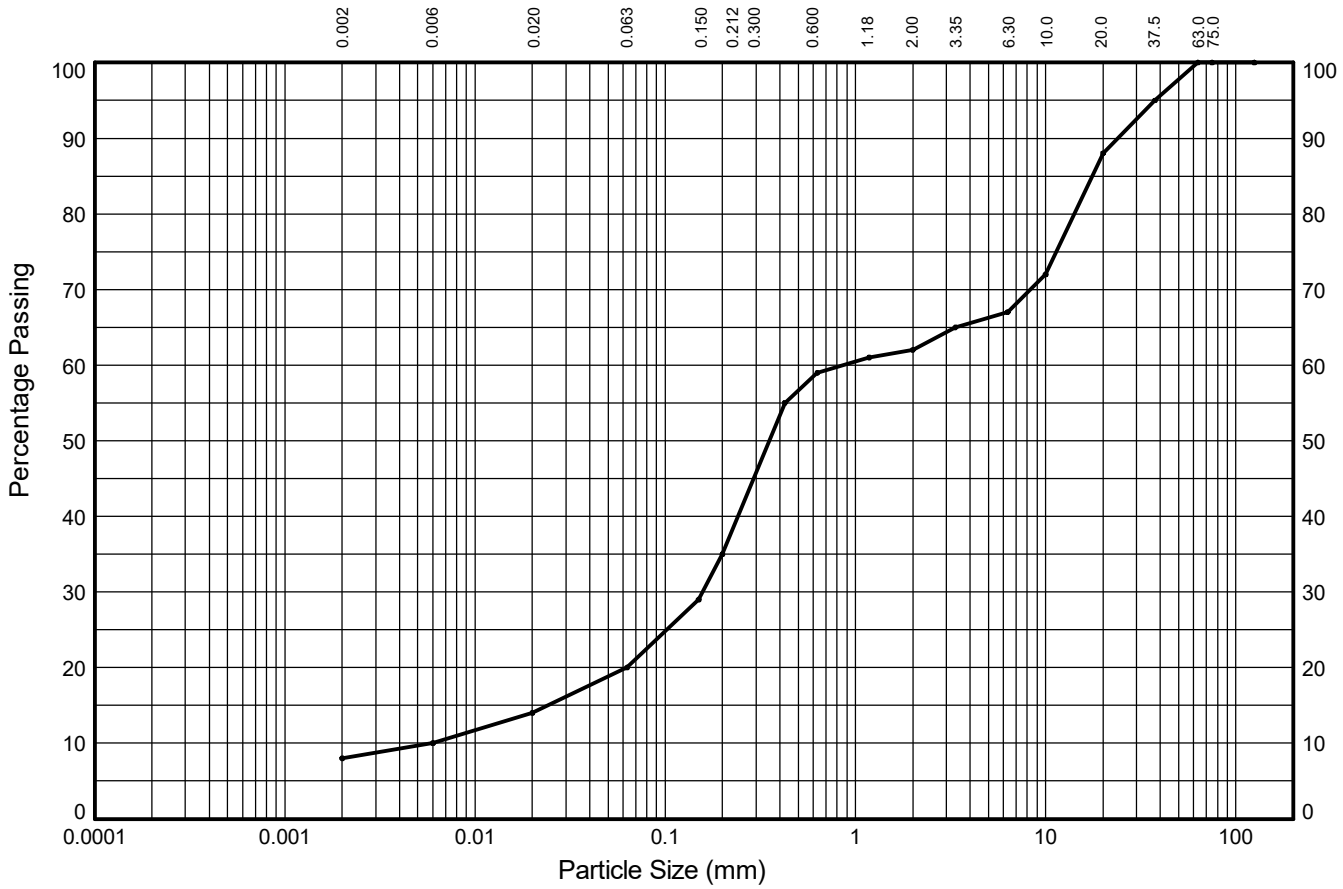
AGS

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - PSD - A4P | 765325-2-AND-3-ANGEL-SQUARE.GPJ - v10_01
Structural Soils Ltd, Branch Office - Castleford: The Potteries, Pottery Street, Castleford, West Yorkshire, WF10 1NJ. Tel: 01977-552255, Fax: 01977-552299, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 20/09/21 - 13:21 | DR1 |

PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Trial Pit: **TP108** Sample Ref: **13** Sample Type: **B** Depth (m): **2.30**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	2%	4%	6%	15%	24%	3%	5%	21%	12%	
	SILT			SAND			GRAVEL			
8%	12%			42%			38%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**95**
20.0	**88**
10.0	**72**
6.30	**67**
3.35	**65**
2.00	**62**
1.18	**61**
0.630	**59**
0.425	**55**
0.200	**35**
0.150	**29**
0.063	**20**

Particle Diameter (mm)	Percent Passing (%)
0.02	**14**
0.006	**10**
0.002	**8**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.006**
D_{15} (mm)	**0.024**
D_{30} (mm)	**0.157**
D_{50} (mm)	**0.352**
D_{60} (mm)	**0.862**
D_{85} (mm)	**17.563**
D_{90} (mm)	**23.935**
C_U	**144**
C_C	**5**

Soil Description:

Brown clayey very gravelly SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2

STRUCTURAL SOILS
The Potteries
Pottery Street
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Contract	Contract Ref:
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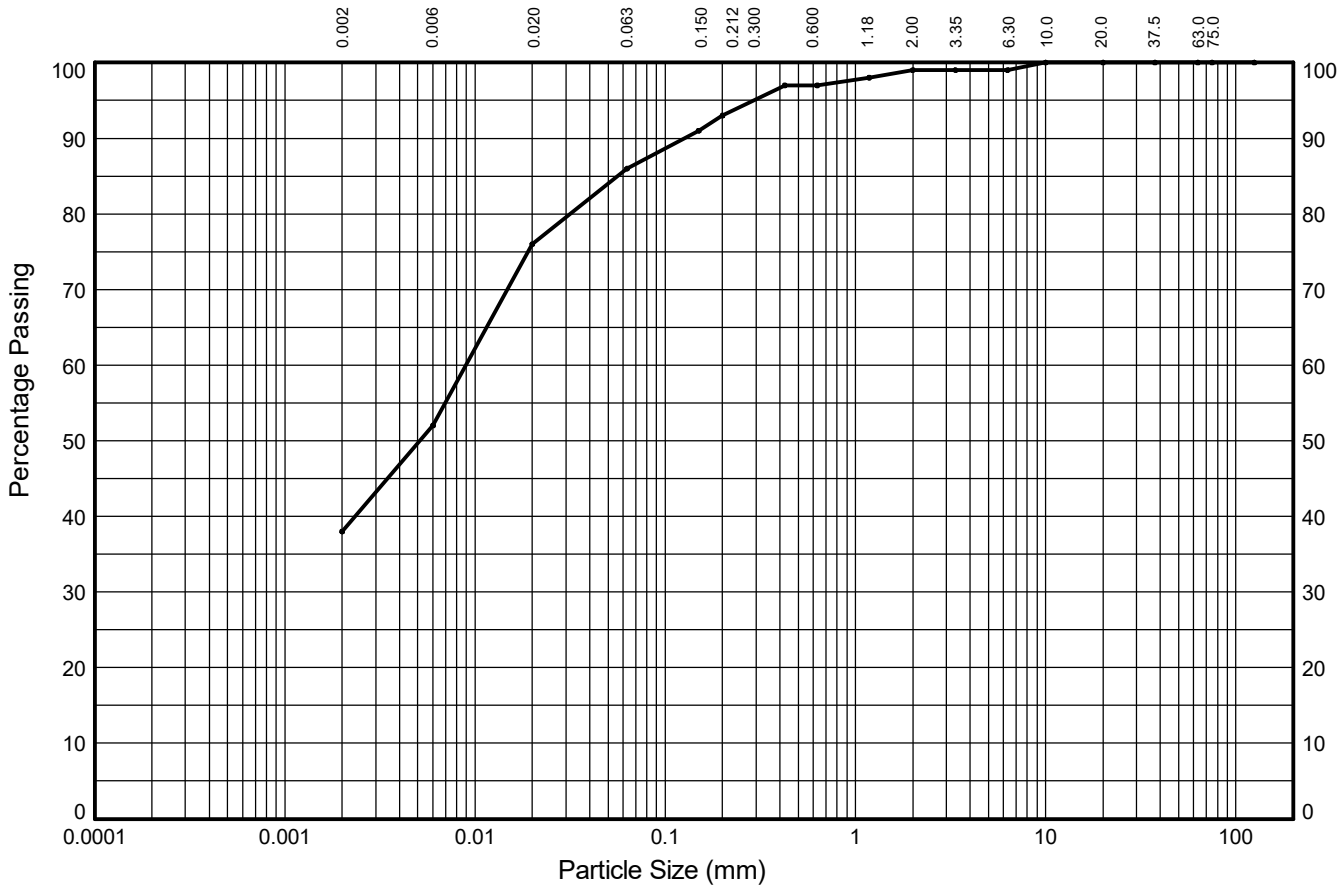
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PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Window Sample: **WS104** Sample Ref: **9** Sample Type: **B** Depth (m): **2.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	15%	23%	10%	7%	4%	2%	0%	1%	0%	
	SILT			SAND			GRAVEL			
38%	48%			13%			1%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**100**
6.30	**99**
3.35	**99**
2.00	**99**
1.18	**98**
0.630	**97**
0.425	**97**
0.200	**93**
0.150	**91**
0.063	**86**

Particle Diameter (mm)	Percent Passing (%)
0.02	**76**
0.006	**52**
0.002	**38**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**NA**
D_{30} (mm)	**NA**
D_{50} (mm)	**0.005**
D_{60} (mm)	**0.009**
D_{85} (mm)	**0.056**
D_{90} (mm)	**0.126**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown slightly sandy slightly gravelly CLAY

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2

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SUMMARY OF POINT LOAD INDEX TEST RESULTS

RT03 Point Load Testing (in accordance with ISRM 2007)

Exploratory Position ID	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Moisture Content (%)	Rock Type
BH101	18.00	D	62.27	99.19	0.101	99	0.01	1.36	0.01	13	SANDSTONE
BH101	20.50	D	78.43	101.46	0.126	101	0.01	1.37	0.02	11	SANDSTONE
BH101	23.00	A	100.26	57.95	0.807	86	0.11	1.28	0.14	10	SANDSTONE
BH101	25.50	A	73.14	54.5	1.161	71	0.23	1.17	0.27	11	SANDSTONE
BH101	25.50	D	100.28	73.14	0.275	73	0.05	1.19	0.06	11	SANDSTONE
BH101	29.00	A	100.02	54.47	0.221	83	0.03	1.26	0.04	11	SANDSTONE
BH101	29.00	D	81.02	100.92	0.245	101	0.02	1.37	0.03	11	SANDSTONE
BH102	19.00	A	61.95	53.31	0.762	65	0.18	1.12	0.20	13	SANDSTONE

Key : A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel to planes of weakness, P = Perpendicular to planes of weakness. [NS] denotes Non Standard Test.

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SUMMARY OF POINT LOAD INDEX TEST RESULTS

RT03 Point Load Testing (in accordance with ISRM 2007)

Exploratory Position ID	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Moisture Content (%)	Rock Type
BH102	19.00	D	85.65	61.95	0.359	62	0.09	1.10	0.10	13	SANDSTONE
BH102	21.50	A	96.18	55.15	1.002	82	0.15	1.25	0.19	11	SANDSTONE
BH102	21.50	D	107.77	96.18	0.596	96	0.06	1.34	0.09	11	SANDSTONE
BH102	24.00	D	73.92	97.54	0.721	98	0.08	1.35	0.10	11	SANDSTONE
BH102	26.50	A	99.47	61.28	1.738	88	0.22	1.29	0.29	11	SANDSTONE
BH102	26.50	D	114.13	99.47	0.789	99	0.08	1.36	0.11	11	SANDSTONE
BH102	28.00	A	63.44	47.26	0.532	62	0.14	1.10	0.15	14	SANDSTONE
BH102	28.00	D	125.78	63.44	0.276	63	0.07	1.11	0.08	14	SANDSTONE

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SUMMARY OF POINT LOAD INDEX TEST RESULTS

RT03 Point Load Testing (in accordance with ISRM 2007)

Exploratory Position ID	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Moisture Content (%)	Rock Type
BH103	12.00	A	97.81	47.18	1.226	77	0.21	1.21	0.25	4.4	SANDSTONE
BH103	12.00	D	124.47	97.81	0.320	98	0.03	1.35	0.05	4.4	SANDSTONE
BH103	14.60	A	100.15	58.99	2.821	87	0.38	1.28	0.48	8.4	SANDSTONE
BH103	14.60	D	97.1	100.15	1.140	100	0.11	1.37	0.16	8.4	SANDSTONE
BH103	17.20	A	63.04	50.52	1.790	64	0.44	1.11	0.49	4.4	SANDSTONE
BH103	17.20	D	99.7	63.04	1.321	63	0.33	1.11	0.37	4.4	SANDSTONE
BH103	19.80	A	56.23	49.95	1.780	60	0.50	1.08	0.54	9.7	SANDSTONE
BH103	19.80	D	73.35	56.23	0.524	56	0.17	1.05	0.17	9.7	SANDSTONE

Key : A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel to planes of weakness, P = Perpendicular to planes of weakness. [NS] denotes Non Standard Test.

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SUMMARY OF POINT LOAD INDEX TEST RESULTS

RT03 Point Load Testing (in accordance with ISRM 2007)

Exploratory Position ID	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Moisture Content (%)	Rock Type
BH103	25.00	D	73.54	98.09	0.386	98	0.04	1.35	0.05	9.5	SSANDSTONE SANDSTONE
BH104	24.00	A	101.03	68.09	2.274	94	0.26	1.33	0.34	14	SANDSTONE
BH104	24.00	D	137.36	101.03	1.641	101	0.16	1.37	0.22	14	SANDSTONE
BH104	25.40	A	103.08	50.21	2.280	81	0.35	1.24	0.43	12	SANDSTONE
BH104	25.40	D	90.74	103.08	1.439	103	0.14	1.38	0.19	12	SANDSTONE
BH104	26.80	A	48.74	45.33	2.308	53	0.82	1.03	0.84	14	SANDSTONE
BH104	26.80	D	87.11	48.74	1.677	49	0.71	0.99	0.70	14	SANDSTONE
BH104	28.20	A	100.59	51.96	3.004	82	0.45	1.25	0.56	12	SANDSTONE

Key : A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel to planes of weakness, P = Perpendicular to planes of weakness. [NS] denotes Non Standard Test.

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SUMMARY OF POINT LOAD INDEX TEST RESULTS

RT03 Point Load Testing (in accordance with ISRM 2007)

Exploratory Position ID	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Moisture Content (%)	Rock Type
BH104	28.20	D	109.85	100.59	2.023	101	0.20	1.37	0.27	12	SANDSTONE
BH104	31.00	D	105.02	101.36	1.512	101	0.15	1.37	0.20	10	SANDSTONE

Key : A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel to planes of weakness, P = Perpendicular to planes of weakness. [NS] denotes Non Standard Test.

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UNIAXIAL COMPRESSIVE STRENGTH

Preparation in accordance with ASTM D4543-19
Testing in accordance with ISRM 1974-2006

Borehole: **BH101** Sample Ref: Sample Type: **C** Depth (m) : **26.60**

Bulk Density (Mg/m^3): **2.17** Dry Density (Mg/m^3): **1.90** Moisture Content (%): **14**
Length (mm): **204.85** Diameter (mm): **100.52** Length/Diameter Ratio: **2.04**
Test Duration (mins:secs): **5:15** Stress Rate (kN/min): **7.8** Load at Failure (kN): **47.8**
UCS (MPa): **6.0** Failure Type: **Simple shear**

Note: **Axis of loading parallel to core axis**
Description: **SANDSTONE**
Specimen Preparation: **Specimen was not recored.**
Sample tolerance checks: Straightness: **PASS**. Flatness: **PASS**. Perpendicularity: **PASS**.



PRE-TEST FRONT



PRE-TEST BACK



POST-TEST FRONT



POST-TEST BACK

Samples delivered from site to storage facility. Samples are stored in a frost free environment, at temperatures >4°C
Compression machine: Impact CT340 2000kN Auto Compression Machine Serial No. CT340-22. SSL No. 011076

STRUCTURAL SOILS
The Potteries
Pottery Street
Castleford
W. Yorkshire WF10 1NJ

Compiled By		Date
	LORNA WHITWORTH	**08/09/21**

Contract	Job No
2 & 3 Angel Square	**765325**

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UNIAXIAL COMPRESSIVE STRENGTH

Preparation in accordance with ASTM D4543-19
Testing in accordance with ISRM 1974-2006

Borehole: **BH101** Sample Ref: Sample Type: **C** Depth (m) : **27.65**

Bulk Density (Mg/m^3): **2.16** Dry Density (Mg/m^3): **1.89** Moisture Content (%): **14**
Length (mm): **206.54** Diameter (mm): **100.58** Length/Diameter Ratio: **2.05**
Test Duration (mins:secs): **5:23** Stress Rate (kN/min): **7.8** Load at Failure (kN): **45.2**
UCS (MPa): **5.7** Failure Type: **Simple shear**

Note: **Axis of loading parallel to core axis**
Description: **SANDSTONE**
Specimen Preparation: **Specimen was not recored.**
Sample tolerance checks: Straightness: **PASS**. Flatness: **PASS**. Perpendicularity: **PASS**.



PRE-TEST FRONT



PRE-TEST BACK



POST-TEST FRONT



POST-TEST BACK

Samples delivered from site to storage facility. Samples are stored in a frost free environment, at temperatures >4°C
Compression machine: Impact CT340 2000kN Auto Compression Machine Serial No. CT340-22. SSL No. 011076

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Compiled By		Date
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UNIAXIAL COMPRESSIVE STRENGTH

Preparation in accordance with ASTM D4543-19
Testing in accordance with ISRM 1974-2006

Borehole: **BH101** Sample Ref: Sample Type: **C** Depth (m) : **28.30**

Bulk Density (Mg/m^3): **2.12** Dry Density (Mg/m^3): **1.85** Moisture Content (%): **15**
Length (mm): **200.66** Diameter (mm): **100.74** Length/Diameter Ratio: **1.99**
Test Duration (mins:secs): **2:47** Stress Rate (kN/min): **7.8** Load at Failure (kN): **31.0**
UCS (MPa): **3.9** Failure Type: **Vertical splitting**

Note: **Axis of loading parallel to core axis**
Description: **SANDSTONE**
Specimen Preparation: **Specimen was not recored.**
Sample tolerance checks: Straightness: **PASS**. Flatness: **PASS**. Perpendicularity: **PASS**.



PRE-TEST FRONT



PRE-TEST BACK



POST-TEST FRONT



POST-TEST BACK

Samples delivered from site to storage facility. Samples are stored in a frost free environment, at temperatures >4°C
Compression machine: Impact CT340 2000kN Auto Compression Machine Serial No. CT340-22. SSL No. 011076

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UNIAXIAL COMPRESSIVE STRENGTH

Preparation in accordance with ASTM D4543-19
Testing in accordance with ISRM 1974-2006

Borehole: **BH102** Sample Ref: Sample Type: **C** Depth (m) : **26.00**

Bulk Density (Mg/m^3): **2.56** Dry Density (Mg/m^3): **2.29** Moisture Content (%): **12**
Length (mm): **204.37** Diameter (mm): **97.74** Length/Diameter Ratio: **2.09**
Test Duration (mins:secs): **8:02** Stress Rate (kN/min): **7.8** Load at Failure (kN): **63.2**
UCS (MPa): **8.4** Failure Type: **Simple shear**

Note: **Axis of loading parallel to core axis**
Description: **SANDSTONE**
Specimen Preparation: **Specimen was not recored.**
Sample tolerance checks: Straightness: **PASS**. Flatness: **PASS**. Perpendicularity: **PASS**.



PRE-TEST FRONT



PRE-TEST BACK



POST-TEST FRONT



POST-TEST BACK

Samples delivered from site to storage facility. Samples are stored in a frost free environment, at temperatures >4°C
Compression machine: Impact CT340 2000kN Auto Compression Machine Serial No. CT340-22. SSL No. 011076

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UNIAXIAL COMPRESSIVE STRENGTH

Preparation in accordance with ASTM D4543-19
Testing in accordance with ISRM 1974-2006

Borehole: **BH103** Sample Ref: Sample Type: **C** Depth (m) : **15.50**

Bulk Density (Mg/m^3): **2.15** Dry Density (Mg/m^3): **1.96** Moisture Content (%): **9.4**
Length (mm): **203.31** Diameter (mm): **98.90** Length/Diameter Ratio: **2.06**
Test Duration (mins:secs): **10:51** Stress Rate (kN/min): **7.8** Load at Failure (kN): **85.3**
UCS (MPa): **11.1** Failure Type: **Simple shear**

Note: **Axis of loading parallel to core axis**
Description: **SANDSTONE**
Specimen Preparation: **Specimen was not recored.**
Sample tolerance checks: Straightness: **PASS**. Flatness: **PASS**. Perpendicularity: **PASS**.



PRE-TEST FRONT



PRE-TEST BACK



POST-TEST FRONT



POST-TEST BACK

Samples delivered from site to storage facility. Samples are stored in a frost free environment, at temperatures >4°C
Compression machine: Impact CT340 2000kN Auto Compression Machine Serial No. CT340-22. SSL No. 011076

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UNIAXIAL COMPRESSIVE STRENGTH

Preparation in accordance with ASTM D4543-19
Testing in accordance with ISRM 1974-2006

Borehole: **BH103** Sample Ref: Sample Type: **C** Depth (m) : **16.80**

Bulk Density (Mg/m^3): **1.95** Dry Density (Mg/m^3): **1.77** Moisture Content (%): **10**
Length (mm): **204.83** Diameter (mm): **100.53** Length/Diameter Ratio: **2.04**
Test Duration (mins:secs): **9:23** Stress Rate (kN/min): **6.6** Load at Failure (kN): **67.2**
UCS (MPa): **8.5** Failure Type: **Simple shear**

Note: **Axis of loading parallel to core axis**
Description: **SANDSTONE**
Specimen Preparation: **Specimen was not recored.**
Sample tolerance checks: Straightness: **PASS**. Flatness: **PASS**. Perpendicularity: **PASS**.



PRE-TEST FRONT



PRE-TEST BACK



POST-TEST FRONT



POST-TEST BACK

Samples delivered from site to storage facility. Samples are stored in a frost free environment, at temperatures >4°C
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UNIAXIAL COMPRESSIVE STRENGTH

Preparation in accordance with ASTM D4543-19
Testing in accordance with ISRM 1974-2006

Borehole: **BH103** Sample Ref: Sample Type: **C** Depth (m) : **17.95**

Bulk Density (Mg/m^3): **2.01** Dry Density (Mg/m^3): **1.79** Moisture Content (%): **12**
Length (mm): **206.45** Diameter (mm): **97.56** Length/Diameter Ratio: **2.12**
Test Duration (mins:secs): **6:22** Stress Rate (kN/min): **7.8** Load at Failure (kN): **55.7**
UCS (MPa): **7.5** Failure Type: **Simple shear**

Note: **Axis of loading parallel to core axis**
Description: **SANDSTONE**
Specimen Preparation: **Specimen was not recored.**
Sample tolerance checks: Straightness: **PASS**. Flatness: **PASS**. Perpendicularity: **PASS**.



PRE-TEST FRONT



PRE-TEST BACK



POST-TEST FRONT



POST-TEST BACK

Samples delivered from site to storage facility. Samples are stored in a frost free environment, at temperatures >4°C
Compression machine: Impact CT340 2000kN Auto Compression Machine Serial No. CT340-22. SSL No. 011076

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2 & 3 Angel Square	**765325**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | GrfcText L - UCS STRESS CONTROL - A4P | 765325-2-AND-3-ANGEL-SQUARE.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Castleford: The Potteries, Pottery Street, Castleford, West Yorkshire, WF10 1NJ. Tel: 01977-552255, Fax: 01977-552299, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 08/09/21 - 13:22 | LW5 |

UNIAXIAL COMPRESSIVE STRENGTH

Preparation in accordance with ASTM D4543-19
Testing in accordance with ISRM 1974-2006

Borehole: **BH103** Sample Ref: Sample Type: **C** Depth (m) : **22.40**

Bulk Density (Mg/m^3): **2.16** Dry Density (Mg/m^3): **1.90** Moisture Content (%): **14**
Length (mm): **202.22** Diameter (mm): **100.28** Length/Diameter Ratio: **2.02**
Test Duration (mins:secs): **8:25** Stress Rate (kN/min): **7.8** Load at Failure (kN): **73.9**
UCS (MPa): **9.4** Failure Type: **Simple shear**

Note: **Axis of loading parallel to core axis**
Description: **SANDSTONE**
Specimen Preparation: **Specimen was not recored.**
Sample tolerance checks: Straightness: **PASS**. Flatness: **PASS**. Perpendicularity: **PASS**.



PRE-TEST FRONT



PRE-TEST BACK



POST-TEST FRONT



POST-TEST BACK

Samples delivered from site to storage facility. Samples are stored in a frost free environment, at temperatures >4°C
Compression machine: Impact CT340 2000kN Auto Compression Machine Serial No. CT340-22. SSL No. 011076

STRUCTURAL SOILS
The Potteries
Pottery Street
Castleford
W. Yorkshire WF10 1NJ

Compiled By		Date
	LORNA WHITWORTH	**08/09/21**

Contract	Job No
2 & 3 Angel Square	**765325**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | GrfcText L - UCS STRESS CONTROL - A4P | 765325-2-AND-3-ANGEL-SQUARE.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Castleford: The Potteries, Pottery Street, Castleford, West Yorkshire, WF10 1NJ. Tel: 01977-552255, Fax: 01977-552299, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 08/09/21 - 13:22 | LW5 |

UNIAXIAL COMPRESSIVE STRENGTH

Preparation in accordance with ASTM D4543-19
Testing in accordance with ISRM 1974-2006

Borehole: **BH103** Sample Ref: Sample Type: **C** Depth (m) : **24.17**

Bulk Density (Mg/m^3): **2.17** Dry Density (Mg/m^3): **1.92** Moisture Content (%): **13**
Length (mm): **201.71** Diameter (mm): **100.49** Length/Diameter Ratio: **2.01**
Test Duration (mins:secs): **9:57** Stress Rate (kN/min): **7.8** Load at Failure (kN): **80.8**
UCS (MPa): **10.2** Failure Type: **Simple shear**

Note: **Axis of loading parallel to core axis**
Description: **SANDSTONE**
Specimen Preparation: **Specimen was not recored.**
Sample tolerance checks: Straightness: **PASS**. Flatness: **PASS**. Perpendicularity: **PASS**.



PRE-TEST FRONT



PRE-TEST BACK



POST-TEST FRONT



POST-TEST BACK

Samples delivered from site to storage facility. Samples are stored in a frost free environment, at temperatures >4°C
Compression machine: Impact CT340 2000kN Auto Compression Machine Serial No. CT340-22. SSL No. 011076

STRUCTURAL SOILS
The Potteries
Pottery Street
Castleford
W. Yorkshire WF10 1NJ

Compiled By		Date
	LORNA WHITWORTH	08/09/21

Contract	Job No
2 & 3 Angel Square	**765325**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | GrfcText L - UCS STRESS CONTROL - A4P | 765325-2-AND-3-ANGEL-SQUARE.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Castleford: The Potteries, Pottery Street, Castleford, West Yorkshire, WF10 1NJ. Tel: 01977-552255, Fax: 01977-552299, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 08/09/21 - 13:22 | LW5 |

UNIAXIAL COMPRESSIVE STRENGTH

Preparation in accordance with ASTM D4543-19
Testing in accordance with ISRM 1974-2006

Borehole: **BH104** Sample Ref: Sample Type: **C** Depth (m) : **27.65**

Bulk Density (Mg/m^3): **2.15** Dry Density (Mg/m^3): **1.87** Moisture Content (%): **15**
Length (mm): **202.55** Diameter (mm): **98.38** Length/Diameter Ratio: **2.06**
Test Duration (mins:secs): **7:55** Stress Rate (kN/min): **7.8** Load at Failure (kN): **63.1**
UCS (MPa): **8.3** Failure Type: **Simple shear**

Note: **Axis of loading parallel to core axis**
Description: **SANDSTONE**
Specimen Preparation: **Specimen was not recored.**
Sample tolerance checks: Straightness: **PASS**. Flatness: **PASS**. Perpendicularity: **PASS**.



PRE-TEST FRONT



PRE-TEST BACK



POST-TEST FRONT



POST-TEST BACK

Samples delivered from site to storage facility. Samples are stored in a frost free environment, at temperatures >4°C
Compression machine: Impact CT340 2000kN Auto Compression Machine Serial No. CT340-22. SSL No. 011076

STRUCTURAL SOILS
The Potteries
Pottery Street
Castleford
W. Yorkshire WF10 1NJ

Compiled By		Date
	LORNA WHITWORTH	**08/09/21**

Contract	Job No
2 & 3 Angel Square	**765325**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | GrfcText L - UCS STRESS CONTROL - A4P | 765325-2-AND-3-ANGEL-SQUARE.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Castleford: The Potteries, Pottery Street, Castleford, West Yorkshire, WF10 1NJ. Tel: 01977-552255, Fax: 01977-552299, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 08/09/21 - 13:22 | LW5 |

UNIAXIAL COMPRESSIVE STRENGTH

Preparation in accordance with ASTM D4543-19
Testing in accordance with ISRM 1974-2006

Borehole: **BH104** Sample Ref: Sample Type: **C** Depth (m) : **29.90**

Bulk Density (Mg/m^3): **2.16** Dry Density (Mg/m^3): **1.90** Moisture Content (%): **14**
Length (mm): **200.30** Diameter (mm): **101.26** Length/Diameter Ratio: **1.98**
Test Duration (mins:secs): **11:17** Stress Rate (kN/min): **7.8** Load at Failure (kN): **91.3**
UCS (MPa): **11.3** Failure Type: **Simple shear**

Note: **Axis of loading parallel to core axis**
Description: **SANDSTONE**
Specimen Preparation: **Specimen was not recored.**
Sample tolerance checks: Straightness: **PASS**. Flatness: **PASS**. Perpendicularity: **PASS**.



PRE-TEST FRONT



PRE-TEST BACK



POST-TEST FRONT



POST-TEST BACK

Samples delivered from site to storage facility. Samples are stored in a frost free environment, at temperatures >4°C
Compression machine: Impact CT340 2000kN Auto Compression Machine Serial No. CT340-22. SSL No. 011076

STRUCTURAL SOILS
The Potteries
Pottery Street
Castleford
W. Yorkshire WF10 1NJ

Compiled By		Date
	LORNA WHITWORTH	**08/09/21**

Contract	Job No
2 & 3 Angel Square	**765325**

AGS

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | GrfcText L - UCS STRESS CONTROL - A4P | 765325-2-AND-3-ANGEL-SQUARE.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Castleford: The Potteries, Pottery Street, Castleford, West Yorkshire, WF10 1NJ. Tel: 01977-552255, Fax: 01977-552299, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 08/09/21 - 13:22 | LW5 |

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 21/10627
Issue Number: 1 **Date:** 07 October, 2021

Client:
Structural Soils Limited (Castleford Lab)
The Potteries
Pottery Street
Castleford
West Yorkshire
UK
WF10 1NJ

Project Manager: Castleford Lab/Luke Fisher
Project Name: 2 & 3 Angel Square
Project Ref: 765325
Order No: N/A
Date Samples Received: 29/09/21
Date Instructions Received: 30/09/21
Date Analysis Completed: 06/10/21

Prepared by:

Melanie Marshall
Laboratory Coordinator

Approved by:

Richard Wong
Client Manager

mCERTS THE ENVIRONMENT AGENCY'S MONITORING CERTIFICATION SCHEME
UKAS TESTING 1247

Envirolab Job Number: 21/10627

Client Project Name: 2 & 3 Angel Square

Client Project Ref: 765325

Lab Sample ID	21/10627/1	21/10627/2	21/10627/3	21/10627/4	21/10627/5	21/10627/6	21/10627/7	Units	Limit of Detection	Method ref
Client Sample No	10	18	24	33	40	44	9			
Client Sample ID	BH101	BH101	BH101	BH101	BH101	BH101	BH102			
Depth to Top	3.50	7.00	9.00	13.00	16.00	17.50	2.00			
Depth To Bottom	3.95		9.50				2.50			
Date Sampled										
Sample Type	Soil - B	Soil - D	Soil - B	Soil - D	Soil - D	Soil - D	Soil - B			
Sample Matrix Code	5A	4A	4A	5A	4A	4A	6A			
% Stones >10mm$_A$	<0.1	<0.1	11.7	7.9	<0.1	<0.1	<0.1	% w/w	0.1	A-T-044
pH BRE$_D$$^{M\#}$	9.17	8.87	9.15	8.87	8.50	8.79	8.40	pH	0.01	A-T-031s
Sulphate BRE (water sol 2:1)$_D$$^{M\#}$	29	<10	<10	38	<10	<10	29	mg/l	10	A-T-026s

Envirolab Job Number: 21/10627

Client Project Name: 2 & 3 Angel Square

Client Project Ref: 765325

Lab Sample ID	21/10627/8	21/10627/9	21/10627/10	21/10627/11	21/10627/12	21/10627/13	21/10627/14	Units	Limit of Detection	Method ref
Client Sample No	20	31		11	17	20	28			
Client Sample ID	BH102	BH102	BH102	BH103	BH103	BH103	BH103			
Depth to Top	6.50	11.00	18.20	3.50	6.00	8.00	11.10			
Depth To Bottom	7.00	11.50		3.90	6.43	8.50	12.00			
Date Sampled										
Sample Type	Soil - B	Soil - B	Soil - B	Soil - B	Soil - B	Soil - B	Soil - B			
Sample Matrix Code	4A	4A	4A	4A	4A	4A	4A			
% Stones >10mm$_A$	<0.1	18.0	0.7	1.5	39.2	10.4	<0.1	% w/w	0.1	A-T-044
pH BRE$_D$$^{M\#}$	8.97	8.63	8.92	11.11	9.22	8.99	8.98	pH	0.01	A-T-031s
Sulphate BRE (water sol 2:1)$_D$$^{M\#}$	<10	<10	16	71	<10	11	<10	mg/l	10	A-T-026s

Envirolab Job Number: 21/10627

Client Project Name: 2 & 3 Angel Square

Client Project Ref: 765325

Lab Sample ID	21/10627/15	21/10627/16	21/10627/17	21/10627/18	21/10627/19	21/10627/20		Units	Limit of Detection	Method ref
Client Sample No	9	19	23	37	8	6				
Client Sample ID	BH104	BH104	BH104	BH104	WS101	TP111				
Depth to Top	2.50	6.00	7.50	13.50	2.10	1.80				
Depth To Bottom	3.00	6.50	8.00	14.00	3.40	2.70				
Date Sampled										
Sample Type	Soil - B	Soil - B	Soil - B	Soil - B	Soil - B	Soil - B				
Sample Matrix Code	4A	4A	4A	4A	6A	6AE				
% Stones >10mm$_A$	<0.1	22.7	7.5	<0.1	<0.1	20.3		% w/w	0.1	A-T-044
pH BRE$_D^{M\#}$	9.41	9.23	8.97	8.87	8.46	8.14		pH	0.01	A-T-031s
Sulphate BRE (water sol 2:1)$_D^{M\#}$	<10	<10	<10	<10	86	124		mg/l	10	A-T-026s

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.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

Soil chemical analysis:
All results are reported as dry weight (<40℃).
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℃ / 11550µS/cm @ 20℃ 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, 9 = INCINERATOR ASH.
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.

v1

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: Structural Soils Limited (Castleford Lab), The Potteries, Pottery Street, Castleford, West Yorkshire, UK, WF10 1NJ

Project: 2 & 3 Angel Square

Clients Project No: 765325

Project No: 21/10627

Date Received: 30/09/2021 (am)

Cool Box Temperatures (°C): 15.9 & 16.1

Lab Sample ID	21/10627/1	21/10627/2	21/10627/3	21/10627/4	21/10627/5	21/10627/6	21/10627/7	21/10627/8	21/10627/9	21/10627/10	21/10627/11	21/10627/12
Client Sample No	10	18	24	33	40	44	9	20	31		11	17
Client Sample ID/Depth	BH101 3.50-3.95m	BH101 7.00m	BH101 9.00-9.50m	BH101 13.00m	BH101 16.00m	BH101 17.50m	BH102 2.00-2.50m	BH102 6.50-7.00m	BH102 11.00-11.50m	BH102 18.20m	BH103 3.50-3.90m	BH103 6.00-6.43m
Date Sampled												
Deviation Code												
E (no date)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Lab Sample ID	21/10627/13	21/10627/14	21/10627/15	21/10627/16	21/10627/17	21/10627/18	21/10627/19	21/10627/20
Client Sample No	20	28	9	19	23	37	8	6
Client Sample ID/Depth	BH103 8.00-8.50m	BH103 11.10-12.00m	BH104 2.50-3.00m	BH104 6.00-6.50m	BH104 7.50-8.00m	BH104 13.50-14.00m	WS101 2.10-3.40m	TP111 1.80-2.70m
Date Sampled								
Deviation Code								
E (no date)	✓	✓	✓	✓	✓	✓	✓	✓

Key
E (no date) *No sampling date provided (all results affected if not provided)*

Note: 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 (for water samples 5 ± 3℃), ISO 18400-105:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	21/10627/1	21/10627/2	21/10627/3	21/10627/4	21/10627/5	21/10627/6	21/10627/7	21/10627/8	21/10627/9	21/10627/10	21/10627/11	21/10627/12
Client Sample No	10	18	24	33	40	44	9	20	31		11	17
Client Sample ID/Depth	BH101 3.50-3.95m	BH101 7.00m	BH101 9.00-9.50m	BH101 13.00m	BH101 16.00m	BH101 17.50m	BH102 2.00-2.50m	BH102 6.50-7.00m	BH102 11.00-11.50m	BH102 18.20m	BH103 3.50-3.90m	BH103 6.00-6.43m
Date Sampled												
A-T-026s	06/10/2021	06/10/2021	06/10/2021	06/10/2021	06/10/2021	06/10/2021	06/10/2021	06/10/2021	06/10/2021	06/10/2021	06/10/2021	06/10/2021
A-T-031s	06/10/2021	06/10/2021	06/10/2021	06/10/2021	06/10/2021	06/10/2021	06/10/2021	06/10/2021	06/10/2021	06/10/2021	06/10/2021	06/10/2021
A-T-044	05/10/2021	05/10/2021	05/10/2021	05/10/2021	05/10/2021	05/10/2021	05/10/2021	05/10/2021	05/10/2021	05/10/2021	05/10/2021	05/10/2021

Lab Sample ID	21/10627/13	21/10627/14	21/10627/15	21/10627/16	21/10627/17	21/10627/18	21/10627/19	21/10627/20
Client Sample No	20	28	9	19	23	37	8	6
Client Sample ID/Depth	BH103 8.00-8.50m	BH103 11.10-12.00m	BH104 2.50-3.00m	BH104 6.00-6.50m	BH104 7.50-8.00m	BH104 13.50-14.00m	WS101 2.10-3.40m	TP111 1.80-2.70m
Date Sampled								
A-T-026s	06/10/2021	06/10/2021	06/10/2021	06/10/2021	06/10/2021	06/10/2021	06/10/2021	06/10/2021
A-T-031s	06/10/2021	06/10/2021	06/10/2021	06/10/2021	06/10/2021	06/10/2021	06/10/2021	06/10/2021
A-T-044	05/10/2021	05/10/2021	05/10/2021	05/10/2021	05/10/2021	05/10/2021	05/10/2021	05/10/2021

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

APPENDIX E - GEOENVIRONMENTAL TESTING

(i) Laboratory Test Results

(ii) Gas Test Results

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT
SUPPLEMENT TO TEST REPORT 21/08333/1

Amendments: Request for Additional Analysis

Envirolab Job Number: 21/08333
Issue Number: 2 **Date:** 14 September, 2021

Client:
Structural Soils Limited (Castleford)
The Potteries
Pottery Street
Castleford
West Yorkshire
UK
WF10 1NJ

Project Manager: John McCarthy
Project Name: 2 & 3 Angel Square
Project Ref: 765325
Order No: N/A
Date Samples Received: 23/07/21
Date Instructions Received: 02/08/21
Date Analysis Completed: 14/09/21

Prepared by:

Richard Wong
Client Manager

Approved by:

Danielle Brierley
Client Manager

Envirolab Job Number: 21/08333

Client Project Name: 2 & 3 Angel Square

Client Project Ref: 765325

Lab Sample ID	21/08333/1	21/08333/2	21/08333/3	21/08333/4	21/08333/5	21/08333/8	21/08333/12	Units	Limit of Detection	Method ref
Client Sample No	103	102	102	101	103	103	103			
Client Sample ID	TP103	TP104	TP107	TP108	TP111	TP101	TP102			
Depth to Top	0.8	0.5	0.6	0.6	1.8	0.7	0.7			
Depth To Bottom										
Date Sampled	22-Jul-21	22-Jul-21	21-Jul-21	20-Jul-21	21-Jul-21	22-Jul-21	22-Jul-21			
Sample Type	Soil - ES	Soil - ES	Solid	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	6ABE	4AB	7	4A	4A	4AE	4AB			
% Moisture at <40C$_A$	11.2	9.4	2.2	13.6	11.4	-	11.6	% w/w	0.1	A-T-044
% Stones >10mm$_A$	30.0	11.7	<0.1	<0.1	18.2	-	27.0	% w/w	0.1	A-T-044
pH$_D$$^{M\#}$	8.51	7.96	9.03	8.67	8.27	-	8.11	pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_D$$^{M\#}$	0.11	0.79	0.04	0.22	0.15	-	0.07	g/l	0.01	A-T-026s
Organic matter$_D$$^{M\#}$	3.3	6.9	0.3	19.8	4.5	-	9.4	% w/w	0.1	A-T-032 OM
Arsenic$_D$$^{M\#}$	8	14	<1	13	17	-	15	mg/kg	1	A-T-024s
Cadmium$_D$$^{M\#}$	1.4	1.1	<0.5	1.0	0.9	-	2.5	mg/kg	0.5	A-T-024s
Copper$_D$$^{M\#}$	96	139	7	61	107	-	299	mg/kg	1	A-T-024s
Chromium$_D$$^{M\#}$	18	21	14	16	29	-	16	mg/kg	1	A-T-024s
Lead$_D$$^{M\#}$	169	5910	142	109	4300	-	1060	mg/kg	1	A-T-024s
Mercury$_D$	0.71	1.32	1.75	1.34	0.66	-	0.77	mg/kg	0.17	A-T-024s
Nickel$_D$$^{M\#}$	25	28	13	31	22	-	31	mg/kg	1	A-T-024s
Selenium$_D$$^{M\#}$	<1	<1	<1	<1	<1	-	<1	mg/kg	1	A-T-024s
Zinc$_D$$^{M\#}$	200	267	13	171	229	-	1580	mg/kg	5	A-T-024s

Envirolab Job Number: 21/08333

Client Project Name: 2 & 3 Angel Square

Client Project Ref: 765325

Lab Sample ID	21/08333/1	21/08333/2	21/08333/3	21/08333/4	21/08333/5	21/08333/8	21/08333/12	Units	Limit of Detection	Method ref
Client Sample No	103	102	102	101	103	103	103			
Client Sample ID	TP103	TP104	TP107	TP108	TP111	TP101	TP102			
Depth to Top	0.8	0.5	0.6	0.6	1.8	0.7	0.7			
Depth To Bottom										
Date Sampled	22-Jul-21	22-Jul-21	21-Jul-21	20-Jul-21	21-Jul-21	22-Jul-21	22-Jul-21			
Sample Type	Soil - ES	Soil - ES	Solid	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	6ABE	4AB	7	4A	4A	4AE	4AB			
Asbestos in Soil (inc. matrix)										
Asbestos in soil$_{D}^{\#}$	NAD	NAD	NAD	Chrysotile	NAD	NAD	NAD			A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-	-	Loose fibres	-	-	-			A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A	N/A	N/A	N/A	N/A	N/A	N/A			A-T-045
Asbestos in Soil Quantification % (Hand Picking & Weighing)										
Asbestos in soil % composition (hand picking and weighing)$_{D}$	-	-	-	0.003	-	-	-	% w/w	0.001	A-T-054

Envirolab Job Number: 21/08333

Client Project Name: 2 & 3 Angel Square

Client Project Ref: 765325

Lab Sample ID	21/08333/1	21/08333/2	21/08333/3	21/08333/4	21/08333/5	21/08333/8	21/08333/12	Units	Limit of Detection	Method ref
Client Sample No	103	102	102	101	103	103	103			
Client Sample ID	TP103	TP104	TP107	TP108	TP111	TP101	TP102			
Depth to Top	0.8	0.5	0.6	0.6	1.8	0.7	0.7			
Depth To Bottom										
Date Sampled	22-Jul-21	22-Jul-21	21-Jul-21	20-Jul-21	21-Jul-21	22-Jul-21	22-Jul-21			
Sample Type	Soil - ES	Soil - ES	Solid	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	6ABE	4AB	7	4A	4A	4AE	4AB			
PAH-16MS										
Acenaphthene$_A^{M\#}$	0.28	0.13	<0.01	0.57	0.15	-	4.81	mg/kg	0.01	A-T-019s
Acenaphthylene$_A^{M\#}$	0.02	0.04	<0.01	0.02	0.03	-	0.06	mg/kg	0.01	A-T-019s
Anthracene$_A^{M\#}$	0.44	0.28	<0.02	0.61	0.30	-	4.13	mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_A^{M\#}$	1.60	1.90	<0.04	1.46	1.20	-	5.06	mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	1.63	1.86	<0.04	1.11	1.11	-	4.14	mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_A^{M\#}$	1.67	2.03	<0.05	1.11	1.14	-	4.31	mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_A^{M\#}$	0.87	1.14	<0.05	0.53	0.63	-	1.92	mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_A^{M\#}$	0.60	0.58	<0.07	0.44	0.42	-	1.60	mg/kg	0.07	A-T-019s
Chrysene$_A^{M\#}$	1.63	2.11	<0.06	1.49	1.20	-	4.80	mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_A^{M\#}$	0.20	0.25	<0.04	0.14	0.14	-	0.44	mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	3.20	3.55	<0.08	2.97	2.52	-	14.9	mg/kg	0.08	A-T-019s
Fluorene$_A^{M\#}$	0.19	0.09	<0.01	0.30	0.10	-	3.14	mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_A^{M\#}$	0.95	1.24	<0.03	0.58	0.68	-	2.11	mg/kg	0.03	A-T-019s
Naphthalene $_A^{M\#}$	0.04	<0.03	<0.03	0.19	<0.03	-	3.25	mg/kg	0.03	A-T-019s
Phenanthrene$_A^{M\#}$	1.91	1.19	0.03	2.67	1.34	-	21.2	mg/kg	0.03	A-T-019s
Pyrene$_A^{M\#}$	3.07	3.90	<0.07	2.87	2.37	-	13	mg/kg	0.07	A-T-019s
Total PAH-16MS$_A^{M\#}$	18.3	20.3	<0.08	17.1	13.3	-	88.9	mg/kg	0.01	A-T-019s

Envirolab Job Number: 21/08333

Client Project Name: 2 & 3 Angel Square

Client Project Ref: 765325

Lab Sample ID	21/08333/1	21/08333/2	21/08333/3	21/08333/4	21/08333/5	21/08333/8	21/08333/12	Units	Limit of Detection	Method ref
Client Sample No	103	102	102	101	103	103	103			
Client Sample ID	TP103	TP104	TP107	TP108	TP111	TP101	TP102			
Depth to Top	0.8	0.5	0.6	0.6	1.8	0.7	0.7			
Depth To Bottom										
Date Sampled	22-Jul-21	22-Jul-21	21-Jul-21	20-Jul-21	21-Jul-21	22-Jul-21	22-Jul-21			
Sample Type	Soil - ES	Soil - ES	Solid	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	6ABE	4AB	7	4A	4A	4AE	4AB			
TPH CWG										
Ali >C5-C6$_A^{\#}$	<0.01	<0.01	<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	<0.01	-	<0.01	mg/kg	0.01	A-T-022s
Ali >C8-C10$_A$	<1	<5	<1	<1	<1	-	<1	mg/kg	1	A-T-055s
Ali >C10-C12$_A^{M\#}$	<1	<5	<1	<1	<1	-	<1	mg/kg	1	A-T-055s
Ali >C12-C16$_A^{M\#}$	2	<5	<1	2	2	-	2	mg/kg	1	A-T-055s
Ali >C16-C21$_A^{M\#}$	2	<5	<1	5	4	-	2	mg/kg	1	A-T-055s
Ali >C21-C35$_A^{M\#}$	69	231	2	30	24	-	21	mg/kg	1	A-T-055s
Total Aliphatics$_A$	73	231	2	37	30	-	25	mg/kg	1	A-T-055s
Aro >C5-C7$_A^{\#}$	<0.01	<0.01	<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	<0.01	-	<0.01	mg/kg	0.01	A-T-022s
Aro >C8-C10$_A$	<1	6	<1	2	<1	-	<1	mg/kg	1	A-T-055s
Aro >C10-C12$_A$	<1	7	<1	8	2	-	2	mg/kg	1	A-T-055s
Aro >C12-C16$_A$	5	12	<1	45	11	-	11	mg/kg	1	A-T-055s
Aro >C16-C21$_A^{M\#}$	20	70	1	150	66	-	47	mg/kg	1	A-T-055s
Aro >C21-C35$_A^{M\#}$	113	543	3	326	259	-	129	mg/kg	1	A-T-055s
Total Aromatics$_A$	139	637	4	532	340	-	189	mg/kg	1	A-T-055s
TPH (Ali & Aro >C5-C35)$_A$	211	868	6	569	369	-	214	mg/kg	1	A-T-055s
BTEX - Benzene$_A^{\#}$	<0.01	<0.01	<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	<0.01	-	<0.01	mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_A^{\#}$	<0.01	<0.01	<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	<0.01	-	<0.01	mg/kg	0.01	A-T-022s
BTEX - o Xylene$_A^{\#}$	<0.01	<0.01	<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	<0.01	-	<0.01	mg/kg	0.01	A-T-022s

Envirolab Job Number: 21/08333

Client Project Name: 2 & 3 Angel Square

Client Project Ref: 765325

Lab Sample ID	21/08333/27	21/08333/30						Units	Limit of Detection	Method ref
Client Sample No	102	102								
Client Sample ID	TP108	TP109								
Depth to Top	0.8	0.3								
Depth To Bottom										
Date Sampled	20-Jul-21	22-Jul-21								
Sample Type	Soil - ES	Soil - ES								
Sample Matrix Code	5A	3A								
Asbestos in Soil (inc. matrix)										
Asbestos in soil$_D^{\#}$	NAD	NAD								A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_D$	N/A	N/A								A-T-045

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.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

Soil chemical analysis:
All results are reported as dry weight (<40℃).
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℃ / 11550µS/cm @ 20℃ 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, 9 = INCINERATOR ASH.
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.

v1

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: Structural Soils Limited (Castleford), The Potteries, Pottery Street, Castleford, West Yorkshire, UK, WF10 1NJ

Project: 2 & 3 Angel Square

Clients Project No: 765325

Project No: 21/08333

Date Received: 02/08/2021 (am)

Cool Box Temperatures (°C): 16.3 & 16.9

Lab Sample ID	21/08333/4	21/08333/12
Client Sample No	101	103
Client Sample ID/Depth	TP108 0.6m	TP102 0.7m
Date Sampled	20/07/21	22/07/21
Deviation Code		
B1 (no VPH)	✓	
D (no glass)	✓	
F	✓	✓

Key

B1 (no VPH)	*Separate container not supplied for VPH/BTEX analysis*
D (no glass)	*Glass container not provided for extractable organics analysis*
F	*Maximum holding time exceeded between sampling date and analysis for analytes listed below*

HOLDING TIME EXCEEDANCES

Lab Sample ID	21/08333/4	21/08333/12
Client Sample No	101	103
Client Sample ID/Depth	TP108 0.6m	TP102 0.7m
Date Sampled	20/07/21	22/07/21
PAH-16MS	✓	✓
VPHCWG	✓	✓
Organic matter		✓
Sulphate (water sol 2:1)		✓
EPHCWG		✓

Note: 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 (for water samples 5 ± 3℃), ISO 18400-105:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	21/08333/1	21/08333/2	21/08333/3	21/08333/4	21/08333/5	21/08333/8	21/08333/12	21/08333/27	21/08333/30
Client Sample No	103	102	102	101	103	103	103	102	102
Client Sample ID/Depth	TP103 0.8m	TP104 0.5m	TP107 0.6m	TP108 0.6m	TP111 1.8m	TP101 0.7m	TP102 0.7m	TP108 0.8m	TP109 0.3m
Date Sampled	22/07/21	22/07/21	21/07/21	20/07/21	21/07/21	22/07/21	22/07/21	20/07/21	22/07/21
A-T-019s	10/08/2021	10/08/2021	10/08/2021	10/08/2021	10/08/2021		10/09/2021		
A-T-022s	06/08/2021	06/08/2021	06/08/2021	06/08/2021	06/08/2021		10/09/2021		
A-T-024s	13/08/2021	13/08/2021	13/08/2021	13/08/2021	13/08/2021		13/09/2021		
A-T-026s	10/08/2021	10/08/2021	10/08/2021	10/08/2021	10/08/2021		14/09/2021		
A-T-031s	10/08/2021	10/08/2021	10/08/2021	10/08/2021	10/08/2021		13/09/2021		
A-T-032 OM	11/08/2021	11/08/2021	11/08/2021	11/08/2021	11/08/2021		13/09/2021		
A-T-044	05/08/2021	05/08/2021	05/08/2021	05/08/2021	05/08/2021		14/09/2021		
A-T-045	03/08/2021	03/08/2021	03/08/2021	03/08/2021	03/08/2021	09/09/2021	09/09/2021	09/08/2021	09/09/2021
A-T-054				09/08/2021					
A-T-055s	06/08/2021	06/08/2021	06/08/2021	06/08/2021	06/08/2021		10/09/2021		

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 21/10800
Issue Number: 1 **Date:** 12 October, 2021

Client:
Structural Soils Limited (Castleford)
The Potteries
Pottery Street
Castleford
West Yorkshire
UK
WF10 1NJ

Project Manager: John McCarthy
Project Name: 2 & 3 Angel Square
Project Ref: 765325
Order No: N/A
Date Samples Received: 05/08/21
Date Instructions Received: 05/10/21
Date Analysis Completed: 12/10/21

Prepared by:

Melanie Marshall
Laboratory Coordinator

Approved by:

Richard Wong
Client Manager

Envirolab Job Number: 21/10800

Client Project Name: 2 & 3 Angel Square

Client Project Ref: 765325

Lab Sample ID	21/10800/1	21/10800/2	21/10800/3	21/10800/4	21/10800/5	21/10800/6		Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	BH104	WS105	WS105	BH103	WS102	WS101				
Depth to Top	0.10	1.00	4.00	3.50	1.00	1.50				
Depth To Bottom	0.40	1.50	4.65	4.00	1.35					
Date Sampled	26-Jul-21	29-Jul-21	29-Jul-21	26-Jul-21	29-Jul-21	27-Jul-21				
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES				
Sample Matrix Code	4A	4AB	4A	4AB	6AB	6AB				
% Moisture at <40C$_A$	13.2	14.6	7.5	-	-	-		% w/w	0.1	A-T-044
% Stones >10mm$_A$	21.3	47.1	11.0	-	-	-		% w/w	0.1	A-T-044
pH$_D$$^{M\#}$	8.37	9.88	9.31	-	-	-		pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_D$$^{M\#}$	0.02	0.03	0.04	-	-	-		g/l	0.01	A-T-026s
Organic matter$_D$$^{M\#}$	14.0	1.9	1.7	-	-	-		% w/w	0.1	A-T-032 OM
Arsenic$_D$$^{M\#}$	19	5	4	-	-	-		mg/kg	1	A-T-024s
Cadmium$_D$$^{M\#}$	0.8	0.6	0.5	-	-	-		mg/kg	0.5	A-T-024s
Copper$_D$$^{M\#}$	36	75	53	-	-	-		mg/kg	1	A-T-024s
Chromium$_D$$^{M\#}$	16	19	12	-	-	-		mg/kg	1	A-T-024s
Lead$_D$$^{M\#}$	23	258	124	-	-	-		mg/kg	1	A-T-024s
Mercury$_D$	0.28	0.49	<0.17	-	-	-		mg/kg	0.17	A-T-024s
Nickel$_D$$^{M\#}$	26	10	12	-	-	-		mg/kg	1	A-T-024s
Selenium$_D$$^{M\#}$	<1	<1	<1	-	-	-		mg/kg	1	A-T-024s
Zinc$_D$$^{M\#}$	23	124	80	-	-	-		mg/kg	5	A-T-024s

Envirolab Job Number: 21/10800

Client Project Name: 2 & 3 Angel Square

Client Project Ref: 765325

Lab Sample ID	21/10800/1	21/10800/2	21/10800/3	21/10800/4	21/10800/5	21/10800/6		Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	BH104	WS105	WS105	BH103	WS102	WS101				
Depth to Top	0.10	1.00	4.00	3.50	1.00	1.50				
Depth To Bottom	0.40	1.50	4.65	4.00	1.35					
Date Sampled	26-Jul-21	29-Jul-21	29-Jul-21	26-Jul-21	29-Jul-21	27-Jul-21				
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES				
Sample Matrix Code	4A	4AB	4A	4AB	6AB	6AB				
Asbestos in Soil (inc. matrix)										
Asbestos in soil$_D^{\#}$	NAD	NAD	NAD	NAD	NAD	NAD				A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_D$	N/A	N/A	N/A	N/A	N/A	N/A				A-T-045

Envirolab Job Number: 21/10800

Client Project Name: 2 & 3 Angel Square

Client Project Ref: 765325

Lab Sample ID	21/10800/1	21/10800/2	21/10800/3	21/10800/4	21/10800/5	21/10800/6		Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	BH104	WS105	WS105	BH103	WS102	WS101				
Depth to Top	0.10	1.00	4.00	3.50	1.00	1.50				
Depth To Bottom	0.40	1.50	4.65	4.00	1.35					
Date Sampled	26-Jul-21	29-Jul-21	29-Jul-21	26-Jul-21	29-Jul-21	27-Jul-21				
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES				
Sample Matrix Code	4A	4AB	4A	4AB	6AB	6AB				
PAH-16MS										
Acenaphthene$_A^{M\#}$	1.89	0.20	0.26	-	-	-		mg/kg	0.01	A-T-019s
Acenaphthylene$_A^{M\#}$	0.03	0.01	0.03	-	-	-		mg/kg	0.01	A-T-019s
Anthracene$_A^{M\#}$	2.94	0.24	0.48	-	-	-		mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_A^{M\#}$	4.45	0.61	1.43	-	-	-		mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	3.15	0.63	1.93	-	-	-		mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_A^{M\#}$	3.28	0.68	2.15	-	-	-		mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_A^{M\#}$	1.12	0.35	1.06	-	-	-		mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_A^{M\#}$	1.31	0.26	0.82	-	-	-		mg/kg	0.07	A-T-019s
Chrysene$_A^{M\#}$	3.90	0.60	1.50	-	-	-		mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_A^{M\#}$	0.32	0.07	0.23	-	-	-		mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	9.67	1.20	2.96	-	-	-		mg/kg	0.08	A-T-019s
Fluorene$_A^{M\#}$	1.62	0.13	0.16	-	-	-		mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_A^{M\#}$	1.31	0.37	1.12	-	-	-		mg/kg	0.03	A-T-019s
Naphthalene $_A^{M\#}$	1.55	0.13	0.10	-	-	-		mg/kg	0.03	A-T-019s
Phenanthrene$_A^{M\#}$	10.6	1.04	1.86	-	-	-		mg/kg	0.03	A-T-019s
Pyrene$_A^{M\#}$	8.56	1.16	2.96	-	-	-		mg/kg	0.07	A-T-019s
Total PAH-16MS$_A^{M\#}$	55.7	7.68	19.1	-	-	-		mg/kg	0.01	A-T-019s

Envirolab Job Number: 21/10800

Client Project Name: 2 & 3 Angel Square

Client Project Ref: 765325

Lab Sample ID	21/10800/1	21/10800/2	21/10800/3	21/10800/4	21/10800/5	21/10800/6		Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	BH104	WS105	WS105	BH103	WS102	WS101				
Depth to Top	0.10	1.00	4.00	3.50	1.00	1.50				
Depth To Bottom	0.40	1.50	4.65	4.00	1.35					
Date Sampled	26-Jul-21	29-Jul-21	29-Jul-21	26-Jul-21	29-Jul-21	27-Jul-21				
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES				
Sample Matrix Code	4A	4AB	4A	4AB	6AB	6AB				
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$_A^{M\#}$	<1	<1	<1	-	-	-		mg/kg	1	A-T-055s
Ali >C12-C16$_A^{M\#}$	2	<1	2	-	-	-		mg/kg	1	A-T-055s
Ali >C16-C21$_A^{M\#}$	4	2	6	-	-	-		mg/kg	1	A-T-055s
Ali >C21-C35$_A^{M\#}$	15	25	38	-	-	-		mg/kg	1	A-T-055s
Total Aliphatics$_A$	21	28	46	-	-	-		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$_A$	2	1	2	-	-	-		mg/kg	1	A-T-055s
Aro >C10-C12$_A$	2	1	<1	-	-	-		mg/kg	1	A-T-055s
Aro >C12-C16$_A$	14	6	8	-	-	-		mg/kg	1	A-T-055s
Aro >C16-C21$_A^{M\#}$	47	23	53	-	-	-		mg/kg	1	A-T-055s
Aro >C21-C35$_A^{M\#}$	127	77	130	-	-	-		mg/kg	1	A-T-055s
Total Aromatics$_A$	191	109	193	-	-	-		mg/kg	1	A-T-055s
TPH (Ali & Aro >C5-C35)$_A$	212	137	240	-	-	-		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

REPORT NOTES

General
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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.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

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, 9 = INCINERATOR ASH.
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.

v1

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: Structural Soils Limited (Castleford), The Potteries, Pottery Street, Castleford, West Yorkshire, UK, WF10 1NJ

Project: 2 & 3 Angel Square

Clients Project No: 765325

Project No: 21/10800

Date Received: 05/10/2021 (am)

Cool Box Temperatures (°C): 16.6, 16.8

Lab Sample ID	21/10800/1	21/10800/2	21/10800/3
Client Sample No			
Client Sample ID/Depth	BH104 0.10-0.40m	WS105 1.00-1.50m	WS105 4.00-4.65m
Date Sampled	26/07/21	29/07/21	29/07/21
Deviation Code			
F	✓	✓	✓

Key

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

HOLDING TIME EXCEEDANCES

Lab Sample ID	21/10800/1	21/10800/2	21/10800/3
Client Sample No			
Client Sample ID/Depth	BH104 0.10-0.40m	WS105 1.00-1.50m	WS105 4.00-4.65m
Date Sampled	26/07/21	29/07/21	29/07/21
PAH-16MS	✓	✓	✓
Organic matter	✓	✓	✓
Sulphate (water sol 2:1)	✓	✓	✓
EPHCWG	✓	✓	✓
VPHCWG	✓	✓	✓

Note: 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 (for water samples 5 ± 3°C), ISO 18400-105:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	21/10800/1	21/10800/2	21/10800/3	21/10800/4	21/10800/5	21/10800/6
Client Sample No						
Client Sample ID/Depth	BH104 0.10-0.40m	WS105 1.00-1.50m	WS105 4.00-4.65m	BH103 3.50-4.00m	WS102 1.00-1.35m	WS101 1.50m
Date Sampled	26/07/21	29/07/21	29/07/21	26/07/21	29/07/21	27/07/21
A-T-019s	08/10/2021	08/10/2021	08/10/2021			
A-T-022s	12/10/2021	12/10/2021	12/10/2021			
A-T-024s	12/10/2021	12/10/2021	12/10/2021			
A-T-026s	12/10/2021	12/10/2021	12/10/2021			
A-T-031s	11/10/2021	11/10/2021	11/10/2021			
A-T-032 OM	12/10/2021	12/10/2021	12/10/2021			
A-T-044	07/10/2021	07/10/2021	07/10/2021			
A-T-045	06/10/2021	06/10/2021	06/10/2021	06/10/2021	06/10/2021	06/10/2021
A-T-055s	12/10/2021	12/10/2021	12/10/2021			

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 21/11081
Issue Number: 1 **Date:** 25 October, 2021

Client:
Structural Soils Limited (Castleford)
The Potteries
Pottery Street
Castleford
West Yorkshire
UK
WF10 1NJ

Project Manager: John McCarthy
Project Name: 2 & 3 Angel Square
Project Ref: 765325
Order No: N/A
Date Samples Received: 08/10/21
Date Instructions Received: 12/10/21
Date Analysis Completed: 23/10/21

Prepared by:

Melanie Marshall
Laboratory Coordinator

Approved by:

Sophie France
Client Service Manager

Envirolab Job Number: 21/11081

Client Project Name: 2 & 3 Angel Square

Client Project Ref: 765325

Lab Sample ID	21/11081/2	21/11081/3	21/11081/4	21/11081/5	21/11081/7			Units	Limit of Detection	Method ref
Client Sample No	102	102	101	103	101					
Client Sample ID	TP104	TP107	TP108	TP111	WS104					
Depth to Top	0.50	0.60	0.60	1.80	0.30					
Depth To Bottom										
Date Sampled	20-Jul-21	21-Jul-21	20-Jul-21	21-Jul-21	20-Jul-21					
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES					
Sample Matrix Code					6A					
% Moisture at <40C$_A$	-	-	-	-	13.4			% w/w	0.1	A-T-044
% Stones >10mm$_A$	-	-	-	-	2.2			% w/w	0.1	A-T-044
pH$_D^{M\#}$	-	-	-	-	9.28			pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_D^{M\#}$	-	-	-	-	0.02			g/l	0.01	A-T-026s
Organic matter$_D^{M\#}$	-	-	-	-	1.1			% w/w	0.1	A-T-032 OM
Arsenic$_D^{M\#}$	-	-	-	-	2			mg/kg	1	A-T-024s
Cadmium$_D^{M\#}$	-	-	-	-	0.9			mg/kg	0.5	A-T-024s
Copper$_D^{M\#}$	-	-	-	-	22			mg/kg	1	A-T-024s
Chromium$_D^{M\#}$	-	-	-	-	20			mg/kg	1	A-T-024s
Lead$_D^{M\#}$	-	-	-	-	11			mg/kg	1	A-T-024s
Mercury$_D$	-	-	-	-	<0.17			mg/kg	0.17	A-T-024s
Nickel$_D^{M\#}$	-	-	-	-	26			mg/kg	1	A-T-024s
Selenium$_D^{M\#}$	-	-	-	-	<1			mg/kg	1	A-T-024s
Zinc$_D^{M\#}$	-	-	-	-	48			mg/kg	5	A-T-024s

Envirolab Job Number: 21/11081

Client Project Name: 2 & 3 Angel Square

Client Project Ref: 765325

Lab Sample ID	21/11081/2	21/11081/3	21/11081/4	21/11081/5	21/11081/7			Units	Limit of Detection	Method ref
Client Sample No	102	102	101	103	101					
Client Sample ID	TP104	TP107	TP108	TP111	WS104					
Depth to Top	0.50	0.60	0.60	1.80	0.30					
Depth To Bottom										
Date Sampled	20-Jul-21	21-Jul-21	20-Jul-21	21-Jul-21	20-Jul-21					
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES					
Sample Matrix Code					6A					
Asbestos in Soil (inc. matrix)										
Asbestos in soil$_D^{\#}$	-	-	-	-	NAD					A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_D$	-	-	-	-	N/A					A-T-045

Envirolab Job Number: 21/11081

Client Project Name: 2 & 3 Angel Square

Client Project Ref: 765325

Lab Sample ID	21/11081/2	21/11081/3	21/11081/4	21/11081/5	21/11081/7			Units	Limit of Detection	Method ref
Client Sample No	102	102	101	103	101					
Client Sample ID	TP104	TP107	TP108	TP111	WS104					
Depth to Top	0.50	0.60	0.60	1.80	0.30					
Depth To Bottom										
Date Sampled	20-Jul-21	21-Jul-21	20-Jul-21	21-Jul-21	20-Jul-21					
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES					
Sample Matrix Code					6A					
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$_A^{M\#}$	-	-	-	-	0.05			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$_A^{M\#}$	-	-	-	-	0.10			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$_A^{M\#}$	-	-	-	-	0.07			mg/kg	0.03	A-T-019s
Pyrene$_A^{M\#}$	-	-	-	-	0.10			mg/kg	0.07	A-T-019s
Total PAH-16MS$_A^{M\#}$	-	-	-	-	0.32			mg/kg	0.01	A-T-019s

Envirolab Job Number: 21/11081

Client Project Name: 2 & 3 Angel Square

Client Project Ref: 765325

Lab Sample ID	21/11081/2	21/11081/3	21/11081/4	21/11081/5	21/11081/7			Units	Limit of Detection	Method ref
Client Sample No	102	102	101	103	101					
Client Sample ID	TP104	TP107	TP108	TP111	WS104					
Depth to Top	0.50	0.60	0.60	1.80	0.30					
Depth To Bottom										
Date Sampled	20-Jul-21	21-Jul-21	20-Jul-21	21-Jul-21	20-Jul-21					
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES					
Sample Matrix Code					6A					
TPH CWG										
Ali >C5-C6$_A^{\#}$	-	-	-	-	<0.01			mg/kg	0.01	A-T-022s
Ali >C6-C8$_A^{\#}$	-	-	-	-	<0.01			mg/kg	0.01	A-T-022s
Ali >C8-C10$_A$	-	-	-	-	<1			mg/kg	1	A-T-055s
Ali >C10-C12$_A^{M\#}$	-	-	-	-	<1			mg/kg	1	A-T-055s
Ali >C12-C16$_A^{M\#}$	-	-	-	-	<1			mg/kg	1	A-T-055s
Ali >C16-C21$_A^{M\#}$	-	-	-	-	<1			mg/kg	1	A-T-055s
Ali >C21-C35$_A^{M\#}$	-	-	-	-	<1			mg/kg	1	A-T-055s
Total Aliphatics$_A$	-	-	-	-	<1			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$_A$	-	-	-	-	<1			mg/kg	1	A-T-055s
Aro >C10-C12$_A$	-	-	-	-	<1			mg/kg	1	A-T-055s
Aro >C12-C16$_A$	-	-	-	-	<1			mg/kg	1	A-T-055s
Aro >C16-C21$_A^{M\#}$	-	-	-	-	<1			mg/kg	1	A-T-055s
Aro >C21-C35$_A^{M\#}$	-	-	-	-	2			mg/kg	1	A-T-055s
Total Aromatics$_A$	-	-	-	-	2			mg/kg	1	A-T-055s
TPH (Ali & Aro >C5-C35)$_A$	-	-	-	-	2			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

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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.

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

Please contact us if you need any further information.

v1

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: Structural Soils Limited (Castleford), The Potteries, Pottery Street, Castleford, West Yorkshire, UK, WF10 1NJ

Project: 2 & 3 Angel Square

Clients Project No: 765325

Project No: 21/11081

Date Received: 12/10/2021 (am)

Cool Box Temperatures (°C): 13.7

Lab Sample ID	21/11081/7
Client Sample No	101
Client Sample ID/Depth	WS104 0.30m
Date Sampled	20/07/21
Deviation Code	
F	✓

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

HOLDING TIME EXCEEDANCES

Lab Sample ID	21/11081/7
Client Sample No	101
Client Sample ID/Depth	WS104 0.30m
Date Sampled	20/07/21
PAH-16MS	✓
Organic matter	✓
Sulphate (water sol 2:1)	✓
EPHCWG	✓
VPHCWG	✓

Note: 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 (for water samples 5 ± 3°C), ISO 18400-105:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	21/11081/2	21/11081/3	21/11081/4	21/11081/5	21/11081/7
Client Sample No	102	102	101	103	101
Client Sample ID/Depth	TP104 0.50m	TP107 0.60m	TP108 0.60m	TP111 1.80m	WS104 0.30m
Date Sampled	20/07/21	21/07/21	20/07/21	21/07/21	20/07/21
A-T-019s					18/10/2021
A-T-022s					18/10/2021
A-T-024s					19/10/2021
A-T-025w	20/10/2021	20/10/2021	20/10/2021	20/10/2021	
A-T-026s					18/10/2021
A-T-026w	20/10/2021	20/10/2021	20/10/2021	20/10/2021	
A-T-031s					18/10/2021
A-T-031w	20/10/2021	20/10/2021	20/10/2021	20/10/2021	
A-T-032 OM					23/10/2021
A-T-032w	20/10/2021	20/10/2021	20/10/2021	20/10/2021	
A-T-037w	20/10/2021	20/10/2021	20/10/2021	20/10/2021	
A-T-044					18/10/2021
A-T-045					15/10/2021
A-T-050w	20/10/2021	20/10/2021	20/10/2021	20/10/2021	
A-T-055s					18/10/2021
Calc-no stones	20/10/2021	20/10/2021	20/10/2021	20/10/2021	
Probe (w)	20/10/2021	20/10/2021	20/10/2021	20/10/2021	

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8, Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

Final Test Report

Envirolab Job Number:	21/11081
Issue Number:	1
Date:	25-Oct-21
Client:	Structural Soils Limited (Castleford) The Potteries Pottery Street Castleford West Yorkshire UK, WF10 1NJ
Project Manager:	John McCarthy
Project Name:	2 & 3 Angel Square
Project Ref:	765325
Order No:	N/A
Date Samples Received:	8-Oct-21
Date Instructions Received:	12-Oct-21
Date Analysis Completed:	23-Oct-21

Notes - Soil analysis

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

For samples with Matrix Codes 1 - 6 natural stones >10mm are removed or excluded from the sample prior to analysis and reported results corrected to a whole sample basis.

For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis.

Notes - General

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

Subscript "A" indicates analysis performed on the sample as received. "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve, unless asbestos is found to be present in which case all analysis is performed on the sample as received.

All analysis is performed on the dried and crushed sample for samples with Matrix Code 7 and this supercedes any "A" subscripts.

All analysis is performed on the sample as received for soil samples from outside the European Union and this supercedes any "D" subscripts

For complex, multi-compound analysis, quality control results do not always fall within chart limits for every compound and we have criteria for reporting in these situations.

If results are in italic font they are associated with such quality control failures and may be 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

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

Secondary Matrix Codes: A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

IS indicates Insufficient sample for analysis, NDP indicates No Determination Possible and NAD indicates No Asbestos Detected.

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.

Please contact us if you need any further information.

HWOL TPH Code: EH_CU_1D_AL: Extractable hydrocarbons - i.e. everything extracted by the solvent(s), Clean-up - e.g. by florisil, silica gel, GC - Single coil gas chromatography, Aliphatics only

Prepared by:



Melanie Marshall
Laboratory Coordinator

Approved by:



Sophie France
Client Service Manager

envirolab

Landfill WAC analysis must not be used for hazardous waste classification purposes. This analysis is only applicable for landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Sample Details						Landfill Waste Acceptance Criteria Limits		
Lab Sample ID	Method	ISO17025	MCERTS	21/11081/2				
Client Sample Number				102		Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Client Sample ID				TP104				
Depth to Top				0.5				
Depth to Bottom								
Date Sampled				20/07/2021				
Sample Type				Soil - ES				
Sample Matrix Code								
Solid Waste Analysis								
pH (pH Units)$_D$	A-T-031	N	N			-	>6	-
ANC to pH 4 (mol/kg)$_D$	A-T-ANC	N	N			-	to be evaluated	to be evaluated
ANC to pH 6 (mol/kg)$_D$	A-T-ANC	N	N			-	to be evaluated	to be evaluated
Loss on Ignition (%)$_D$	A-T-030	N	N			-	-	10
Total Organic Carbon (%)$_D$	A-T-032	N	N			3	5	6
PAH Sum of 17 (mg/kg) $_A$	A-T-019	N	N			100	-	-
Mineral Oil (mg/kg)$_{A\ EH_CU_1D_AL}$	A-T-007	N	N			500	-	-
Sum of 7 PCBs (mg/kg)$_A$	A-T-004	N	N			1	-	-
Sum of BTEX (mg/kg)$_A$	A-T-022	N	N			6	-	-
Eluate Analysis				**10:1**	**10:1**	**Limit values for compliance leaching test using**		
				mg/l	**mg/kg**	**BS EN 12457-2 at L/S 10 l/kg (mg/kg)**		
Arsenic	A-T-025	N	N	0.002	**0.020**	0.5	2	25
Barium	A-T-025	N	N	0.233	**2.330**	20	100	300
Cadmium	A-T-025	N	N	<0.001	**<0.01**	0.04	1	5
Chromium	A-T-025	N	N	0.002	**0.020**	0.5	10	70
Copper	A-T-025	N	N	0.005	**0.050**	2	50	100
Mercury	A-T-025	N	N	<0.0005	**<0.005**	0.01	0.2	2
Molybdenum	A-T-025	N	N	<0.001	**<0.01**	0.5	10	30
Nickel	A-T-025	N	N	0.002	**0.020**	0.4	10	40
Lead	A-T-025	N	N	0.005	**0.050**	0.5	10	50
Antimony	A-T-025	N	N	0.003	**0.030**	0.06	0.7	5
Selenium	A-T-025	N	N	<0.001	**<0.01**	0.1	0.5	7
Zinc	A-T-025	N	N	0.005	**0.050**	4	50	200
Chloride	A-T-026	N	N	<1.00	**<10**	800	15000	25000
Fluoride	A-T-026	N	N	0.5	**5.0**	10	150	500
Sulphate as SO_4	A-T-026	N	N	11	**110**	1000	20000	50000
Total Dissolved Solids	A-T-035	N	N	49	**490**	4000	60000	100000
Phenol Index	A-T-050	N	N	<0.01	**<0.1**	1	-	-
Dissolved Organic Carbon	A-T-032	N	N	<0.2	**<200**	500	800	1000
Leach Test Information								
pH (pH Units)	A-T-031	N	N	8.4				
Conductivity (µS/cm)	A-T-037	N	N	97				
Mass Sample (kg)				0.205				
Dry Matter (%)	A-T-044	N	N	85.3				

Stated acceptance limits are for guidance only and Envirolab cannot be held responsible for any discrepancies with current legislation

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Landfill WAC analysis must not be used for hazardous waste classification purposes. This analysis is only applicable for landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Sample Details						Landfill Waste Acceptance Criteria Limits		
Lab Sample ID	Method	ISO17025	MCERTS	21/11081/3				
Client Sample Number				102		Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Client Sample ID				TP107				
Depth to Top				0.6				
Depth to Bottom								
Date Sampled				21/07/2021				
Sample Type				Soil - ES				
Sample Matrix Code								
Solid Waste Analysis								
pH (pH Units)$_D$	A-T-031	N	N			-	>6	-
ANC to pH 4 (mol/kg)$_D$	A-T-ANC	N	N			-	to be evaluated	to be evaluated
ANC to pH 6 (mol/kg)$_D$	A-T-ANC	N	N			-	to be evaluated	to be evaluated
Loss on Ignition (%)$_D$	A-T-030	N	N			-	-	10
Total Organic Carbon (%)$_D$	A-T-032	N	N			3	5	6
PAH Sum of 17 (mg/kg) $_A$	A-T-019	N	N			100	-	-
Mineral Oil (mg/kg)$_{A\ EH_CU_1D_AL}$	A-T-007	N	N			500	-	-
Sum of 7 PCBs (mg/kg)$_A$	A-T-004	N	N			1	-	-
Sum of BTEX (mg/kg)$_A$	A-T-022	N	N			6	-	-
Eluate Analysis				**10:1** mg/l	**10:1** mg/kg	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg (mg/kg)**		
Arsenic	A-T-025	N	N	0.007	**0.070**	0.5	2	25
Barium	A-T-025	N	N	0.076	**0.760**	20	100	300
Cadmium	A-T-025	N	N	<0.001	**<0.01**	0.04	1	5
Chromium	A-T-025	N	N	0.003	**0.030**	0.5	10	70
Copper	A-T-025	N	N	0.015	**0.150**	2	50	100
Mercury	A-T-025	N	N	<0.0005	**<0.005**	0.01	0.2	2
Molybdenum	A-T-025	N	N	0.001	**0.010**	0.5	10	30
Nickel	A-T-025	N	N	<0.001	**<0.01**	0.4	10	40
Lead	A-T-025	N	N	0.124	**1.240**	0.5	10	50
Antimony	A-T-025	N	N	0.004	**0.040**	0.06	0.7	5
Selenium	A-T-025	N	N	<0.001	**<0.01**	0.1	0.5	7
Zinc	A-T-025	N	N	0.031	**0.310**	4	50	200
Chloride	A-T-026	N	N	3	**34**	800	15000	25000
Fluoride	A-T-026	N	N	0.7	**7.0**	10	150	500
Sulphate as SO_4	A-T-026	N	N	2	**16**	1000	20000	50000
Total Dissolved Solids	A-T-035	N	N	37	**370**	4000	60000	100000
Phenol Index	A-T-050	N	N	<0.01	**<0.1**	1	-	-
Dissolved Organic Carbon	A-T-032	N	N	<0.2	**<200**	500	800	1000
Leach Test Information								
pH (pH Units)	A-T-031	N	N	8.6				
Conductivity (µS/cm)	A-T-037	N	N	75				
Mass Sample (kg)				0.183				
Dry Matter (%)	A-T-044	N	N	95.7				

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Landfill WAC analysis must not be used for hazardous waste classification purposes. This analysis is only applicable for landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Sample Details						Landfill Waste Acceptance Criteria Limits		
Lab Sample ID	Method	ISO17025	MCERTS	21/11081/4				
Client Sample Number				101		Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Client Sample ID				TP108				
Depth to Top				0.6				
Depth to Bottom								
Date Sampled				20/07/2021				
Sample Type				Soil - ES				
Sample Matrix Code								
Solid Waste Analysis								
pH (pH Units)$_D$	A-T-031	N	N			-	>6	-
ANC to pH 4 (mol/kg)$_D$	A-T-ANC	N	N			-	to be evaluated	to be evaluated
ANC to pH 6 (mol/kg)$_D$	A-T-ANC	N	N			-	to be evaluated	to be evaluated
Loss on Ignition (%)$_D$	A-T-030	N	N			-	-	10
Total Organic Carbon (%)$_D$	A-T-032	N	N			3	5	6
PAH Sum of 17 (mg/kg) $_A$	A-T-019	N	N			100	-	-
Mineral Oil (mg/kg)$_{A\ EH_CU_1D_AL}$	A-T-007	N	N			500	-	-
Sum of 7 PCBs (mg/kg)$_A$	A-T-004	N	N			1	-	-
Sum of BTEX (mg/kg)$_A$	A-T-022	N	N			6	-	-
Eluate Analysis				10:1 mg/l	10:1 mg/kg	Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic	A-T-025	N	N	0.002	**0.020**	0.5	2	25
Barium	A-T-025	N	N	0.024	**0.240**	20	100	300
Cadmium	A-T-025	N	N	<0.001	**<0.01**	0.04	1	5
Chromium	A-T-025	N	N	0.002	**0.020**	0.5	10	70
Copper	A-T-025	N	N	<0.001	**<0.01**	2	50	100
Mercury	A-T-025	N	N	<0.0005	**<0.005**	0.01	0.2	2
Molybdenum	A-T-025	N	N	<0.001	**<0.01**	0.5	10	30
Nickel	A-T-025	N	N	<0.001	**<0.01**	0.4	10	40
Lead	A-T-025	N	N	0.002	**0.020**	0.5	10	50
Antimony	A-T-025	N	N	0.003	**0.030**	0.06	0.7	5
Selenium	A-T-025	N	N	<0.001	**<0.01**	0.1	0.5	7
Zinc	A-T-025	N	N	<0.001	**<0.01**	4	50	200
Chloride	A-T-026	N	N	<1.00	**<10**	800	15000	25000
Fluoride	A-T-026	N	N	<0.10	**<1**	10	150	500
Sulphate as SO_4	A-T-026	N	N	55	**546**	1000	20000	50000
Total Dissolved Solids	A-T-035	N	N	86	**860**	4000	60000	100000
Phenol Index	A-T-050	N	N	<0.01	**<0.1**	1	-	-
Dissolved Organic Carbon	A-T-032	N	N	<0.2	**<200**	500	800	1000
Leach Test Information								
pH (pH Units)	A-T-031	N	N	8.8				
Conductivity (µS/cm)	A-T-037	N	N	173				
Mass Sample (kg)				0.187				
Dry Matter (%)	A-T-044	N	N	93.7				

Stated acceptance limits are for guidance only and Envirolab cannot be held responsible for any discrepancies with current legislation

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Landfill WAC analysis must not be used for hazardous waste classification purposes. This analysis is only applicable for landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Sample Details						Landfill Waste Acceptance Criteria Limits		
Lab Sample ID	Method	ISO17025	MCERTS	21/11081/5				
Client Sample Number				103		Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Client Sample ID				TP111				
Depth to Top				1.8				
Depth to Bottom								
Date Sampled				21/07/2021				
Sample Type				Soil - ES				
Sample Matrix Code								
Solid Waste Analysis								
pH (pH Units)$_D$	A-T-031	N	N			-	>6	-
ANC to pH 4 (mol/kg)$_D$	A-T-ANC	N	N			-	to be evaluated	to be evaluated
ANC to pH 6 (mol/kg)$_D$	A-T-ANC	N	N			-	to be evaluated	to be evaluated
Loss on Ignition (%)$_D$	A-T-030	N	N			-	-	10
Total Organic Carbon (%)$_D$	A-T-032	N	N			3	5	6
PAH Sum of 17 (mg/kg) $_A$	A-T-019	N	N			100	-	-
Mineral Oil (mg/kg)$_{A\ EH_CU_1D_AL}$	A-T-007	N	N			500	-	-
Sum of 7 PCBs (mg/kg)$_A$	A-T-004	N	N			1	-	-
Sum of BTEX (mg/kg)$_A$	A-T-022	N	N			6	-	-
Eluate Analysis				**10:1** mg/l	**10:1** mg/kg	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg (mg/kg)**		
Arsenic	A-T-025	N	N	0.006	**0.060**	0.5	2	25
Barium	A-T-025	N	N	0.077	**0.770**	20	100	300
Cadmium	A-T-025	N	N	<0.001	**<0.01**	0.04	1	5
Chromium	A-T-025	N	N	0.003	**0.030**	0.5	10	70
Copper	A-T-025	N	N	0.020	**0.200**	2	50	100
Mercury	A-T-025	N	N	<0.0005	**<0.005**	0.01	0.2	2
Molybdenum	A-T-025	N	N	0.003	**0.030**	0.5	10	30
Nickel	A-T-025	N	N	<0.001	**<0.01**	0.4	10	40
Lead	A-T-025	N	N	0.283	**2.830**	0.5	10	50
Antimony	A-T-025	N	N	0.007	**0.070**	0.06	0.7	5
Selenium	A-T-025	N	N	<0.001	**<0.01**	0.1	0.5	7
Zinc	A-T-025	N	N	0.089	**0.890**	4	50	200
Chloride	A-T-026	N	N	3	**27**	800	15000	25000
Fluoride	A-T-026	N	N	0.8	**8.0**	10	150	500
Sulphate as SO_4	A-T-026	N	N	19	**195**	1000	20000	50000
Total Dissolved Solids	A-T-035	N	N	73	**730**	4000	60000	100000
Phenol Index	A-T-050	N	N	<0.01	**<0.1**	1	-	-
Dissolved Organic Carbon	A-T-032	N	N	<0.2	**<200**	500	800	1000
Leach Test Information								
pH (pH Units)	A-T-031	N	N	8.4				
Conductivity (µS/cm)	A-T-037	N	N	146				
Mass Sample (kg)				0.191				
Dry Matter (%)	A-T-044	N	N	91.9				

Stated acceptance limits are for guidance only and Envirolab cannot be held responsible for any discrepancies with current legislation

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RSK Group Plc
Abbey Park
Humber Road
Coventry
CV3 4AQ

Attention :	Gerry Whittall
Date :	3rd November, 2021
Your reference :	
Our reference :	Test Report 21/16756 Batch 1
Location :	Angel Square
Date samples received :	23rd October, 2021
Status :	Final Report
Issue :	1

Two samples were received for analysis on 23rd October, 2021 of which one was scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Authorised By:



Simon Gomery BSc
Project Manager

Please include all sections of this report if it is reproduced

Element Materials Technology Environmental UK Limited
Registered in England and Wales
Registered Office: 10 Lower Grosvenor Place, London, SW1W 0EN
Company Registration No: 11371415

Element Materials Technology

Client Name: RSK Group Plc
Reference:
Location: Angel Square
Contact: Gerry Whittall
EMT Job No: 21/16756

Report : Gas

EMT Sample No.	1												
Sample ID	WS102												
Depth													
COC No / misc													
Containers	BV												
Sample Date	22/10/2021 09:20												
Sample Type	Gas												
Batch Number	1												
Date of Receipt	23/10/2021												

Please see attached notes for all abbreviations and acronyms

											LOD/LOR	Units	Method No.
Carbon Dioxide	0.14										<0.05	%	TM69/PM0
Carbon Monoxide	<0.05										<0.05	%	TM69/PM0
Hydrogen	<0.5										<0.5	%	TM69/PM0
Methane	<0.05										<0.05	%	TM69/PM0
Methane	<5										<5	ppmV	TM69/PM0
Nitrogen	82.9										<0.5	%	TM69/PM0
Oxygen	17.0										<0.5	%	TM69/PM0

Client Name: RSK Group Plc
Reference:
Location: Angel Square
Contact: Gerry Whittall

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Analysis	Reason
No deviating sample report results for job 21/16756						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

Please include all sections of this report if it is reproduced

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

EMT Job No.: 21/16756

SOILS

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

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

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

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

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

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

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

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

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

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

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

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

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

WATERS

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

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

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

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

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

SURROGATES

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

DILUTIONS

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

BLANKS

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

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

REPORTS FROM THE SOUTH AFRICA LABORATORY

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

Measurement Uncertainty

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

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) accredited - South Africa
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
>>	Results above calibration range, the result should be considered the minimum value. The actual result could be significantly higher.
*	Analysis subcontracted to an Element Materials Technology approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range

EMT Job No: 21/16756

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM69	Analysis of gas samples by direct injection onto a Gas Chromatography (GC) column and analysed using a Flame Ionisation Detector (FID) or a Thermocouple Detector (TD)	PM0	No preparation is required.				

APPENDIX F - CALIBRATION CERTIFICATES

(i) SPT Calibration Records

SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

JB Site Investigations
Windmill Way West
Ramparts Business Park
Berwick
TD15 1TB

SPT Hammer Ref:	AR1862
Test Date:	27/05/2020
Report Date:	28/05/2020
File Name:	AR1862.spt
Test Operator:	SP

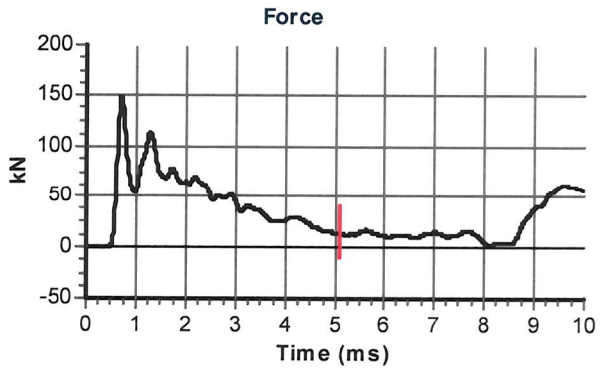
Instrumented Rod Data

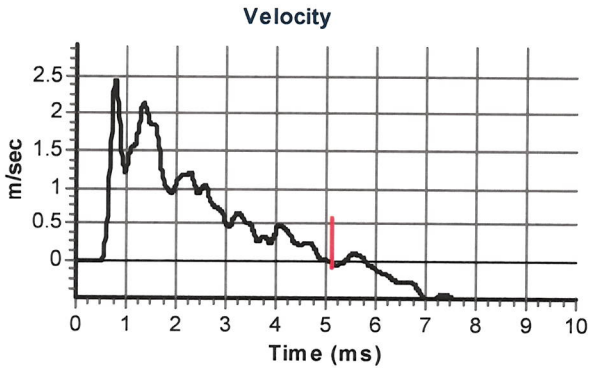
Diameter d_r (mm):	54
Wall Thickness t_r (mm):	6.5
Rod Length l_r (m):	1.0
Assumed Modulus E_a (GPa):	208
Accelerometer No.1:	6178
Accelerometer No.2:	5843

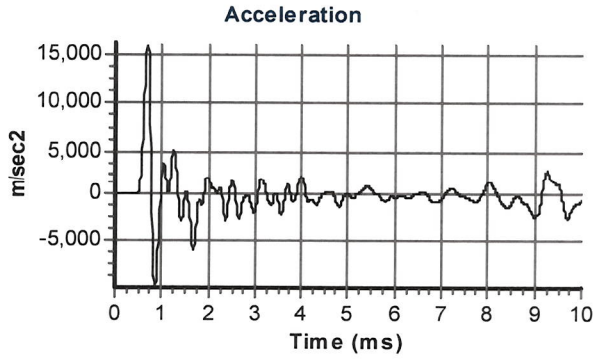
SPT Hammer Information

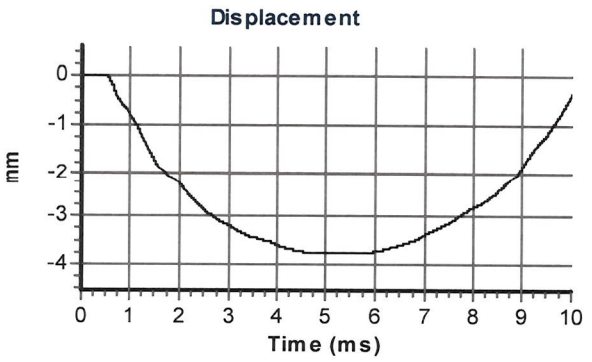
Hammer Mass m (kg):	63.5
Falling Height h (mm):	760
SPT String Length L (m):	14.0

Comments / Location









Calculations

Area of Rod A (mm2):	970
Theoretical Energy E_{theor} (J):	473
Measured Energy E_{meas} (J):	251

Energy Ratio E_r (%): **53**

Signed: Scott Pincher

Title: Director

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SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

Scott Pincher
JB Site Investigations
DC103/9
Windmill Way West
Ramparts Business Park

SPT Hammer Ref:	DART384
Test Date:	21/06/2021
Report Date:	22/06/2021
File Name:	DART384.spt
Test Operator:	SP

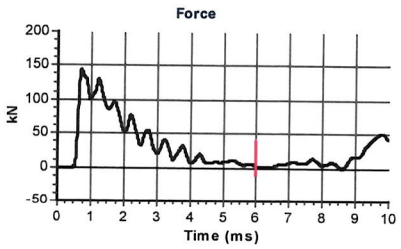
Instrumented Rod Data

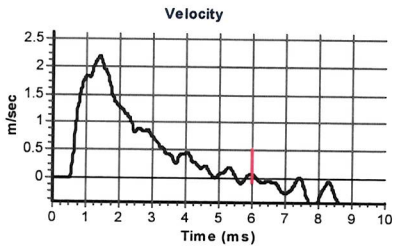
Diameter d_r (mm):	54
Wall Thickness t_r (mm):	6.1
Rod Length l_r (m):	1.0
Assumed Modulus E_a (GPa):	208
Accelerometer No.1:	6178
Accelerometer No.2:	5843

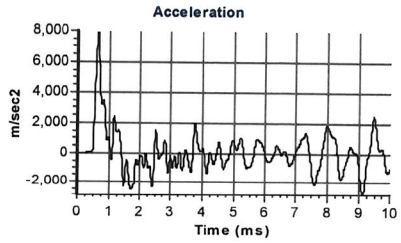
SPT Hammer Information

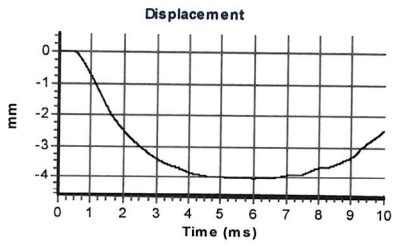
Hammer Mass m (kg):	63.5
Falling Height h (mm):	760
SPT String Length L (m):	14.2

Comments / Location









Calculations

Area of Rod A (mm2):	918
Theoretical Energy E_{theor} (J):	473
Measured Energy E_{meas} (J):	360

Energy Ratio E_r (%): **76**

Signed:

Title: Director

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APPENDIX G - MONITORING RECORDS

(i) Gas/Groundwater Monitoring Results

IN-SITU GAS MONITORING RESULTS

	Start Date	End Date	Pressures Previous	Pressures During	Pressures Start	Pressures End	Equipment Used & Remarks
Round 1	13/08/2021	13/08/2021	Constant	Constant	1012	1013	GA5000 | Weather: Cloudy | Ground: Dry | Wind: Light | Air Temp: 15°C | Summary: Gas & Water
Round 2	26/08/2021	26/08/2021	Rising	Constant	1019	1019	GA5000 | Weather: Sunny | Ground: Dry | Air Temp: 19°C | Summary: Gas & Water
Round 3	07/09/2021	07/09/2021	Constant	Constant	1015	1015	Weather: Sunny | Ground: Dry | Air Temp: 20°C | Summary: Gas & Water
Round 4	20/09/2021	20/09/2021	Constant	Constant	1020	1020	Weather: Clear | Ground: Dry | Air Temp: 10°C | Summary: Gas & Water
Round 5	06/10/2021	06/10/2021	Constant	Constant	1016	1016	Weather: Clear | Ground: Dry | Air Temp: 15°C | Summary: Gas & Water
Round 6	22/10/2021	22/10/2021	Constant	Rising	1012	1013	Weather: Raining | Ground: Wet | Wind: Light | Air Temp: 9°C | Summary: Gas & Water

Exploratory Position ID	Pipe ref	Pipe diameter (mm)	Monitoring Round	Reported Installation Depth (m)	Measured Installation Depth (mbgl)	Response Zone	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	PID (ppm)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)
BH101	1	19	1	25.00	---	17.00 to 29.00	13/08/2021 12:16:52	1012	1012	$0.0_{(I)}$	-	-	-	-	-	-	-	-
BH101	1	19	1	---	---	17.00 to 29.00	30 secs	-	-	$-0.1_{(SS)}$	-	-	-	-	-	-	-	-
BH101	1	19	1 (2)	25.00	---	17.00 to 29.00	13/08/2021 12:18:56	-	-	-	-	0.1	0.0	20.9	0.0	-	0	0
BH101	1	19	1 (2)	---	---	17.00 to 29.00	15 secs	-	-	-	-	0.1	0.0	20.8	0.0	-	4	0
BH101	1	19	1 (2)	---	---	17.00 to 29.00	31 secs	-	-	-	-	0.0	0.0	20.8	0.0	-	1	0
BH101	1	19	1 (2)	---	---	17.00 to 29.00	61 secs	-	-	-	-	0.0	0.0	20.8	0.0	-	0	0
BH101	1	19	1 (2)	---	---	17.00 to 29.00	92 secs	-	-	-	-	0.0	0.0	20.8	0.0	-	0	0
BH101	1	19	1 (2)	---	---	17.00 to 29.00	122 secs	-	-	-	-	0.0	0.0	20.8	0.0	-	0	0
BH101	1	19	1 (2)	---	---	17.00 to 29.00	183 secs	-	-	-	-	0.0	0.0	20.8	0.0	-	0	0
BH101	1	19	1 (2)	---	---	17.00 to 29.00	244 secs	-	-	-	-	0.0	0.0	20.8	0.0	-	0	0
BH101	1	19	1 (2)	---	---	17.00 to 29.00	304 secs	-	-	-	-	0.0	0.0	20.9	0.0	-	0	0
BH101	1	19	1 (3)	25.00	17.18	17.00 to 29.00	13/08/2021 12:27:20	-	-	-	DRY	-	-	-	-	-	-	-
BH101	1	19	2	25.00	---	17.00 to 29.00	26/08/2021 09:51:22	1019	1019	$0.0_{(I)}$	-	-	-	-	-	-	-	-
BH101	1	19	2	---	---	17.00 to 29.00	9 secs	-	-	$0.0_{(SS)}$	-	-	-	-	-	-	-	-
BH101	1	19	2 (2)	25.00	---	17.00 to 29.00	26/08/2021 09:52:15	-	-	-	-	-	-	-	-	-	-	-
BH101	1	19	2 (2)	---	---	17.00 to 29.00	15 secs	-	-	-	-	0.1	0.0	21.1	0.0	-	0	0
BH101	1	19	2 (2)	---	---	17.00 to 29.00	31 secs	-	-	-	-	0.1	0.0	20.7	0.0	-	6	0
BH101	1	19	2 (2)	---	---	17.00 to 29.00	62 secs	-	-	-	-	0.2	0.0	20.4	0.0	-	8	0

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

STRUCTURAL SOILS
The Potteries
Pottery Street
Castleford
W. Yorkshire WF10 1NJ

Compiled By	Date	Checked By	Date	Contract Ref:
JMcCarthy	01/11/2021	JMcCarthy	01/11/2021	765325

Contract: **2 & 3 Angel Square**

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe diameter (mm)	Monitoring Round	Reported Installation Depth (m)	Measured Installation Depth (mbgl)	Response Zone	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	PID (ppm)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)
BH101	1	19	2 (2)	---	---	17.00 to 29.00	93 secs	-	-	-	-	0.2	0.0	20.2	0.0	-	9	0
BH101	1	19	2 (2)	---	---	17.00 to 29.00	123 secs	-	-	-	-	0.2	0.0	20.0	0.0	-	11	0
BH101	1	19	2 (2)	---	---	17.00 to 29.00	184 secs	-	-	-	-	0.2	0.0	19.7	0.0	-	14	0
BH101	1	19	2 (2)	---	---	17.00 to 29.00	244 secs	-	-	-	-	0.2	0.0	19.5	0.0	-	17	0
BH101	1	19	2 (2)	---	---	17.00 to 29.00	305 secs	-	-	-	-	0.2	0.0	19.4	0.0	-	20	0
BH101	1	19	2 (3)	25.00	21.93	17.00 to 29.00	26/08/2021 10:00:56	-	-	-	DRY	0.2	0.0	19.3	0.0	-	20	0
BH101	1	19	4	25.00	---	17.00 to 29.00	20/09/2021 08:47:00	1020	1020	$0.0_{(I)}$	-	-	-	-	-	-	-	-
BH101	1	19	4	---	---	17.00 to 29.00	30 secs	-	-	$0.0_{(SS)}$	-	-	-	-	-	-	-	-
BH101	1	19	4 (2)	25.00	---	17.00 to 29.00	20/09/2021 08:48:00	-	-	-	-	0.1	0.0	20.8	0.0	0.2	0	0
BH101	1	19	4 (2)	---	---	17.00 to 29.00	15 secs	-	-	-	-	1.7	0.0	20.1	0.0	-	0	0
BH101	1	19	4 (2)	---	---	17.00 to 29.00	30 secs	-	-	-	-	1.8	0.0	18.7	0.0	-	0	0
BH101	1	19	4 (2)	---	---	17.00 to 29.00	60 secs	-	-	-	-	1.8	0.0	18.5	0.0	-	0	0
BH101	1	19	4 (2)	---	---	17.00 to 29.00	90 secs	-	-	-	-	1.8	0.0	18.5	0.0	-	0	0
BH101	1	19	4 (2)	---	---	17.00 to 29.00	120 secs	-	-	-	-	1.8	0.0	18.6	0.0	-	0	0
BH101	1	19	4 (2)	---	---	17.00 to 29.00	180 secs	-	-	-	-	1.8	0.0	18.7	0.0	-	0	0
BH101	1	19	4 (2)	---	---	17.00 to 29.00	240 secs	-	-	-	-	1.8	0.0	18.7	0.0	-	0	0
BH101	1	19	4 (2)	---	---	17.00 to 29.00	300 secs	-	-	-	-	1.8	0.0	18.7	0.0	-	0	0
BH101	1	19	4 (3)	25.00	2.06	17.00 to 29.00	20/09/2021 08:55:00	-	-	-	2.06	-	-	-	-	-	-	-
BH101	1	19	5	25.00	---	17.00 to 29.00	06/10/2021 14:20:00	1015	1016	$0.0_{(I)}$	-	-	-	-	-	-	-	-
BH101	1	19	5	---	---	17.00 to 29.00	30 secs	-	-	$0.0_{(SS)}$	-	-	-	-	-	-	-	-
BH101	1	19	5 (2)	25.00	---	17.00 to 29.00	06/10/2021 14:21:00	-	-	-	-	0.1	0.0	20.8	0.0	0.1	0	0
BH101	1	19	5 (2)	---	---	17.00 to 29.00	15 secs	-	-	-	-	0.1	0.0	20.8	0.0	-	0	0
BH101	1	19	5 (2)	---	---	17.00 to 29.00	30 secs	-	-	-	-	0.1	0.0	20.8	0.0	-	0	0
BH101	1	19	5 (2)	---	---	17.00 to 29.00	60 secs	-	-	-	-	0.1	0.0	20.8	0.0	-	0	0
BH101	1	19	5 (2)	---	---	17.00 to 29.00	90 secs	-	-	-	-	0.1	0.0	20.8	0.0	-	0	0

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe diameter (mm)	Monitoring Round	Reported Installation Depth (m)	Measured Installation Depth (mbgl)	Response Zone	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	PID (ppm)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)
BH101	1	19	5 (2)	---	---	17.00 to 29.00	120 secs	-	-	-	-	0.1	0.0	20.8	0.0	-	0	0
BH101	1	19	5 (2)	---	---	17.00 to 29.00	180 secs	-	-	-	-	0.1	0.0	20.8	0.0	-	1	0
BH101	1	19	5 (2)	---	---	17.00 to 29.00	240 secs	-	-	-	-	0.1	0.0	20.8	0.0	-	1	0
BH101	1	19	5 (2)	---	---	17.00 to 29.00	300 secs	-	-	-	-	0.1	0.0	20.8	0.0	-	1	0
BH101	1	19	5 (3)	25.00	2.06	17.00 to 29.00	06/10/2021 14:27:00	-	-	-	1.77	-	-	-	-	-	-	-
BH101	1	19	6	25.00	---	17.00 to 29.00	22/10/2021 07:25:00	1012	1012	$0.0_{(I)}$	-	-	-	-	-	-	-	-
BH101	1	19	6	---	---	17.00 to 29.00	30 secs	-	-	$0.0_{(SS)}$	-	-	-	-	-	-	-	-
BH101	1	19	6 (2)	25.00	---	17.00 to 29.00	22/10/2021 07:26:00	-	-	-	-	0.0	0.0	20.9	-	-	0	0
BH101	1	19	6 (2)	---	---	17.00 to 29.00	15 secs	-	-	-	-	0.0	0.0	20.9	-	-	0	0
BH101	1	19	6 (2)	---	---	17.00 to 29.00	30 secs	-	-	-	-	1.8	0.0	20.1	-	-	0	0
BH101	1	19	6 (2)	---	---	17.00 to 29.00	60 secs	-	-	-	-	1.8	0.0	19.9	-	-	0	0
BH101	1	19	6 (2)	---	---	17.00 to 29.00	90 secs	-	-	-	-	1.9	0.0	19.9	-	-	0	0
BH101	1	19	6 (2)	---	---	17.00 to 29.00	120 secs	-	-	-	-	1.9	0.0	19.9	-	-	0	0
BH101	1	19	6 (2)	---	---	17.00 to 29.00	180 secs	-	-	-	-	1.8	0.0	20.1	-	-	0	0
BH101	1	19	6 (2)	---	---	17.00 to 29.00	240 secs	-	-	-	-	1.9	0.0	20.2	-	-	0	0
BH101	1	19	6 (2)	---	---	17.00 to 29.00	300 secs	-	-	-	-	1.9	0.0	20.4	-	-	0	0
BH101	1	19	6 (3)	25.00	2.07	17.00 to 29.00	22/10/2021 07:32:00	-	-	-	1.80	-	-	-	-	-	-	-
BH101	2	50	1	2.00	---	1.00 to 2.00	13/08/2021 12:28:49	1013	1013	$0.0_{(I)}$	-	-	-	-	-	-	-	-
BH101	2	50	1	---	---	1.00 to 2.00	30 secs	-	-	$0.0_{(SS)}$	-	-	-	-	-	-	-	-
BH101	2	50	1 (2)	2.00	---	1.00 to 2.00	13/08/2021 12:30:57	-	-	-	-	0.1	0.0	20.9	0.0	-	0	0
BH101	2	50	1 (2)	---	---	1.00 to 2.00	15 secs	-	-	-	-	0.4	0.0	20.4	0.0	-	3	0
BH101	2	50	1 (2)	---	---	1.00 to 2.00	30 secs	-	-	-	-	0.4	0.0	19.1	0.0	-	0	0
BH101	2	50	1 (2)	---	---	1.00 to 2.00	60 secs	-	-	-	-	0.4	0.0	18.9	0.0	-	0	0
BH101	2	50	1 (2)	---	---	1.00 to 2.00	91 secs	-	-	-	-	0.4	0.0	18.9	0.0	-	0	0
BH101	2	50	1 (2)	---	---	1.00 to 2.00	121 secs	-	-	-	-	0.4	0.0	18.9	0.0	-	0	0

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe diameter (mm)	Monitoring Round	Reported Installation Depth (m)	Measured Installation Depth (mbgl)	Response Zone	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	PID (ppm)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)
BH101	2	50	1 (2)	---	---	1.00 to 2.00	181 secs	-	-	-	-	0.4	0.0	19.0	0.0	-	0	0
BH101	2	50	1 (2)	---	---	1.00 to 2.00	241 secs	-	-	-	-	0.4	0.0	19.0	0.0	-	0	0
BH101	2	50	1 (2)	---	---	1.00 to 2.00	302 secs	-	-	-	-	0.4	0.0	19.0	0.0	-	0	0
BH101	2	50	1 (3)	2.00	2.10	1.00 to 2.00	13/08/2021 12:39:17	-	-	-	1.83	-	-	-	-	-	-	-
BH101	2	50	2	2.00	---	1.00 to 2.00	26/08/2021 09:41:56	1019	1019	$0.0_{(I)}$	-	-	-	-	-	-	-	-
BH101	2	50	2	---	---	1.00 to 2.00	9 secs	-	-	$0.0_{(SS)}$	-	-	-	-	-	-	-	-
BH101	2	50	2 (2)	2.00	---	1.00 to 2.00	26/08/2021 09:42:46	-	-	-	-	0.1	0.0	20.9	0.0	-	0	0
BH101	2	50	2 (2)	---	---	1.00 to 2.00	16 secs	-	-	-	-	0.6	0.1	19.7	2.0	-	0	0
BH101	2	50	2 (2)	---	---	1.00 to 2.00	31 secs	-	-	-	-	0.6	0.1	19.4	2.0	-	0	0
BH101	2	50	2 (2)	---	---	1.00 to 2.00	62 secs	-	-	-	-	0.6	0.1	19.4	2.0	-	0	0
BH101	2	50	2 (2)	---	---	1.00 to 2.00	92 secs	-	-	-	-	0.6	0.0	19.4	0.0	-	0	0
BH101	2	50	2 (2)	---	---	1.00 to 2.00	123 secs	-	-	-	-	0.6	0.0	19.4	0.0	-	0	0
BH101	2	50	2 (2)	---	---	1.00 to 2.00	183 secs	-	-	-	-	0.6	0.0	19.4	0.0	-	0	0
BH101	2	50	2 (2)	---	---	1.00 to 2.00	244 secs	-	-	-	-	0.6	0.0	19.5	0.0	-	0	0
BH101	2	50	2 (2)	---	---	1.00 to 2.00	304 secs	-	-	-	-	0.3	0.0	20.9	0.0	-	0	0
BH101	2	50	2 (3)	2.00	2.08	1.00 to 2.00	26/08/2021 09:50:58	-	-	-	1.83	0.1	0.0	21.8	0.0	-	0	0
BH101	2	50	4 (3)	2.00	22.03	1.00 to 2.00	20/09/2021 08:55:30	-	-	-	21.92	-	-	-	-	-	-	-
BH101	2	50	5	2.00	---	1.00 to 2.00	06/10/2021 14:28:00	1016	1016	$0.0_{(I)}$	-	-	-	-	-	-	-	-
BH101	2	50	5	---	---	1.00 to 2.00	30 secs	-	-	$0.0_{(SS)}$	-	-	-	-	-	-	-	-
BH101	2	50	5 (2)	2.00	---	1.00 to 2.00	06/10/2021 14:29:00	-	-	-	-	0.1	0.0	21.0	0.0	0.5	0	0
BH101	2	50	5 (2)	---	---	1.00 to 2.00	15 secs	-	-	-	-	1.8	0.1	21.0	2.0	-	1	0
BH101	2	50	5 (2)	---	---	1.00 to 2.00	30 secs	-	-	-	-	1.8	0.1	20.0	2.0	-	0	0
BH101	2	50	5 (2)	---	---	1.00 to 2.00	60 secs	-	-	-	-	1.9	0.1	19.9	2.0	-	0	0
BH101	2	50	5 (2)	---	---	1.00 to 2.00	90 secs	-	-	-	-	1.9	0.1	19.9	2.0	-	0	0
BH101	2	50	5 (2)	---	---	1.00 to 2.00	120 secs	-	-	-	-	1.9	0.1	19.9	2.0	-	0	0

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe diameter (mm)	Monitoring Round	Reported Installation Depth (m)	Measured Installation Depth (mbgl)	Response Zone	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	PID (ppm)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)
BH101	2	50	5 (2)	---	---	1.00 to 2.00	180 secs	-	-	-	-	1.9	0.0	20.0	0.0	-	0	0
BH101	2	50	5 (2)	---	---	1.00 to 2.00	240 secs	-	-	-	-	1.9	0.0	20.0	0.0	-	0	0
BH101	2	50	5 (2)	---	---	1.00 to 2.00	300 secs	-	-	-	-	1.9	0.0	20.0	0.0	-	0	0
BH101	2	50	5 (3)	2.00	2.06	1.00 to 2.00	06/10/2021 14:48:00	-	-	-	1.77	-	-	-	-	-	-	-
BH101	2	50	6	2.00	---	1.00 to 2.00	22/10/2021 07:39:00	1013	1013	$0.0_{(I)}$	-	-	-	-	-	-	-	-
BH101	2	50	6	---	---	1.00 to 2.00	30 secs	-	-	$0.0_{(SS)}$	-	-	-	-	-	-	-	-
BH101	2	50	6 (2)	2.00	---	1.00 to 2.00	22/10/2021 07:40:00	-	-	-	-	0.1	0.0	20.9	-	-	0	0
BH101	2	50	6 (2)	---	---	1.00 to 2.00	15 secs	-	-	-	-	0.7	0.0	20.4	-	-	2	0
BH101	2	50	6 (2)	---	---	1.00 to 2.00	30 secs	-	-	-	-	0.8	0.0	18.8	-	-	3	0
BH101	2	50	6 (2)	---	---	1.00 to 2.00	60 secs	-	-	-	-	0.8	0.0	18.5	-	-	3	0
BH101	2	50	6 (2)	---	---	1.00 to 2.00	90 secs	-	-	-	-	0.8	0.0	18.3	-	-	3	0
BH101	2	50	6 (2)	---	---	1.00 to 2.00	120 secs	-	-	-	-	0.8	0.0	18.1	-	-	3	0
BH101	2	50	6 (2)	---	---	1.00 to 2.00	180 secs	-	-	-	-	0.8	0.0	18.1	-	-	3	0
BH101	2	50	6 (2)	---	---	1.00 to 2.00	240 secs	-	-	-	-	0.9	0.0	18.2	-	-	3	0
BH101	2	50	6 (2)	---	---	1.00 to 2.00	300 secs	-	-	-	-	0.9	0.0	18.3	-	-	3	0
BH101	2	50	6 (3)	2.00	22.36	1.00 to 2.00	22/10/2021 07:46:00	-	-	-	21.88	-	-	-	-	-	-	-
BH102	1	19	1	24.00	---	23.70 to 24.00	13/08/2021 12:57:55	1012	1012	$0.0_{(I)}$	-	-	-	-	-	-	-	-
BH102	1	19	1	---	---	23.70 to 24.00	30 secs	-	-	$0.0_{(SS)}$	-	-	-	-	-	-	-	-
BH102	1	19	1 (2)	24.00	---	23.70 to 24.00	13/08/2021 13:00:05	-	-	-	-	0.1	0.0	20.8	0.0	-	0	0
BH102	1	19	1 (2)	---	---	23.70 to 24.00	16 secs	-	-	-	-	0.1	0.1	20.5	2.0	-	170	0
BH102	1	19	1 (2)	---	---	23.70 to 24.00	32 secs	-	-	-	-	0.1	0.2	20.0	4.0	-	222	0
BH102	1	19	1 (2)	---	---	23.70 to 24.00	62 secs	-	-	-	-	0.1	0.4	20.1	8.0	-	175	0
BH102	1	19	1 (2)	---	---	23.70 to 24.00	93 secs	-	-	-	-	0.1	0.5	20.2	10.0	-	174	0
BH102	1	19	1 (2)	---	---	23.70 to 24.00	123 secs	-	-	-	-	0.1	0.6	20.2	12.0	-	146	0

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe diameter (mm)	Monitoring Round	Reported Installation Depth (m)	Measured Installation Depth (mbgl)	Response Zone	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	PID (ppm)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)
BH102	1	19	1 (2)	---	---	23.70 to 24.00	183 secs	-	-	-	-	0.1	0.7	20.4	14.0	-	104	0
BH102	1	19	1 (2)	---	---	23.70 to 24.00	243 secs	-	-	-	-	0.1	0.6	20.4	12.0	-	63	0
BH102	1	19	1 (2)	---	---	23.70 to 24.00	303 secs	-	-	-	-	0.0	0.5	20.5	10.0	-	47	0
BH102	1	19	1 (3)	24.00	22.74	23.70 to 24.00	13/08/2021 13:08:25	-	-	-	20.79	-	-	-	-	-	-	-
BH102	1	19	2	24.00	---	23.70 to 24.00	26/08/2021 09:25:18	1018	1019	$0.0_{(I)}$	-	-	-	-	-	-	-	-
BH102	1	19	2	---	---	23.70 to 24.00	169 secs	-	-	$-0.5_{(SS)}$	-	-	-	-	-	-	-	-
BH102	1	19	2 (2)	24.00	---	23.70 to 24.00	26/08/2021 09:29:55	-	-	-	-	0.1	0.0	21.0	0.0	-	0	0
BH102	1	19	2 (2)	---	---	23.70 to 24.00	15 secs	-	-	-	-	0.1	0.0	21.8	0.0	-	313	0
BH102	1	19	2 (2)	---	---	23.70 to 24.00	30 secs	-	-	-	-	0.1	0.1	21.5	2.0	-	>	0
BH102	1	19	2 (2)	---	---	23.70 to 24.00	60 secs	-	-	-	-	0.1	0.2	21.5	4.0	-	>	0
BH102	1	19	2 (2)	---	---	23.70 to 24.00	91 secs	-	-	-	-	0.1	0.3	21.5	6.0	-	>	0
BH102	1	19	2 (2)	---	---	23.70 to 24.00	121 secs	-	-	-	-	0.1	0.4	21.6	8.0	-	>	0
BH102	1	19	2 (2)	---	---	23.70 to 24.00	181 secs	-	-	-	-	0.1	0.4	21.6	8.0	-	500	0
BH102	1	19	2 (2)	---	---	23.70 to 24.00	241 secs	-	-	-	-	0.1	0.4	21.7	8.0	-	379	0
BH102	1	19	2 (2)	---	---	23.70 to 24.00	303 secs	-	-	-	-	0.1	0.3	21.7	6.0	-	282	0
BH102	1	19	2 (3)	24.00	22.70	23.70 to 24.00	26/08/2021 09:37:07	-	-	-	20.74	0.1	0.3	21.8	6.0	-	244	0
BH102	1	19	4	24.00	22.69	23.70 to 24.00	20/09/2021 09:50:00	-	-	-	20.82	-	-	-	-	-	-	-
	Remarks: Water reading levels. Dip only, blocked by car.																	
BH102	1	19	5	24.00	---	23.70 to 24.00	06/10/2021 14:20:00	1015	1016	$0.0_{(I)}$	-	-	-	-	-	-	-	-
BH102	1	19	5	---	---	23.70 to 24.00	30 secs	-	-	$0.0_{(SS)}$	-	-	-	-	-	-	-	-
BH102	1	19	5 (2)	24.00	---	23.70 to 24.00	06/10/2021 14:21:00	-	-	-	-	0.1	0.0	21.0	0.0	0.6	0	0
BH102	1	19	5 (2)	---	---	23.70 to 24.00	15 secs	-	-	-	-	0.2	0.3	21.0	6.0	-	219	0
BH102	1	19	5 (2)	---	---	23.70 to 24.00	30 secs	-	-	-	-	0.3	0.6	20.6	12.0	-	297	0
BH102	1	19	5 (2)	---	---	23.70 to 24.00	60 secs	-	-	-	-	0.4	0.8	20.6	16.0	-	290	0
BH102	1	19	5 (2)	---	---	23.70 to 24.00	90 secs	-	-	-	-	0.4	1.0	20.6	20.0	-	280	0

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

STRUCTURAL SOILS
The Potteries
Pottery Street
Castleford
W. Yorkshire WF10 1NJ

Compiled By	Date	Checked By	Date	Contract Ref:
JMcCarthy	01/11/2021	JMcCarthy	01/11/2021	765325

Contract: **2 & 3 Angel Square**

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe diameter (mm)	Monitoring Round	Reported Installation Depth (m)	Measured Installation Depth (mbgl)	Response Zone	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	PID (ppm)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)
BH102	1	19	5 (2)	---	---	23.70 to 24.00	120 secs	-	-	-	-	0.4	1.2	20.6	24.0	-	274	0
BH102	1	19	5 (2)	---	---	23.70 to 24.00	180 secs	-	-	-	-	0.4	1.4	20.6	28.0	-	272	0
BH102	1	19	5 (3)	24.00	22.70	23.70 to 24.00	06/10/2021 14:25:00	-	-	-	21.72	-	-	-	-	-	-	-
BH102	1	19	6	24.00	---	23.70 to 24.00	22/10/2021 07:50:00	1012	1012	$0.0_{(I)}$	-	-	-	-	-	-	-	-
BH102	1	19	6	---	---	23.70 to 24.00	30 secs	-	-	$0.0_{(SS)}$	-	-	-	-	-	-	-	-
BH102	1	19	6 (2)	24.00	---	23.70 to 24.00	22/10/2021 07:51:00	-	-	-	-	0.1	0.0	20.9	-	-	0	0
BH102	1	19	6 (2)	---	---	23.70 to 24.00	15 secs	-	-	-	-	0.3	0.3	20.8	-	-	0	0
BH102	1	19	6 (2)	---	---	23.70 to 24.00	30 secs	-	-	-	-	0.3	0.6	20.3	-	-	0	0
BH102	1	19	6 (2)	---	---	23.70 to 24.00	60 secs	-	-	-	-	0.3	0.8	20.3	-	-	0	0
BH102	1	19	6 (2)	---	---	23.70 to 24.00	90 secs	-	-	-	-	0.3	1.0	20.7	-	-	0	0
BH102	1	19	6 (2)	---	---	23.70 to 24.00	120 secs	-	-	-	-	0.3	1.1	20.7	-	-	0	0
BH102	1	19	6 (2)	---	---	23.70 to 24.00	180 secs	-	-	-	-	0.3	1.3	20.7	-	-	0	0
BH102	1	19	6 (3)	24.00	22.70	23.70 to 24.00	22/10/2021 07:55:00	-	-	-	20.70	-	-	-	-	-	-	-
BH103	1	19	1	25.00	---	15.60 to 25.00	13/08/2021 11:20:33	1012	1013	$0.0_{(I)}$	-	-	-	-	-	-	-	-
BH103	1	19	1	---	---	15.60 to 25.00	30 secs	-	-	$-0.2_{(SS)}$	-	-	-	-	-	-	-	-
BH103	1	19	1 (2)	25.00	---	15.60 to 25.00	13/08/2021 11:23:00	-	-	-	-	0.3	0.0	20.7	0.0	-	0	0
BH103	1	19	1 (2)	---	---	15.60 to 25.00	15 secs	-	-	-	-	0.1	0.0	20.7	0.0	-	1	0
BH103	1	19	1 (2)	---	---	15.60 to 25.00	30 secs	-	-	-	-	0.1	0.0	20.8	0.0	-	0	0
BH103	1	19	1 (2)	---	---	15.60 to 25.00	60 secs	-	-	-	-	0.1	0.0	20.8	0.0	-	0	0
BH103	1	19	1 (2)	---	---	15.60 to 25.00	90 secs	-	-	-	-	0.0	0.0	20.8	0.0	-	0	0
BH103	1	19	1 (2)	---	---	15.60 to 25.00	120 secs	-	-	-	-	0.1	0.0	20.8	0.0	-	0	0
BH103	1	19	1 (2)	---	---	15.60 to 25.00	180 secs	-	-	-	-	0.3	0.0	20.7	0.0	-	0	0
BH103	1	19	1 (2)	---	---	15.60 to 25.00	240 secs	-	-	-	-	0.0	0.0	20.8	0.0	-	0	0
BH103	1	19	1 (2)	---	---	15.60 to 25.00	300 secs	-	-	-	-	0.2	0.0	20.7	0.0	-	0	0

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe diameter (mm)	Monitoring Round	Reported Installation Depth (m)	Measured Installation Depth (mbgl)	Response Zone	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	PID (ppm)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)
BH103	1	19	1 (3)	25.00	24.57	15.60 to 25.00	13/08/2021 11:32:08	-	-	-	16.59	-	-	-	-	-	-	-
BH103	1	19	2	25.00	---	15.60 to 25.00	26/08/2021 08:34:35	1020	1019	$0.0_{(I)}$	-	-	-	-	-	-	-	-
BH103	1	19	2	---	---	15.60 to 25.00	10 secs	-	-	$0.0_{(SS)}$	-	-	-	-	-	-	-	-
BH103	1	19	2 (2)	25.00	---	15.60 to 25.00	26/08/2021 08:35:24	-	-	-	-	0.1	0.0	21.0	0.0	-	0	0
BH103	1	19	2 (2)	---	---	15.60 to 25.00	16 secs	-	-	-	-	0.3	0.0	20.6	0.0	-	0	0
BH103	1	19	2 (2)	---	---	15.60 to 25.00	31 secs	-	-	-	-	0.4	0.0	20.5	0.0	-	0	0
BH103	1	19	2 (2)	---	---	15.60 to 25.00	61 secs	-	-	-	-	0.4	0.0	20.5	0.0	-	0	0
BH103	1	19	2 (2)	---	---	15.60 to 25.00	91 secs	-	-	-	-	0.4	0.0	20.5	0.0	-	0	0
BH103	1	19	2 (2)	---	---	15.60 to 25.00	121 secs	-	-	-	-	0.4	0.0	20.5	0.0	-	0	0
BH103	1	19	2 (2)	---	---	15.60 to 25.00	181 secs	-	-	-	-	0.4	0.0	20.5	0.0	-	0	0
BH103	1	19	2 (2)	---	---	15.60 to 25.00	241 secs	-	-	-	-	0.4	0.0	20.5	0.0	-	0	0
BH103	1	19	2 (2)	---	---	15.60 to 25.00	301 secs	-	-	-	-	0.4	0.0	20.5	0.0	-	0	0
BH103	1	19	2 (3)	25.00	24.57	15.60 to 25.00	26/08/2021 08:44:24	-	-	-	16.59	-	-	-	-	-	-	-
BH103	1	19	3	25.00	---	15.60 to 25.00	07/09/2021 13:28:00	1015	1015	$0.0_{(I)}$	-	-	-	-	-	-	-	-
BH103	1	19	3	---	---	15.60 to 25.00	30 secs	-	-	$0.0_{(SS)}$	-	-	-	-	-	-	-	-
BH103	1	19	3 (2)	25.00	---	15.60 to 25.00	07/09/2021 13:29:00	-	-	-	-	0.1	0.0	20.7	0.0	0.0	0	0
BH103	1	19	3 (2)	---	---	15.60 to 25.00	15 secs	-	-	-	-	2.2	0.0	18.8	0.0	-	1	0
BH103	1	19	3 (2)	---	---	15.60 to 25.00	30 secs	-	-	-	-	2.2	0.0	18.3	0.0	-	0	0
BH103	1	19	3 (2)	---	---	15.60 to 25.00	60 secs	-	-	-	-	2.2	0.0	18.2	0.0	-	0	0
BH103	1	19	3 (2)	---	---	15.60 to 25.00	90 secs	-	-	-	-	2.2	0.0	18.3	0.0	-	0	0
BH103	1	19	3 (2)	---	---	15.60 to 25.00	120 secs	-	-	-	-	2.2	0.0	18.3	0.0	-	0	0
BH103	1	19	3 (2)	---	---	15.60 to 25.00	180 secs	-	-	-	-	2.2	0.0	18.3	0.0	-	0	0
BH103	1	19	3 (2)	---	---	15.60 to 25.00	240 secs	-	-	-	-	2.2	0.0	18.3	0.0	-	0	0
BH103	1	19	3 (2)	---	---	15.60 to 25.00	300 secs	-	-	-	-	2.2	0.0	18.3	0.0	-	0	0
BH103	1	19	3 (3)	25.00	3.91	15.60 to 25.00	07/09/2021 13:35:00	-	-	-	3.91	-	-	-	-	-	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe diameter (mm)	Monitoring Round	Reported Installation Depth (m)	Measured Installation Depth (mbgl)	Response Zone	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	PID (ppm)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)
BH103	1	19	4	25.00	---	15.60 to 25.00	20/09/2021 09:12:00	1020	1020	$0.0_{(I)}$	-	-	-	-	-	-	-	-
BH103	1	19	4	---	---	15.60 to 25.00	30 secs	-	-	$0.0_{(SS)}$	-	-	-	-	-	-	-	-
BH103	1	19	4 (2)	25.00	---	15.60 to 25.00	20/09/2021 09:13:00	-	-	-	-	0.1	0.0	20.8	0.0	0.0	0	0
BH103	1	19	4 (2)	---	---	15.60 to 25.00	15 secs	-	-	-	-	0.1	0.0	21.3	0.0	-	0	0
BH103	1	19	4 (2)	---	---	15.60 to 25.00	30 secs	-	-	-	-	0.1	0.0	21.3	0.0	-	0	0
BH103	1	19	4 (2)	---	---	15.60 to 25.00	60 secs	-	-	-	-	0.1	0.0	21.3	0.0	-	0	0
BH103	1	19	4 (2)	---	---	15.60 to 25.00	90 secs	-	-	-	-	0.1	0.0	21.3	0.0	-	0	0
BH103	1	19	4 (2)	---	---	15.60 to 25.00	120 secs	-	-	-	-	0.1	0.0	21.3	0.0	-	0	0
BH103	1	19	4 (2)	---	---	15.60 to 25.00	180 secs	-	-	-	-	0.1	0.0	21.3	0.0	-	0	0
BH103	1	19	4 (2)	---	---	15.60 to 25.00	240 secs	-	-	-	-	0.1	0.0	21.3	0.0	-	0	0
BH103	1	19	4 (2)	---	---	15.60 to 25.00	300 secs	-	-	-	-	0.2	0.0	21.2	0.0	-	0	0
BH103	1	19	4 (2)	---	---	15.60 to 25.00	360 secs	-	-	-	-	-	-	-	-	-	-	-
BH103	1	19	4 (3)	25.00	3.91	15.60 to 25.00	20/09/2021 09:20:00	-	-	-	3.91	-	-	-	-	-	-	-
BH103	1	19	5	25.00	---	15.60 to 25.00	06/10/2021 14:52:00	1016	1016	$0.0_{(I)}$	-	-	-	-	-	-	-	-
BH103	1	19	5	---	---	15.60 to 25.00	30 secs	-	-	$0.0_{(SS)}$	-	-	-	-	-	-	-	-
BH103	1	19	5 (2)	25.00	---	15.60 to 25.00	06/10/2021 14:53:00	-	-	-	-	0.1	0.0	20.9	0.0	0.0	0	0
BH103	1	19	5 (2)	---	---	15.60 to 25.00	15 secs	-	-	-	-	0.1	0.0	20.9	0.0	-	0	0
BH103	1	19	5 (2)	---	---	15.60 to 25.00	30 secs	-	-	-	-	0.0	0.0	20.8	0.0	-	0	0
BH103	1	19	5 (2)	---	---	15.60 to 25.00	60 secs	-	-	-	-	0.0	0.0	20.8	0.0	-	0	0
BH103	1	19	5 (2)	---	---	15.60 to 25.00	90 secs	-	-	-	-	0.0	0.0	20.8	0.0	-	0	0
BH103	1	19	5 (2)	---	---	15.60 to 25.00	120 secs	-	-	-	-	0.0	0.0	20.8	0.0	-	0	0
BH103	1	19	5 (2)	---	---	15.60 to 25.00	180 secs	-	-	-	-	0.0	0.0	20.8	0.0	-	0	0
BH103	1	19	5 (2)	---	---	15.60 to 25.00	240 secs	-	-	-	-	0.0	0.0	20.8	0.0	-	0	0
BH103	1	19	5 (2)	---	---	15.60 to 25.00	300 secs	-	-	-	-	0.0	0.0	20.8	0.0	-	0	0
BH103	1	19	5 (3)	25.00	3.93	15.60 to 25.00	06/10/2021 14:59:00	-	-	-	3.93	-	-	-	-	-	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe diameter (mm)	Monitoring Round	Reported Installation Depth (m)	Measured Installation Depth (mbgl)	Response Zone	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	PID (ppm)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)
BH103	1	19	6	25.00	---	15.60 to 25.00	22/10/2021 08:09:00	1013	1013	0.0$_{(I)}$	-	-	-	-	-	-	-	-
BH103	1	19	6	---	---	15.60 to 25.00	30 secs	-	-	0.0$_{(SS)}$	-	-	-	-	-	-	-	-
BH103	1	19	6 (2)	25.00	---	15.60 to 25.00	22/10/2021 08:10:00	-	-	-	-	0.0	0.0	20.8	-	-	0	0
BH103	1	19	6 (2)	---	---	15.60 to 25.00	15 secs	-	-	-	-	0.0	0.0	20.8	-	-	0	0
BH103	1	19	6 (2)	---	---	15.60 to 25.00	30 secs	-	-	-	-	0.0	0.0	20.8	-	-	0	0
BH103	1	19	6 (2)	---	---	15.60 to 25.00	60 secs	-	-	-	-	0.0	0.0	20.8	-	-	0	0
BH103	1	19	6 (2)	---	---	15.60 to 25.00	90 secs	-	-	-	-	0.0	0.0	20.8	-	-	0	0
BH103	1	19	6 (2)	---	---	15.60 to 25.00	120 secs	-	-	-	-	0.0	0.0	20.8	-	-	0	0
BH103	1	19	6 (2)	---	---	15.60 to 25.00	180 secs	-	-	-	-	0.0	0.0	20.8	-	-	0	0
BH103	1	19	6 (2)	---	---	15.60 to 25.00	240 secs	-	-	-	-	0.0	0.0	20.9	-	-	0	0
BH103	1	19	6 (2)	---	---	15.60 to 25.00	300 secs	-	-	-	-	0.0	0.0	20.9	-	-	0	0
BH103	1	19	6 (3)	25.00	3.92	15.60 to 25.00	22/10/2021 08:16:00	-	-	-	3.92	-	-	-	-	-	-	-
BH103	2	50	1	4.00	---	2.00 to 4.00	13/08/2021 11:33:32	1013	1013	0.0$_{(I)}$	-	-	-	-	-	-	-	-
BH103	2	50	1	---	---	2.00 to 4.00	30 secs	-	-	0.0$_{(SS)}$	-	-	-	-	-	-	-	-
BH103	2	50	1 (2)	4.00	---	2.00 to 4.00	13/08/2021 11:35:36	-	-	-	-	0.1	0.0	20.9	0.0	-	0	0
BH103	2	50	1 (2)	---	---	2.00 to 4.00	16 secs	-	-	-	-	0.1	0.0	20.9	0.0	-	0	0
BH103	2	50	1 (2)	---	---	2.00 to 4.00	31 secs	-	-	-	-	0.0	0.0	20.8	0.0	-	0	0
BH103	2	50	1 (2)	---	---	2.00 to 4.00	61 secs	-	-	-	-	0.0	0.0	20.8	0.0	-	0	0
BH103	2	50	1 (2)	---	---	2.00 to 4.00	91 secs	-	-	-	-	0.1	0.0	20.8	0.0	-	0	0
BH103	2	50	1 (2)	---	---	2.00 to 4.00	122 secs	-	-	-	-	0.0	0.0	20.8	0.0	-	0	0
BH103	2	50	1 (2)	---	---	2.00 to 4.00	182 secs	-	-	-	-	0.2	0.0	20.3	0.0	-	0	0
BH103	2	50	1 (2)	---	---	2.00 to 4.00	242 secs	-	-	-	-	0.0	0.0	20.8	0.0	-	0	0
BH103	2	50	1 (2)	---	---	2.00 to 4.00	302 secs	-	-	-	-	0.1	0.0	20.8	0.0	-	0	0
BH103	2	50	1 (3)	4.00	3.93	2.00 to 4.00	13/08/2021 11:45:06	-	-	-	DRY	-	-	-	-	-	-	-
BH103	2	50	2	4.00	---	2.00 to 4.00	26/08/2021 08:23:40	1019	1019	0.0$_{(I)}$	-	-	-	-	-	-	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe diameter (mm)	Monitoring Round	Reported Installation Depth (m)	Measured Installation Depth (mbgl)	Response Zone	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	PID (ppm)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)
BH103	2	50	2	---	---	2.00 to 4.00	10 secs	-	-	$0.0_{(SS)}$	-	-	-	-	-	-	-	-
BH103	2	50	2 (2)	4.00	---	2.00 to 4.00	26/08/2021 08:24:34	-	-	-	-	0.1	0.0	20.8	0.0	-	0	0
BH103	2	50	2 (2)	---	---	2.00 to 4.00	14 secs	-	-	-	-	0.3	0.0	20.4	0.0	-	0	0
BH103	2	50	2 (2)	---	---	2.00 to 4.00	29 secs	-	-	-	-	0.3	0.0	20.3	0.0	-	0	0
BH103	2	50	2 (2)	---	---	2.00 to 4.00	59 secs	-	-	-	-	0.3	0.0	20.3	0.0	-	0	0
BH103	2	50	2 (2)	---	---	2.00 to 4.00	89 secs	-	-	-	-	0.3	0.0	20.3	0.0	-	0	0
BH103	2	50	2 (2)	---	---	2.00 to 4.00	119 secs	-	-	-	-	0.4	0.0	20.3	0.0	-	0	0
BH103	2	50	2 (2)	---	---	2.00 to 4.00	180 secs	-	-	-	-	0.4	0.0	20.3	0.0	-	0	0
BH103	2	50	2 (2)	---	---	2.00 to 4.00	240 secs	-	-	-	-	0.5	0.0	20.1	0.0	-	0	0
BH103	2	50	2 (2)	---	---	2.00 to 4.00	300 secs	-	-	-	-	0.8	0.0	19.7	0.0	-	0	0
BH103	2	50	2 (3)	4.00	3.91	2.00 to 4.00	26/08/2021 08:31:14	-	-	-	DRY	-	-	-	-	-	-	-
BH103	2	50	3	4.00	---	2.00 to 4.00	07/09/2021 13:39:00	1016	1015	$0.1_{(I)}$	-	-	-	-	-	-	-	-
BH103	2	50	3	---	---	2.00 to 4.00	30 secs	-	-	$1.0_{(SS)}$	-	-	-	-	-	-	-	-
BH103	2	50	3 (2)	4.00	---	2.00 to 4.00	07/09/2021 13:40:00	-	-	-	-	0.1	0.0	20.6	0.0	0.1	0	0
BH103	2	50	3 (2)	---	---	2.00 to 4.00	15 secs	-	-	-	-	0.4	0.0	19.8	0.0	-	2	0
BH103	2	50	3 (2)	---	---	2.00 to 4.00	30 secs	-	-	-	-	0.5	0.0	19.6	0.0	-	1	0
BH103	2	50	3 (2)	---	---	2.00 to 4.00	60 secs	-	-	-	-	0.6	0.0	19.3	0.0	-	1	0
BH103	2	50	3 (2)	---	---	2.00 to 4.00	90 secs	-	-	-	-	0.7	0.0	19.1	0.0	-	1	0
BH103	2	50	3 (2)	---	---	2.00 to 4.00	120 secs	-	-	-	-	0.8	0.0	19.0	0.0	-	1	0
BH103	2	50	3 (2)	---	---	2.00 to 4.00	180 secs	-	-	-	-	0.8	0.0	18.9	0.0	-	1	0
BH103	2	50	3 (2)	---	---	2.00 to 4.00	240 secs	-	-	-	-	0.8	0.0	18.8	0.0	-	1	0
BH103	2	50	3 (2)	---	---	2.00 to 4.00	300 secs	-	-	-	-	0.8	0.0	18.8	0.0	-	1	0
BH103	2	50	3 (3)	4.00	24.60	2.00 to 4.00	07/09/2021 13:47:00	-	-	-	16.58	-	-	-	-	-	-	-
BH103	2	50	4 (3)	4.00	24.53	2.00 to 4.00	20/09/2021 09:21:00	-	-	-	15.69	-	-	-	-	-	-	-
BH103	2	50	5	4.00	---	2.00 to 4.00	06/10/2021 15:03:00	1015	1016	$0.0_{(I)}$	-	-	-	-	-	-	-	-

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IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe diameter (mm)	Monitoring Round	Reported Installation Depth (m)	Measured Installation Depth (mbgl)	Response Zone	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	PID (ppm)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)
BH103	2	50	5	---	---	2.00 to 4.00	30 secs	-	-	$-0.2_{(SS)}$	-	-	-	-	-	-	-	-
BH103	2	50	5 (2)	4.00	---	2.00 to 4.00	06/10/2021 15:04:00	-	-	-	-	0.1	0.0	20.8	0.0	0.0	0	0
BH103	2	50	5 (2)	---	---	2.00 to 4.00	15 secs	-	-	-	-	0.1	0.0	20.8	0.0	-	1	0
BH103	2	50	5 (2)	---	---	2.00 to 4.00	30 secs	-	-	-	-	0.1	0.0	20.8	0.0	-	0	0
BH103	2	50	5 (2)	---	---	2.00 to 4.00	60 secs	-	-	-	-	0.1	0.0	20.8	0.0	-	0	0
BH103	2	50	5 (2)	---	---	2.00 to 4.00	90 secs	-	-	-	-	0.1	0.0	20.8	0.0	-	0	0
BH103	2	50	5 (2)	---	---	2.00 to 4.00	120 secs	-	-	-	-	0.1	0.0	20.8	0.0	-	0	0
BH103	2	50	5 (2)	---	---	2.00 to 4.00	180 secs	-	-	-	-	0.1	0.0	20.8	0.0	-	0	0
BH103	2	50	5 (2)	---	---	2.00 to 4.00	240 secs	-	-	-	-	0.1	0.0	20.8	0.0	-	0	0
BH103	2	50	5 (2)	---	---	2.00 to 4.00	300 secs	-	-	-	-	0.1	0.0	20.8	0.0	-	0	0
BH103	2	50	5 (3)	4.00	24.57	2.00 to 4.00	06/10/2021 15:10:00	-	-	-	16.59	-	-	-	-	-	-	-
BH103	2	50	6	4.00	---	2.00 to 4.00	22/10/2021 08:17:00	-	-	$0.0_{(I)}$	-	-	-	-	-	-	-	-
BH103	2	50	6	---	---	2.00 to 4.00	30 secs	-	-	$-1.5_{(SS)}$	-	-	-	-	-	-	-	-
BH103	2	50	6 (2)	4.00	---	2.00 to 4.00	22/10/2021 08:18:00	-	-	-	-	0.0	0.0	20.9	-	-	0	0
BH103	2	50	6 (2)	---	---	2.00 to 4.00	15 secs	-	-	-	-	0.1	0.0	20.8	-	-	0	0
BH103	2	50	6 (2)	---	---	2.00 to 4.00	30 secs	-	-	-	-	0.3	0.0	20.8	-	-	0	0
BH103	2	50	6 (2)	---	---	2.00 to 4.00	60 secs	-	-	-	-	0.1	0.0	20.9	-	-	0	0
BH103	2	50	6 (2)	---	---	2.00 to 4.00	90 secs	-	-	-	-	0.1	0.0	20.9	-	-	0	0
BH103	2	50	6 (2)	---	---	2.00 to 4.00	120 secs	-	-	-	-	0.1	0.0	20.9	-	-	0	0
BH103	2	50	6 (2)	---	---	2.00 to 4.00	180 secs	-	-	-	-	0.1	0.0	20.9	-	-	0	0
BH103	2	50	6 (2)	---	---	2.00 to 4.00	240 secs	-	-	-	-	0.1	0.0	20.9	-	-	0	0
BH103	2	50	6 (2)	---	---	2.00 to 4.00	300 secs	-	-	-	-	0.1	0.0	20.9	-	-	0	0
BH103	2	50	6 (3)	4.00	24.56	2.00 to 4.00	22/10/2021 08:26:00	-	-	-	16.80	-	-	-	-	-	-	-
BH104	1	19	1	21.00	---	15.00 to 21.10	13/08/2021 10:46:40	1012	1012	$0.0_{(I)}$	-	-	-	-	-	-	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe diameter (mm)	Monitoring Round	Reported Installation Depth (m)	Measured Installation Depth (mbgl)	Response Zone	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	PID (ppm)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)
BH104	1	19	1	---	---	15.00 to 21.10	30 secs	-	-	$-0.3_{(SS)}$	-	-	-	-	-	-	-	-
BH104	1	19	1 (2)	21.00	---	15.00 to 21.10	13/08/2021 10:48:53	-	-	-	-	0.1	0.0	20.9	0.0	-	0	0
BH104	1	19	1 (2)	---	---	15.00 to 21.10	14 secs	-	-	-	-	0.1	0.0	20.7	0.0	-	38	0
BH104	1	19	1 (2)	---	---	15.00 to 21.10	29 secs	-	-	-	-	0.0	0.0	20.7	0.0	-	15	0
BH104	1	19	1 (2)	---	---	15.00 to 21.10	59 secs	-	-	-	-	0.0	0.0	20.8	0.0	-	4	0
BH104	1	19	1 (2)	---	---	15.00 to 21.10	89 secs	-	-	-	-	0.0	0.0	20.8	0.0	-	2	0
BH104	1	19	1 (2)	---	---	15.00 to 21.10	119 secs	-	-	-	-	0.0	0.0	20.8	0.0	-	1	0
BH104	1	19	1 (2)	---	---	15.00 to 21.10	180 secs	-	-	-	-	0.0	0.0	20.9	0.0	-	1	0
BH104	1	19	1 (2)	---	---	15.00 to 21.10	241 secs	-	-	-	-	0.0	0.0	20.9	0.0	-	1	0
BH104	1	19	1 (2)	---	---	15.00 to 21.10	301 secs	-	-	-	-	0.0	0.0	20.9	0.0	-	1	0
BH104	1	19	1 (3)	21.00	20.56	15.00 to 21.10	13/08/2021 10:58:17	-	-	-	17.82	-	-	-	-	-	-	-
BH104	1	19	2	21.00	---	15.00 to 21.10	26/08/2021 09:00:22	1019	1019	$0.0_{(I)}$	-	-	-	-	-	-	-	-
BH104	1	19	2	---	---	15.00 to 21.10	10 secs	-	-	$0.0_{(SS)}$	-	-	-	-	-	-	-	-
BH104	1	19	2 (2)	21.00	---	15.00 to 21.10	26/08/2021 09:01:16	-	-	-	-	0.1	0.0	20.7	0.0	-	0	0
BH104	1	19	2 (2)	---	---	15.00 to 21.10	14 secs	-	-	-	-	0.1	0.0	20.4	0.0	-	156	0
BH104	1	19	2 (2)	---	---	15.00 to 21.10	29 secs	-	-	-	-	0.1	0.0	21.3	0.0	-	59	0
BH104	1	19	2 (2)	---	---	15.00 to 21.10	59 secs	-	-	-	-	0.1	0.0	21.6	0.0	-	17	0
BH104	1	19	2 (2)	---	---	15.00 to 21.10	89 secs	-	-	-	-	0.1	0.0	21.7	0.0	-	12	0
BH104	1	19	2 (2)	---	---	15.00 to 21.10	119 secs	-	-	-	-	0.1	0.0	21.7	0.0	-	10	0
BH104	1	19	2 (2)	---	---	15.00 to 21.10	179 secs	-	-	-	-	0.1	0.0	21.7	0.0	-	5	0
BH104	1	19	2 (2)	---	---	15.00 to 21.10	239 secs	-	-	-	-	0.1	0.0	21.7	0.0	-	3	0
BH104	1	19	2 (2)	---	---	15.00 to 21.10	299 secs	-	-	-	-	0.1	0.0	21.7	0.0	-	2	0
BH104	1	19	2 (3)	21.00	20.54	15.00 to 21.10	26/08/2021 09:08:43	-	-	-	17.64	0.1	0.0	21.7	0.0	-	2	0
BH104	1	19	3	21.00	---	15.00 to 21.10	07/09/2021 14:02:00	1016	1015	$0.0_{(I)}$	-	-	-	-	-	-	-	-
BH104	1	19	3	---	---	15.00 to 21.10	30 secs	-	-	$0.7_{(SS)}$	-	-	-	-	-	-	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

STRUCTURAL SOILS
The Potteries
Pottery Street
Castleford
W. Yorkshire WF10 1NJ

Compiled By	Date	Checked By	Date	Contract Ref:
JMcCarthy	01/11/2021	JMcCarthy	01/11/2021	765325

Contract: **2 & 3 Angel Square**

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe diameter (mm)	Monitoring Round	Reported Installation Depth (m)	Measured Installation Depth (mbgl)	Response Zone	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	PID (ppm)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)
BH104	1	19	3 (2)	21.00	---	15.00 to 21.10	07/09/2021 14:03:00	-	-	-	-	0.1	0.0	20.8	0.0	-	0	0
BH104	1	19	3 (2)	---	---	15.00 to 21.10	15 secs	-	-	-	-	0.0	0.0	20.6	0.0	-	5	0
BH104	1	19	3 (2)	---	---	15.00 to 21.10	30 secs	-	-	-	-	0.0	0.0	21.0	0.0	-	2	0
BH104	1	19	3 (2)	---	---	15.00 to 21.10	60 secs	-	-	-	-	0.0	0.0	21.1	0.0	-	2	0
BH104	1	19	3 (2)	---	---	15.00 to 21.10	90 secs	-	-	-	-	0.0	0.0	21.0	0.0	-	2	0
BH104	1	19	3 (2)	---	---	15.00 to 21.10	120 secs	-	-	-	-	0.0	0.0	21.1	0.0	-	2	0
BH104	1	19	3 (2)	---	---	15.00 to 21.10	180 secs	-	-	-	-	0.0	0.0	21.1	0.0	-	2	0
BH104	1	19	3 (2)	---	---	15.00 to 21.10	240 secs	-	-	-	-	0.0	0.0	21.1	0.0	-	2	0
BH104	1	19	3 (2)	---	---	15.00 to 21.10	300 secs	-	-	-	-	0.0	0.0	21.1	0.0	-	2	0
BH104	1	19	3 (3)	21.00	20.83	15.00 to 21.10	07/09/2021 14:09:00	-	-	-	17.90	-	-	-	-	-	-	-
BH104	1	19	4	21.00	20.82	15.00 to 21.10	20/09/2021 09:50:00	-	-	-	18.02	-	-	-	-	-	-	-
	Remarks: Water reading levels. Dip only.																	
BH104	1	19	5	21.00	---	15.00 to 21.10	06/10/2021 13:32:00	1016	1016	$0.0_{(I)}$	-	-	-	-	-	-	-	-
BH104	1	19	5	---	---	15.00 to 21.10	30 secs	-	-	$0.0_{(SS)}$	-	-	-	-	-	-	-	-
BH104	1	19	5 (2)	21.00	---	15.00 to 21.10	06/10/2021 13:33:00	-	-	-	-	0.1	0.0	20.9	0.0	-	0	0
BH104	1	19	5 (2)	---	---	15.00 to 21.10	15 secs	-	-	-	-	0.1	0.0	20.6	0.0	-	6	0
BH104	1	19	5 (2)	---	---	15.00 to 21.10	30 secs	-	-	-	-	0.1	0.0	20.7	0.0	-	1	0
BH104	1	19	5 (2)	---	---	15.00 to 21.10	60 secs	-	-	-	-	0.1	0.0	20.9	0.0	-	0	0
BH104	1	19	5 (2)	---	---	15.00 to 21.10	90 secs	-	-	-	-	0.1	0.0	21.0	0.0	-	0	0
BH104	1	19	5 (2)	---	---	15.00 to 21.10	120 secs	-	-	-	-	0.1	0.0	21.0	0.0	-	0	0
BH104	1	19	5 (2)	---	---	15.00 to 21.10	180 secs	-	-	-	-	0.1	0.0	21.0	0.0	-	0	0
BH104	1	19	5 (2)	---	---	15.00 to 21.10	240 secs	-	-	-	-	0.1	0.0	21.1	0.0	-	0	0
BH104	1	19	5 (2)	---	---	15.00 to 21.10	300 secs	-	-	-	-	0.1	0.0	21.1	0.0	-	0	0
BH104	1	19	5 (3)	21.00	20.82	15.00 to 21.10	06/10/2021 13:40:00	-	-	-	18.07	-	-	-	-	0.1	-	-
BH104	1	19	6	21.00	---	15.00 to 21.10	22/10/2021 08:42:00	1015	1013	$1.5_{(I)}$	-	-	-	-	-	-	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe diameter (mm)	Monitoring Round	Reported Installation Depth (m)	Measured Installation Depth (mbgl)	Response Zone	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	PID (ppm)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)
BH104	1	19	6	---	---	15.00 to 21.10	30 secs	-	-	$0.0_{(SS)}$	-	-	-	-	-	-	-	-
BH104	1	19	6 (2)	21.00	---	15.00 to 21.10	22/10/2021 08:43:00	-	-	-	-	0.1	0.0	20.7	-	-	0	0
BH104	1	19	6 (2)	---	---	15.00 to 21.10	15 secs	-	-	-	-	0.1	0.0	19.9	-	-	4	0
BH104	1	19	6 (2)	---	---	15.00 to 21.10	30 secs	-	-	-	-	0.1	0.0	19.0	-	-	4	0
BH104	1	19	6 (2)	---	---	15.00 to 21.10	60 secs	-	-	-	-	0.1	0.0	18.9	-	-	5	0
BH104	1	19	6 (2)	---	---	15.00 to 21.10	90 secs	-	-	-	-	0.1	0.0	19.0	-	-	4	0
BH104	1	19	6 (2)	---	---	15.00 to 21.10	120 secs	-	-	-	-	0.1	0.0	19.0	-	-	4	0
BH104	1	19	6 (2)	---	---	15.00 to 21.10	180 secs	-	-	-	-	0.1	0.0	20.9	-	-	0	0
BH104	1	19	6 (2)	---	---	15.00 to 21.10	240 secs	-	-	-	-	0.1	0.0	20.9	-	-	0	0
BH104	1	19	6 (2)	---	---	15.00 to 21.10	300 secs	-	-	-	-	0.1	0.0	20.9	-	-	0	0
BH104	1	19	6 (3)	21.00	20.82	15.00 to 21.10	22/10/2021 08:49:00	-	-	-	18.03	-	-	-	-	-	-	-
WS101	1	50	1	4.00	---	1.00 to 4.00	13/08/2021 13:13:12	1013	1013	$0.0_{(I)}$	-	-	-	-	-	-	-	-
WS101	1	50	1	---	---	1.00 to 4.00	30 secs	-	-	$0.0_{(SS)}$	-	-	-	-	-	-	-	-
WS101	1	50	1 (2)	4.00	---	1.00 to 4.00	13/08/2021 13:15:18	-	-	-	-	0.1	0.0	20.9	0.0	-	0	0
WS101	1	50	1 (2)	---	---	1.00 to 4.00	15 secs	-	-	-	-	2.5	0.0	19.1	0.0	-	0	0
WS101	1	50	1 (2)	---	---	1.00 to 4.00	30 secs	-	-	-	-	2.6	0.0	16.4	0.0	-	0	0
WS101	1	50	1 (2)	---	---	1.00 to 4.00	60 secs	-	-	-	-	2.6	0.0	15.7	0.0	-	0	0
WS101	1	50	1 (2)	---	---	1.00 to 4.00	91 secs	-	-	-	-	2.6	0.0	15.7	0.0	-	0	0
WS101	1	50	1 (2)	---	---	1.00 to 4.00	121 secs	-	-	-	-	2.6	0.0	15.7	0.0	-	0	0
WS101	1	50	1 (2)	---	---	1.00 to 4.00	181 secs	-	-	-	-	2.6	0.0	15.7	0.0	-	0	0
WS101	1	50	1 (2)	---	---	1.00 to 4.00	241 secs	-	-	-	-	2.6	0.0	15.8	0.0	-	0	0
WS101	1	50	1 (2)	---	---	1.00 to 4.00	301 secs	-	-	-	-	2.5	0.0	16.3	0.0	-	0	0
WS101	1	50	1 (3)	4.00	2.05	1.00 to 4.00	13/08/2021 13:23:23	-	-	-	1.96	-	-	-	-	-	-	-
WS101	1	50	2	4.00	---	1.00 to 4.00	26/08/2021	-	-	-	-	-	-	-	-	-	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe diameter (mm)	Monitoring Round	Reported Installation Depth (m)	Measured Installation Depth (mbgl)	Response Zone	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	PID (ppm)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)
	Remarks: No access - car parked over borehole																	
WS101	1	50	4	4.00	---	1.00 to 4.00	20/09/2021 08:59:00	1020	1020	$0.0_{(I)}$	-	-	-	-	-	-	-	-
WS101	1	50	4	---	---	1.00 to 4.00	30 secs	-	-	$-0.1_{(SS)}$	-	-	-	-	-	-	-	-
WS101	1	50	4 (2)	4.00	---	1.00 to 4.00	20/09/2021 09:00:00	-	-	-	-	-	-	-	-	-	-	-
WS101	1	50	4 (2)	---	---	1.00 to 4.00	15 secs	-	-	-	-	0.1	0.0	20.8	0.0	0.3	0	0
WS101	1	50	4 (2)	---	---	1.00 to 4.00	30 secs	-	-	-	-	3.1	0.0	19.9	0.0	-	0	0
WS101	1	50	4 (2)	---	---	1.00 to 4.00	60 secs	-	-	-	-	3.2	0.0	17.7	0.0	-	0	0
WS101	1	50	4 (2)	---	---	1.00 to 4.00	90 secs	-	-	-	-	3.2	0.0	17.3	0.0	-	0	0
WS101	1	50	4 (2)	---	---	1.00 to 4.00	120 secs	-	-	-	-	3.2	0.0	17.3	0.0	-	0	0
WS101	1	50	4 (2)	---	---	1.00 to 4.00	180 secs	-	-	-	-	3.2	0.0	17.3	0.0	-	0	0
WS101	1	50	4 (2)	---	---	1.00 to 4.00	240 secs	-	-	-	-	3.2	0.0	17.4	0.0	-	0	0
WS101	1	50	4 (2)	---	---	1.00 to 4.00	300 secs	-	-	-	-	3.1	0.0	17.5	0.0	-	0	0
WS101	1	50	4 (2)	---	---	1.00 to 4.00	360 secs	-	-	-	-	3.0	0.0	17.7	0.0	-	0	0
WS101	1	50	4 (3)	4.00	2.02	1.00 to 4.00	20/09/2021 09:15:00	-	-	-	1.95	-	-	-	-	-	-	-
WS101	1	50	6	4.00	---	1.00 to 4.00	22/10/2021 09:50:00	-	-	-	-	-	-	-	-	-	-	-
	Remarks: No gas due to cart parked on the spot.																	
WS102	1	50	1	1.00	---	0.20 to 1.00	13/08/2021 12:41:17	1012	1012	$0.0_{(I)}$	-	-	-	-	-	-	-	-
WS102	1	50	1	---	---	0.20 to 1.00	30 secs	-	-	$-0.1_{(SS)}$	-	-	-	-	-	-	-	-
WS102	1	50	1 (2)	1.00	---	0.20 to 1.00	13/08/2021 12:43:23	-	-	-	-	0.1	0.0	20.9	0.0	-	0	0
WS102	1	50	1 (2)	---	---	0.20 to 1.00	15 secs	-	-	-	-	0.1	0.0	19.6	0.0	-	3	0
WS102	1	50	1 (2)	---	---	0.20 to 1.00	31 secs	-	-	-	-	0.1	0.0	17.4	0.0	-	3	0
WS102	1	50	1 (2)	---	---	0.20 to 1.00	61 secs	-	-	-	-	0.1	0.0	17.0	0.0	-	3	0
WS102	1	50	1 (2)	---	---	0.20 to 1.00	91 secs	-	-	-	-	0.1	0.0	17.0	0.0	-	3	0
WS102	1	50	1 (2)	---	---	0.20 to 1.00	121 secs	-	-	-	-	0.1	0.0	17.2	0.0	-	2	0
WS102	1	50	1 (2)	---	---	0.20 to 1.00	181 secs	-	-	-	-	0.1	0.0	19.3	0.0	-	0	0

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe diameter (mm)	Monitoring Round	Reported Installation Depth (m)	Measured Installation Depth (mbgl)	Response Zone	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	PID (ppm)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)
WS102	1	50	1 (2)	---	---	0.20 to 1.00	241 secs	-	-	-	-	0.0	0.0	20.3	0.0	-	0	0
WS102	1	50	1 (2)	---	---	0.20 to 1.00	301 secs	-	-	-	-	0.0	0.0	20.6	0.0	-	0	0
WS102	1	50	1 (3)	1.00	0.95	0.20 to 1.00	13/08/2021 12:51:57	-	-	-	0.63	-	-	-	-	-	-	-
WS102	1	50	2	1.00	---	0.20 to 1.00	26/08/2021 10:02:36	1019	1019	$0.1_{(I)}$	-	-	-	-	-	-	-	-
WS102	1	50	2	---	---	0.20 to 1.00	15 secs	-	-	$0.1_{(SS)}$	-	-	-	-	-	-	-	-
WS102	1	50	2 (2)	1.00	---	0.20 to 1.00	26/08/2021 10:03:33	-	-	-	-	0.1	0.0	20.9	0.0	-	0	0
WS102	1	50	2 (2)	---	---	0.20 to 1.00	15 secs	-	-	-	-	0.2	0.0	16.5	0.0	-	0	0
WS102	1	50	2 (2)	---	---	0.20 to 1.00	30 secs	-	-	-	-	0.2	0.0	15.8	0.0	-	0	0
WS102	1	50	2 (2)	---	---	0.20 to 1.00	61 secs	-	-	-	-	0.2	0.0	15.8	0.0	-	0	0
WS102	1	50	2 (2)	---	---	0.20 to 1.00	91 secs	-	-	-	-	0.2	0.0	15.8	0.0	-	0	0
WS102	1	50	2 (2)	---	---	0.20 to 1.00	122 secs	-	-	-	-	0.2	0.0	15.8	0.0	-	0	0
WS102	1	50	2 (2)	---	---	0.20 to 1.00	182 secs	-	-	-	-	0.2	0.0	17.1	0.0	-	0	0
WS102	1	50	2 (2)	---	---	0.20 to 1.00	242 secs	-	-	-	-	0.1	0.0	19.4	0.0	-	0	0
WS102	1	50	2 (2)	---	---	0.20 to 1.00	302 secs	-	-	-	-	0.1	0.0	20.4	0.0	-	0	0
WS102	1	50	2 (3)	1.00	0.93	0.20 to 1.00	26/08/2021 10:10:46	-	-	-	0.67	-	-	-	-	-	-	-
WS102	1	50	5	1.00	---	0.20 to 1.00	06/10/2021 14:03:00	1017	1016	$0.0_{(I)}$	-	-	-	-	-	-	-	-
WS102	1	50	5	---	---	0.20 to 1.00	30 secs	-	-	$0.8_{(SS)}$	-	-	-	-	-	-	-	-
WS102	1	50	5 (2)	1.00	---	0.20 to 1.00	06/10/2021 14:04:00	-	-	-	-	0.1	0.0	21.0	0.0	0.0	0	0
WS102	1	50	5 (2)	---	---	0.20 to 1.00	15 secs	-	-	-	-	0.2	0.0	14.0	0.0	-	0	0
WS102	1	50	5 (2)	---	---	0.20 to 1.00	30 secs	-	-	-	-	0.2	0.0	10.2	0.0	-	0	0
WS102	1	50	5 (2)	---	---	0.20 to 1.00	60 secs	-	-	-	-	0.2	0.0	9.8	0.0	-	0	0
WS102	1	50	5 (3)	1.00	0.92	0.20 to 1.00	06/10/2021 14:05:30	-	-	-	0.65	-	-	-	-	-	-	-
WS102	1	50	6	1.00	---	0.20 to 1.00	22/10/2021 09:02:00	1038	1013	$8.4_{(I)}$	-	-	-	-	-	-	-	-
WS102	1	50	6	---	---	0.20 to 1.00	20 secs	-	-	$0.0_{(SS)}$	-	-	-	-	-	-	-	-
WS102	1	50	6 (2)	1.00	---	0.20 to 1.00	22/10/2021 09:03:00	-	-	-	-	0.0	0.0	28.8	-	-	0	0

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe diameter (mm)	Monitoring Round	Reported Installation Depth (m)	Measured Installation Depth (mbgl)	Response Zone	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	PID (ppm)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)
WS102	1	50	6 (2)	---	---	0.20 to 1.00	15 secs	-	-	-	-	0.3	0.0	16.0	-	-	0	0
WS102	1	50	6 (2)	---	---	0.20 to 1.00	30 secs	-	-	-	-	0.3	0.0	14.1	-	-	0	0
WS102	1	50	6 (2)	---	---	0.20 to 1.00	60 secs	-	-	-	-	0.3	0.0	13.4	-	-	0	0
WS102	1	50	6 (2)	---	---	0.20 to 1.00	90 secs	-	-	-	-	0.3	0.0	13.5	-	-	0	0
WS102	1	50	6 (3)	1.00	0.92	0.20 to 1.00	22/10/2021 09:05:00	-	-	-	0.67	-	-	-	-	-	-	-
WS103	1	50	1	1.00	---	0.20 to 1.00	13/08/2021 10:33:41	1012	1012	$0.0_{(I)}$	-	-	-	-	-	-	-	-
WS103	1	50	1	---	---	0.20 to 1.00	30 secs	-	-	$-0.1_{(SS)}$	-	-	-	-	-	-	-	-
WS103	1	50	1 (2)	1.00	---	0.20 to 1.00	13/08/2021 10:35:47	-	-	-	-	0.2	0.0	20.8	0.0	-	0	0
WS103	1	50	1 (2)	---	---	0.20 to 1.00	15 secs	-	-	-	-	0.1	0.0	20.6	0.0	-	3	0
WS103	1	50	1 (2)	---	---	0.20 to 1.00	31 secs	-	-	-	-	0.1	0.0	20.5	0.0	-	0	0
WS103	1	50	1 (2)	---	---	0.20 to 1.00	61 secs	-	-	-	-	0.0	0.0	20.6	0.0	-	0	0
WS103	1	50	1 (2)	---	---	0.20 to 1.00	92 secs	-	-	-	-	0.0	0.0	20.6	0.0	-	0	0
WS103	1	50	1 (2)	---	---	0.20 to 1.00	122 secs	-	-	-	-	0.0	0.0	20.7	0.0	-	0	0
WS103	1	50	1 (2)	---	---	0.20 to 1.00	182 secs	-	-	-	-	0.0	0.0	20.7	0.0	-	0	0
WS103	1	50	1 (2)	---	---	0.20 to 1.00	243 secs	-	-	-	-	0.0	0.0	20.8	0.0	-	0	0
WS103	1	50	1 (2)	---	---	0.20 to 1.00	303 secs	-	-	-	-	0.0	0.0	20.8	0.0	-	0	0
WS103	1	50	1 (3)	1.00	1.05	0.20 to 1.00	13/08/2021 10:44:03	-	-	-	0.53	-	-	-	-	-	-	-
WS103	1	50	2	1.00	---	0.20 to 1.00	26/08/2021 09:09:46	1019	1019	$0.0_{(I)}$	-	-	-	-	-	-	-	-
WS103	1	50	2	---	---	0.20 to 1.00	10 secs	-	-	$0.0_{(SS)}$	-	-	-	-	-	-	-	-
WS103	1	50	2 (2)	1.00	---	0.20 to 1.00	26/08/2021 09:10:47	-	-	-	-	0.1	0.0	20.8	0.0	-	0	0
WS103	1	50	2 (2)	---	---	0.20 to 1.00	15 secs	-	-	-	-	0.1	0.0	21.5	0.0	-	2	0
WS103	1	50	2 (2)	---	---	0.20 to 1.00	30 secs	-	-	-	-	0.1	0.0	21.5	0.0	-	0	0
WS103	1	50	2 (2)	---	---	0.20 to 1.00	60 secs	-	-	-	-	0.1	0.0	21.6	0.0	-	0	0
WS103	1	50	2 (2)	---	---	0.20 to 1.00	90 secs	-	-	-	-	0.1	0.0	21.7	0.0	-	0	0

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe diameter (mm)	Monitoring Round	Reported Installation Depth (m)	Measured Installation Depth (mbgl)	Response Zone	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	PID (ppm)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)
WS103	1	50	2 (2)	---	---	0.20 to 1.00	121 secs	-	-	-	-	0.1	0.0	21.7	0.0	-	0	0
WS103	1	50	2 (2)	---	---	0.20 to 1.00	181 secs	-	-	-	-	0.1	0.0	21.7	0.0	-	0	0
WS103	1	50	2 (2)	---	---	0.20 to 1.00	241 secs	-	-	-	-	0.1	0.0	21.7	0.0	-	0	0
WS103	1	50	2 (2)	---	---	0.20 to 1.00	301 secs	-	-	-	-	0.1	0.0	21.7	0.0	-	0	0
WS103	1	50	2 (3)	1.00	1.04	0.20 to 1.00	26/08/2021 09:17:24	-	-	-	0.57	0.1	0.0	21.8	0.0	-	0	0
WS103	1	50	3	1.00	---	0.20 to 1.00	07/09/2021 13:52:00	1015	1015	$0.0_{(I)}$	-	-	-	-	-	-	-	-
WS103	1	50	3	---	---	0.20 to 1.00	30 secs	-	-	$0.0_{(SS)}$	-	-	-	-	-	-	-	-
WS103	1	50	3 (2)	1.00	---	0.20 to 1.00	07/09/2021 13:53:00	-	-	-	-	0.1	0.0	20.8	0.0	-	0	0
WS103	1	50	3 (2)	---	---	0.20 to 1.00	15 secs	-	-	-	-	0.1	0.0	20.3	0.0	-	1	0
WS103	1	50	3 (2)	---	---	0.20 to 1.00	30 secs	-	-	-	-	0.1	0.0	20.3	0.0	-	1	0
WS103	1	50	3 (2)	---	---	0.20 to 1.00	60 secs	-	-	-	-	0.0	0.0	20.5	0.0	-	1	0
WS103	1	50	3 (2)	---	---	0.20 to 1.00	90 secs	-	-	-	-	0.0	0.0	20.6	0.0	-	1	0
WS103	1	50	3 (2)	---	---	0.20 to 1.00	120 secs	-	-	-	-	0.0	0.0	20.7	0.0	-	1	0
WS103	1	50	3 (2)	---	---	0.20 to 1.00	180 secs	-	-	-	-	0.0	0.0	20.7	0.0	-	1	0
WS103	1	50	3 (2)	---	---	0.20 to 1.00	240 secs	-	-	-	-	0.0	0.0	20.7	0.0	-	1	0
WS103	1	50	3 (2)	---	---	0.20 to 1.00	300 secs	-	-	-	-	0.0	0.0	20.7	0.0	-	1	0
WS103	1	50	3 (3)	1.00	1.04	0.20 to 1.00	07/09/2021 13:59:00	-	-	-	0.96	-	-	-	-	-	-	-
WS103	1	50	4	1.00	---	0.20 to 1.00	20/09/2021 09:39:00	1020	1020	$0.0_{(I)}$	-	-	-	-	-	-	-	-
WS103	1	50	4	---	---	0.20 to 1.00	30 secs	-	-	$-0.1_{(SS)}$	-	-	-	-	-	-	-	-
WS103	1	50	4 (2)	1.00	---	0.20 to 1.00	20/09/2021 09:40:00	-	-	-	-	0.1	0.0	20.8	0.0	0.0	0	0
WS103	1	50	4 (2)	---	---	0.20 to 1.00	15 secs	-	-	-	-	0.2	0.0	21.0	0.0	-	0	0
WS103	1	50	4 (2)	---	---	0.20 to 1.00	30 secs	-	-	-	-	0.2	0.0	21.0	0.0	-	0	0
WS103	1	50	4 (2)	---	---	0.20 to 1.00	60 secs	-	-	-	-	0.2	0.0	21.0	0.0	-	0	0
WS103	1	50	4 (2)	---	---	0.20 to 1.00	90 secs	-	-	-	-	0.2	0.0	21.1	0.0	-	0	0
WS103	1	50	4 (2)	---	---	0.20 to 1.00	120 secs	-	-	-	-	0.2	0.0	21.1	0.0	-	0	0

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IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe diameter (mm)	Monitoring Round	Reported Installation Depth (m)	Measured Installation Depth (mbgl)	Response Zone	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	PID (ppm)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)
WS103	1	50	4 (2)	---	---	0.20 to 1.00	180 secs	-	-	-	-	0.2	0.0	21.1	0.0	-	0	0
WS103	1	50	4 (2)	---	---	0.20 to 1.00	240 secs	-	-	-	-	0.2	0.0	21.1	0.0	-	0	0
WS103	1	50	4 (2)	---	---	0.20 to 1.00	300 secs	-	-	-	-	0.2	0.0	21.1	0.0	-	0	0
WS103	1	50	4 (3)	1.00	1.03	0.20 to 1.00	20/09/2021 09:46:00	-	-	-	0.94	-	-	-	-	-	-	-
WS103	1	50	5	1.00	---	0.20 to 1.00	06/10/2021 14:36:00	1016	1016	$0.0_{(I)}$	-	-	-	-	-	-	-	-
WS103	1	50	5	---	---	0.20 to 1.00	30 secs	-	-	$0.0_{(SS)}$	-	-	-	-	-	-	-	-
WS103	1	50	5 (2)	1.00	---	0.20 to 1.00	06/10/2021 14:37:00	-	-	-	-	0.1	0.0	20.7	0.0	0.3	0	0
WS103	1	50	5 (2)	---	---	0.20 to 1.00	15 secs	-	-	-	-	0.1	0.1	20.6	2.0	-	1	0
WS103	1	50	5 (2)	---	---	0.20 to 1.00	30 secs	-	-	-	-	0.1	0.1	20.5	2.0	-	0	0
WS103	1	50	5 (2)	---	---	0.20 to 1.00	60 secs	-	-	-	-	0.1	0.1	20.6	2.0	-	0	0
WS103	1	50	5 (2)	---	---	0.20 to 1.00	90 secs	-	-	-	-	0.1	0.1	20.6	2.0	-	0	0
WS103	1	50	5 (2)	---	---	0.20 to 1.00	120 secs	-	-	-	-	0.1	0.0	20.6	0.0	-	0	0
WS103	1	50	5 (2)	---	---	0.20 to 1.00	180 secs	-	-	-	-	0.1	0.0	20.5	0.0	-	0	0
WS103	1	50	5 (2)	---	---	0.20 to 1.00	240 secs	-	-	-	-	0.1	0.0	20.4	0.0	-	0	0
WS103	1	50	5 (2)	---	---	0.20 to 1.00	300 secs	-	-	-	-	0.1	0.0	20.3	0.0	-	0	0
WS103	1	50	5 (3)	1.00	1.03	0.20 to 1.00	06/10/2021 14:43:00	-	-	-	0.50	-	-	-	-	-	-	-
WS104	1	50	1	1.00	---	0.20 to 1.00	13/08/2021 11:49:32	1013	1013	$0.0_{(I)}$	-	-	-	-	-	-	-	-
WS104	1	50	1	---	---	0.20 to 1.00	30 secs	-	-	$0.0_{(SS)}$	-	-	-	-	-	-	-	-
WS104	1	50	1 (2)	1.00	---	0.20 to 1.00	13/08/2021 11:51:32	-	-	-	-	0.1	0.0	20.8	0.0	-	0	0
WS104	1	50	1 (2)	---	---	0.20 to 1.00	15 secs	-	-	-	-	0.6	0.0	20.6	0.0	-	0	0
WS104	1	50	1 (2)	---	---	0.20 to 1.00	30 secs	-	-	-	-	0.5	0.0	20.3	0.0	-	0	0
WS104	1	50	1 (2)	---	---	0.20 to 1.00	60 secs	-	-	-	-	0.4	0.0	20.4	0.0	-	0	0
WS104	1	50	1 (2)	---	---	0.20 to 1.00	90 secs	-	-	-	-	0.6	0.0	20.2	0.0	-	0	0
WS104	1	50	1 (2)	---	---	0.20 to 1.00	120 secs	-	-	-	-	0.4	0.0	20.4	0.0	-	0	0

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IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe diameter (mm)	Monitoring Round	Reported Installation Depth (m)	Measured Installation Depth (mbgl)	Response Zone	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	PID (ppm)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)
WS104	1	50	1 (2)	---	---	0.20 to 1.00	180 secs	-	-	-	-	0.9	0.0	19.9	0.0	-	0	0
WS104	1	50	1 (2)	---	---	0.20 to 1.00	240 secs	-	-	-	-	0.8	0.0	20.0	0.0	-	0	0
WS104	1	50	1 (2)	---	---	0.20 to 1.00	301 secs	-	-	-	-	0.5	0.0	20.4	0.0	-	0	0
WS104	1	50	1 (3)	1.00	1.11	0.20 to 1.00	13/08/2021 11:59:36	-	-	-	0.94	-	-	-	-	-	-	-
WS104	1	50	2	1.00	---	0.20 to 1.00	26/08/2021 08:10:08	1019	1019	$0.0_{(I)}$	-	-	-	-	-	-	-	-
WS104	1	50	2	---	---	0.20 to 1.00	10 secs	-	-	$0.0_{(SS)}$	-	-	-	-	-	-	-	-
WS104	1	50	2 (2)	1.00	---	0.20 to 1.00	26/08/2021 08:11:08	-	-	-	-	0.1	0.0	20.7	0.0	-	0	0
WS104	1	50	2 (2)	---	---	0.20 to 1.00	15 secs	-	-	-	-	0.6	0.0	20.1	0.0	-	0	0
WS104	1	50	2 (2)	---	---	0.20 to 1.00	30 secs	-	-	-	-	0.6	0.0	20.1	0.0	-	0	0
WS104	1	50	2 (2)	---	---	0.20 to 1.00	61 secs	-	-	-	-	0.6	0.0	20.1	0.0	-	0	0
WS104	1	50	2 (2)	---	---	0.20 to 1.00	91 secs	-	-	-	-	0.5	0.0	20.2	0.0	-	0	0
WS104	1	50	2 (2)	---	---	0.20 to 1.00	121 secs	-	-	-	-	0.5	0.0	20.2	0.0	-	0	0
WS104	1	50	2 (2)	---	---	0.20 to 1.00	182 secs	-	-	-	-	0.4	0.0	20.5	0.0	-	0	0
WS104	1	50	2 (2)	---	---	0.20 to 1.00	242 secs	-	-	-	-	0.3	0.0	20.5	0.0	-	0	0
WS104	1	50	2 (2)	---	---	0.20 to 1.00	302 secs	-	-	-	-	0.3	0.0	20.6	0.0	-	0	0
WS104	1	50	2 (3)	1.00	1.10	0.20 to 1.00	26/08/2021 08:18:15	-	-	-	0.94	-	-	-	-	-	-	-
WS104	1	50	3	1.00	---	0.20 to 1.00	07/09/2021 13:15:00	1015	1015	$0.0_{(I)}$	-	-	-	-	-	-	-	-
WS104	1	50	3	---	---	0.20 to 1.00	30 secs	-	-	$0.1_{(SS)}$	-	-	-	-	-	-	-	-
WS104	1	50	3 (2)	1.00	---	0.20 to 1.00	07/09/2021 13:16:00	-	-	-	-	0.1	0.0	20.8	0.0	-	0	0
WS104	1	50	3 (2)	---	---	0.20 to 1.00	15 secs	-	-	-	-	0.2	0.0	20.5	0.0	-	0	0
WS104	1	50	3 (2)	---	---	0.20 to 1.00	30 secs	-	-	-	-	0.4	0.0	20.4	0.0	-	0	0
WS104	1	50	3 (2)	---	---	0.20 to 1.00	60 secs	-	-	-	-	0.7	0.0	20.2	0.0	-	0	0
WS104	1	50	3 (2)	---	---	0.20 to 1.00	90 secs	-	-	-	-	0.7	0.0	20.1	0.0	-	0	0
WS104	1	50	3 (2)	---	---	0.20 to 1.00	120 secs	-	-	-	-	0.4	0.0	20.3	0.0	-	0	0
WS104	1	50	3 (2)	---	---	0.20 to 1.00	180 secs	-	-	-	-	0.1	0.0	20.5	0.0	-	0	0

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IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe diameter (mm)	Monitoring Round	Reported Installation Depth (m)	Measured Installation Depth (mbgl)	Response Zone	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	PID (ppm)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)
WS104	1	50	3 (2)	---	---	0.20 to 1.00	240 secs	-	-	-	-	0.1	0.0	20.5	0.0	-	0	0
WS104	1	50	3 (2)	---	---	0.20 to 1.00	300 secs	-	-	-	-	0.1	0.0	20.5	0.0	-	0	0
WS104	1	50	3 (3)	1.00	1.10	0.20 to 1.00	07/09/2021 13:22:00	-	-	-	1.00	-	-	-	-	-	-	-
WS104	1	50	4	1.00	---	0.20 to 1.00	20/09/2021 09:56:00	1020	1020	$0.0_{(I)}$	-	-	-	-	-	-	-	-
WS104	1	50	4	---	---	0.20 to 1.00	30 secs	-	-	$0.0_{(SS)}$	-	-	-	-	-	-	-	-
WS104	1	50	4 (2)	1.00	---	0.20 to 1.00	20/09/2021 09:57:00	-	-	-	-	0.1	0.0	20.9	0.0	0.0	0	0
WS104	1	50	4 (2)	---	---	0.20 to 1.00	15 secs	-	-	-	-	1.0	0.0	20.8	0.0	-	0	0
WS104	1	50	4 (2)	---	---	0.20 to 1.00	30 secs	-	-	-	-	1.0	0.0	20.0	0.0	-	0	0
WS104	1	50	4 (2)	---	---	0.20 to 1.00	60 secs	-	-	-	-	0.9	0.0	20.0	0.0	-	0	0
WS104	1	50	4 (2)	---	---	0.20 to 1.00	90 secs	-	-	-	-	0.8	0.0	20.1	0.0	-	0	0
WS104	1	50	4 (2)	---	---	0.20 to 1.00	120 secs	-	-	-	-	0.7	0.0	20.2	0.0	-	0	0
WS104	1	50	4 (2)	---	---	0.20 to 1.00	180 secs	-	-	-	-	0.7	0.0	20.4	0.0	-	0	0
WS104	1	50	4 (2)	---	---	0.20 to 1.00	240 secs	-	-	-	-	0.7	0.0	20.4	0.0	-	0	0
WS104	1	50	4 (2)	---	---	0.20 to 1.00	300 secs	-	-	-	-	0.8	0.0	20.3	0.0	-	0	0
WS104	1	50	4 (3)	1.00	1.08	0.20 to 1.00	20/09/2021 10:03:00	-	-	-	0.99	-	-	-	-	-	-	-
WS104	1	50	5	1.00	---	0.20 to 1.00	06/10/2021 13:52:00	1016	1016	$0.0_{(I)}$	-	-	-	-	-	-	-	-
WS104	1	50	5	---	---	0.20 to 1.00	30 secs	-	-	$0.0_{(SS)}$	-	-	-	-	-	-	-	-
WS104	1	50	5 (2)	1.00	---	0.20 to 1.00	06/10/2021 13:53:00	-	-	-	-	0.1	0.0	20.8	0.0	0.0	0	0
WS104	1	50	5 (2)	---	---	0.20 to 1.00	15 secs	-	-	-	-	0.1	0.0	20.8	0.0	-	0	0
WS104	1	50	5 (2)	---	---	0.20 to 1.00	30 secs	-	-	-	-	0.1	0.0	20.8	0.0	-	0	0
WS104	1	50	5 (2)	---	---	0.20 to 1.00	60 secs	-	-	-	-	0.1	0.0	20.8	0.0	-	0	0
WS104	1	50	5 (2)	---	---	0.20 to 1.00	90 secs	-	-	-	-	0.1	0.0	20.8	0.0	-	0	0
WS104	1	50	5 (2)	---	---	0.20 to 1.00	120 secs	-	-	-	-	0.1	0.0	20.8	0.0	-	0	0
WS104	1	50	5 (2)	---	---	0.20 to 1.00	180 secs	-	-	-	-	0.1	0.0	20.8	0.0	-	0	0
WS104	1	50	5 (2)	---	---	0.20 to 1.00	240 secs	-	-	-	-	0.1	0.0	20.8	0.0	-	0	0

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IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe diameter (mm)	Monitoring Round	Reported Installation Depth (m)	Measured Installation Depth (mbgl)	Response Zone	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	PID (ppm)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)
WS104	1	50	5 (2)	---	---	0.20 to 1.00	300 secs	-	-	-	-	0.1	0.0	20.8	0.0	-	0	0
WS104	1	50	5 (3)	1.00	1.08	0.20 to 1.00	06/10/2021 13:59:00	-	-	-	0.88	-	-	-	-	-	-	-
WS104	1	50	6	1.00	---	0.20 to 1.00	22/10/2021 07:59:00	1012	1012	$0.0_{(I)}$	-	-	-	-	-	-	-	-
WS104	1	50	6	---	---	0.20 to 1.00	30 secs	-	-	$0.0_{(SS)}$	-	-	-	-	-	-	-	-
WS104	1	50	6 (2)	1.00	---	0.20 to 1.00	22/10/2021 08:00:00	-	-	-	-	0.0	0.0	20.7	-	-	0	0
WS104	1	50	6 (2)	---	---	0.20 to 1.00	15 secs	-	-	-	-	0.1	0.3	20.6	-	-	0	0
WS104	1	50	6 (2)	---	---	0.20 to 1.00	30 secs	-	-	-	-	0.1	0.3	20.6	-	-	0	0
WS104	1	50	6 (2)	---	---	0.20 to 1.00	60 secs	-	-	-	-	0.1	0.3	20.6	-	-	0	0
WS104	1	50	6 (2)	---	---	0.20 to 1.00	90 secs	-	-	-	-	0.1	0.2	20.6	-	-	0	0
WS104	1	50	6 (2)	---	---	0.20 to 1.00	120 secs	-	-	-	-	0.1	0.2	20.6	-	-	0	0
WS104	1	50	6 (2)	---	---	0.20 to 1.00	180 secs	-	-	-	-	0.1	0.1	20.6	-	-	0	0
WS104	1	50	6 (2)	---	---	0.20 to 1.00	240 secs	-	-	-	-	0.1	0.1	20.6	-	-	0	0
WS104	1	50	6 (2)	---	---	0.20 to 1.00	300 secs	-	-	-	-	0.1	0.1	20.6	-	-	0	0
WS104	1	50	6 (3)	1.00	0.88	0.20 to 1.00	22/10/2021 08:06:00	-	-	-	0.63	-	-	-	-	-	-	-
WS105	1	50	1	4.00	---	1.00 to 4.00	13/08/2021 11:04:31	1013	1013	$0.0_{(I)}$	-	-	-	-	-	-	-	-
WS105	1	50	1	---	---	1.00 to 4.00	30 secs	-	-	$-0.1_{(SS)}$	-	-	-	-	-	-	-	-
WS105	1	50	1 (2)	4.00	---	1.00 to 4.00	13/08/2021 11:06:45	-	-	-	-	0.1	0.0	20.8	0.0	-	0	0
WS105	1	50	1 (2)	---	---	1.00 to 4.00	14 secs	-	-	-	-	4.7	0.0	18.6	0.0	-	1	0
WS105	1	50	1 (2)	---	---	1.00 to 4.00	29 secs	-	-	-	-	4.7	0.0	14.4	0.0	-	1	0
WS105	1	50	1 (2)	---	---	1.00 to 4.00	59 secs	-	-	-	-	4.8	0.0	13.5	0.0	-	0	0
WS105	1	50	1 (2)	---	---	1.00 to 4.00	89 secs	-	-	-	-	4.8	0.0	13.4	0.0	-	0	0
WS105	1	50	1 (2)	---	---	1.00 to 4.00	120 secs	-	-	-	-	4.8	0.0	13.4	0.0	-	0	0
WS105	1	50	1 (2)	---	---	1.00 to 4.00	180 secs	-	-	-	-	4.8	0.0	13.3	0.0	-	0	0
WS105	1	50	1 (2)	---	---	1.00 to 4.00	240 secs	-	-	-	-	4.9	0.0	13.1	0.0	-	0	0

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STRUCTURAL SOILS
The Potteries
Pottery Street
Castleford
W. Yorkshire WF10 1NJ

Compiled By	Date	Checked By	Date	Contract Ref:
JMcCarthy	01/11/2021	JMcCarthy	01/11/2021	765325

Contract: **2 & 3 Angel Square**

AGS

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe diameter (mm)	Monitoring Round	Reported Installation Depth (m)	Measured Installation Depth (mbgl)	Response Zone	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	PID (ppm)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)
WS105	1	50	1 (2)	---	---	1.00 to 4.00	300 secs	-	-	-	-	5.0	0.0	13.0	0.0	-	0	0
WS105	1	50	1 (3)	4.00	3.96	1.00 to 4.00	13/08/2021 11:14:15	-	-	-	DRY	-	-	-	-	-	-	-
WS105	1	50	2	4.00	---	1.00 to 4.00	26/08/2021 08:48:18	1019	1019	$-0.1_{(I)}$	-	-	-	-	-	-	-	-
WS105	1	50	2	---	---	1.00 to 4.00	20 secs	-	-	$-0.1_{(SS)}$	-	-	-	-	-	-	-	-
WS105	1	50	2 (2)	4.00	---	1.00 to 4.00	26/08/2021 08:49:19	-	-	-	-	0.1	0.0	20.7	0.0	-	0	0
WS105	1	50	2 (2)	---	---	1.00 to 4.00	15 secs	-	-	-	-	2.7	0.0	19.4	0.0	-	0	0
WS105	1	50	2 (2)	---	---	1.00 to 4.00	30 secs	-	-	-	-	2.8	0.0	19.0	0.0	-	0	0
WS105	1	50	2 (2)	---	---	1.00 to 4.00	60 secs	-	-	-	-	2.8	0.0	19.0	0.0	-	0	0
WS105	1	50	2 (2)	---	---	1.00 to 4.00	90 secs	-	-	-	-	2.8	0.0	19.1	0.0	-	0	0
WS105	1	50	2 (2)	---	---	1.00 to 4.00	120 secs	-	-	-	-	2.7	0.0	19.1	0.0	-	0	0
WS105	1	50	2 (2)	---	---	1.00 to 4.00	180 secs	-	-	-	-	2.6	0.0	19.3	0.0	-	0	0
WS105	1	50	2 (2)	---	---	1.00 to 4.00	240 secs	-	-	-	-	2.6	0.0	19.4	0.0	-	0	0
WS105	1	50	2 (2)	---	---	1.00 to 4.00	300 secs	-	-	-	-	2.5	0.0	19.5	0.0	-	0	0
WS105	1	50	2 (3)	4.00	3.94	1.00 to 4.00	26/08/2021 08:56:45	-	-	-	DRY	-	-	-	-	-	-	-
WS105	1	50	4	4.00	---	1.00 to 4.00	20/09/2021 09:24:00	1020	1020	$0.0_{(I)}$	-	-	-	-	-	-	-	-
WS105	1	50	4	---	---	1.00 to 4.00	30 secs	-	-	$0.0_{(SS)}$	-	-	-	-	-	-	-	-
WS105	1	50	4 (2)	4.00	---	1.00 to 4.00	20/09/2021 09:25:00	-	-	-	-	0.1	0.0	20.8	0.0	0.0	0	0
WS105	1	50	4 (2)	---	---	1.00 to 4.00	15 secs	-	-	-	-	2.5	0.0	20.3	0.0	-	0	0
WS105	1	50	4 (2)	---	---	1.00 to 4.00	30 secs	-	-	-	-	2.5	0.0	18.8	0.0	-	0	0
WS105	1	50	4 (2)	---	---	1.00 to 4.00	60 secs	-	-	-	-	2.5	0.0	18.5	0.0	-	0	0
WS105	1	50	4 (2)	---	---	1.00 to 4.00	90 secs	-	-	-	-	2.5	0.0	18.5	0.0	-	0	0
WS105	1	50	4 (2)	---	---	1.00 to 4.00	120 secs	-	-	-	-	2.5	0.0	18.6	0.0	-	0	0
WS105	1	50	4 (2)	---	---	1.00 to 4.00	180 secs	-	-	-	-	2.4	0.0	18.7	0.0	-	0	0
WS105	1	50	4 (2)	---	---	1.00 to 4.00	240 secs	-	-	-	-	2.4	0.0	18.8	0.0	-	0	0
WS105	1	50	4 (2)	---	---	1.00 to 4.00	300 secs	-	-	-	-	2.4	0.0	18.8	0.0	-	0	0

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe diameter (mm)	Monitoring Round	Reported Installation Depth (m)	Measured Installation Depth (mbgl)	Response Zone	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	PID (ppm)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)
WS105	1	50	4 (2)	---	---	1.00 to 4.00	360 secs	-	-	-	-	-	-	-	-	-	-	-
WS105	1	50	4 (3)	4.00	3.94	1.00 to 4.00	20/09/2021 09:32:00	-	-	-	3.94	-	-	-	-	-	-	-
WS105	1	50	5	4.00	---	1.00 to 4.00	06/10/2021 13:41:00	1016	1016	$0.0_{(I)}$	-	-	-	-	-	-	-	-
WS105	1	50	5	---	---	1.00 to 4.00	30 secs	-	-	$0.0_{(SS)}$	-	-	-	-	-	-	-	-
WS105	1	50	5 (2)	4.00	---	1.00 to 4.00	06/10/2021 13:42:00	-	-	-	-	0.1	0.0	21.0	0.0	0.0	0	0
WS105	1	50	5 (2)	---	---	1.00 to 4.00	15 secs	-	-	-	-	3.0	0.0	20.3	0.0	-	1	0
WS105	1	50	5 (2)	---	---	1.00 to 4.00	30 secs	-	-	-	-	3.1	0.0	19.0	0.0	-	0	0
WS105	1	50	5 (2)	---	---	1.00 to 4.00	60 secs	-	-	-	-	3.1	0.0	18.9	0.0	-	0	0
WS105	1	50	5 (2)	---	---	1.00 to 4.00	90 secs	-	-	-	-	3.1	0.0	18.9	0.0	-	0	0
WS105	1	50	5 (2)	---	---	1.00 to 4.00	120 secs	-	-	-	-	3.1	0.0	18.9	0.0	-	0	0
WS105	1	50	5 (2)	---	---	1.00 to 4.00	180 secs	-	-	-	-	3.1	0.0	18.9	0.0	-	0	0
WS105	1	50	5 (2)	---	---	1.00 to 4.00	240 secs	-	-	-	-	3.1	0.0	18.9	0.0	-	0	0
WS105	1	50	5 (2)	---	---	1.00 to 4.00	300 secs	-	-	-	-	3.1	0.0	18.9	0.0	-	0	0
WS105	1	50	5 (3)	4.00	3.94	1.00 to 4.00	06/10/2021 13:49:00	-	-	-	3.94	-	-	-	-	-	-	-
WS105	1	50	6	4.00	---	1.00 to 4.00	22/10/2021 08:29:00	1012	1013	$0.0_{(I)}$	-	-	-	-	-	-	-	-
WS105	1	50	6	---	---	1.00 to 4.00	30 secs	-	-	$0.0_{(SS)}$	-	-	-	-	-	-	-	-
WS105	1	50	6 (2)	4.00	---	1.00 to 4.00	22/10/2021 08:30:00	-	-	-	-	0.0	0.0	20.9	-	-	0	0
WS105	1	50	6 (2)	---	---	1.00 to 4.00	15 secs	-	-	-	-	3.6	0.0	19.4	-	-	0	0
WS105	1	50	6 (2)	---	---	1.00 to 4.00	30 secs	-	-	-	-	3.6	0.0	17.3	-	-	0	0
WS105	1	50	6 (2)	---	---	1.00 to 4.00	60 secs	-	-	-	-	3.6	0.0	17.1	-	-	0	0
WS105	1	50	6 (2)	---	---	1.00 to 4.00	90 secs	-	-	-	-	3.6	0.0	17.0	-	-	0	0
WS105	1	50	6 (2)	---	---	1.00 to 4.00	120 secs	-	-	-	-	3.6	0.0	17.0	-	-	0	0
WS105	1	50	6 (2)	---	---	1.00 to 4.00	180 secs	-	-	-	-	3.7	0.0	17.0	-	-	0	0
WS105	1	50	6 (2)	---	---	1.00 to 4.00	240 secs	-	-	-	-	3.7	0.0	16.9	-	-	0	0
WS105	1	50	6 (2)	---	---	1.00 to 4.00	300 secs	-	-	-	-	3.7	0.0	16.9	-	-	0	0

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Compiled By	Date	Checked By	Date	Contract Ref:
JMcCarthy	01/11/2021	JMcCarthy	01/11/2021	765325

Contract: **2 & 3 Angel Square**

AGS

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe diameter (mm)	Monitoring Round	Reported Installation Depth (m)	Measured Installation Depth (mbgl)	Response Zone	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	PID (ppm)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)
WS105	1	50	6 (3)	4.00	3.95	1.00 to 4.00	22/10/2021 08:36:00	-	-	-	3.95	-	-	-	-	-	-	-

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