PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

FACTUAL REPORT ON GROUND INVESTIGATION

Prepared for ASK PROPERTY DEVELOPMENTS LTD

Report Ref: 31847

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PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

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PROJECT: Construction of residential apartment complex.

CONSULTANT: Cundall Johnston & Partners LLP

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ORIGINATOR	APPROVER
IAN GARSTANG Senior Engineering Geologist	COLIN THOMAS Geotechnical Consultant

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1. INTRODUCTION

It is proposed to construct a 22 storey residential apartment complex as part of the First Street development in Manchester city centre. Geotechnical Engineering Limited (GEL) was instructed by Cundall Johnston & Partners LLP (the Consultant) acting on behalf of Ask Property Developments Ltd (the Client) to carry out an investigation to determine the ground conditions.

The scope of works and terms and conditions of appointment were specified by the Consultant and GEL correspondence reference T23329, dated 7th March 2016. The investigation was carried out under the direction and supervision of the Consultant.

This report describes the investigation and presents the findings.

2. SITE LOCATION AND GEOLOGY

The site is situated on a site north and south of Hulme Street, Manchester, west of the junction with Wilmott Street and east of Medlock Street and may be located by its National Grid co-ordinates SJ 838 971.

British Geological Survey (BGS) England and Wales (Sheet No. 85 Manchester, 1:63,360, 1971) and the BGS online geology (1:50,000) indicate the site is underlain by Glaciofluvial Sheet Deposits overlying the Cheshire Pebble Beds Formation. Made Ground is expected to be present due to the nature of the site.

3. GROUND INVESTIGATION

3.1 Fieldwork

The fieldwork was carried out in general accordance with BS5930:2015 during the period 11th April to 3rd June 2016 and comprised:

- twenty-three dynamic sample and rotary core boreholes,
- six dynamic sample boreholes,
- fourteen machine excavated trial pits,
- seven California Bearing Ratio tests,
- one hundred and sixty-six hand excavated trial pits (unlogged) for asbestos screening samples,
- eleven vacuum excavated trial pits (unlogged) to confirm the presence of gas mains.

The exploratory hole locations were selected by the Consultant and set out by this Company and are shown on Figures 1 and 2. The ground level and co-ordinates of each exploratory hole were established by this Company using GPS techniques.

The site is considered to be in an area that was subjected to significant historic bombing and therefore required an Unexploded Ordnance Survey (UXO). The survey comprised a risk assessment and on site monitoring by a UXO specialist from First Line Defence. Down hole magnetometer testing was also undertaken at regular intervals as the boreholes were advanced.

3.2 Dynamic Sample and Rotary Core Boreholes

The boreholes, referenced CP/RC101, CP/RC101A, CP/RC101B, CP/RC102, CP/RC102A, CP/RC103, CP/RC104, CP/RC104A, CP/RC105, CP/RC106, CP/RC106A, CP/RC106B, CP/RC107 to CP/RC113, CP/RC115, to CP/RC117, and CP/RC117A (Appendix A), were

formed using a track-mounted Geotechnical Pioneer Rig. Initially, an inspection pit was hand excavated at each borehole location to a maximum depth of 1.50m to check for buried services. Disturbed samples were taken and retained in a combination of plastic tubs, bags, and glass jars. Boreholes CP/RC106, CP/RC106A, CP/RC106B, CP/RC107, CP/RC111 and CP/RC117A were commenced by waterflush rotary coring to penetrate concrete or tarmacadam hardstanding, recovering 300mm nominal diameter samples and subsequently hand excavated to a maximum depth of 1.30m to check for buried services.

Boreholes CP/RC101, CP/RC104, CP/RC106, CP/RC106A, and CP/RC117 were terminated in the inspection pits.

Heavy duty dynamic sampling techniques were employed from the surface in CP/RC101B and from below the inspection pits to produce a continuous disturbed sample of 97mm nominal diameter or, in CP/RC108, CP/RC113 and CP/RC117A 112mm reducing to 97mm as the borehole was advanced. The samples were recovered in semi-rigid plastic liner.

On refusal to dynamic sampling the boreholes were continued by rotary core drilling techniques utilising a water or polymer flush. A double-tube swivel core barrel with semi-rigid plastic liner was utilised to recover a continuous sample of 90mm diameter. Where appropriate, dynamic sampling techniques were carried out to recover dropped core or where rotary core drilling was not suitable.

The dynamic samples and rotary core were extracted horizontally from the sampler and core barrel respectively, the semi-rigid liner was cut to length and caps placed at each end to retain moisture content. All samples and core were retained in sequence in labelled, wooden coreboxes.

Undisturbed samples of 100mm nominal diameter were taken in suitable cohesive soils using a thin walled, open drive sampler (UT100). Samples were wax sealed on site to prevent moisture loss.

Standard penetration tests (SPT) were carried out in general accordance with BS EN ISO 22476-3:2005+A1:2011. A split barrel or a solid cone was used depending upon the materials encountered and the split barrel samples retained in airtight jars. The SPT N value was taken as the number of blows to penetrate the 300mm test drive following a 150mm seating drive. Where low penetration was recorded the seating drive was terminated at 25 blows and the test drive completed after a further 50 blows. Detailed SPT results, together with the energy ratio (E_r), are presented in Appendix A and summarised as uncorrected N values on the borehole logs.

Boreholes were monitored for groundwater ingress as dynamic sampling proceeded. Upon encountering water, sampling was temporarily stopped to allow the level to stabilise. Water levels were also recorded at the start and finish of each day's work and on completion of the borehole and are presented on the relevant log.

On completion dual and single gas/water monitoring standpipes were installed in boreholes CP/RC101B, CP/RC102A, CP/RC104A, CP/RC111, CP/RC115 and CP/RC117A. Each installation consisted of a 50 or 19mm ID HDPE slotted tube set in a filter response zone of non-calcareous pea gravel. The installation was sealed above with a bentonite plug and accessed via a valve assembly. The installations were protected at the surface by a lockable stopcock cover set in concrete. Installation details are given on the relevant borehole log.

The installations were monitored for gas flow and then tested for methane, carbon dioxide, oxygen, hydrogen sulphide, and carbon monoxide using a Gas Data GFM 435 gas analyser. Subsequent readings, with water level readings, are tabulated in Appendix A.

On completion, the remaining boreholes were backfilled with arisings and bentonite pellets and the surface reinstated.

3.3 Dynamic Sample Boreholes

The boreholes, referenced WS102, WS105, WS106, WS107, WS107A and WS110 (Appendix A), were formed using a Terrier 2000 rig or Geotechnical Pioneer rig (WS105 and WS107A only). Initially, an inspection pit was hand excavated at each borehole location to a maximum depth of 1.20m to check for buried services. Disturbed samples were taken and retained in a combination of plastic tubs, bags and glass jars. Boreholes WS102 and WS107 were terminated in the inspection pits. WS101 was terminated after repeated attempts to dig inspection pits met obstructions near surface. A disturbed sample was taken of the surface material for environmental testing. Dynamic sampling techniques were then employed to produce a continuous disturbed sample of 97mm diameter in WS105 and WS110 or 83mm reducing to 70mm as the borehole was advanced in WS106 and WS107. The samples were recovered in semi-rigid plastic liner.

The samples were extracted horizontally from the sampler, labelled and caps placed each end to retain moisture.

Standard penetration tests (SPT) were carried out in general accordance with BS EN ISO 22476-3:2005+A1:2011. A split barrel was used and the samples retained in airtight jars. The SPT N value was taken as the number of blows to penetrate the 300mm test drive following a 150mm seating drive. Detailed SPT results, together with the energy ratio (E_r), are presented in Appendix A and summarised as uncorrected N values on the borehole logs.

Boreholes were monitored for groundwater ingress as dynamic sampling proceeded. Water levels were also recorded at the start and finish of each day's work and on completion of the borehole and are presented on the relevant log.

On completion, the boreholes were backfilled with arisings and bentonite pellets and the surface reinstated.

3.4 Machine Excavated Trial Pits

The trial pits, referenced TP101 to TP114 (Appendix A), were formed by a wheeled excavator with a 0.60m wide backactor bucket.

The ground surface at TP106, TP107, TP108, TP110, TP111, and TP114 consisted of hardstanding which required breaking out prior to excavation.

Representative disturbed samples were taken and retained in sealed plastic bags and airtight containers to retain moisture content.

Photographs of the trial pit profile and spoil heap were taken and are presented separately.

On completion all trial pits were backfilled with arisings compacted in suitable layers by the excavator bucket. The ground surface was left slightly proud to accommodate the future inevitable settlement of the backfill.

3.5 Asbestos Screening Pits

One hundred and sixty-six trial pits (references provided, with coordinates and levels, in Appendix D) were hand excavated on approximate 9m interval grids in Plots 6 & 7 and Plot 8 (split into three grids A, B and C) to a maximum depth of 1.00m to recover plastic tub samples at nominal depths of 0.50m and 1.00m for asbestos screening. The locations within the grids were named using a letter code for the columns and number for the rows, for example AOP6-7 J9.

On completion the trial pits were backfilled with arisings compacted in suitable layers. The ground surface was left slightly proud to accommodate the future inevitable settlement of the backfill. No logs were taken of the pits however basic sample descriptions have been recorded and are provided in Appendix D.

3.6 Vacuum Excavated Pits

Eleven trial pits, referenced OP101 to OP105, OP107, OP110, OP112, OP113, OP116, and OP118, were formed using vacuum excavation techniques to locate buried services. Trial pit sketches are presented in Appendix A. On completion, the trial pits were reinstated with arisings and the ground surface reinstated. No logs were taken of the pits. Coordinates and levels are presented in Appendix E.

3.7 California Bearing Ratio (CBR) Tests

Seven in situ California Bearing Ratio (CBR) tests, referenced CBR 102, CBR 103, and CBR 105 to CBR 109 (Appendix A) were carried out in accordance with BS1377: Part 9:1990:4.3.

The test force was applied to the CBR plunger via a screw jack, the apparatus being mounted on a Land Rover which provided the reaction load. The test force was measured by a calibrated proving ring and the vertical penetration of the plunger by a calibrated dial gauge readable to 0.01mm. The jack applied the load so as to keep the plunger penetration rate at 1mm/min.

Once the test area was prepared, 250mm diameter annular surcharge discs (with a total weight of 9kg) were positioned on a thin bed of sand. The sand was not present in the central area beneath the plunger.

The force readings were recorded at intervals of 0.25mm penetration to a maximum total penetration of 7.5mm. On completion of the test, a sample of soil from beneath the central test area was taken for the determination of its moisture content.

3.8 Samples

Samples for chemical analyses and asbestos screening were dispatched from site directly to I_2 Analytical Ltd under a Chain of Custody. The remaining samples were brought to this Company's laboratory for testing and storage.

3.9 Logging

The logging of soils and rocks was carried out by an Engineering Geologist in general accordance with BS5930:2015. A key to the exploratory hole logs is presented in Appendix A.

Detailed descriptions of the core and samples are given in the borehole logs, Appendix A, along with details of sampling, in situ testing, groundwater ingress, installations and relevant comments on drilling techniques.

Pocket penetrometer tests were carried out on suitable samples in borehole CP/RC108. The results are summarised on the borehole log and also tabulated in Appendix A.

Suitable core subsamples were selected where possible. The core was carefully logged and prepared prior to preserving the subsample by wrapping in clingfilm and coating with at least three layers of wax. The sample was further protected by a covering of waxed cheesecloth, labelled and transported horizontally in padded, wooden coreboxes.

Prior to logging, photographs of the core and samples were taken and are presented separately.

The machine excavated trial pits were logged in situ to a depth of approximately 1.20m and thereafter from the surface. Detailed descriptions are given in the trial pit logs, Appendix A, along with details of sampling and in situ testing, groundwater ingress and relevant comments on stability.

3.10 Laboratory Testing

Eight schedules of laboratory tests were prepared by the Consultant, the following tests being carried out in accordance with BS1377:1990, unless stated otherwise. The number in brackets refers to the test number given in that standard. The results are presented in Appendix B.

The natural water content was determined on twenty-three selected samples in accordance with BS EN ISO 17892-1:2014.

Liquid limit, plastic limit and plasticity index tests [Part 2:4.3, 5.3 and 5.4] were carried out on twenty-three selected samples. An Atterberg line plot has also been presented.

Particle size distributions were determined for twenty-two samples by wet sieving [Part 2:9.2]. The fine fractions of four of these samples were further analysed by sedimentation using the pipette method [Part 2:9.4]. The results are presented as grading curves.

The compaction characteristics of nine selected soil samples were investigated using a 2.5kg rammer [Part 4:3.2 and 3.3/3.4]. The results are presented as a plot of dry density against moisture content.

The California Bearing Ratio (CBR) test [Part 4:7] was carried out on thirteen recompacted samples. The results are presented as graphs of force against penetration.

Unconsolidated undrained triaxial compression tests were carried out under a single cell pressure on ten specimens prepared from full diameter subsamples from the dynamic samples [Part 7:8]. A cell pressure specified by the Consultant was used. Fully saturated, $\phi_u = 0$, conditions were assumed and the undrained cohesion, c_u was taken as half the deviator stress at failure.

The following tests on rock samples were carried out in accordance with ISRM (2007) unless stated otherwise. Test results are presented in Appendix B.

Twenty-six rock cores were tested for their unconfined compressive strength.

Point load index tests were carried out on ninety selected lengths of core.

The BRE SD1 (2005) reduced suite; water soluble sulphate, together with pH were determined for twenty-seven samples by Chemtest Ltd using in-house methods.

Selected samples were dispatched to I_2 Analytical Ltd, where chemical analyses (Appendix C) and asbestos screenings and quantifications (Appendix D) were carried out to in-house methods for a specified suite of contaminants.

GEOTECHNICAL ENGINEERING LIMITED

4. REFERENCES

British Standards Institution (2015): Code of practice for ground investigations. BS 5930:2015.

British Standards Institution (1990): Methods of tests for soils for civil engineering purposes. BS 1377 Parts 1-9.

British Standards Institution (2014): Geotechnical investigation and testing – Laboratory testing of soil. Part 1: Determination of water content. BS EN ISO 17892-1:2014.

British Standards Institution (2012): Geotechnical investigation and testing. Field testing. Standard penetration test. BS EN ISO 22476-3:2005+A1:2011.

Building Research Establishment (2005): Concrete in aggressive ground. BRE Special Digest 1. Third Edition.

International Society for Rock Mechanics (2007). The complete ISRM suggested methods for rock characterization, testing and monitoring: 1974-2006, edited by R Ulusay & J A Hudson. Ankara, Turkey: Turkish National Group of the International Society for Rock Mechanics.

Key.

Borehole and CBR Locations

Trial Pit and Gas Main Pit Locations

Notes:

Drawing supplied by client.

geotechnical

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Client: ASK PROPERTY DEVELOPMENTS LTD

Site: PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

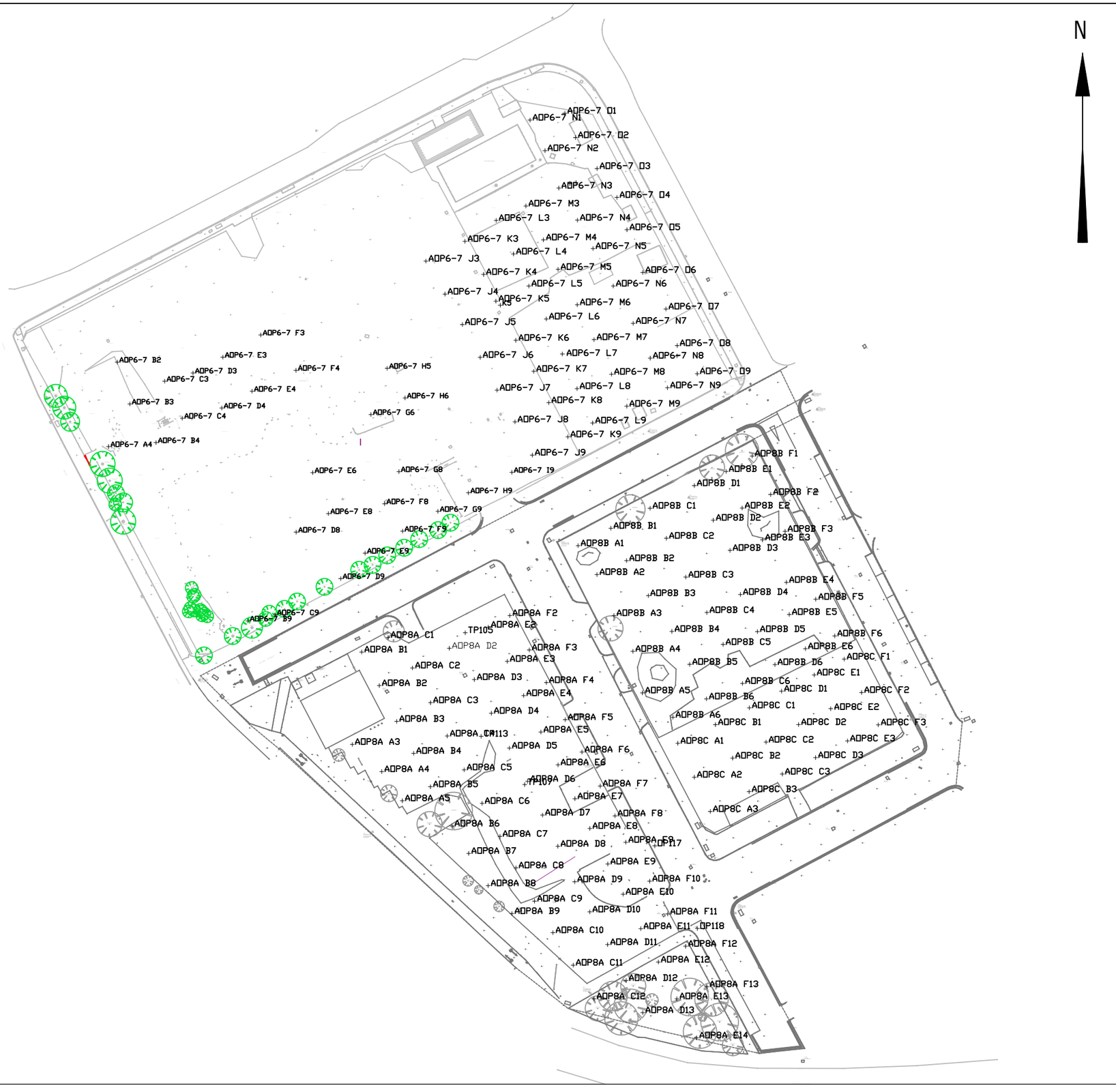
Engineer: Cundall Johnston & Partners LLP

Title: Exploratory Hole Location Plan

Drawn By:	Checked By:	Paper Size:
IG	IG	A3

Scale:	Date:
1:2000	July 2016

Contract:	Figure:
31847	01



Key.

\+ Asbestos Observation Pit Locations

Notes:

Drawing supplied by client.

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Client: ASK PROPERTY DEVELOPMENTS LTD

Site: PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

Engineer: Cundall Johnston & Partners LLP

Title: Exploratory Hole Location Plan - Asbestos Observation Pits

Drawn By:	Checked By:	Paper Size:
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Scale:	Date:
1:2000	July 2016

Contract:	Figure:
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APPENDIX A

FIELDWORK DATA

Geotechnical Engineering Limited

KEY TO EXPLORATORY HOLE LOGS

Sample type

D	Small disturbed	U	Undisturbed	X/L	Dynamic	D*/ES	Environmental - soil	Cs	Core subsample (prepared)
B	Bulk disturbed	UT	Undisturbed thin wall	C	Core	EW	Environmental - water	Xs/Ls	Dynamic subsample (prepared)
LB	Large bulk disturbed	P	Piston	W	Water				

Test type

S SPT - Split spoon sampler followed by uncorrected SPT 'N' Value
C SPT - Solid cone followed by uncorrected SPT 'N' Value
(*250 - Where full test drive not completed, linearly extrapolated 'N' value reported, ** - Denotes no effective penetration)
H Hand vane - direct reading in kPa - not corrected for BS1377 (1990). Re* denotes refusal
M Mackintosh probe - number of blows to achieve 100mm penetration
PP Pocket penetrometer - direct reading in kg/sq.cm
Vo Headspace vapour reading, uncorrected peak values in ppm, using a PID (calibrated with Isobutylene, using a 10.6eV bulb)

Sample/core range/I_f

Dynamic sample

Undisturbed sample - open drive including thin wall. Symbol length reflects recovery

x x = Total Core Recovery (TCR) as percentage of core run

y y = Solid Core Recovery (SCR) as percentage of core run. Assessment of core is based on full diameter.

z z = Rock Quality Designation (RQD). The amount of solid core greater than 100mm expressed as percentage of core run.

Where SPT has been carried out at beginning of core run, disturbed section of core excluded from SCR and RQD assessment.

I_f - fracture spacing - the modal fracture spacing (mm) over the indicated length of core. Where spacing varies signficantly, the minimum, mode and maximum values are given. NI = non-intact core NA = not applicable

Instrumentation

Porous tip | Perforated standpipe | Granular response zone | Bentonite seal | Cement/ bentonite grout | Soil Backfill | Concrete

Stratum boundaries

Estimated boundary

Grading boundary

Logging

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

Chalk is logged in general accordance with Lord et al (2002) CIRIA C574. Where possible, dynamic samples in chalk have been logged in accordance with CIRIA C574; descriptions and gradings (if presented) should be treated with caution given the potential for sample disturbance.

For rocks the term fracture has been used to identify a mechanical break within the core. Where possible incipient and drilling induced fractures have been excluded from the assessment of fracture state. Where doubt exists, a note has been made in the descriptions. All fractures are considered to be continuous unless otherwise reported.

Made Ground is readily identifiable when, within the material make up, man made constituents are evident. Where Made Ground appears to be reworked natural material the differentiation between in situ natural deposits and Made Ground is much more difficult to ascertain. The interpretation of Made Ground within the logs should therefore be treated with caution.

The descriptors "topsoil" and "tarmacadam" are used as generic terms and do not imply conformation to any particular standard or composition.

Rootlets are defined as being less than 2mm in diameter, roots are defined as in excess of 2mm diameter.

General Comments

The process of drilling and sampling will inevitably lead to disturbance, mixing or loss of material in some soil and rocks.

Indicated water levels are those recorded during the process of drilling or excavating exploratory holes and may not represent standing water levels.

All depths are measured along the axis of the borehole and are related to ground level at the point of entry. All inclinations are measured normal to the axis of the core.

Geotechnical Engineering Limited

BOREHOLE LOG

CP/RC101

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

Sheet 1 of 1

Start Date 14 April 2016 Easting 383755 Scale 1 : 50

End Date 14 April 2016 Northing 397191 Ground level 33.90mOD Depth 1.00 m

progress date/time water depth	sample no & type	depth (m) from	depth (m) to	casing depth (m)	test type & value	samp. /core range		instru -ment	description	depth (m)	reduced level (m)	legend
14/04/16 1000hrs									MADE GROUND comprising black TARMACADAM.	0.05	33.85	
									Black and dark grey gravelly (ashy) fine to coarse SAND. Gravel is angular to subrounded fine to coarse sandstone, concrete, mudstone, mortar and brick. (MADE GROUND)	0.50	33.40	
14/04/16 1100hrs Dry									Brown slightly clayey slightly gravelly fine to coarse SAND with a high subangular brick cobble content. Gravel is angular to subrounded fine to coarse sandstone, brick and rare mudstone. (MADE GROUND) 1.00m: Red brick structure encountered.	1.00	32.90	
									Borehole completed at 1.00m.	{8.00}		

EQUIPMENT: Geotechnical Pioneer rig.

METHOD: Hand dug inspection pit 0.00-1.00m.

REMARKS: Inspection pit terminated at 1.00m due to a red brick structure.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m) casing (m) rose to (m) time to rise (min) remarks

Groundwater not encountered.

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Geotechnical Engineering Limited

BOREHOLE LOG

CP/RC101A

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER — Sheet 1 of 1

Start Date 14 April 2016 — Easting 383756 — Scale 1 : 50

End Date 14 April 2016 — Northing 397189 — Ground level 33.90mOD — Depth 6.20 m

progress date/time water depth	sample no & type	depth (m) from	depth (m) to	casing depth (m)	test type & value	samp. /core range		instru -ment	description	depth (m)	reduced level (m)	legend
14/04/16 1030hrs	1ES	0.10							MADE GROUND comprising black TARMACADAM.	0.05	33.85	
	1B	0.30							Black and dark grey gravelly (ashy) fine to coarse SAND. Gravel is angular to subrounded fine to coarse sandstone, concrete, mudstone and brick. (MADE GROUND)	0.50	33.40	
	2ES	0.30							Brown slightly gravelly clayey fine to coarse SAND. Gravel is angular to subrounded fine to coarse sandstone, brick and rare mudstone. (MADE GROUND) 0.50 - 1.10m: High subangular brick cobble content.	0.90	33.00	
	2B	0.60								1.10	32.80	
	3ES	0.60							Brown clayey very sandy angular and subangular fine to coarse sandstone and brick GRAVEL with a low subangular sandstone cobble content. (MADE GROUND)			
	3B	1.00							Loose dark brown and black very gravelly medium and coarse SAND with a high subangular brick cobble content. Gravel is angular to subrounded fine to coarse sandstone, brick, concrete and tile. (MADE GROUND) 2.40 - 2.70m: Rare brick.	2.80	31.10	
	4ES	1.00							Light brown gravelly fine and medium SAND. Gravel is subrounded and rounded fine to coarse sandstone. (MADE GROUND) 2.90 - 3.20m: No recovery.	3.20	30.70	
	4B	1.20	1.50						Medium dense dark greyish brown very gravelly medium and coarse SAND with rare pockets (up to 5mm) of black fine sand. Gravel is angular to rounded fine to coarse brick, sandstone and mudstone. (MADE GROUND)	3.80	30.10	
	5D	1.50	1.95	1.50	S 5					4.20	29.70	
	6L	1.50	2.20						Dark brown and black gravelly medium and coarse SAND with a medium subrounded sandstone cobble content. Gravel is subangular to rounded fine to coarse sandstone and rare quartz. 3.85 - 3.95m: Light brown. 3.90m: Band (5mm) of black fine sand.	4.30	29.60	
	5ES	1.50										
	7D	2.20	2.65	2.50	S 7							
	8L	2.20	3.20						Firm light brown slightly sandy silty CLAY with frequent pockets (up to 10mm) of yellow coarse sand.			
	6ES	2.20										
	7ES	2.70							Firm becoming stiff brown slightly gravelly CLAY with rare pockets (up to 5mm) of dark red fine sand. Gravel is subangular to rounded fine and medium sandstone and mudstone. 4.40 - 5.00m: Locally mottled orange. 4.80 - 5.20m: Slightly sandy.	6.20	27.70	
	9D	3.20	3.65	3.20	S 24							
	10L	3.20	4.20						Borehole completed at 6.20m.			
	8ES	3.30										
	9ES	3.80										
	11D	4.20	4.65	4.20	S 11							
	12L	4.20	5.20									
	13D	5.20	5.65	5.20	S 10							
	14L	5.20	6.20									
14/04/16 1800hrs 0.80m	15Ls	5.80	6.20							{8.00}		

EQUIPMENT: Geotechnical Pioneer rig.

METHOD: Hand dug inspection pit 0.00-1.50m. Dynamic sampled (113mm) 1.50-6.20m.

CASING: 140mm diam to 6.20m.

BACKFILL: On completion, hole backfilled with bentonite pellets 6.20-0.00m.

REMARKS: Downhole magnetometry for UXO risk mitigation carried out 0.00-6.20m.

Borehole terminated at 6.20m due to the presence of a metallic object.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks
				Groundwater not encountered prior to use of water flush.

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Geotechnical Engineering Limited

BOREHOLE LOG

CP/RC101B

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

Sheet 1 of 3

Start Date 15 April 2016 Easting 383764 Scale 1 : 50

End Date 19 April 2016 Northing 397193 Ground level 33.90mOD Depth 27.20 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	I_f	instru -ment	description	depth (m)	reduced level (m)	legend
15/04/16 1000hrs	1L	0.00 - 1.00						MADE GROUND comprising black TARMACADAM.	0.10	33.80	
	1ES	0.10						Dark brown and black slightly clayey gravelly fine to coarse SAND. Gravel is angular and subangular fine to coarse crystalline, clinker and brick. (MADE GROUND)	0.30	33.60	
	2ES	0.30									
	3ES	0.60									
	2D	1.00 - 1.50	1.00	S 2				Dark brown locally black slightly gravelly clayey (locally ashy) fine to coarse SAND with a high angular and subangular brick cobble content. Gravel is angular and subangular fine to coarse clinker, crystalline, sandstone and mudstone. (MADE GROUND) 0.70 - 0.80m: Brick.	1.00	32.90	
	3L	1.00 - 2.20									
	4ES	1.00									
	5ES	1.50 - 1.60							1.75	32.15	
	6ES	2.00 - 2.10						Soft brown slightly gravelly very sandy CLAY. Gravel is angular to subrounded fine to coarse clinker, sandstone, mudstone and brick. (MADE GROUND) 1.60 - 1.65m: Black (ashy). 1.65 - 1.75m: Subrounded brick cobble.	2.15	31.75	
	4D	2.20 - 2.65	2.20	S 18							
	5L	2.20 - 3.20									
	7ES	2.70 - 2.80						Brown and orangish brown locally mottled black slightly gravelly fine and medium locally coarse SAND. Gravel is subrounded and rounded fine and medium quartz. 2.10m: Band (20mm) of brown silty clay.			
	6D	3.20 - 3.65	3.20	S 22							
	7L	3.20 - 4.20						Medium dense brown gravelly locally very gravelly fine to coarse SAND. Gravel is subrounded and rounded fine to coarse sandstone, mudstone and quartz.	3.70	30.20	
15/04/16 1400hrs 3.00m								3.30m: Pocket (50mm) of red silty fine sand.	3.80	30.10	
	8D	4.20 - 4.65	4.20	S 12				Brown medium and coarse SAND. 3.75m: Band (5mm) of black fine sand.	4.10	29.80	
18/04/16 0730hrs Dry	9L	4.20 - 5.20							4.20	29.70	
								Dark brown and black gravelly medium and coarse SAND. Gravel is subrounded and rounded fine to coarse sandstone and quartz.			
								Soft reddish brown locally mottled yellowish brown slightly sandy CLAY.			
	UT	5.20 - 5.70	5.20					Firm becoming stiff brown slightly sandy slightly gravelly silty CLAY. Gravel is subangular and subrounded fine rarely medium and coarse sandstone.			
	10L	5.20 - 6.20									
	11Ls	5.90 - 6.20									
	12D	6.20 - 6.65	6.20	S 18							
	13L	6.20 - 7.20							6.80	27.10	
								Stiff brown indistinctly fissured slightly sandy slightly gravelly CLAY. Gravel is subrounded and rounded fine quartz, sandstone and mudstone.			
	14D	7.20 - 7.65	7.20	S 20							
	15L	7.20 - 8.20									
								7.80 - 7.90m: Very sandy. Continued Next Page	{8.00}		

EQUIPMENT: Geotechnical Pioneer rig.

METHOD: Inspection pit dug by others and backfilled 0.00-1.20m. Dynamic sampled (113mm) 0.00-11.70m. Waterflush rotary core drilled (116mm) 11.70-27.20m.

CASING: 140mm diam to 11.70m.

BACKFILL: On completion, borehole backfilled with bentonite pellets 27.20-15.00m. A slotted standpipe (19mm) was installed to 15.00m, granular response zone 15.00-9.00m, bentonite seal 9.00-3.50m. A second slotted standpipe (50mm) was installed to 3.50m, granular response zone 3.50-1.00m, bentonite seal 1.00-0.40m, concrete and stopcock cover 0.40-0.00m.

REMARKS: Borehole collapsed from 4.20m to 3.00m. Downhole magnetometry for UXO risk mitigation carried out 0.00-11.70m. No anomalies encountered.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks
				Groundwater not encountered prior to use of water flush.

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BOREHOLE LOG

CP/RC101B

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

Sheet 2 of 3

Start Date 15 April 2016 Easting 383764 Scale 1 : 50

End Date 19 April 2016 Northing 397193 Ground level 33.90mOD Depth 27.20 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	I_f	instru -ment	description	depth (m)	reduced level (m)	legend
	16Ls 17D 18L	7.90 - 8.20 8.20 - 8.65 8.20 - 9.20	8.20	S 28							
									8.60	25.30	
								Very dense dark red gravelly very clayey fine and medium SAND. Gravel is rounded fine and medium sandstone.			
	19D 20L	9.20 - 9.60 9.20 - 10.20	9.20	S*61				9.10 - 9.20m: Mottled brown.			
								9.50 - 9.60m: Mottled brown. Clayey.			
									9.80	24.10	
	21D 22L	10.20 - 10.55 10.20 - 11.20	10.20	S*75				Very dense brown locally orangish brown slightly gravelly clayey fine and medium SAND. Gravel is subrounded fine sandstone.			
18/04/16 1800hrs 3.20m								10.50 - 10.70m: Slightly clayey.			
	23D	11.20 - 11.45	11.20	S*150							
19/04/16 0730hrs 3.40m	24L	11.20 - 11.70							11.40	22.50	
								Very dense orangish brown fine and medium SAND.			
	25C	11.70 - 12.50			100 56 25	NI 170 260			11.90	22.00	
								Extremely weak to weak red fine and medium SANDSTONE with frequent subrounded fine to coarse gravel sized mudstone clasts. Fractures are subhorizontal to 10° closely and medium spaced planar rough.			
		12.50 - 12.64	11.70	C*500				12.10 - 12.20m: Recovered non intact as slightly gravelly fine and medium sand with rare subangular medium sandstone gravel.			
	26C	12.50 - 13.30			88 63 46			12.45 - 12.55m: Band of slightly gravelly clayey fine and medium sand. Gravel is subangular and subrounded fine to coarse mudstone.			
	27Cs	13.05 - 13.30									
	28C	13.30 - 14.80			70 37 17	NI 90 150		13.00 - 13.50m: Locally greyish yellow.	13.50	20.40	
								Very weak and weak red fine and medium SANDSTONE locally recovered non intact as subangular and subrounded sandstone cobbles. Fractures are subhorizontal closely spaced planar smooth and rough.			
		14.80 - 14.85	11.70	C*600					14.80	19.10	
	29C	14.80 - 16.30	11.70		93 83 63	40 190 300		Very weak to medium strong red medium and coarse SANDSTONE locally with frequent subrounded medium and coarse mudstone clasts. Fractures are subhorizontal to 20° closely and medium spaced undulating rough.			
								15.65m: Intersecting subhorizontal and 20° undulating smooth fractures.			
	30C	16.30 - 17.20	11.70		100 89 89						
								16.80 - 16.90m: Band of extremely weak brown mudstone recovered non intact as subangular coarse gravel.			
	31C	17.20 - 18.70	11.70		97 85 75			17.10 - 17.20m: Mottled black. 17.25 - 17.35m: Recovered non intact as red fine and medium sand.			
								Continued Next Page	{18.00}		

water strike (m) casing (m) rose to (m) time to rise (m) remarks

Groundwater not encountered prior to use of water flush.

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BOREHOLE LOG

CP/RC101B

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

Sheet 3 of 3

Start Date 15 April 2016 Easting 383764 Scale 1 : 50

End Date 19 April 2016 Northing 397193 Ground level 33.90mOD Depth 27.20 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	I_f	instru -ment	description	depth (m)	reduced level (m)	legend
								17.95 - 18.05m: Intersecting subhorizontal and 20° undulating smooth fractures. 18.20m: Band (15mm) of reddish brown clayey mudstone.			
	32C	18.70 - 20.20	11.70		97 95 71			19.10m: 50° planar rough fracture. 19.30 - 19.50m: Locally very weak.			
						80 210 330			20.00	13.90	
	33C	20.20 - 21.70	11.70		100 100 95			Very weak to medium strong red fine and medium SANDSTONE. Fractures are subhorizontal to 10° rarely 20° to 30° closely and medium spaced undulating smooth and rough. 21.20m: Fracture infilled (10mm) with red fine sand.			
	34C	21.70 - 23.20	11.70		100 100 76			21.75m: Fracture infilled (10mm) with red fine sand.			
	35C	23.20 - 24.70	11.70		100 90 85						
	36C	24.70 - 26.20	11.70		100 91 84			24.45 - 24.50m: Band of gravelly fine and medium SAND. Gravel is subangular and subrounded fine to coarse mudstone. 24.90 - 25.10m: Abundant subrounded and rounded fine to coarse gravel sized mudstone clasts.			
	37Cs	25.20 - 25.55									
	38C	26.20 - 27.20	11.70		100 100 70			25.90 - 26.10m: Very gravelly clayey fine and medium sand. Gravel is subangular and subrounded fine to coarse mudstone.			
19/04/16 1745hrs 3.30m								27.05 - 27.15m: Mottled black. Borehole completed at 27.20m.	27.20	6.70	
									{28.00}		

water strike (m) casing (m) rose to (m) time to rise (m) remarks

Groundwater not encountered prior to use of water flush.

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BOREHOLE LOG

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CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

Sheet 1 of 1

Start Date 18 April 2016 Easting 383808 Scale 1 : 50

End Date 18 April 2016 Northing 397142 Ground level 34.40mOD Depth 6.65 m

progress date/time water depth	sample no & type	depth (m) from	depth (m) to	casing depth (m)	test type & value	samp. /core range	instru -ment	description	depth (m)	reduced level (m)	legend
18/04/16 1020hrs	1B	0.00						Grass over greyish brown gravelly fine and medium SAND. Gravel is subangular to subrounded fine to coarse sandstone and brick. Frequent rootlets. (MADE GROUND)	0.15	34.25	
	1ES	0.00							0.45	33.95	
	2B	0.30						Stiff brownish orange slightly sandy slightly gravelly CLAY. Gravel is subrounded and rounded fine to coarse sandstone, quartz and rare brick. (MADE GROUND)			
	2ES	0.30									
	3B	0.60									
	3ES	0.60									
	4B	1.00									
	4ES	1.00		Nil	S 14			Dark orangish brown clayey very gravelly fine to coarse SAND with a low rounded sandstone cobble content. Gravel is subrounded and rounded fine to coarse sandstone and mudstone.			
	5D	1.20	1.65					0.45 - 1.00m: Rare rootlets.			
	6L	1.20	2.20					1.20 - 1.65m: Medium dense.	1.80	32.60	
								1.50 - 1.60m: Rare gravel.			
	7D	2.20	2.65	1.20	S 14			1.70 - 1.80m: Medium and coarse sand.			
	8L	2.20	3.20					Medium dense orangish brown locally slightly clayey fine and medium SAND.			
								2.10 - 2.20m: Gravelly. Gravel is subrounded and rounded fine and medium sandstone.			
								2.50 - 2.60m: Fine and medium sand.			
								2.60 - 2.70m: Silty.			
	UT	3.20	3.50	1.20					3.30	31.10	
	9L	3.20	4.20					Medium dense brown gravelly medium and coarse SAND. Gravel is subangular to rounded fine to coarse sandstone and mudstone.			
	10D	4.20	4.65	1.20	S 26			4.00 - 4.20m: Orangish brown.			
	11L	4.20	5.20						4.80	29.60	
								Yellowish brown very gravelly coarse SAND. Gravel is subrounded and rounded fine and medium sandstone.	4.95	29.45	
	12D	5.20	5.65	1.20	S 28						
	13L	5.20	6.20					Stiff brown slightly gravelly CLAY. Gravel is subrounded and rounded fine and medium sandstone and quartz.			
	14D	6.20	6.65	6.20	S 17			6.00 - 6.20m: Rare pockets (up to 5mm) of red fine sand.			
18/04/16 1645hrs 0.00m									6.65	27.75	
								Borehole completed at 6.65m.			
									{8.00}		

EQUIPMENT: Geotechnical Pioneer rig.

METHOD: Hand dug inspection pit 0.00-1.20m. Dynamic sampled (113mm) 1.50-6.20m.

CASING: 140mm diam to 6.20m.

BACKFILL: On completion, hole backfilled with bentonite pellets 6.65-0.10m and arisings 0.10-0.00m.

REMARKS: Downhole magnetometry for UXO risk mitigation carried out 0.00-6.65m. Borehole terminated at 6.65m due to the presence of a metallic object.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks
4.97	1.20	4.97	20	Struck between 4.20 and 5.20m.

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BOREHOLE LOG

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CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER — Sheet 1 of 3

Start Date 19 April 2016 — Easting 383813 — Scale 1 : 50

End Date 20 April 2016 — Northing 397133 — Ground level 34.65mOD — Depth 27.70 m

progress date/time water depth	sample no & type	depth (m) from	depth (m) to	casing depth (m)	test type & value	samp. /core range	I_f	instru -ment	description	depth (m)	reduced level (m)	legend
19/04/16 0800hrs	1B	0.00							MADE GROUND comprising dark grey strongly cemented CONCRETE.	0.15	34.50	
	1ES	0.00								0.30	34.35	
	2B	0.30							Brown slightly clayey locally clayey gravelly fine to coarse SAND. Gravel is subangular and subrounded fine to coarse crystalline, brick and sandstone. (MADE GROUND)	0.50	34.15	
	2ES	0.30								1.00	33.65	
	3B	0.60							Firm brownish orange slightly gravelly CLAY. Gravel is subrounded and rounded fine to coarse sandstone and rare brick. (MADE GROUND)			
	3ES	0.60										
	4B	1.00							Orangish red slightly gravelly fine and medium SAND with rare pockets (up to 10mm) of dark brown clay. Gravel is subrounded and rounded fine and medium sandstone.	2.10	32.55	
	4ES	1.00										
	5D	1.20	1.65	Nil	S 32				Dense orangish brown and brown clayey gravelly fine to coarse SAND with rare pockets (up to 10mm) of orange sand. Gravel is subrounded to well rounded fine to coarse crystalline and siltstone and rare sandstone. 1.90 - 2.10m: Absence of clay.	2.50	32.15	
	6L	1.20	2.20									
	5ES	1.80										
	6ES	2.10										
	7D	2.20	2.65	1.20	S 19				Medium dense orangish brown gravelly fine and medium SAND. Gravel is rounded and well rounded medium and coarse crystalline and siltstone.	3.25	31.40	
	8L	2.20	3.20									
	7ES	3.10							Dark brown slightly gravelly locally gravelly silty fine SAND with rare pockets (up to15mm) of orange sand. 3.00 - 3.05m: Orange medium sand.			
	9D	3.20	3.65	1.20	S 24							
	10L	3.20	4.20									
	11D	4.20	4.65	1.20	S 16				Medium dense brownish orange locally orange clayey very sandy subrounded to well rounded fine to coarse sandstone, siltstone, crystalline and rare quartz GRAVEL. 3.25 - 3.55m: Clayey. 3.90 - 4.80m: Locally grey, silty.	4.80	29.85	
	12L	4.20	5.20									
		5.20	5.65	1.20	S 16				Medium dense yellowish brown slightly gravelly medium and coarse SAND. Gravel is well rounded fine to coarse sandstone and siltstone. 5.15 - 5.20m: Dark orangish brown. 5.35 - 5.45m: Orangish brown.	5.45	29.20	
	13L	5.20	6.20									
									Stiff brown slightly sandy CLAY with rare subrounded to well rounded medium and coarse siltstone, sandstone and rare coal gravel.			
	UT	6.20	6.65	6.20								
	14L	6.20	7.20									
	15Ls	6.95	7.20									
	16D	7.20	7.65	6.20	S 24							
	17L	7.20	8.20									
									Continued Next Page	{8.00}		

EQUIPMENT: Geotechnical Pioneer rig.

METHOD: Hand dug inspection pit 0.00-1.20m. Dynamic sampled (113mm) 1.20-11.15m. Rotary cored (116mm) 11.15-27.70m using a polymer flush.

CASING: 140mm to 12.70m.

BACKFILL: On completion, a slotted standpipe (50mm) was installed to 5.50m, granular response zone 5.60-1.00m, bentonite seal 27.70-5.60m and 1.00-0.50m, concrete and stopcock cover 0.50-0.00m.

REMARKS: Downhole magnetometry for UXO risk mitigation carried out 0.00-11.15m. No anomalies encountered. Dynamic sampling carried out to recover dropped core 11.15-12.70m; recovered 0.30m.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks
5.02	1.20	5.02	20	Struck between 5.20 and 6.20m.

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BOREHOLE LOG

CP/RC102A

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER — Sheet 2 of 3

Start Date 19 April 2016 — Easting 383813 — Scale 1 : 50

End Date 20 April 2016 — Northing 397133 — Ground level 34.65mOD — Depth 27.70 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	I_f	instru -ment	description	depth (m)	reduced level (m)	legend
	18D 19L	8.20 - 8.61 8.20 - 9.20	8.20	S*58					8.20	26.45	
								Very stiff locally stiff brown slightly sandy slightly gravelly CLAY. Gravel is subangular to well rounded fine and medium rarely coarse black coal, siltstone and rare quartz.			
	20D 21L	9.20 - 9.65 9.20 - 10.20	8.20 9.20	S 31							
								9.70 - 10.20m: Absence of gravel.			
	22Ls 23D 24L	9.90 - 10.20 10.20 - 10.63 10.20 - 11.15	10.20	S*54							
	25D 26C	11.15 - 11.30 11.15 - 12.70	11.15	S*214	97			11.15 - 11.30m: Greenish blue subrounded crystalline cobble. 11.45 - 12.70m: Limited recovery.	11.65	23.00	
								Very dense locally weakly cemented reddish brown medium SAND.			
19/04/16 1745hrs 5.10m		12.70 - 12.87	12.70	S*167							
20/04/16 0735hrs 5.39m	27C	12.70 - 14.20			68 15 8						
						NI 40 130		13.50 - 13.65m: Brownish red and orange gravelly fine and medium sand. Gravel is subrounded medium and coarse mudstone.	13.65	21.00	
		14.20 - 14.34	12.70	C*188				Extremely weak dark reddish brown medium and rarely coarse SANDSTONE. Fractures are subhorizontal to 15° closely spaced planar and undulating rough infilled up to 20mm with reddish brown medium sand.			
	28C	14.20 - 15.70			100 47 23				14.70	19.95	
						30 150 260		Medium strong locally weak brownish red locally orangish brown medium SANDSTONE. Fractures are subhorizontal to 25° closely and locally medium spaced planar and undulating rough locally infilled (up to 5mm) with light grey silty clay. 15.05 - 15.45m: Extremely weak highly fractured brownish red medium sandstone with frequent inclusions of subrounded and rounded medium and coarse mudstone. Fractures are randomly orientated extremely closely space planar rough locally infilled up to 15mm with grey clay. 16.50 - 16.55m: Fracture is 30° undulating rough infilled with a veneer of orange sand locally stained black. 16.90 - 16.93m: Fracture is 30° undulating smooth infilled with a veneer of brownish red clay.			
	29C	15.70 - 17.20	12.70		100 93 75						
	30C	17.20 - 18.70	12.70		100 83 71			17.80 - 17.85m: Fracture is 30° undulating rough clean.			
								Continued Next Page	{18.00}		

water strike (m) casing (m) rose to (m) time to rise (m) remarks

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BOREHOLE LOG

CP/RC102A

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

Sheet 3 of 3

Start Date 19 April 2016 Easting 383813 Scale 1 : 50

End Date 20 April 2016 Northing 397133 Ground level 34.65mOD Depth 27.70 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	I_f	instru -ment	description	depth (m)	reduced level (m)	legend
								17.95 - 18.15m: Extremely weak brownish red medium and coarse sandstone locally infilled (up to 30mm) with frequent subrounded and rounded medium and coarse crystalline gravel with locally frequent coal specks (up to 2mm).			
	31C	18.70 - 20.20	12.70		100 87 67			18.41 - 18.43m: Fracture is subhorizontal infilled 20mm with subrounded sandstone gravel and a veneer of grey silty clay. 19.15 - 19.40m: Extremely weak brownish red medium sandstone with frequent rounded medium and coarse mudstone inclusions. Fracture are subhorizontal extremely closely spaced planar rough infilled with a veneer of orange sand.			
	32C	20.20 - 21.70	12.70		95 67 23			20.35 - 20.70m: Extremely weak highly fractured brownish red medium and coarse sandstone. Fractures are randomly orientated planar rough extremely closely spaced infilled up to 10mm with light grey silty clay. 20.95 - 21.05m: Extremely weak brownish red medium sandstone. Fractures are subhorizontal extremely closely spaced infilled up to 20mm with reddish brown medium sand.			
	33C	21.70 - 23.20	12.70		100 93 69			21.65 - 21.67m: Fracture is subhorizontal planar rough infilled 20mm with reddish brown sand.			
						50 220 450		Medium strong locally very weak and weak brownish red medium SANDSTONE. Fractures are subhorizontal medium spaced planar and undulating rough locally infilled with a veneer or brownish red sand.	22.50	12.15	
	34C	23.20 - 24.70	12.70		100 89 87			23.40 - 23.60m: Extremely weak.			
	35Cs	23.75 - 24.20						23.75 - 23.80m: Non intact.			
	36C	24.70 - 26.20	12.70		100 80 71			24.85 - 24.90m: Non intact. 25.35 - 25.40m: Extremely weak.			
	37C	26.20 - 27.70	12.70		97 82 69			26.00 - 26.07m: Extremely weak reddish brown mudstone.			
20/04/16 1415hrs 3.86m	38Cs	27.10 - 27.45						27.00 - 27.05m: Extremely weak with frequent inclusion of subrounded and rounded medium and coarse mudstone. 27.45 - 27.50m: Extremely weak.	27.70	6.95	
								Borehole completed at 27.70m.	{28.00}		

water strike (m) casing (m) rose to (m) time to rise (m) remarks

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BOREHOLE LOG

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CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

Sheet 1 of 4

Start Date 11 April 2016 Easting 383816 Scale 1 : 50

End Date 13 April 2016 Northing 397227 Ground level 33.65mOD Depth 28.70 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	I_f	instru -ment	description	depth (m)	reduced level (m)	legend
11/04/16 1140hrs	1ES	0.00 - 0.10						Dark brown slightly gravelly fine to coarse SAND. Gravel is subangular and subrounded fine to coarse sandstone, crystalline and brick. (MADE GROUND)	0.30	33.35	
	1B	0.00 - 0.10						0.00 - 0.10m: Frequent wood chippings (up to 15mm).	0.50	33.15	
	2ES	0.30 - 0.40						Brown gravelly fine to coarse SAND with rare angular coarse gravel sized glass fragments. Gravel is angular to subrounded fine to coarse sandstone, brick and rare slate. (MADE GROUND)	1.15	32.50	
	2B	0.30 - 0.40									
	3ES	0.60 - 0.70									
	3B	0.60 - 0.70									
	4ES	1.00 - 1.10									
	4B	1.00 - 1.10	Nil	S 11							
	5D	1.20 - 1.65									
	6L	1.20 - 2.20						Dark orangish brown slightly clayey very sandy subangular to rounded fine to coarse sandstone and mudstone GRAVEL.	1.45	32.20	
	5ES	1.70 - 1.80							1.65	32.00	
								Firm brown slightly sandy silty CLAY.	1.95	31.70	
	7D	2.20 - 2.65	1.20	S 20				Medium dense brown slightly clayey slightly gravelly fine and medium SAND. Gravel is subrounded and rounded fine and medium sandstone and mudstone.	2.40	31.25	
	8L	2.20 - 3.20									
								Firm brown locally slightly sandy CLAY with rare fine angular mudstone gravel.			
	9D	3.20 - 3.65	1.20	S 9				Medium dense yellowish brown locally clayey fine and medium SAND with rare pockets (up to 20mm) of dark brown fine sand.			
	10L	3.20 - 4.20						2.10 - 2.20m: Orangish brown.			
								Loose light brown slightly gravelly locally slightly clayey fine to coarse SAND. Gravel is subangular to rounded fine to coarse sandstone and mudstone.	3.80	29.85	
	11D	4.20 - 4.65	4.20	S 17				3.60 - 3.70m: Rare gravel.	4.10	29.55	
	12L	4.20 - 5.20						Dark brown gravelly coarse SAND. Gravel is subrounded and rounded fine to coarse sandstone, mudstone and rare quartz.			
	13Ls	4.80 - 5.20						Stiff brown slightly sandy slightly gravelly CLAY. Gravel is subangular and subrounded fine mudstone and sandstone.			
	14D	5.20 - 5.65	5.20	S 26				5.40 - 6.00m: Rare rounded medium and coarse sandstone gravel.			
	15L	5.20 - 6.20									
	16D	6.20 - 6.65	6.20	S 22				6.00 - 6.20m: Firm. (Possibly drilling disturbed).			
	17L	6.20 - 7.20									
11/04/16 1905hrs 4.61m	18Ls	6.80 - 7.20						6.82m: Very stiff.			
	19D	7.20 - 7.65	7.20	S 25							
12/04/16 0800hrs 4.93m	20L	7.20 - 8.20									
								7.55 - 7.70m: Brown fine and medium sand.	7.70	25.95	
								Continued Next Page	{8.00}		

EQUIPMENT: Geotechnical Pioneer rig.

METHOD: Hand dug inspection pit 0.00-1.20m. Dynamic sampled (113mm) 1.20-10.20m. Waterflush rotary core drilled (116mm) 10.20-28.70m.

CASING: 140mm diam to 12.70m.

BACKFILL: On completion, hole collapsed to 28.70-7.82m, backfilled with arisings 7.82-1.50m and bentonite pellets 1.50-0.00m.

REMARKS: Dynamic sampling carried out to recover dropped core. 11.80-12.70m recovered 0.90m, 14.80-15.70m recovered 0.65m, 19.10-20.20m recovered 0.80m, 24.70-25.70m recovered 0.45m and 26.30-27.20m recovered 0.90m. Downhole magnetometry for UXO risk mitigation carried out 0.00-12.95m. No anomalies encountered.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks
3.81	1.20	3.81	20	Struck between 3.20m and 4.20m.

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BOREHOLE LOG

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CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

Sheet 2 of 4

Start Date 11 April 2016 Easting 383816 Scale 1 : 50

End Date 13 April 2016 Northing 397227 Ground level 33.65mOD Depth 28.70 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	I_f	instru -ment	description	depth (m)	reduced level (m)	legend
	21D 22L	8.20 - 8.58 8.20 - 9.20	8.20	S*67				Very dense brown locally slightly clayey fine and medium SAND with rare subrounded and rounded fine and medium sandstone, mudstone and rare quartz.			
	23D 24L	9.20 - 9.58 9.20 - 10.20	9.20	S*67				9.20 - 9.58m: Slightly gravelly very clayey.			
	25D 26C	10.20 - 10.42 10.20 - 11.20	10.20	S*143	95	NA		10.20 - 10.30m: Rare subrounded coarse sandstone gravel.			
	27D 28C	11.20 - 11.38 11.20 - 12.70	10.20	S*188	100			10.95m: Pocket (30mm) of fine red sand. 11.00 - 11.20m: Slightly clayey. 11.05 - 11.10m: Rare subrounded coarse sandstone gravel.	11.10	22.55	
								Very dense red fine and medium SAND. 11.15 - 11.20m: Rare subrounded coarse quartz gravel. 11.50m: Pocket (40mm) of yellow fine sand. 12.00m: Red subangular sandstone cobble. 12.20 - 12.30m: Frequent red subangular sandstone cobbles.			
	29D 30C	12.70 - 12.80 12.70 - 14.20	12.70	S*333	83 55 28	NI 80 240		12.40 - 12.50m: Red subangular sandstone cobble.	12.95	20.70	
	31D 32C	14.20 - 14.28 14.20 - 15.70	12.70	S*500	70 0 0			Very weak and weak red locally orange fine and medium SANDSTONE. Fractures are subhorizontal to 40° very closely to medium spaced undulating smooth. 13.10 - 13.25m: Red fine and medium sand. 13.60 - 13.70m: Red fine and medium sand. 13.80 - 13.85m: Red fine and medium sand. 13.95m: 20° fracture infilled with fine sand. 14.20 - 14.65m: Drilling disturbed. Recovered non intact as fine and medium sand. 14.80 - 14.90m: Red fine and medium sand.			
	33C	15.70 - 15.80 15.70 - 17.20	12.70	S*250	97 93 65	90 200 350		15.40 - 15.60m: Recovered non intact with a low subangular sandstone cobble content.	15.70	17.95	
12/04/16 1755hrs 4.21m		17.20 - 17.25	12.70	C*750				Weak and medium strong locally very weak red locally brownish red fine and medium SANDSTONE. Fractures are 10° to 20° closely and medium spaced undulating smooth and rough. Fractures are frequently infilled with fine and medium sand. 16.05 - 16.15m: Extremely weak. 16.35 - 16.40m: Extremely weak. 16.40 - 16.70m: Rare subhorizontal to 10° very closely spaced planar smooth drilling induced fractures.			
13/04/16 0800hrs 5.92m	35C	17.20 - 18.70			93 92 89			17.65 - 17.75m: Extremely weak.			
								Continued Next Page	{18.00}		

water strike (m) casing (m) rose to (m) time to rise (m) remarks

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BOREHOLE LOG

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CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER — Sheet 3 of 4

Start Date 11 April 2016 — Easting 383816 — Scale 1 : 50

End Date 13 April 2016 — Northing 397227 — Ground level 33.65mOD — Depth 28.70 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	I_f	instru -ment	description	depth (m)	reduced level (m)	legend
	34Cs	18.20 - 18.55									
		18.70 - 18.74	12.70	C*750							
	36C	18.70 - 20.20			71 66 35	90 100 110					
						100 200 300		19.10 - 19.75m: Frequent subhorizontal to 10° very closely and closely spaced planar smooth drilling induced fractures.			
		20.20 - 20.28	12.70	C*500							
	37C	20.20 - 21.70			100 93 93	250 310 450		20.20 - 20.50m: Frequent subhorizontal to 10° very closely and closely spaced planar smooth drilling induced fractures.			
		21.70 - 21.76	12.70	C*429				21.45 - 21.50m: Yellowish brown.	21.70	11.95	
	38C	21.70 - 23.20			34 19 19	NR		21.65m: Pocket (15mm) of yellow coarse sand. Very dense red fine and medium SAND. 21.70 - 22.70m: No recovery.			
						NA			22.90	10.75	
		23.20 - 23.39	12.70	C*150		80 150 220		Weak locally very weak red fine and medium locally coarse SANDSTONE. Fractures are subhorizontal to 10° closely and medium spaced planar rough and undulating smooth. 23.20 - 23.30m: Recovered as red fine and medium sand.			
	39C	23.20 - 24.20			100 90 90						
		24.20 - 24.24	12.70	C*1000							
	40C	24.20 - 25.70			51 35 8			24.20 - 24.70m: Frequent subhorizontal very closely spaced planar smooth drilling induced fractures.			
						NI 50 90			24.90	8.75	
		25.70 - 25.78	12.70	C*333				Very weak locally weak red fine and medium SANDSTONE. Fractures are subhorizontal to 10° very closely spaced undulating rough. 24.90 - 25.70m: Fractures are randomly oriented extremely closely and very closely spaced undulating rough.			
	41C	25.70 - 27.20			90 40 40			26.00 - 26.30m: Frequent dark red and greenish grey rounded medium and coarse gravel sized mudstone and sandstone clasts.			
						NA			26.60	7.05	
		27.20 - 27.24	12.70	C*1000				Red fine and medium SAND. 26.60 - 26.80m: Low subrounded sandstone cobble content.			
	43C	27.20 - 28.70			93 90 71	40 120 300		27.20 - 27.30m: Clayey. 27.25m: Pocket (20mm) of light brown fine sand.	27.30	6.35	
	42Cs	27.50 - 27.80						Medium strong locally very weak, weak and strong red fine and medium SANDSTONE. Fractures are			
								Continued Next Page	{28.00}		

water strike (m) casing (m) rose to (m) time to rise (m) remarks

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BOREHOLE LOG

CP/RC103

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

Sheet 4 of 4

Start Date 11 April 2016 Easting 383816 Scale 1 : 50

End Date 13 April 2016 Northing 397227 Ground level 33.65mOD Depth 28.70 m

progress date/time water depth	sample no & type	depth (m) from	depth (m) to	casing depth (m)	test type & value	samp. /core range	I_f	instru -ment	description	depth (m)	reduced level (m)	legend
13/04/16 1530hrs 6.03m		28.70	28.73	12.70	C*750				subhorizontal to 10° very closely to medium spaced undulating smooth and rough. 28.00 - 28.20m: Rare dark red rounded medium and coarse gravel sized mudstone clasts. 28.40 - 28.70m: Rare black specks (up to 5mm).	28.70	4.95	
									Borehole completed at 28.70m.	{38.00}		

water strike (m) casing (m) rose to (m) time to rise (m) remarks

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BOREHOLE LOG

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CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

Sheet 1 of 1

Start Date 11 April 2016 Easting 383848 Scale 1 : 50

End Date 11 April 2016 Northing 397219 Ground level 34.25mOD Depth 0.70 m

progress date/time water depth	sample no & type	depth (m) from	depth (m) to	casing depth (m)	test type & value	samp. /core range		instru -ment	description	depth (m)	reduced level (m)	legend
11/04/16 1145hrs 11/04/16 1215hrs Dry									Dark brownish grey slightly sandy silty angular and subangular fine to coarse crystalline, sandstone and rare brick GRAVEL. (MADE GROUND)	0.20	34.05	
									Dark brownish grey slightly sandy angular to rounded fine to coarse crystalline, sandstone and brick GRAVEL. (MADE GROUND)	0.70	33.55	
									Borehole completed at 0.70m.	{8.00}		

EQUIPMENT: Geotechnical Pioneer rig.

METHOD: Hand dug inspection pit 0.00-0.70m.

BACKFILL: On completion, hole backfilled with local materials.

REMARKS: Pit terminated at 0.70m due to obstruction.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m) casing (m) rose to (m) time to rise (min) remarks

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BOREHOLE LOG

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CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER — Sheet 1 of 4

Start Date 11 April 2016 — Easting 383848 — Scale 1 : 50

End Date 14 April 2016 — Northing 397216 — Ground level 34.35mOD — Depth 29.70 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	I_f	instru -ment	description	depth (m)	reduced level (m)	legend
11/04/16 0900hrs	1ES	0.00						Grey and dark brown slightly clayey gravelly fine to coarse SAND with a medium angular and subangular brick, concrete and crystalline cobble content and rare wood fragments (up to 100x150mm). Gravel is angular to subrounded fine to coarse brick, mortar, concrete and crystalline. (MADE GROUND)	0.10	34.25	
	1B	0.30 - 0.50									
	2ES	0.30							0.60	33.75	
	2B	0.60 - 0.80									
	3ES	0.60									
	3B	1.00 - 1.20									
	4ES	1.00									
	4D	1.20 - 1.65	1.20	S 18				Black sandy angular and subangular fine to coarse brick, concrete and crystalline GRAVEL. (MADE GROUND)			
	5L	1.20 - 2.20									
								Dark greyish brown very sandy angular and subangular fine to coarse concrete and crystalline GRAVEL. (MADE GROUND)	1.60	32.75	
	5ES	1.70 - 1.80									
								1.20 - 1.60m: Medium dense, mottled orangish brown.	1.95	32.40	
									2.10	32.25	
	6D	2.20 - 2.65	2.20	S 9				Brownish orange slightly gravelly fine to coarse SAND. Gravel is subangular and subrounded fine to coarse crystalline, mudstone and sandstone. (MADE GROUND)	2.20	32.15	
	7L	2.20 - 3.20							2.60	31.75	
								Firm indistinctly fissured brown sandy CLAY with rare black decomposed organic matter (up to 3mm).			
	6ES	2.70 - 2.80							2.90	31.45	
								Brown mottled black fine to coarse SAND.			
	8D	3.20 - 3.65	3.20	S 19							
	9L	3.20 - 4.20						Firm fissured brown locally slightly sandy silty CLAY.			
								Brown mottled black fine to coarse SAND with frequent black decomposed organic matter (up to 5mm).			
								Medium dense brown clayey very gravelly fine to coarse SAND. Gravel is subrounded and rounded fine to coarse mudstone and sandstone. 3.50 - 4.20m: Orangish brown.			
	10D	4.20 - 4.65	4.20	S 17							
	11L	4.20 - 5.20						4.20 - 4.50m: clayey very sandy gravel with a low rounded sandstone cobble content.	4.50	29.85	
									4.70	29.65	
11/04/16 1730hrs 0.80m								Stiff indistinctly fissured brown slightly gravelly silty CLAY. Gravel is subrounded and rounded fine and medium sandstone and mudstone.	4.85	29.50	
		5.20 - 5.65	5.20	S 23							
12/04/16 0730hrs 1.80m	12L	5.20 - 6.20	5.20					Brownish orange slightly clayey fine to coarse SAND.			
								Stiff and very stiff brown slightly gravelly silty CLAY. Gravel is subrounded and rounded fine to coarse sandstone and mudstone.			
	13Ls	5.70 - 6.00									
									6.10	28.25	
	14D	6.20 - 6.65	6.20	S 18				Stiff indistinctly fissured brown slightly sandy slightly gravelly silty CLAY. Gravel is subrounded and rounded fine to coarse sandstone, mudstone and rare quartz. 6.10 - 7.20m: Rare black decomposed organic matter (up to 5mm).			
	15L	6.20 - 7.20									
	16D	7.20 - 7.65	7.20	S 24							
	17L	7.20 - 8.20									
								Continued Next Page	{8.00}		

EQUIPMENT: Geotechnical Pioneer rig.

METHOD: Hand dug inspection pit 0.00-1.20m. Dynamic sampled (113mm) 1.20-12.60m. Waterflush rotary core drilled (116mm) 12.60-29.70m.

CASING: 140mm diam to 12.60m.

BACKFILL: On completion, borehole backfilled with bentonite pellets 29.70-6.00m. A slotted standpipe (50mm) was installed to 6.00m, granular response zone 6.00-1.90m, bentonite seal 1.90-0.30m, gravel 0.30-0.20m, concrete and stopcock cover 0.30-0.00m.

REMARKS: Downhole magnetometry for UXO risk mitigation carried out 0.00-15.00m. No anomalies encountered.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks
				Groundwater not encountered prior to use of water flush.

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BOREHOLE LOG

CP/RC104A

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

Sheet 2 of 4

Start Date 11 April 2016 Easting 383848 Scale 1 : 50

End Date 14 April 2016 Northing 397216 Ground level 34.35mOD Depth 29.70 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	I_f	instru -ment	description	depth (m)	reduced level (m)	legend
	18D 19L	8.20 - 8.65 8.20 - 9.20	8.20	S 20					8.25	26.10	
								Stiff fissured brown silty CLAY with rare subrounded and rounded fine and medium sandstone and mudstone gravel.	8.75	25.60	
	20D 21L	9.20 - 9.65 9.20 - 10.20	9.20	S 30				Brown and reddish brown clayey locally very clayey fine and medium locally coarse SAND with rare subrounded and rounded fine to coarse mudstone and sandstone gravel. 9.20 - 9.60m: Medium dense to dense, mottled greyish brown.	9.60	24.75	
	22Ls	9.80 - 10.00						Reddish brown slightly clayey locally clayey fine and medium SAND with rare subrounded and rounded fine to coarse sandstone, mudstone and quartz gravel. 10.10m: Subrounded sandstone cobble. 10.20 - 10.65m: Dense to very dense locally tending to very stiff very sandy clay.			
	23D 24L	10.20 - 10.65 10.20 - 11.20	10.20	S 50							
	25Ls	10.85 - 11.15									
	26D 27L	11.20 - 11.53 11.20 - 12.20	11.20	S*86					11.30	23.05	
								11.25m: Subhorizontal band (5mm thick) of orangish brown coarse sand.			
12/04/16 1830hrs 3.30m								Very dense brown locally reddish brown slightly clayey slightly gravelly fine and medium SAND. Gravel is subrounded and rounded fine to coarse sandstone and mudstone. 11.40m: Subrounded mudstone cobble.	11.80	22.55	
	28D 29L	12.20 - 12.49 12.20 - 12.60	12.20	S*88					12.40	21.95	
13/04/16 0730hrs 5.30m								Brown gravelly fine and medium locally coarse SAND with a low subrounded and rounded mudstone cobble content. Gravel is subrounded and rounded fine to coarse mudstone, sandstone and quartz. 12.20m: Very dense.	12.90	21.45	
	30C	12.60 - 13.40	12.60		94	NA					
	31D 32C	13.40 - 13.60 13.40 - 14.70	12.60	S*158	100 61 38			Brown locally mottled red, yellow and yellowish green slightly gravelly clayey locally very clayey fine and medium SAND locally tending to firm very sandy clay. Gravel is subrounded and rounded fine to coarse sandstone and mudstone.	14.00	20.35	
						NI 80 170		Very dense(?) orangish brown and reddish brown slightly clayey locally clayey fine and medium SAND with rare extremely weak and very weak subrounded cobble sized sandstone lithorelicts. 13.90m: Subhorizontal band (2mm thick) of greyish brown clay.			
		14.70 - 14.75	12.60	C**					15.10	19.25	
	33C	14.70 - 16.20			97 93 74						
						50 150 200		Medium strong to strong reddish brown fine and medium SANDSTONE. Fractures are subhorizontal to 20° extremely closely to closely spaced planar smooth. 14.10 - 14.15m: Stiff greyish brown very sandy clay with rare reddish brown subrounded fine and medium gravel sized mudstone lithorelicts. 14.35m: Fracture with a greyish brown clay veneer. 14.75m: 20° band (5mm thick) of black clayey fine and medium sand. 14.95 - 15.00m: Very weak siltstone recovered non intact.			
		16.20 - 16.25	12.60	C*750		NI					
	34C	16.20 - 17.70			93 89 76	110 220 380					
	35Cs	17.00 - 17.25						Weak and medium strong thinly laminated reddish brown fine and medium SANDSTONE. Fractures are subhorizontal to 20° very closely to medium spaced planar smooth. 16.10 - 16.15m: Greyish yellow and yellow. 16.15 - 16.35m: Drilling disturbed. Recovered as greyish brown and reddish brown clayey fine and medium sand. 17.70 - 17.80m: Drilling disturbed. Recovered non intact.			
		17.70 - 17.74	12.60	C**							
	36C	17.70 - 19.20			95 81	NI 200					
								Continued Next Page	{18.00}		

water strike (m) casing (m) rose to (m) time to rise (m) remarks

Groundwater not encountered prior to use of water flush.

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BOREHOLE LOG

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CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER — Sheet 3 of 4

Start Date 11 April 2016 — Easting 383848 — Scale 1 : 50

End Date 14 April 2016 — Northing 397216 — Ground level 34.35mOD — Depth 29.70 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	I_f	instru -ment	description	depth (m)	reduced level (m)	legend
					77	220		17.90 - 18.10m: Orangish brown.	18.20	16.15	
						NI		18.10 - 18.20m: Greyish yellow.	18.40	15.95	
						70 130 330		Weak reddish brown SILTSTONE recovered non intact.			
								Weak and medium strong orangish brown fine and medium SANDSTONE. Fractures are subhorizontal to 20° closely and medium spaced planar smooth.			
		19.20 - 19.24	12.60	C*750				18.40 - 18.45m: Rare inclusions of grey and yellowish grey rounded fine and medium sandstone gravel.			
	37C	19.20 - 20.70			97 92 81	NI 80 200 400		19.20 - 19.30m: Drilling disturbed. Recovered non intact.			
	38Cs	19.40 - 19.70									
		20.70 - 20.74	12.60	C**							
	39C	20.70 - 22.20			100 87 55	NI 70 160 390		20.70 - 20.80m: Drilling disturbed. Recovered non intact.			
						NI 40 70			21.45	12.90	
						50 120 280		Weak orangish brown fine and medium SANDSTONE with 10-20° very closely and closely spaced thick laminae and very thin beds of extremely weak reddish brown siltstone. Fractures are 10-20° locally non intact very closely and closely spaced planar smooth.	21.70	12.65	
		22.20 - 22.26	12.60	C*750							
	40C	22.20 - 23.70			100 97 79			Very weak and weak orangish brown fine and medium SANDSTONE. Fractures are subhorizontal to 20° very closely to medium spaced planar smooth locally stained grey.			
						480					
		23.70 - 23.73	12.60	C**		NI 140 280					
	41C	23.70 - 25.20			10 93 80			23.70 - 23.80m: Drilling disturbed. Recovered non intact.			
								24.00 - 24.05m: Stiff reddish brown sandy clay with frequent subrounded fine and medium gravel sized siltstone lithorelicts.			
								24.15 - 24.20m: Greyish yellow.			
								24.75 - 24.90m: Reddish brown.			
		25.20 - 25.24	12.60	C**							
	42C	25.20 - 26.70			98 96 79						
						450		25.65m: Band (20mm thick) of extremely weak reddish brown siltstone recovered non intact.			
						90 180 230					
	43C	26.70 - 28.20			100 97 97	NI 110 260 430		26.70 - 26.80m: Drilling disturbed. Recovered as fine and medium sand.	26.80	7.55	
	44Cs	27.20 - 27.50						Weak thinly and thickly laminated orangish brown locally greyish brown and reddish brown fine and medium SANDSTONE. Fractures are 10-20° closely and medium spaced planar smooth.			
13/04/16 1800hrs 3.70m								27.50 - 27.55m: Extremely weak.			
								Continued Next Page	{28.00}		

water strike (m) casing (m) rose to (m) time to rise (m) remarks

Groundwater not encountered prior to use of water flush.

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BOREHOLE LOG

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CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

Sheet 4 of 4

Start Date 11 April 2016 Easting 383848 Scale 1 : 50

End Date 14 April 2016 Northing 397216 Ground level 34.35mOD Depth 29.70 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	I_f	instru -ment	description	depth (m)	reduced level (m)	legend
14/04/16 0730hrs 7.70m	45C	28.20 - 29.70			100 100 90	40 120 250		Weak orangish brown fine and medium SANDSTONE with rare inclusions of reddish brown subrounded and rounded fine to coarse mudstone gravel. Fractures are subhorizontal to 20° very closely to medium spaced planar smooth.	28.45	5.90	
14/04/16 1000hrs 7.70m								29.65 - 29.70m: Thickly laminated. Borehole completed at 29.70m.	29.70	4.65	
									{38.00}		

water strike (m) casing (m) rose to (m) time to rise (m) remarks

Groundwater not encountered prior to use of water flush.

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BOREHOLE LOG

CP/RC105

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

Sheet 1 of 4

Start Date 14 April 2016 Easting 383848 Scale 1 : 50

End Date 15 April 2016 Northing 397169 Ground level 34.75mOD Depth 29.00 m

progress date/time water depth	sample no & type	depth (m) from	depth (m) to	casing depth (m)	test type & value	samp. /core range	I_f	instru -ment	description	depth (m)	reduced level (m)	legend
14/04/16 0800hrs									MADE GROUND comprising black TARMACADAM.	0.05	34.70	
	1B	0.30							MADE GROUND comprising light grey and red CONCRETE.	0.15	34.60	
	1ES	0.30								0.65	34.10	
	2B	0.65							Firm brown locally mottled dark brown slightly sandy slightly gravelly CLAY. Gravel is angular to subrounded fine to coarse sandstone and crystalline. (MADE GROUND)	0.90	33.85	
	2ES	0.65										
	3B	1.00										
	3ES	1.00										
	4D	1.20	1.65	Nil	S 19							
	5L	1.20	2.20						Orange slightly gravelly fine and medium SAND. Gravel is subrounded and rounded fine to coarse sandstone.	1.65	33.10	
	4ES	1.60	1.70						Medium dense orangish brown clayey very sandy subangular to round fine to coarse sandstone and rare quartz GRAVEL with rare pockets (up to 20mm) of yellow coarse sand and greyish brown silty clay.			
	6D	2.20	2.65	1.20	S 7							
	7L	2.20	3.20						Brown gravelly fine and medium SAND with rare pockets (up to 15mm) of yellow coarse sand. Gravel is angular to rounded fine to coarse sandstone. 2.20 - 2.65m: Loose. 2.50 - 2.75m: Clayey.	2.75	32.00	
	8D	3.20	3.65	1.20	S 22					3.10	31.65	
	9L	3.20	4.20						Soft brown silty CLAY with rare pockets (up to 10mm) of black coarse sand. 3.05 - 3.10m: Sandy.	3.50	31.25	
									Medium dense orange and light orangish brown fine and medium SAND with rare pockets (up to 5mm) of black fine sand.	3.90	30.85	
	10D	4.20	4.65	1.20	S 23							
	11L	4.20	5.20						Medium dense brown slightly clayey slightly gravelly fine and medium SAND. Gravel is subangular to rounded fine to coarse sandstone and quartz.			
									Medium dense greyish brown clayey very sandy subangular to rounded fine to coarse sandstone, mudstone and quartz GRAVEL. 3.90 - 3.95m: Band of medium and coarse orange sand. 4.60 - 4.80m: Slightly gravelly. 4.80m: Band (4mm) of black subangular fine mudstone gravel.	5.15	29.60	
	12D	5.20	5.65	1.20	S 15							
	13L	5.20	6.20									
	14Ls	5.75	6.15									
									Stiff locally very stiff brown slightly gravelly CLAY. Gravel is subrounded and rounded fine rarely medium and coarse sandstone and mudstone. 5.20 - 5.65m: Locally mottled orange. 6.50 - 7.20m: Locally slightly sandy.			
	15D	6.20	6.65	6.20	S 24							
	16L	6.20	7.20									
	17D	7.20	7.65	7.20	S 37							
	18L	7.20	8.20						7.40m: Pocket (5mm) of orange coarse sand.			
	19Ls	7.80	8.20									
									Continued Next Page	{8.00}		

EQUIPMENT: Geotechnical Pioneer rig.

METHOD: Hand dug inspection pit 0.00-1.20m. Dynamic sampled (113mm) 1.20-10.05m. Waterflush rotary core drilled (116mm) 10.05-29.00m.

CASING: 140mm diam to 12.70m.

BACKFILL: On completion, borehole backfilled with arisings 29.00-6.55m, bentonite pellets 6.55m-0.40m and concrete 0.40-0.00m.

REMARKS: Dynamic sampling carried out to recover dropped core. 12.00-12.70m recovered 0.65m. Downhole magnetometry for UXO risk mitigation carried out 0.00-13.90m. No anomalies encountered.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks
4.96	1.20	4.96	20	

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BOREHOLE LOG

CP/RC105

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

Sheet 2 of 4

Start Date 14 April 2016 Easting 383848 Scale 1 : 50

End Date 15 April 2016 Northing 397169 Ground level 34.75mOD Depth 29.00 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	I_f	instru -ment	description	depth (m)	reduced level (m)	legend
	20D 21L	8.20 - 8.65 8.20 - 9.20	8.20	S 33							
									8.50	26.25	
								Stiff indistinctly fissured brown CLAY with rare subrounded fine and medium sandstone and quartz gravel.			
	22D 23L	9.20 - 9.65 9.20 - 10.05	9.20	S 37				9.20 - 9.35m: Slightly sandy silty.			
								9.55 - 9.60m: Very sandy.			
								9.80 - 9.90m: Light brown.			
	24D 25C	10.05 - 10.34 10.05 - 11.20	10.05	S*71	78	NA		9.95m: Band (5mm) of dark red clay.	10.20	24.55	
								Stiff and very stiff brown slightly gravelly sandy silty CLAY. Gravel is subrounded fine sandstone and rare mudstone. 10.30 - 10.35m: Red fine sand.			
	26D 27C	11.20 - 11.51 11.20 - 12.70	10.05	S*94	80						
									11.70	23.05	
								Very dense red clayey very gravelly fine and medium SAND. Gravel is subrounded fine and medium sandstone.			
14/04/16 1800hrs 3.87m		12.70 - 12.79	12.70	C*500				12.40 - 12.60m: Coarse sand.			
15/04/16 0735hrs 5.72m	28C	12.70 - 14.20			67						
								13.70 - 13.90m: Locally brownish red.	13.90	20.85	
						NI 40 120		Extremely weak red fine and medium SANDSTONE. Fractures are randomly orientated extremely closely to closely spaced undulating rough. 13.90 - 14.00m: Greyish brown clay veneer on fractures. 14.15 - 14.35m: Recovered as red fine and medium sand. 14.40m: Pocket (50mm) of light brown medium and coarse sand. 14.45 - 14.55m: Recovered as red and brown fine and medium sand.			
	29C	14.20 - 15.70			97 12 8						
								15.50m: Fracture infilled with red clay (5mm).	15.70	19.05	
	30C	15.70 - 17.20			97 71 65	NI 120 180		Very weak red medium and coarse SANDSTONE. Fractures are subhorizontal to 10° very closely and closely spaced undulating rough. Fractures frequently infilled (up to 10mm) with light brown and red fine and medium sand. 15.70 - 15.95m: Subvertical undulating smooth fracture with a greyish brown clay veneer. 16.60 - 16.70m: Frequent subrounded medium and coarse gravel sized mudstone clasts.	16.80	17.95	
						40 130 290		16.70 - 16.80m: Recovered non intact as gravelly fine and medium sand. Gravel is subangular medium and coarse sandstone.			
	31C	17.20 - 18.70			100 73 61						
								Weak locally extremely and very weak red fine and medium SANDSTONE. Fractures are subhorizontal to 10° very closely and closely rarely medium spaced undulating			
								Continued Next Page	{18.00}		

water strike (m) casing (m) rose to (m) time to rise (m) remarks

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BOREHOLE LOG

CP/RC105

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

Sheet 3 of 4

Start Date 14 April 2016 Easting 383848 Scale 1 : 50

End Date 15 April 2016 Northing 397169 Ground level 34.75mOD Depth 29.00 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	I_f	instru -ment	description	depth (m)	reduced level (m)	legend
	32Cs	18.10 - 18.40				50 100 200		smooth and rough. Fractures frequently infilled (up to 10mm) with clayey fine and medium sand. 17.00 - 17.15m: 70° undulating smooth fracture. 17.75 - 17.80m: Recovered non intact as fine and medium sand.	18.40 18.70	16.35 16.05	
	33C	18.70 - 20.20			97 93 86	40 140 270		Weak to medium strong red slightly sandy MUDSTONE. Fractures are 10° to 20° closely and medium spaced undulating rough. 18.55m: Band (5mm) of dark grey and yellow fine sand.			
	34C	20.20 - 21.70			90 86 74			Weak to medium strong locally very weak red fine and medium SANDSTONE. Fractures are 10° to 20° rarely 30° to 50° very closely to medium spaced undulating rough. 18.75 - 18.85m: 70° undulating smooth fracture. 19.30 - 19.50m: Fractures infilled (up to 10mm) with red fine and medium sand. 20.70 - 20.75m: Recovered non intact as gravelly fine and medium sand. Gravel is subangular and subrounded fine and medium sandstone.			
	35C	21.70 - 23.20			97 89 70			22.45m: Brown subangular medium gravel sized mudstone clast. 22.55m: Pocket (10mm) of greenish grey silt.			
	36C	23.20 - 24.70			20 20 20	NI 110 330		22.80 - 22.90m: Rare red subrounded medium and coarse gravel sized mudstone clasts. 22.95 - 23.00m: Recovered as sandy angular and subangular fine to coarse sandstone gravel.	23.00 23.20	11.75 11.55	
	37C	23.60 - 25.10			90 77 48			Very weak dark brownish red medium and coarse SANDSTONE. Fractures are randomly orientated extremely closely to closely spaced undulating smooth and rough. Weak to medium strong red fine and medium SANDSTONE. Fractures are subhorizontal to 10° closely and medium spaced undulating smooth and rough. 24.30 - 24.45m: Recovered non intact as subangular and subrounded medium and coarse sandstone gravel and cobbles.			
	38C	25.10 - 26.60			60 57 54			25.30 - 25.40m: 80° planar rough fracture.			
	39Cs	25.70 - 26.00									
	40C	26.00 - 27.50			80 74 59			27.00 - 27.50m: Medium and coarse grained.			
	41C	27.50 - 29.00			97 72 57						
								Continued Next Page	{28.00}		

water strike (m) casing (m) rose to (m) time to rise (m) remarks

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BOREHOLE LOG

CP/RC105

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

Sheet 4 of 4

Start Date 14 April 2016 Easting 383848 Scale 1 : 50

End Date 15 April 2016 Northing 397169 Ground level 34.75mOD Depth 29.00 m

progress date/time water depth	sample no & type	depth (m) from	depth (m) to	casing depth (m)	test type & value	samp. /core range	I_f	instru -ment	description	depth (m)	reduced level (m)	legend
									27.90 - 27.95m: Very weak.			
									28.40 - 28.45m: Locally greyish yellow.			
15/04/16 1310hrs 3.20m									28.60 - 29.00m: Very weak. Locally recovered non intact as sandy subangular and subrounded medium and coarse gravel.	29.00	5.75	
									Borehole completed at 29.00m.			
										{38.00}		

water strike (m) casing (m) rose to (m) time to rise (m) remarks

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BOREHOLE LOG

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CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

Sheet 1 of 1

Start Date 12 April 2016 Easting 383792 Scale 1 : 50

End Date 12 April 2016 Northing 397185 Ground level 34.15mOD Depth 0.45 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range		instru -ment	description	depth (m)	reduced level (m)	legend
12/04/16 1140hrs	1C 2B 1ES	0.00 - 0.20 0.30 0.30			100			MADE GROUND comprising light grey and red strongly cemented CONCRETE composed of 40-50% angular to subrounded fine to coarse gravel sized aggregate of brick and rare limestone and lignite with up to 1% voids (up to 2mm). 0.00 - 0.02m: Absence of aggregate. 0.15 - 0.20m: Locally weakly cemented.	0.20	33.95	
12/04/16 1220hrs Dry								Dark brown sandy very silty angular and subangular medium and coarse brick, concrete and slag GRAVEL with rare white ceramic fragments (up to 50mm). (MADE GROUND) 0.40 - 0.45m: Brown ceramic drainage pipe (100mm). Borehole completed at 0.45m.	0.45 {8.00}	33.70	

EQUIPMENT: Geotechnical Pioneer rig.

METHOD: Rotary core drilled (300mm) 0.00-0.20m with a water flush. Hand dug inspection pit 0.20-0.45m.

CASING: None used.

BACKFILL: On completion, hole backfilled with local materials.

REMARKS: Inspection pit terminated at 0.45m due to presence of ceramic drainage pipe.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m) casing (m) rose to (m) time to rise (min) remarks

Groundwater not encountered.

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BOREHOLE LOG

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CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER — Sheet 1 of 1

Start Date 12 April 2016 — Easting 383791 — Scale 1 : 50

End Date 12 April 2016 — Northing 397185 — Ground level 34.15mOD — Depth 1.30 m

progress date/time water depth	sample no & type	depth (m) from	depth (m) to	casing depth (m)	test type & value	samp. /core range		instru -ment	description	depth (m)	reduced level (m)	legend
12/04/16 1240hrs	1C	0.00	0.12			100			MADE GROUND comprising light greyish brown and red strongly cemented CONCRETE with 40-50% angular to subrounded fine to coarse gravel sized aggregate brick and limestone up to 1% voids (up to 2mm).	0.12	34.03	
	2B	0.30								0.50	33.65	
	1ES	0.30							Dark brown and brown very silty very sandy angular to rounded fine to coarse brick, concrete, slag and sandstone GRAVEL with rare pockets (up to 65mm) of soft orange brown clay. (MADE GROUND)			
	3B	0.60										
	2ES	0.60										
12/04/16 1310hrs Dry	4B	1.00								1.10	33.05	
	3ES	1.00								1.30	32.85	
									Brown silty very gravelly fine to coarse SAND. Gravel is subangular to rounded fine to coarse sandstone, siltstone and rare slag. (MADE GROUND)			
									MADE GROUND comprising red BRICKWORK.			
									Borehole completed at 1.30m.	{8.00}		

EQUIPMENT: Geotechnical Pioneer rig.

METHOD: Rotary core drilled (300mm) 0.00-0.12m with a water flush. Hand dug inspection pit 0.12-1.30m.

CASING: None used.

BACKFILL: On completion, hole backfilled with local materials.

REMARKS: Inspection pit terminated at 1.30m due to presence of brick culvert.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks
				Groundwater not encountered prior to use of water flush.

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BOREHOLE LOG

CP/RC106B

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER — Sheet 1 of 4

Start Date 25 April 2016 — Easting 383784 — Scale 1 : 50

End Date 27 April 2016 — Northing 397186 — Ground level 34.05mOD — Depth 29.00 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	I_f	instru -ment	description	depth (m)	reduced level (m)	legend
25/04/16 1015hrs	C	0.00 - 0.10			100			MADE GROUND comprising black TARMACADAM.	0.05	34.00	
	1ES	0.10						MADE GROUND comprising light grey and red CONCRETE recovered non intact as sandy angular and subangular medium and coarse gravel with a high subangular concrete cobble content.	0.20	33.85	
	1B	0.30									
	2ES	0.30									
	2B	0.60									
	3ES	0.60									
	3B	1.00						Orangish brown gravelly fine to coarse SAND. Gravel is subrounded and rounded fine to coarse sandstone and quartz.			
	4ES	1.00	Nil	S 21				0.20 - 0.40m: Rare subangular fine and medium brick gravel.			
	4D	1.20 - 1.65						1.20 - 1.65m: Medium dense.	1.85	32.20	
	5L	1.20 - 2.20						1.80 - 1.85m: No gravel.			
	5ES	1.50									
	6D	2.20 - 2.65	1.20	S 16				Medium dense light brown and brown gravelly fine and medium SAND. Gravel is subrounded and rounded fine to coarse sandstone and rare quartz.			
	7L	2.20 - 3.20						1.95 - 2.05m: Clayey.			
								2.05 - 2.10m: Locally mottled black.			
								2.10 - 2.20m: Brown silty clay.			
								2.20 - 2.30m: Clayey.			
	8D	3.20 - 3.65	1.20	S 19				2.50 - 2.60m: Rare subangular medium and coarse coal gravel.			
	9L	3.20 - 4.20						3.45 - 3.55m: Silty.			
								3.95 - 4.20m: Locally black.			
	10D	4.20 - 4.65	1.20	S 26							
	11L	4.20 - 5.20									
									4.70	29.35	
								Firm brown locally yellowish brown CLAY.	4.90	29.15	
	12D	5.20 - 5.65	5.20	S 30				Very stiff locally stiff greyish brown slightly gravelly CLAY. Gravel is subrounded and rounded fine and medium sandstone and mudstone.			
	13L	5.20 - 6.20									
25/04/16 1620hrs 2.51m	14Ls	5.70 - 6.15									
	15D	6.20 - 6.65	5.20	S 28							
26/04/16 0800hrs 2.28m	16L	6.20 - 7.20									
	17D	7.20 - 7.63	7.20	S 41							
	18L	7.20 - 8.20						7.40 - 7.50m: Rare subangular coarse sandstone gravel.			
	19Ls	7.70 - 8.10									
								Continued Next Page	{8.00}		

EQUIPMENT: Geotechnical Pioneer rig.

METHOD: Waterflush rotary core drilled (300mm) 0.00-0.10m. Hand dug inspection pit 0.10-1.20m. Dynamic sampled (113mm) 1.20-11.05m. Polymer flush rotary core drilled (116mm) 11.05-29.00m.

CASING: 140mm diam to 12.50m.

BACKFILL: On completion, hole backfilled with gravel.

REMARKS: Dynamic sampling carried out to recover dropped core. 11.50-12.50m recovered 0.50m. Downhole magnetometry for UXO risk mitigation carried out 0.00-11.05m. No anomalies encountered.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks
				Groundwater not encountered prior to use of water flush.

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BOREHOLE LOG

CP/RC106B

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER — Sheet 2 of 4

Start Date 25 April 2016 — Easting 383784 — Scale 1 : 50

End Date 27 April 2016 — Northing 397186 — Ground level 34.05mOD — Depth 29.00 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	I_f	instru -ment	description	depth (m)	reduced level (m)	legend
	UT 20L	8.20 - 8.35 8.20 - 9.20	7.20								
								Stiff indistinctly fissured brown silty CLAY with rare subrounded fine sandstone gravel. 8.70m: Subrounded sandstone cobble.	8.70 9.20	25.35 24.85	
	21D 22L	9.20 - 9.64 9.20 - 10.20	8.20	S*53				Very stiff brown very sandy CLAY.			
	23D 24L	10.20 - 10.56 10.20 - 11.05	10.20	S*71							
	25D 26C	11.05 - 11.37 11.05 - 12.50	11.05	S*91	63	NA		11.05 - 11.50m: Slightly gravelly. Gravel is subangular and subrounded medium and coarse sandstone.	11.50	22.55	
								Very dense red fine and medium SAND.			
26/04/16 1745hrs 0.69m	27D	12.50 - 12.78	12.50	S*103							
27/04/16 0800hrs 3.61m	28C	12.50 - 13.50			0	NR		12.50m: Light grey subrounded sandstone cobble. 12.50 - 13.50m: No recovery.			
	29C	13.50 - 13.71 13.50 - 15.00	12.50	C*125	80 50 21	NA					
						30 110 220		Very weak dark reddish brown medium and coarse SANDSTONE. Fractures are 10° to 20° very closely and closely rarely medium spaced planar rough and undulating smooth. 13.85 - 14.10m: Extremely weak. 14.10 - 14.80m: Recovered non intact as gravelly fine and medium sand. Gravel is subangular medium and coarse sandstone and rare quartz. 14.85m: Fracture infilled (15mm) with red fine and medium sand. 14.90 - 15.00m: Clayey. 15.50m: Fracture infilled (20mm) with red fine and medium sand.	13.85	20.20	
	30C	15.00 - 15.11 15.00 - 16.50	3.02 12.50	C*231	100 95 58						
						70 100 230		15.90m: Fracture infilled (20mm) with red fine and medium sand.	16.00	18.05	
	31C	16.50 - 18.00	12.50		100 87 61			Weak red fine and medium SANDSTONE. Fractures are subhorizontal closely and medium spaced undulating smooth. 16.00 - 16.10m: Very weak. 16.10m: Subvertical undulating smooth fracture.	16.75	17.30	
						NI 110 220		Very weak dark brownish red medium and coarse SANDSTONE. Fractures are subhorizontal to 10° and 50° to 60° closely and medium spaced rarely very closely spaced undulating smooth and rough.			
								Continued Next Page	{18.00}		

water strike (m) casing (m) rose to (m) time to rise (m) remarks

Groundwater not encountered prior to use of water flush.

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BOREHOLE LOG

CP/RC106B

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER — Sheet 3 of 4

Start Date 25 April 2016 — Easting 383784 — Scale 1 : 50

End Date 27 April 2016 — Northing 397186 — Ground level 34.05mOD — Depth 29.00 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	I_f	instru -ment	description	depth (m)	reduced level (m)	legend
	32C	18.00 - 18.90	12.50		100 56 31			16.95m: Subvertical planar smooth fracture. Fracture surface stained black. 17.20 - 17.25m: Reddish brown slightly clayey sandy angular medium and coarse mudstone gravel. 17.60m: Fracture infilled (5mm) with brown fine sand. 17.90 - 18.00m: Mottled orange. 18.20 - 18.30m: Mottled black. 18.30m: Subvertical planar smooth fracture. Fracture surface stained mottled black. 18.50m: Fracture surface stained mottled black. 18.70 - 18.90m: Weak. 18.95 - 19.00m: Recovered non intact as sandy subangular medium and coarse sandstone gravel. 19.60m: 40° planar smooth fracture. Fracture surface mottled black. 19.75 - 20.10m: Fracture surfaces stained black and mottled black. Frequent subrounded and rounded fine to coarse gravel sized mudstone clasts. 20.60 - 20.70m: Extremely weak. 20.60 - 21.00m: Fracture surfaces stained black.			
	33C	18.90 - 19.90	12.50		90 52 37						
	34C	19.90 - 21.40	12.50		100 93 60						
						50 90 180			21.00	13.05	
	35C	21.40 - 22.90	12.50		100 95 43			Weak locally medium strong red medium and coarse SANDSTONE. Fractures are subhorizontal to 10° very closely and closely spaced undulating rough. Fractures frequent infilled (up to 10mm) with red fine and medium sand. 21.50 - 21.60m: Subvertical planar rough fracture. 22.30 - 22.50m: Locally yellowish brown. Rare subrounded fine to coarse gravel sized mudstone clasts.			
	36C	22.90 - 24.40	12.50		100 95 58			23.40 - 23.50m: Rare subrounded medium and coarse gravel sized mudstone clasts. 23.90 - 24.00m: Extremely weak. Frequent subrounded and rounded fine to coarse gravel sized mudstone clasts. 24.20 - 24.25m: Recovered non intact as gravelly fine and medium sand. Gravel is subangular and subrounded fine to coarse sandstone. 24.30m: Band (4mm) of reddish brown clayey subangular fine and medium mudstone gravel. 24.60 - 24.65m: Reddish brown angular and subangular medium and coarse mudstone gravel. 25.05m: Band (10mm) of fine and medium sand. 25.05 - 25.15m: Mottled greenish grey.	25.15	8.90	
	37C	24.40 - 25.90	12.50		99 60 17	NI 20 30			25.55	8.50	
						40 80 240		Extremely weak dark reddish brown MUDSTONE locally recovered non intact as angular and subangular fine to coarse gravel. Fractures are subhorizontal rarely subvertical very closely spaced undulating smooth and rough. Fracture surfaced locally stained dark brown. 25.55m: Band (4mm) of greenish grey silt.			
	38C	25.90 - 27.40	12.50		100 77 43				26.75	7.30	
						NI 20 80		Very weak and weak red fine and medium SANDSTONE. Fractures are subhorizontal to 20° very closely and closely spaced rarely medium spaced undulating smooth and rough.	27.20	6.85	
						30 90 370		25.55 - 25.60m: Mottled yellowish brown. Pocket (20mm) of yellow fine and medium sand. 25.60m: Subvertical planar smooth fracture. 26.30 - 26.50m: Subvertical undulating smooth fracture.			
	39C	27.40 - 29.00	12.50		100 97 53						
								Continued Next Page	{28.00}		

water strike (m) casing (m) rose to (m) time to rise (m) remarks

Groundwater not encountered prior to use of water flush.

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BOREHOLE LOG

CP/RC106B

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

Sheet 4 of 4

Start Date 25 April 2016 Easting 383784 Scale 1 : 50

End Date 27 April 2016 Northing 397186 Ground level 34.05mOD Depth 29.00 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	I_f	instru -ment	description	depth (m)	reduced level (m)	legend
27/04/16 1540hrs 3.14m	40Cs	27.95 - 28.35						Extremely weak dark reddish brown MUDSTONE locally recovered non intact as subangular medium and coarse gravel. Fractures are subhorizontal very closely and closely spaced planar smooth and rough. Fracture surfaces locally stained dark brown.			
								Weak red fine and medium locally medium and coarse SANDSTONE. Fractures are 10° to 20° closely rarely medium spaced undulating smooth and rough. 27.20 - 27.25m: Greyish yellow. 27.50 - 27.55m: Recovered non intact as subangular coarse gravel. 28.35 - 28.40m: Fractures are very closely spaced. 28.50 - 29.00m: Frequent subrounded and rounded fine to coarse gravel sized mudstone clasts.	29.00	5.05	
								Borehole completed at 29.00m.	{38.00}		

water strike (m) casing (m) rose to (m) time to rise (m) remarks

Groundwater not encountered prior to use of water flush.

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BOREHOLE LOG

CP/RC107

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

Sheet 1 of 3

Start Date 20 April 2016 Easting 383779 Scale 1 : 50

End Date 22 April 2016 Northing 397164 Ground level 34.15mOD Depth 27.70 m

progress date/time water depth	sample no & type	depth (m) from	depth (m) to	casing depth (m)	test type & value	samp. /core range	I_f	instru -ment	description	depth (m)	reduced level (m)	legend
20/04/16 1420hrs	1C	0.00	0.13			100			MADE GROUND comprising CONCRETE.	0.13	34.02	
	1ES	0.00							Brown silty angular and subangular fine to coarse brick, concrete and sandstone GRAVEL with a high brick cobble content. Rare metal fragments (up to 10mm). (MADE GROUND)	0.60	33.55	
	2B	0.30										
	2ES	0.30										
	3B	0.60										
	3ES	0.60										
	4B	1.00							Brownish orange slightly clayey gravelly fine to coarse SAND with a high brick cobble content. Gravel is subangular and subrounded fine to coarse brick and sandstone. (MADE GROUND)	1.20	32.95	
	4ES	1.00		Nil	S 12							
	5D	1.20	1.65	1.20								
	6L	1.20	2.20									
	5ES	1.50							Medium dense orangish brown sandy subangular to rounded fine to coarse sandstone and siltstone GRAVEL.			
	7D	2.20	2.65	1.20	S 15				1.95 - 2.00m: Frequent carbonaceous material. 2.00 - 2.20m: Slightly gravelly fine and medium sand.			
	8L	2.20	3.20						2.30 - 2.65m: Frequent bands (up to 60mm) of fine reddish brown sand.			
	9D	3.20	3.65	1.20	S 23							
	10L	3.20	4.20						3.55 - 3.75m: Slightly gravelly fine and medium sand.			
	11D	4.20	4.65	1.20	S 18							
	12L	4.20	5.20							4.75	29.40	
20/04/16 1745hrs 0.95m	13D	5.20	5.65	5.20	S 22				Stiff dark brown slightly sandy slightly gravelly CLAY. Gravel is subangular and subrounded fine and medium sandstone, coal and black carbonaceous material.			
21/04/16 0755hrs 2.53m	14L	5.20	6.20									
	UT	6.20	6.30	6.20					5.95 - 6.20m: Slightly clayey gravelly fine and medium sand. Gravel is subangular and rounded fine and medium sandstone and siltstone.			
	15L	6.20	7.20									
	16D	7.20	7.65	7.20	S 19							
	17L	7.20	8.20									
									Continued Next Page	{8.00}		

EQUIPMENT: Geotechnical Pioneer rig.

METHOD: Waterflush rotary core drilled (300mm) 0.00-0.13m. Hand dug inspection pit 0.13-1.20m. Dynamic sampled (113mm) 1.20-8.85m. Waterflush rotary core drilled with added polymer (116mm) 8.85-27.70m.

CASING: 140mm diam to 12.70m.

BACKFILL: On completion, hole backfilled with bentonite pellets 27.70-1.00m and arisings 1.00-0.00m.

REMARKS: Dynamic sampling carried out to recover dropped core. 11.20-12.70m recovered 1.50m. Downhole magnetometry for UXO risk mitigation carried out 0.00-8.85m. No anomalies encountered.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks
4.37	1.20	4.37	20	Struck between 4.20 and 5.20m.

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BOREHOLE LOG

CP/RC107

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

Sheet 2 of 3

Start Date 20 April 2016 Easting 383779 Scale 1 : 50

End Date 22 April 2016 Northing 397164 Ground level 34.15mOD Depth 27.70 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	I_f	instru -ment	description	depth (m)	reduced level (m)	legend
	18D 19L	8.20 - 8.65 8.20 - 8.85	8.20	S 30							
	20D 21C	8.85 - 9.03 8.85 - 9.85	8.20	S*162	100	NA		8.65 - 8.85m: Sandy.			
	22D 23C	9.85 - 10.01 9.85 - 11.20	9.85	S*214	74			9.55 - 9.75m: Sandy. Very dense dark reddish brown slightly clayey slightly gravelly fine to coarse SAND. Gravel is subangular and subrounded fine and medium sandstone, coal and black carbonaceous material.	9.75	24.40	
						NR		NO RECOVERY.	10.70	23.45	
	24C	11.20 - 11.36 11.20 - 12.70	9.85	C*188	40						
						NA		Very dense reddish brown slightly gravelly fine and medium SAND. Gravel is subangular and subrounded fine and medium black carbonaceous material and sandstone.	11.90	22.25	
	25C	12.70 - 12.84 12.70 - 14.20	12.70	C*188	86 24 12	NI 30 70		Extremely weak reddish brown fine and medium SANDSTONE. Fractures are randomly orientated rarely subhorizontal very closely to closely spaced planar smooth and rough. 13.10 - 13.55m: Decomposed to gravelly fine and medium sand. Gravel is angular fine to coarse lithorelicts of extremely weak sandstone.	12.70	21.45	
						NI 120 360		13.70 - 13.95m: Decomposed to gravelly fine and medium sand. Gravel is angular fine to coarse lithorelicts of extremely weak sandstone.	13.95	20.20	
	26C	14.20 - 15.70	12.70		100 78 44			Weak locally extremely weak reddish brown fine to coarse SANDSTONE. Fractures are subhorizontal to 10° very closely to medium spaced planar smooth and rough frequently infilled (up to 2mm) with sandy clay. 14.65 - 14.90m: Medium and coarse sandstone. 15.50 - 15.60m: Reddish brown mottled dark grey.			
	27C	15.70 - 17.20	12.70		100 58 26			16.25 - 16.40m: Fine to coarse sand with rare very thin mudstone lenses. 16.52 - 16.65m: Subvertical planar rough fracture.			
	28C	17.20 - 18.70	12.70		100 80 52			17.50m: 30mm lens of extremely weak mudstone. 17.50 - 17.60m: 70° planar rough fracture.			
								Continued Next Page	{18.00}		

water strike (m) casing (m) rose to (m) time to rise (m) remarks

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BOREHOLE LOG

CP/RC107

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

Sheet 3 of 3

Start Date 20 April 2016 Easting 383779 Scale 1 : 50

End Date 22 April 2016 Northing 397164 Ground level 34.15mOD Depth 27.70 m

progress date/time water depth	sample no & type	depth (m) from	depth (m) to	casing depth (m)	test type & value	samp. /core range	I_f	instru -ment	description	depth (m)	reduced level (m)	legend
									18.10m: 10° planar rough fracture infilled (up to 1mm) with brownish grey clay and weakened up to 20mm penetration from fracture surface.			
	29C 30Cs	18.70 18.80	20.20 19.05	12.70		100 53 45						
21/04/16 1715hrs 3.71m									19.60 - 19.70m: Subvertical planar rough fracture.			
22/04/16 0735hrs 4.73m	31C	20.20	21.70	12.70		93 56 40			20.70 - 20.90m: Recovered non intact. 20.70 - 21.05m: Fractures are subhorizontal to 10° very closely spaced undulating and stepped rough. Frequent very thin mudstone lenses.			
	32C	21.70	23.20	12.70		100 66 36			22.30 - 22.55m: Subvertical undulating rough fracture.			
	33C	23.20	24.70	12.70		100 62 50			23.55 - 23.60m: Two subhorizontal and 20° planar rough fractures infilled (up to 1mm) with dark grey carbonaceous material. 24.20m: 70° undulating rough fracture. 24.30m: 10° planar rough fracture infilled (up to 5mm) with dark grey carbonaceous material.			
	34C	24.70	26.20	12.70		100 66 54			25.50m: Very thin lens of extremely weak reddish brown mudstone.			
	35C	26.20	27.70	12.70		93 76 49			26.90 - 26.95m: Extremely weak. 27.00 - 27.15m: Recovered non intact. Extremely weak with thin reddish brown mudstone lenses.			
22/04/16 1045hrs 5.17m										27.70	6.45	
									Borehole completed at 27.70m.	{28.00}		

water strike (m) casing (m) rose to (m) time to rise (m) remarks

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BOREHOLE LOG

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CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

Sheet 1 of 4

Start Date 12 April 2016 Easting 383826 Scale 1 : 50

End Date 15 April 2016 Northing 397211 Ground level 34.10mOD Depth 30.00 m

progress date/time water depth	sample no & type	depth (m) from	to	casing depth (m)	test type & value	samp. /core range	I_f	instru -ment	description	depth (m)	reduced level (m)	legend
12/04/16 1330hrs	1B	0.00							Brown slightly clayey very sandy angular and subangular fine to coarse sandstone, brick, concrete and rare slag GRAVEL with frequent pockets (up to 85mm) of firm brown clay. (MADE GROUND)	0.45	33.65	
	1ES	0.00										
	2B	0.30										
	2ES	0.30										
	3B	0.60										
	3ES	0.60										
	4B	1.00							Orangish brown very gravelly medium and coarse SAND. Gravel is subrounded and rounded medium and coarse siltstone and sandstone.			
	4ES	1.00										
	5D	1.20 - 1.65		Nil	S 20				1.20 - 1.80m: Medium dense.			
	6L	1.20 - 2.00										
	5ES	1.90 - 2.00										
		1.95			PP 0.3					1.80	32.30	
	7D	2.00 - 2.45		Nil	S 2				Very soft dark reddish brown slightly sandy slightly gravelly CLAY.			
	8L	2.00 - 3.00										
		2.65			PP 1.0					2.70	31.40	
		3.00 - 3.45		Nil	S 35				Brownish yellow very gravelly fine and medium SAND. Gravel is rounded fine to coarse siltstone and sandstone. 2.70 - 2.80m: Absence of gravel.	2.95	31.15	
	9L	3.00 - 4.00										
									Dense brown clayey sandy subangular to rounded fine to coarse conglomerate, siltstone and sandstone GRAVEL.	3.80	30.30	
		4.00 - 4.45		4.00	S 12				Dark yellowish brown slightly silty gravelly coarse SAND. Gravel is rounded medium and coarse siltstone and sandstone.	4.00	30.10	
	10L	4.00 - 5.00								4.35	29.75	
12/04/16 1830hrs 2.43m									Medium dense greyish brown slightly silty very sandy subrounded and well rounded fine to coarse siltstone, sandstone and rare crystalline GRAVEL.			
		4.95			PP 2.6							
	11D	5.00 - 5.45		5.00	S 23				Stiff brown slightly sandy slightly gravelly CLAY. Gravel is subrounded to well rounded fine and medium rarely coarse siltstone, sandstone and rare coal.			
13/04/16 0900hrs 1.36m	12L	5.00 - 6.00										
	13D	5.90 - 6.00										
		5.95			PP 3.1							
	14D	6.00 - 6.45		6.00	S 24							
	15L	6.00 - 7.00										
	16Ls	6.60 - 7.00							6.50 - 7.95m: Fine to coarse gravel. 6.60m: Very stiff.			
		6.95			PP 3.0							
	17D	7.00 - 7.45		7.00	S 30							
	18L	7.00 - 8.00										
	19D	7.90 - 8.00										
		7.95			PP 2.7							
	20D	8.00 - 8.45		7.00	S 23				7.80 - 7.95m: Reddish brown, sandy.	7.95	26.15	
									Continued Next Page	{8.00}		

EQUIPMENT: Geotechnical Pioneer rig.

METHOD: Hand dug inspection pit 0.00-1.20m. Dynamic sampled (128mm) 1.20-3.00m and (113mm) 3.00-10.60m. Waterflush rotary core drilled (116mm) 10.60-30.00m.

CASING: 140mm diam to 10.60m.

BACKFILL: On completion, borehole backfilled with bentonite pellets.

REMARKS: Downhole magnetometry for UXO risk mitigation carried out 1.20-9.80m. No anomalies encountered.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks
				Groundwater not encountered prior to use of water flush.

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BOREHOLE LOG

CP/RC108

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER — Sheet 2 of 4

Start Date 12 April 2016 — Easting 383826 — Scale 1 : 50

End Date 15 April 2016 — Northing 397211 — Ground level 34.10mOD — Depth 30.00 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	I_f	instru -ment	description	depth (m)	reduced level (m)	legend
	21L	8.00 - 8.80	8.00					Medium dense reddish brown clayey gravelly locally slightly gravelly medium SAND. Gravel is rounded and well rounded medium and coarse siltstone and rare crystalline and sandstone.			
	22D	8.80 - 9.25	8.00	S 32							
	23L	8.80 - 9.80	8.80								
	24D	9.70 - 9.80									
	25D	9.80 - 10.25	9.80	S*125					9.80	24.30	
	26L	9.80 - 10.60						Very dense reddish brown clayey gravelly locally slightly gravelly medium SAND. Gravel is rounded and well rounded medium and coarse siltstone and rare crystalline and sandstone.			
		10.60 - 10.86	10.60	C*125							
	27C	10.60 - 11.50			53	NA		10.60 - 11.50m: Limited recovery.			
	28D	11.40 - 11.50									
		11.50 - 11.80	10.60	C*100					11.50	22.60	
	29C	11.50 - 13.00			64	NI		Extremely weak reddish brown medium and rarely coarse SANDSTONE recovered non intact as weakly cemented SAND.			
	30D	12.90 - 13.00									
		13.00 - 13.28	10.60	C*120							
	31C	13.00 - 14.50			89						
13/04/16 1800hrs 3.90m											
14/04/16 0945hrs 5.06m									14.05	20.05	
	32D	14.40 - 14.50						Extremely weak reddish brown rarely brown medium and coarse SANDSTONE recovered non intact as strongly cemented slightly gravelly SAND. Gravel is subangular and subrounded medium and coarse sandstone lithorelicts.			
		14.50 - 14.65	10.60	C**							
	33C	14.50 - 16.00			90 41 21				14.85	19.25	
						30 70 210		Very weak reddish brown medium and coarse SANDSTONE. Fractures are subhorizontal to 40° closely spaced undulating and planar rough infilled with a veneer of grey clayey sand.	15.45	18.65	
						NI		Extremely weak reddish brown medium and coarse SANDSTONE recovered non intact as strongly cemented SAND.			
		16.00 - 16.23	10.60	C*200							
	34C	16.00 - 17.50			98 78 57				16.20	17.90	
						20 90 290		Very weak and weak locally extremely weak reddish brown locally orangish brown medium and rarely coarse SANDSTONE. Fractures are subhorizontal closely and medium spaced planar rough infilled (up to 10mm) with reddish brown sand. 17.10 - 17.14m: Fracture is 40° undulating rough infilled with a veneer of grey silt.			
	35Cs	16.55 - 16.80									
	36C	17.50 - 19.00	10.60		92 57 24						
								Continued Next Page	{18.00}		

water strike (m) casing (m) rose to (m) time to rise (m) remarks

Groundwater not encountered prior to use of water flush.

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BOREHOLE LOG

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CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

Sheet 3 of 4

Start Date 12 April 2016 Easting 383826 Scale 1 : 50

End Date 15 April 2016 Northing 397211 Ground level 34.10mOD Depth 30.00 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	I_f	instru -ment	description	depth (m)	reduced level (m)	legend
									18.35	15.75	
						NI		Extremely weak reddish brown medium and rarely coarse SANDSTONE recovered non intact as strongly cemented SAND. 18.70 - 18.77m: Very weak reddish brown sandstone.	19.00	15.10	
	37C	19.00 - 20.00	10.60		94 82 61	40 130 370		Very weak and weak reddish brown medium SANDSTONE. Fractures are subhorizontal medium and closely spaced planar and undulating rough locally infilled (up to 5mm) with reddish brown sand.			
	38Cs	19.50 - 19.90									
	39C	20.00 - 21.50	10.60		89 73 54						
								21.10 - 21.30m: Extremely weak reddish brown sandstone recovered non intact as strongly cemented sand.			
	40C	21.50 - 23.00	10.60		97 89 70						
	41Cs	21.75 - 22.05									
								22.83 - 22.87m: Fracture is subhorizontal planar rough infilled (40mm) with reddish brown silty sand.			
	42C	23.00 - 23.50	10.60		90 90 90						
	43C	23.50 - 24.50	10.60		95 76 47						
	44C	24.50 - 25.00	10.60		100 100 82						
	C	25.00 - 25.50			0 0 0	NR		24.98 - 25.00m: Fracture is subhorizontal planar rough infilled (20mm) with brownish red sandy clay.	25.00	9.10	
								No recovery.	25.50	8.60	
	45C	25.50 - 27.00	10.60		100 95 71	40 130 370		Very weak and weak reddish brown medium SANDSTONE. Fractures are subhorizontal medium and closely spaced planar and undulating rough locally infilled (up to 5mm) with reddish brown sand. 25.98 - 26.00m: Extremely weak reddish brown medium sandstone recovered non intact as strongly cemented sand.			
	46Cs	26.50 - 27.00									
	47C	27.00 - 28.50			41 39 18	220 300 450		27.00 - 28.50m: Limited recovery. Medium strong locally very weak and weak reddish brown medium and locally coarse SANDSTONE. Fractures are subhorizontal medium spaced planar and undulating rough clean.	27.10	7.00	
								Continued Next Page	{28.00}		

water strike (m) casing (m) rose to (m) time to rise (m) remarks

Groundwater not encountered prior to use of water flush.

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BOREHOLE LOG

CP/RC108

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

Sheet 4 of 4

Start Date 12 April 2016 Easting 383826 Scale 1 : 50

End Date 15 April 2016 Northing 397211 Ground level 34.10mOD Depth 30.00 m

progress date/time water depth	sample no & type	depth (m) from	depth (m) to	casing depth (m)	test type & value	samp. /core range	I_f	instru -ment	description	depth (m)	reduced level (m)	legend
	48C	28.50	30.00	10.60		99 92 92	220 300 450		27.40 - 27.90m: Very weak reddish brown medium sandstone with rare locally frequent subrounded and rounded medium and coarse gravel sized mudstone inclusions. Fractures are subhorizontal closely spaced planar rough. 29.03 - 29.05m: Fracture is subhorizontal planar rough infilled (20mm) with reddish brown sandy clay. 29.22 - 29.34m: Fracture is 50° undulating rough clean. Possibly drilling disturbed. 29.50 - 29.55m: Strongly cemented reddish brown gravelly medium sand. Gravel is angular to subrounded fine to coarse mudstone.			
14/04/16 1730hrs 3.58m	49Cs	29.55	30.00							30.00	4.10	
									Borehole completed at 30.00m.			
										{38.00}		

water strike (m)	casing (m)	rose to (m)	time to rise (m)	remarks
				Groundwater not encountered prior to use of water flush.

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BOREHOLE LOG

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CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

Sheet 1 of 3

Start Date 25 April 2016 Easting 383761 Scale 1 : 50

End Date 27 April 2016 Northing 397225 Ground level 33.40mOD Depth 26.00 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	I_f	instru -ment	description	depth (m)	reduced level (m)	legend
25/04/16 1515hrs	1B	0.00 - 0.10						Dark brown slightly clayey sandy subangular fine to coarse brick and concrete GRAVEL with high a subangular brick cobble content. (MADE GROUND)			
	1ES	0.00 - 0.00									
	2B	0.30 - 0.60									
	2ES	0.30							0.60	32.80	
	3B	0.60 - 0.80						Firm dark brown slightly sandy gravelly CLAY with a high subangular brick cobble content. Gravel is subangular fine to coarse brick and concrete. (MADE GROUND)			
	3ES	0.60									
	4B	1.00 - 1.20									
	4ES	1.00							1.20	32.20	
	5D	1.20 - 1.65	1.20	S 7				Firm dark brown slightly sandy gravelly clayey SILT. Gravel is subangular and subrounded fine to coarse sandstone and mudstone. Frequent rootlets. (MADE GROUND)			
	6L	1.20 - 2.20									
	5ES	1.50									
25/04/16 1740hrs 1.85m	7D	2.20 - 2.65	2.20	S 25					2.20	31.20	
26/04/16 0830hrs 1.23m	8L	2.20 - 3.20						Brown slightly silty sandy subangular to rounded fine to coarse sandstone and mudstone GRAVEL. 2.20 - 2.70m: Light brown fine to coarse sand.			
	6ES	2.20									
	7ES	3.00									
	9D	3.20 - 3.65	3.10	S 11							
	10L	3.20 - 4.20									
									3.80	29.60	
								Firm dark brown slightly sandy slightly gravelly CLAY. Gravel is subangular and subrounded fine coal, mudstone and siltstone.			
	11D	4.20 - 4.65	4.20	S 17					4.20	29.20	
	12L	4.20 - 5.20						NO RECOVERY.			
									5.20	28.20	
	13L	5.20 - 5.40									
	14D	5.40 - 5.85	4.20	S 25				Stiff dark brown slightly gravelly CLAY. Gravel is subangular to subrounded fine to medium coal and siltstone.			
	15L	5.40 - 6.90									
	16L	6.90 - 8.00	6.30						7.50	25.90	
26/04/16 1815hrs 2.68m	17D	8.00 - 8.30	8.00	S*100				Light reddish grey slightly silty slightly gravelly fine to coarse SAND. Gravel is subrounded fine and medium siltstone and sandstone.	8.00	25.40	
								Continued Next Page	{8.00}		

EQUIPMENT: Geotechnical Pioneer rig.

METHOD: Hand dug inspection pit 0.00-1.20m. Dynamic sampled (113mm) 1.20-8.00m. Waterflush rotary core drilled (116mm) 8.00-26.00m.

CASING: 140mm diam to 8.00m

BACKFILL: On completion, hole backfilled with bentonite pellets.

REMARKS: Polymer added to waterflush 2.20 to 26.00m. Downhole magnetometry for UXO risk mitigation carried out 0.00-8.00m. No anomalies encountered.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks
				Groundwater not encountered prior to use of water flush.

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BOREHOLE LOG

CP/RC109

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

Sheet 2 of 3

Start Date 25 April 2016 Easting 383761 Scale 1 : 50

End Date 27 April 2016 Northing 397225 Ground level 33.40mOD Depth 26.00 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	I_f	instru -ment	description	depth (m)	reduced level (m)	legend
27/04/16 0830hrs 4.60m	18C	8.00 - 9.50			87	NA		Very dense dark brown slightly gravelly fine to coarse SAND. Gravel is subrounded fine and medium siltstone.			
		9.50 - 9.73	8.00	C*200					9.50	23.90	
	19C	9.50 - 11.00			0	NR		NO RECOVERY.			
		11.00 - 11.23	8.00	C*200					11.00	22.40	
	20C	11.00 - 12.50			80 36 10	NI 60 200		Extremely weak reddish brown fine to coarse SANDSTONE. Fractures are subhorizontal rarely subvertical very closely to closely spaced planar smooth and rough. 11.00 - 12.50m: Limited recovery. 11.30m: 20mm band of fine and medium sand. 11.50 - 11.90m: Slightly gravelly fine and medium sand tending to extremely weak sandstone. Gravel is subangular fine to coarse lithorelicts of extremely weak mudstone.	12.50	20.90	
	21C	12.50 - 14.00	8.00		96 92 86	NI 220 320		Weak reddish brown fine and medium SANDSTONE. Fractures are subhorizontal to 10° closely to medium spaced planar rough. 13.10 - 13.15m: Extremely weak. 13.15m: Fracture infilled (<5mm) with reddish brown sandy clay.			
	22C	14.00 - 15.50	8.00		100 66 66			14.55 - 14.60m: Thin bed of extremely weak reddish brown mudstone.	14.60	18.80	
								Very weak reddish brown mottled yellowish brown fine and medium SANDSTONE disintegrated to gravelly fine and medium sand with frequent lenses (<50mm) of extremely weak mudstone. Gravel is subangular medium and coarse lithorelicts of extremely weak sandstone.	15.00	18.40	
	23C	15.50 - 17.00	8.00		96 88 70			Weak reddish brown fine and medium SANDSTONE. Fractures are subhorizontal to 10° very closely to medium spaced planar and undulating rough. 16.68 - 16.70m: Extremely weak.			
	24C	17.00 - 18.50	8.00		100 98 93			17.25 - 17.75m: Abundant subangular fine to coarse tabular mudstone.			
								Continued Next Page	{18.00}		

water strike (m) casing (m) rose to (m) time to rise (m) remarks

Groundwater not encountered prior to use of water flush.

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BOREHOLE LOG

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CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER — Sheet 3 of 3

Start Date 25 April 2016 — Easting 383761 — Scale 1 : 50

End Date 27 April 2016 — Northing 397225 — Ground level 33.40mOD — Depth 26.00 m

progress date/time water depth	sample no & type	depth (m) from	depth (m) to	casing depth (m)	test type & value	samp. /core range	I_f	instru -ment	description	depth (m)	reduced level (m)	legend
	25C	18.50	20.00	8.00		95 95 83			18.80 - 19.05m: Abundant very thin mudstone lenses.			
	26Cs	19.30	19.60									
	27C	20.00	21.50	8.00		96 78 64	NI 200 470		20.20m: Two very closely spaced 10° fractures infilled (up to 20mm) with sandy clay.			
										21.30	12.10	
	28C	21.50	23.00	8.00		90 68 58	NI 60 150		Weak locally extremely weak reddish brown fine and medium SANDSTONE with frequent closely spaced very thin beds of extremely weak mudstone weathered to clay.			
							NI 120 240			22.20	11.20	
	29C	23.00	24.50	8.00		96 84 80			Weak reddish brown fine and medium SANDSTONE. Fractures are subhorizontal to 20° extremely closely to closely spaced planar and undulating rough.			
	30C	24.50	26.00	8.00		100 93 80			24.70 - 24.75m: Extremely weak.			
27/04/16 1600hrs 2.32m	31Cs	25.60	25.85						25.40m: Thick lamination of reddish brown mudstone (up to 10mm).			
										26.00	7.40	
									Borehole completed at 26.00m.			
										{28.00}		

water strike (m) casing (m) rose to (m) time to rise (m) remarks

Groundwater not encountered prior to use of water flush.

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BOREHOLE LOG

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CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

Sheet 1 of 3

Start Date 27 April 2016 Easting 383753 Scale 1 : 50

End Date 28 April 2016 Northing 397265 Ground level 32.10mOD Depth 23.50 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	I_f	instru -ment	description	depth (m)	reduced level (m)	legend
27/04/16 0800hrs	1ES	0.00						Brown locally dark brown sandy silty angular to rounded fine to coarse brick, charcoal, coal, concrete and rare sandstone GRAVEL with a low subangular brick cobble content. (MADE GROUND)			
	1B	0.10						0.00 - 0.20m: High subangular brick cobble content.			
	2B	0.30						0.30 - 0.45m: Dark orangish brown. Very sandy.			
	2ES	0.30						0.80 - 1.20m: Frequent subangular fine to coarse slag gravel.			
	3B	0.60						1.20 - 1.30m: Subrounded red brick cobble.	1.30	30.80	
	3ES	0.60						Soft dark grey and greyish brown slightly sandy slightly gravelly CLAY. Gravel is subangular and subrounded fine to coarse brick and sandstone. (MADE GROUND)			
	4B	1.00						1.70 - 2.30m: Light greyish brown.			
	4ES	1.00									
	5D	1.20 - 1.65	Nil	S 6							
	6L	1.20 - 2.00									
	5ES	1.70									
	7D	2.00 - 2.45	Nil	S 5							
	8L	2.00 - 3.00									
	6ES	2.20									
	7ES	2.70						2.75 - 3.00m: Red brick.			
	9D	3.00 - 3.45	Nil	S 4							
	10L	3.00 - 4.00									
	8ES	3.20									
									3.60	28.50	
	9ES	3.70						Firm dark brown and black fibrous PEAT with abundant roots (up to 20mm diam) and rootlets.			
	11D	4.00 - 4.45	Nil	S 7					4.10	28.00	
	12L	4.00 - 5.00						Loose grey fine and medium SAND with frequent roots (up to 10mm diam) and rootlets.			
	10ES	4.30						4.50 - 4.65m: Slightly clayey.	4.65	27.45	
27/04/16 1830hrs 1.30m								Light brown and orange fine and medium SAND with rare pockets (up to 10mm) of black coarse sand.	4.80	27.30	
	13D	5.00 - 5.45	5.00	S 11							
28/04/16 0800hrs 1.70m	14L	5.00 - 6.00						Soft locally firm brown silty CLAY. 4.80 - 5.10m: Frequent pockets (up to 5mm) of orange fine sand. 5.45 - 5.50m: Sandy. Frequent pockets (up to 10mm) of yellow fine sand.	5.50	26.60	
									5.70	26.40	
	15D	6.00 - 6.38	6.00	S*65							
	16C	6.00 - 7.00			75	NA		Firm brown CLAY with rare subrounded and rounded fine and medium sandstone gravel. 5.60 - 5.65m: Sandy.			
		7.00 - 7.28	6.00	C*107				Very dense dark brownish red slightly gravelly fine and medium SAND. Gravel is subrounded and rounded fine to coarse sandstone. 5.70 - 6.00m: Slightly clayey. 5.75m: Subrounded sandstone cobble.			
	17C	7.00 - 8.50			73						
								Continued Next Page	{8.00}		

EQUIPMENT: Geotechnical Pioneer rig.

METHOD: Hand dug inspection pit 0.00-1.20m. Dynamic sampled (128mm) 1.20-4.00m and (113mm) 4.00-6.00m. Polymer flush rotary core drilled (116mm) 6.00-23.50m.

CASING: 140mm diam to 6.00m.

BACKFILL: On completion, borehole backfilled (on 29/4/16) with bentonite pellets 23.50-0.20m and arisings 0.20-0.00m.

REMARKS: Downhole magnetometry for UXO risk mitigation carried out 0.00-6.00m. No anomalies encountered.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks
				Groundwater not encountered prior to use of water flush.

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BOREHOLE LOG

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CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

Sheet 2 of 3

Start Date 27 April 2016 Easting 383753 Scale 1 : 50

End Date 28 April 2016 Northing 397265 Ground level 32.10mOD Depth 23.50 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	I_f	instru -ment	description	depth (m)	reduced level (m)	legend
									8.20	23.90	
		8.50 - 8.65	6.00	C*200				Very dense red fine and medium SAND.			
	18C	8.50 - 10.00			80 20 13						
						NI			9.00	23.10	
								Extremely weak red fine and medium SANDSTONE recovered non intact as sandy subangular and subrounded medium and coarse gravel with a high subrounded sandstone cobble content.	9.70	22.40	
		10.00 - 10.11	6.00	C*500		NI 80 190		Very weak locally weak red medium and coarse SANDSTONE. Fractures are subhorizontal closely spaced undulating rough.			
	19C	10.00 - 11.50			87 67 43			10.00 - 10.55m: Recovered non intact as subrounded medium and coarse sandstone gravel with a medium subrounded sandstone cobble content.	10.55	21.55	
						110 210 300		10.40 - 10.50m: Locally greyish brown. 10.50 - 10.55m: Dark red silty gravelly fine sand. Gravel is subrounded fine to coarse sandstone.			
								Very weak and weak orangish red fine and medium SANDSTONE. Fractures are subhorizontal to 10° closely and medium spaced undulating rough.			
	20C	11.50 - 13.00	6.00		100 91 83			11.40 - 11.50m: Frequent subrounded and rounded fine to coarse gravel sized mudstone clasts.			
	21Cs	12.00 - 12.30						11.90 - 12.10m: Frequent subrounded and rounded fine to coarse gravel sized mudstone clasts. 12.35 - 12.45m: Fractures are very closely spaced and frequently infilled (up to 10mm) with fine and medium sand.			
	22C	13.00 - 14.50	6.00		97 89 77				13.55	18.55	
						40 160 260		Weak red fine and medium SANDSTONE with frequent subrounded fine and medium gravel sized mudstone clasts. Fractures are subhorizontal to 10° closely and medium spaced undulating smooth and rough.			
	23C	14.50 - 16.00	6.00		100 100 87			13.70m: Dark red subangular cobble sized mudstone clast. 13.75m: Dark red subangular cobble sized mudstone clast. 13.90 - 13.95m: Extremely weak. 14.40m: Fracture surface stained black. 14.70m: 20° undulating rough fracture. 15.05m: 20° undulating smooth fracture.			
	24C	16.00 - 17.50	6.00		100 99 93				17.25	14.85	
						NI 80 180		Very weak locally weak red fine and medium locally medium and coarse SANDSTONE. Fractures are subhorizontal rarely 10° very closely and closely spaced undulating rough rarely stepped smooth.			
	25C	17.50 - 19.00	6.00		97 88 50						
								Continued Next Page	{18.00}		

water strike (m) casing (m) rose to (m) time to rise (m) remarks

Groundwater not encountered prior to use of water flush.

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BOREHOLE LOG

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CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER — Sheet 3 of 3

Start Date 27 April 2016 — Easting 383753 — Scale 1 : 50

End Date 28 April 2016 — Northing 397265 — Ground level 32.10mOD — Depth 23.50 m

progress date/time water depth	sample no & type	depth (m) from	depth (m) to	casing depth (m)	test type & value	samp. /core range	I_f	instru -ment	description	depth (m)	reduced level (m)	legend
									17.30m: Fracture infilled (2mm) with grey fine sand. 17.40 - 17.80m: Dark brownish red. 17.50 - 17.70m: Recovered non intact as subangular coarse sandstone gravel with a low subrounded sandstone cobble content. 18.60 - 18.70m: Fractures infilled (up to 4mm) with grey fine sand. 18.75 - 18.85m: Reddish brown mudstone recovered non intact as angular medium and coarse mudstone gravel. 19.15m: Pocket (30mm) of greenish grey fine sand. 19.15 - 19.20m: Reddish brown sandy angular and subangular medium and coarse mudstone gravel. 19.20 - 19.40m: Reddish brown. 19.40 - 20.50m: Fracture surfaces frequently stained dark brown. 20.20 - 20.30m: Brown. Fine grained.			
	26C	19.00 - 20.50		6.00		100 93 93						
	27Cs	19.40 - 19.75										
	28C	20.50 - 22.00		6.00		98 98 92			20.65 - 20.70m: Coarse grained. 21.20 - 21.80m: Frequent subrounded and rounded fine to coarse gravel sized mudstone clasts. 21.90m: 20° undulating smooth fracture.			
	29C	22.00 - 23.50		6.00		97 97 97	130 400 450			22.20	9.90	
28/04/16 1730hrs 2.86m	30Cs	23.05 - 23.50							Weak and medium strong red fine and medium SANDSTONE locally with frequent subrounded and rounded fine and medium gravel sized mudstone clasts. Fractures are subhorizontal medium rarely closely spaced undulating smooth.	23.50	8.60	
									Borehole completed at 23.50m.	{28.00}		

water strike (m) casing (m) rose to (m) time to rise (m) remarks

Groundwater not encountered prior to use of water flush.

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BOREHOLE LOG

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CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

Sheet 1 of 3

Start Date 21 April 2016 Easting 383713 Scale 1 : 50

End Date 25 April 2016 Northing 397256 Ground level 30.85mOD Depth 22.00 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	I_f	instru -ment	description	depth (m)	reduced level (m)	legend
21/04/16 1430hrs	1C	0.00 - 0.15	Nil		100			MADE GROUND comprising light grey reinforced CONCRETE.	0.15	30.70	
	2B	0.30 - 0.60						0.10m: Metal reinforcement bar (8mm diam).	0.25	30.60	
	1ES	0.30							0.35	30.50	
	3B	0.60 - 0.80						MADE GROUND comprising black TARMACADAM over angular and subangular coarse brick gravel.			
	2ES	0.60									
	4C	0.90 - 1.20	Nil		100				0.90	29.95	
	3ES	1.00						Greyish brown and black silty sandy subangular to rounded fine to coarse brick, coal, slag and rare siltstone GRAVEL. (MADE GROUND)			
	5D	1.20 - 1.65	Nil	S <1					1.20	29.65	
	6L	1.20 - 2.20	1.20								
	4ES	1.50						Brown silty very sandy angular to subrounded fine to coarse sandstone, siltstone, coal, slag and concrete GRAVEL. Rare rootlets. (MADE GROUND)	1.80	29.05	
	5ES	2.00						MADE GROUND comprising concrete.			
	7D	2.20 - 2.65	2.20	S 4							
	8L	2.20 - 3.20						Very soft dark greyish brown slightly gravelly CLAY. Gravel is angular to subrounded fine to coarse brick and sandstone. Frequent black organic material (<20mm) and strong organic odour. (MADE GROUND)			
21/04/16 1800hrs 1.13m											
	9D	3.20 - 3.65	3.10	S 9				Firm dark brown and black slightly sandy PEAT. (MADE GROUND)	3.00	27.85	
22/04/16 0800hrs 1.30m	10L	3.20 - 4.20						2.90 - 3.00m: Soft grey clay with rare organic material (<30mm).			
	6ES	3.50						Loose light grey slightly clayey slightly gravelly fine to coarse SAND. Gravel is subangular to rounded fine to coarse brick, crystalline, siltstone and sandstone. (MADE GROUND)	3.60	27.25	
	11D	4.20 - 4.65	4.20	S 49							
	12L	4.20 - 5.20						Dense light reddish grey slightly clayey slightly gravelly fine to coarse SAND. Gravel is subangular to rounded fine and medium siltstone, coal, quartz and limestone. 3.60 - 3.80m: Soft greyish brown slightly sandy slightly gravelly clay.			
	13D	5.20 - 5.61	5.20	S*58					5.20	25.65	
	14L	5.20 - 6.20						NO RECOVERY.			
		6.20 - 6.45	6.10	C*150					6.20	24.65	
	15C	6.20 - 7.00			88 0 0	NA		Very dense reddish brown slightly gravelly fine and medium SAND. Gravel is angular fine to coarse lithorelicts of extremely weak sandstone.	6.50	24.35	
						NI 30 60					
		7.00 - 7.21	6.10	C*273				Extremely weak reddish brown fine and medium SANDSTONE. Fractures are randomly orientated rarely subhorizontal planar rough.			
	16C	7.00 - 8.50			86 46 33						
									7.70	23.15	
						NI 130		7.65m: 20° undulating rough fracture infilled with dark grey clay (<5mm).			
								Continued Next Page	{8.00}		

EQUIPMENT: Geotechnical Pioneer rig.

METHOD: Waterflush rotary core drilled (300mm) 0.00-0.25m. Hand dug inspection pit 0.25-0.90m. Waterflush rotary core drilled (146mm) 0.90-1.20m. Dynamic sampled (113mm) 1.20-6.20m. Waterflush rotary core drilled (116mm) 6.20-22.00m.

CASING: 140mm diam to 6.60m.

BACKFILL: On completion, the borehole was backfilled with bentonite pellets 22.00-10.00m. A slotted standpipe (19mm) was installed to 10.00m, granular response zone 10.00-4.00m, bentonite seal 4.00-2.50m. A second slotted standpipe (19mm) was installed to 2.50m, granular response zone 2.50-1.00m, bentonite seal 1.00-0.30m, concrete and stopcock cover 0.30- 0.00m.

REMARKS: Polymer added to waterflush 6.20 to 22.00m. Downhole magnetometry for UXO risk mitigation carried out 0.00-6.20m. No anomalies encountered.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks
				Groundwater not encountered prior to use of water flush.

AGS

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BOREHOLE LOG

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CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

Sheet 2 of 3

Start Date 21 April 2016 Easting 383713 Scale 1 : 50

End Date 25 April 2016 Northing 397256 Ground level 30.85mOD Depth 22.00 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	I_f	instru -ment	description	depth (m)	reduced level (m)	legend
						370		Weak locally thinly laminated reddish brown and dark reddish brown fine to coarse SANDSTONE with rare lenses (<50mm) of extremely weak mudstone. Fractures are subhorizontal and 10-20° mainly closely to medium spaced planar rough.			
	17C	8.50 - 10.00	6.10		100 80 66						
	18C	10.00 - 11.50	6.10		96 80 62			9.70 - 10.00m: Decomposed to reddish brown mottled yellowish brown and greenish grey slightly clayey slightly gravelly fine to coarse sand. Gravel is subangular and subrounded fine to coarse siltstone, sandstone and mudstone.			
	19C	11.50 - 13.00	6.10		93 85 78						
22/04/16 1230hrs 2.31m											
25/04/16 0915hrs 5.41m	20C	13.00 - 14.50	6.60		93 87 82						
	21C	14.50 - 16.00	6.60		93 76 62			15.10 - 15.20m: Reddish brown mottled greenish grey. 15.20m: 50mm thick band of extremely weak reddish brown mudstone. 15.25 - 15.40m: Recovered as reddish brown sandy subangular fine to coarse sandstone and mudstone gravel.			
	22C	16.00 - 17.50	6.60		100 82 68			16.80 - 16.90m: Subvertical fracture undulating rough. 16.90m: 30mm thick lens of extremely weak reddish brown mudstone.			
	23C	17.50 - 19.00	6.60		93 83 68						
								Continued Next Page	{18.00}		

water strike (m) casing (m) rose to (m) time to rise (m) remarks

Groundwater not encountered prior to use of water flush.

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CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

Sheet 3 of 3

Start Date 21 April 2016 Easting 383713 Scale 1 : 50

End Date 25 April 2016 Northing 397256 Ground level 30.85mOD Depth 22.00 m

progress date/time water depth	sample no & type	depth (m) from	depth (m) to	casing depth (m)	test type & value	samp. /core range	I_f	instru -ment	description	depth (m)	reduced level (m)	legend
	24C	19.00	20.50	6.60		100 90 78						
	25C	20.50	22.00	6.60		91 65 50	NI 100 290		20.60m: 50mm thick lens of very weak reddish brown mudstone. Weak locally extremely weak reddish brown fine and medium SANDSTONE with frequent lenses (<20mm thick) of extremely weak reddish brown mudstone. Fractures are subhorizontal to 10° mainly closely spaced planar and undulating rough.	20.70	10.15	
25/04/16 1200hrs 2.65m										22.00	8.85	
									Borehole completed at 22.00m.	{28.00}		

water strike (m)	casing (m)	rose to (m)	time to rise (m)	remarks
				Groundwater not encountered prior to use of water flush.

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BOREHOLE LOG

CP/RC112

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

Sheet 1 of 3

Start Date 20 April 2016 Easting 383767 Scale 1 : 50

End Date 21 April 2016 Northing 397306 Ground level 30.90mOD Depth 22.00 m

progress date/time water depth	sample no & type	depth (m) from	depth (m) to	casing depth (m)	test type & value	samp. /core range	I_f	instru -ment	description	depth (m)	reduced level (m)	legend
20/04/16 0730hrs	1ES	0.00							Light grey and dark grey slightly sandy angular and subangular fine to coarse crystalline and sandstone GRAVEL. (MADE GROUND)	0.20	30.70	
	1B	0.30										
	2ES	0.30							Dark brown and black mottled light grey slightly clayey (ashy) sandy subangular fine and medium crystalline and sandstone GRAVEL with a low subangular brick cobble content. (MADE GROUND)			
	2B	0.60										
	3ES	0.60										
	3B	1.00										
	4ES	1.00										
	4D	1.20	1.65	1.20	S 6					1.20	29.70	
	5L	1.20	2.20						Loose dark brown clayey very sandy subangular and subrounded fine to coarse brick, sandstone and concrete GRAVEL with a high subangular and subrounded brick and sandstone cobble content. (MADE GROUND)	1.60	29.30	
	5ES	1.50										
	6ES	2.00							Soft dark brown slightly sandy gravelly CLAY with a low subangular brick cobble content. Gravel is angular and subrounded fine to coarse sandstone and brick. (MADE GROUND)			
	6D	2.20	2.65	2.20	S 4							
	7L	2.20	3.20							2.60	28.30	
	7ES	2.50							Loose brown and reddish brown slightly clayey slightly gravelly fine and medium SAND. Gravel is subrounded and rounded fine and medium sandstone and brick. (MADE GROUND) 2.60 - 2.70m: Clayey.			
	8ES	3.00										
		3.20	3.65	3.20	S 6							
	9L	3.20	3.90									
	9ES	3.50										
	10D	3.90	4.25	3.90	S*110	100			3.70m: Subrounded sandstone cobble.	3.90	27.00	
	11C	3.90	4.50						MADE GROUND comprising strongly cemented light grey CONCRETE composed of 60% angular and subangular medium and coarse gravel sized aggregate of sandstone and limestone with 5-10% voids (up to 15mm). 4.45 - 4.50m: Rebar (20mm diam).			
		4.50	4.95	3.90	S 38					4.50	26.40	
	13L	4.50	5.50									
	10ES	4.70							Dense brown slightly clayey locally clayey fine and medium SAND with rare subrounded and rounded fine and medium sandstone gravel.			
										5.30	25.60	
	14D	5.50	5.95	5.50	S*51				Very dense red very clayey fine and medium SAND.			
	15L	5.50	6.50						5.90 - 6.00m: Tending to extremely weak sandstone.			
	16D	6.50	6.87	6.50	S*68				6.40 - 6.50m: Slightly clayey.			
	17L	6.50	7.30									
		7.30	7.37	7.30	S*600					7.40	23.50	
	19C	7.30	8.80			83 77	NA 130					
	20Cs	7.40	7.65			52	190 270		Very weak and weak red locally brown fine and medium SANDSTONE. Fractures are subhorizontal closely and medium spaced planar rough.			
									Continued Next Page	{8.00}		

EQUIPMENT: Geotechnical Pioneer rig.

METHOD: Hand dug inspection pit 0.00-1.20m. Dynamic sampled (113mm) 1.20-3.90 and 4.50-7.30m. Polymer flush rotary core drilled (116mm) 3.90-4.50m and 7.30-22.00m.

CASING: 140mm diam to 7.30m.

BACKFILL: On completion, borehole backfilled with bentonite pellets 22.00-0.20m and arisings 0.20-0.00m.

REMARKS: Downhole magnetometry for UXO risk mitigation carried out 0.00-7.30m. No anomalies encountered.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks
				Groundwater not encountered prior to use of water flush.

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BOREHOLE LOG

CLIENT ASK PROPERTY DEVELOPMENTS LTD

CP/RC112

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

Sheet 2 of 3

Start Date 20 April 2016 Easting 383767

Scale 1 : 50

End Date 21 April 2016 Northing 397306 Ground level 30.90mOD

Depth 22.00 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	I_f	instru -ment	description	depth (m)	reduced level (m)	legend
								8.20 - 8.90m: Recovered non intact as gravelly fine and medium sand. Gravel is subangular medium and coarse sandstone.	8.65	22.25	
	21C	8.80 - 8.84 8.80 - 10.30	7.30	C*1000	90 83 83	80 140 230		Weak and medium strong red fine and medium SANDSTONE. Fractures are 10° to 20° closely and medium spaced undulating smooth and rough. 9.25m: Fracture infilled (10mm) with red fine sand.	10.30	20.60	
	22C	10.30 - 11.80	7.30		97 97 91	100 130 180		Very weak locally extremely weak brownish red fine and medium SANDSTONE. Fractures are subhorizontal closely spaced undulating smooth. 10.60 - 10.90m: Mottled dark brown. Frequent rounded medium and coarse gravel sized mudstone clasts.	11.00	19.90	
						50 190 280		Weak red fine and medium SANDSTONE. Fractures are subhorizontal to 10° rarely 20° closely and medium spaced planar rough and undulating smooth. 11.30m: Fracture infilled (10mm) with red fine sand.			
	23C	11.80 - 13.30	7.30		100 100 78			11.80 - 12.40m: Brownish red. Medium and coarse grained.			
	24Cs	12.50 - 12.80						12.50m: Band (5mm) of dark grey fine sandstone.			
20/04/16 1800hrs 3.20m									13.30	17.60	
21/04/16 0730hrs 4.80m	25C	13.30 - 14.80	7.30		100 97 80	60 130 260		Weak dark brown medium and coarse SANDSTONE. Fractures are subhorizontal to 10° closely and medium spaced undulating smooth. 13.45 - 13.50m: Extremely weak. 14.40m: Pocket (15mm) of grey fine sand.			
	26C	14.80 - 16.00	7.30		100 88 54			15.00 - 15.10m: Recovered non intact as subrounded coarse sandstone gravel.			
	27C	16.00 - 17.50	7.30		97 79 73			15.80m: Fracture infill (15mm) of brown medium and coarse sand. 16.90 - 17.00m: Subvertical undulating rough fracture.			
						NI 200 310		17.00 - 17.20m: Recovered non intact as gravelly medium and coarse sand. Gravel is subangular medium and coarse sandstone and mudstone.	17.25	13.65	
	28C	17.50 - 19.00	7.30		100 81 63			Weak red and brown fine and medium locally medium and coarse SANDSTONE. Fractures are subhorizontal to 10°			
								Continued Next Page	{18.00}		

water strike (m) casing (m) rose to (m) time to rise (m) remarks

Groundwater not encountered prior to use of water flush.

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BOREHOLE LOG

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SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER — Sheet 3 of 3

Start Date 20 April 2016 — Easting 383767 — Scale 1 : 50

End Date 21 April 2016 — Northing 397306 — Ground level 30.90mOD — Depth 22.00 m

progress date/time water depth	sample no & type	depth (m) from	depth (m) to	casing depth (m)	test type & value	samp. /core range	I_f	instru -ment	description	depth (m)	reduced level (m)	legend
									very closely to medium spaced undulating smooth and rough. 18.05 - 18.10m: Extremely weak. 18.40m: Band (30mm) of sandy subangular medium and coarse mudstone gravel. 18.65 - 18.75m: Red slightly sandy angular fine to coarse mudstone gravel. 18.75 - 18.85m: Extremely weak.			
	29C	19.00	20.50	7.30		92 92 87			19.35m: 30° planar rough fracture. 19.45m: 30° planar rough fracture. 19.65 - 19.70m: Rare rounded medium and coarse gravel sized mudstone clasts.			
	30Cs	19.90	20.25									
	31C	20.50	22.00	7.30		100 90 80	NI 180 300		20.40 - 20.50m: Mottled dark brown. 20.65 - 20.70m: Recovered non intact as angular and subangular medium and coarse sandstone gravel.	20.70	10.20	
21/04/16 1050hrs 3.00m									Weak red fine and medium SANDSTONE. Fractures are subhorizontal to 10° medium rarely closely spaced undulating smooth and rough. 20.80 - 20.85m: Rare subrounded medium and coarse gravel sized mudstone clasts. 21.20 - 21.25m: Recovered non intact as subangular coarse sandstone gravel. 21.30 - 21.35m: Red angular and subangular fine to coarse mudstone gravel. 21.90 - 22.00m: Recovered non intact as sandy subangular medium and coarse sandstone gravel.	22.00	8.90	
									Borehole completed at 22.00m.	{28.00}		

water strike (m) casing (m) rose to (m) time to rise (m) remarks

Groundwater not encountered prior to use of water flush.

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BOREHOLE LOG

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SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER — Sheet 1 of 3

Start Date 26 April 2016 — Easting 383790 — Scale 1 : 50

End Date 27 April 2016 — Northing 397256 — Ground level 31.90mOD — Depth 25.00 m

progress date/time water depth	sample no & type	depth (m) from	depth (m) to	casing depth (m)	test type & value	samp. /core range	I_f	instru -ment	description	depth (m)	reduced level (m)	legend
26/04/16 0800hrs	1ES	0.00							Black and dark grey sandy (ashy) angular and subangular fine to coarse crystalline, brick and sandstone GRAVEL. (MADE GROUND)	0.15	31.75	
	1B	0.30										
	2ES	0.30										
	2B	0.60										
	3ES	0.60							Greyish brown sandy angular and subangular fine to coarse sandstone, brick and concrete GRAVEL with a high subangular brick cobble content. (MADE GROUND) 0.60m: Rare angular coarse gravel sized fragments. Possible asbestos.	0.90	31.00	
	3B	1.00										
	4ES	1.00										
	4D	1.20	1.65	Nil	S 4							
	5L	1.20	2.00							1.40	30.50	
	5ES	1.70							Greyish brown and brown gravelly locally very gravelly fine to coarse SAND with a low subangular concrete cobble content. Gravel is subangular and subrounded fine to coarse mudstone. (MADE GROUND) 1.20 - 1.40m: Loose.			
		2.00	2.45	Nil	S 3							
	6L	2.00	3.00									
	6ES	2.20							Very soft and soft dark brown slightly sandy slightly gravelly CLAY. Gravel is angular to subangular fine to coarse sandstone, brick and mudstone. (MADE GROUND) 1.95m: Subrounded clinker cobble. 1.95 - 2.00m: Frequent angular coarse gravel sized tile fragments.	2.35	29.55	
	7ES	2.70										
	7D	3.00	3.45	Nil	S <1							
	8L	3.00	4.00									
	8ES	3.20							Very soft brown gravelly CLAY. Gravel is subangular and subrounded fine to coarse brick, tile and sandstone. (MADE GROUND) 2.35 - 2.40m: Light brown. 2.80 - 3.00m: Rare pockets (up to 10mm) of yellow silt. 3.35 - 3.45m: Orange and orangish brown very sandy clay.	3.45	28.45	
	9ES	3.70								3.90	28.00	
		4.00	4.45	4.00	S 6							
	9L	4.00	5.00							4.15	27.75	
	10ES	4.30							Soft brown sandy silty CLAY with rare subrounded fine sandstone gravel. 3.80 - 3.90m: Orange clayey fine and medium sand.			
	10Ls	4.40	4.80									
	11D	5.00	5.45	4.00	S 31					5.00	26.90	
	12L	5.00	6.00						Loose greyish brown very gravelly fine and medium SAND. Gravel is subrounded and rounded fine to coarse sandstone.			
	13D	6.00	6.45	6.00	S 50				Soft locally firm brown slightly gravelly CLAY. Gravel is subangular fine to coarse sandstone. 4.80 - 5.00m: Rare subrounded fine gravel sized organic fragments. Decomposing root (4mm diam). 4.90m: Band (10mm) of orangish brown fine sand.			
	14C	6.00	6.70			71	NA					
		6.70	7.01	6.00	C*83				Dense becoming very dense brown slightly gravelly locally clayey fine and medium SAND. Gravel is subrounded and rounded fine and medium sandstone.			
	15C	6.70	8.20			47						
										7.40	24.50	
									Very dense red fine and medium SAND.			
									Continued Next Page	{8.00}		

EQUIPMENT: Geotechnical Pioneer rig.

METHOD: Hand dug inspection pit 0.00-1.20m. Dynamic sampled (128mm) 1.20-4.00m and (113mm) 4.00-6.00m. Polymer flush rotary core drilled (116mm) 6.00-25.00m.

CASING: 140mm diam to 6.00m.

BACKFILL: On completion, borehole backfilled with bentonite pellets 25.00-0.20m and arisings 0.20-0.00m.

REMARKS: Downhole magnetometry for UXO risk mitigation carried out 0.00-6.00m. No anomalies encountered.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks
				Groundwater not encountered prior to use of water flush.

AGS

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BOREHOLE LOG

CP/RC113

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

Sheet 2 of 3

Start Date 26 April 2016 Easting 383790 Scale 1 : 50

End Date 27 April 2016 Northing 397256 Ground level 31.90mOD Depth 25.00 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	I_f	instru -ment	description	depth (m)	reduced level (m)	legend
	16C	8.20 - 8.53 8.20 - 9.70	6.00	C*86	100 7 7			8.50 - 8.60m: Tending to extremely weak sandstone.			
	17C	9.70 - 9.83 9.70 - 11.20	6.00	C*273	100 53 33			9.60 - 9.70m: Extremely weak red fine and medium sandstone.	10.40	21.50	
	18C 19Cs	11.20 - 11.27 11.20 - 12.70 11.50 - 11.80	6.00	C*375	93 93 70	60 140 300		Extremely weak red fine and medium SANDSTONE. Fractures are subhorizontal to 10° closely and medium spaced planar rough and undulating smooth. 10.70 - 10.75m: Mottled green. 10.75m: Subvertical planar smooth fracture. 11.00m: Fracture infilled (10mm) with red fine and medium sand. 11.45 - 11.50m: Recovered non intact as subangular coarse sandstone gravel. 11.50 - 12.70m: Fracture surfaces frequently stained dark brown.			
26/04/16 1745hrs 2.94m	20C	12.70 - 13.00	6.00		100 20 0			12.70 - 12.90m: Recovered non intact as red fine and medium gravelly fine and medium sand. Gravel is subangular medium and coarse sandstone.	13.00	18.90	
27/04/16 0800hrs 5.18m	21C	13.00 - 14.50	6.00		97 97 95	40 160 320		Very weak and weak red fine and medium SANDSTONE. Fractures are rarely subhorizontal 10° to 20° closely and medium spaced undulating smooth and rough. 13.35 - 13.45m: Fractures are very closely spaced undulating smooth. 13.50 - 14.50m: Rare subrounded and rounded fine to coarse gravel sized mudstone clasts.			
	22C	14.50 - 16.00	6.00		100 96 86			14.90m: Band (10mm) of reddish brown mudstone recovered non intact as angular and subangular fine to coarse gravel.	15.65	16.25	
	23C 24Cs	16.00 - 17.50 16.50 - 16.85	6.00		97 97 91	40 210 370		Weak and medium strong red fine and medium SANDSTONE. Fractures are subhorizontal medium rarely very closely and closely spaced planar smooth and rough. 17.00m: Light grey subrounded coarse gravel sized sandstone clast. 17.30m: 80° planar rough fracture.			
	25C	17.50 - 19.00	6.00		98 98 82						
								Continued Next Page	{18.00}		

water strike (m) casing (m) rose to (m) time to rise (m) remarks

Groundwater not encountered prior to use of water flush.

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BOREHOLE LOG

CP/RC113

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

Sheet 3 of 3

Start Date 26 April 2016 Easting 383790 Scale 1 : 50

End Date 27 April 2016 Northing 397256 Ground level 31.90mOD Depth 25.00 m

progress date/time water depth	sample no & type	depth (m) from	depth (m) to	casing depth (m)	test type & value	samp. /core range	I_f	instru -ment	description	depth (m)	reduced level (m)	legend
									18.05 - 18.30m: Frequent subrounded and rounded fine to coarse gravel sized mudstone clasts.			
									18.70m: Band (10mm) of subangular medium and coarse mudstone gravel.			
	26C	19.00	20.50	6.00		100 100 86						
	27C	20.50	22.00	6.00		100 97 97						
									21.80m: Fracture infilled (20mm) with red fine and medium sand.			
	28C	22.00	23.50	6.00		100 100 91			22.35m: Subrounded coarse gravel sized mudstone clast.			
									22.70 - 22.75m: Extremely weak.			
									22.90 - 23.40m: Frequent subrounded and rounded medium and coarse gravel sized mudstone clasts.			
	29C	23.50	25.00	6.00		100 100 84	200 350 470		23.60 - 23.75m: Frequent subrounded fine to coarse gravel sized mudstone clasts.	23.80	8.10	
									Medium strong red fine locally fine and medium SANDSTONE. Fractures are 20° medium spaced planar smooth rarely undulating rough.			
27/04/16 1500hrs 2.33m	30Cs	24.40	24.85									
									Borehole completed at 25.00m.	25.00	6.90	
										{28.00}		

water strike (m) casing (m) rose to (m) time to rise (m) remarks

Groundwater not encountered prior to use of water flush.

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BOREHOLE LOG

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CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

Sheet 1 of 3

Start Date 15 April 2016 Easting 383827 Scale 1 : 50

End Date 19 April 2016 Northing 397268 Ground level 32.45mOD Depth 26.50 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	I_f	instru -ment	description	depth (m)	reduced level (m)	legend
15/04/16 1030hrs	1ES	0.00						Greyish brown slightly sandy silty angular and subangular fine to coarse brick, concrete and rare clinker GRAVEL with rare angular coarse gravel sized glass fragments and a high subangular brick and concrete cobble content. (MADE GROUND) 0.30 - 0.45m: Light grey subangular concrete boulder.	0.40	32.05	
	1B	0.30									
	2ES	0.30									
	2B	0.60									
	3ES	0.60									
	3B	1.00									
	4ES	1.00									
	4D	1.20 - 1.65	1.20	S 4				Greyish brown clayey very sandy angular and subangular fine to coarse brick, concrete and crystalline GRAVEL with a medium subangular brick and concrete cobble content. (MADE GROUND) 0.95 - 1.00m: Rare subangular coarse gravel sized wood fragments. 1.20 - 1.50m: Locally black. Rare brick gravel.	1.50	30.95	
	5L	1.20 - 2.00							1.60	30.85	
	5ES	1.70									
	6D	2.00 - 2.45	1.20	S 4							
	7L	2.00 - 3.00							2.20	30.25	
	6ES	2.20						Brown gravelly medium and coarse SAND with rare pockets (up to 20mm) of yellow fine sand. Gravel is angular and subangular fine to coarse brick and sandstone. (MADE GROUND)	2.40	30.05	
									2.60	29.85	
15/04/16 1400hrs 0.00m	7ES	2.70									
	8D	3.00 - 3.45	3.00	S 8				Soft brown slightly gravelly sandy CLAY. Gravel is subangular and subrounded fine to coarse brick and sandstone. (MADE GROUND)	2.90	29.55	
18/04/16 0930hrs Dry	9L	3.00 - 4.00									
	8ES	3.20							3.30	29.15	
	9ES	3.70						Loose brown slightly clayey gravelly medium and coarse SAND. Gravel is subangular and subrounded fine to coarse brick, sandstone and rare mudstone. (MADE GROUND)			
	10D	4.00 - 4.45	4.00	S 21							
	11L	4.00 - 5.00						Soft locally firm brown slightly gravelly sandy CLAY. Gravel is subangular to rounded fine and medium brick and sandstone. (MADE GROUND)			
								Brown and greyish brown slightly gravelly clayey fine and medium SAND. Gravel is angular and subangular fine to coarse sandstone and tile. (MADE GROUND)			
	12D	5.00 - 5.45	5.00	S 17							
	13L	5.00 - 6.00						Firm greyish brown slightly gravelly sandy CLAY. Gravel is subangular and subrounded fine to coarse sandstone. (MADE GROUND)			
								Stiff brown slightly gravelly CLAY. Gravel is subrounded and rounded fine to coarse sandstone. Frequent rootlets. 3.30 - 3.60m: Locally mottled orange. 4.30 - 4.50m: Locally mottled orange. 4.90 - 4.95m: Band of light brown fine sand with rare subangular fine and medium mudstone gravel.	5.70	26.75	
	14D	6.00 - 6.45	6.00	S 39		NA			6.00	26.45	
	15L	6.00 - 7.00									
								Dark red slightly gravelly clayey fine and medium SAND. Gravel is subrounded and rounded fine and medium sandstone and quartz. 5.80 - 6.00m: Mottled orange.			
	16D	7.00 - 7.37	7.00	S*68	73						
	17C	7.00 - 8.50						Dense becoming very dense brown locally reddish brown slightly clayey slightly gravelly fine and medium SAND. Gravel is subangular to rounded fine and medium rarely coarse sandstone lithorelicts. 6.30 - 6.50m: Locally mottled orange.			
								Continued Next Page	{8.00}		

EQUIPMENT: Geotechnical Pioneer rig.

METHOD: Hand dug inspection pit 0.00-1.20m. Dynamic sampled (113mm) 1.20-7.00m. Polymer flush rotary core drilled (116mm) 7.00-26.50m.

CASING: 140mm diam to 7.00m.

BACKFILL: On completion, borehole backfilled with bentonite pellets 26.50-5.00m. A slotted standpipe (50mm) with geosock was installed to 5.00m, granular response zone 5.00-1.00m, bentonite seal 1.00-0.30m, concrete and traffic rated stopcock cover 0.30-0.00m.

REMARKS: Downhole magnetometry for UXO risk mitigation carried out 0.00-7.00m. No anomalies encountered.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks
				Groundwater not encountered prior to use of water flush.

AGS

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BOREHOLE LOG

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CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

Sheet 2 of 3

Start Date 15 April 2016 Easting 383827 Scale 1 : 50

End Date 19 April 2016 Northing 397268 Ground level 32.45mOD Depth 26.50 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	I_f	instru -ment	description	depth (m)	reduced level (m)	legend
		8.50 - 8.80	7.00	S*83							
	18C	8.50 - 9.10			92						
						NA			9.00	23.45	
	19C	9.10 - 10.00			100			Very dense red fine and medium SAND with rare subrounded medium and coarse sandstone gravel. 9.00 - 9.20m: Slightly clayey.			
		10.00 - 10.20	7.00	C*158							
	20C	10.00 - 11.50			90 43 33			10.00 - 10.50m: Locally tending to extremely weak fine and medium sandstone.			
									10.50	21.95	
						NI 90 200		Extremely weak and very weak red fine and medium SANDSTONE. Fractures are subhorizontal to 10° closely rarely medium spaced undulating rough.			
	21Cs	10.75 - 10.95							11.00	21.45	
						90 130 220		10.95 - 11.00m: Band of brown sandy clay.			
		11.50 - 11.74	7.00	C*176				Very weak and weak red fine and medium SANDSTONE. Fractures are subhorizontal to 10° closely rarely medium spaced undulating smooth and rough.			
	22C	11.50 - 13.00			97 93 83			11.00 - 11.05m: Recovered non intact as fine and medium sand.			
	23C	13.00 - 14.50	7.00		100 83 71						
									13.45	19.00	
						40 200 350		13.40 - 13.45m: Red silty fine sand with subangular coarse mudstone gravel.			
	24Cs	13.85 - 14.20						Weak to medium strong red fine and medium SANDSTONE. Fractures are subhorizontal to 20° closely and medium rarely very closely spaced undulating smooth and rough.			
	25C	14.50 - 16.00	7.00		100 93 75			13.55 - 13.60m: Red slightly gravelly clayey fine sand. Gravel is subangular medium mudstone. 13.70 - 13.80m: Locally yellow. 14.40 - 14.45m: Fracture infilled with red fine sand.			
								15.10 - 15.20m: Locally yellow.			
18/04/16 1800hrs 2.61m								15.50 - 15.60m: Red slightly gravelly clayey fine sand. Gravel is subrounded medium and coarse mudstone.			
19/04/16 0800hrs 5.91m	26C	16.00 - 17.50	7.00		97 93 93			15.90m: Band (5mm) of light grey fine sandstone.			
								16.50 - 18.50m: Locally frequent subrounded and rounded fine to coarse gravel sized mudstone clasts.			
	27C	17.50 - 19.00	7.00		83 77 77						
								Continued Next Page	{18.00}		

water strike (m) casing (m) rose to (m) time to rise (m) remarks

Groundwater not encountered prior to use of water flush.

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BOREHOLE LOG

CP/RC115

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER — Sheet 3 of 3

Start Date 15 April 2016 — Easting 383827 — Scale 1 : 50

End Date 19 April 2016 — Northing 397268 — Ground level 32.45mOD — Depth 26.50 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	I_f	instru -ment	description	depth (m)	reduced level (m)	legend
									18.65	13.80	
						30 70 190		Very weak dark red fine and medium SANDSTONE with frequent subrounded medium and coarse gravel sized mudstone clasts. Fractures are subhorizontal very closely and closely spaced undulating rough.	19.00	13.45	
	28C	19.00 - 20.50	7.00		100 90 85	90 240 450		Weak and medium strong red fine and medium SANDSTONE. Fractures are subhorizontal to 10° closely and medium spaced undulating rough. 19.05 - 19.15m: Mottled grey. 19.85 - 19.95m: Extremely weak with abundant subrounded medium and coarse gravel sized mudstone clasts.			
	29C	20.50 - 22.00	7.00		100 100 97			20.05 - 20.10m: Subangular fine to coarse mudstone clasts. 20.15 - 20.35m: Greyish orange. Medium and coarse grained. 20.45m: 40° undulating smooth fracture. 20.70 - 21.20m: Rare grey subrounded fine and medium sandstone clasts. 21.50m: Fracture infilled (5mm) with light grey coarse sand.			
	30C	22.00 - 23.50	7.00		100 100 100			22.00 - 22.10m: Locally light grey.			
	31C	23.50 - 25.00	7.00		100 97 93			23.40m: Band (5mm) of reddish brown mudstone. 24.00 - 25.50m: Frequent subrounded fine to coarse gravel sized mudstone clasts.			
	32C	25.00 - 26.50	7.00		100 97 97						
	33Cs	25.65 - 26.00						25.60 - 25.70m: Rare grey subrounded fine sandstone clasts. 26.00 - 26.25m: Subangular mudstone cobble.			
19/04/16 1515hrs 3.09m									26.50	5.95	
								Borehole completed at 26.50m.	{28.00}		

water strike (m) casing (m) rose to (m) time to rise (m) remarks

Groundwater not encountered prior to use of water flush.

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BOREHOLE LOG

CP/RC116

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

Sheet 1 of 3

Start Date 19 April 2016 Easting 383803 Scale 1 : 50

End Date 21 April 2016 Northing 397268 Ground level 31.55mOD Depth 23.10 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	I_f	instru -ment	description	depth (m)	reduced level (m)	legend
19/04/16 1715hrs	1ES	0.00						Light grey and dark grey slightly sandy subangular fine to coarse crystalline and sandstone GRAVEL. (MADE GROUND)	0.30	31.25	
	1B	0.30									
	2ES	0.30						Grey mottled dark brown slightly clayey sandy angular and subangular fine to coarse crystalline and sandstone GRAVEL. (MADE GROUND)			
	2B	0.60									
	3ES	0.60									
	3B	1.00									
	4ES	1.00									
	5D	1.20 - 1.65	Nil	S 7				1.20 - 1.65m: Loose.			
	6L	1.20 - 1.80						1.20 - 1.90m: Rare angular coarse gravel sized tile fragments and subrounded fine coal gravel.			
19/04/16 1830hrs Dry	5ES	1.40						1.65 - 1.80m: Frequent subangular medium and coarse brick gravel.	1.90	29.65	
		1.80 - 2.12	Nil	S 39				Dense brown locally slightly clayey slightly gravelly fine and medium SAND. Gravel is subangular fine and medium sandstone and rare brick. (MADE GROUND)	2.30	29.25	
20/04/16 0800hrs Dry	7L	1.80 - 3.00						2.10 - 2.30m: Clayey.			
	6ES	1.90									
	7ES	2.40									
	8ES	2.90						Medium dense light brown fine and medium SAND with rare subangular and subrounded fine and medium brick and sandstone gravel. (MADE GROUND)			
	8D	3.00 - 3.45	3.00	S 13				2.30 - 2.40m: Mottled dark brown. Slightly clayey.			
	9L	3.00 - 4.00									
	9ES	3.40						3.60 - 3.70m: Mottled black. Rare subangular fine mudstone gravel.	3.70	27.85	
	10D	4.00 - 4.45	4.00	S 9				Loose greyish brown gravelly fine and medium SAND. Gravel is subangular to rounded fine to coarse sandstone.			
	10ES	3.90						4.20 - 4.40m: Slightly clayey.	4.40	27.15	
	11L	4.00 - 4.60									
	11ES	4.40									
	12D	4.60 - 5.05	4.00	S 33				Very stiff brown slightly gravelly sandy CLAY. Gravel is subangular fine and medium sandstone.			
	13C	4.60 - 4.80			75	NA		4.60 - 4.80m: Strong light grey crystalline cobble and subangular coarse sandstone gravel.	4.80	26.75	
	14L	4.80 - 5.60									
	12ES	4.90						Dense orangish brown slightly gravelly fine and medium SAND. Gravel is subrounded and rounded fine sandstone and quartz.			
	13ES	5.40						4.80 - 4.90m: Slightly clayey.	5.70	25.85	
	15D	5.60 - 6.05	4.70	S 36							
	16L	5.60 - 6.60						Dense becoming very dense brown slightly gravelly fine and medium SAND. Gravel is subrounded and rounded fine and medium sandstone.			
	17D	6.60 - 7.04	4.70	S*52							
	18C	6.60 - 8.10			33	NA					
									6.95	24.60	
								Very dense dark red fine and medium SAND.			
								Continued Next Page	{8.00}		

EQUIPMENT: Geotechnical Pioneer rig.

METHOD: Hand dug inspection pit 0.00-1.20m. Dynamic sampled (113mm) 1.20-4.60m and 4.80m-6.60m. Polymer flush rotary core drilled (116mm) 4.60-4.80m and 6.60-23.10m.

CASING: 140mm diam to 6.70m.

BACKFILL: On completion, borehole backfilled with bentonite pellets 23.10-0.20m and arisings 0.20-0.00m.

REMARKS: Downhole magnetometry for UXO risk mitigation carried out 0.00-6.60m. No anomalies encountered.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks
				Groundwater not encountered prior to use of water flush.

AGS

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Geotechnical Engineering Limited

BOREHOLE LOG

CP/RC116

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

Sheet 2 of 3

Start Date 19 April 2016 Easting 383803 Scale 1 : 50

End Date 21 April 2016 Northing 397268 Ground level 31.55mOD Depth 23.10 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	I_f	instru -ment	description	depth (m)	reduced level (m)	legend
	19C	8.10 - 8.31 8.10 - 9.60	6.70	C*150	83 38 35	40 180 260		8.35 - 8.40m: Extremely weak fine and medium sandstone.	8.55	23.00	
						10 120 220		Extremely weak red fine and medium SANDSTONE. Fractures are 10° to 20° closely rarely medium spaced undulating rough. 8.60m: 60° undulating smooth fracture. 8.95 - 9.10m: Red fine and medium sand. 9.25 - 9.30m: Red fine and medium sand.	9.35	22.20	
	20C	9.60 - 9.72 9.60 - 11.10	6.70	C*375	97 77 77			Very weak locally weak red fine and medium SANDSTONE. Fractures are 10° to 20° rarely 30° closely and medium spaced planar rough and undulating smooth. 9.60 - 9.85m: Red fine and medium sand. 10.20 - 10.30m: Fractures are very closely spaced undulating smooth. 10.50m: Fracture infilled with red fine and medium sand.			
	21Cs	10.55 - 10.75									
	22C	11.10 - 11.22 11.10 - 12.60	6.70	C*500	57 35 8			11.20 - 12.60m: Drilling disturbed. Recovered locally non intact as subrounded cobbles.			
	23C	12.60 - 12.67 12.60 - 14.10	6.70	C*600	87 80 65	90 180 290			12.75	18.80	
	24Cs	13.35 - 13.65						Very weak and weak red fine and medium SANDSTONE. Fractures are subhorizontal to 10° closely and medium spaced undulating smooth and rough.			
	25C	14.10 - 15.60			97 95 91						
20/04/16 1830hrs 2.35m											
21/04/16 0800hrs 4.54m	26C	15.60 - 17.10			100 100 85	90 270 540			15.75	15.80	
								Weak and medium strong red medium SANDSTONE. Fractures are subhorizontal to 20° medium rarely closely spaced undulating smooth and rough. 15.85m: Grey subrounded sandstone clast (10mm diam).			
	27C	17.10 - 18.60			92 88 69						
								Continued Next Page	{18.00}		

water strike (m) casing (m) rose to (m) time to rise (m) remarks

Groundwater not encountered prior to use of water flush.

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BOREHOLE LOG

CP/RC116

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

Sheet 3 of 3

Start Date 19 April 2016 Easting 383803 Scale 1 : 50

End Date 21 April 2016 Northing 397268 Ground level 31.55mOD Depth 23.10 m

progress date/time water depth	sample no & type	depth (m) from	depth (m) to	casing depth (m)	test type & value	samp. /core range	I_f	instru -ment	description	depth (m)	reduced level (m)	legend
									18.15 - 18.20m: Intersecting subhorizontal undulating rough and 70° undulating rough fractures.			
	28C	18.60	20.10			100 95 79			19.10 - 19.15m: Recovered non intact as subangular coarse sandstone gravel.			
	29C	20.10	21.60			100 100 90			19.85m: Band (10mm) of red angular and subangular medium and coarse mudstone gravel. 20.10 - 20.20m: Recovered non intact as fine and medium gravelly sand. Gravel is subangular fine and medium sandstone. 20.70 - 21.00m: Frequent subrounded and rounded medium and coarse gravel sized mudstone clasts.			
	30C	21.60	23.10			100 100 75						
	31Cs	22.10	22.30						22.00 - 22.40m: Locally mottled brown.			
										22.70	8.85	
21/04/16 1230hrs 2.70m							40 100 160		Weak and medium strong red fine locally medium SANDSTONE. Fractures are subhorizontal to 10° closely spaced undulating smooth.	23.10	8.45	
									Borehole completed at 23.10m.	{28.00}		

water strike (m) casing (m) rose to (m) time to rise (m) remarks

Groundwater not encountered prior to use of water flush.

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BOREHOLE LOG

CP/RC117

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

Sheet 1 of 1

Start Date 21 April 2016 Easting 383802 Scale 1 : 50

End Date 21 April 2016 Northing 397309 Ground level 30.85mOD Depth 0.30 m

progress date/time water depth	sample no & type	depth (m) from	depth (m) to	casing depth (m)	test type & value	samp. /core range		instru -ment	description	depth (m)	reduced level (m)	legend
21/04/16 1440hrs									MADE GROUND comprising black TARMACADAM.	0.05	30.80	
21/04/16 1515hrs Dry									Dark greyish brown sandy angular and subangular fine to coarse brick, crystalline and sandstone GRAVEL. (MADE GROUND)	0.30	30.55	
									Orange drainage pipe (150mm diam). Borehole completed at 0.30m.	{8.00}		

EQUIPMENT: Geotechnical Pioneer rig.

METHOD: Hand dug inspection pit 0.00-0.30m.

REMARKS: Pit terminated at 0.30m due to presence of orange drainage pipe (150mm diam).

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m) casing (m) rose to (m) time to rise (min) remarks

Groundwater not encountered.

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BOREHOLE LOG

CP/RC117A

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER — Sheet 1 of 3

Start Date 21 April 2016 — Easting 383803 — Scale 1 : 50

End Date 25 April 2016 — Northing 397310 — Ground level 30.90mOD — Depth 23.00 m

progress date/time water depth	sample no & type	depth (m) from	depth (m) to	casing depth (m)	test type & value	samp. /core range	I_f	instru -ment	description	depth (m)	reduced level (m)	legend
21/04/16 1330hrs	C	0.00	0.10			100			MADE GROUND comprising black TARMACADAM recovered non intact.	0.07	30.83	
	1ES	0.10								0.20	30.70	
	1B	0.30							Grey slightly clayey slightly sandy angular and subangular fine to coarse crystalline and sandstone GRAVEL. (MADE GROUND)	0.60	30.30	
	2ES	0.30								0.90	30.00	
	2B	0.60							Brown gravelly fine to coarse SAND with a high subangular brick cobble content. Gravel is angular and subangular fine to coarse brick and sandstone. (MADE GROUND)			
	3ES	0.60										
	3B	1.00										
	4ES	1.00		Nil	S 1							
	4D	1.20	1.65									
	5L	1.20	2.00									
	5ES	1.40							Brown locally black gravelly (locally ashy) fine to coarse SAND. Gravel is subangular and subrounded fine to coarse sandstone and brick. (MADE GROUND)	1.80	29.10	
	6ES	1.90								2.05	28.85	
	6D	2.00	2.45	Nil	S 3							
	7L	2.00	3.00						Very loose dark grey slightly clayey sandy subangular and subrounded fine to coarse sandstone and brick GRAVEL with a high subangular brick cobble content. (MADE GROUND) 1.20 - 1.65m: Very loose.			
	7ES	2.50										
	8D	3.00	3.45	Nil	S 18							
	9L	3.00	4.00						Firm dark brown gravelly CLAY. Gravel is subangular and subrounded medium and coarse sandstone and brick. (MADE GROUND) 1.95 - 2.05m: Rare gravel.	3.20	27.70	
21/04/16 1830hrs 1.78m										3.60	27.30	
	10D	4.00	4.45	4.00	S 38				Very loose becoming medium dense brown slightly gravelly fine and medium SAND. Gravel is subangular to rounded fine rarely medium coal and sandstone. 2.05 - 2.35m: Clayey. 2.40 - 2.60m: Light brown. 2.70 - 2.80m: Locally orange. 2.85 - 2.90m: Rare subrounded coarse coal gravel. 2.90 - 3.10m: Greyish brown locally mottled black.	4.00	26.90	
22/04/16 0800hrs 2.68m	11L	4.00	5.00									
	12D	5.00	5.45	5.00	S 37							
	13C	5.00	6.50			70	NA		Medium dense yellowish brown slightly clayey gravelly fine and medium SAND. Gravel is subrounded and rounded fine to coarse sandstone. 3.50m: Subrounded sandstone cobble.			
									Red fine and medium SAND.			
									Dense becoming very dense brown slightly clayey slightly gravelly fine and medium SAND. Gravel is subrounded and rounded fine to coarse sandstone. 4.30 - 5.00m: Clayey. 5.40 - 5.50m: Gravelly.			
		6.50	6.78	5.00	C*115							
	14C	6.50	8.00			100 25 20						
									7.25 - 7.30m: Brownish red angular and subangular medium and coarse mudstone gravel.	7.30	23.60	
							70 300		Red fine and medium SAND locally tending to extremely weak sandstone with frequent subrounded medium gravel	7.70	23.20	
		8.00	8.07	5.00	C*1000							
									Continued Next Page	{8.00}		

EQUIPMENT: Geotechnical Pioneer rig.

METHOD: Waterflush rotary core drilled (300mm) 0.00-0.10m. Hand dug inspection pit 0.10-1.20m. Dynamic sampled (128mm) 1.20-3.00m and (113mm) 3.00-5.00m. Polymer flush rotary core drilled (116mm) 5.00-23.00m.

CASING: 140mm diam to 5.00m.

BACKFILL: On completion, borehole backfilled with bentonite pellets 23.00-10.00m. A slotted standpipe (19mm) was installed to 10.00m, granular response zone 10.00-4.00m, bentonite seal 4.00-2.50m. A second slotted standpipe (50mm) was installed to 2.50m, granular response zone 2.50-1.00m, bentonite seal 1.00-0.20m, concrete and traffic rated stopcock cover 0.20-0.00m.

REMARKS: Downhole magnetometry for UXO risk mitigation carried out 0.00-5.00m. No anomalies encountered.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks
				Groundwater not encountered prior to use of water flush.

AGS

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BOREHOLE LOG

CP/RC117A

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER — Sheet 2 of 3

Start Date 21 April 2016 — Easting 383803 — Scale 1 : 50

End Date 25 April 2016 — Northing 397310 — Ground level 30.90mOD — Depth 23.00 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	I_f	instru -ment	description	depth (m)	reduced level (m)	legend
	15C	8.00 - 9.50			100 82 78	370		sized mudstone clasts.			
	16Cs	8.25 - 8.60						Very weak and weak red fine and medium SANDSTONE. Fractures are subhorizontal to 10° medium rarely closely spaced undulating smooth and rough.			
								8.90 - 9.00m: Brown angular and subangular medium and coarse mudstone gravel.			
	17C	9.50 - 11.00	5.00		100 99 83			9.30 - 9.50m: Extremely weak.			
						90 220 360		10.80m: Fracture infilled (10mm) with red fine and medium sand.	10.85	20.05	
	18C	11.00 - 12.50	5.00		100 92 88			Weak brownish red fine locally medium SANDSTONE. Fractures are subhorizontal to 20° closely and medium spaced undulating smooth and rough. 11.10m: 50° planar smooth fracture. 11.50 - 11.60m: Dark red slightly sandy clayey angular and subangular mudstone gravel. 11.80m: Fracture infilled (10mm) with red fine and medium sand. 11.80 - 12.10m: Frequent subrounded and rounded medium and coarse gravel sized mudstone clasts.			
	19C	12.50 - 14.00	5.00		100 100 100						
	20C	14.00 - 15.50	5.00		100 97 91						
	21Cs	14.25 - 14.60									
22/04/16 1300hrs 2.27m								14.65 - 15.00m: Frequent subrounded and rounded medium and coarse gravel sized mudstone clasts. 14.95m: Band (4mm) of dark red mudstone.			
25/04/16 0900hrs 5.10m	22C	15.50 - 17.00	5.00		97 95 91			15.50 - 15.80m: Medium and coarse grained.	15.80	15.10	
						80 200 430		Weak and medium strong red fine and medium SANDSTONE. Fractures are 10° to 20° closely and medium spaced undulating rough. 16.00m: Band (10mm) of dark red mudstone.			
	23C	17.00 - 18.50	5.00		100 100 100						
								Continued Next Page	{18.00}		

water strike (m) casing (m) rose to (m) time to rise (m) remarks

Groundwater not encountered prior to use of water flush.

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BOREHOLE LOG

CP/RC117A

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER — Sheet 3 of 3

Start Date 21 April 2016 — Easting 383803 — Scale 1 : 50

End Date 25 April 2016 — Northing 397310 — Ground level 30.90mOD — Depth 23.00 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	I_f	instru -ment	description	depth (m)	reduced level (m)	legend
								18.25m: Pocket (20mm) of black coarse sand.			
	24C	18.50 - 20.00	5.00		98 91 85			19.00 - 19.80m: Locally frequent subrounded and rounded fine to coarse gravel sized mudstone clasts. 19.20 - 19.30m: Reddish brown sandy angular and subangular fine to coarse mudstone gravel. 19.65m: Pocket (10mm) of green fine sand.			
	25C	20.00 - 21.50	5.00		100 91 73			20.50 - 20.80m: Extremely weak. 20.65 - 20.75m: Reddish brown sandy angular and subangular fine to coarse mudstone gravel.	20.85	10.05	
						120 240 410		Medium strong red fine locally medium SANDSTONE. Fractures are subhorizontal to 10° medium rarely closely spaced undulating smooth rarely rough.			
	26C	21.50 - 23.00	5.00		100 100 97			21.85 - 21.95m: Fractures are very closely spaced.			
25/04/16 1800hrs 2.32m	27Cs	22.60 - 23.00							23.00	7.90	
								Borehole completed at 23.00m.	{28.00}		

water strike (m) casing (m) rose to (m) time to rise (m) remarks

Groundwater not encountered prior to use of water flush.

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TRIAL PIT LOG

WS102

CLIENT	ASK PROPERTY DEVELOPMENTS LTD					Sheet	1 of 1
SITE	PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER					Scale	1 : 25
Start Date	18 April 2016	Easting	383709				
End Date	18 April 2016	Northing	397272	Ground level	30.90mOD	Depth	0.90 m

water record	sample/test no/type	sample/test result	sample/test depth (m)	description	depth (m)	level (m)	legend
	1ES		0.00	Dark grey sandy angular to subrounded fine to coarse brick, concrete and charcoal GRAVEL with high brick cobble content. (MADE GROUND)			
	1B		0.30- 0.50		0.40	30.50	
	2ES		0.30- 0.50	Grey clayey very sandy angular to subrounded fine to coarse brick, concrete and charcoal GRAVEL with high brick cobble content. (MADE GROUND)			
	2B		0.60- 0.80				
	3ES		0.60- 0.80				
	3B		0.80- 0.90		0.90	30.00	
Dry.	4ES		0.80- 0.90	Trial pit completed at 0.90m.			

Notes

Trial pit excavated by hand.
Groundwater was not encountered.
Trial pit sides remained stable.
On completion, the trial pit was backfilled and the surface reinstated.
Pit refused at 1.20m due to buried concrete slab.
Downhole magnetometry for UXO risk mitigation carried out 0.00-0.90m. No anomalies encountered.

Sketch of Foundation - Not to scale. All dimensions in metres.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

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BOREHOLE LOG

WS105

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER — Sheet 1 of 1

Start Date 28 April 2016 — Easting 383749 — Scale 1 : 50

End Date 28 April 2016 — Northing 397266 — Ground level 31.05mOD — Depth 2.70 m

progress date/time water depth	sample no & type	depth (m) from	depth (m) to	casing depth (m)	test type & value	samp. /core range		instru -ment	description	depth (m)	reduced level (m)	legend
28/04/16 1000hrs	1ES	0.00							Dark grey slightly clayey gravelly fine and medium SAND with a high brick cobble content. Gravel is subangular fine to coarse brick, concrete and coal. (MADE GROUND)			
	1B	0.30	0.50									
	2ES	0.30										
	2B	0.60	0.80									
	3ES	0.60										
	3B	1.00	1.20							1.00	30.05	
	4ES	1.00										
	4D	1.20	1.65	Nil	S 4				Very loose to loose dark grey sandy subangular fine to coarse brick and concrete GRAVEL with a high brick cobble content. (MADE GROUND)			
	5L	1.20	2.70									
	5ES	1.50								1.65	29.40	
									Dark grey sandy subangular fine to coarse bitumen GRAVEL. (MADE GROUND)			
	6ES	2.00							1.95 - 2.10m: Subangular concrete cobble.	2.10	28.95	
28/04/16 1115hrs									Grey slightly clayey gravelly fine to coarse SAND. Gravel is subangular fine to coarse brick. (MADE GROUND)	2.40	28.65	
Dry	7ES	2.50							Soft dark grey slightly gravelly sandy CLAY. Gravel is subangular and subrounded siltstone and coal.	2.70	28.35	
		2.70	3.15	Nil	S 15				Borehole completed at 2.70m.	{8.00}		

EQUIPMENT: Geotechnical Pioneer rig.

METHOD: Hand dug inspection pit 0.00-1.20m. Dynamic sampled (113mm) 1.20-2.70m.

CASING: None used.

BACKFILL: On completion, hole backfilled with local materials.

REMARKS: Downhole magnetometry for UXO risk mitigation carried out 0.00-2.70m. No anomalies encountered.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks
				Groundwater not encountered.

AGS

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BOREHOLE LOG

WS106

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER — Sheet 1 of 1

Start Date 18 April 2016 — Easting 383706 — Scale 1 : 50

End Date 19 April 2016 — Northing 397239 — Ground level 32.85mOD — Depth 4.45 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	instru -ment	description	depth (m)	reduced level (m)	legend
18/04/16 1500hrs Dry	1ES	0.00 - 0.00					Dark grey sandy gravelly SILT. Gravel is angular to subrounded fine to coarse brick, concrete and charcoal. Low concrete and brick cobbles content. (MADE GROUND)	0.50	32.35	
	1B	0.30 - 0.50								
	2ES	0.30 - 0.50								
18/04/16 1600hrs Dry	2B	0.60 - 0.80					Dark brown very clayey fine to coarse SAND with high ceramic fragment and brick cobble content. (MADE GROUND)	0.80	32.05	
	3ES	0.60 - 0.80								
	3B	0.80 - 1.00								
19/04/16 0830hrs Dry	4ES	0.80 - 1.00								
	4D	1.20 - 1.65	Nil	S 10			Greenish orange clayey fine and medium SAND.	1.20	31.65	
	5L	1.20 - 2.00					Loose and medium dense dark orangish brown mottled dark grey slightly clayey slightly gravelly fine to coarse SAND. Gravel is subangular to subrounded fine to coarse sandstone. Rare rootlets.			
	6D	2.00 - 2.45	2.00	S 35			1.55 - 1.60m: Clayey.	2.15	30.70	
	5ES	2.00 - 2.20								
	7L	2.00 - 3.00					Dense dark brownish orange slightly gravelly fine to coarse SAND. Gravel is subangular to subrounded fine to coarse sandstone. 2.65 - 2.70m: Mottled dark grey.	3.00	29.85	
	8D	3.00 - 3.45	3.00	S 34			Stiff and very stiff dark brown mottled dark grey and orangish brown slightly sandy slightly gravelly CLAY. Gravel is subangular to subrounded fine to medium sandstone.			
	9L	3.00 - 4.00								
19/04/16 1200hrs Dry	10D	4.00 - 4.45	3.00	S 30			3.95 - 4.00m: Limestone cobble.	4.45	28.40	
							Borehole completed at 4.45m.	{8.00}		

EQUIPMENT: Geotechnical Terrier 2000 rig.

METHOD: Hand dug inspection pit 0.00-1.20m. Dynamic sampled (98mm) 1.20-3.00m (84mm) 3.00-4.00m.

CASING: 113mm diam to 3.00m.

BACKFILL: On completion, hole backfilled with bentonite pellets and local materials.

REMARKS: Downhole magnetometry for UXO risk mitigation carried out 0.00-4.00m. No anomalies encountered.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m) casing (m) rose to (m) time to rise (min) remarks

Groundwater not encountered.

AGS

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TRIAL PIT LOG

WS107

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

Sheet 1 of 1

Start Date 18 April 2016 Easting 383733 Scale 1 : 25

End Date 18 April 2016 Northing 397239 Ground level 33.00mOD Depth 0.50 m

water record	sample/test no/type	sample/test result	sample/test depth (m)	description	depth (m)	level (m)	legend
	1ES		0.00	Dark grey slightly gravelly sandy clayey SILT with high brick cobble content. (MADE GROUND)			
	2ES		0.30- 0.50		0.50	32.50	
Dry.				Trial pit completed at 0.50m.			

Notes

Trial pit excavated by hand.
Groundwater was not encountered.
Trial pit sides remained stable.
On completion, the trial pit was backfilled and the surface reinstated.
Pit backfilled at 0.50m due to presence of unknown service.
Downhole magnetometry for UXO risk mitigation carried out 0.00-0.50m. No anomalies encountered.

Sketch of Foundation - Not to scale. All dimensions in metres.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

AGS

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BOREHOLE LOG

WS107A

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

Sheet 1 of 1

Start Date 19 April 2016 Easting 383734 Scale 1 : 50

End Date 19 April 2016 Northing 397239 Ground level 33.00mOD Depth 4.45 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	instru -ment	description	depth (m)	reduced level (m)	legend
19/04/16 1200hrs	1ES	0.00 - 0.00					Dark brown slightly sandy gravelly clayey SILT. Gravel is angular to subrounded fine to coarse brick, concrete and charcoal. Low brick cobble content. (MADE GROUND)	0.50	32.50	
	1B	0.30 - 0.50					Dark brown slightly sandy slightly gravelly clayey SILT with frequent brick cobbles. (MADE GROUND)	0.80	32.20	
	2ES	0.30 - 0.50					Dark brown silty very gravelly fine to coarse SAND. Gravel is angular to subrounded fine to coarse brick, charcoal, flint, sandstone and crystalline. (MADE GROUND)	1.10	31.90	
	2B	0.60 - 0.80					Loose and very loose dark brown slightly sandy gravelly clayey SILT. Gravel is angular to subrounded fine to coarse brick, charcoal, flint, sandstone and crystalline. Frequent brick cobbles. (MADE GROUND)			
	3ES	0.60 - 0.80								
	3B	0.90 - 1.10								
	4ES	0.90 - 1.10	Nil	S 4						
	4D	1.20 - 1.65								
	5L	1.20 - 2.00								
	5ES	1.50								
	6D	2.00 - 2.45	2.00	S<1						
	6ES	2.00								
	7L	2.00 - 3.00								
	7ES	2.50								
	8D	3.00 - 3.45	3.00	S 1						
	9L	3.00 - 4.00						3.40	29.60	
	10D	4.00 - 4.45	3.00	S 27			Stiff dark brown mottled dark orangish brown slightly sandy slightly gravelly CLAY. Gravel is subangular to rounded fine to coarse sandstone.			
19/04/16 1730hrs Dry	8ES	4.00						4.45	28.55	
							Borehole completed at 4.45m.	{8.00}		

EQUIPMENT: Geotechnical Terrier 2000 rig.

METHOD: Hand dug inspection pit 0.00-1.10m. Dynamic sampled (98mm) 1.20m-3.00m (84mm) 3.00-4.00m.

CASING: 113mm diam to 3.00m.

BACKFILL: On completion, hole backfilled with bentonite and local materials.

REMARKS: Downhole magnetometry for UXO risk mitigation carried out 0.00-4.00m. No anomalies encountered.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m) casing (m) rose to (m) time to rise (min) remarks

Groundwater not encountered.

AGS

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BOREHOLE LOG

WS110

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER — Sheet 1 of 1

Start Date 28 April 2016 — Easting 383767 — Scale 1 : 50

End Date 28 April 2016 — Northing 397228 — Ground level 30.85mOD — Depth 3.15 m

progress date/time water depth	sample no & type	depth (m) from	depth (m) to	casing depth (m)	test type & value	samp. /core range		instru -ment	description	depth (m)	reduced level (m)	legend
28/04/16 0830hrs	1ES	0.00							Vegetation over dark brown and black silty sandy (ashy) angular and subangular fine to coarse brick, concrete and slag GRAVEL. Rare roots (up to 10mm diam) and rootlets. (MADE GROUND)	0.10	30.75	
	1B	0.30	0.50									
	2ES	0.30										
	2B	0.60	0.80									
	3ES	0.60										
	3B	1.00	1.20									
	4ES	1.00										
		1.20	1.65	Nil	S 4							
	4L	1.20	2.70									
	5ES	1.50							Light brown and red subangular and subrounded brick COBBLES with much light brown silty, sandy angular to subrounded fine to coarse brick and charcoal gravel. Rare roots (up to 25mm) and rootlets. (MADE GROUND)	1.20	29.65	
	6ES	2.00							Very loose and loose dark grey slightly clayey gravelly fine to coarse SAND with a high brick cobble content. Gravel is subangular fine to coarse brick and concrete. (MADE GROUND)	1.90	28.95	
	7ES	2.50							Orangish brown slightly clayey gravelly fine to coarse SAND. Gravel is subangular and subrounded fine to coarse mudstone and siltstone.			
28/04/16 1310hrs Dry	5D	2.70	3.15	Nil	S 16				2.70m: Medium dense.	3.15	27.70	
									Borehole completed at 3.15m.	{8.00}		

EQUIPMENT: Geotechnical Pioneer rig.

METHOD: Hand dug inspection pit 0.00-1.20m. Dynamic sampled (113mm) 1.20-2.70m.

CASING: None used.

BACKFILL: On completion, hole backfilled with local materials.

REMARKS:Downhole magnetometry for UXO risk mitigation carried out 0.00-2.70m. No anomalies encountered.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks
				Groundwater not encountered.

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STANDARD PENETRATION TEST

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

borehole no.	borehole depth (m)	bottom depth (m)	casing depth (m)	water level (m)	seating drive blows	seating drive pen (mm)	test drive blows	test drive pen (mm)	test type	N	energy ratio (%)
CP/RC101A	1.50	1.95	1.50	Dry	1 1	75 75	1 1 1 2	75 75 75 75	S	5	65
CP/RC101A	2.20	2.65	2.20	2.00	2 2	75 75	3 2 1 1	75 75 75 75	S	7	65
CP/RC101A	3.20	3.65	3.20	2.80	4 6	75 75	7 5 5 7	75 75 75 75	S	24	65
CP/RC101A	4.20	4.65	4.20	2.80	3 2	75 75	2 2 3 4	75 75 75 75	S	11	65
CP/RC101A	5.20	5.65	5.20	0.00	2 2	75 75	2 2 3 3	75 75 75 75	S	10	65
CP/RC101B	1.00	1.45	1.00	Dry	1 0	75 75	0 0 1 0	75 75 75 75	S	1	65
CP/RC101B	2.20	2.65	2.20	1.80	3 3	75 75	3 5 4 6	75 75 75 75	S	18	65
CP/RC101B	3.20	3.65	3.20	3.00	3 6	75 75	7 5 5 5	75 75 75 75	S	22	65
CP/RC101B	4.20	4.65	4.20	1.40	1 0	75 75	2 2 4 4	75 75 75 75	S	12	65
CP/RC101B	6.20	6.65	6.20	1.50	2 2	75 75	3 4 4 7	75 75 75 75	S	18	65
CP/RC101B	7.20	7.65	7.20	2.40	2 3	75 75	3 5 6 6	75 75 75 75	S	20	65
CP/RC101B	8.20	8.65	8.20	2.20	2 2	75 75	3 6 9 10	75 75 75 75	S	28	65
CP/RC101B	9.20	9.60	9.20	3.20	7 9	75 75	12 18 12 8	75 75 75 20	S	61	65
CP/RC101B	10.20	10.55	10.20	3.20	10 15	75 75	19 18 13	75 75 50	S	75	65
CP/RC101B	11.20	11.45	11.20	3.20	8 13	75 75	28 22	75 25	S	150	65
CP/RC101B	12.50	12.64	11.70	3.20	6 19	75 35	50	30	C	500	65
CP/RC101B	14.80	14.85	11.70	3.10	25	20	50	25	C	600	65
CP/RC102	1.20	1.65	Nil	Dry	1 1	75 75	2 4 4 4	75 75 75 75	S	14	62
CP/RC102	2.20	2.65	1.20	Dry	3 3	75 75	4 3 3 4	75 75 75 75	S	14	62
CP/RC102	4.20	4.65	1.20	Dry	6 6	75 75	6 6 7 7	75 75 75 75	S	26	62
CP/RC102	5.20	5.65	1.20	4.97	4 4	75 75	6 7 7 8	75 75 75 75	S	28	62
CP/RC102	6.20	6.65	6.20	Dry	5 5	75 75	5 4 4 4	75 75 75 75	S	17	62
CP/RC102A	1.20	1.65	Nil	Dry	8 8	75 75	8 8 8 8	75 75 75 75	S	32	62
CP/RC102A	2.20	2.65	1.20	Dry	5 4	75 75	4 5 5 5	75 75 75 75	S	19	62

notes:

1. Test carried out in general accordance with BS EN ISO 22476-3:2005 + A1:2011
2. N values have not been subjected to any correction.
3. Test carried out using split spoon S, solid cone C.
4. Where full test drive not completed, linearly extrapolated N value reported.
5. <1 Denotes hammer self weight penetration (sank under own weight).
6. ** Denotes no effective penetration.

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STANDARD PENETRATION TEST

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

borehole no.	borehole depth (m)	bottom depth (m)	casing depth (m)	water level (m)	seating drive blows	seating drive pen (mm)	test drive blows	test drive pen (mm)	test type	N	energy ratio (%)
CP/RC102A	3.20	3.65	1.20	Dry	7 6	75 75	6 6 6 6	75 75 75 75	S	24	62
CP/RC102A	4.20	4.65	1.20	Dry	5 4	75 75	4 4 4 4	75 75 75 75	S	16	62
CP/RC102A	5.20	5.65	1.20	Dry	6 5	75 75	4 3 4 5	75 75 75 75	S	16	62
CP/RC102A	7.20	7.65	6.20	5.02	4 4	75 75	6 6 6 6	75 75 75 75	S	24	62
CP/RC102A	8.20	8.61	6.20	2.72	5 5	75 75	13 13 14 10	75 75 75 35	S	58	62
CP/RC102A	9.20	9.65	8.20	2.72	5 4	75 75	7 7 8 9	75 75 75 75	S	31	62
CP/RC102A	10.20	10.63	10.20	0.00	5 7	75 75	8 8 14 20	75 75 75 55	S	54	62
CP/RC102A	11.15	11.30	11.15	3.37	19 6	75 5	50	70	S	214	62
CP/RC102A	12.70	12.87	11.15	4.79	21 4	75 0	37 13	75 15	S	167	62
CP/RC102A	14.20	14.34	12.70	1.83	25	55	41 9	75 5	C	188	62
CP/RC103	1.20	1.65	Nil	Dry	1 3	75 75	3 3 3 2	75 75 75 75	S	11	62
CP/RC103	2.20	2.65	1.20	Dry	6 5	75 75	6 5 5 4	75 75 75 75	S	20	62
CP/RC103	3.20	3.65	1.20	Dry	2 3	75 75	2 2 3 2	75 75 75 75	S	9	62
CP/RC103	4.20	4.65	4.20	1.27	3 2	75 75	3 5 4 5	75 75 75 75	S	17	62
CP/RC103	5.20	5.65	5.20	3.24	5 5	75 75	5 5 7 9	75 75 75 75	S	26	62
CP/RC103	6.20	6.65	6.20	3.67	2 3	75 75	4 4 6 8	75 75 75 75	S	22	62
CP/RC103	7.20	7.65	7.20	4.24	4 3	75 75	5 7 6 7	75 75 75 75	S	25	62
CP/RC103	8.20	8.58	8.20	Dry	5 5	75 75	11 15 21 3	75 75 75 0	S	67	62
CP/RC103	9.20	9.58	9.20	2.48	7 12	75 75	16 16 16 2	75 75 75 0	S	67	62
CP/RC103	10.20	10.42	10.20	4.62	15 10	75 40	32 18	75 30	S	143	62
CP/RC103	11.20	11.38	10.20	5.42	18 7	75 20	43 7	75 5	S	188	62
CP/RC103	12.70	12.80	12.70	5.02	25	55	50	45	S	333	62
CP/RC103	14.20	14.28	12.70	3.68	25	45	50	30	S	500	62
CP/RC103	15.70	15.80	12.70	6.27	25	35	50	60	S	250	62

notes:

1. Test carried out in general accordance with BS EN ISO 22476-3:2005 + A1:2011
2. N values have not been subjected to any correction.
3. Test carried out using split spoon S, solid cone C.
4. Where full test drive not completed, linearly extrapolated N value reported.
5. <1 Denotes hammer self weight penetration (sank under own weight).
6. ** Denotes no effective penetration.

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STANDARD PENETRATION TEST

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

borehole no.	borehole depth (m)	bottom depth (m)	casing depth (m)	water level (m)	seating drive blows	seating drive pen (mm)	test drive blows	test drive pen (mm)	test type	N	energy ratio (%)
CP/RC103	17.20	17.25	12.70	3.96	25	25	50	20	C	750	62
CP/RC103	18.70	18.74	12.70	4.11	25	20	50	20	C	750	62
CP/RC103	20.20	20.28	12.70	3.77	25	45	50	30	C	500	62
CP/RC103	21.70	21.76	12.70	3.77	25	25	50	35	C	429	62
CP/RC103	23.20	23.39	12.70	3.28	17 8	75 10	39 11	75 25	C	150	62
CP/RC103	24.20	24.24	12.70	4.57	25	20	50	15	C	1000	62
CP/RC103	25.70	25.78	12.70	7.21	25	30	50	45	C	333	62
CP/RC103	27.20	27.24	12.70	6.98	25	20	50	15	C	1000	62
CP/RC103	28.70	28.73	12.70	6.03	25	10	50	20	C	750	62
CP/RC104A	1.20	1.65	1.20	0.80	2 4	75 75	4 4 5 5	75 75 75 75	S	18	65
CP/RC104A	2.20	2.65	2.20	1.40	1 0	75 75	1 1 3 4	75 75 75 75	S	9	65
CP/RC104A	3.20	3.65	3.20	Dry	2 5	75 75	5 4 5 5	75 75 75 75	S	19	65
CP/RC104A	4.20	4.65	4.20	3.80	3 4	75 75	4 4 4 5	75 75 75 75	S	17	65
CP/RC104A	5.20	5.65	5.20	0.80	4 5	75 75	5 5 6 7	75 75 75 75	S	23	65
CP/RC104A	6.20	6.65	6.20	2.40	2 3	75 75	3 4 5 6	75 75 75 75	S	18	65
CP/RC104A	7.20	7.65	7.20	2.10	2 2	75 75	4 4 7 9	75 75 75 75	S	24	65
CP/RC104A	8.20	8.65	8.20	2.20	2 2	75 75	3 4 6 7	75 75 75 75	S	20	65
CP/RC104A	9.20	9.65	9.20	3.20	4 8	75 75	8 7 7 8	75 75 75 75	S	30	65
CP/RC104A	10.20	10.65	10.20	3.90	5 10	75 75	11 15 17 7	75 75 75 75	S	50	65
CP/RC104A	11.20	11.53	11.20	4.90	7 11	75 75	17 22 11	75 75 25	S	86	65
CP/RC104A	12.20	12.49	12.20	3.30	14 11	75 40	16 25 9	75 75 20	S	88	65
CP/RC104A	13.40	13.60	12.60	3.70	15 10	75 30	36 14	75 20	S	158	65
CP/RC104A	14.70	14.75	12.60	3.70	25	35	50	15	C	**	65
CP/RC104A	16.20	16.25	12.60	3.70	25	25	50	20	C	750	65

notes:

1. Test carried out in general accordance with BS EN ISO 22476-3:2005 + A1:2011
2. N values have not been subjected to any correction.
3. Test carried out using split spoon S, solid cone C.
4. Where full test drive not completed, linearly extrapolated N value reported.
5. <1 Denotes hammer self weight penetration (sank under own weight).
6. ** Denotes no effective penetration.

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STANDARD PENETRATION TEST

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

borehole no.	borehole depth (m)	bottom depth (m)	casing depth (m)	water level (m)	seating drive blows	seating drive pen (mm)	test drive blows	test drive pen (mm)	test type	N	energy ratio (%)
CP/RC104A	17.70	17.74	12.60	3.70	25	25	50	15	C	**	65
CP/RC104A	19.20	19.24	12.60	3.70	25	20	50	20	C	750	65
CP/RC104A	20.70	20.74	12.60	3.70	25	20	50	15	C	**	65
CP/RC104A	22.20	22.26	12.60	3.70	25	35	50	20	C	750	65
CP/RC104A	23.70	23.73	12.60	3.70	25	20	50	10	C	**	65
CP/RC104A	25.20	25.24	12.60	3.70	25	30	50	10	C	**	65
CP/RC105	1.20	1.65	Nil	Dry	2 3	75 75	4 5 5 5	75 75 75 75	S	19	62
CP/RC105	2.20	2.65	1.20	Dry	2 3	75 75	2 2 2 1	75 75 75 75	S	7	62
CP/RC105	3.20	3.65	1.20	Dry	5 5	75 75	5 6 6 5	75 75 75 75	S	22	62
CP/RC105	4.20	4.65	1.20	Dry	5 5	75 75	7 7 5 4	75 75 75 75	S	23	62
CP/RC105	5.20	5.65	1.20	4.96	4 3	75 75	4 4 3 4	75 75 75 75	S	15	62
CP/RC105	6.20	6.65	6.20	0.32	8 8	75 75	7 6 6 5	75 75 75 75	S	24	62
CP/RC105	7.20	7.65	7.20	Dry	5 8	75 75	8 10 10 9	75 75 75 75	S	37	62
CP/RC105	8.20	8.65	8.20	5.81	5 4	75 75	7 7 10 9	75 75 75 75	S	33	62
CP/RC105	9.20	9.65	9.20	2.05	5 5	75 75	8 9 10 10	75 75 75 75	S	37	62
CP/RC105	10.05	10.34	10.05	1.96	21 4	75 5	22 13 15	75 75 60	S	71	62
CP/RC105	11.20	11.51	10.05	0.68	12 11	75 75	13 22 15	75 75 10	S	94	62
CP/RC105	12.70	12.77	12.70	3.65	25	40	50	30	C	500	62
CP/RC106B	1.20	1.65	Nil	Dry	4 5	75 75	4 5 6 6	75 75 75 75	S	21	62
CP/RC106B	2.20	2.65	1.20	Dry	3 3	75 75	3 5 4 4	75 75 75 75	S	16	62
CP/RC106B	3.20	3.65	1.20	Dry	4 3	75 75	4 5 5 5	75 75 75 75	S	19	62
CP/RC106B	4.20	4.65	1.20	Dry	7 7	75 75	6 5 5 10	75 75 75 75	S	26	62
CP/RC106B	5.20	5.65	5.20	0.68	4 5	75 75	6 8 8 8	75 75 75 75	S	30	62
CP/RC106B	6.20	6.65	5.20	2.28	5 5	75 75	5 7 7 9	75 75 75 75	S	28	62

notes:

1. Test carried out in general accordance with BS EN ISO 22476-3:2005 + A1:2011
2. N values have not been subjected to any correction.
3. Test carried out using split spoon S, solid cone C.
4. Where full test drive not completed, linearly extrapolated N value reported.
5. <1 Denotes hammer self weight penetration (sank under own weight).
6. ** Denotes no effective penetration.

CONTRACT	CHECKED
31847	**CT**

Geotechnical Engineering Limited

STANDARD PENETRATION TEST

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

borehole no.	borehole depth (m)	bottom depth (m)	casing depth (m)	water level (m)	seating drive blows	seating drive pen (mm)	test drive blows	test drive pen (mm)	test type	N	energy ratio (%)
CP/RC106B	7.20	7.63	7.20	3.18	15 10	75 55	15 10 8 8	75 75 75 75	S	41	62
CP/RC106B	9.20	9.64	8.20	4.09	8 8	75 75	12 13 13 12	75 75 75 60	S	53	62
CP/RC106B	10.20	10.56	10.20	1.43	8 9	75 75	14 17 19	75 75 60	S	71	62
CP/RC106B	11.05	11.37	11.05	2.13	12 12	75 75	15 22 13	75 75 15	S	91	62
CP/RC106B	12.50	12.78	12.50	Dry	16 9	75 60	26 24	75 70	S	103	62
CP/RC106B	13.50	13.71	12.50	2.79	19 6	75 10	23 27	75 45	C	125	62
CP/RC106B	15.00	15.11	12.50	3.02	25	40	50	65	C	231	62
CP/RC107	1.20	1.65	0.00	Dry	2 3	75 75	3 3 3 3	75 75 75 75	S	12	62
CP/RC107	2.20	2.65	1.20	Dry	3 4	75 75	4 4 4 3	75 75 75 75	S	15	62
CP/RC107	3.20	3.65	1.20	Dry	6 5	75 75	6 6 6 5	75 75 75 75	S	23	62
CP/RC107	4.20	4.65	1.20	Dry	6 6	75 75	5 4 4 5	75 75 75 75	S	18	62
CP/RC107	5.20	5.65	5.20	0.00	8 8	75 75	8 5 5 4	75 75 75 75	S	22	62
CP/RC107	7.20	7.65	7.20	2.67	3 3	75 75	3 5 5 6	75 75 75 75	S	19	62
CP/RC107	8.20	8.65	8.20	0.00	3 3	75 75	5 7 9 9	75 75 75 75	S	30	62
CP/RC107	8.85	9.03	8.20	4.52	18 7	75 5	37 17	75 25	S	162	62
CP/RC107	9.85	10.01	9.85	1.52	16 9	75 15	50	70	S	214	62
CP/RC107	11.20	11.36	9.85	2.32	22 3	75 0	45 5	75 5	C	188	62
CP/RC107	12.70	12.84	12.70	1.16	25	55	42 8	75 5	C	188	62
CP/RC108	1.20	1.65	Nil	0.00	1 2	75 75	3 4 6 7	75 75 75 75	S	20	62
CP/RC108	2.00	2.45	Nil	0.00	0 0	75 75	0 0 1 1	75 75 75 75	S	2	62
CP/RC108	3.00	3.45	Nil	0.00	7 8	75 75	9 9 9 8	75 75 75 75	S	35	62
CP/RC108	4.00	4.45	4.00	2.60	2 2	75 75	3 3 3 3	75 75 75 75	S	12	62
CP/RC108	5.00	5.45	5.00	2.43	0 1	75 75	4 5 6 8	75 75 75 75	S	23	62
CP/RC108	6.00	6.45	6.00	1.43	1 3	75 75	5 5 5 9	75 75 75 75	S	24	62

notes:

1. Test carried out in general accordance with BS EN ISO 22476-3:2005 + A1:2011
2. N values have not been subjected to any correction.
3. Test carried out using split spoon S, solid cone C.
4. Where full test drive not completed, linearly extrapolated N value reported.
5. <1 Denotes hammer self weight penetration (sank under own weight).
6. ** Denotes no effective penetration.

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STANDARD PENETRATION TEST

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

borehole no.	borehole depth (m)	bottom depth (m)	casing depth (m)	water level (m)	seating drive blows	seating drive pen (mm)	test drive blows	test drive pen (mm)	test type	N	energy ratio (%)
CP/RC108	7.00	7.45	7.00	1.98	3 3	75 75	4 7 9 10	75 75 75 75	S	30	62
CP/RC108	8.00	8.45	8.00	2.71	1 3	75 75	4 5 6 8	75 75 75 75	S	23	62
CP/RC108	8.80	9.25	8.80	2.64	2 6	75 75	7 7 8 10	75 75 75 75	S	32	62
CP/RC108	9.80	10.07	9.80	2.23	5 11	75 75	15 20 15	75 45	S	125	62
CP/RC108	10.60	10.86	10.60	3.80	7 18	75 60	28 22	75 45	C	125	62
CP/RC108	11.50	11.80	10.60	3.95	5 14	75 75	20 30	75 75	C	100	62
CP/RC108	13.00	13.28	10.60	2.21	9 9	75 75	28 22	75 50	C	120	62
CP/RC108	14.50	14.67	10.60	3.90	8 16	75 75	50	20	C	750	62
CP/RC108	16.00	16.23	10.60	3.09	11 14	75 75	50	75	C	200	62
CP/RC109	1.20	1.65	Nil	Dry	2 1	75 75	1 2 2 2	75 75 75 75	S	7	65
CP/RC109	2.20	2.65	2.20	1.85	4 4	75 75	6 6 6 7	75 75 75 75	S	25	65
CP/RC109	3.20	3.65	3.10	1.31	1 1	75 75	2 3 3 3	75 75 75 75	S	11	65
CP/RC109	4.20	4.65	4.20	1.49	1 2	75 75	2 4 5 6	75 75 75 75	S	17	65
CP/RC109	5.40	5.85	4.20	2.33	1 2	75 75	4 5 7 8	75 75 75 75	S	24	65
CP/RC109	8.00	8.30	8.00	2.68	10 14	75 75	21 29	75 75	S	100	65
CP/RC109	9.50	9.73	8.00	2.20	10 15	75 75	50	75	C	200	65
CP/RC109	11.00	11.23	8.00	1.75	5 16	75 75	50	75	C	200	65
CP/RC110	1.20	1.65	Nil	Dry	3 2	75 75	1 2 1 2	75 75 75 75	S	6	62
CP/RC110	2.00	2.45	Nil	Dry	1 1	75 75	2 1 1 1	75 75 75 75	S	5	62
CP/RC110	3.00	3.45	Nil	Dry	1 0	75 75	0 0 1 3	75 75 75 75	S	4	62
CP/RC110	4.00	4.45	Nil	Dry	1 1	75 75	2 2 2 1	75 75 75 75	S	7	62
CP/RC110	5.00	5.45	5.00	1.30	1 1	75 75	2 2 3 4	75 75 75 75	S	11	62
CP/RC110	6.00	6.38	6.00	2.87	8 11	75 75	11 18 20	75 75 75	S	65	62
CP/RC110	7.00	7.28	6.00	2.12	10 15	75 60	24 26	75 65	C	107	62

notes:

1. Test carried out in general accordance with BS EN ISO 22476-3:2005 + A1:2011
2. N values have not been subjected to any correction.
3. Test carried out using split spoon S, solid cone C.
4. Where full test drive not completed, linearly extrapolated N value reported.
5. <1 Denotes hammer self weight penetration (sank under own weight).
6. ** Denotes no effective penetration.

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STANDARD PENETRATION TEST

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

borehole no.	borehole depth (m)	bottom depth (m)	casing depth (m)	water level (m)	seating drive blows	seating drive pen (mm)	test drive blows	test drive pen (mm)	test type	N	energy ratio (%)
CP/RC110	8.50	8.65	6.00	2.58	25	75	50	75	C	200	62
CP/RC110	10.00	10.11	6.00	2.62	19 6	75 5	50	30	C	500	62
CP/RC111	1.20	1.65	Nil	1.19	1 0	75 75	0 0 0 0	75 75 75 75	S	<1	65
CP/RC111	2.20	2.65	2.20	1.10	1 1	75 75	1 1 1 1	75 75 75 75	S	4	65
CP/RC111	3.20	3.65	3.10	1.13	2 2	75 75	2 3 2 2	75 75 75 75	S	9	65
CP/RC111	4.20	4.65	4.20	1.27	2 8	75 75	10 10 12 17	75 75 75 75	S	49	65
CP/RC111	5.20	5.61	5.20	1.26	4 6	75 75	14 20 13 3	75 75 75 35	S	58	65
CP/RC111	6.20	6.45	6.10	1.20	10 15	75 75	35 15	75 25	C	150	65
CP/RC111	7.00	7.21	6.10	1.60	2 4	75 75	50	55	C	273	65
CP/RC112	1.20	1.65	1.20	Dry	1 2	75 75	1 1 1 3	75 75 75 75	S	6	65
CP/RC112	2.20	2.65	2.20	2.10	1 1	75 75	1 1 1 1	75 75 75 75	S	4	65
CP/RC112	3.20	3.65	3.20	3.10	1 1	75 75	1 2 1 2	75 75 75 75	S	6	65
CP/RC112	3.90	4.10	3.90	3.80	25	50	50 5	75 75	S	110	65
CP/RC112	4.50	4.95	3.90	3.90	5 8	75 75	8 9 9 12	75 75 75 75	S	38	65
CP/RC112	5.50	5.95	5.50	2.90	4 8	75 75	9 12 16 13	75 75 75 70	S	51	65
CP/RC112	6.50	6.87	6.50	3.20	6 9	75 75	8 19 23	75 75 70	S	68	65
CP/RC112	7.30	7.37	7.30	3.20	25	40	50	25	S	600	65
CP/RC112	8.80	8.84	7.30	3.20	25	20	50	15	C	1000	65
CP/RC113	1.20	1.65	Nil	Dry	1 1	75 75	1 1 1 1	75 75 75 75	S	4	62
CP/RC113	2.00	2.45	Nil	Dry	0 0	75 75	0 1 1 1	75 75 75 75	S	3	62
CP/RC113	3.00	3.45	Nil	Dry	1 0	75 75	0 0 0 0	75 75 75 75	S	0	62
CP/RC113	4.00	4.45	4.00	2.29	3 3	75 75	3 1 1 1	75 75 75 75	S	6	62
CP/RC113	5.00	5.45	4.00	4.50	5 8	75 75	8 8 7 8	75 75 75 75	S	31	62
CP/RC113	6.00	6.45	6.00	1.80	5 8	75 75	10 13 14 13	75 75 75 75	S	50	62

notes:

1. Test carried out in general accordance with BS EN ISO 22476-3:2005 + A1:2011
2. N values have not been subjected to any correction.
3. Test carried out using split spoon S, solid cone C.
4. Where full test drive not completed, linearly extrapolated N value reported.
5. <1 Denotes hammer self weight penetration (sank under own weight).
6. ** Denotes no effective penetration.

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STANDARD PENETRATION TEST

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SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

borehole no.	borehole depth (m)	bottom depth (m)	casing depth (m)	water level (m)	seating drive blows	seating drive pen (mm)	test drive blows	test drive pen (mm)	test type	N	energy ratio (%)
CP/RC113	6.70	7.01	6.00	2.70	12 13	75 55	15 23 12	75 75 30	C	83	62
CP/RC113	8.20	8.53	6.00	2.67	3 3	75 75	9 28 13	75 75 25	C	86	62
CP/RC113	9.70	9.83	6.00	2.90	25	75	50	55	C	273	62
CP/RC113	11.20	11.27	6.00	3.63	25	25	50	40	C	375	62
CP/RC115	1.20	1.65	1.20	Dry	4 3	75 75	1 1 1 1	75 75 75 75	S	4	62
CP/RC115	2.00	2.45	1.20	Dry	2 2	75 75	1 1 2 0	75 75 75 75	S	4	62
CP/RC115	3.00	3.45	3.00	Dry	3 2	75 75	2 2 2 2	75 75 75 75	S	8	62
CP/RC115	4.00	4.45	4.00	1.91	8 8	75 75	9 4 4 4	75 75 75 75	S	21	62
CP/RC115	5.00	5.45	5.00	1.49	4 4	75 75	5 4 4 4	75 75 75 75	S	17	62
CP/RC115	6.00	6.45	6.00	1.74	3 5	75 75	8 9 11 11	75 75 75 75	S	39	62
CP/RC115	7.00	7.37	7.00	1.38	8 11	75 75	12 18 20	75 75 70	S	68	62
CP/RC115	8.50	8.80	7.00	3.05	11 14	75 40	22 21 7	75 75 30	C	83	62
CP/RC115	10.00	10.20	7.00	2.21	17 8	75 30	37 13	75 20	C	158	62
CP/RC115	11.50	11.74	7.00	2.34	6 16	75 75	26 24	75 10	C	176	62
CP/RC116	1.20	1.65	Nil	Dry	2 2	75 75	3 2 1 1	75 75 75 75	S	7	62
CP/RC116	1.80	2.12	Nil	Dry	25 0	20 0	22 9 5 3	75 75 75 75	S	39	62
CP/RC116	3.00	3.45	3.00	1.95	3 4	75 75	3 3 4 3	75 75 75 75	S	13	62
CP/RC116	4.00	4.45	4.00	1.72	1 1	75 75	2 3 2 2	75 75 75 75	S	9	62
CP/RC116	4.60	5.05	4.00	2.90	16 6	75 75	8 8 9 8	75 75 75 75	S	33	62
CP/RC116	5.60	6.05	4.70	2.90	3 7	75 75	8 9 8 11	75 75 75 75	S	36	62
CP/RC116	6.60	7.04	4.70	1.34	1 3	75 75	6 10 15 19	75 75 75 65	S	52	62
CP/RC116	8.10	8.31	6.70	3.10	13 12	75 35	37 13	75 25	C	150	62
CP/RC116	9.60	9.72	6.70	3.61	25	75	50	40	C	375	62
CP/RC116	11.10	11.22	6.70	3.98	19 6	75 15	50	30	C	500	62

notes:

1. Test carried out in general accordance with BS EN ISO 22476-3:2005 + A1:2011
2. N values have not been subjected to any correction.
3. Test carried out using split spoon S, solid cone C.
4. Where full test drive not completed, linearly extrapolated N value reported.
5. <1 Denotes hammer self weight penetration (sank under own weight).
6. ** Denotes no effective penetration.

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STANDARD PENETRATION TEST

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

borehole no.	borehole depth (m)	bottom depth (m)	casing depth (m)	water level (m)	seating drive blows	seating drive pen (mm)	test drive blows	test drive pen (mm)	test type	N	energy ratio (%)
CP/RC116	12.60	12.67	6.70	4.20	25	40	50	25	C	600	62
CP/RC117A	1.20	1.65	Nil	Dry	1 1	75 75	0 0 0 1	75 75 75 75	S	1	62
CP/RC117A	2.00	2.45	Nil	Dry	1 0	75 75	0 0 1 2	75 75 75 75	S	3	62
CP/RC117A	3.00	3.45	Nil	Dry	5 6	75 75	5 3 3 7	75 75 75 75	S	18	62
CP/RC117A	4.00	4.45	4.00	1.78	3 5	75 75	7 9 10 12	75 75 75 75	S	38	62
CP/RC117A	5.00	5.45	5.00	2.28	4 6	75 75	8 8 11 10	75 75 75 75	S	37	62
CP/RC117A	6.50	6.78	5.00	2.48	3 8	75 75	24 26	75 55	C	115	62
CP/RC117A	8.00	8.07	5.00	2.48	25	55	50	15	C	1000	62
WS105	1.20	1.65	Nil	Dry	1 0	75 75	1 1 1 1	75 75 75 75	S	4	65
WS105	2.70	3.15	Nil	Dry	3 3	75 75	5 4 3 3	75 75 75 75	S	15	65
WS106	1.20	1.65	Nil	Dry	3 3	75 75	2 2 3 3	75 75 75 75	S	10	78
WS106	2.00	2.45	2.00	Dry	3 4	75 75	6 8 10 11	75 75 75 75	S	35	78
WS106	3.00	3.45	3.00	Dry	5 5	75 75	6 8 8 10	75 75 75 75	S	32	78
WS106	4.00	4.45	3.00	Dry	3 4	75 75	6 7 7 7	75 75 75 75	S	27	78
WS107A	1.20	1.65	Nil	Dry	1 1	75 75	1 1 1 1	75 75 75 75	S	4	78
WS107A	2.00	2.45	2.00	Dry	0 0	75 75	0 0 0 0	75 75 75 75	S	0	78
WS107A	3.00	3.45	3.00	Dry	0 0	75 75	0 0 0 1	75 75 75 75	S	1	78
WS107A	4.00	4.45	3.00	Dry	3 3	75 75	6 6 7 8	75 75 75 75	S	27	78
WS110	1.20	1.65	Nil	Dry	1 1	75 75	1 1 1 1	75 75 75 75	S	4	65
WS110	2.70	3.15	Nil	Dry	3 4	75 75	4 4 4 4	75 75 75 75	S	16	65

notes:

1. Test carried out in general accordance with BS EN ISO 22476-3:2005 + A1:2011
2. N values have not been subjected to any correction.
3. Test carried out using split spoon S, solid cone C.
4. Where full test drive not completed, linearly extrapolated N value reported.
5. <1 Denotes hammer self weight penetration (sank under own weight).
6. ** Denotes no effective penetration.

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Geotechnical Engineering Limited

IN-SITU HAND VANE/POCKET PENETROMETER

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

borehole /trial pit no.	depth (m)	hand vane peak (kPa)	average hand vane peak (kPa)	hand vane remoulded (kPa)	average hand vane remoulded (kPa)	pocket penetrometer (kg/cm^2)	average pocket penetrometer (kPa)*	remarks
CP/RC108	1.95					0.20 0.40 0.30 0.30 0.50	17	
CP/RC108	2.65					0.80 1.40 0.90 0.70 1.20	50	
CP/RC108	4.95					2.60 3.10 2.50 2.60 2.10	129	
CP/RC108	5.95					3.60 2.50 4.20 2.80 2.40	155	
CP/RC108	6.95					2.80 3.10 3.30 2.70 2.90	148	
CP/RC108	7.95					2.60 2.40 2.70 3.10 2.80	136	

general remarks:

Hand vane test results reported as undrained shear strength.

*Average pocket penetrometer results reported as undrained shear strength.

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Geotechnical Engineering Limited

TRIAL PIT LOG

TP101

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER — Sheet 1 of 1

Start Date 18 April 2016 — Easting 383836 — Scale 1 : 25

End Date 18 April 2016 — Northing 397235 — Ground level 33.65mOD — Depth 3.70 m

water record	sample/test no/type	sample/test result	sample/test depth (m)	description	depth (m)	level (m)	legend
	1B 1ES		0.20- 0.40 0.20- 0.40	Grey locally black silty very sandy angular and subangular fine to coarse brick, crystalline and rare slag GRAVEL. (MADE GROUND) 0.40 - 0.50m: Frequent roots (up to 20mm diam) and rootlets on southern and eastern edge of trial pit.	0.55	33.10	
	2B 2ES		0.60- 0.80 0.60- 0.80	Dark orangish brown slightly clayey very gravelly medium and coarse SAND. Gravel is subrounded to well rounded medium and coarse sandstone, siltstone and rare quartz.	0.95	32.70	
	3B 3ES		1.40- 1.60 1.40- 1.60	Firm brown slightly sandy silty CLAY.	2.50	31.15	
	4B		2.70- 2.90	Orangish brown gravelly medium and coarse SAND. Gravel is subrounded and well rounded medium and coarse siltstone and rare crystalline.	3.20	30.45	
Dry	5B		3.50- 3.70	Dark orangish brown sandy locally very sandy rounded and well rounded medium and coarse siltstone and sandstone GRAVEL. Trial pit completed at 3.70m.	3.70	29.95	

Notes

Trial pit excavated by JCB 3CX ECO mechanical excavator.
Groundwater not encountered.
Trial pit sides became unstable at 3.70m.
Trial pit dimensions 1.05x2.20x3.70m.
On completion, the trial pit was backfilled with materials arising.
Trial pit completed to 3.70m and collapsed back to 3.00m.

Sketch of Foundation - Not to scale. All dimensions in metres.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

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TRIAL PIT LOG

TP102

CLIENT	ASK PROPERTY DEVELOPMENTS LTD					Sheet	1 of 1
SITE	PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER					Scale	1 : 25
Start Date	18 April 2016	Easting	383825				
End Date	18 April 2016	Northing	397229	Ground level	33.65mOD	Depth	3.40 m

water record	sample/test no/type	sample/test result	sample/test depth (m)	description	depth (m)	level (m)	legend
	1B 1ES		0.10- 0.30 0.10- 0.30	Dark brown locally black sandy very silty subangular fine to coarse brick and concrete and rare slag and clinker GRAVEL with frequent brown ceramic fragments (up to 20mm). (MADE GROUND) 0.05 - 0.20m: High subangular brick cobble content. 0.05 - 1.30m: Brick wall structure on southern edge of trial pit. 0.30 - 0.50m: Frequent rootlets within brick structure on southern edge of trial pit.	0.60	33.05	
				Orangish brown slightly silty gravelly medium SAND. Gravel is subrounded to well rounded medium and coarse siltstone and sandstone.	1.00	32.65	
	2B 2ES		1.10- 1.30 1.10- 1.30	Firm locally stiff brown slightly sandy CLAY with rare subangular medium and coarse coal and siltstone gravel.	2.10	31.55	
	3B		2.20- 2.40	Brownish orange sandy rounded and well rounded coarse siltstone and sandstone GRAVEL.	3.05	30.60	
	4B		3.10- 3.30	Light yellowish brown locally orange gravelly fine to coarse SAND. Gravel is rounded coarse siltstone and rare sandstone.	3.40	30.25	
Dry				Trial pit completed at 3.40m.			

Notes

Trial pit excavated by JCB 3CX ECO mechanical excavator.
Groundwater not encountered.
Trial pit sides became unstable between 3.20 to 3.40m.
Trial pit dimensions 0.80x2.90x3.40m.
On completion, the trial pit was backfilled with materials arising.
Trail pit was terminated at 3.40m due to excessive spalling on eastern edge of the trial pit.

Sketch of Foundation - Not to scale. All dimensions in metres.

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TRIAL PIT LOG

TP103

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER — Sheet 1 of 1

Start Date 18 April 2016 — Easting 383839 — Scale 1 : 25

End Date 18 April 2016 — Northing 397224 — Ground level 34.10mOD — Depth 3.30 m

water record	sample/test no/type	sample/test result	sample/test depth (m)	description	depth (m)	level (m)	legend
	1B 1ES		0.10- 0.30 0.10- 0.30	Greyish brown locally black very silty very sandy angular to subrounded fine to coarse brick, concrete and rare coal GRAVEL with rare wood fragments (up to 110mm). (MADE GROUND)			
				0.35 - 0.40m: Locally black, ashy.	0.40	33.70	
				Dark brown rarely black slightly clayey very sandy angular to subrounded fine to coarse brick, siltstone and slate GRAVEL. (MADE GROUND)			
	2B 2ES		0.80- 1.00 0.80- 1.00				
				1.05 - 1.10m: Locally black, ashy.	1.10	33.00	
	3B		1.30- 1.50	Soft brown and reddish brown slightly sandy slightly gravelly CLAY with a low well rounded siltstone cobble content. Gravel is subangular to well rounded fine to coarse coal and siltstone. (MADE GROUND)			
	4B		2.50- 2.70				
				2.90 - 3.30m: Locally light greenish grey. Organic odour.			
Dry				3.30m: Light greenish grey concrete obstruction.	3.30	30.80	
				Trial pit completed at 3.30m.			

Notes

Trial pit excavated by JCB 3CX ECO mechanical excavator.
Groundwater not encountered.
Trial pit sides remained stable and vertical.
Trial pit dimensions 0.75x2.60x3.30m.
On completion, the trial pit was backfilled with materials arising.
Trial pit terminated at 3.30m due to light greenish grey concrete obstruction.

Sketch of Foundation - Not to scale. All dimensions in metres.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

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TRIAL PIT LOG

TP104

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER — Sheet 1 of 1

Start Date 18 April 2016 — Easting 383826 — Scale 1 : 25

End Date 18 April 2016 — Northing 397217 — Ground level 34.10mOD — Depth 4.00 m

water record	sample/test no/type	sample/test result	sample/test depth (m)	description	depth (m)	level (m)	legend
	1B		0.10- 0.30	Pinkish brown silty sandy angular and subangular fine to coarse brick and slag GRAVEL. (MADE GROUND)	0.05	34.05	
	1ES		0.10- 0.30	Dark brown and black silty sandy (ashy) angular to subrounded fine to coarse brick, concrete, slag and rare coal GRAVEL with a high subangular brick cobble content. (MADE GROUND) 0.10 - 0.15m: Rare white paper fragments (up to 100mm). 0.30 - 3.70m: Relict black borehole install (50mm diam) with gas valve, at north eastern corner of trial pit. 0.70 - 0.80m: Frequent angular and subangular fine to coarse coal gravel.	0.90	33.20	
	2B		1.00- 1.20	Firm brown and orangish brown slightly sandy slightly gravelly CLAY with frequent light grey relict rootlets. Gravel is angular and subangular fine to coarse coal. (MADE GROUND)			
	2ES		1.00- 1.20				
	3B		2.00- 2.20	2.50 - 2.65m: Brown metal pipe (150mm diam) at eastern edge of the pit.			
	4B		3.10- 3.30		3.40	30.70	
	5B		3.50- 3.70	Soft dark greenish grey locally brown slightly sandy slightly gravelly organic CLAY. Gravel is angular and subangular fine to coarse coal. Slight organic odour.			
	3ES		3.50- 3.70				
Dry					4.00	30.10	

Trial pit completed at 4.00m.

Notes

Trial pit excavated by JCB 3CX ECO mechanical excavator.
Groundwater not encountered.
Trial pit sides remained stable and vertical.
Trial pit dimensions 0.85x2.70x4.00m.
On completion, the trial pit was backfilled with materials arising.

Sketch of Foundation - Not to scale. All dimensions in metres.

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EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

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TRIAL PIT LOG

TP105

CLIENT	ASK PROPERTY DEVELOPMENTS LTD					Sheet	1 of 1
SITE	PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER					Scale	1 : 25
Start Date	19 April 2016	Easting	383777				
End Date	19 April 2016	Northing	397202	Ground level	34.00mOD	Depth	3.00 m

water record	sample/test no/type	sample/test result	sample/test depth (m)	description	depth (m)	level (m)	legend
	1B 1ES		0.30- 0.50 0.30- 0.50	Grass over dark brown and brown clayey very sandy angular and subangular coarse brick and concrete GRAVEL with medium subangular brick cobble content. (MADE GROUND) 0.20 - 0.50m: Two red and light grey subangular brick and concrete boulders (up to 500mm).			
					0.70	33.30	
	2B 2ES		1.00- 1.20 1.00- 1.20	Orangish brown clayey sandy subrounded to well rounded medium and coarse siltstone, sandstone and rare crystalline and coal GRAVEL.			
					1.70	32.30	
	3B		1.80- 2.00	Soft brown and light grey mottled orangish brown slightly sandy clayey SILT with rare well rounded coarse siltstone and crystalline gravel.			
					2.10	31.90	
2.60m: Damp	4B		2.60- 2.80	Light orangish brown very gravelly medium and coarse SAND. Gravel is rounded and well rounded medium and coarse sandstone and siltstone.			
					3.00	31.00	
Damp				Trial pit completed at 3.00m.			

Notes

Trial pit excavated by JCB 3CX ECO mechanical excavator.
Groundwater not encountered, however pit observed to be damp from 2.60m.
Trial pit sides became unstable between 2.60 to 3.00m.
Trial pit dimensions 0.80x2.70x3.00m.
On completion, the trial pit was backfilled with materials arising.
Trial pit completed at 3.00m and collapsed back to 2.90m.

Sketch of Foundation - Not to scale. All dimensions in metres.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

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TRIAL PIT LOG

TP106

CLIENT	ASK PROPERTY DEVELOPMENTS LTD					Sheet	1 of 1
SITE	PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER					Scale	1 : 25
Start Date	19 April 2016	Easting	383761				
End Date	19 April 2016	Northing	397180	Ground level	33.95mOD	Depth	3.10 m

water record	sample/test no/type	sample/test result	sample/test depth (m)	description	depth (m)	level (m)	legend
				MADE GROUND comprising black TARMACADAM.	0.05	33.90	
	1B		0.20- 0.40	Light grey and red subangular concrete and brick COBBLES and BOULDERS with much orangish brown slightly clayey angular and subangular medium and coarse crystalline gravel. (MADE GROUND)			
	1ES		0.20- 0.40		0.55	33.40	
				Firm brown slightly sandy slightly gravelly CLAY. Gravel is subrounded to well rounded medium and coarse siltstone and sandstone.	0.70	33.25	
				Orangish brown slightly clayey very sandy rounded and well rounded medium and coarse sandstone, siltstone and rare quartz and crystalline GRAVEL.			
	2B		0.90- 1.10				
	2ES		0.90- 1.10	1.00 - 1.40m: Brown metal drainage pipe (400mm) on northern edge of trial pit.			
					1.50	32.45	
	3B		1.50- 1.60	Very soft brown CLAY.			
	3ES		1.50- 1.60		1.65	32.30	
	4B		1.70- 1.80	Light orangish brown slightly clayey gravelly medium SAND. Gravel is rounded and well rounded medium and coarse siltstone, sandstone and rare crystalline.	1.90	32.05	
	5B		1.90- 2.10	Firm brown slightly sandy locally sandy CLAY.	2.10	31.85	
				Brown slightly silty sandy rounded and well rounded coarse crystalline, sandstone, siltstone and rare mudstone GRAVEL with a low well rounded siltstone cobble content.			
	6B		2.60- 2.80				
2.70m: Damp							
Damp				Trial pit completed at 3.10m.	3.10	30.85	

Notes

Trial pit excavated by JCB 3CX ECO mechanical excavator and breaker.
Groundwater not encountered, however pit observed to be damp from 2.70m.
Trial pit sides became unstable between 2.70 to 3.10m.
Trial pit dimensions 1.00x2.80x3.10m.
On completion, the trial pit was backfilled with materials arising.
Trial pit completed at 3.10m and collapsed back to 2.85m on completion.

Sketch of Foundation - Not to scale. All dimensions in metres.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

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TRIAL PIT LOG

TP107

CLIENT	ASK PROPERTY DEVELOPMENTS LTD						
SITE	PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER					Sheet	1 of 1
Start Date	18 April 2016	Easting	383791			Scale	1 : 25
End Date	18 April 2016	Northing	397166	Ground level	34.15mOD	Depth	3.50 m

water record	sample/test no/type	sample/test result	sample/test depth (m)	description	depth (m)	level (m)	legend
				MADE GROUND comprising light grey and grey strongly cemented CONCRETE composed of 20-30% angular and subangular fine to coarse gravel sized aggregate of limestone and rarely siltstone with up to 1% voids (up to 5mm diam). 0.10 - 0.11m: 10mm diameter steel reinforcement bars.	0.15	34.00	
				Red and brown subangular brick COBBLES with some greyish brown silt. (MADE GROUND)	0.25	33.90	
	1B		0.40- 0.60				
	1ES		0.40- 0.60	Dark orangish brown locally light orangish brown very gravelly medium SAND. Gravel is rounded and well rounded medium and coarse siltstone, sandstone and rare crystalline.	0.60	33.55	
				Dark orangish brown locally light orangish brown very sandy rounded and well rounded coarse siltstone, sandstone and crystalline GRAVEL.			
	2B		1.20- 1.40				
	2ES		1.20- 1.40				
				2.00 - 2.30m: Soft reddish brown slightly sandy clay.			
	3B		2.40- 2.60				
					2.70	31.45	
2.75m: Damp				Dark orangish brown locally light orangish brown very gravelly medium SAND. Gravel is rounded and well rounded medium and coarse siltstone and sandstone.			
				3.20 - 3.30m: Soft locally firm reddish brown slightly sandy clay.			
	4B		3.30- 3.50				
					3.50	30.65	
Damp				Trial pit completed at 3.50m.			

Notes

Trial pit excavated by JCB 3CX ECO mechanical excavator and breaker.
Groundwater not encountered, however pit observed to be damp at 2.75m.
Trial pit sides became unstable at 3.50m.
Trial pit dimensions 0.80x3.10x3.50m.
On completion, the trial pit was backfilled with materials arising.
Trail pit completed to 3.50m and collapsed back to 3.10m.

Sketch of Foundation - Not to scale. All dimensions in metres.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

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TRIAL PIT LOG

TP108

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER — Sheet 1 of 1

Start Date 18 April 2016 — Easting 383776 — Scale 1 : 25

End Date 18 April 2016 — Northing 397150 — Ground level 34.65mOD — Depth 3.40 m

water record	sample/test no/type	sample/test result	sample/test depth (m)	description	depth (m)	level (m)	legend
				MADE GROUND comprising black TARMACADAM.	0.08	34.57	
				Light brown very sandy angular and subangular fine to coarse brick GRAVEL. (MADE GROUND)	0.15	34.50	
	1B		0.30- 0.50	Dark brown clayey sandy angular to subrounded fine to coarse brick, coal, concrete and rare siltstone GRAVEL with rare ceramic fragments (up to 30mm). High subangular brick cobble content. (MADE GROUND)			
	1ES		0.30- 0.50				
					0.75	33.90	
				Brownish orange sandy locally very sandy rounded and well rounded medium and coarse sandstone, siltstone and rare crystalline GRAVEL.			
	2B		1.00- 1.20				
	2ES		1.00- 1.20				
1.50m: Damp							
	3B		2.00- 2.20				
				2.50 - 2.70m: Soft brown slightly sandy clay.			
	4B		3.00- 3.20				
					3.40	31.25	
Damp				Trial pit completed at 3.40m.			

Notes

Trial pit excavated by JCB 3CX ECO mechanical excavator and breaker.
Groundwater not encountered, however pit observed to be damp at 1.50m.
Trial pit sides became unstable at 3.40m.
Trial pit dimensions 0.80x2.00x3.40m.
On completion, the trial pit was backfilled with materials arising.
Trail pit ceased at 3.40m due to excessive spalling on eastern edge of trial pit.

Sketch of Foundation - Not to scale. All dimensions in metres.

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EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

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TRIAL PIT LOG

TP109

CLIENT	ASK PROPERTY DEVELOPMENTS LTD					Sheet	1 of 2
SITE	PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER					Scale	1 : 25
Start Date	20 April 2016	Easting	383824				
End Date	20 April 2016	Northing	397116	Ground level	35.10mOD	Depth	4.20 m

water record	sample/test no/type	result	depth (m)	description	depth (m)	level (m)	legend
	1B		0.10- 0.30	Grass over dark brown slightly gravelly sandy organic SILT with rare glass fragments (up to 50mm) and white ceramic (up to 40mm) and rare pockets (up to 50mm) of firm dark brown clay. Gravel is subangular to well rounded coarse brick and sandstone. Frequent roots (up to 25mm diam) and rootlets. (MADE GROUND)			
	1ES		0.10- 0.30	0.00 - 0.20m: Frequent branches (up to 150mm diam)			
				0.40 - 0.50m: Two red subangular brick cobbles.			
				0.50 - 0.90m: Locally black, ash.			
				0.55 - 0.60m: Frequent angular and subangular fine to coarse coal gravel.			
	2B		0.70- 0.90	0.60 - 0.70m: Red brick structure running in an approximate north to south orientation.			
	2ES		0.70- 0.90	0.60 - 1.60m: Rare roots (up to 15mm diam) and rootlets.			
				0.90 - 1.20m: Frequent ceramic drainage pipe fragments (up to 300mm diam).			
				1.10 - 1.20m: Brown ceramic pipe (110mm diam) infilled with light grey strongly cemented concrete.	1.20	33.90	
1.20m: Damp				Orangish brown clayey sandy rounded and well rounded medium and coarse sandstone and siltstone GRAVEL.			
	3B		1.40- 1.60				
	3ES		1.40- 1.60				
					1.80	33.30	
				Orangish brown silty sandy rounded and well rounded medium and coarse sandstone and siltstone GRAVEL.			
	4B		2.20- 2.40				
				2.50 - 2.60m: Soft light brown sandy clay.			
	5B		2.90- 3.10				
	6B		3.20- 3.40	3.15 - 3.50m: Firm locally soft reddish brown and brown clay.			
				3.65 - 3.75m: Soft reddish brown clay.			

Notes

Trial pit excavated by JCB 3CX ECO mechanical excavator.
Groundwater not encountered, however pit was observed to be damp from 1.20m.
Trial pit sides remained stable and vertical.
Trial pit dimensions 0.70x2.60x4.20m.
On completion, the trial pit was backfilled with materials arising.

Sketch of Foundation - Not to scale. All dimensions in metres.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

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TRIAL PIT LOG

TP109

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER — Sheet 2 of 2

Start Date 20 April 2016 — Easting 383824 — Scale 1 : 25

End Date 20 April 2016 — Northing 397116 — Ground level 35.10mOD — Depth 4.20 m

water record	sample/test no/type	sample/test result	sample/test depth (m)	description	depth (m)	level (m)	legend
	7B		4.00- 4.20		4.20	30.90	
Damp				Trial pit completed at 4.20m.			

Notes

Trial pit excavated by JCB 3CX ECO mechanical excavator.
Groundwater not encountered, however pit was observed to be damp from 1.20m.
Trial pit sides remained stable and vertical.
Trial pit dimensions 0.70x2.60x4.20m.
On completion, the trial pit was backfilled with materials arising.

Sketch of Foundation - Not to scale. All dimensions in metres.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

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TRIAL PIT LOG

TP110

CLIENT	ASK PROPERTY DEVELOPMENTS LTD					Sheet	1 of 1
SITE	PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER					Scale	1 : 25
Start Date	19 April 2016	Easting	383867				
End Date	19 April 2016	Northing	397184	Ground level	34.70mOD	Depth	4.00 m

water record	sample/test no/type	sample/test result	sample/test depth (m)	description	depth (m)	level (m)	legend
				MADE GROUND comprising light grey paving slab (50mm) over light grey strongly cemented CONCRETE composed of 15-25% angular and subangular medium and coarse gravel sized aggregate of crystalline and sandstone with up to 1% voids (up to 5mm).	0.20	34.50	
				Red angular and subangular fine to coarse brick GRAVEL. (MADE GROUND)	0.30	34.40	
	1B		0.40- 0.50	Stiff reddish brown, brownish orange and brown slightly sandy CLAY with rare subrounded and rounded fine to coarse siltstone, quartz and coal gravel. Rare light grey relict rootlets. (MADE GROUND)	0.55	34.15	
	1ES		0.40- 0.50				
				Brownish orange very sandy rounded and well rounded medium and coarse siltstone, sandstone and crystalline GRAVEL with a low well rounded siltstone cobble content.			
	2B		0.90- 1.10	0.55 - 0.75m: Clayey.			
	2ES		0.90- 1.10				
	3B		2.00- 2.20				
	3ES		2.00- 2.20				
2.25m: Damp							
	4B		2.35- 2.45	2.35 - 2.45m: Firm reddish brown silty clay.			
2.80m: Damp 2.85m: Dry	5B		2.80- 3.00	2.80 - 3.00m: Soft brown slightly gravelly slightly sandy locally sandy clay.	3.00	31.70	
	6B		3.10- 3.30	Orange and yellowish brown fine and medium SAND.	3.30	31.40	
				Yellowish brown fine and medium SAND.	3.70	31.00	
Dry	7B		3.80- 4.00	Yellowish brown and brownish orange slightly gravelly fine and medium SAND with rare pockets (up to 70mm) of firm reddish brown clay. Gravel is well rounded coarse siltstone, mudstone and rare quartz.	4.00	30.70	
				Trial pit completed at 4.00m.			

Notes

Trial pit excavated by JCB 3CX ECO mechanical excavator and breaker.
Groundwater not encountered, however pit observed to be damp between 2.25m and 2.80m.
Trial pit sides remained stable and vertical.
Trial pit dimensions 0.80x2.80x4.00m.
On completion, the trial pit was backfilled with materials arising.

Sketch of Foundation - Not to scale. All dimensions in metres.

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TRIAL PIT LOG

TP111

CLIENT	ASK PROPERTY DEVELOPMENTS LTD					Sheet	1 of 1
SITE	PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER					Scale	1 : 25
Start Date	19 April 2016	Easting	383832				
End Date	19 April 2016	Northing	397174	Ground level	34.70mOD	Depth	4.00 m

water record	sample/test no/type	result	depth (m)	description	depth (m)	level (m)	legend
				MADE GROUND light brownish grey and red strongly cemented CONCRETE composed of 30-40% angular and subangular fine to coarse gravel sized aggregate of brick and rare limestone, slag and coal with up to 1% voids (up to 5mm).	0.15	34.55	
	1B		0.30- 0.40	Brown locally dark brown silty sandy angular and subangular fine to coarse brick, concrete and rare slag GRAVEL with a low subangular brick cobble content. (MADE GROUND)			
	1ES		0.30- 0.40		0.70	34.00	
	2B		0.80- 1.00	Firm brown locally orange slightly sandy slightly gravelly CLAY with rare white ceramic fragments (up to 40mm) and rare pockets (up to 70mm) of white sandy silt. Gravel is angular to well rounded fine to coarse brick, coal, siltstone, sandstone and rare slate. (MADE GROUND)			
	2ES		0.80- 1.00	0.80 - 1.00m: Locally stained black.			
				1.40 - 1.70m: Gravelly.			
	3B		1.50- 1.70				
	3ES		1.50- 1.70	1.60 - 1.62m: White shell fragment (20mm).			
	4B		1.90- 2.10				
	4ES		1.90- 2.10				
	5B		2.80- 3.00		2.90	31.80	
	5ES		2.80- 3.00	Soft dark brownish grey locally stained black slightly sandy slightly gravelly silty CLAY. Gravel is angular and subangular fine to coarse coal and rare siltstone. Slight organic odour. (MADE GROUND)			
	6B		3.40- 3.60				
	6ES		3.40- 3.60				
3.70m: Damp					3.70	31.00	
	7B		3.80- 4.00	Orangish brown clayey very sandy rounded and well rounded coarse crystalline, sandstone, siltstone and rare coal GRAVEL.			
Damp					4.00	30.70	
				Trial pit completed at 4.00m.			

Notes

Trial pit excavated by JCB 3CX ECO mechanical excavator and breaker.
Groundwater not encountered, however pit observed to be damp from 3.70m.
Trial pit sides remained stable and vertical.
Trial pit dimensions 0.80x2.70x4.00m.
On completion, the trial pit was backfilled with materials arising.

Sketch of Foundation - Not to scale. All dimensions in metres.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

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Geotechnical Engineering Limited

TRIAL PIT LOG

TP112

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER — Sheet 1 of 2

Start Date 20 April 2016 — Easting 383848 — Scale 1 : 25

End Date 20 April 2016 — Northing 397205 — Ground level 34.70mOD — Depth 4.20 m

water record	sample/test no/type	sample/test result	sample/test depth (m)	description	depth (m)	level (m)	legend
	1B 1ES		0.00- 0.10 0.00- 0.10	Reddish brown silty fine and medium SAND with rare polystyrene fragments (up to 80mm). Locally frequent rootlets. (MADE GROUND)	0.15	34.55	
	2B 2ES		0.30- 0.50 0.30- 0.50	Dark brown locally dark greyish brown silty very sandy angular to subrounded fine to coarse brick, concrete and slag GRAVEL with a medium subangular brick cobble content. Rare white ceramic fragments (up to 60mm) and rare fibrous wood fragments (up to 70mm). (MADE GROUND) 0.50 - 0.70m: Orange plastic tape (20x400mm).			
				Light grey angular to subrounded fine to coarse concrete and brick GRAVEL and angular and subangular concrete BOULDERS with some light greyish silty sand. Rare wood fragments (up to 25x300mm). (MADE GROUND) 0.80 - 0.82m: Black steel bar (15mm diam) and grey cloth material (500mm) in northern edge of trial pit.	0.75	33.95	
	3B 3ES		1.30- 1.50 1.30- 1.50	Red and light grey angular and subangular fine to coarse concrete, brick and rare slag gravel and subangular and subrounded brick and concrete COBBLES and BOULDERS with much grey silty sand. Frequent steel reinforcement bars (50mm diam) and rare glass fragments (up to 80mm) and rare ceramics (up to 200mm). (MADE GROUND)	1.25	33.45	
	4B 4ES		1.90- 2.00 1.90- 2.00				
	5B 5ES		2.50- 2.70 2.50- 2.70				
				2.90 - 3.00m: Black plastic tubing (80mm diam x 1400mm).			
				3.30 - 3.50m: Rare white tiles (up to 20x100x100mm).			
	6B 6ES		3.80- 4.00 3.80- 4.00	Brown and brownish orange clayey sandy rounded and well rounded sandstone and siltstone GRAVEL.	3.70	31.00	

Notes

Trial pit excavated by JCB 3CX ECO mechanical excavator.
Groundwater not encountered.
Trial pit sides unstable throughout excavation.
Trial pit dimensions 0.90x2.70x4.20m.
On completion, the trial pit was backfilled with materials arising.

Sketch of Foundation - Not to scale. All dimensions in metres.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

AGS

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TRIAL PIT LOG

TP112

CLIENT	ASK PROPERTY DEVELOPMENTS LTD					Sheet	2 of 2
SITE	PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER					Scale	1 : 25
Start Date	20 April 2016	Easting	383848				
End Date	20 April 2016	Northing	397205	Ground level	34.70mOD	Depth	4.20 m

water record	sample/test no/type	sample/test result	sample/test depth (m)	description	depth (m)	level (m)	legend
					4.20	30.50	
Dry				Trial pit completed at 4.20m.			

Notes

Trial pit excavated by JCB 3CX ECO mechanical excavator.
Groundwater not encountered.
Trial pit sides unstable throughout excavation.
Trial pit dimensions 0.90x2.70x4.20m.
On completion, the trial pit was backfilled with materials arising.

Sketch of Foundation - Not to scale. All dimensions in metres.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

AGS

CONTRACT	CHECKED
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Geotechnical Engineering Limited

TRIAL PIT LOG

TP113

CLIENT	ASK PROPERTY DEVELOPMENTS LTD					Sheet	1 of 1
SITE	PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER					Scale	1 : 25
Start Date	19 April 2016	Easting	383780				
End Date	19 April 2016	Northing	397177	Ground level	34.15mOD	Depth	2.60 m

water record	sample/test no/type	sample/test result	sample/test depth (m)	description	depth (m)	level (m)	legend
				Light grey silty sandy angular to subrounded fine to coarse slag, brick and concrete GRAVEL. (MADE GROUND)	0.15	34.00	
	1B		0.20- 0.40	Dark grey locally black silty (ashy) sandy (ashy) angular to subrounded fine to coarse brick, concrete and rare slag and sandstone GRAVEL. (MADE GROUND) 0.30 - 0.60m: Light grey paving slab (100mm) overlaying light grey brick wall at eastern edge of pit.			
	1ES		0.20- 0.40		0.65	33.50	
	2B		0.80- 1.10	Soft brown locally orange slightly sandy CLAY with rare pockets (up to 50mm) of grey silt and rare subangular medium gravel. (MADE GROUND)			
	2ES		0.80- 1.10		1.30	32.85	
	3B		1.40- 1.60	Soft orangish brown and brown mottled light grey slightly sandy clayey SILT. (MADE GROUND)			
	3ES		1.40- 1.60		1.70	32.45	
	4B		1.70- 1.60	Soft brown slightly sandy CLAY with rare subangular medium and coarse sandstone, siltstone and slag gravel. (MADE GROUND)			
	4ES		1.70- 1.60	2.00 - 2.20m: Brick structure at southern edge of trial pit.	2.60	31.55	
Dry				Trial pit completed at 2.60m.			

Notes

Trial pit excavated by JCB 3CX ECO mechanical excavator.
Groundwater not encountered.
Trial pit sides became unstable between 2.50 to 2.60m
Trial pit dimensions 0.70x2.70x2.60m.
On completion, the trial pit was backfilled with materials arising.
Trial pit became unstable at 2.50m and terminated at 2.60m due to excessive spalling.

Sketch of Foundation - Not to scale. All dimensions in metres.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

CONTRACT	CHECKED
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TRIAL PIT LOG

TP114

CLIENT	ASK PROPERTY DEVELOPMENTS LTD					Sheet	1 of 1
SITE	PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER					Scale	1 : 25
Start Date	19 April 2016	Easting	383849				
End Date	19 April 2016	Northing	397184	Ground level	34.70mOD	Depth	2.75 m

water record	sample/test no/type	sample/test result	sample/test depth (m)	description	depth (m)	level (m)	legend
				MADE GROUND comprising pinkish grey strongly cemented CONCRETE composed of 25-35% angular to subrounded fine to coarse gravel sized aggregate of limestone, sandstone and crystalline with 1-5% voids (up to 10mm).			
					0.35	34.35	
				MADE GROUND comprising light grey paving slabs (150mm).			
					0.50	34.20	
	1B		0.50- 0.70	Brown and black sandy very clayey angular to rounded fine to coarse brick, slag, coal and rare sandstone and slate GRAVEL with frequent pockets (up to 110mm) of firm reddish brown clay. (MADE GROUND)			
	1ES		0.50- 0.70				
	2B		0.80- 1.00				
	2ES		0.80- 1.00				
					1.10	33.60	
				Firm locally soft light orangish brown slightly sandy slightly gravelly CLAY. Gravel is subrounded to well rounded fine to coarse siltstone and sandstone. (MADE GROUND)			
	3B		2.10- 2.30				
	3ES		2.10- 2.30				
2.25m: Damp							
					2.75	31.95	
Damp				Trial pit completed at 2.75m.			

Notes

Trial pit excavated by JCB 3CX ECO mechanical excavator and breaker.
Groundwater not encountered, however pit observed to be damp from 2.25m.
Trial pit sides became unstable between 2.35 to 2.75m.
Trial pit dimensions 0.80x2.60x2.75m.
On completion, the trial pit was backfilled with materials arising.
Trial pit extended due to black cable at 0.50m running in an east to west orientation across the trial pit.
Trial pit terminated at 2.75m upon excavating a man made void, possibly a cellar, on the eastern edge of trial pit.

Sketch of Foundation - Not to scale. All dimensions in metres.

CONTRACT	CHECKED
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EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

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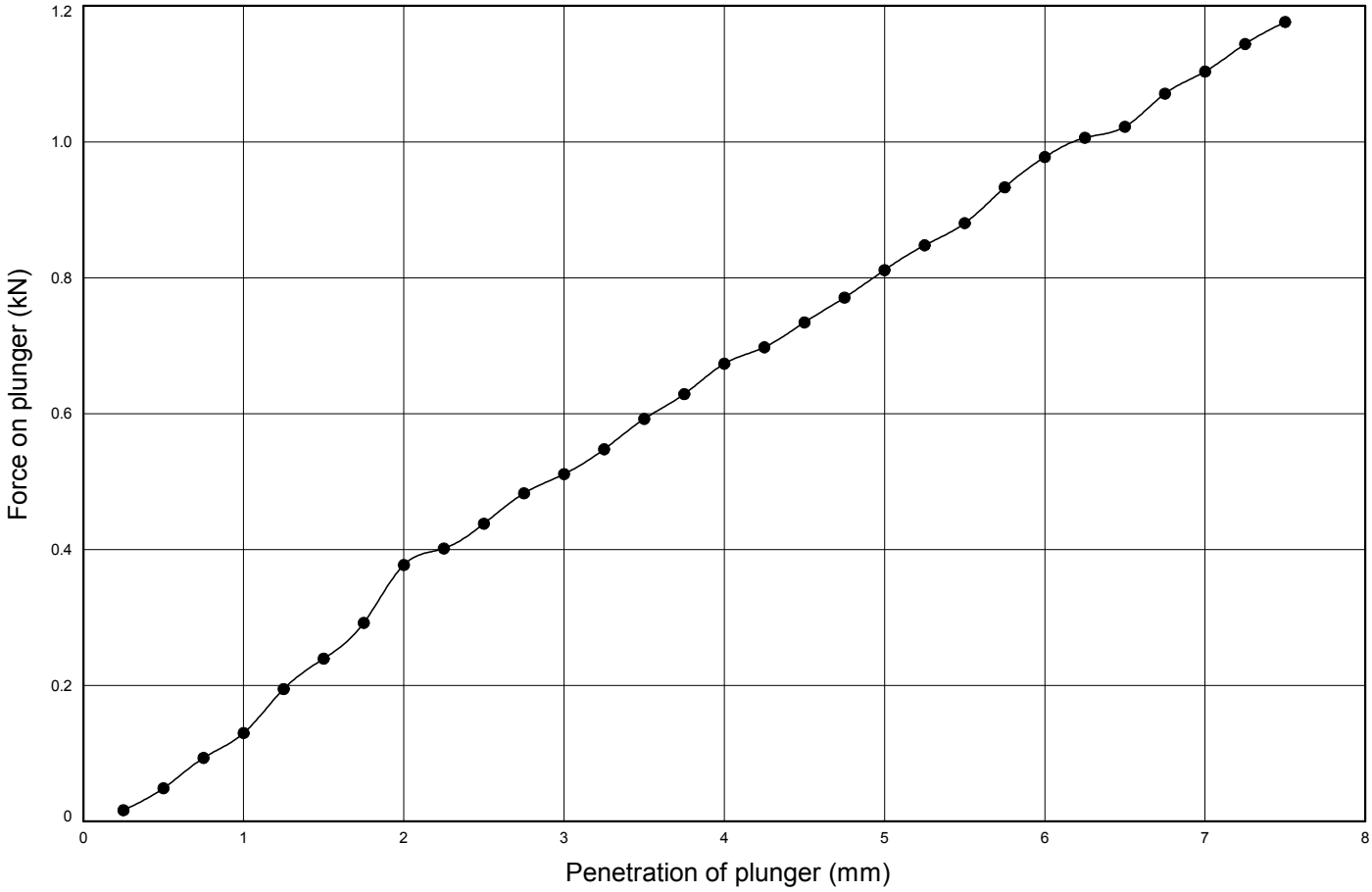
IN SITU CALIFORNIA BEARING RATIO

BS.1377 : Part 9 : 1990

CLIENT	ASK PROPERTY DEVELOPMENTS LTD	BH/TP No.	CBR 102
SITE	PLOTS 6,7 & 8 FIRST STREET, MANCHESTER	TEST DEPTH (m)	0.30
		Easting	383800.0
DESCRIPTION	Dark grey slightly clayey gravelly SAND	Northing	397211.0
		Ground level	33.60mOD



TEST DETAILS

date of test	19/04/2016
surcharge mass (kg)	9
moisture content (%)	5.2

remarks:

RESULTS

penetration of plunger (mm)	force on plunger (kN)	calculated CBR (%)	CBR value (%)
2.5	0.44	3.3	
5.0	0.81	4.1	
			4.1

CBR taken is the higher value (%) corresponding to 2.50mm and 5.00mm penetration

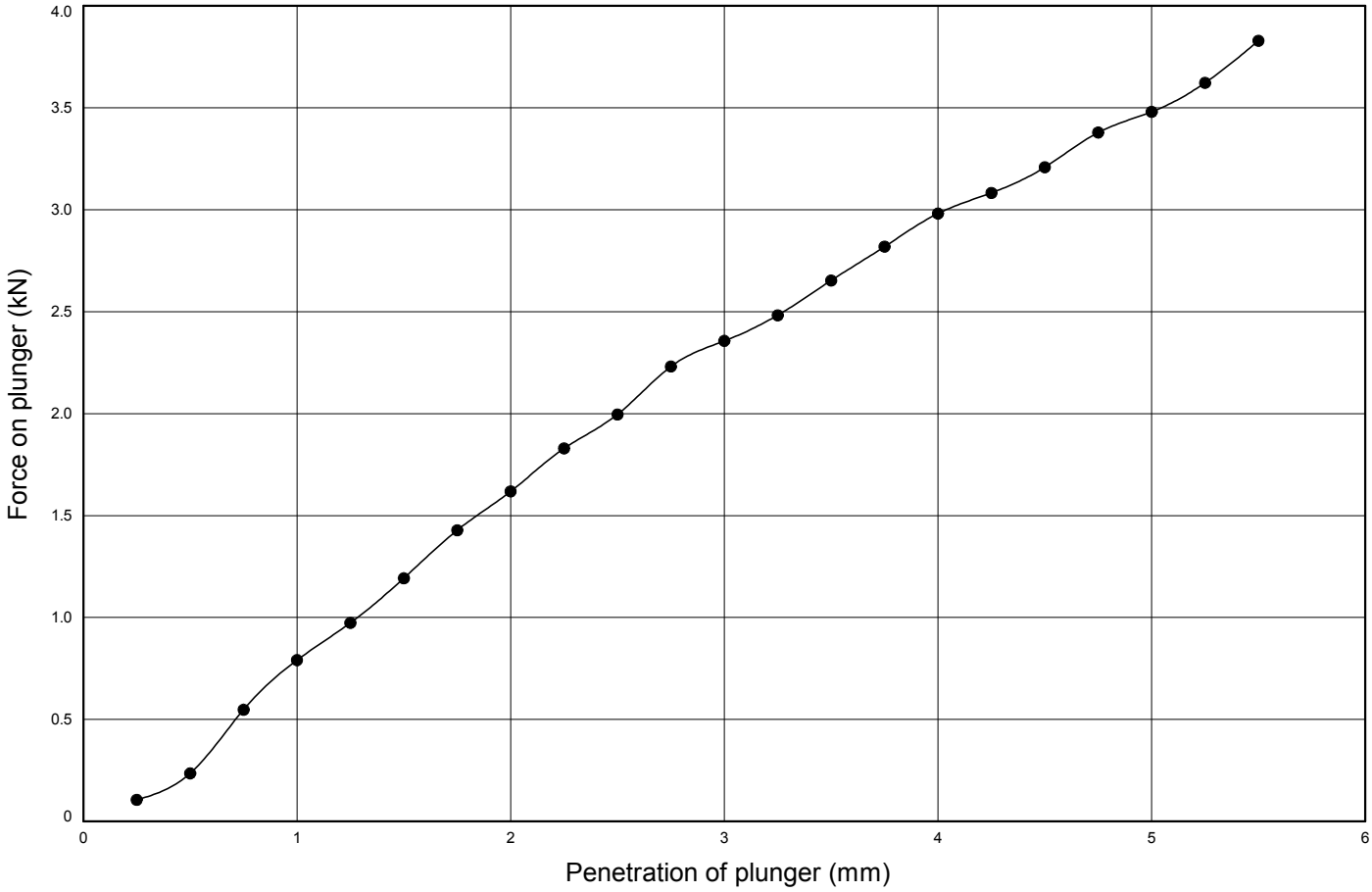
CONTRACT	CHECKED
31847	**NP**

Geotechnical Engineering Limited

IN SITU CALIFORNIA BEARING RATIO

BS.1377 : Part 9 : 1990

CLIENT	ASK PROPERTY DEVELOPMENTS LTD	BH/TP No.	CBR 103
SITE	PLOTS 6,7 & 8 FIRST STREET, MANCHESTER	TEST DEPTH (m)	0.50
		Easting	383801.0
DESCRIPTION	Dark grey slightly clayey gravelly SAND	Northing	397196.0
		Ground level	33.90mOD



TEST DETAILS

date of test	18/04/2016
surcharge mass (kg)	9
moisture content (%)	7.9

remarks:

RESULTS

penetration of plunger (mm)	force on plunger (kN)	calculated CBR (%)	CBR value (%)
2.5	2.00	15	
5.0	3.48	17	
			17

CBR taken is the higher value (%) corresponding to 2.50mm and 5.00mm penetration

CONTRACT	CHECKED
31847	**NP**

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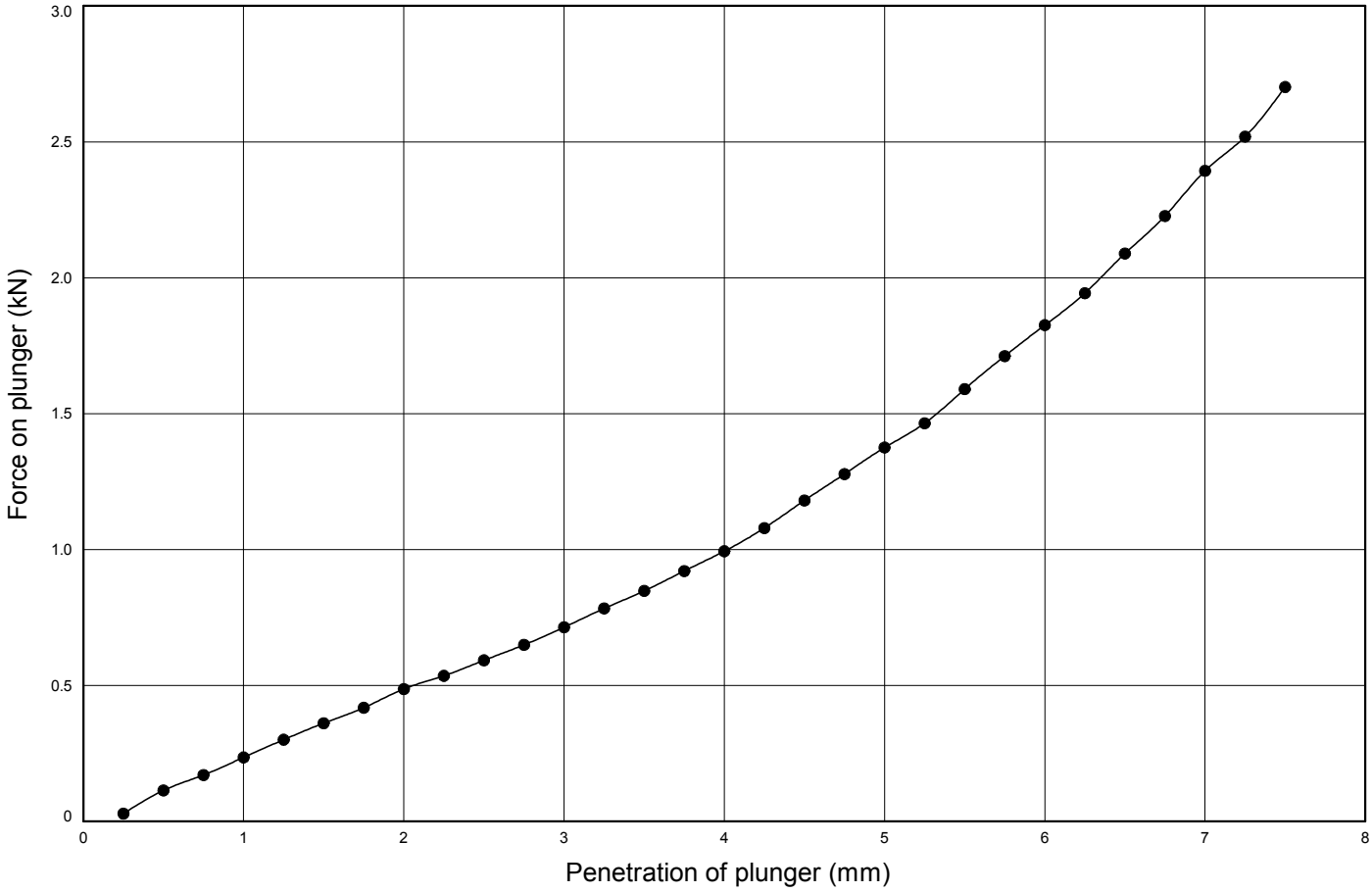
IN SITU CALIFORNIA BEARING RATIO

BS.1377 : Part 9 : 1990

CLIENT	ASK PROPERTY DEVELOPMENTS LTD	BH/TP No.	CBR 105
SITE	PLOTS 6,7 & 8 FIRST STREET, MANCHESTER	TEST DEPTH (m)	0.35
		Easting	383819.0
DESCRIPTION	Dark brown clayey gravelly SAND	Northing	397161.0
		Ground level	34.55mOD



TEST DETAILS

date of test	18/04/2016
surcharge mass (kg)	9
moisture content (%)	12

remarks:

RESULTS

penetration of plunger (mm)	force on plunger (kN)	calculated CBR (%)	CBR value (%)
2.5	0.59	4.5	
5.0	1.38	6.9	
			6.9

CBR taken is the higher value (%) corresponding to 2.50mm and 5.00mm penetration

CONTRACT	CHECKED
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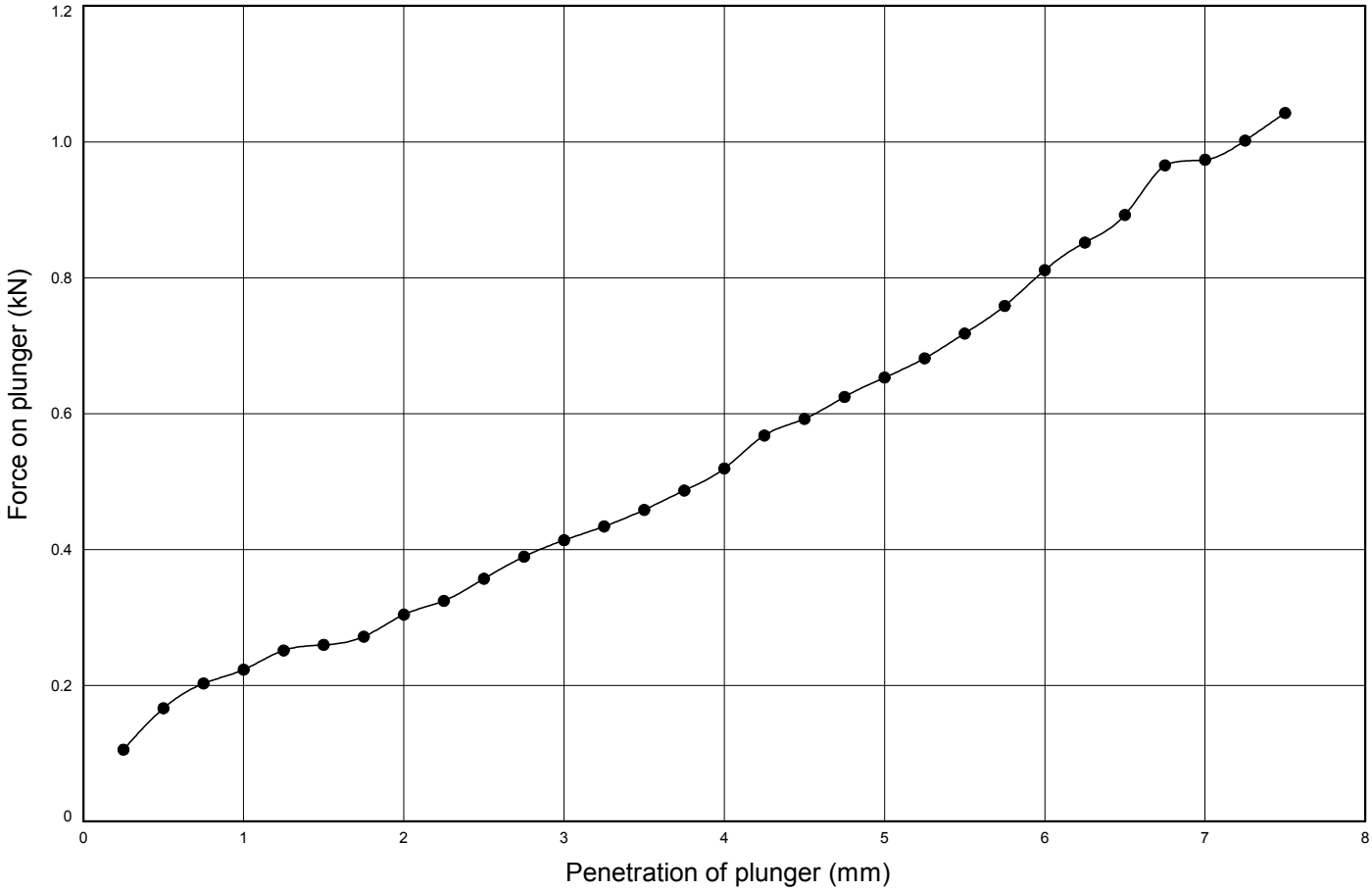
IN SITU CALIFORNIA BEARING RATIO

BS.1377 : Part 9 : 1990

CLIENT	ASK PROPERTY DEVELOPMENTS LTD	BH/TP No.	CBR 106
SITE	PLOTS 6,7 & 8 FIRST STREET, MANCHESTER	TEST DEPTH (m)	0.60
		Easting	383826.0
DESCRIPTION	Dark grey slightly sandy gravelly CLAY	Northing	397147.0
		Ground level	34.65mOD



TEST DETAILS

date of test	18/04/2016
surcharge mass (kg)	9
moisture content (%)	17

remarks:

RESULTS

penetration of plunger (mm)	force on plunger (kN)	calculated CBR (%)	CBR value (%)
2.5	0.36	2.7	
5.0	0.65	3.3	
			3.3

CBR taken is the higher value (%) corresponding to 2.50mm and 5.00mm penetration

CONTRACT	CHECKED
31847	**NP**

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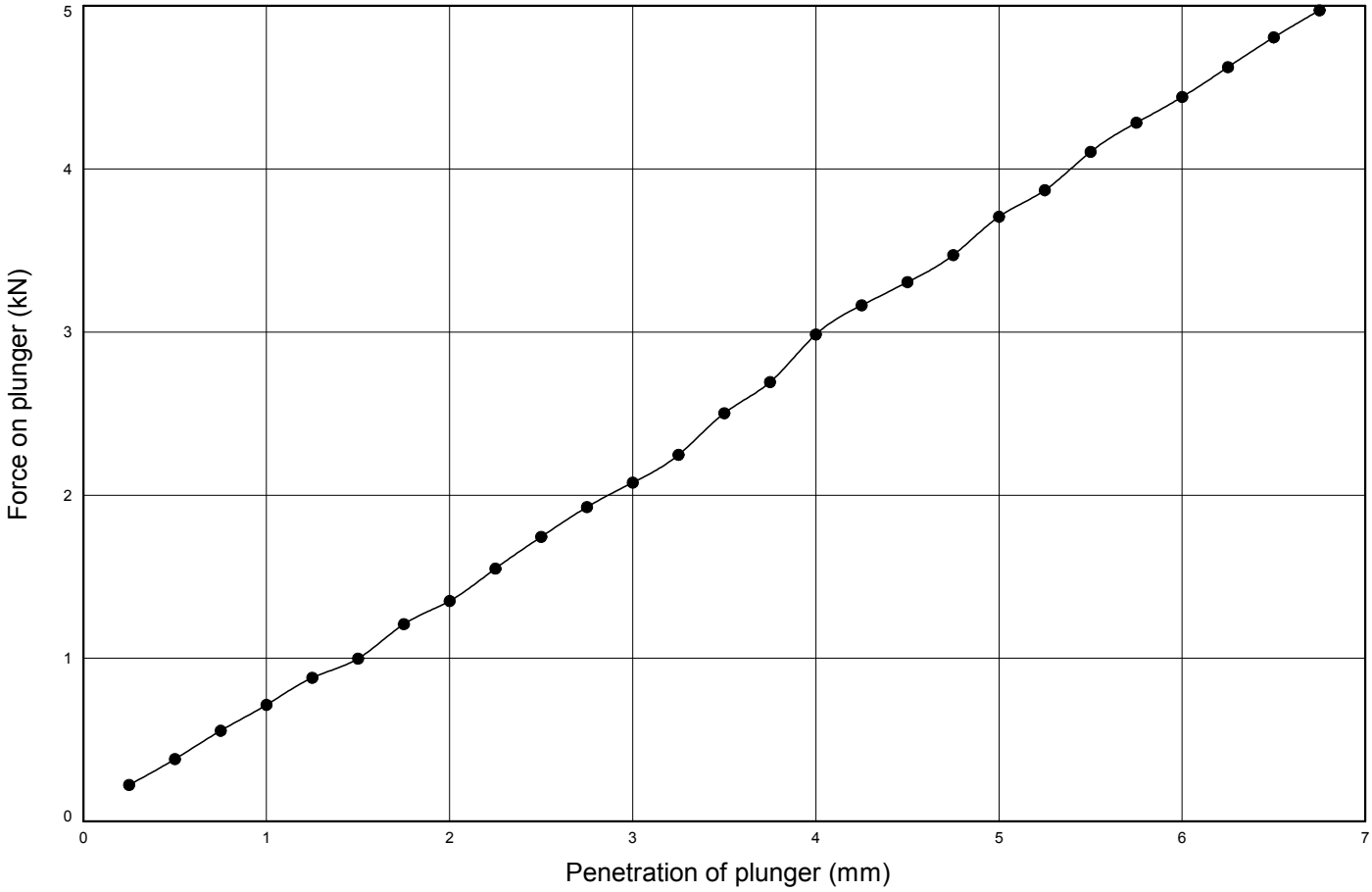
IN SITU CALIFORNIA BEARING RATIO

BS.1377 : Part 9 : 1990

CLIENT	ASK PROPERTY DEVELOPMENTS LTD	BH/TP No.	CBR 107
SITE	PLOTS 6,7 & 8 FIRST STREET, MANCHESTER	TEST DEPTH (m)	0.20
		Easting	383774.0
DESCRIPTION	Dark brown slightly clayey gravelly SAND	Northing	397239.0
		Ground level	32.45mOD



TEST DETAILS

date of test	19/04/2016
surcharge mass (kg)	9
moisture content (%)	10

remarks:

RESULTS

penetration of plunger (mm)	force on plunger (kN)	calculated CBR (%)	CBR value (%)
2.5	1.74	13	
5.0	3.71	19	
			19

CBR taken is the higher value (%) corresponding to 2.50mm and 5.00mm penetration

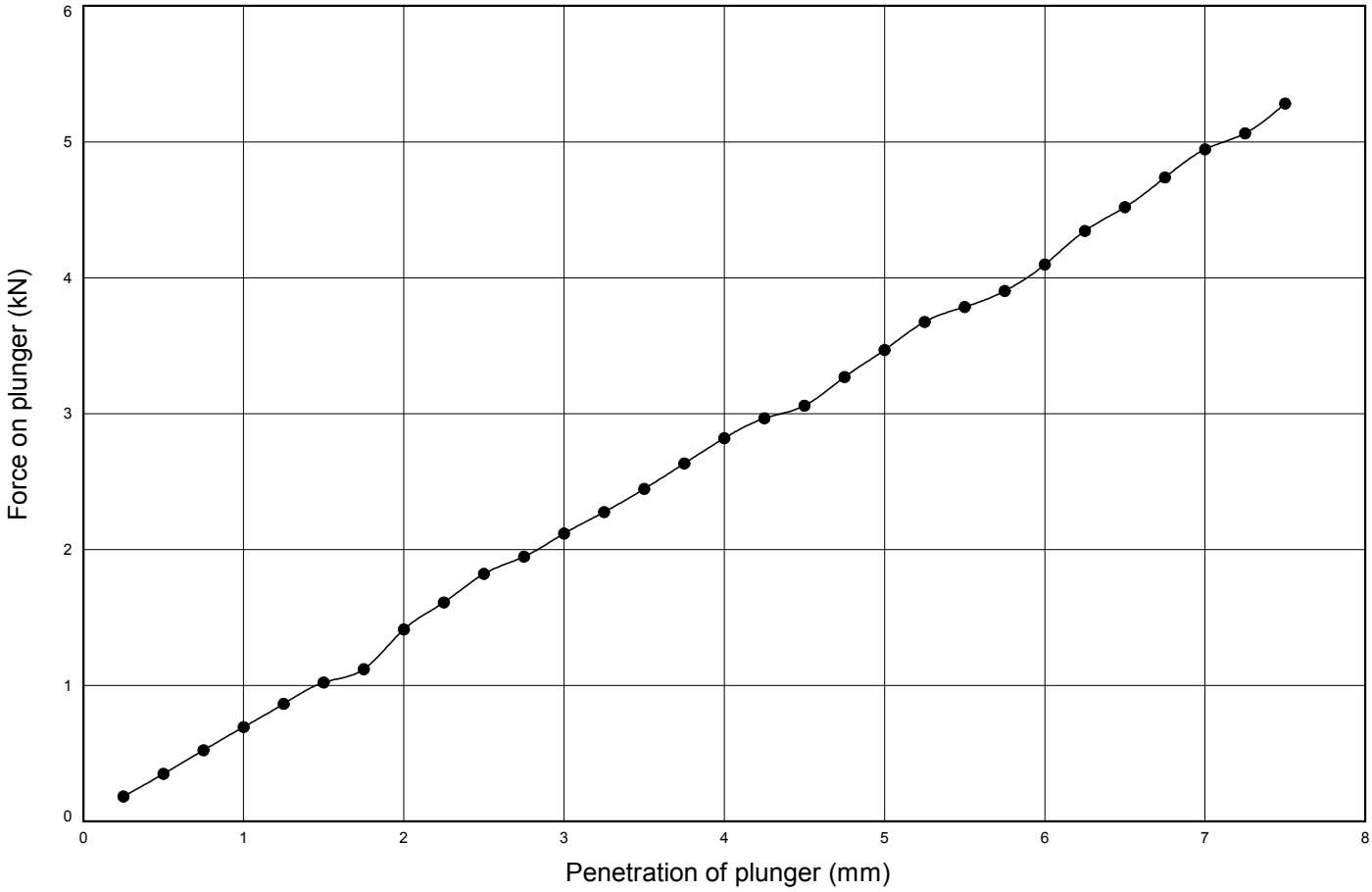
CONTRACT	CHECKED
31847	**NP**

Geotechnical Engineering Limited

IN SITU CALIFORNIA BEARING RATIO

BS.1377 : Part 9 : 1990

CLIENT	ASK PROPERTY DEVELOPMENTS LTD	BH/TP No.	CBR 108
SITE	PLOTS 6,7 & 8 FIRST STREET, MANCHESTER	TEST DEPTH (m)	0.50
		Easting	383764.0
DESCRIPTION	Dark brown slightly clayey gravelly SAND	Northing	397265.0
		Ground level	31.10mOD



TEST DETAILS

date of test	19/04/2016
surcharge mass (kg)	9
moisture content (%)	13

remarks:

RESULTS

penetration of plunger (mm)	force on plunger (kN)	calculated CBR (%)	CBR value (%)
2.5	1.82	14	
5.0	3.47	17	
			17

CBR taken is the higher value (%) corresponding to 2.50mm and 5.00mm penetration

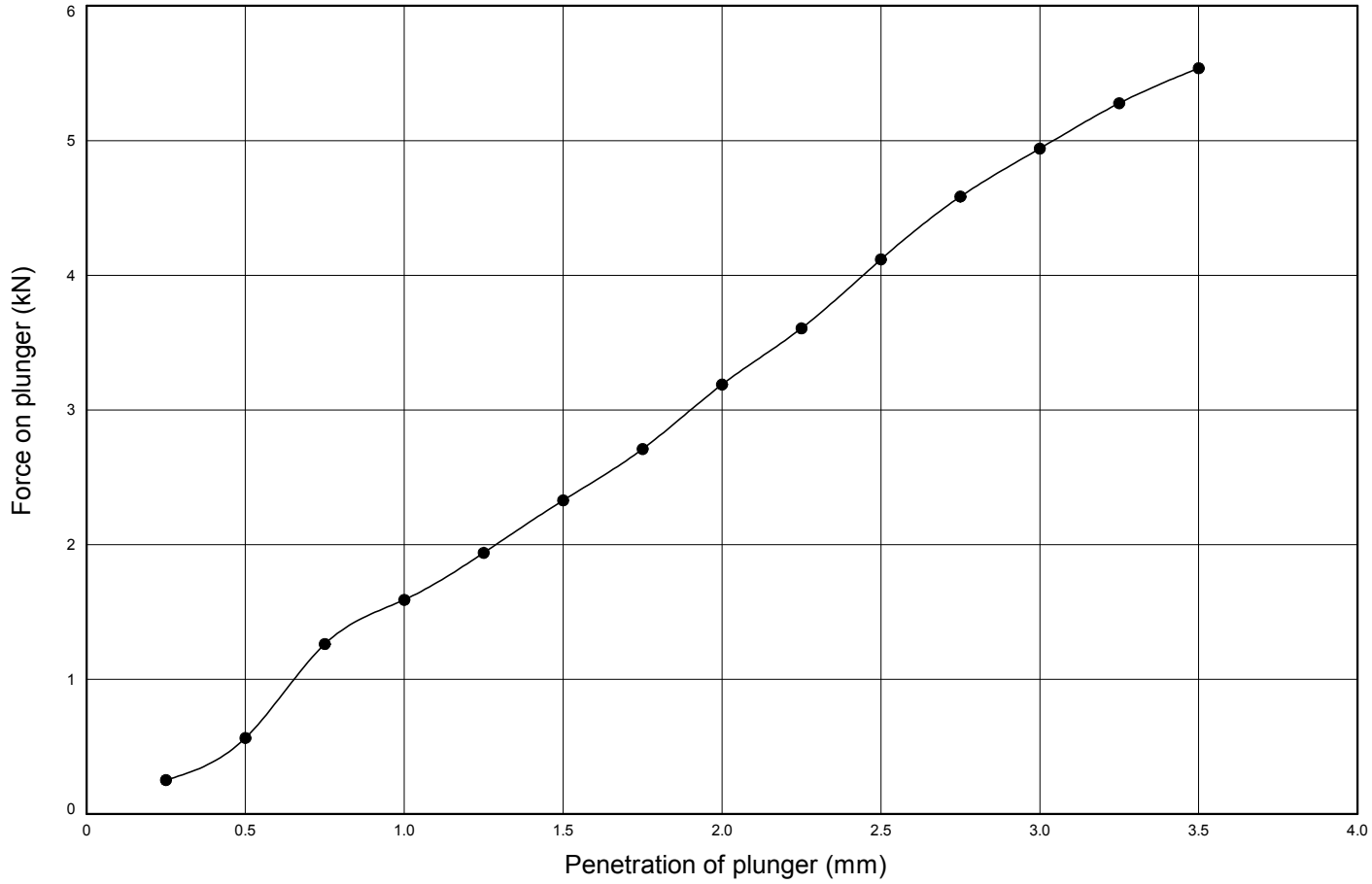
CONTRACT	CHECKED
31847	**NP**

Geotechnical Engineering Limited

IN SITU CALIFORNIA BEARING RATIO

BS.1377 : Part 9 : 1990

CLIENT	ASK PROPERTY DEVELOPMENTS LTD	BH/TP No.	CBR 109
SITE	PLOTS 6,7 & 8 FIRST STREET, MANCHESTER	TEST DEPTH (m)	0.30
		Easting	383756.0
DESCRIPTION	Dark grey slightly clayey gravelly SAND	Northing	397278.0
		Ground level	31.00mOD



TEST DETAILS

date of test	19/04/2016
surcharge mass (kg)	9
moisture content (%)	4.4

remarks:

Test terminated prematurely due to exceeding kentledge.

RESULTS

penetration of plunger (mm)	force on plunger (kN)	calculated CBR (%)	CBR value (%)
2.5	4.12	31	
5.0			31

CBR taken is the higher value (%) corresponding to 2.50mm and 5.00mm penetration

CONTRACT	CHECKED
31847	**NP**

Geotechnical Engineering Limited

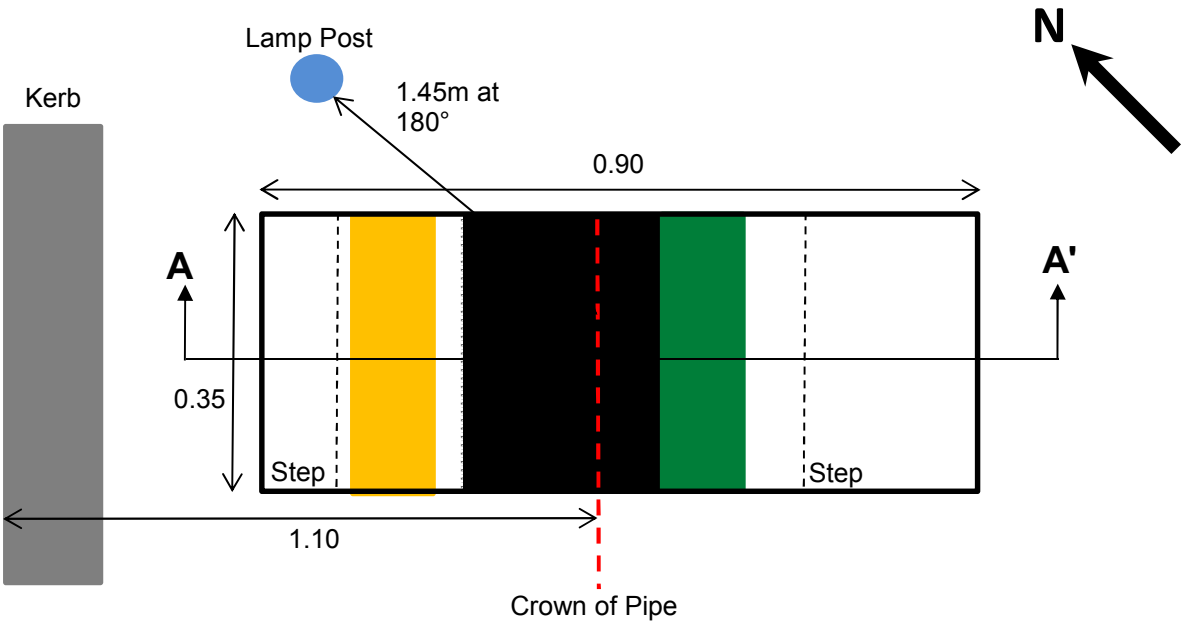
SLIT TRENCH DETAIL

CLIENT ASK PROPERTY DEVELOPMENTS LTD

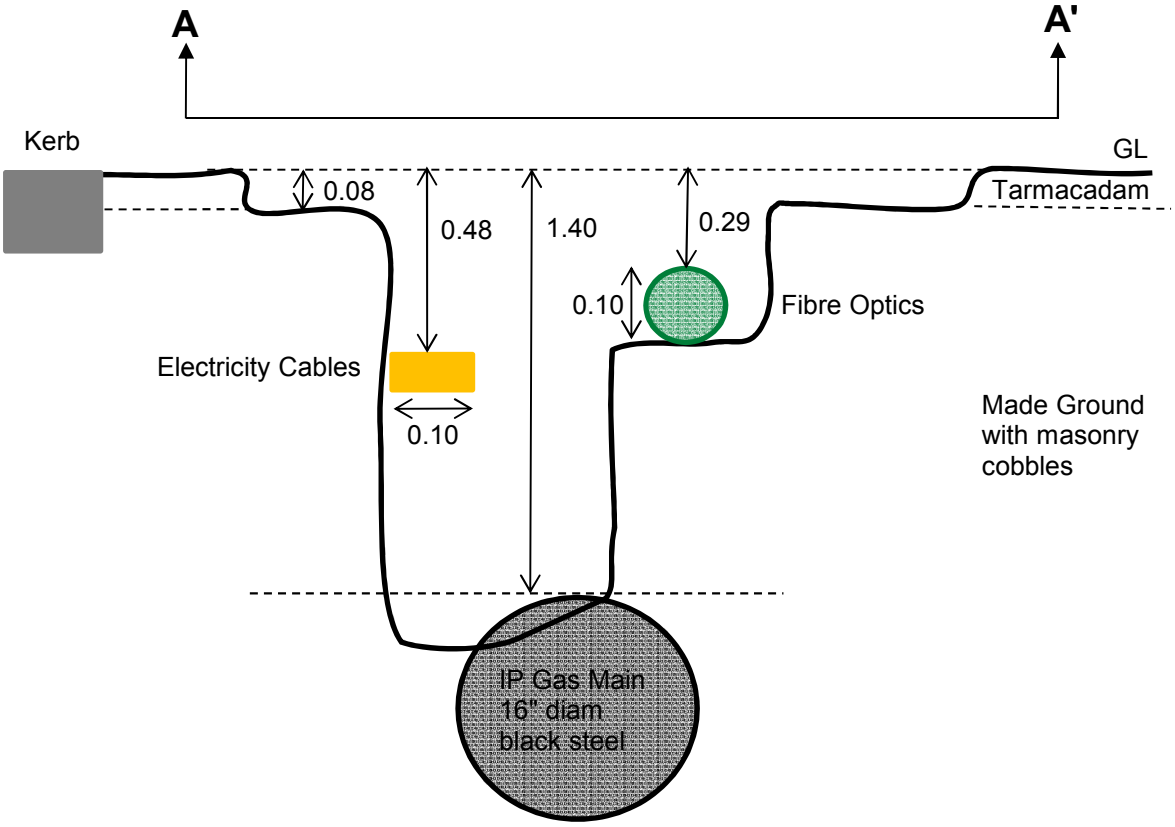
SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

OP101

Plan View



Section A - A'



All measurements in metres.
Not to scale.

CONTRACT	CHECKED
31847	CT

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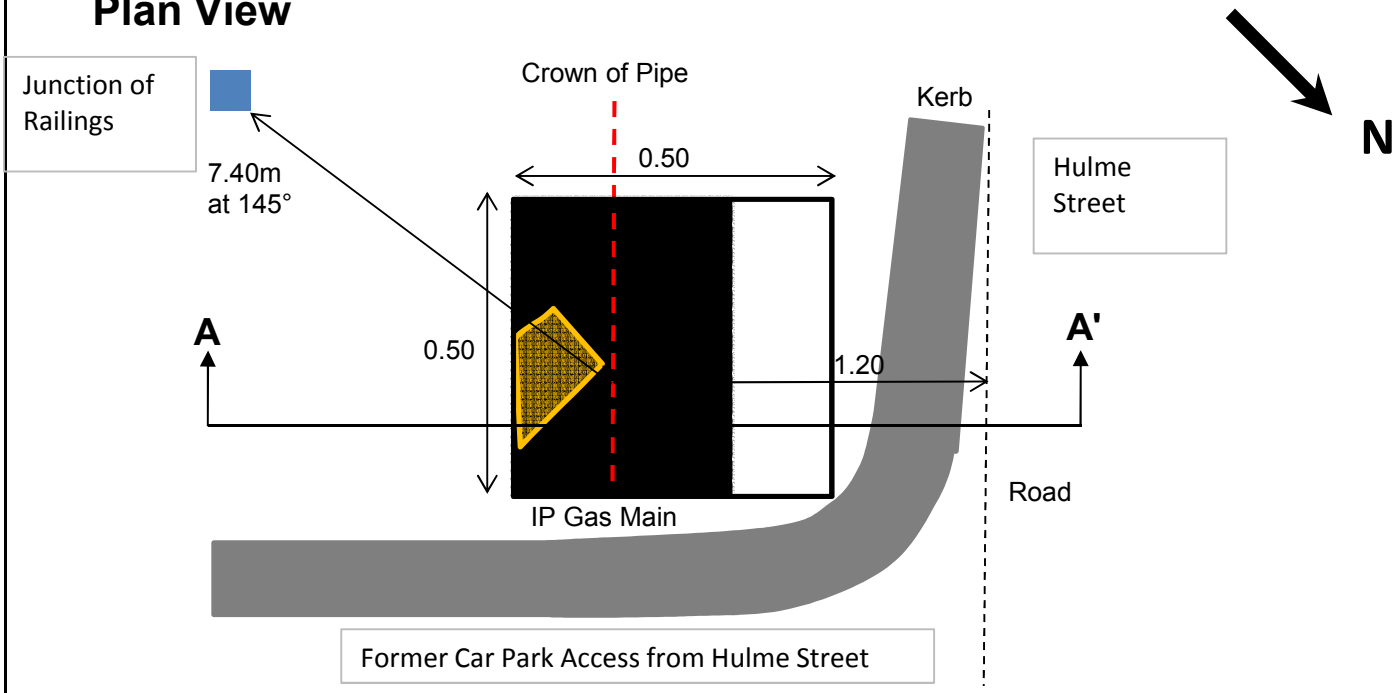
SLIT TRENCH DETAIL

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

OP102

Plan View



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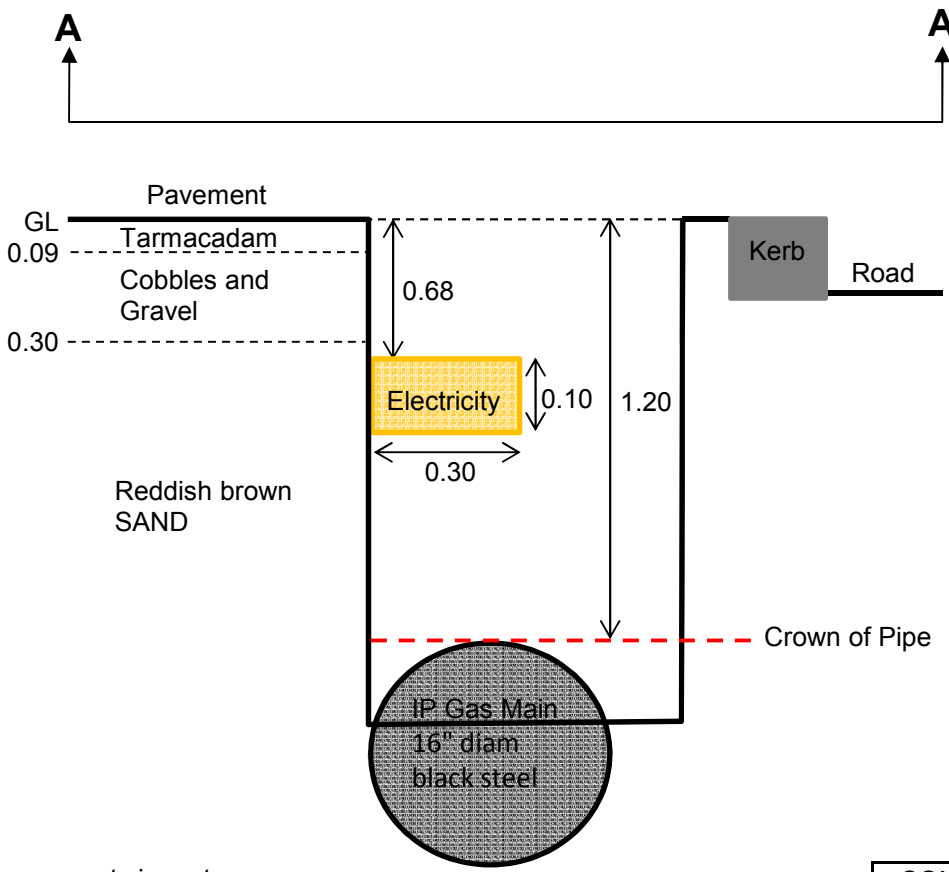

All measurements in metres.
Not to scale.

CONTRACT	CHECKED
31847	CT

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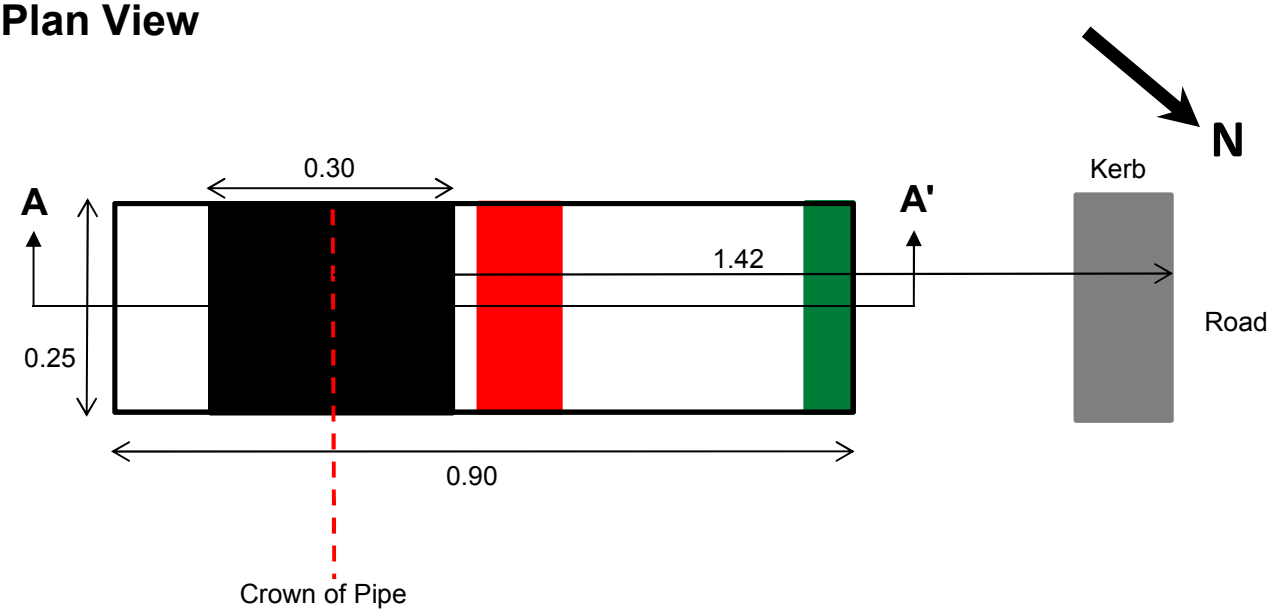
SLIT TRENCH DETAIL

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

OP105

Plan View



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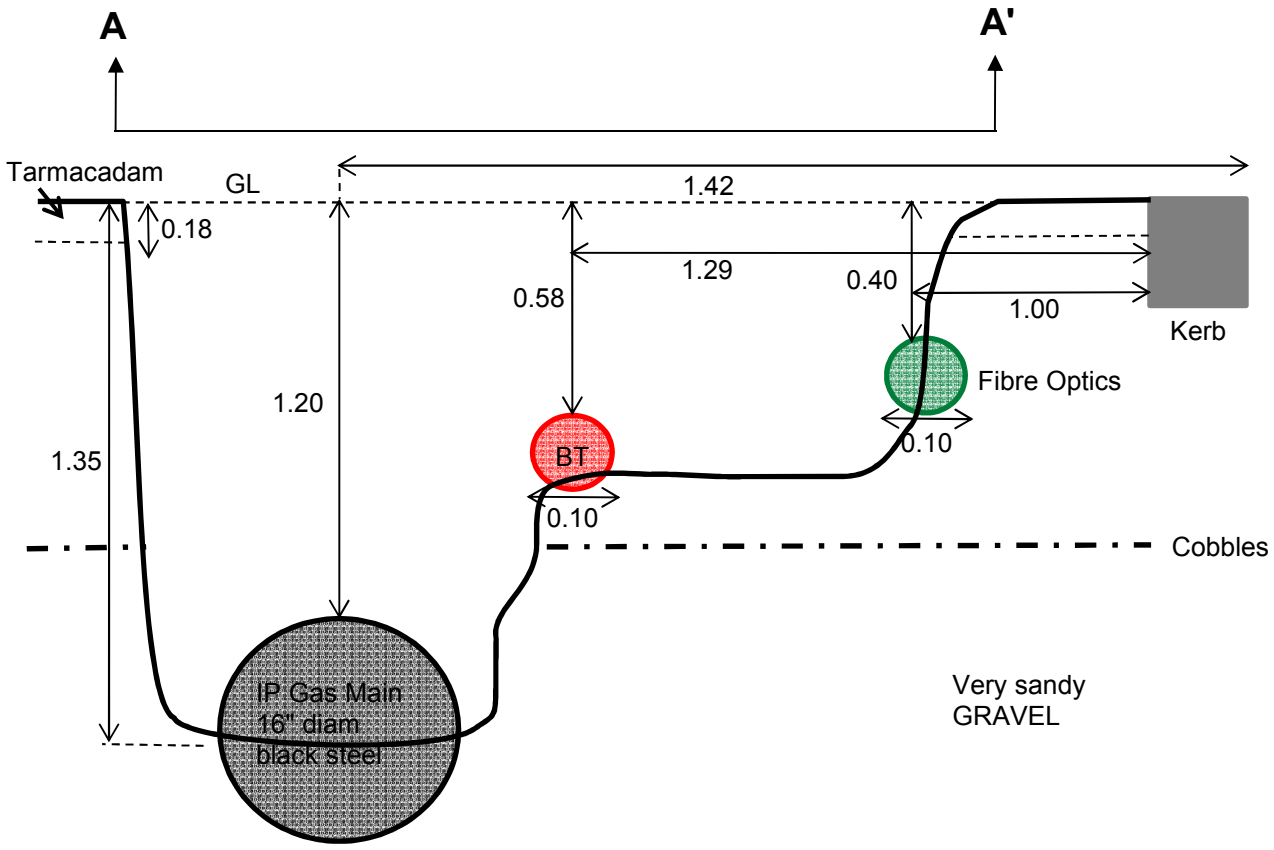


All measurements in metres.
Not to scale.

CONTRACT	CHECKED
31847	CT

Geotechnical Engineering Limited

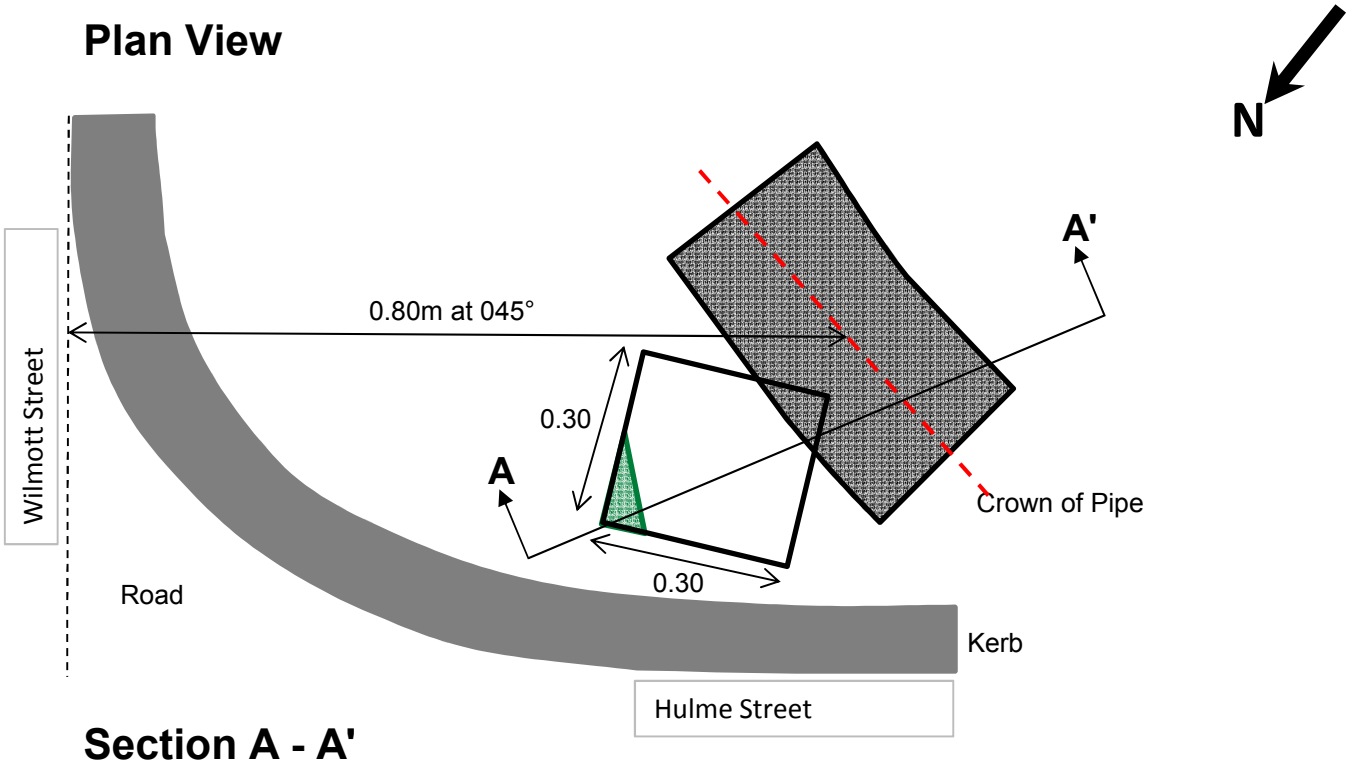
SLIT TRENCH DETAIL

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

OP107

Plan View



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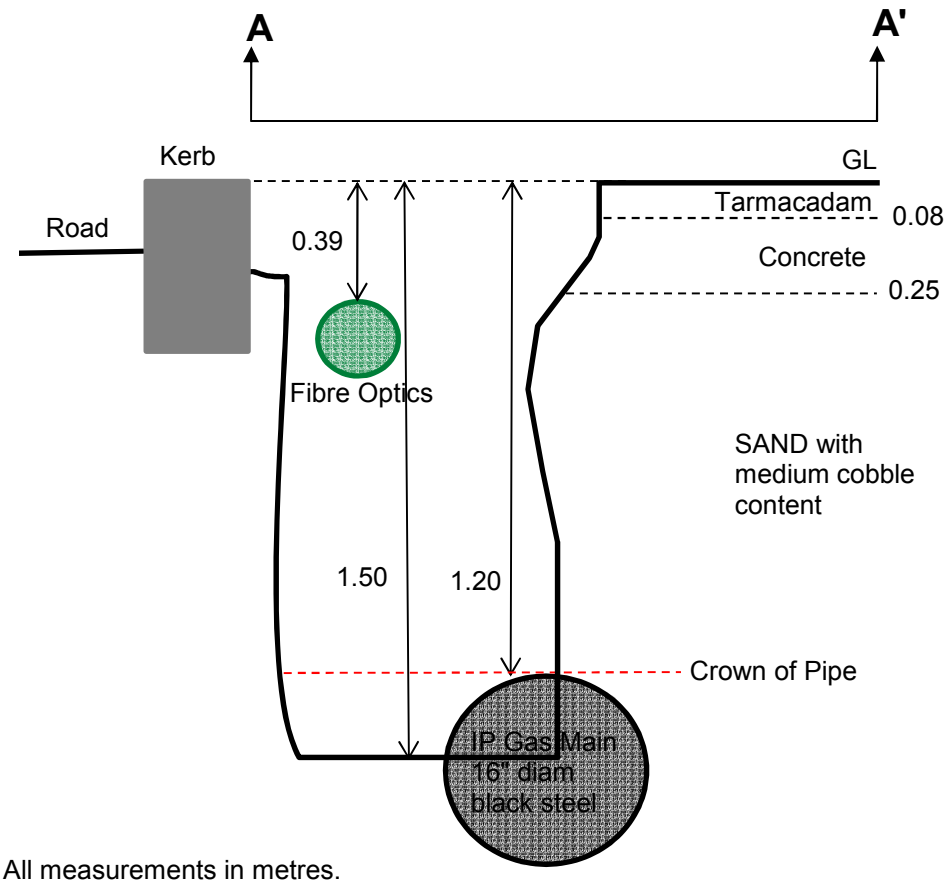


All measurements in metres.
Not to scale.

CONTRACT	CHECKED
31847	CT

Geotechnical Engineering Limited

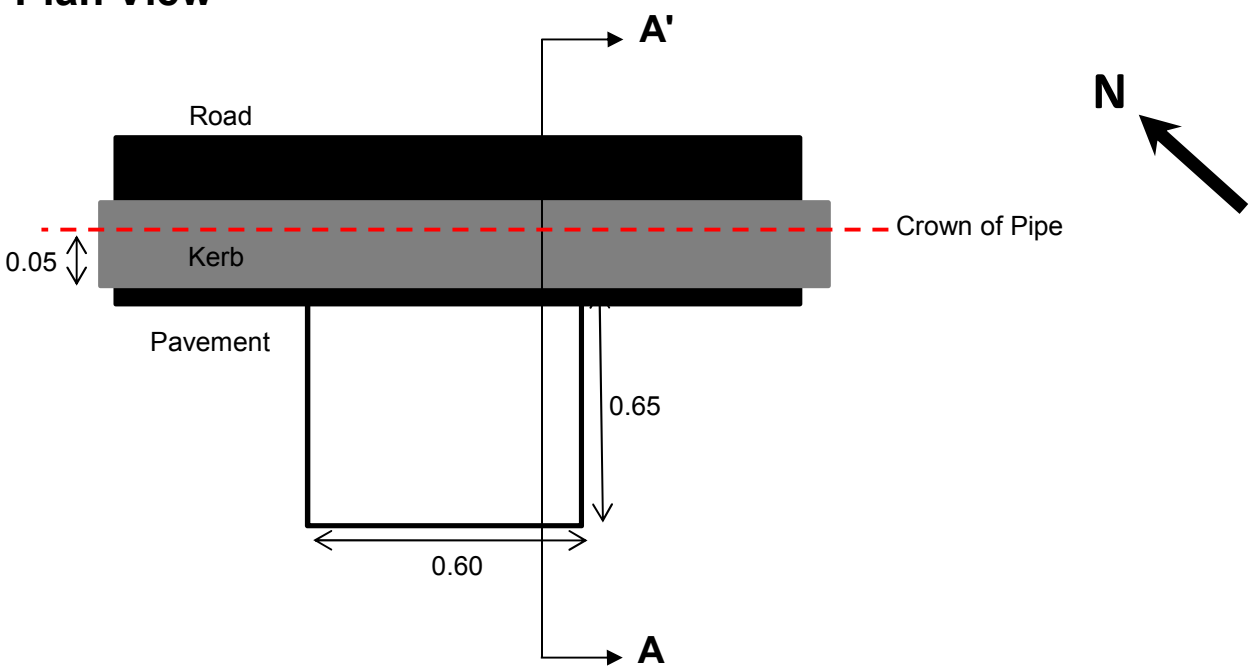
SLIT TRENCH DETAIL

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

OP110

Plan View



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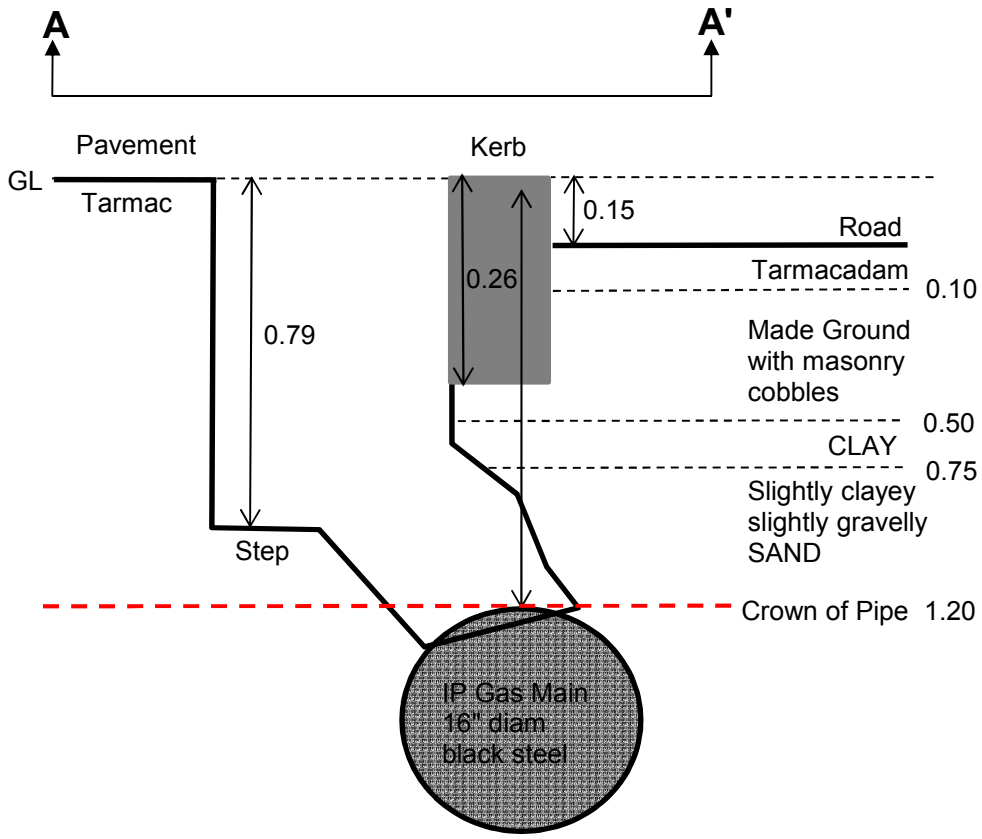


All measurements in metres.
Not to scale.

CONTRACT	CHECKED
31847	CT

Geotechnical Engineering Limited

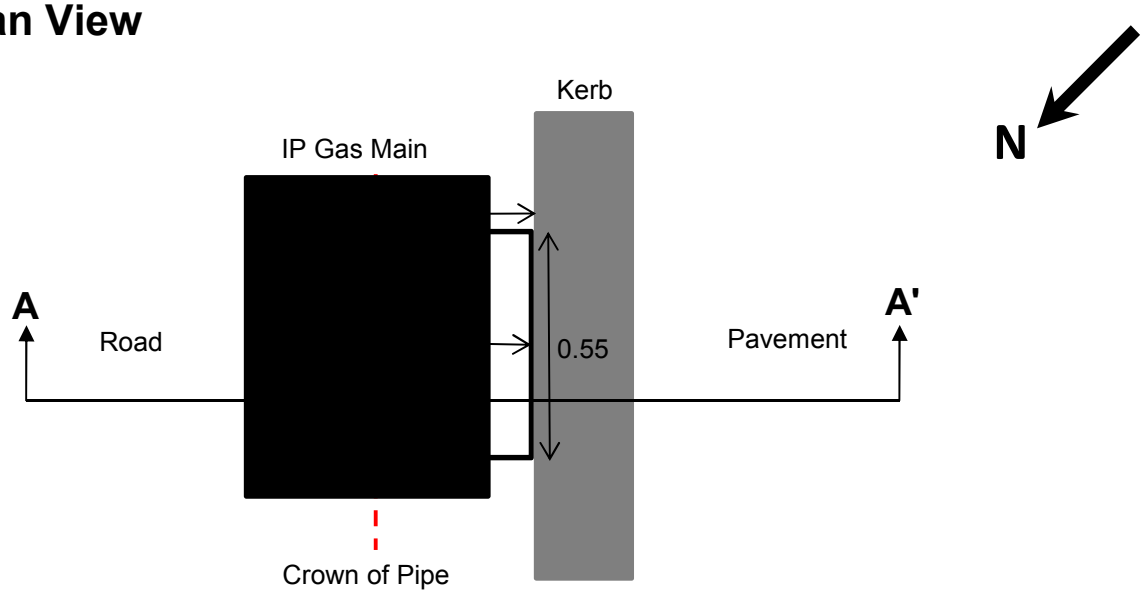
SLIT TRENCH DETAIL

CLIENT ASK PROPERTY DEVELOPMENTS LTD

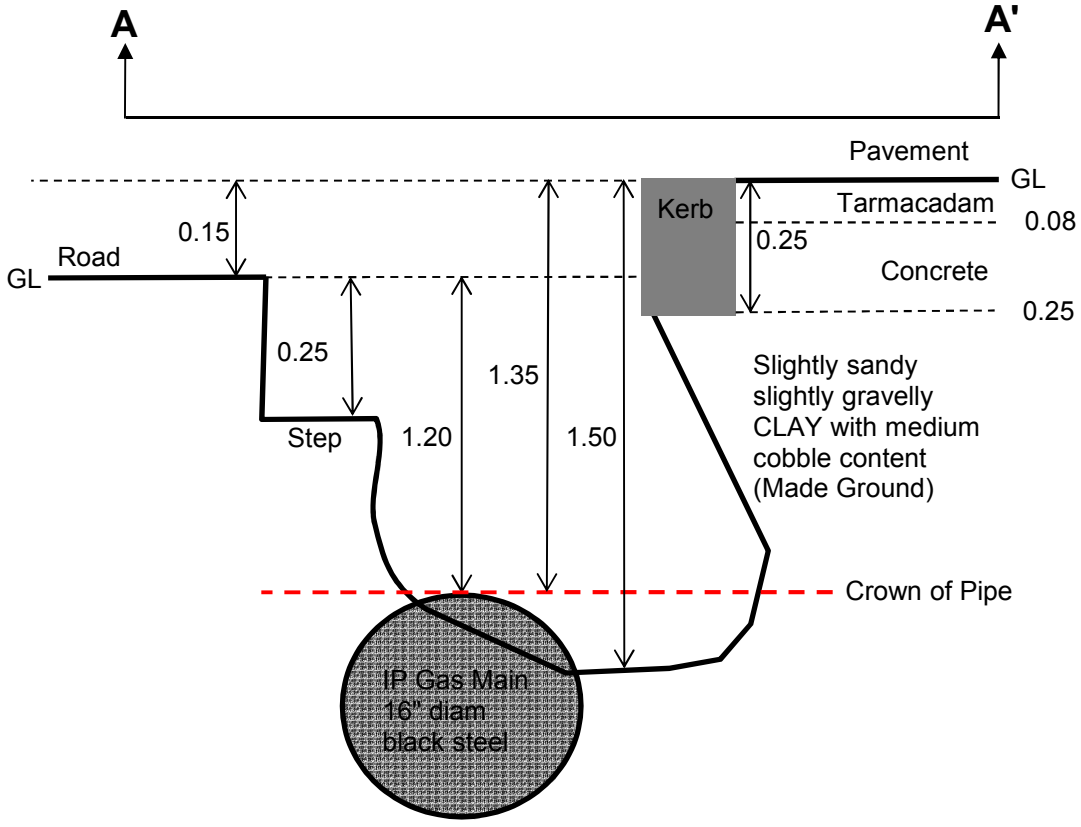
SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTE

OP112

Plan View



Section A - A'



All measurements in metres.
Not to scale.

CONTRACT	CHECKED
31847	CT

Geotechnical Engineering Limited

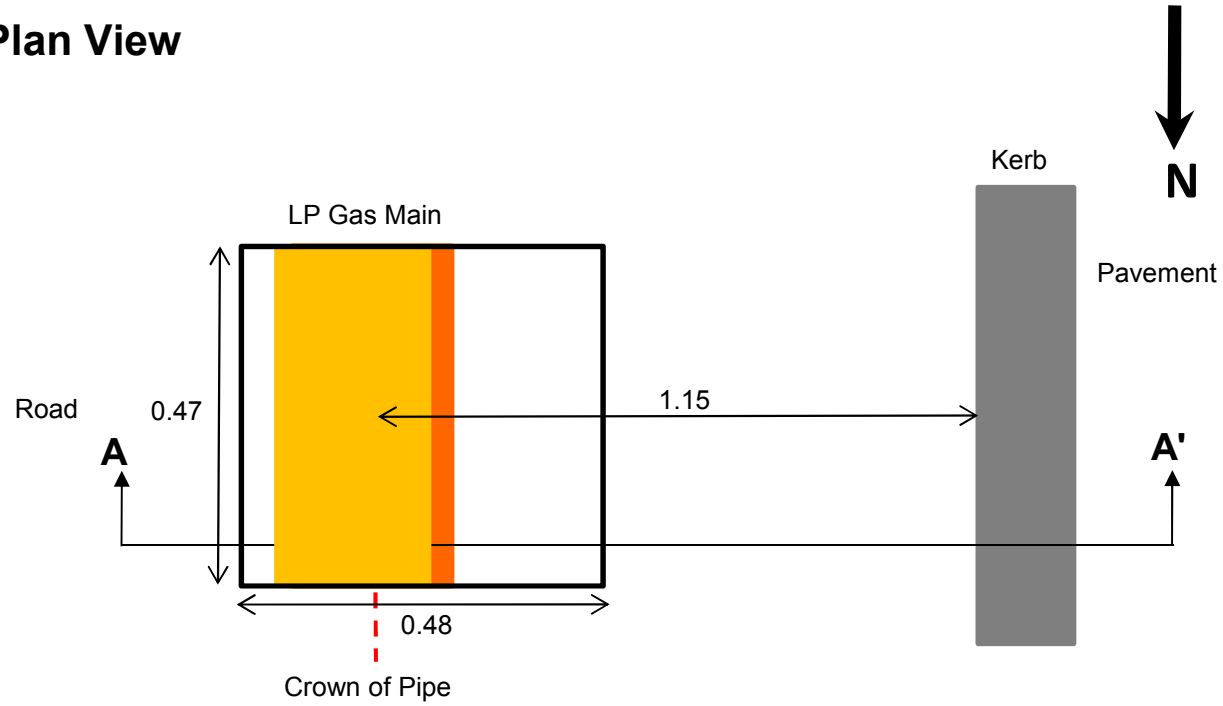
SLIT TRENCH DETAIL

CLIENT ASK PROPERTY DEVELOPMENTS LTD

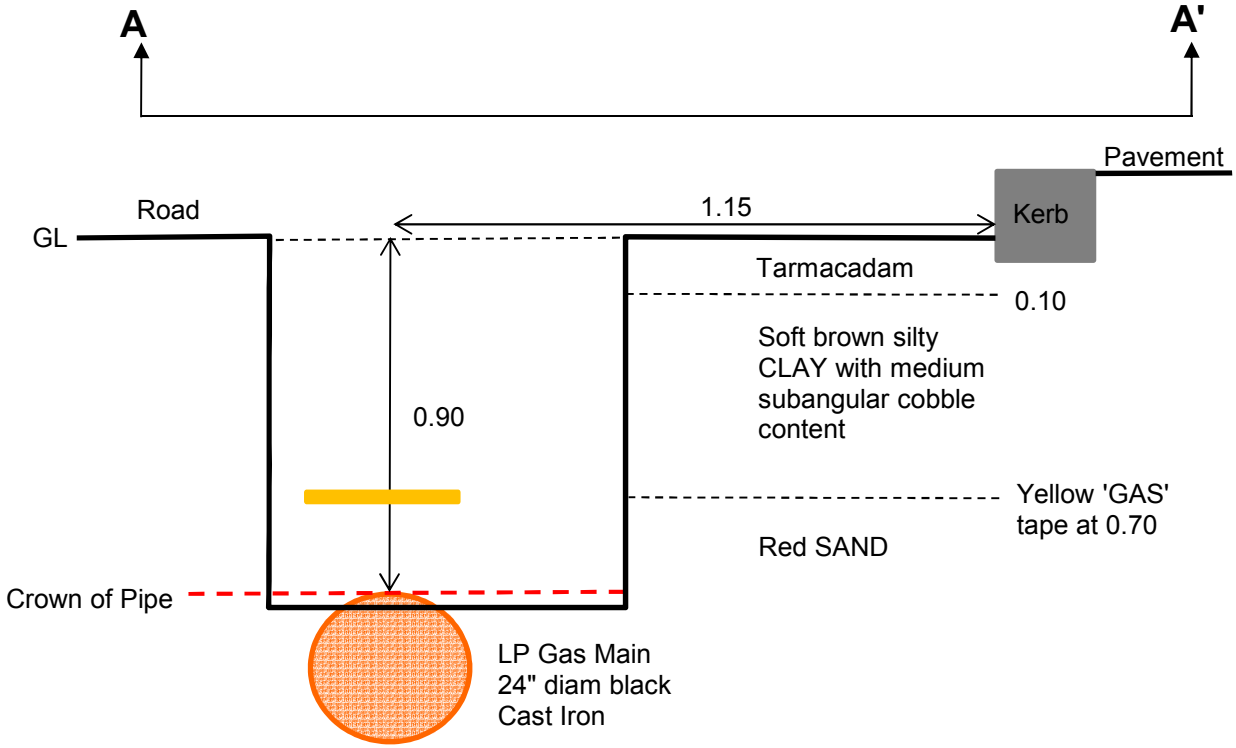
SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

OP113

Plan View



Section A - A'



All measurements in metres.
Not to scale.

CONTRACT	CHECKED
31847	CT

Geotechnical Engineering Limited

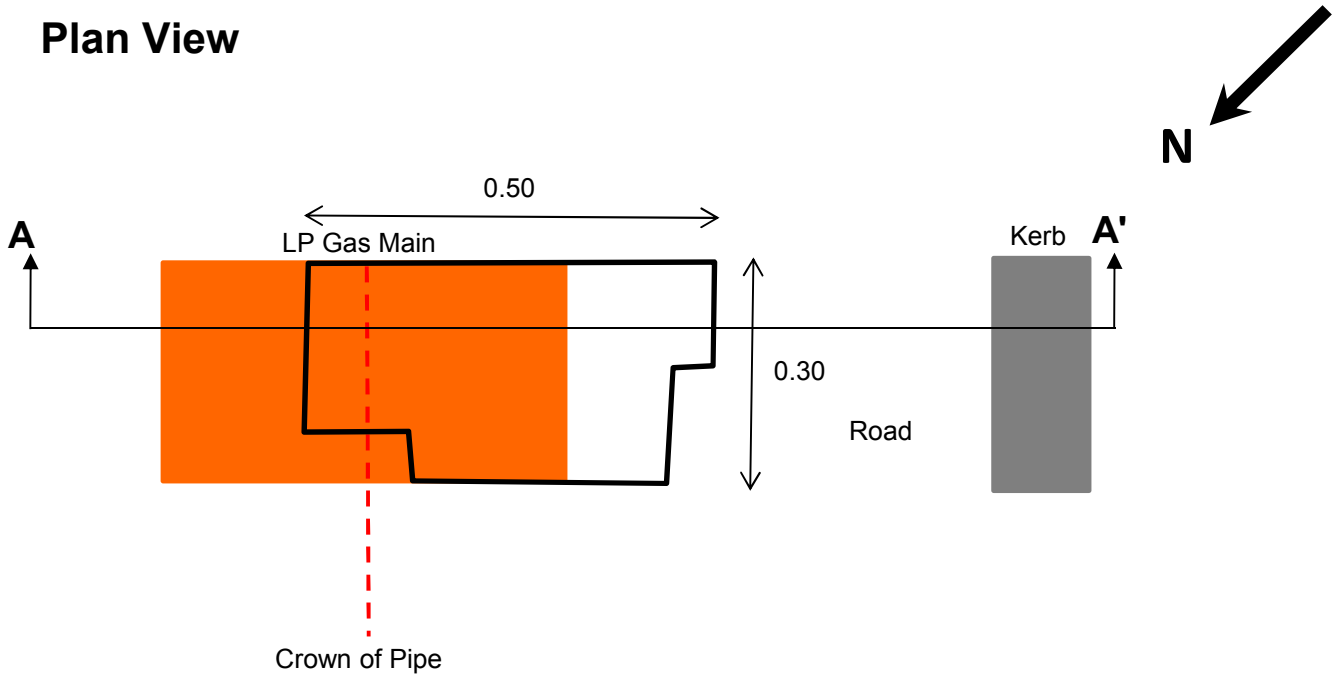
SLIT TRENCH DETAIL

CLIENT ASK PROPERTY DEVELOPMENTS LTD

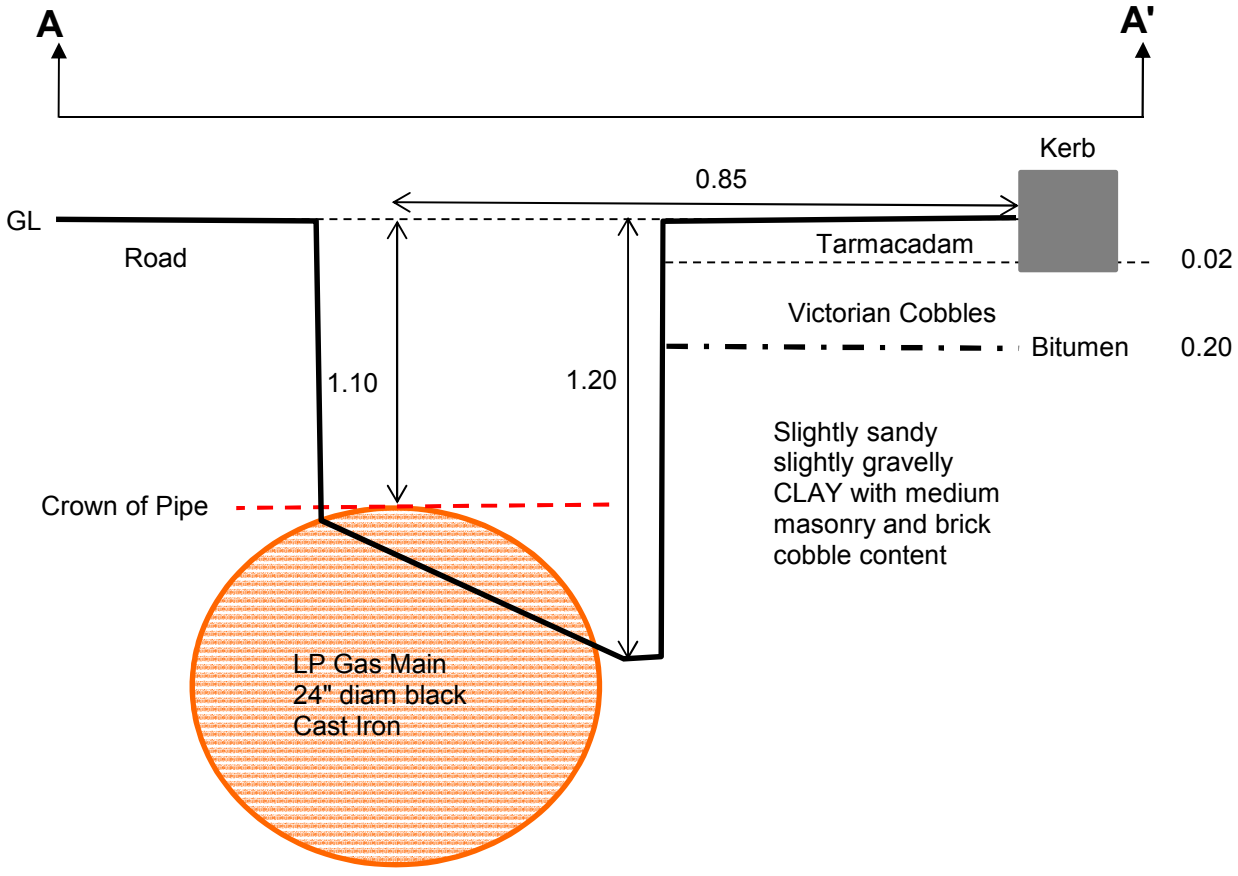
SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

OP116

Plan View



Section A - A'



All measurements in metres.
Not to scale.

CONTRACT	CHECKED
31847	CT

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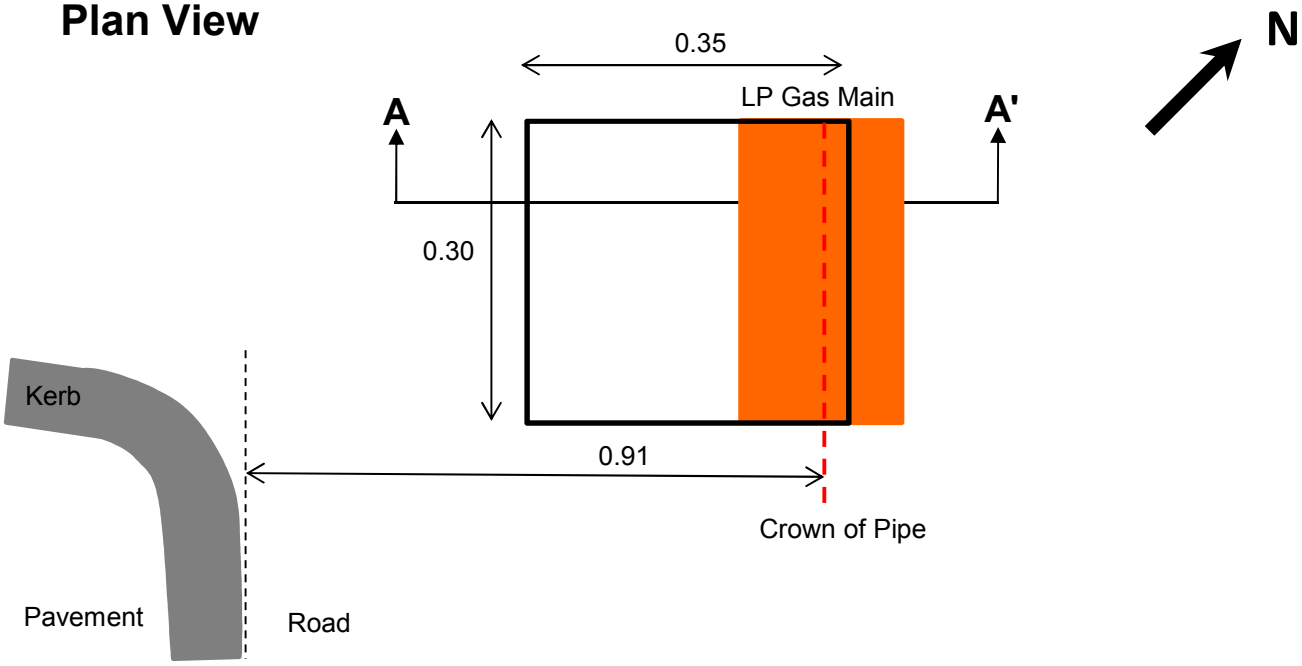
SLIT TRENCH DETAIL

CLIENT ASK PROPERTY DEVELOPMENTS LTD

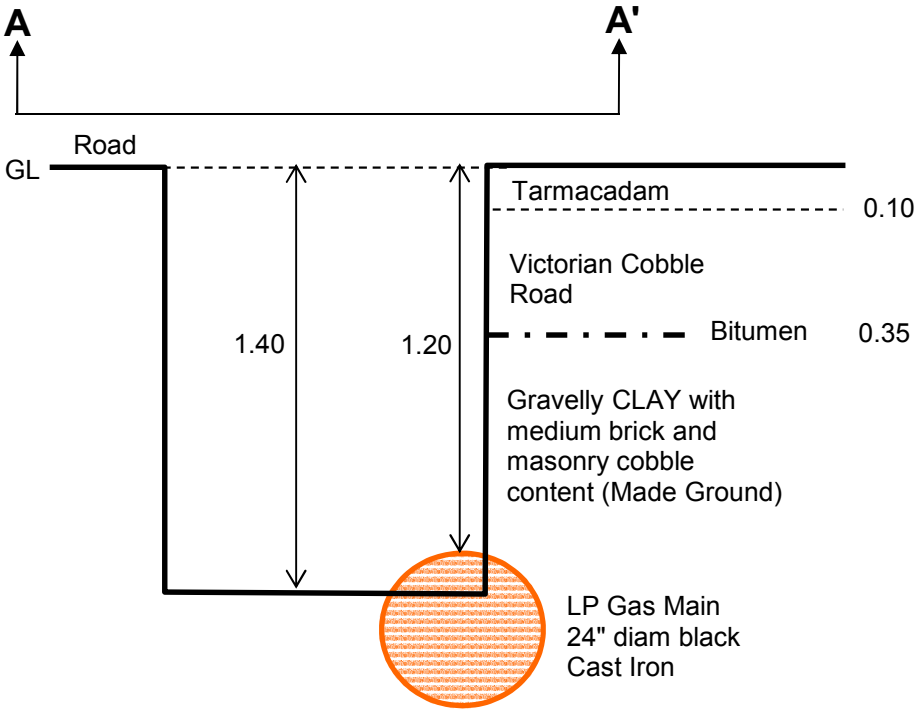
SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

OP118

Plan View



Section A - A'



All measurements in metres.
Not to scale.

CONTRACT	CHECKED
31847	CT

Geotechnical Engineering Limited

GAS AND GROUNDWATER LEVELS

CLIENT: ASK PROPERTY DEVELOPMENTS LTD

SITE: PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

Borehole /trial pit no.	pipe	date and time	barometric pressure (mb)	pressure differentiation (mm H_2O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	carbon monoxide (ppm)	VOC (ppm)	gas flow (ltr/hr)	temperature (°C)	water level (m - bgl)	remarks
CP/RC101B	Shallow	22/04/16 00:00:00												2.20	
CP/RC101B	Shallow	29/04/16 00:00:00												2.70	
CP/RC101B	Shallow	05/05/16 12:30:00	1015	0.57								0.0	15		Purged.
CP/RC101B	Shallow	05/05/16 12:31:00										0.0			
CP/RC101B	Shallow	05/05/16 12:32:00										0.0			
CP/RC101B	Shallow	05/05/16 12:33:00										0.0			
CP/RC101B	Shallow	05/05/16 12:34:00										0.0			
CP/RC101B	Shallow	05/05/16 12:35:00			0.6	0.0	13.2	0.0	0	3					
CP/RC101B	Shallow	05/05/16 12:36:00			0.8	0.0	11.7	0.0	0	3					
CP/RC101B	Shallow	05/05/16 12:37:00			0.8	0.1	11.7	1.0	0	4					
CP/RC101B	Shallow	05/05/16 12:38:00			0.8	0.0	11.7	0.0	0	3					
CP/RC101B	Shallow	05/05/16 12:39:00			0.8	0.1	11.6	1.0	0	4					
CP/RC101B	Shallow	05/05/16 12:40:00			0.8	0.1	11.6	1.0	0	4					
CP/RC101B	Shallow	05/05/16 12:41:00			0.8	0.0	11.6	0.0	0	4					
CP/RC101B	Shallow	05/05/16 12:42:00			0.8	0.1	11.6	1.0	0	4					
CP/RC101B	Shallow	05/05/16 12:43:00			0.8	0.1	11.7	1.0	0	4					
CP/RC101B	Shallow	05/05/16 12:44:00			0.8	0.1	11.7	1.0	0	4					
CP/RC101B	Shallow	05/05/16 12:45:00												2.89	

remarks
# denotes result exceeding capacity of gas monitoring equipment
Equipment used - Gas Data GFM 435 Gas Analyser

CONTRACT **31847**

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Geotechnical Engineering Limited

GAS AND GROUNDWATER LEVELS

CLIENT: ASK PROPERTY DEVELOPMENTS LTD

SITE: PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

Borehole /trial pit no.	pipe	date and time	barometric pressure (mb)	pressure differentiation (mm H_2O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	carbon monoxide (ppm)	VOC (ppm)	gas flow (ltr/hr)	temperature (°C)	water level (m - bgl)	remarks
CP/RC101B	Shallow	18/05/16 10:30:00	1000	-0.08								0.0	13		Well dry.
CP/RC101B	Shallow	18/05/16 10:31:00										0.0			Technician: SF
CP/RC101B	Shallow	18/05/16 10:32:00										0.0			
CP/RC101B	Shallow	18/05/16 10:33:00										0.0			
CP/RC101B	Shallow	18/05/16 10:34:00										0.0			
CP/RC101B	Shallow	18/05/16 10:35:00			0.6	0.0	19.6	0.0	0	0					
CP/RC101B	Shallow	18/05/16 10:36:00			0.6	0.0	19.6	0.0	0	0					
CP/RC101B	Shallow	18/05/16 10:37:00			0.6	0.0	19.6	0.0	0	0					
CP/RC101B	Shallow	18/05/16 10:38:00			0.6	0.0	19.5	0.0	0	0					
CP/RC101B	Shallow	18/05/16 10:39:00			0.6	0.0	19.4	0.0	0	0					
CP/RC101B	Shallow	18/05/16 10:40:00			0.7	0.0	19.4	0.0	0	0					
CP/RC101B	Shallow	18/05/16 10:41:00			0.7	0.0	19.3	0.0	0	0					
CP/RC101B	Shallow	18/05/16 10:42:00			0.7	0.0	19.3	0.0	0	0					
CP/RC101B	Shallow	18/05/16 10:43:00			0.8	0.0	19.2	0.0	0	0					
CP/RC101B	Shallow	18/05/16 10:44:00			0.8	0.0	19.3	0.0	0	0					
CP/RC101B	Shallow	18/05/16 10:45:00												Dry	

remarks
# denotes result exceeding capacity of gas monitoring equipment
Equipment used - Gas Data GFM 435 Gas Analyser

CONTRACT **31847**

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Geotechnical Engineering Limited

GAS AND GROUNDWATER LEVELS

CLIENT: ASK PROPERTY DEVELOPMENTS LTD

SITE: PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

Borehole /trial pit no.	pipe	date and time	barometric pressure (mb)	pressure differentiation (mm H_2O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	carbon monoxide (ppm)	VOC (ppm)	gas flow (ltr/hr)	temperature (°C)	water level (m - bgl)	remarks
CP/RC101B	Deep	22/04/16 00:00:00												5.80	
CP/RC101B	Deep	29/04/16 00:00:00												5.85	
CP/RC101B	Deep	05/05/16 12:55:00	1013	1013								0.0	15		Purged.
CP/RC101B	Deep	05/05/16 12:56:00										0.0			
CP/RC101B	Deep	05/05/16 12:57:00										0.0			
CP/RC101B	Deep	05/05/16 12:58:00										0.0			
CP/RC101B	Deep	05/05/16 12:59:00										0.0			
CP/RC101B	Deep	05/05/16 13:00:00			0.0	0.1	20.1	0.0	0	21					
CP/RC101B	Deep	05/05/16 13:01:00			0.0	0.0	20.1	0.0	0	11					
CP/RC101B	Deep	05/05/16 13:02:00			0.0	0.1	20.0	1.0	0	4					
CP/RC101B	Deep	05/05/16 13:03:00			0.0	0.1	20.0	1.0	0	3					
CP/RC101B	Deep	05/05/16 13:04:00			0.0	0.1	20.0	1.0	0	2					
CP/RC101B	Deep	05/05/16 13:05:00			0.0	0.1	20.0	1.0	0	1					
CP/RC101B	Deep	05/05/16 13:06:00			0.0	0.1	19.9	1.0	0	1					
CP/RC101B	Deep	05/05/16 13:07:00			0.0	0.1	19.9	1.0	0	0					
CP/RC101B	Deep	05/05/16 13:08:00			0.0	0.1	19.9	1.0	0	1					
CP/RC101B	Deep	05/05/16 13:09:00			0.0	0.1	19.8	1.0	0	1					
CP/RC101B	Deep	05/05/16 13:10:00												5.80	

remarks
# denotes result exceeding capacity of gas monitoring equipment
Equipment used - Gas Data GFM 435 Gas Analyser

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GAS AND GROUNDWATER LEVELS

CLIENT: ASK PROPERTY DEVELOPMENTS LTD

SITE: PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

Borehole /trial pit no.	pipe	date and time	barometric pressure (mb)	pressure differentiation (mm H_2O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	carbon monoxide (ppm)	VOC (ppm)	gas flow (ltr/hr)	temperature (°C)	water level (m - bgl)	remarks
CP/RC101B	Deep	18/05/16 10:45:00	999	0.05								0.0	13		Insufficient water to obtain sample.
CP/RC101B	Deep	18/05/16 10:46:00										0.0			Technician SF
CP/RC101B	Deep	18/05/16 10:47:00										0.0			
CP/RC101B	Deep	18/05/16 10:48:00										0.0			
CP/RC101B	Deep	18/05/16 10:49:00										0.0			
CP/RC101B	Deep	18/05/16 10:50:00			0.0	0.1	21.1	0.0	0	343					
CP/RC101B	Deep	18/05/16 10:51:00			0.1	0.0	20.5	0.0	0	221					
CP/RC101B	Deep	18/05/16 10:52:00			0.0	0.0	21.2	0.0	0	44					
CP/RC101B	Deep	18/05/16 10:53:00			0.0	0.0	21.2	0.0	0	0					
CP/RC101B	Deep	18/05/16 10:54:00			0.0	0.0	21.2	0.0	0	1					
CP/RC101B	Deep	18/05/16 10:55:00			0.0	0.0	21.1	0.0	0	17					
CP/RC101B	Deep	18/05/16 10:56:00			0.0	0.0	21.2	0.0	0	0					
CP/RC101B	Deep	18/05/16 10:57:00			0.0	0.0	21.2	0.0	0	0					
CP/RC101B	Deep	18/05/16 10:58:00			0.0	0.0	21.2	0.0	0	0					
CP/RC101B	Deep	18/05/16 10:59:00			0.0	0.0	21.2	0.0	0	0					
CP/RC101B	Deep	18/05/16 11:00:00												5.78	

remarks
# denotes result exceeding capacity of gas monitoring equipment
Equipment used - Gas Data GFM 435 Gas Analyser

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GAS AND GROUNDWATER LEVELS

CLIENT: ASK PROPERTY DEVELOPMENTS LTD

SITE: PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

Borehole /trial pit no.	pipe	date and time	barometric pressure (mb)	pressure differentiation (mm H_2O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	carbon monoxide (ppm)	VOC (ppm)	gas flow (ltr/hr)	temperature (°C)	water level (m - bgl)	remarks
CP/RC102A		22/04/16 00:00:00												3.65	
CP/RC102A		29/04/16 00:00:00												4.75	
CP/RC102A		05/05/16 11:10:00	1016	0.41								0.0	14		Purged.
CP/RC102A		05/05/16 11:11:00										0.0			
CP/RC102A		05/05/16 11:12:00										0.0			
CP/RC102A		05/05/16 11:13:00										0.0			
CP/RC102A		05/05/16 11:14:00										0.0			
CP/RC102A		05/05/16 11:15:00			0.9	0.1	13.1	1.0	0	355					
CP/RC102A		05/05/16 11:16:00			1.1	0.1	11.4	1.0	0	436					
CP/RC102A		05/05/16 11:17:00			1.2	0.1	10.7	1.0	0	471					
CP/RC102A		05/05/16 11:18:00			1.2	0.1	10.6	1.0	0	480					
CP/RC102A		05/05/16 11:19:00			1.2	0.1	10.6	1.0	0	484					
CP/RC102A		05/05/16 11:20:00			1.2	0.1	10.6	1.0	0	490					
CP/RC102A		05/05/16 11:21:00			1.2	0.1	10.5	1.0	0	494					
CP/RC102A		05/05/16 11:22:00			1.2	0.1	10.5	1.0	0	496					
CP/RC102A		05/05/16 11:23:00			1.2	0.1	10.6	1.0	0	495					
CP/RC102A		05/05/16 11:24:00			1.2	0.1	10.6	1.0	0	491					
CP/RC102A		05/05/16 11:25:00												4.92	

remarks
# denotes result exceeding capacity of gas monitoring equipment
Equipment used - Gas Data GFM 435 Gas Analyser

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GAS AND GROUNDWATER LEVELS

CLIENT: ASK PROPERTY DEVELOPMENTS LTD

SITE: PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

Borehole /trial pit no.	pipe	date and time	barometric pressure (mb)	pressure differentiation (mm H_2O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	carbon monoxide (ppm)	VOC (ppm)	gas flow (ltr/hr)	temperature (°C)	water level (m - bgl)	remarks
CP/RC102A		18/05/16 12:00:00	999	-0.03								0.0	13		Insufficient water to obtain sample.
CP/RC102A		18/05/16 12:01:00										0.0			Technician SF
CP/RC102A		18/05/16 12:02:00										0.0			
CP/RC102A		18/05/16 12:03:00										0.0			
CP/RC102A		18/05/16 12:04:00										0.0			
CP/RC102A		18/05/16 12:05:00			2.8	0.0	12.7	0.0	0	17					
CP/RC102A		18/05/16 12:06:00			2.8	0.0	12.7	0.0	0	18					
CP/RC102A		18/05/16 12:07:00			2.8	0.1	12.7	1.0	0	18					
CP/RC102A		18/05/16 12:08:00			2.8	0.1	12.7	1.0	0	18					
CP/RC102A		18/05/16 12:09:00			2.8	0.1	12.7	1.0	0	19					
CP/RC102A		18/05/16 12:10:00			2.8	0.1	12.7	1.0	0	19					
CP/RC102A		18/05/16 12:11:00			2.8	0.1	12.7	1.0	0	19					
CP/RC102A		18/05/16 12:12:00			2.8	0.1	12.7	1.0	0	19					
CP/RC102A		18/05/16 12:13:00			2.8	0.1	12.7	1.0	0	19					
CP/RC102A		18/05/16 12:14:00			2.8	0.1	12.7	1.0	0	19					
CP/RC102A		18/05/16 12:15:00												5.12	

remarks
# denotes result exceeding capacity of gas monitoring equipment
Equipment used - Gas Data GFM 435 Gas Analyser

CONTRACT **31847**

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Geotechnical Engineering Limited

GAS AND GROUNDWATER LEVELS

CLIENT: ASK PROPERTY DEVELOPMENTS LTD

SITE: PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

Borehole /trial pit no.	pipe	date and time	barometric pressure (mb)	pressure differentiation (mm H_2O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	carbon monoxide (ppm)	VOC (ppm)	gas flow (ltr/hr)	temperature (°C)	water level (m - bgl)	remarks
CP/RC104A		22/04/16 00:00:00												3.80	
CP/RC104A		29/04/16 00:00:00												4.10	
CP/RC104A		05/05/16 09:30:00	1019	0.16								-2.6	14		Purged.
CP/RC104A		05/05/16 09:31:00										-1.9			
CP/RC104A		05/05/16 09:32:00										-1.3			
CP/RC104A		05/05/16 09:33:00										-0.9			
CP/RC104A		05/05/16 09:34:00										-0.4			
CP/RC104A		05/05/16 09:35:00			0.6	0.0	16.1	0.0	0	34					
CP/RC104A		05/05/16 09:36:00			0.7	0.0	15.4	0.0	0	37					
CP/RC104A		05/05/16 09:37:00			0.7	0.0	15.2	0.0	0	38					
CP/RC104A		05/05/16 09:38:00			0.8	0.0	15.0	0.0	0	40					
CP/RC104A		05/05/16 09:39:00			0.8	0.0	14.8	0.0	0	40					
CP/RC104A		05/05/16 09:40:00			0.8	0.0	14.7	0.0	0	40					
CP/RC104A		05/05/16 09:41:00			0.8	0.0	14.6	0.0	0	40					
CP/RC104A		05/05/16 09:42:00			0.8	0.0	14.5	0.0	0	40					
CP/RC104A		05/05/16 09:43:00			0.8	0.0	14.4	0.0	0	39					
CP/RC104A		05/05/16 09:44:00			0.8	0.0	1.3	0.0	0	39					
CP/RC104A		05/05/16 09:45:00												4.11	

remarks
# denotes result exceeding capacity of gas monitoring equipment
Equipment used - Gas Data GFM 435 Gas Analyser

CONTRACT **31847**

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Geotechnical Engineering Limited

GAS AND GROUNDWATER LEVELS

CLIENT: ASK PROPERTY DEVELOPMENTS LTD

SITE: PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

Borehole /trial pit no.	pipe	date and time	barometric pressure (mb)	pressure differentiation (mm H_2O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	carbon monoxide (ppm)	VOC (ppm)	gas flow (ltr/hr)	temperature (°C)	water level (m - bgl)	remarks
CP/RC104A		18/05/16 10:00:00	1000	-0.16								0.0	13		Insufficient water to obtain sample.
CP/RC104A		18/05/16 10:01:00										0.0			Technician SF
CP/RC104A		18/05/16 10:02:00										0.0			
CP/RC104A		18/05/16 10:03:00										0.0			
CP/RC104A		18/05/16 10:04:00										0.0			
CP/RC104A		18/05/16 10:05:00			0.9	0.0	14.3	0.0	0	4					
CP/RC104A		18/05/16 10:06:00			0.9	0.0	14.2	0.0	0	5					
CP/RC104A		18/05/16 10:07:00			0.9	0.0	14.2	0.0	0	5					
CP/RC104A		18/05/16 10:08:00			0.9	0.0	14.2	0.0	0	5					
CP/RC104A		18/05/16 10:09:00			0.9	0.0	14.1	0.0	0	5					
CP/RC104A		18/05/16 10:10:00			0.9	0.0	14.1	0.0	0	6					
CP/RC104A		18/05/16 10:11:00			0.9	0.0	14.1	0.0	0	5					
CP/RC104A		18/05/16 10:12:00			0.9	0.0	14.0	0.0	0	6					
CP/RC104A		18/05/16 10:13:00			0.9	0.0	14.0	0.0	0	6					
CP/RC104A		18/05/16 10:14:00			0.9	0.0	14.0	0.0	0	6					
CP/RC104A		18/05/16 10:15:00												4.54	

remarks
# denotes result exceeding capacity of gas monitoring equipment
Equipment used - Gas Data GFM 435 Gas Analyser

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Geotechnical Engineering Limited

GAS AND GROUNDWATER LEVELS

CLIENT: ASK PROPERTY DEVELOPMENTS LTD

SITE: PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

Borehole /trial pit no.	pipe	date and time	barometric pressure (mb)	pressure differentiation (mm H_2O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	carbon monoxide (ppm)	VOC (ppm)	gas flow (ltr/hr)	temperature (°C)	water level (m - bgl)	remarks
CP/RC111	Shallow	06/05/16 09:45:00	1011	-0.03								0.0	14		Purged.
CP/RC111	Shallow	06/05/16 09:46:00										0.0			
CP/RC111	Shallow	06/05/16 09:47:00										0.0			
CP/RC111	Shallow	06/05/16 09:48:00										0.0			
CP/RC111	Shallow	06/05/16 09:49:00										0.0			
CP/RC111	Shallow	06/05/16 09:50:00			0.0	0.0	20.6	0.0	0	1					
CP/RC111	Shallow	06/05/16 09:51:00			0.0	0.0	20.6	0.0	0	0					
CP/RC111	Shallow	06/05/16 09:52:00			0.0	0.0	20.5	0.0	0	1					
CP/RC111	Shallow	06/05/16 09:53:00			0.0	0.0	20.5	0.0	0	0					
CP/RC111	Shallow	06/05/16 09:54:00			0.0	0.0	20.5	0.0	0	0					
CP/RC111	Shallow	06/05/16 09:55:00			0.0	0.0	20.5	0.0	0	0					
CP/RC111	Shallow	06/05/16 09:56:00			0.0	0.0	20.5	0.0	0	0					
CP/RC111	Shallow	06/05/16 09:57:00			0.0	0.0	20.5	0.0	0	0					
CP/RC111	Shallow	06/05/16 09:58:00			0.0	0.0	20.5	0.0	0	0					
CP/RC111	Shallow	06/05/16 09:59:00			0.0	0.0	20.5	0.0	0	0					
CP/RC111	Shallow	06/05/16 10:00:00												1.45	
CP/RC111	Shallow	18/05/16 14:00:00	1000	0.12								0.0	14		Sampled.
CP/RC111	Shallow	18/05/16 14:01:00										0.0			Stable Readings.

remarks
# denotes result exceeding capacity of gas monitoring equipment
Equipment used - Gas Data GFM 435 Gas Analyser

CONTRACT **31847**

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GAS AND GROUNDWATER LEVELS

CLIENT: ASK PROPERTY DEVELOPMENTS LTD

SITE: PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

Borehole /trial pit no.	pipe	date and time	barometric pressure (mb)	pressure differentiation (mm H_2O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	carbon monoxide (ppm)	VOC (ppm)	gas flow (ltr/hr)	temperature (°C)	water level (m - bgl)	remarks
CP/RC111	Shallow	18/05/16 14:02:00										0.0			Technician SF
CP/RC111	Shallow	18/05/16 14:03:00										0.0			
CP/RC111	Shallow	18/05/16 14:04:00										0.0			
CP/RC111	Shallow	18/05/16 14:05:00			0.0	0.0	20.9	0.0	0	0					
CP/RC111	Shallow	18/05/16 14:06:00			0.0	0.0	20.9	0.0	0	0					
CP/RC111	Shallow	18/05/16 14:07:00			0.0	0.0	20.9	0.0	0	0					
CP/RC111	Shallow	18/05/16 14:08:00			0.0	0.0	20.9	0.0	0	0					
CP/RC111	Shallow	18/05/16 14:09:00			0.0	0.0	20.9	0.0	0	0					
CP/RC111	Shallow	18/05/16 14:10:00												1.98	

remarks
# denotes result exceeding capacity of gas monitoring equipment
Equipment used - Gas Data GFM 435 Gas Analyser

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GAS AND GROUNDWATER LEVELS

CLIENT: ASK PROPERTY DEVELOPMENTS LTD

SITE: PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

Borehole /trial pit no.	pipe	date and time	barometric pressure (mb)	pressure differentiation (mm H_2O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	carbon monoxide (ppm)	VOC (ppm)	gas flow (ltr/hr)	temperature (°C)	water level (m - bgl)	remarks
CP/RC111	Deep	06/05/16 10:10:00	1010	0.24								-0.1	14		Purged.
CP/RC111	Deep	06/05/16 10:11:00										-0.2			BASE 9.58m
CP/RC111	Deep	06/05/16 10:12:00										-0.2			
CP/RC111	Deep	06/05/16 10:13:00										-0.2			
CP/RC111	Deep	06/05/16 10:14:00										-0.2			
CP/RC111	Deep	06/05/16 10:15:00			0.0	0.0	20.0	0.0	0	2					
CP/RC111	Deep	06/05/16 10:16:00			0.0	0.0	20.0	0.0	0	0					
CP/RC111	Deep	06/05/16 10:17:00			0.0	0.0	19.9	0.0	0	1					
CP/RC111	Deep	06/05/16 10:18:00			0.0	0.0	19.8	0.0	0	2					
CP/RC111	Deep	06/05/16 10:19:00			0.0	0.0	19.8	0.0	0	4					
CP/RC111	Deep	06/05/16 10:20:00			0.0	0.0	19.8	0.0	0	1					
CP/RC111	Deep	06/05/16 10:21:00			0.0	0.0	19.8	0.0	0	0					
CP/RC111	Deep	06/05/16 10:22:00			0.0	0.0	19.8	0.0	0	0					
CP/RC111	Deep	06/05/16 10:23:00			0.0	0.0	19.8	0.0	0	0					
CP/RC111	Deep	06/05/16 10:24:00			0.0	0.0	19.8	0.0	0	0					
CP/RC111	Deep	06/05/16 10:25:00												4.22	
CP/RC111	Deep	18/05/16 14:30:00	999	0.29								0.0	14		Sampled.
CP/RC111	Deep	18/05/16 14:31:00										0.0			Technician SF

remarks
# denotes result exceeding capacity of gas monitoring equipment
Equipment used - Gas Data GFM 435 Gas Analyser

CONTRACT **31847**

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GAS AND GROUNDWATER LEVELS

CLIENT: ASK PROPERTY DEVELOPMENTS LTD

SITE: PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

Borehole /trial pit no.	pipe	date and time	barometric pressure (mb)	pressure differentiation (mm H_2O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	carbon monoxide (ppm)	VOC (ppm)	gas flow (ltr/hr)	temperature (°C)	water level (m - bgl)	remarks
CP/RC111	Deep	18/05/16 14:32:00										0.0			
CP/RC111	Deep	18/05/16 14:33:00										0.0			
CP/RC111	Deep	18/05/16 14:34:00										0.0			
CP/RC111	Deep	18/05/16 14:35:00			0.3	0.0	19.9	0.0	0	0					
CP/RC111	Deep	18/05/16 14:36:00			0.1	0.0	20.5	0.0	0	0					
CP/RC111	Deep	18/05/16 14:37:00			0.1	0.0	20.6	0.0	0	0					
CP/RC111	Deep	18/05/16 14:38:00			0.1	0.0	20.6	0.0	0	0					
CP/RC111	Deep	18/05/16 14:39:00			0.1	0.0	20.6	0.0	0	0					
CP/RC111	Deep	18/05/16 14:40:00			0.1	0.0	20.6	0.0	0	0					
CP/RC111	Deep	18/05/16 14:41:00			0.1	0.0	20.6	0.0	0	0					
CP/RC111	Deep	18/05/16 14:42:00			0.1	0.0	20.6	0.0	0	0					
CP/RC111	Deep	18/05/16 14:43:00			0.0	0.0	20.6	0.0	0	0					
CP/RC111	Deep	18/05/16 14:44:00			0.0	0.0	20.6	0.0	0	0					
CP/RC111	Deep	18/05/16 14:45:00												5.16	

remarks
# denotes result exceeding capacity of gas monitoring equipment
Equipment used - Gas Data GFM 435 Gas Analyser

CONTRACT **31847**

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Geotechnical Engineering Limited

GAS AND GROUNDWATER LEVELS

CLIENT: ASK PROPERTY DEVELOPMENTS LTD

SITE: PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

Borehole /trial pit no.	pipe	date and time	barometric pressure (mb)	pressure differentiation (mm H_2O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	carbon monoxide (ppm)	VOC (ppm)	gas flow (ltr/hr)	temperature (°C)	water level (m - bgl)	remarks
CP/RC115		22/04/16 00:00:00												2.95	
CP/RC115		29/04/16 00:00:00												3.25	
CP/RC115		06/05/16 11:45:00	1007	0.82								0.0	16		Purged
CP/RC115		06/05/16 11:46:00										0.0			
CP/RC115		06/05/16 11:47:00										0.0			
CP/RC115		06/05/16 11:48:00										0.0			
CP/RC115		06/05/16 11:49:00										0.0			
CP/RC115		06/05/16 11:50:00			0.0	0.1	20.2	1.0	0	2					
CP/RC115		06/05/16 11:51:00			0.0	0.1	20.2	1.0	0	2					
CP/RC115		06/05/16 11:52:00			0.0	0.1	20.1	1.0	0	2					
CP/RC115		06/05/16 11:53:00			0.0	0.1	20.1	1.0	0	2					
CP/RC115		06/05/16 11:54:00			0.0	0.1	20.1	1.0	0	2					
CP/RC115		06/05/16 11:55:00			0.0	0.1	20.1	1.0	0	2					
CP/RC115		06/05/16 11:56:00			0.0	0.1	20.1	1.0	0	1					
CP/RC115		06/05/16 11:57:00			0.0	0.1	20.0	1.0	0	1					
CP/RC115		06/05/16 11:58:00			0.0	0.1	20.0	1.0	0	2					
CP/RC115		06/05/16 11:59:00			0.0	0.1	20.0	1.0	0	2					
CP/RC115		06/05/16 12:00:00												3.48	

remarks
# denotes result exceeding capacity of gas monitoring equipment
Equipment used - Gas Data GFM 435 Gas Analyser

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GAS AND GROUNDWATER LEVELS

CLIENT: ASK PROPERTY DEVELOPMENTS LTD

SITE: PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

Borehole /trial pit no.	pipe	date and time	barometric pressure (mb)	pressure differentiation (mm H_2O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	carbon monoxide (ppm)	VOC (ppm)	gas flow (ltr/hr)	temperature (°C)	water level (m - bgl)	remarks
CP/RC115		18/05/16 13:30:00	999	0.13								0.0	14		Insufficient water to obtain sample.
CP/RC115		18/05/16 13:31:00										0.0			Stable Readings.
CP/RC115		18/05/16 13:32:00										0.0			Technician SF
CP/RC115		18/05/16 13:33:00										0.0			
CP/RC115		18/05/16 13:34:00										0.0			
CP/RC115		18/05/16 13:35:00			0.0	0.0	20.4	0.0	0	1					
CP/RC115		18/05/16 13:36:00			0.0	0.0	20.4	0.0	0	0					
CP/RC115		18/05/16 13:37:00			0.0	0.0	20.4	0.0	0	0					
CP/RC115		18/05/16 13:38:00			0.0	0.0	20.4	0.0	0	0					
CP/RC115		18/05/16 13:39:00			0.0	0.0	20.4	0.0	0	0					
CP/RC115		18/05/16 13:40:00												4.24	

remarks
# denotes result exceeding capacity of gas monitoring equipment
Equipment used - Gas Data GFM 435 Gas Analyser

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GAS AND GROUNDWATER LEVELS

CLIENT: ASK PROPERTY DEVELOPMENTS LTD

SITE: PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

Borehole /trial pit no.	pipe	date and time	barometric pressure (mb)	pressure differentiation (mm H_2O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	carbon monoxide (ppm)	VOC (ppm)	gas flow (ltr/hr)	temperature (°C)	water level (m - bgl)	remarks
CP/RC117A	Shallow	29/04/16 00:00:00												2.65	
CP/RC117A	Shallow	06/05/16 10:45:00	1009	0.56								-0.2	15		Purged.
CP/RC117A	Shallow	06/05/16 10:46:00										0.0			
CP/RC117A	Shallow	06/05/16 10:47:00										0.0			
CP/RC117A	Shallow	06/05/16 10:48:00										0.0			
CP/RC117A	Shallow	06/05/16 10:49:00										0.0			
CP/RC117A	Shallow	06/05/16 10:50:00			1.3	0.1	9.2	1.0	0	3					
CP/RC117A	Shallow	06/05/16 10:51:00			1.3	0.1	9.1	1.0	0	4					
CP/RC117A	Shallow	06/05/16 10:52:00			1.3	0.1	9.0	1.0	0	5					
CP/RC117A	Shallow	06/05/16 10:53:00			1.3	0.1	9.0	1.0	0	5					
CP/RC117A	Shallow	06/05/16 10:54:00			1.3	0.1	9.0	1.0	0	5					
CP/RC117A	Shallow	06/05/16 10:55:00			1.3	0.1	9.0	1.0	0	5					
CP/RC117A	Shallow	06/05/16 10:56:00			1.3	0.1	9.0	1.0	0	5					
CP/RC117A	Shallow	06/05/16 10:57:00			1.3	0.1	9.0	1.0	0	5					
CP/RC117A	Shallow	06/05/16 10:58:00			1.3	0.1	9.0	1.0	0	6					
CP/RC117A	Shallow	06/05/16 10:59:00			1.3	0.1	9.0	1.0	0	6					
CP/RC117A	Shallow	06/05/16 11:00:00												Dry	
CP/RC117A	Shallow	18/05/16 12:45:00	1000	-0.05								0.0	13		Sampled.

remarks
# denotes result exceeding capacity of gas monitoring equipment
Equipment used - Gas Data GFM 435 Gas Analyser

CONTRACT **31847**

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GAS AND GROUNDWATER LEVELS

CLIENT: ASK PROPERTY DEVELOPMENTS LTD

SITE: PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

Borehole /trial pit no.	pipe	date and time	barometric pressure (mb)	pressure differentiation (mm H_2O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	carbon monoxide (ppm)	VOC (ppm)	gas flow (ltr/hr)	temperature (°C)	water level (m - bgl)	remarks
CP/RC117A	Shallow	18/05/16 12:46:00										0.0			Technician SF
CP/RC117A	Shallow	18/05/16 12:47:00										0.0			
CP/RC117A	Shallow	18/05/16 12:48:00										0.0			
CP/RC117A	Shallow	18/05/16 12:49:00										0.0			
CP/RC117A	Shallow	18/05/16 12:50:00			2.1	0.0	9.1	0.0	0	1					
CP/RC117A	Shallow	18/05/16 12:51:00			2.1	0.0	8.9	0.0	0	2					
CP/RC117A	Shallow	18/05/16 12:52:00			2.1	0.0	8.7	0.0	0	2					
CP/RC117A	Shallow	18/05/16 12:53:00			2.1	0.0	8.7	0.0	0	2					
CP/RC117A	Shallow	18/05/16 12:54:00			2.1	0.0	8.6	0.0	0	2					
CP/RC117A	Shallow	18/05/16 12:55:00			2.1	0.0	8.6	0.0	0	1					
CP/RC117A	Shallow	18/05/16 12:56:00			2.1	0.0	8.6	0.0	0	2					
CP/RC117A	Shallow	18/05/16 12:57:00			2.1	0.0	8.6	0.0	0	2					
CP/RC117A	Shallow	18/05/16 12:58:00			2.1	0.0	8.7	0.0	0	2					
CP/RC117A	Shallow	18/05/16 12:59:00			2.1	0.0	8.7	0.0	0	2					
CP/RC117A	Shallow	18/05/16 13:00:00												Dry	

remarks
# denotes result exceeding capacity of gas monitoring equipment
Equipment used - Gas Data GFM 435 Gas Analyser

CONTRACT **31847**

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GAS AND GROUNDWATER LEVELS

CLIENT: ASK PROPERTY DEVELOPMENTS LTD

SITE: PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

Borehole /trial pit no.	pipe	date and time	barometric pressure (mb)	pressure differentiation (mm H_2O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	carbon monoxide (ppm)	VOC (ppm)	gas flow (ltr/hr)	temperature (°C)	water level (m - bgl)	remarks
CP/RC117A	Deep	29/04/16 00:00:00												4.50	
CP/RC117A	Deep	06/05/16 11:10:00	1008	0.65								0.0	15		Purged
CP/RC117A	Deep	06/05/16 11:11:00										0.0			
CP/RC117A	Deep	06/05/16 11:12:00										0.0			
CP/RC117A	Deep	06/05/16 11:13:00										0.0			
CP/RC117A	Deep	06/05/16 11:14:00										0.0			
CP/RC117A	Deep	06/05/16 11:15:00			0.7	0.1	8.7	1.0	0	21					
CP/RC117A	Deep	06/05/16 11:16:00			0.8	0.1	7.6	1.0	0	19					
CP/RC117A	Deep	06/05/16 11:17:00			0.9	0.1	6.2	2.0	0	13					
CP/RC117A	Deep	06/05/16 11:18:00			1.0	0.1	5.6	2.0	0	12					
CP/RC117A	Deep	06/05/16 11:19:00			1.0	0.1	5.6	2.0	0	11					
CP/RC117A	Deep	06/05/16 11:20:00			1.0	0.1	5.8	2.0	0	11					
CP/RC117A	Deep	06/05/16 11:21:00			1.0	0.1	5.9	2.0	0	11					
CP/RC117A	Deep	06/05/16 11:22:00			1.0	0.1	5.9	2.0	0	11					
CP/RC117A	Deep	06/05/16 11:23:00			1.0	0.1	6.1	2.0	0	11					
CP/RC117A	Deep	06/05/16 11:24:00			1.0	0.1	6.0	2.0	0	11					
CP/RC117A	Deep	06/05/16 11:25:00												4.68	
CP/RC117A	Deep	18/05/16 13:00:00	999	4.41								0.0	13		Sampled.

remarks
# denotes result exceeding capacity of gas monitoring equipment
Equipment used - Gas Data GFM 435 Gas Analyser

CONTRACT **31847**

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GAS AND GROUNDWATER LEVELS

CLIENT: ASK PROPERTY DEVELOPMENTS LTD

SITE: PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

Borehole /trial pit no.	pipe	date and time	barometric pressure (mb)	pressure differentiation (mm H_2O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	carbon monoxide (ppm)	VOC (ppm)	gas flow (ltr/hr)	temperature (°C)	water level (m - bgl)	remarks
CP/RC117A	Deep	18/05/16 13:01:00										0.0			Technician SF
CP/RC117A	Deep	18/05/16 13:02:00										0.0			
CP/RC117A	Deep	18/05/16 13:03:00										0.0			
CP/RC117A	Deep	18/05/16 13:04:00										0.0			
CP/RC117A	Deep	18/05/16 13:05:00			0.7	0.0	13.6	0.0	0	2					
CP/RC117A	Deep	18/05/16 13:06:00			1.3	0.0	7.5	0.0	0	3					
CP/RC117A	Deep	18/05/16 13:07:00			1.7	0.0	4.2	0.0	0	4					
CP/RC117A	Deep	18/05/16 13:08:00			1.7	0.0	3.7	0.0	0	5					
CP/RC117A	Deep	18/05/16 13:09:00			1.7	0.0	3.8	0.0	0	5					
CP/RC117A	Deep	18/05/16 13:10:00			1.8	0.0	3.9	0.0	0	5					
CP/RC117A	Deep	18/05/16 13:11:00			1.8	0.0	4.0	0.0	0	5					
CP/RC117A	Deep	18/05/16 13:12:00			1.8	0.0	4.1	0.0	0	5					
CP/RC117A	Deep	18/05/16 13:13:00			1.8	0.0	4.1	0.0	0	5					
CP/RC117A	Deep	18/05/16 13:14:00			1.8	0.0	4.2	0.0	0	5					
CP/RC117A	Deep	18/05/16 13:15:00												4.92	

remarks
# denotes result exceeding capacity of gas monitoring equipment
Equipment used - Gas Data GFM 435 Gas Analyser

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APPENDIX B

LABORATORY TESTING

2718

GEOTECHNICAL ENGINEERING LIMITED

Version No.	2
For the attention of David Owen/Ian Garstang	Page No. 1 of 86
	Date of Issue 13/07/2016

TEST REPORT

PROJECT/SITE	Plots 6,7 & 8 First Street, Manchester	Samples received	22/04/2016
GEL REPORT NUMBER	31847	Schedule received	22/04/2016
Your ref/PO:	0	Testing commenced	26/04/2016
Test report refers to	31847 Schedules B-J	Status	Final

SUMMARY OF RESULTS ATTACHED

TEST METHOD & DESCRIPTION	QUANTITY	ACCREDITED TEST
BS EN ISO 17892-1: 2014:5. Water Content	23	YES
BS1377: Part 2: 1990:4.2-4.4&5.2-5.4, Liquid & Plastic Limits	23	YES
BS1377: Part 2: 1990:9.2, Particle Size Distribution - Wet Sieve	22	YES
BS1377: Part 2: 1990:9.4, Particle Size Distribution - Pipette	4	YES
BS1377: Part 4: 1990:3, Dry Density/Moisture Content Relationship	9	YES
BS1377: Part 4: 1990:7, California Bearing Ratio (CBR)	13	YES
BS1377: Part 7: 1990:8&9, Undrained Triaxial Compression	10	NO
ISRM: Suggested Methods: 2007: Uniaxial Compressive Strength of Rock	26	NO
ISRM: Suggested Methods: 2007: Point Load Strength Test	90	NO
BRE Suite C Brownfield Site - Pyrite Absent (subcontracted)	27	YES/NO

Remarks

This report may not be partially reproduced without written permission from this laboratory.

Approved Signatories:

S Robinson (Client Manager) C Andrew (Client Manager)

W Jones (Technical Support) J Hanson (Director) N Parry (Director)

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Sort code: 30-15-99 **Bank account**: 00072116

Geotechnical Engineering Limited

LIQUID AND PLASTIC LIMITS

BS.1377 : Part 2 : 1990 : 4 and 5

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

borehole /trial pit no.	sample		specimen depth (m)	natural water content (%)	specimen preparation and test method	fraction >0.425 mm (%)	liquid limit (%)	plastic limit (%)	plasticity index (%)	description and remarks
	no./type	depth (m)								
CP/RC101B	8D	4.20	4.20	15.3	BXE	11	31	15	16	Brown slightly gravelly slightly sandy CLAY
CP/RC101B	12D	6.20	6.20	15.5	BXE	16	31	15	16	Brown slightly sandy slightly gravelly CLAY
CP/RC101B	14D	7.20	7.20	17.2	BXE	11	33	15	18	Brown slightly gravelly slightly sandy CLAY
CP/RC102A	16D	7.20	7.20	11.9	BXE	17	29	14	15	Brown slightly sandy slightly gravelly CLAY
CP/RC102A	20D	9.20	9.20	17.0	BXE	7	36	17	19	Brown slightly gravelly slightly sandy CLAY
CP/RC102A	23D	10.20	10.20	11.4	BXE	8	32	15	17	Brown slightly gravelly slightly sandy CLAY
CP/RC102A	25D	11.15	11.20	14.8	BXE	10	29	13	16	Brown slightly gravelly slightly sandy CLAY
CP/RC103	11D	4.20	4.20	12.5	BXE#	27	29	14	15	Brown slightly sandy slightly gravelly CLAY
CP/RC103	14D	5.20	5.20	13.3	BXE	27	30	15	15	Brown slightly sandy slightly gravelly CLAY
CP/RC103	16D	6.20	6.20	17.2	BXE	10	37	17	20	Brown slightly sandy slightly gravelly CLAY
CP/RC103	19D	7.20	7.20	11.2	BXE	7	35	16	19	Brown slightly sandy slightly gravelly CLAY
CP/RC104A	14D	6.20	6.20	12.9	BXE	15	32	15	17	Brown slightly sandy slightly gravelly CLAY
CP/RC104A	16D	7.20	7.20	14.7	BXE	24	35	16	19	Brown slightly sandy slightly gravelly CLAY
CP/RC105	22D	9.20	9.20	19.0	BXE	8	35	17	18	Brown slightly sandy silty CLAY
CP/RC105	26D	11.20	11.20	11.9	BXE	15	23	14	9	Brown slightly gravelly sandy silty CLAY
CP/RC108	7D	2.00	2.00	25.6	BXE	4	32	18	14	Brown slightly sandy slightly gravelly CLAY
CP/RC108	11D	5.00	5.00	12.5	BXE	21	30	14	16	Dark grey slightly sandy slightly gravelly CLAY
CP/RC108	17D	7.00	7.00	15.6	BXE	7	37	17	20	Brown slightly gravelly slightly sandy CLAY

general remarks:
natural water content determined in accordance with BS EN ISO 17892 - 1 : 2014
NP denotes non-plastic
# denotes sample tested is smaller than that which is recommended in accordance with BS1377 or BS EN ISO 17892

specimen preparation:
A - as received
B - washed on 0.425mm sieve
C - air dried
D - oven dried (60°C)
E - oven dried (105°C)
F - not known

test method:
X - cone penetrometer (test 4.3)
Y - one point cone penetrometer (test 4.4)
Z - Casagrande apparatus (test 4.5)

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LIQUID AND PLASTIC LIMITS

BS.1377 : Part 2 : 1990 : 4 and 5

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

borehole /trial pit no.	sample		specimen depth (m)	natural water content (%)	specimen preparation and test method	fraction >0.425 mm (%)	liquid limit (%)	plastic limit (%)	plasticity index (%)	description and remarks
	no./type	depth (m)								
CP/RC108	19D	7.90	7.90	17.2	BXE	9	35	16	19	Brown slightly gravelly slightly sandy CLAY
TP101	3B	1.40	1.40	24.3	BXE	4	36	17	19	Brown slightly sandy silty CLAY
TP102	2B	1.10	1.10	17.2	BXE	13	34	17	17	Brown slightly gravelly slightly sandy CLAY
WS106	8D	3.00	3.00	12.2	BXE	14	31	15	16	Brown slightly sandy slightly gravelly CLAY
WS107A	10D	4.00	4.00	11.4	BXE	14	30	14	16	Brown slightly sandy slightly gravelly CLAY

general remarks:
natural water content determined in accordance with BS EN ISO 17892 - 1 : 2014
NP denotes non-plastic
# denotes sample tested is smaller than that which is recommended in accordance with BS1377 or BS EN ISO 17892

specimen preparation:
A - as received
B - washed on 0.425mm sieve
C - air dried
D - oven dried (60°C)
E - oven dried (105°C)
F - not known

test method:
X - cone penetrometer (test 4.3)
Y - one point cone penetrometer (test 4.4)
Z - Casagrande apparatus (test 4.5)

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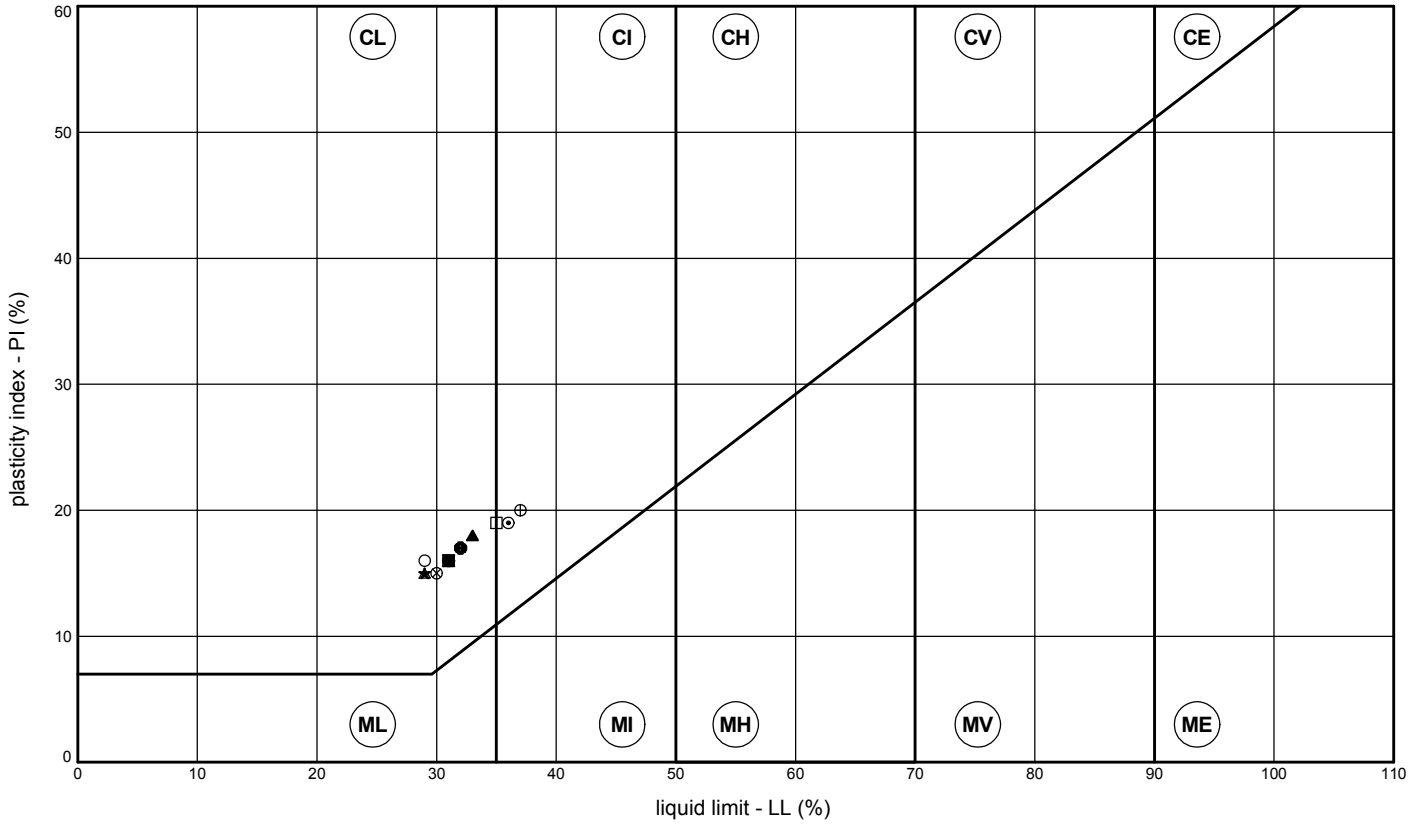
ATTERBERG LINE PLOT

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER



	BH/TP No.	depth (m)	LL	PL	PI	remarks
●	CP/RC101B	4.20	31	15	16	
⊠	CP/RC101B	6.20	31	15	16	
▲	CP/RC101B	7.20	33	15	18	
★	CP/RC102A	7.20	29	14	15	
⊙	CP/RC102A	9.20	36	17	19	
✿	CP/RC102A	10.20	32	15	17	
○	CP/RC102A	11.20	29	13	16	
△	CP/RC103	4.20	29	14	15	
⊗	CP/RC103	5.20	30	15	15	
⊕	CP/RC103	6.20	37	17	20	
□	CP/RC103	7.20	35	16	19	
⊠	CP/RC104A	6.20	32	15	17	

CONTRACT	CHECKED
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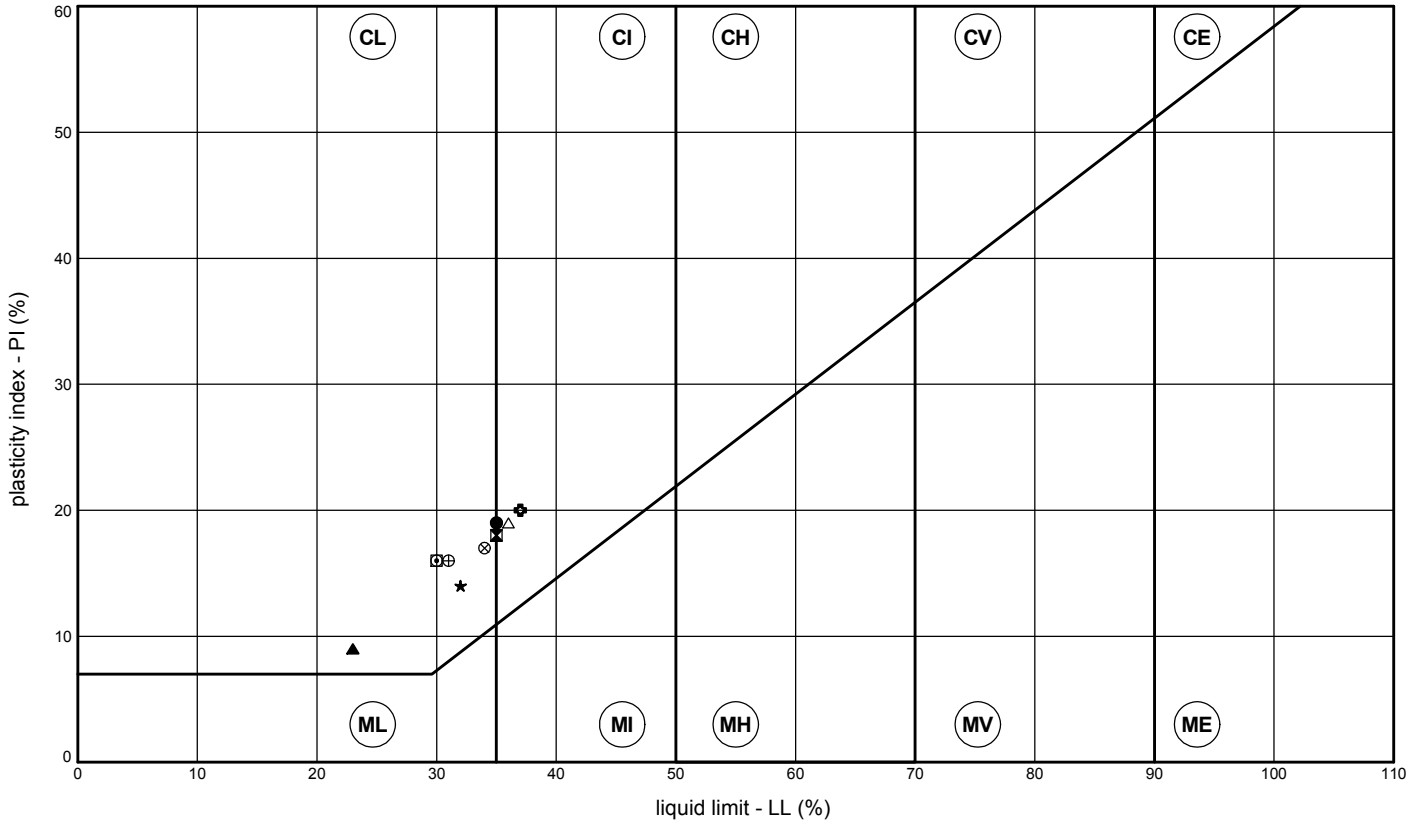
ATTERBERG LINE PLOT

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER



	BH/TP No.	depth (m)	LL	PL	PI	remarks
●	CP/RC104A	7.20	35	16	19	
⊠	CP/RC105	9.20	35	17	18	
▲	CP/RC105	11.20	23	14	9	
★	CP/RC108	2.00	32	18	14	
⊙	CP/RC108	5.00	30	14	16	
✿	CP/RC108	7.00	37	17	20	
○	CP/RC108	7.90	35	16	19	
△	TP101	1.40	36	17	19	
⊗	TP102	1.10	34	17	17	
⊕	WS106	3.00	31	15	16	
□	WS107A	4.00	30	14	16	

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PARTICLE SIZE DISTRIBUTION

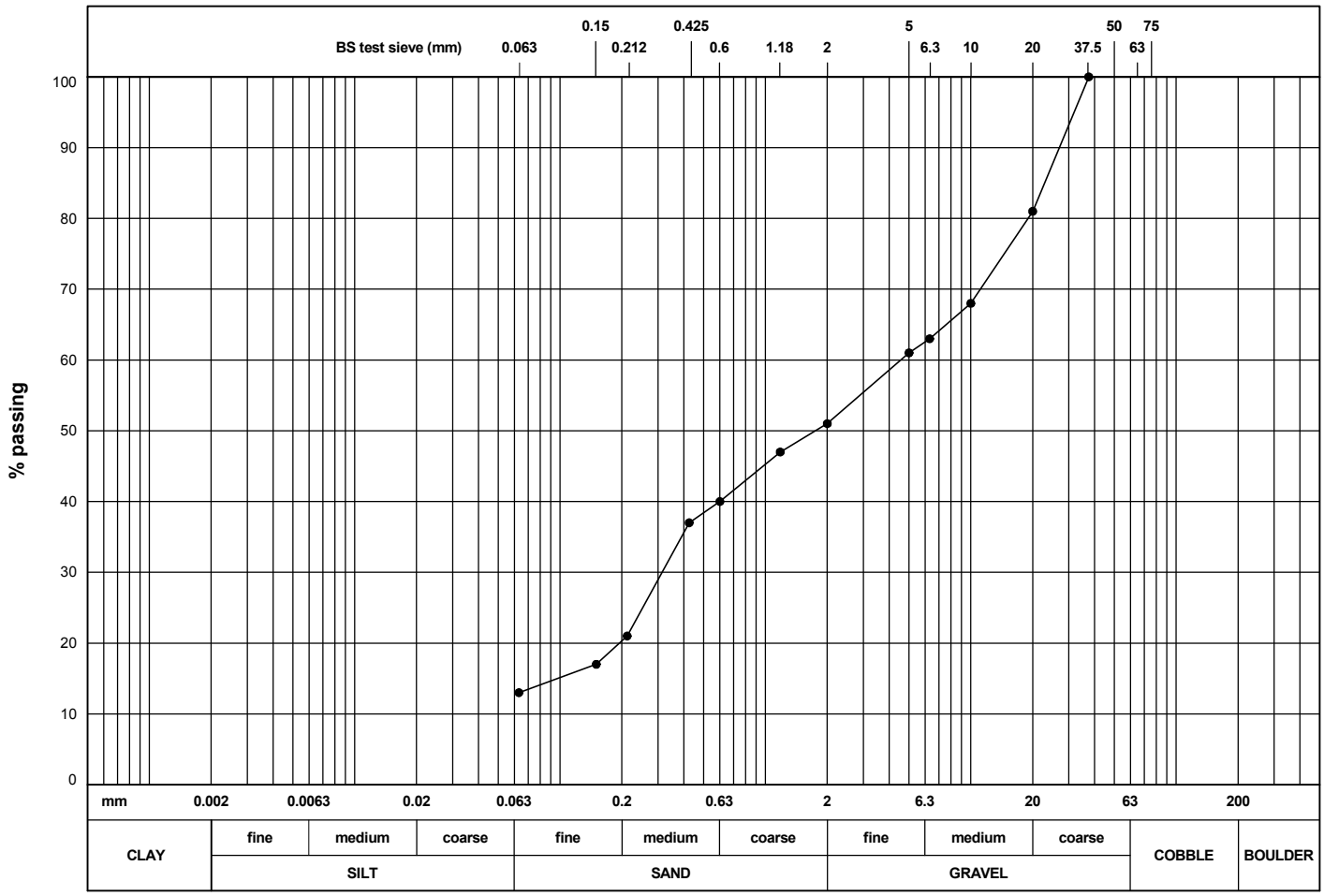
BS.1377 : Part 2 : 1990 : 9

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

DESCRIPTION Brown clayey very sandy GRAVEL

BH/TP No.	CP/RC101A
SAMPLE No./TYPE	3B
SAMPLE DEPTH (m)	1.00
SPECIMEN DEPTH (m)	1.00



soil type	% fraction
CLAY	
SILT	
SILT & CLAY	13
SAND	38
GRAVEL	49
COBBLE & BOULDER	0
test method(s)	9.2#

BS test sieve (mm)	% passing	BS test sieve (mm)	% passing	particle size (μm)	% finer
150		5	61	20	
75		2	51	6	
63		1.18	47	2	
50		0.6	40		
37.5	100	0.425	37		
20	81	0.212	21		
10	68	0.15	17		
6.3	63	0.063	13		

test method:
9.2 - wet sieving
9.3 - dry sieving
9.4 - sedimentation by pipette
9.5 - sedimentation by hydrometer

remarks:
# denotes sample tested is smaller than that which is recommended in accordance with BS1377

CONTRACT	CHECKED
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PARTICLE SIZE DISTRIBUTION

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CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

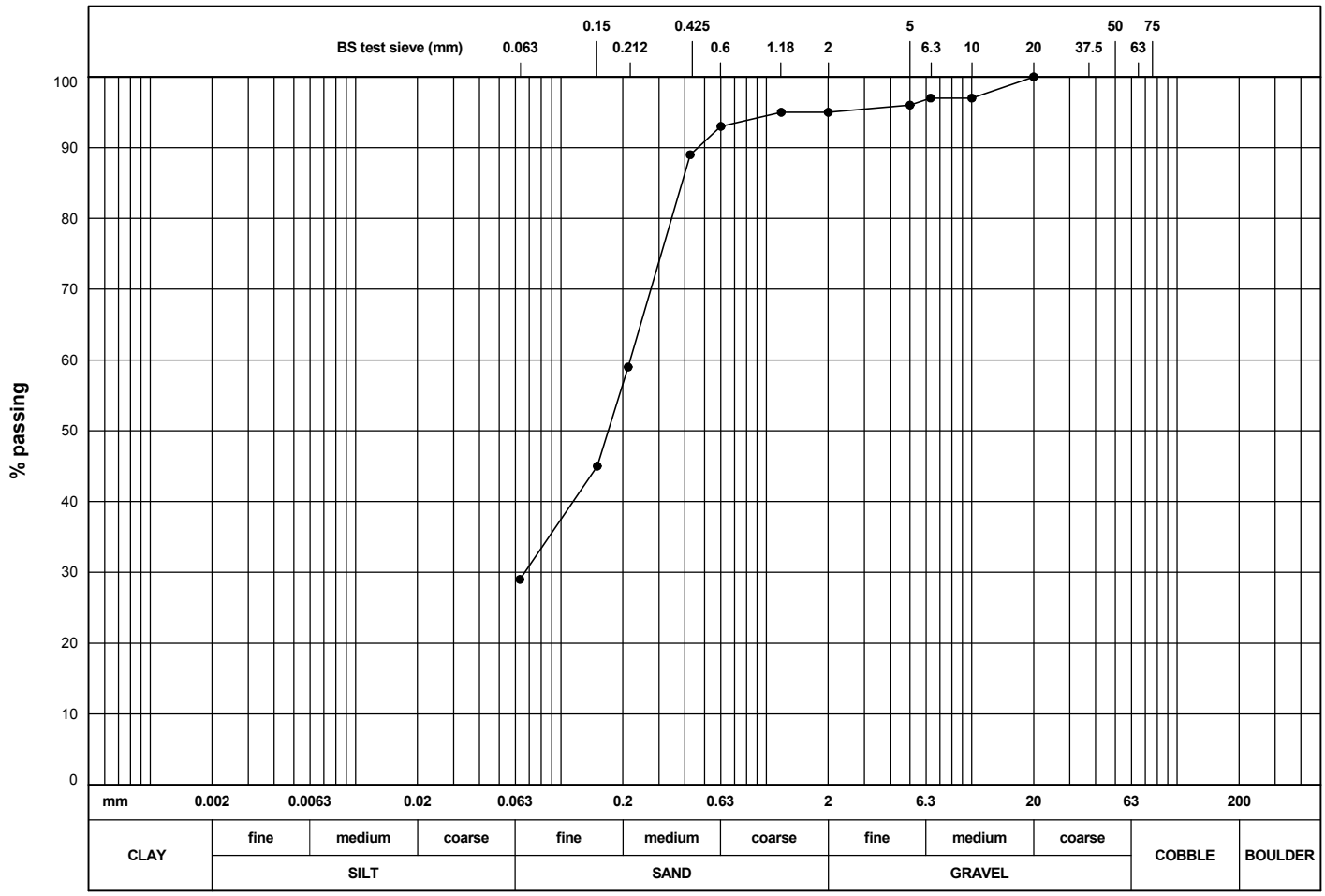
DESCRIPTION Brown gravelly very clayey SAND

BH/TP No. CP/RC101B

SAMPLE No./TYPE 19D

SAMPLE DEPTH (m) 9.20

SPECIMEN DEPTH (m) 9.20



soil type	% fraction
CLAY	
SILT	
SILT & CLAY	29
SAND	66
GRAVEL	5
COBBLE & BOULDER	0
test method(s)	9.2

test method:
9.2 - wet sieving
9.3 - dry sieving
9.4 - sedimentation by pipette
9.5 - sedimentation by hydrometer

BS test sieve (mm)	% passing
150	
75	
63	
50	
37.5	
20	100
10	97
6.3	97

BS test sieve (mm)	% passing
5	96
2	95
1.18	95
0.6	93
0.425	89
0.212	59
0.15	45
0.063	29

particle size (μm)	% finer
20	
6	
2	

remarks:
# denotes sample tested is smaller than that which is recommended in accordance with BS1377

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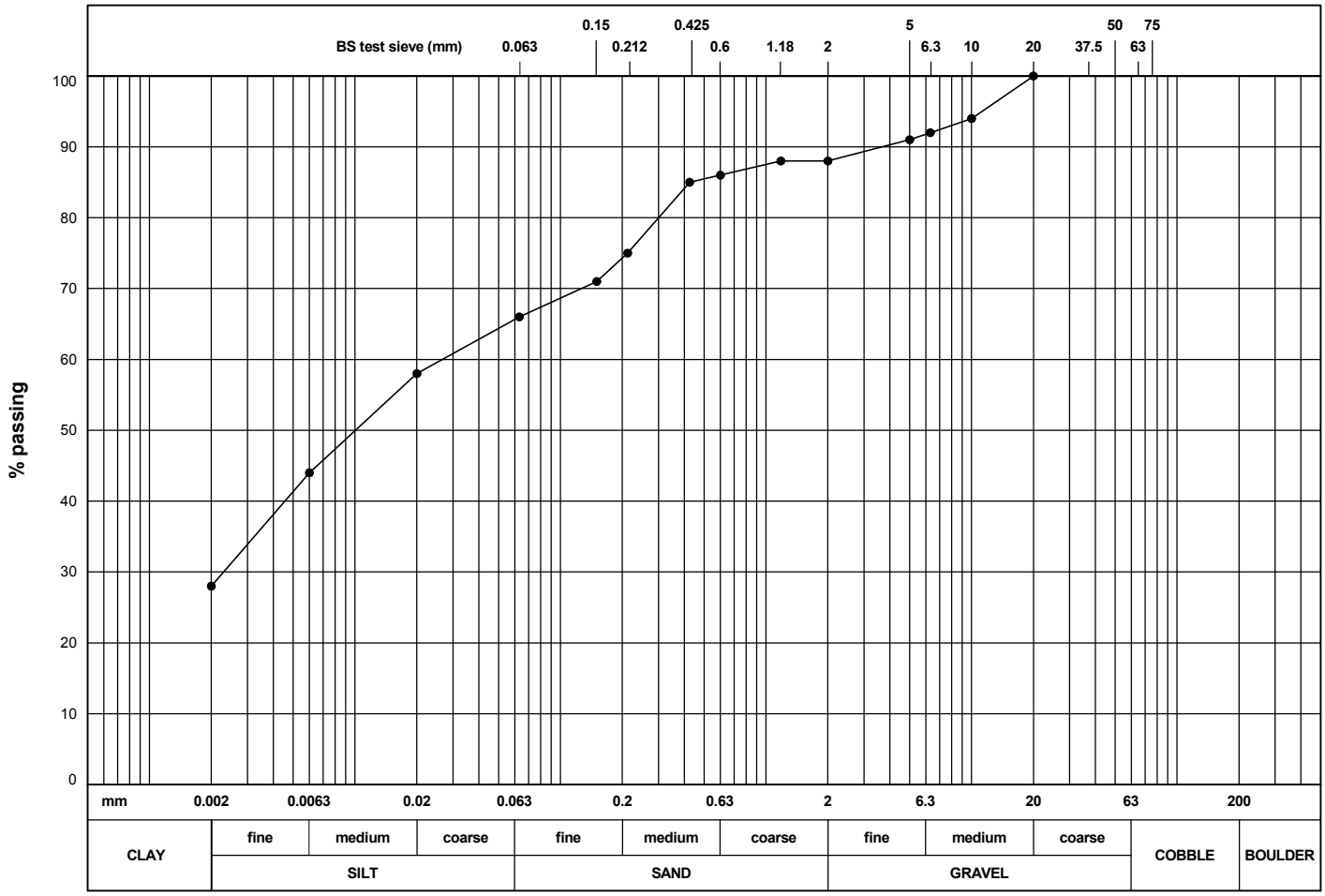
CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

DESCRIPTION Brown slightly gravelly slightly sandy silty CLAY

BH/TP No.	CP/RC102
SAMPLE No./TYPE	2B
SAMPLE DEPTH (m)	0.30
SPECIMEN DEPTH (m)	0.30



soil type	% fraction
CLAY	28
SILT	38
SILT & CLAY	66
SAND	22
GRAVEL	12
COBBLE & BOULDER	0
test method(s)	9.2# & 9.4

test method:
9.2 - wet sieving
9.3 - dry sieving
9.4 - sedimentation by pipette
9.5 - sedimentation by hydrometer

BS test sieve (mm)	% passing	BS test sieve (mm)	% passing	particle size (μm)	% finer
150		5	91	20	58
75		2	88	6	44
63		1.18	88	2	28
50		0.6	86		
37.5		0.425	85		
20	100	0.212	75		
10	94	0.15	71		
6.3	92	0.063	66		

remarks:
# denotes sample tested is smaller than that which is recommended in accordance with BS1377

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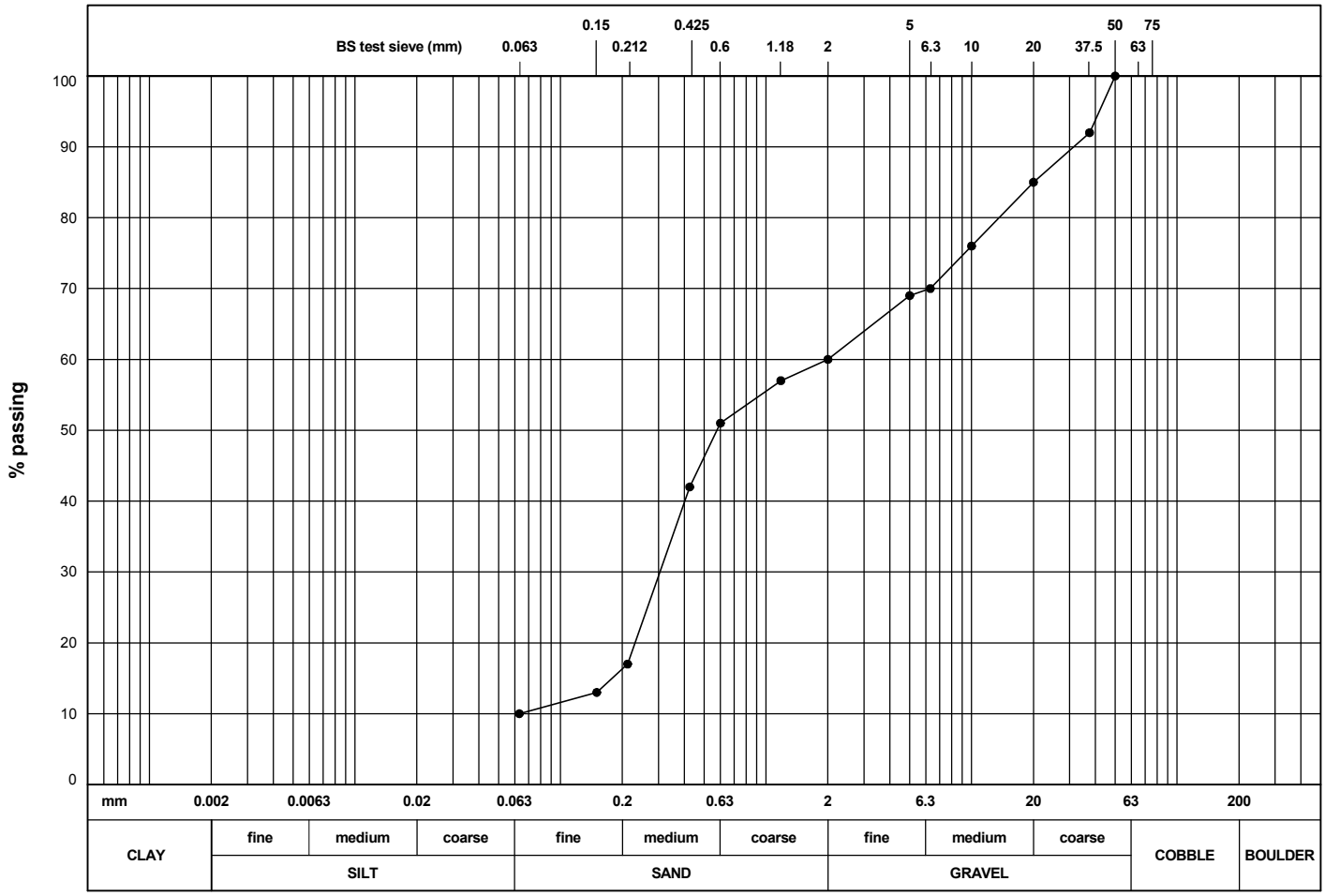
SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

DESCRIPTION Brown clayey very gravelly SAND

BH/TP No.	CP/RC102
SAMPLE No./TYPE	3B
SAMPLE DEPTH (m)	0.60
SPECIMEN DEPTH (m)	0.60



soil type	% fraction
CLAY	
SILT	
SILT & CLAY	10
SAND	50
GRAVEL	40
COBBLE & BOULDER	0
test method(s)	9.2#

test method:
9.2 - wet sieving
9.3 - dry sieving
9.4 - sedimentation by pipette
9.5 - sedimentation by hydrometer

BS test sieve (mm)	% passing	BS test sieve (mm)	% passing	particle size (μm)	% finer
150		5	69	20	
75		2	60	6	
63		1.18	57	2	
50	100	0.6	51		
37.5	92	0.425	42		
20	85	0.212	17		
10	76	0.15	13		
6.3	70	0.063	10		

remarks:
# denotes sample tested is smaller than that which is recommended in accordance with BS1377

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SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

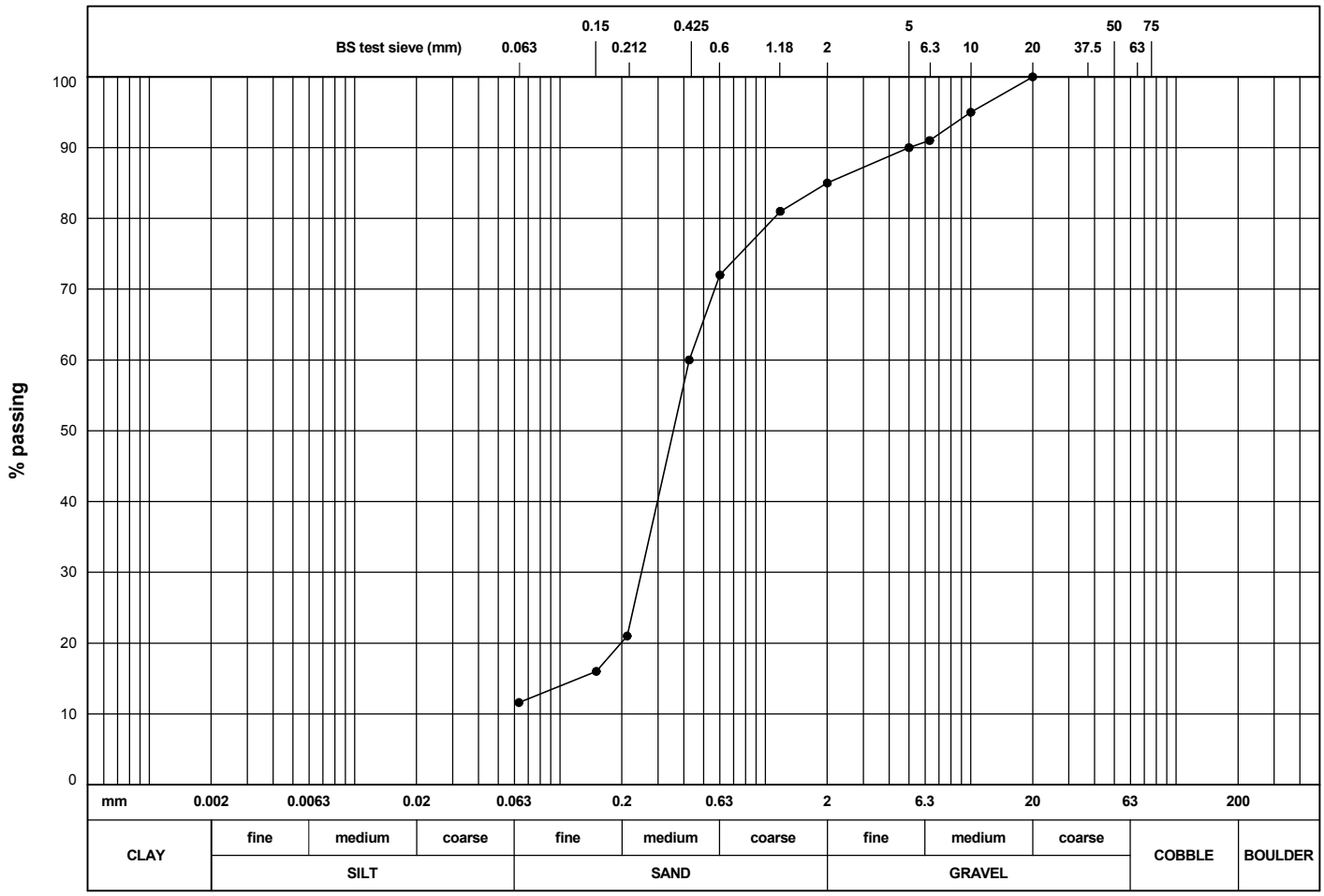
DESCRIPTION Brown clayey gravelly SAND

BH/TP No. CP/RC102A

SAMPLE No./TYPE 4B

SAMPLE DEPTH (m) 1.00

SPECIMEN DEPTH (m) 1.00



soil type	% fraction
CLAY	
SILT	
SILT & CLAY	12
SAND	73
GRAVEL	15
COBBLE & BOULDER	0
test method(s)	9.2

BS test sieve (mm)	% passing
150	
75	
63	
50	
37.5	
20	100
10	95
6.3	91

BS test sieve (mm)	% passing
5	90
2	85
1.18	81
0.6	72
0.425	60
0.212	21
0.15	16
0.063	12

particle size (μm)	% finer
20	
6	
2	

test method:
9.2 - wet sieving
9.3 - dry sieving
9.4 - sedimentation by pipette
9.5 - sedimentation by hydrometer

remarks:
# denotes sample tested is smaller than that which is recommended in accordance with BS1377

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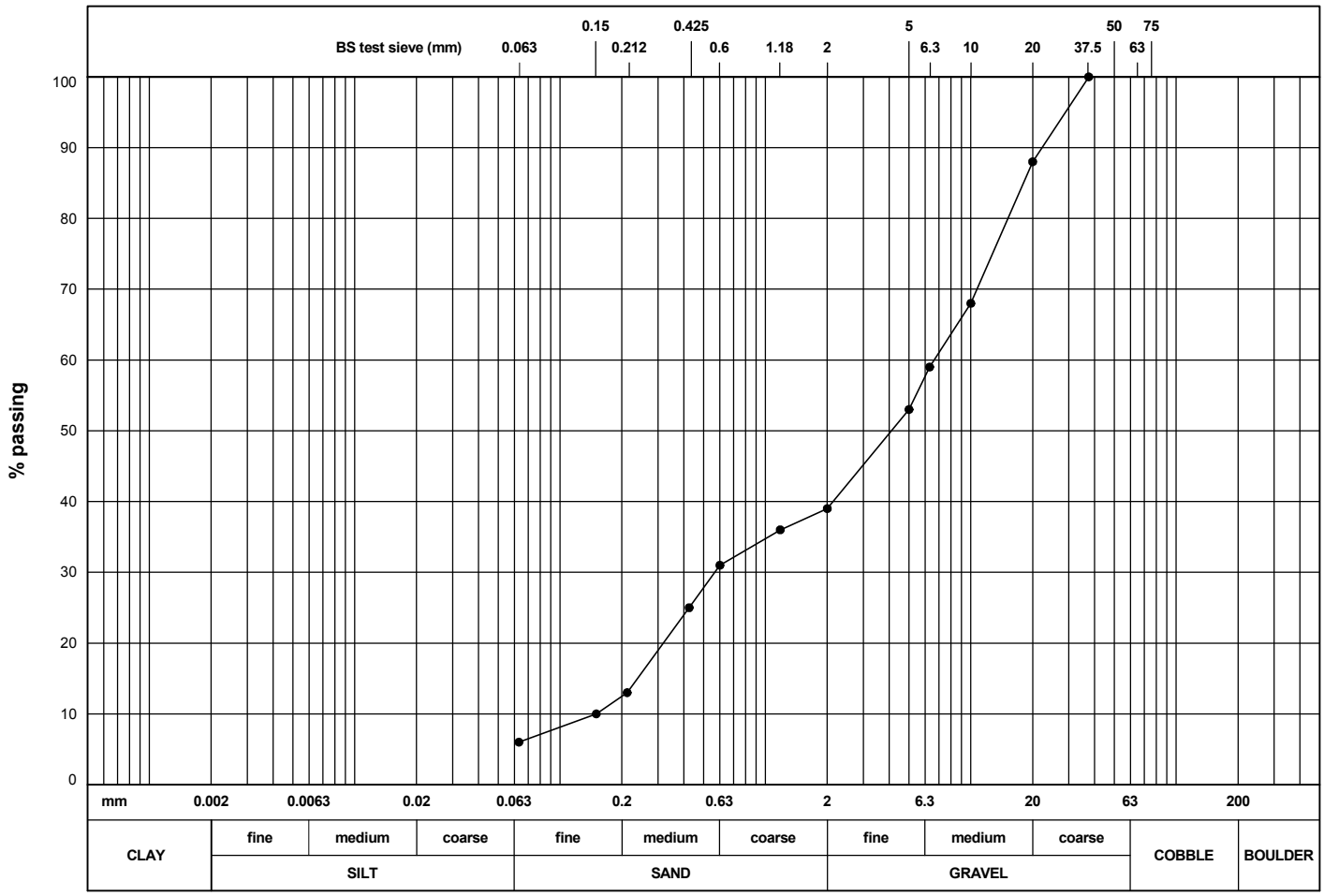
SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

DESCRIPTION Brown clayey very sandy GRAVEL

BH/TP No.	CP/RC102A
SAMPLE No./TYPE	10L
SAMPLE DEPTH (m)	3.20
SPECIMEN DEPTH (m)	3.20



soil type	% fraction
CLAY	
SILT	
SILT & CLAY	6
SAND	33
GRAVEL	61
COBBLE & BOULDER	0
test method(s)	9.2#

test method:
9.2 - wet sieving
9.3 - dry sieving
9.4 - sedimentation by pipette
9.5 - sedimentation by hydrometer

BS test sieve (mm)	% passing	BS test sieve (mm)	% passing	particle size (μm)	% finer
150		5	53	20	
75		2	39	6	
63		1.18	36	2	
50		0.6	31		
37.5	100	0.425	25		
20	88	0.212	13		
10	68	0.15	10		
6.3	59	0.063	6		

remarks:
# denotes sample tested is smaller than that which is recommended in accordance with BS1377

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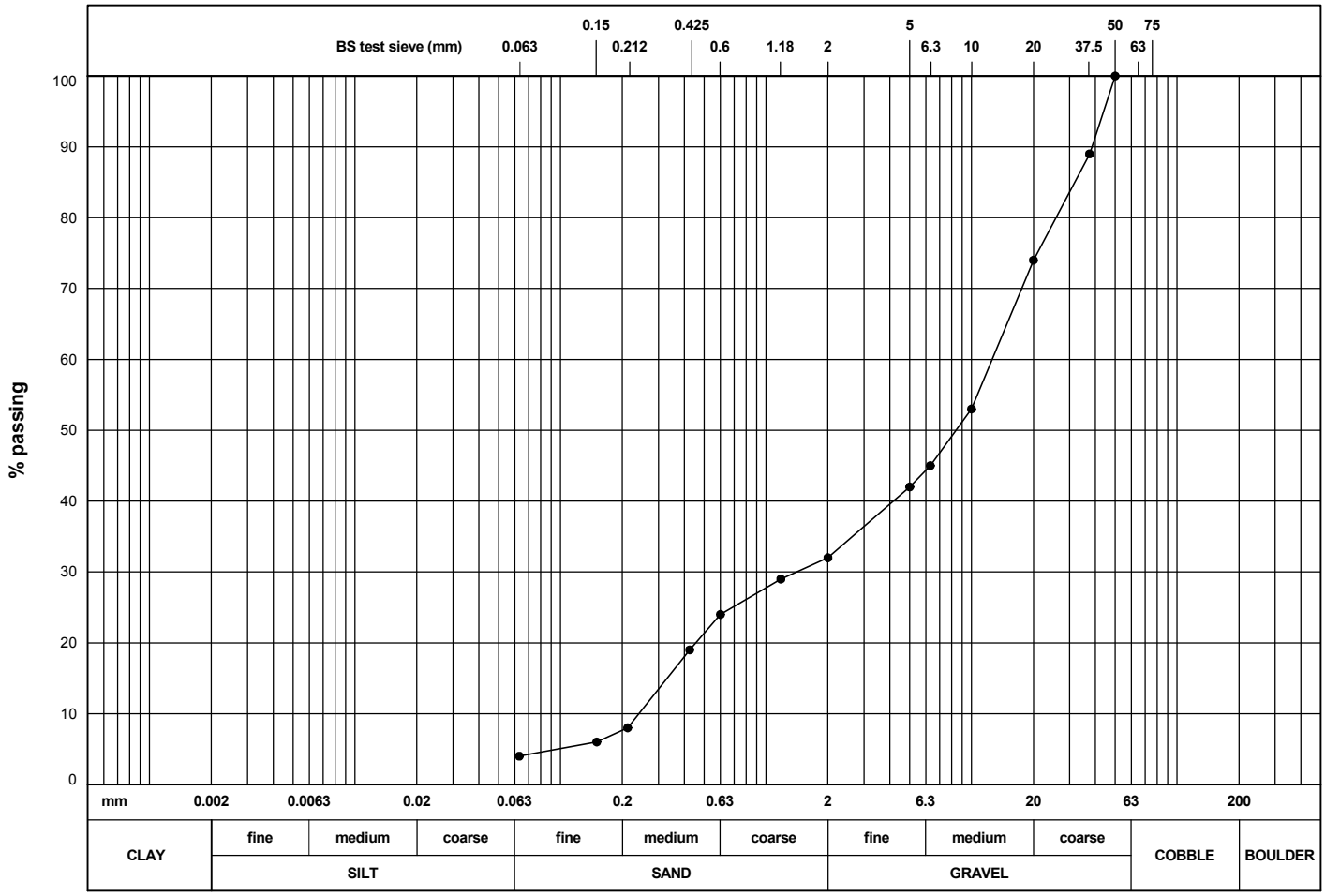
CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

DESCRIPTION Brown slightly clayey very sandy GRAVEL

BH/TP No.	CP/RC103
SAMPLE No./TYPE	3B
SAMPLE DEPTH (m)	0.60
SPECIMEN DEPTH (m)	0.60



soil type	% fraction
CLAY	
SILT	
SILT & CLAY	4
SAND	28
GRAVEL	68
COBBLE & BOULDER	0
test method(s)	9.2#

BS test sieve (mm)	% passing	BS test sieve (mm)	% passing	particle size (μm)	% finer
150		5	42	20	
75		2	32	6	
63		1.18	29	2	
50	100	0.6	24		
37.5	89	0.425	19		
20	74	0.212	8		
10	53	0.15	6		
6.3	45	0.063	4		

test method:
9.2 - wet sieving
9.3 - dry sieving
9.4 - sedimentation by pipette
9.5 - sedimentation by hydrometer

remarks:
# denotes sample tested is smaller than that which is recommended in accordance with BS1377

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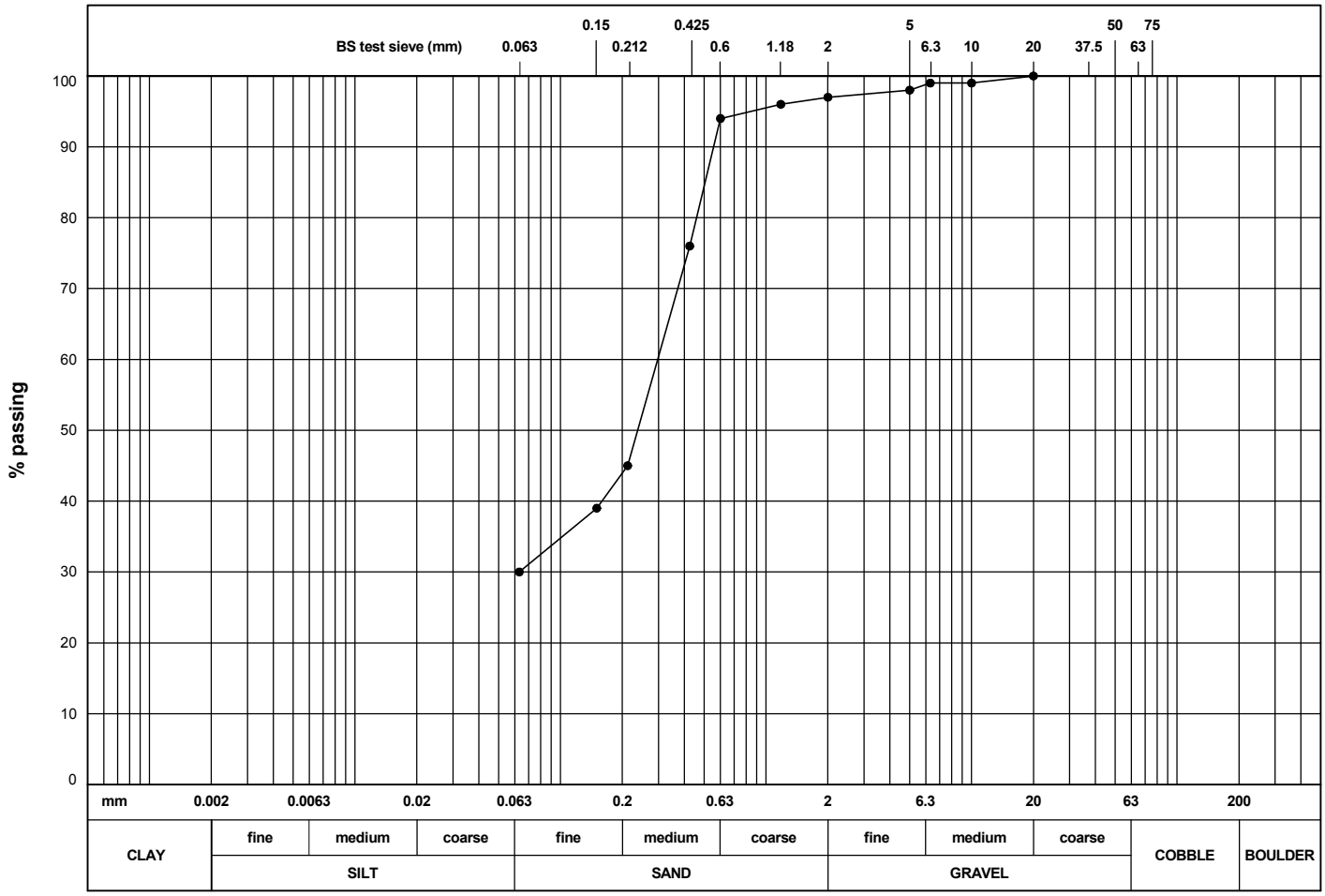
CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

DESCRIPTION Brown slightly gravelly very clayey SAND

BH/TP No.	CP/RC103
SAMPLE No./TYPE	23D
SAMPLE DEPTH (m)	9.20
SPECIMEN DEPTH (m)	9.20



soil type	% fraction
CLAY	
SILT	
SILT & CLAY	30
SAND	67
GRAVEL	3
COBBLE & BOULDER	0
test method(s)	9.2

test method:
9.2 - wet sieving
9.3 - dry sieving
9.4 - sedimentation by pipette
9.5 - sedimentation by hydrometer

BS test sieve (mm)	% passing	BS test sieve (mm)	% passing	particle size (μm)	% finer
150		5	98	20	
75		2	97	6	
63		1.18	96	2	
50		0.6	94		
37.5		0.425	76		
20	100	0.212	45		
10	99	0.15	39		
6.3	99	0.063	30		

remarks:
# denotes sample tested is smaller than that which is recommended in accordance with BS1377

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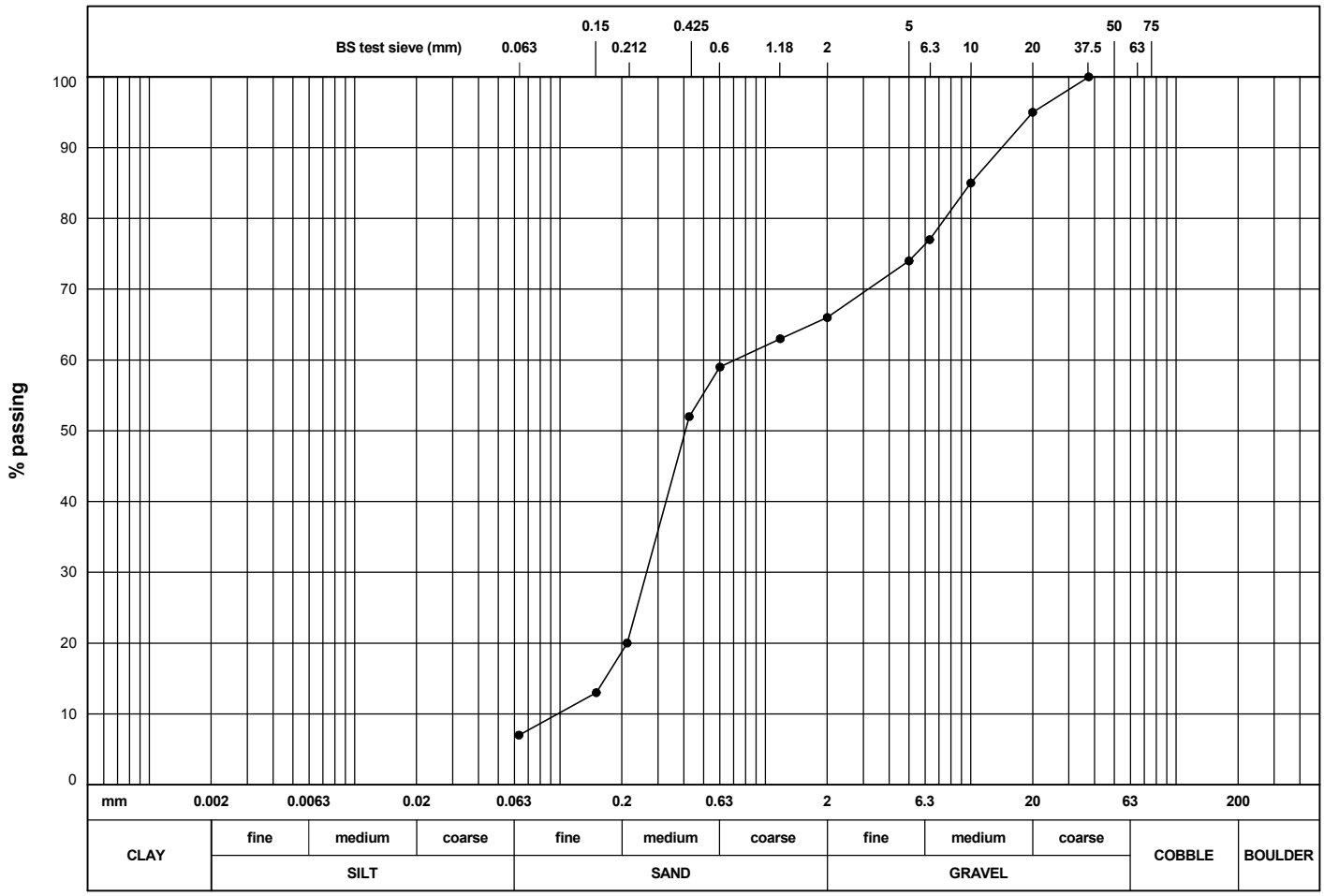
CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

DESCRIPTION Brown clayey very gravelly SAND

BH/TP No.	CP/RC104A
SAMPLE No./TYPE	8D
SAMPLE DEPTH (m)	3.20
SPECIMEN DEPTH (m)	3.20



soil type	% fraction
CLAY	
SILT	
SILT & CLAY	7
SAND	59
GRAVEL	34
COBBLE & BOULDER	0
test method(s)	9.2#

BS test sieve (mm)	% passing
150	
75	
63	
50	
37.5	100
20	95
10	85
6.3	77

BS test sieve (mm)	% passing
5	74
2	66
1.18	63
0.6	59
0.425	52
0.212	20
0.15	13
0.063	7

particle size (μm)	% finer
20	
6	
2	

test method:
9.2 - wet sieving
9.3 - dry sieving
9.4 - sedimentation by pipette
9.5 - sedimentation by hydrometer

remarks:
# denotes sample tested is smaller than that which is recommended in accordance with BS1377

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SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

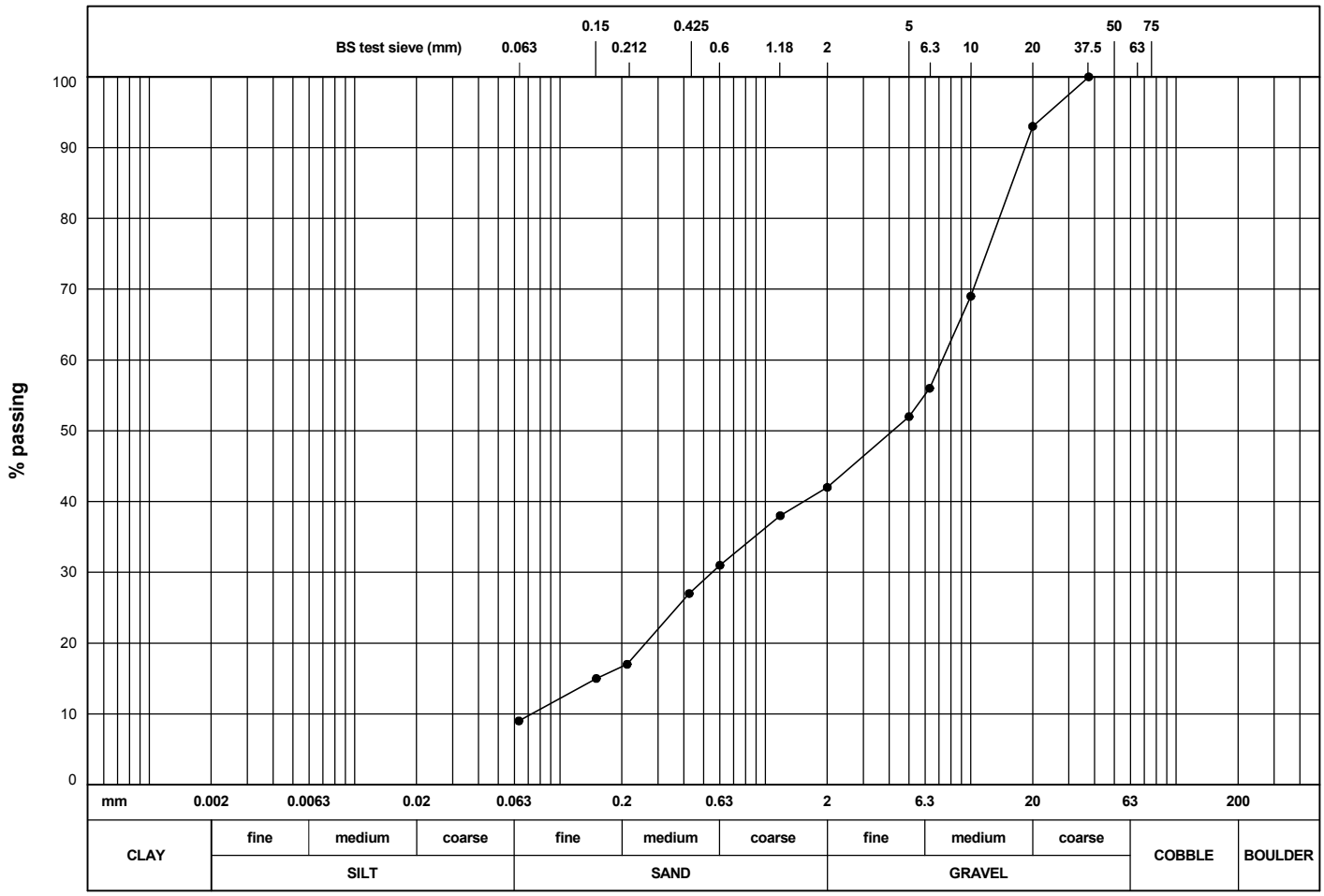
DESCRIPTION Brown clayey very sandy GRAVEL

BH/TP No. CP/RC104A

SAMPLE No./TYPE 10D

SAMPLE DEPTH (m) 4.20

SPECIMEN DEPTH (m) 4.20



soil type	% fraction
CLAY	
SILT	
SILT & CLAY	9
SAND	33
GRAVEL	58
COBBLE & BOULDER	0
test method(s)	9.2#

BS test sieve (mm)	% passing
150	
75	
63	
50	
37.5	100
20	93
10	69
6.3	56

BS test sieve (mm)	% passing
5	52
2	42
1.18	38
0.6	31
0.425	27
0.212	17
0.15	15
0.063	9

particle size (μm)	% finer
20	
6	
2	

test method:
9.2 - wet sieving
9.3 - dry sieving
9.4 - sedimentation by pipette
9.5 - sedimentation by hydrometer

remarks:
# denotes sample tested is smaller than that which is recommended in accordance with BS1377

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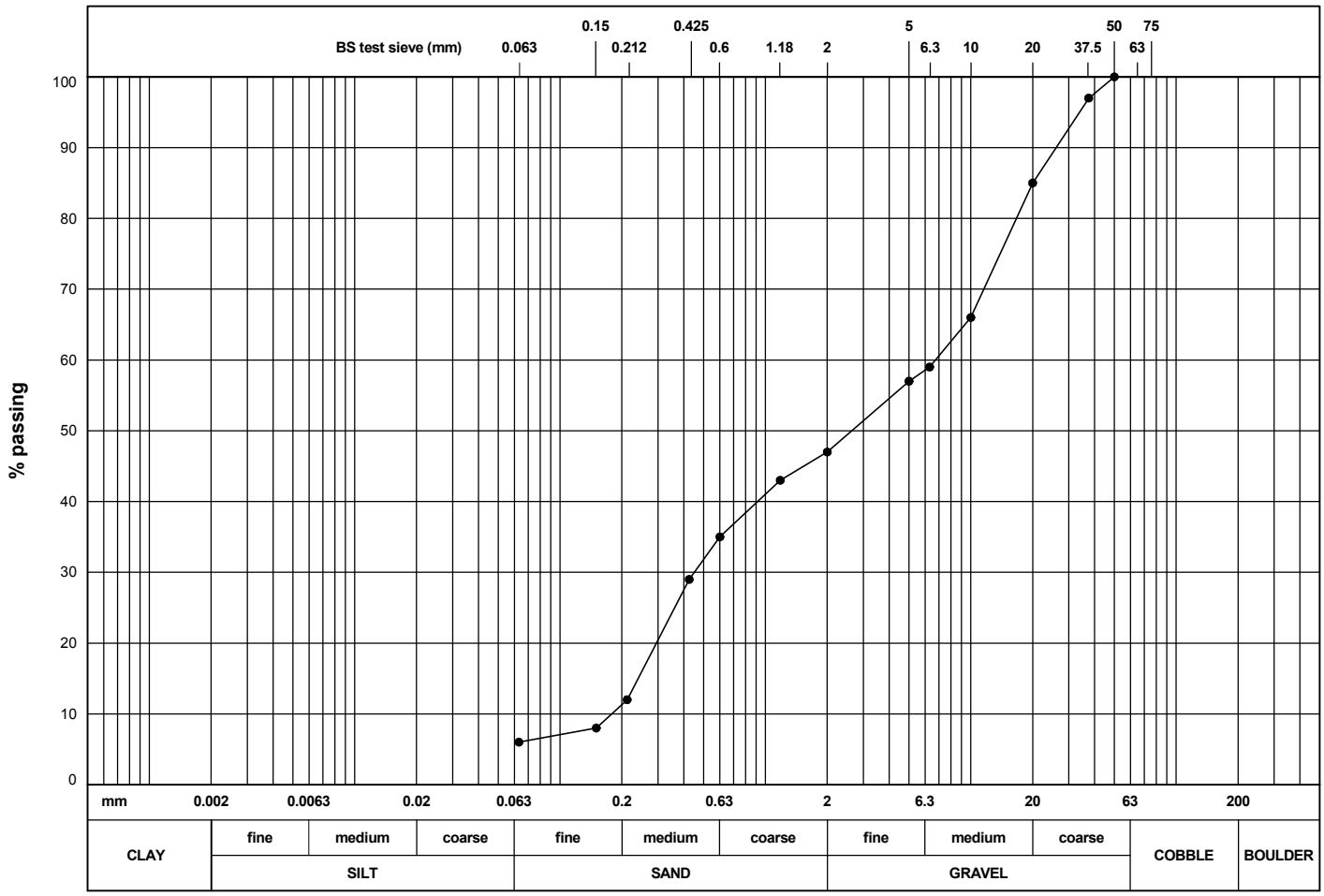
CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

DESCRIPTION Brown clayey very sandy GRAVEL

BH/TP No.	CP/RC105
SAMPLE No./TYPE	3B
SAMPLE DEPTH (m)	1.00
SPECIMEN DEPTH (m)	1.00



soil type	% fraction
CLAY	
SILT	
SILT & CLAY	6
SAND	41
GRAVEL	53
COBBLE & BOULDER	0
test method(s)	9.2#

BS test sieve (mm)	% passing	BS test sieve (mm)	% passing	particle size (μm)	% finer
150		5	57	20	
75		2	47	6	
63		1.18	43	2	
50	100	0.6	35		
37.5	97	0.425	29		
20	85	0.212	12		
10	66	0.15	8		
6.3	59	0.063	6		

test method:
9.2 - wet sieving
9.3 - dry sieving
9.4 - sedimentation by pipette
9.5 - sedimentation by hydrometer

remarks:
# denotes sample tested is smaller than that which is recommended in accordance with BS1377

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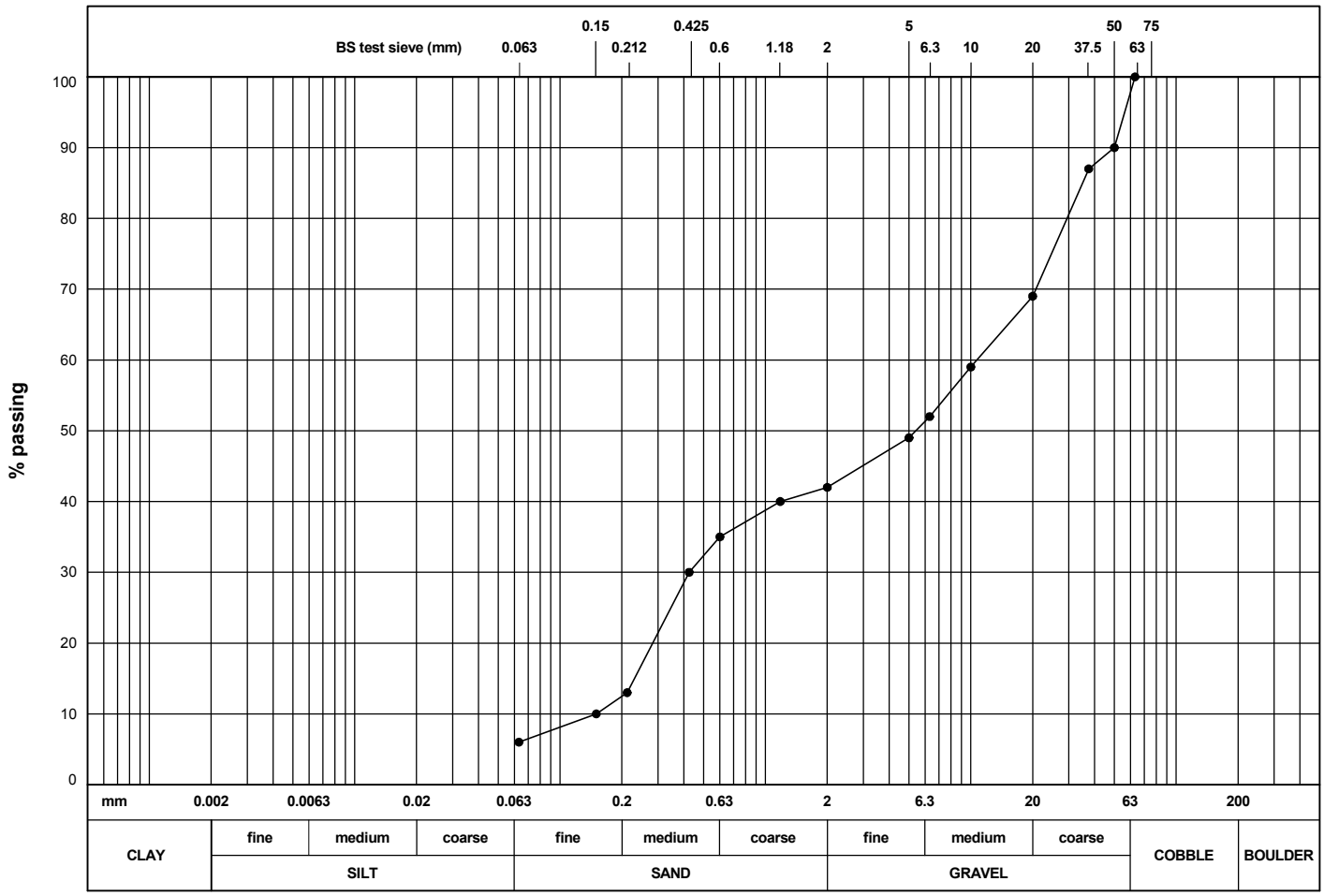
CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

DESCRIPTION Brown clayey very sandy GRAVEL

BH/TP No.	CP/RC105
SAMPLE No./TYPE	11L
SAMPLE DEPTH (m)	4.20
SPECIMEN DEPTH (m)	4.20



soil type	% fraction
CLAY	
SILT	
SILT & CLAY	6
SAND	36
GRAVEL	58
COBBLE & BOULDER	0
test method(s)	9.2#

BS test sieve (mm)	% passing	BS test sieve (mm)	% passing	particle size (μm)	% finer
150		5	49	20	
75		2	42	6	
63	100	1.18	40	2	
50	90	0.6	35		
37.5	87	0.425	30		
20	69	0.212	13		
10	59	0.15	10		
6.3	52	0.063	6		

test method:
9.2 - wet sieving
9.3 - dry sieving
9.4 - sedimentation by pipette
9.5 - sedimentation by hydrometer

remarks:
# denotes sample tested is smaller than that which is recommended in accordance with BS1377

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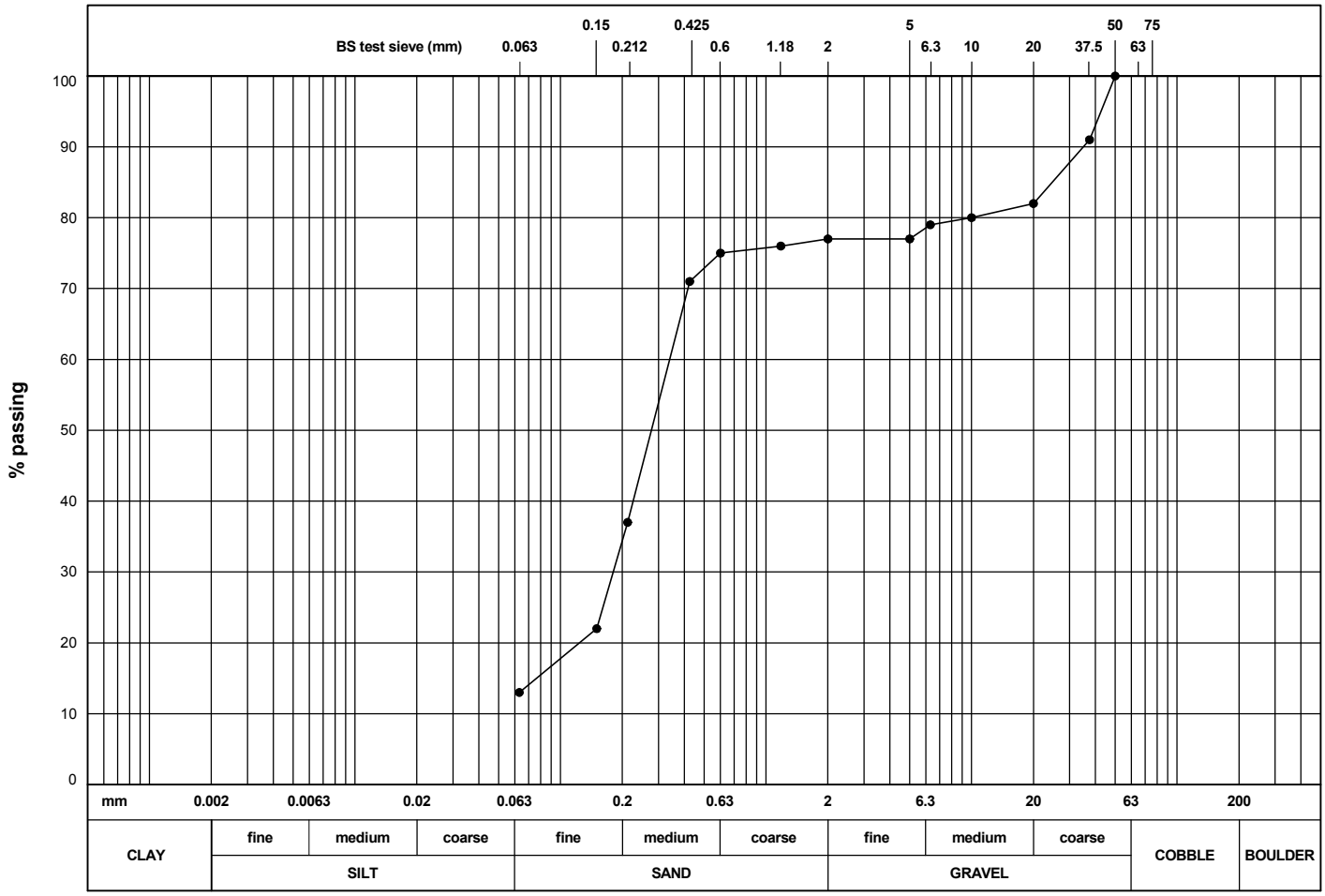
SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

DESCRIPTION Reddish brown clayey very gravelly SAND

BH/TP No.	CP/RC105
SAMPLE No./TYPE	28C
SAMPLE DEPTH (m)	12.70
SPECIMEN DEPTH (m)	12.70



soil type	% fraction
CLAY	
SILT	
SILT & CLAY	13
SAND	64
GRAVEL	23
COBBLE & BOULDER	0
test method(s)	9.2#

BS test sieve (mm)	% passing	BS test sieve (mm)	% passing	particle size (μm)	% finer
150		5	77	20	
75		2	77	6	
63		1.18	76	2	
50	100	0.6	75		
37.5	91	0.425	71		
20	82	0.212	37		
10	80	0.15	22		
6.3	79	0.063	13		

test method:
9.2 - wet sieving
9.3 - dry sieving
9.4 - sedimentation by pipette
9.5 - sedimentation by hydrometer

remarks:
# denotes sample tested is smaller than that which is recommended in accordance with BS1377

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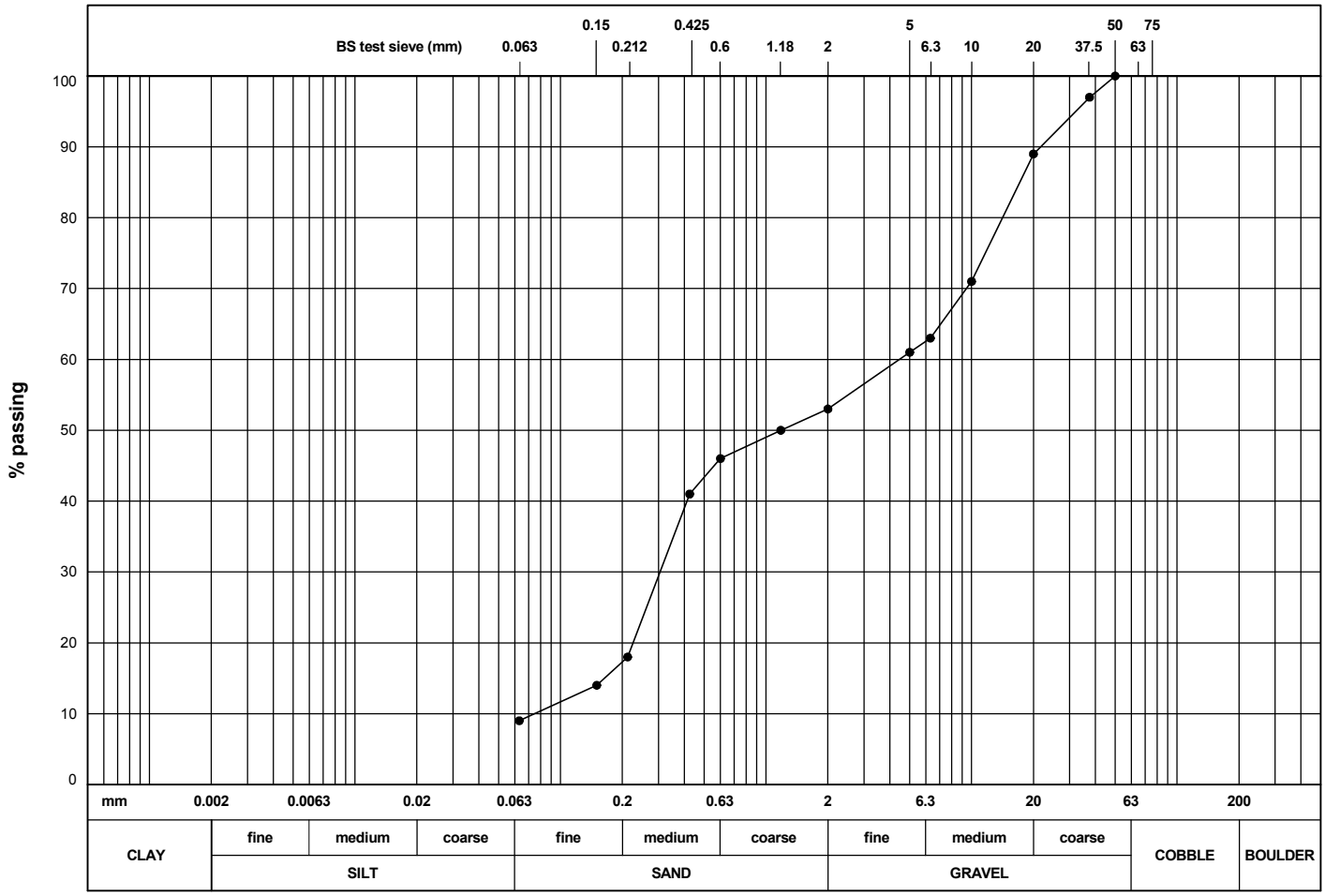
CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

DESCRIPTION Brown silty very sandy GRAVEL

BH/TP No.	CP/RC106A
SAMPLE No./TYPE	3B
SAMPLE DEPTH (m)	0.60
SPECIMEN DEPTH (m)	0.60



soil type	% fraction
CLAY	
SILT	
SILT & CLAY	9
SAND	44
GRAVEL	47
COBBLE & BOULDER	0
test method(s)	9.2

test method:
9.2 - wet sieving
9.3 - dry sieving
9.4 - sedimentation by pipette
9.5 - sedimentation by hydrometer

BS test sieve (mm)	% passing	BS test sieve (mm)	% passing	particle size (μm)	% finer
150		5	61	20	
75		2	53	6	
63		1.18	50	2	
50	100	0.6	46		
37.5	97	0.425	41		
20	89	0.212	18		
10	71	0.15	14		
6.3	63	0.063	9		

remarks:
# denotes sample tested is smaller than that which is recommended in accordance with BS1377

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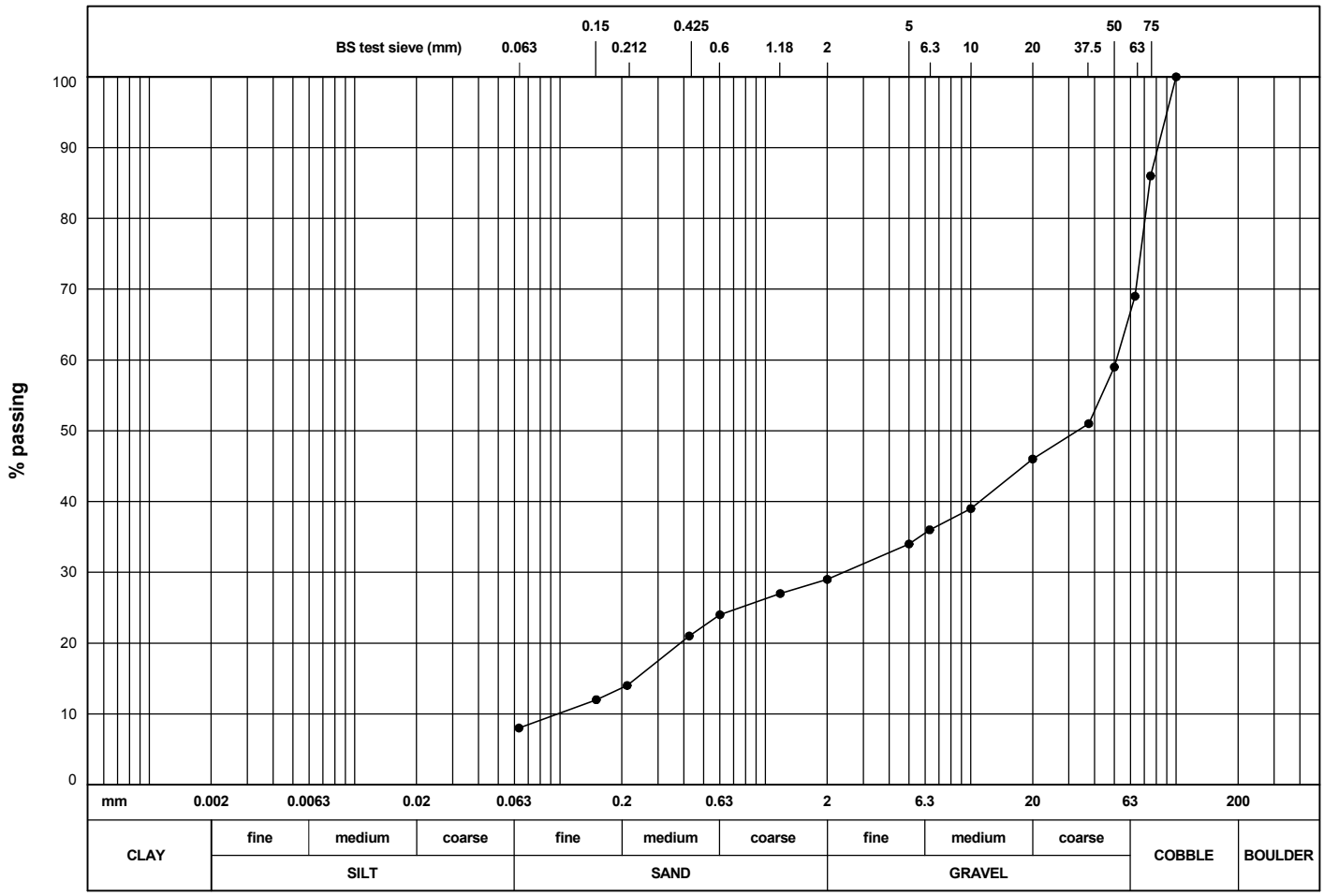
CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

DESCRIPTION Reddish brown clayey very sandy GRAVEL with high cobble content

BH/TP No.	CP/RC112
SAMPLE No./TYPE	5L
SAMPLE DEPTH (m)	1.20
SPECIMEN DEPTH (m)	1.20



soil type	% fraction
CLAY	
SILT	
SILT & CLAY	8
SAND	21
GRAVEL	40
COBBLE & BOULDER	31
test method(s)	9.2#

test method:
9.2 - wet sieving
9.3 - dry sieving
9.4 - sedimentation by pipette
9.5 - sedimentation by hydrometer

BS test sieve (mm)	% passing
150	
75	86
63	69
50	59
37.5	51
20	46
10	39
6.3	36

BS test sieve (mm)	% passing
5	34
2	29
1.18	27
0.6	24
0.425	21
0.212	14
0.15	12
0.063	8

particle size (μm)	% finer
20	
6	
2	

remarks:
# denotes sample tested is smaller than that which is recommended in accordance with BS1377

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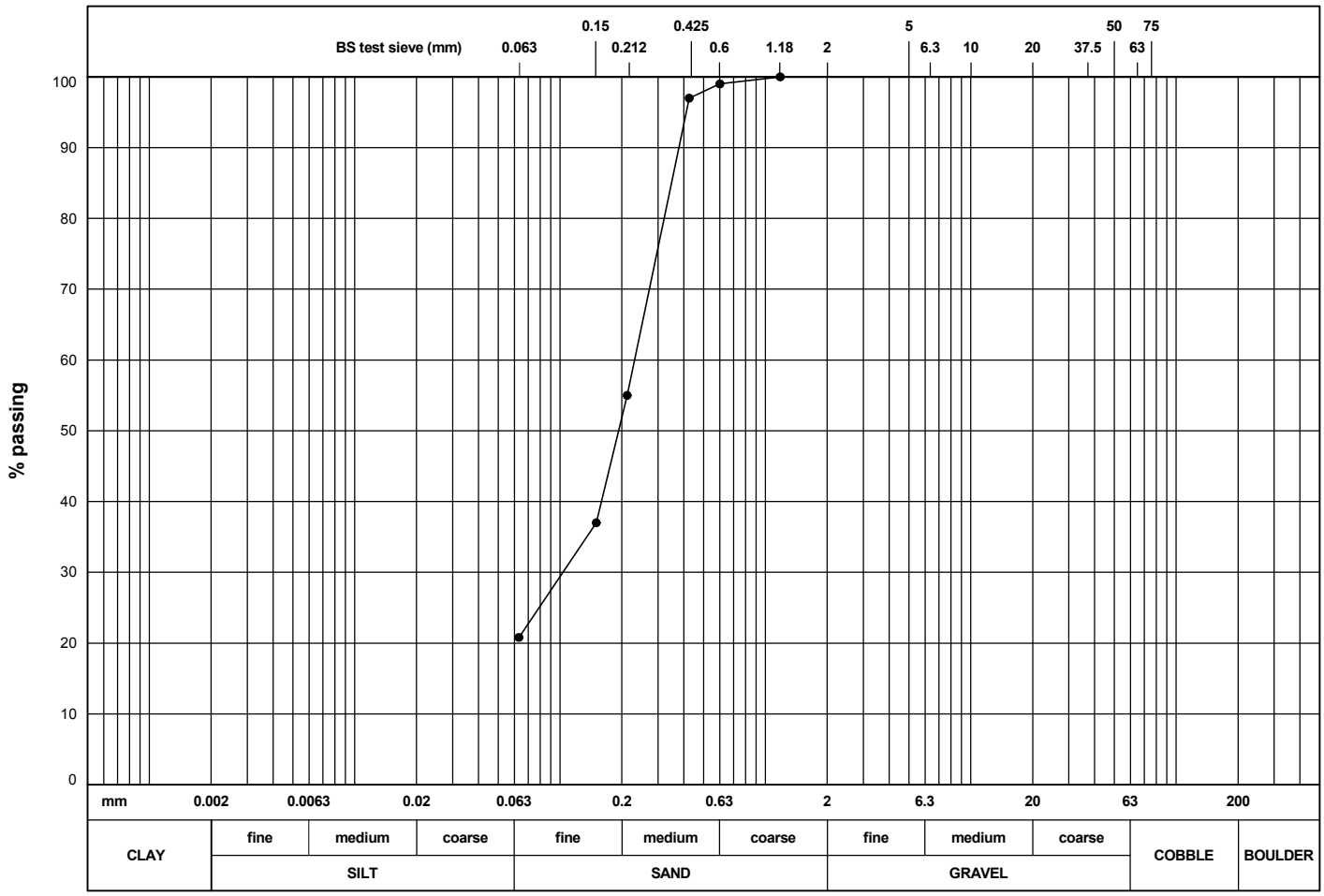
CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

DESCRIPTION Reddish brown very clayey SAND

BH/TP No.	CP/RC112
SAMPLE No./TYPE	16D
SAMPLE DEPTH (m)	6.50
SPECIMEN DEPTH (m)	6.50



soil type	% fraction
CLAY	
SILT	
SILT & CLAY	21
SAND	79
GRAVEL	0
COBBLE & BOULDER	0
test method(s)	9.2

BS test sieve (mm)	% passing
150	
75	
63	
50	
37.5	
20	
10	
6.3	

BS test sieve (mm)	% passing
5	
2	
1.18	100
0.6	99
0.425	97
0.212	55
0.15	37
0.063	21

particle size (μm)	% finer
20	
6	
2	

test method:
9.2 - wet sieving
9.3 - dry sieving
9.4 - sedimentation by pipette
9.5 - sedimentation by hydrometer

remarks:
# denotes sample tested is smaller than that which is recommended in accordance with BS1377

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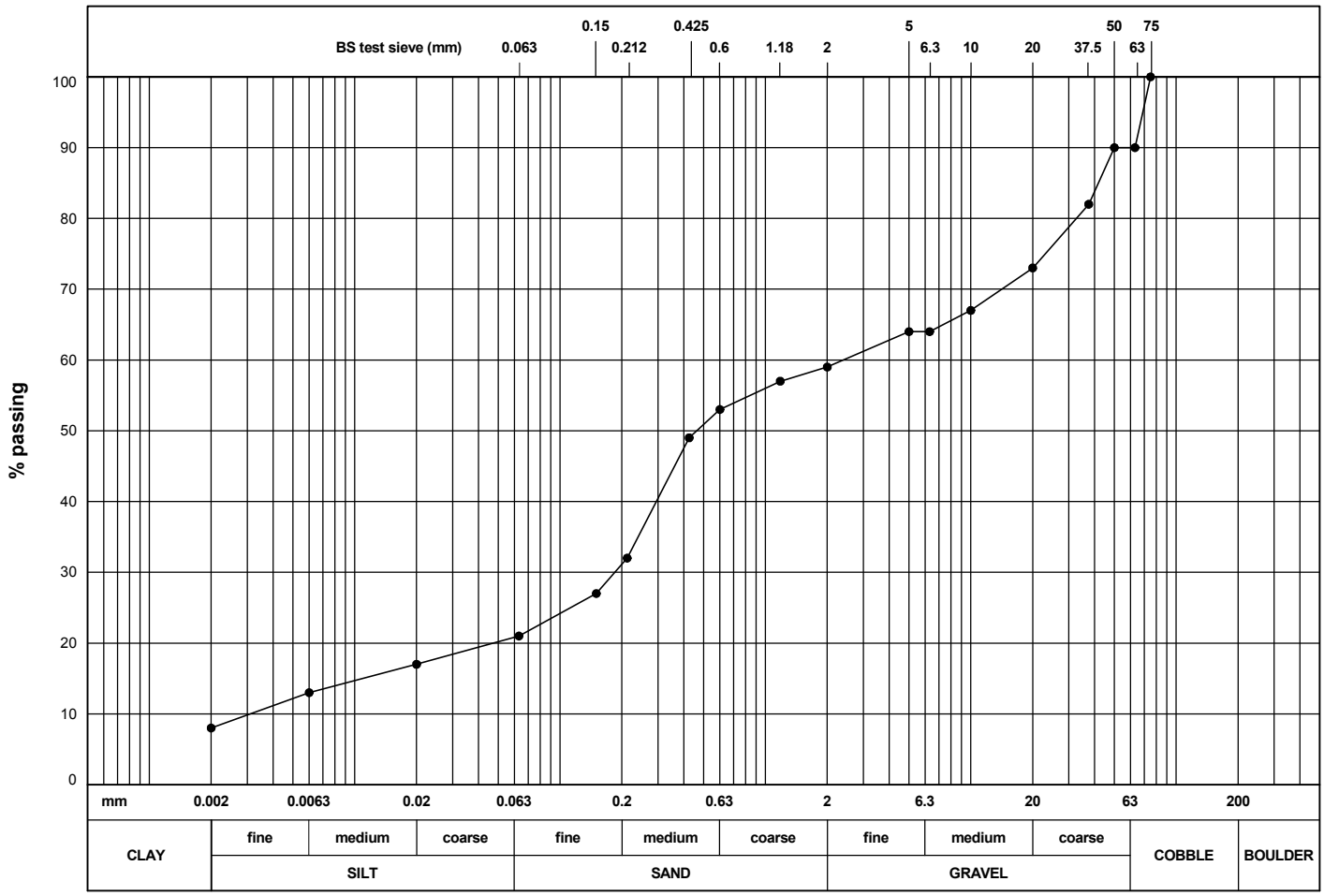
CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

DESCRIPTION Brown very silty very gravelly SAND with medium cobble content

BH/TP No.	CP/RC113
SAMPLE No./TYPE	6L
SAMPLE DEPTH (m)	2.00
SPECIMEN DEPTH (m)	2.00



soil type	% fraction
CLAY	8
SILT	13
SILT & CLAY	21
SAND	38
GRAVEL	31
COBBLE & BOULDER	10
test method(s)	9.2# & 9.4

BS test sieve (mm)	% passing
150	
75	100
63	90
50	90
37.5	82
20	73
10	67
6.3	64

BS test sieve (mm)	% passing
5	64
2	59
1.18	57
0.6	53
0.425	49
0.212	32
0.15	27
0.063	21

particle size (μm)	% finer
20	17
6	13
2	8

test method:
9.2 - wet sieving
9.3 - dry sieving
9.4 - sedimentation by pipette
9.5 - sedimentation by hydrometer

remarks:
# denotes sample tested is smaller than that which is recommended in accordance with BS1377

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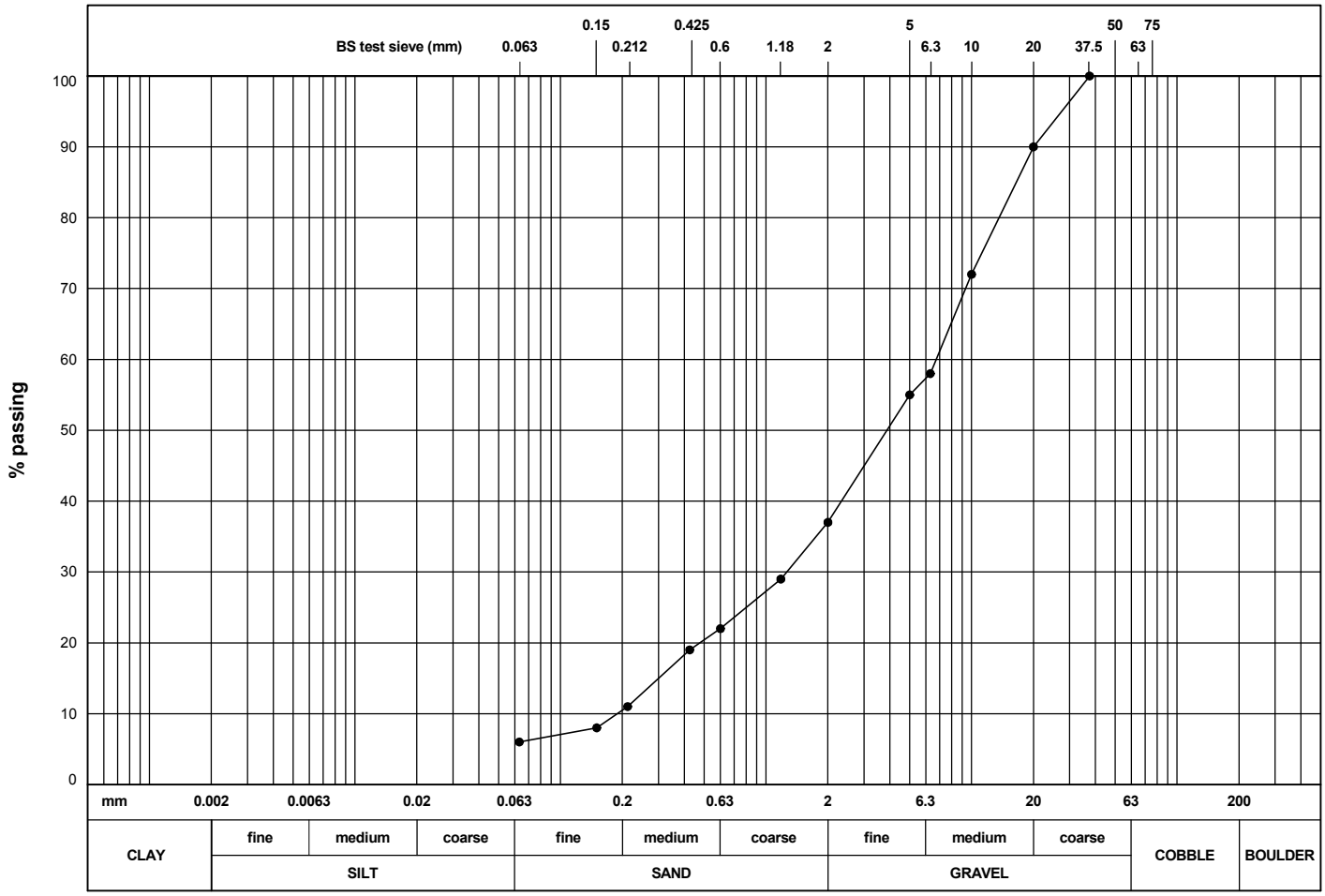
CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

DESCRIPTION Brown clayey very sandy GRAVEL

BH/TP No.	CP/RC115
SAMPLE No./TYPE	2B
SAMPLE DEPTH (m)	0.60
SPECIMEN DEPTH (m)	0.60



soil type	% fraction
CLAY	
SILT	
SILT & CLAY	6
SAND	31
GRAVEL	63
COBBLE & BOULDER	0
test method(s)	9.2

test method:
9.2 - wet sieving
9.3 - dry sieving
9.4 - sedimentation by pipette
9.5 - sedimentation by hydrometer

BS test sieve (mm)	% passing	BS test sieve (mm)	% passing	particle size (μm)	% finer
150		5	55	20	
75		2	37	6	
63		1.18	29	2	
50		0.6	22		
37.5	100	0.425	19		
20	90	0.212	11		
10	72	0.15	8		
6.3	58	0.063	6		

remarks:
# denotes sample tested is smaller than that which is recommended in accordance with BS1377

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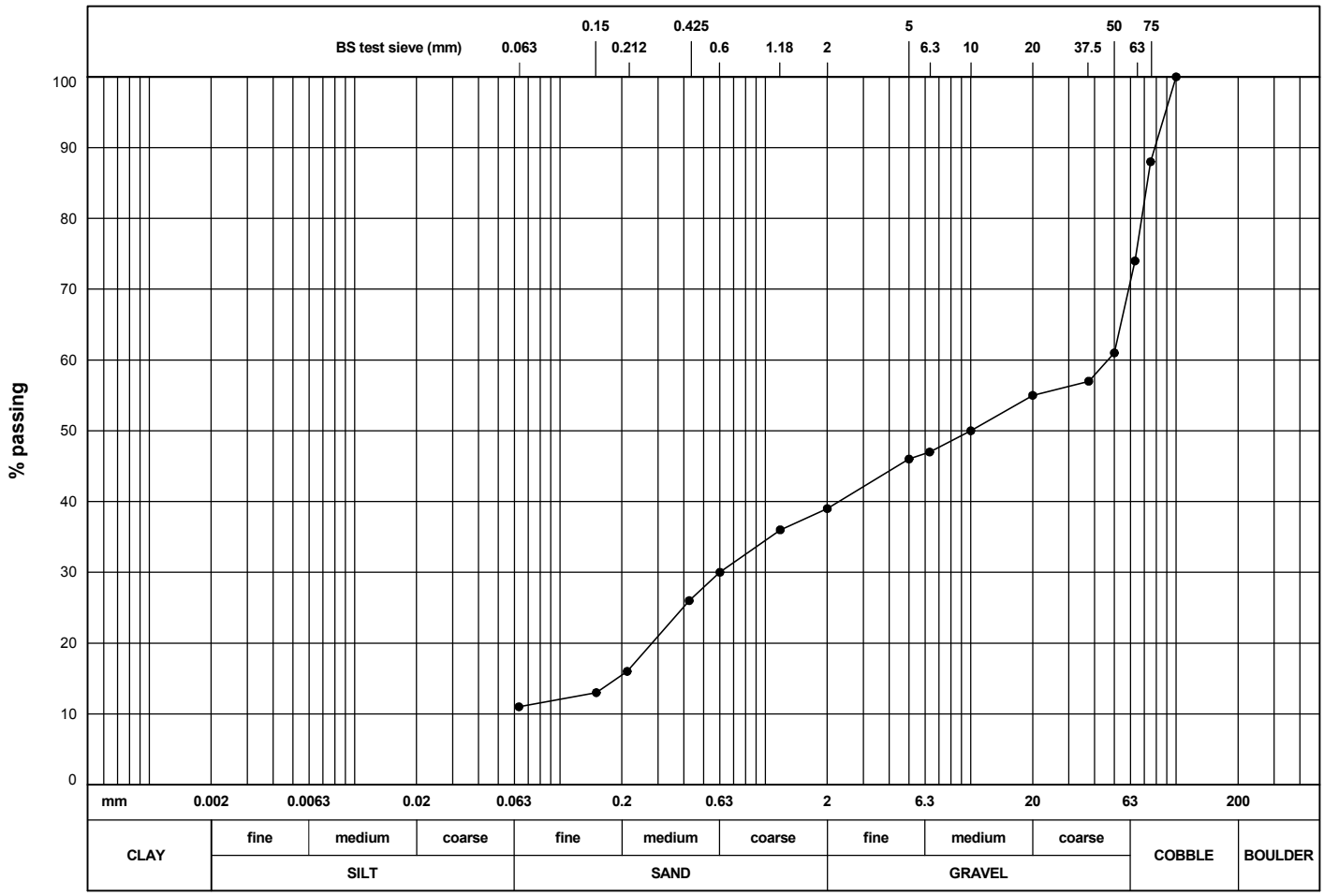
CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

DESCRIPTION Grey clayey very sandy GRAVEL with high cobble content

BH/TP No.	CP/RC117A
SAMPLE No./TYPE	1B
SAMPLE DEPTH (m)	0.30
SPECIMEN DEPTH (m)	0.30



soil type	% fraction
CLAY	
SILT	
SILT & CLAY	11
SAND	28
GRAVEL	35
COBBLE & BOULDER	26
test method(s)	9.2#

BS test sieve (mm)	% passing	BS test sieve (mm)	% passing	particle size (μm)	% finer
150		5	46	20	
75	88	2	39	6	
63	74	1.18	36	2	
50	61	0.6	30		
37.5	57	0.425	26		
20	55	0.212	16		
10	50	0.15	13		
6.3	47	0.063	11		

test method:
9.2 - wet sieving
9.3 - dry sieving
9.4 - sedimentation by pipette
9.5 - sedimentation by hydrometer

remarks:
# denotes sample tested is smaller than that which is recommended in accordance with BS1377

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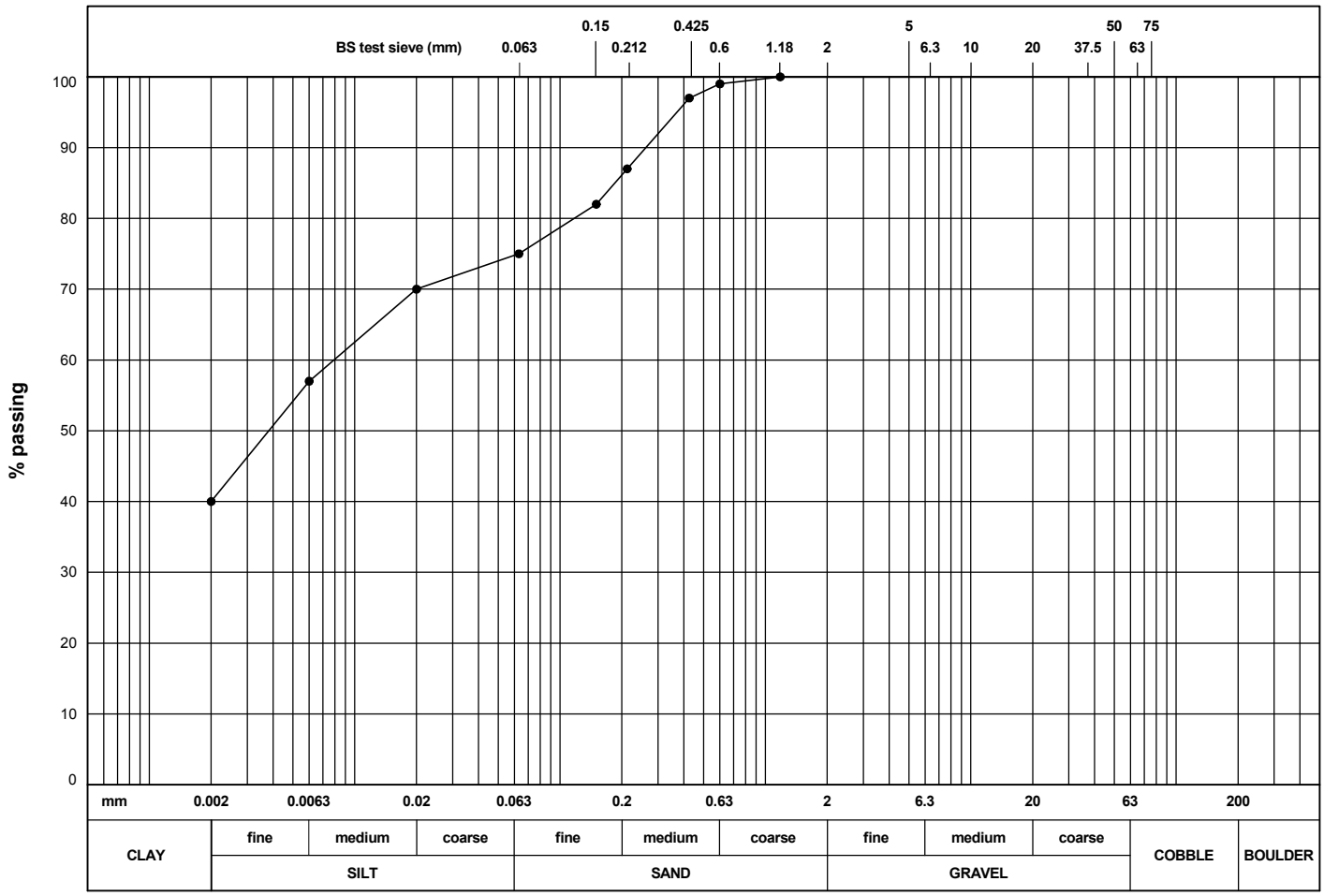
CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

DESCRIPTION Brown slightly sandy silty CLAY

BH/TP No.	TP101
SAMPLE No./TYPE	3B
SAMPLE DEPTH (m)	1.40
SPECIMEN DEPTH (m)	1.40



soil type	% fraction
CLAY	40
SILT	35
SILT & CLAY	75
SAND	25
GRAVEL	0
COBBLE & BOULDER	0
test method(s)	9.2 & 9.4

test method:
9.2 - wet sieving
9.3 - dry sieving
9.4 - sedimentation by pipette
9.5 - sedimentation by hydrometer

BS test sieve (mm)	% passing	BS test sieve (mm)	% passing
150		5	
75		2	
63		1.18	100
50		0.6	99
37.5		0.425	97
20		0.212	87
10		0.15	82
6.3		0.063	75

particle size (μm)	% finer
20	70
6	57
2	40

remarks:
# denotes sample tested is smaller than that which is recommended in accordance with BS1377

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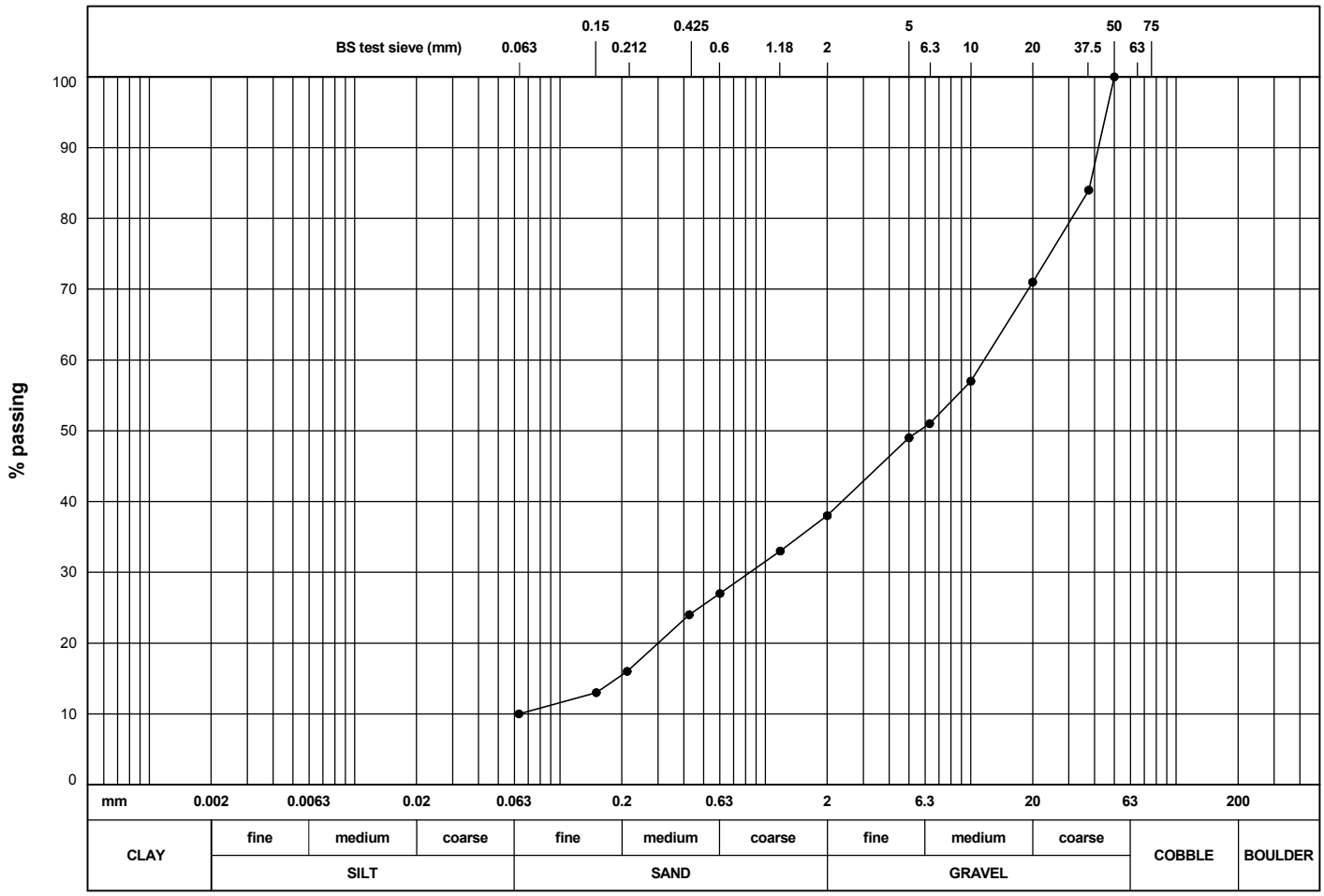
CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

DESCRIPTION Grey clayey very sandy GRAVEL

BH/TP No.	WS102
SAMPLE No./TYPE	2B
SAMPLE DEPTH (m)	0.60
SPECIMEN DEPTH (m)	0.60



soil type	% fraction
CLAY	
SILT	
SILT & CLAY	10
SAND	28
GRAVEL	62
COBBLE & BOULDER	0
test method(s)	9.2#

BS test sieve (mm)	% passing	BS test sieve (mm)	% passing	particle size (μm)	% finer
150		5	49	20	
75		2	38	6	
63		1.18	33	2	
50	100	0.6	27		
37.5	84	0.425	24		
20	71	0.212	16		
10	57	0.15	13		
6.3	51	0.063	10		

test method:
9.2 - wet sieving
9.3 - dry sieving
9.4 - sedimentation by pipette
9.5 - sedimentation by hydrometer

remarks:
# denotes sample tested is smaller than that which is recommended in accordance with BS1377

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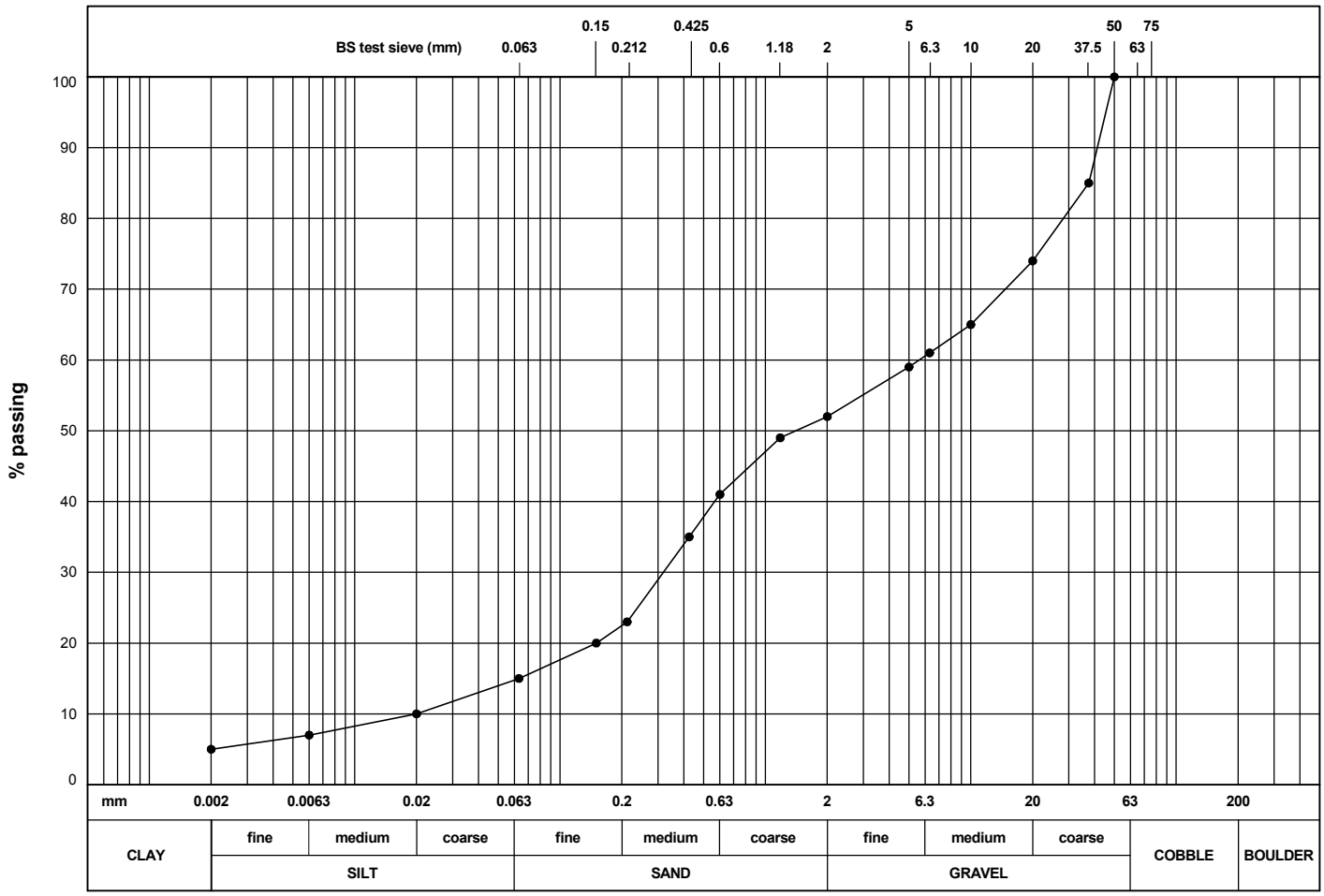
CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

DESCRIPTION Dark brown silty very gravelly SAND

BH/TP No.	WS107A
SAMPLE No./TYPE	3B
SAMPLE DEPTH (m)	0.90
SPECIMEN DEPTH (m)	0.90



soil type	% fraction
CLAY	5
SILT	10
SILT & CLAY	15
SAND	37
GRAVEL	48
COBBLE & BOULDER	0
test method(s)	9.2# & 9.4

BS test sieve (mm)	% passing
150	
75	
63	
50	100
37.5	85
20	74
10	65
6.3	61

BS test sieve (mm)	% passing
5	59
2	52
1.18	49
0.6	41
0.425	35
0.212	23
0.15	20
0.063	15

particle size (μm)	% finer
20	10
6	7
2	5

test method:
9.2 - wet sieving
9.3 - dry sieving
9.4 - sedimentation by pipette
9.5 - sedimentation by hydrometer

remarks:
# denotes sample tested is smaller than that which is recommended in accordance with BS1377

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DRY DENSITY/MOISTURE CONTENT RELATIONSHIP

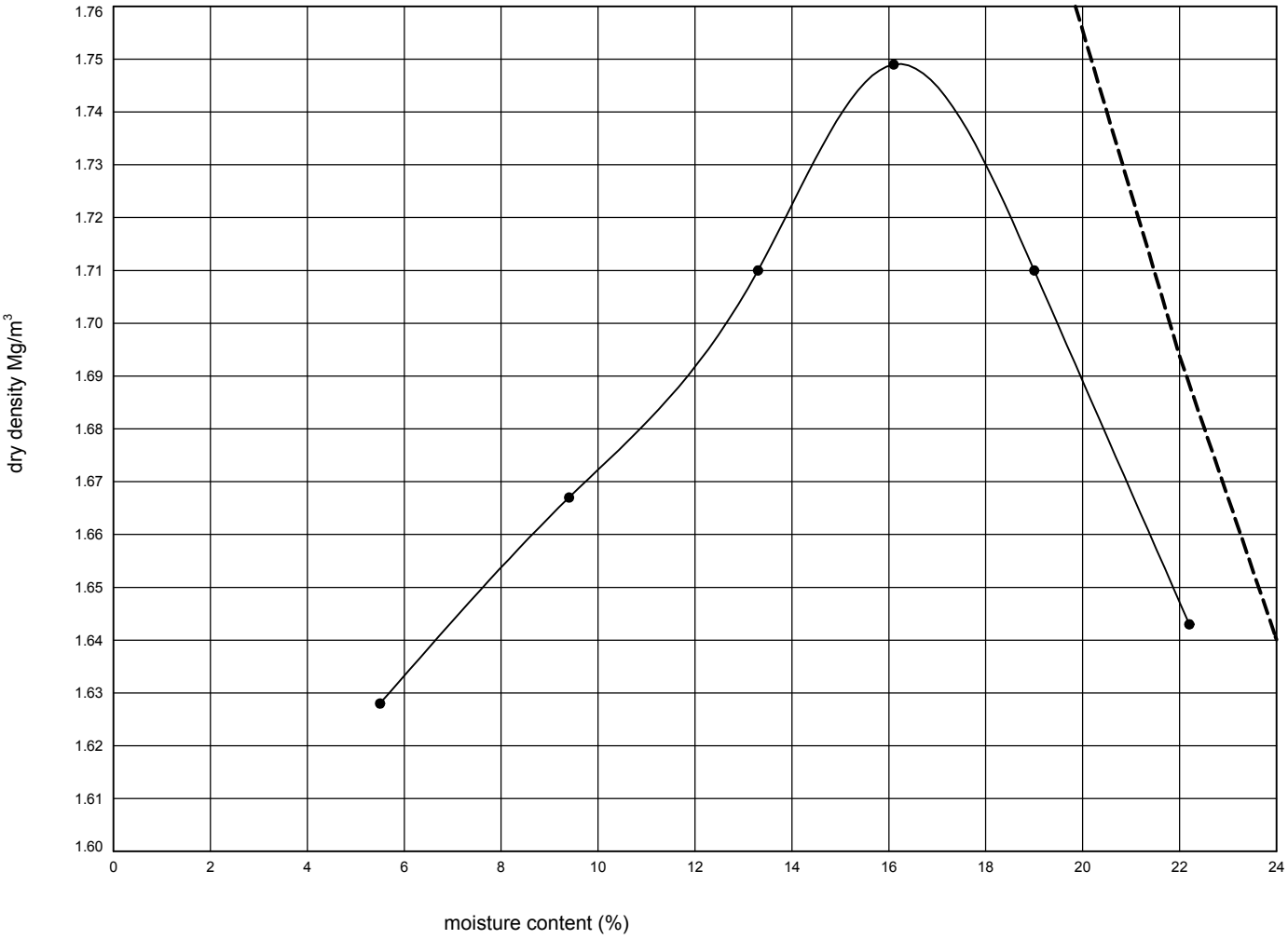
BS.1377 : Part 4 : 1990 : 3

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

DESCRIPTION Brown clayey very sandy GRAVEL

BH/TP No.	CP/RC101A
SAMPLE No./TYPE	3B
SAMPLE DEPTH (m)	1.00
SPECIMEN DEPTH (m)	1.00



test method		3.3.4.1 2.5kg dynamic compaction - 1L mould			
preparation procedure		3.2.5.1 (grading zone 3)			
sample preparation		C,R			
proportion retained on 37.5mm sieve	(%)	0	initial moisture content	(%)	19
proportion retained on 20mm sieve	(%)	15.8	maximum dry density	(Mg/m^3)	1.75
particle density	(Mg/m^3)	#2.70	optimum moisture content	(%)	16

remarks:

– – – – – represents 0% air voids curve

# denotes particle density has been assigned an assumed value
C denotes sample has been chopped to pass 20mm sieve
S denotes sample has been shredded to pass 20mm sieve
R denotes sample material has been recycled between/for points
Test carried out non standard as requested

CONTRACT	CHECKED
31847	**JC**

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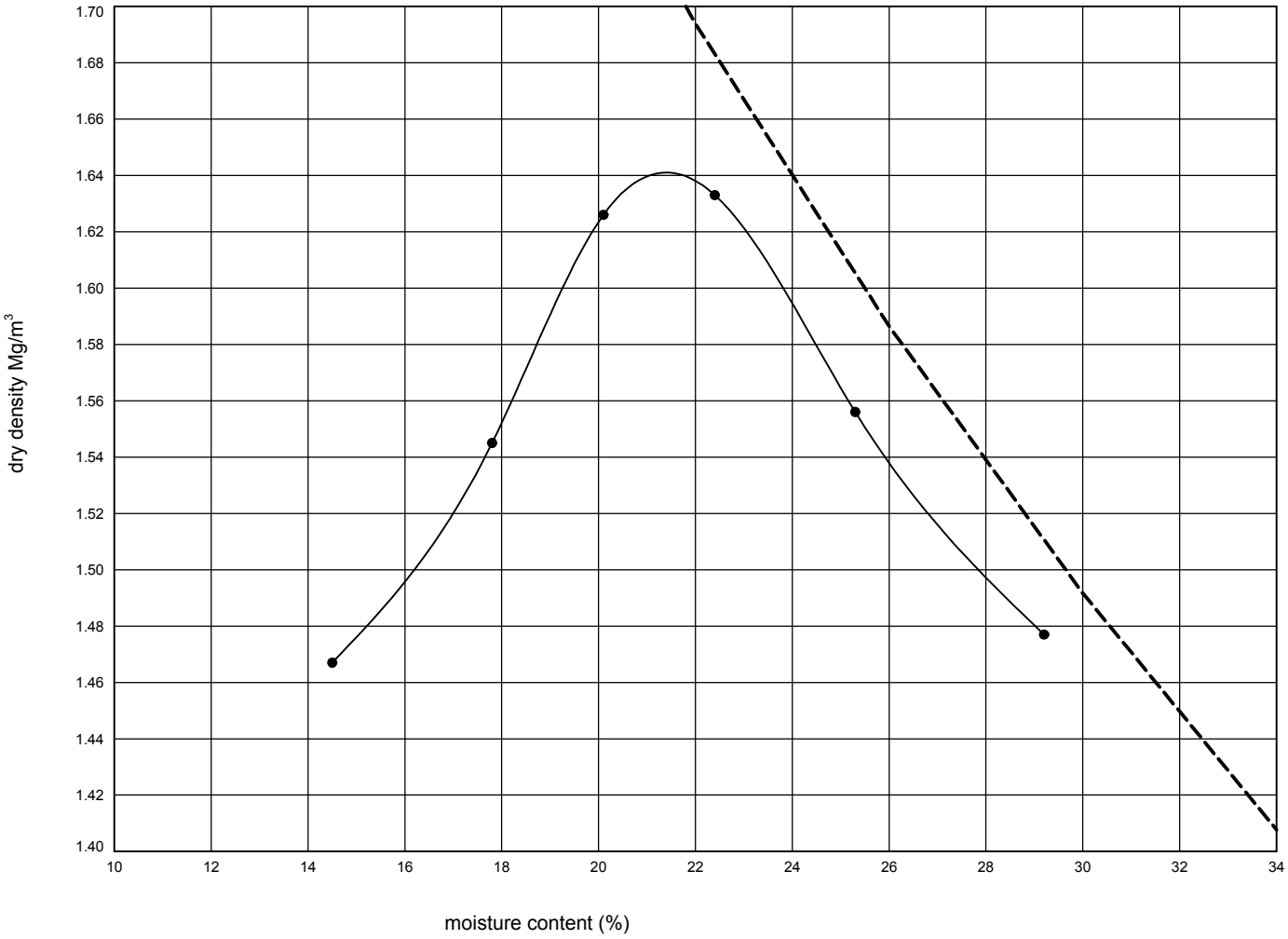
DRY DENSITY/MOISTURE CONTENT RELATIONSHIP

BS.1377 : Part 4 : 1990 : 3

CLIENT	ASK PROPERTY DEVELOPMENTS LTD	BH/TP No.	CP/RC102
SITE	PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER	SAMPLE No./TYPE	2B
		SAMPLE DEPTH (m)	0.30
DESCRIPTION	Brown slightly gravelly slightly sandy silty CLAY	SPECIMEN DEPTH (m)	0.30



test method		3.3.4.1 2.5kg dynamic compaction - 1L mould			
preparation procedure		3.2.4.1 (grading zone 1)			
sample preparation		C,R			
proportion retained on 37.5mm sieve	(%)	0	initial moisture content	(%)	22
proportion retained on 20mm sieve	(%)	0	maximum dry density	(Mg/m^3)	1.64
particle density	(Mg/m^3)	#2.70	optimum moisture content	(%)	21

remarks:

– – – – – represents 0% air voids curve

# denotes particle density has been assigned
an assumed value
C denotes sample has been chopped to pass 20mm sieve
S denotes sample has been shredded to pass 20mm sieve
R denotes sample material has been recycled between/for points

CONTRACT	CHECKED
31847	**JC**

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Geotechnical Engineering Limited

DRY DENSITY/MOISTURE CONTENT RELATIONSHIP

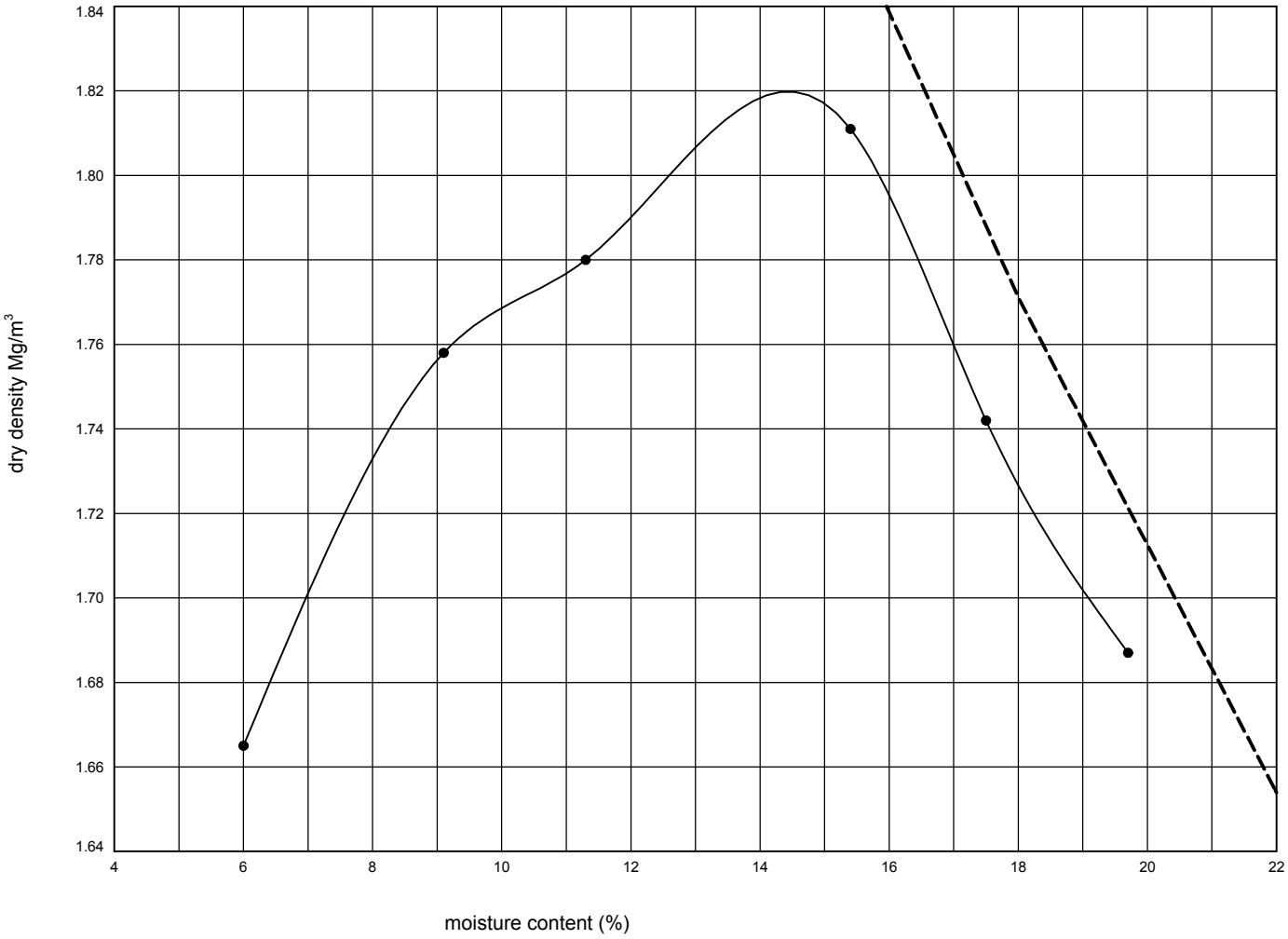
BS.1377 : Part 4 : 1990 : 3

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

DESCRIPTION Brown clayey gravelly SAND

BH/TP No.	CP/RC102A
SAMPLE No./TYPE	4B
SAMPLE DEPTH (m)	1.00
SPECIMEN DEPTH (m)	1.00



test method		3.3.4.1 2.5kg dynamic compaction - 1L mould			
preparation procedure		3.2.4.2 (grading zone 2)			
sample preparation		C,R			
proportion retained on 37.5mm sieve	(%)	0	initial moisture content	(%)	12
proportion retained on 20mm sieve	(%)	3.1	maximum dry density	(Mg/m^3)	1.82
particle density	(Mg/m^3)	#2.60	optimum moisture content	(%)	14

remarks:

– – – – – represents 0% air voids curve

# denotes particle density has been assigned
an assumed value
C denotes sample has been chopped to pass 20mm sieve
S denotes sample has been shredded to pass 20mm sieve
R denotes sample material has been recycled between/for points

CONTRACT	CHECKED
31847	**JC**

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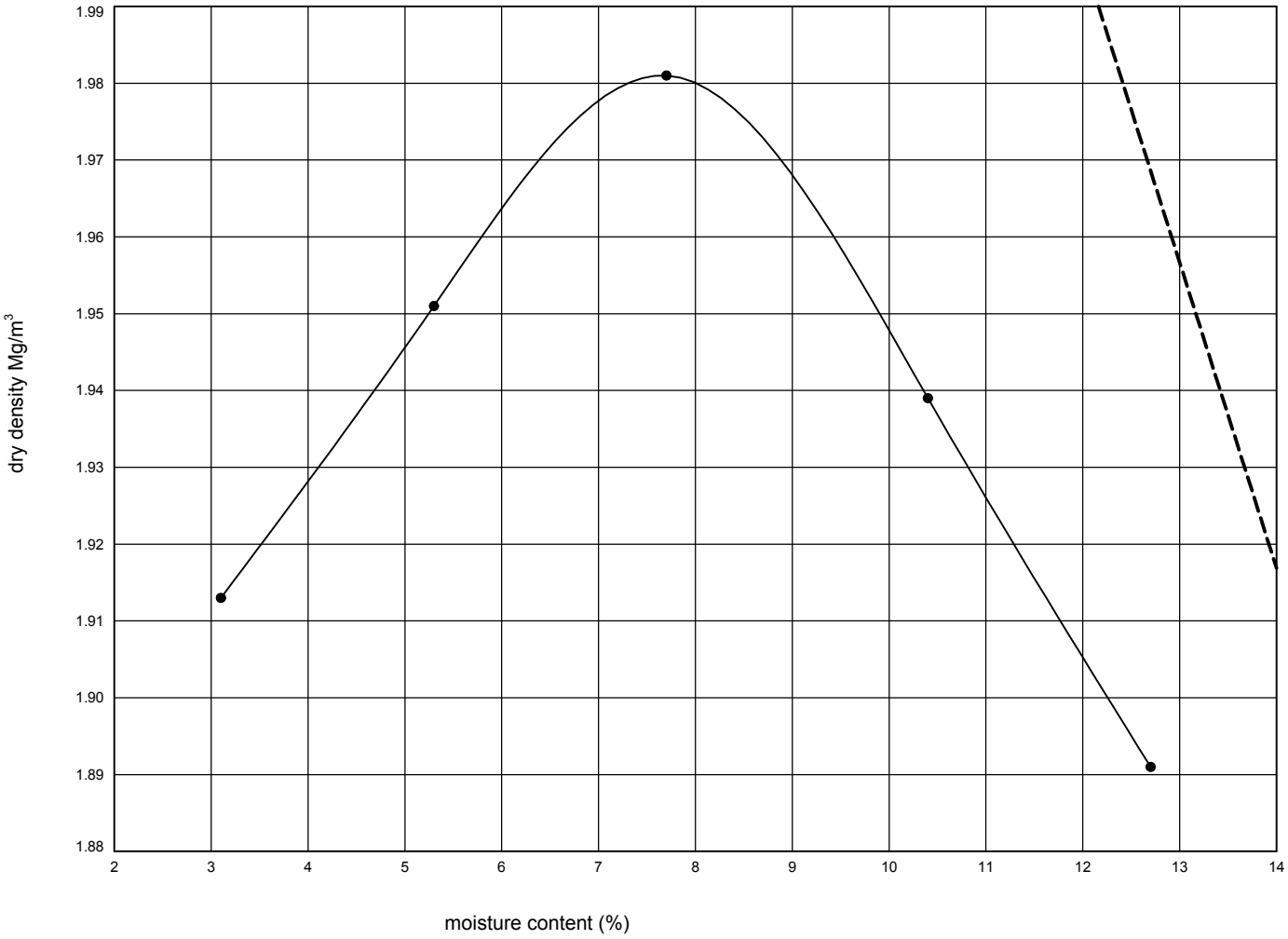
Geotechnical Engineering Limited

DRY DENSITY/MOISTURE CONTENT RELATIONSHIP

BS.1377 : Part 4 : 1990 : 3

CLIENT	ASK PROPERTY DEVELOPMENTS LTD	BH/TP No.	CP/RC102A
SITE	PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER	SAMPLE No./TYPE	10L
		SAMPLE DEPTH (m)	3.20
DESCRIPTION	Brown clayey very sandy GRAVEL	SPECIMEN DEPTH (m)	3.20



test method		3.4.4.1 2.5kg dynamic compaction - CBR mould			
preparation procedure		3.2.5.1 (grading zone 3)			
sample preparation		C,R			
proportion retained on 37.5mm sieve	(%)	0	initial moisture content	(%)	3.1
proportion retained on 20mm sieve	(%)	12.1	maximum dry density	(Mg/m^3)	1.98
particle density	(Mg/m^3)	#2.62	optimum moisture content	(%)	7.7

remarks:

– – – – – represents 0% air voids curve

# denotes particle density has been assigned
an assumed value
C denotes sample has been chopped to pass 20mm sieve
S denotes sample has been shredded to pass 20mm sieve
R denotes sample material has been recycled between/for points

CONTRACT	CHECKED
31847	**JC**

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Geotechnical Engineering Limited

DRY DENSITY/MOISTURE CONTENT RELATIONSHIP

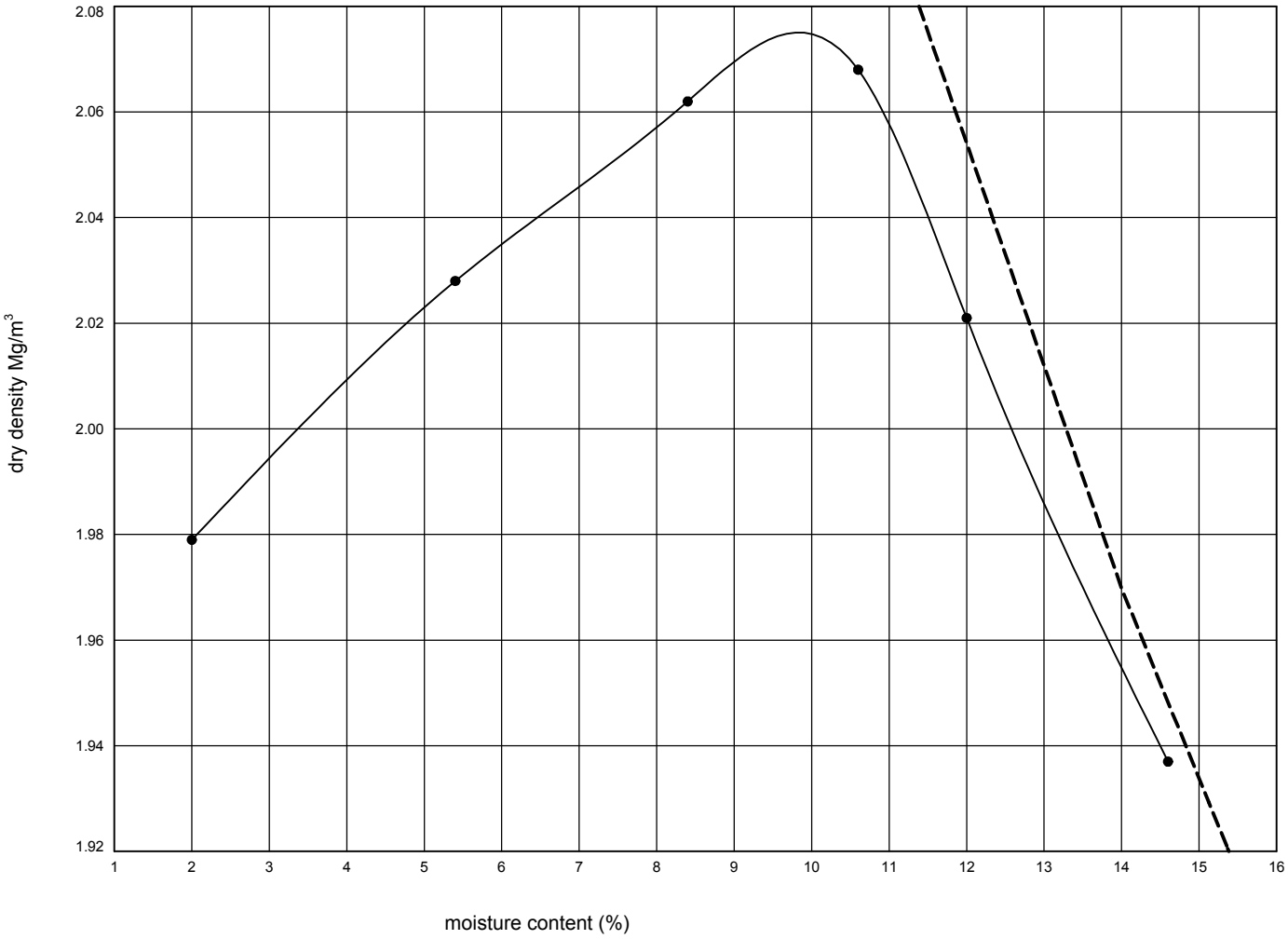
BS.1377 : Part 4 : 1990 : 3

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

DESCRIPTION Brown slightly clayey very sandy GRAVEL

BH/TP No.	CP/RC103
SAMPLE No./TYPE	3B
SAMPLE DEPTH (m)	0.60
SPECIMEN DEPTH (m)	0.60



test method		3.3.4.1 2.5kg dynamic compaction - 1L mould			
preparation procedure		Grading zone X (Test not applicable)			
sample preparation		C,R			
proportion retained on 37.5mm sieve	(%)	10.6	initial moisture content	(%)	6.8
proportion retained on 20mm sieve	(%)	15.2	maximum dry density	(Mg/m^3)	2.07
particle density	(Mg/m^3)	#2.72	optimum moisture content	(%)	9.7

remarks:

– – – – – represents 0% air voids curve

# denotes particle density has been assigned an assumed value
C denotes sample has been chopped to pass 20mm sieve
S denotes sample has been shredded to pass 20mm sieve
R denotes sample material has been recycled between/for points
Test carried out non standard as requested

CONTRACT	CHECKED
31847	**JC**

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Geotechnical Engineering Limited

DRY DENSITY/MOISTURE CONTENT RELATIONSHIP

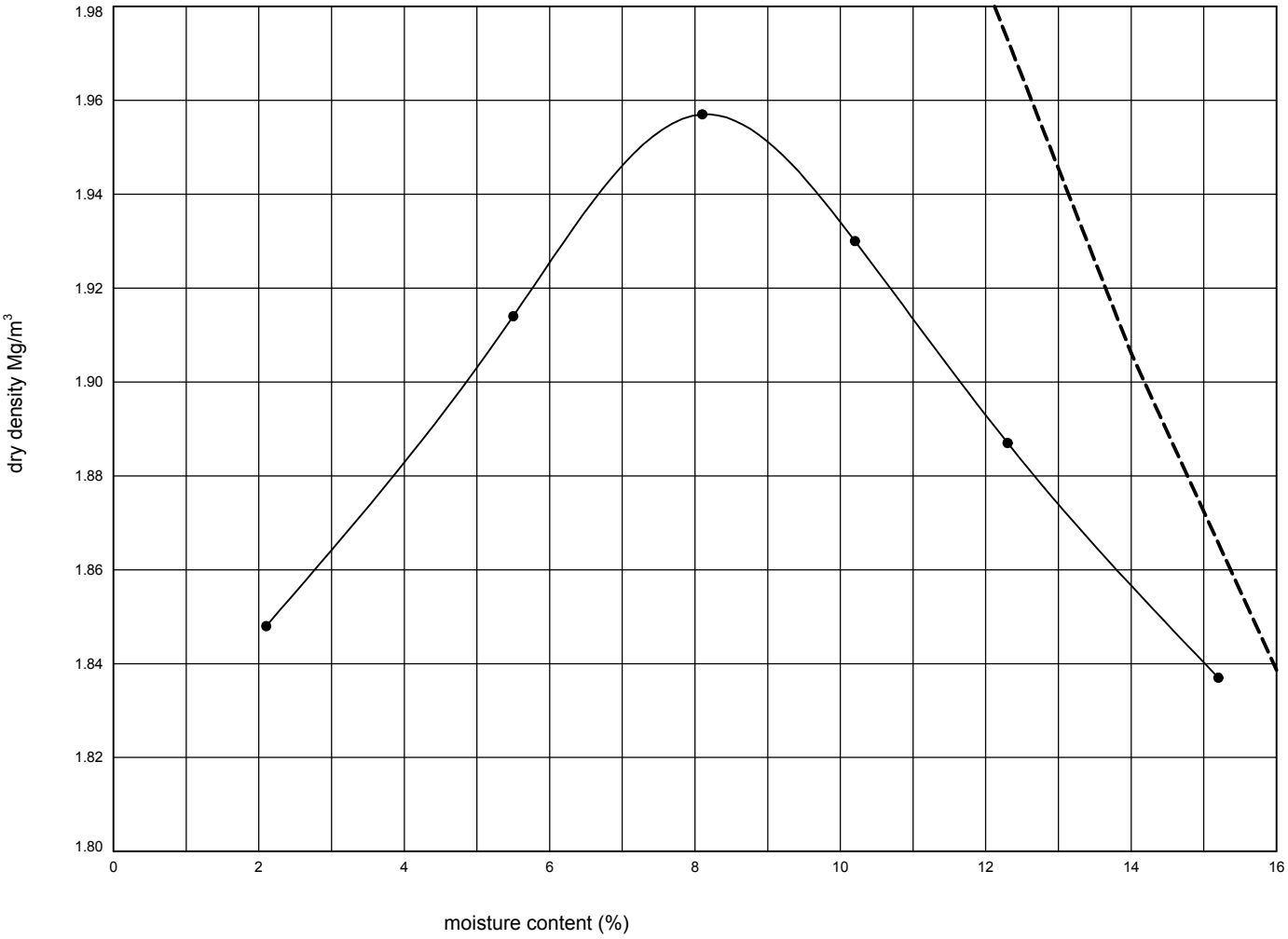
BS.1377 : Part 4 : 1990 : 3

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

DESCRIPTION Brown slightly sandy slightly gravelly CLAY

BH/TP No.	CP/RC105
SAMPLE No./TYPE	1B
SAMPLE DEPTH (m)	0.30
SPECIMEN DEPTH (m)	0.30



test method		3.3.4.1 2.5kg dynamic compaction - 1L mould			
preparation procedure		3.2.5.2 (grading zone 4)			
sample preparation		C,R			
proportion retained on 37.5mm sieve	(%)	3.4	initial moisture content	(%)	8.6
proportion retained on 20mm sieve	(%)	12.0	maximum dry density	(Mg/m^3)	1.96
particle density	(Mg/m^3)	#2.60	optimum moisture content	(%)	8.0

remarks:

– – – – – represents 0% air voids curve

# denotes particle density has been assigned
an assumed value
C denotes sample has been chopped to pass 20mm sieve
S denotes sample has been shredded to pass 20mm sieve
R denotes sample material has been recycled between/for points

CONTRACT	CHECKED
31847	**JC**

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DRY DENSITY/MOISTURE CONTENT RELATIONSHIP

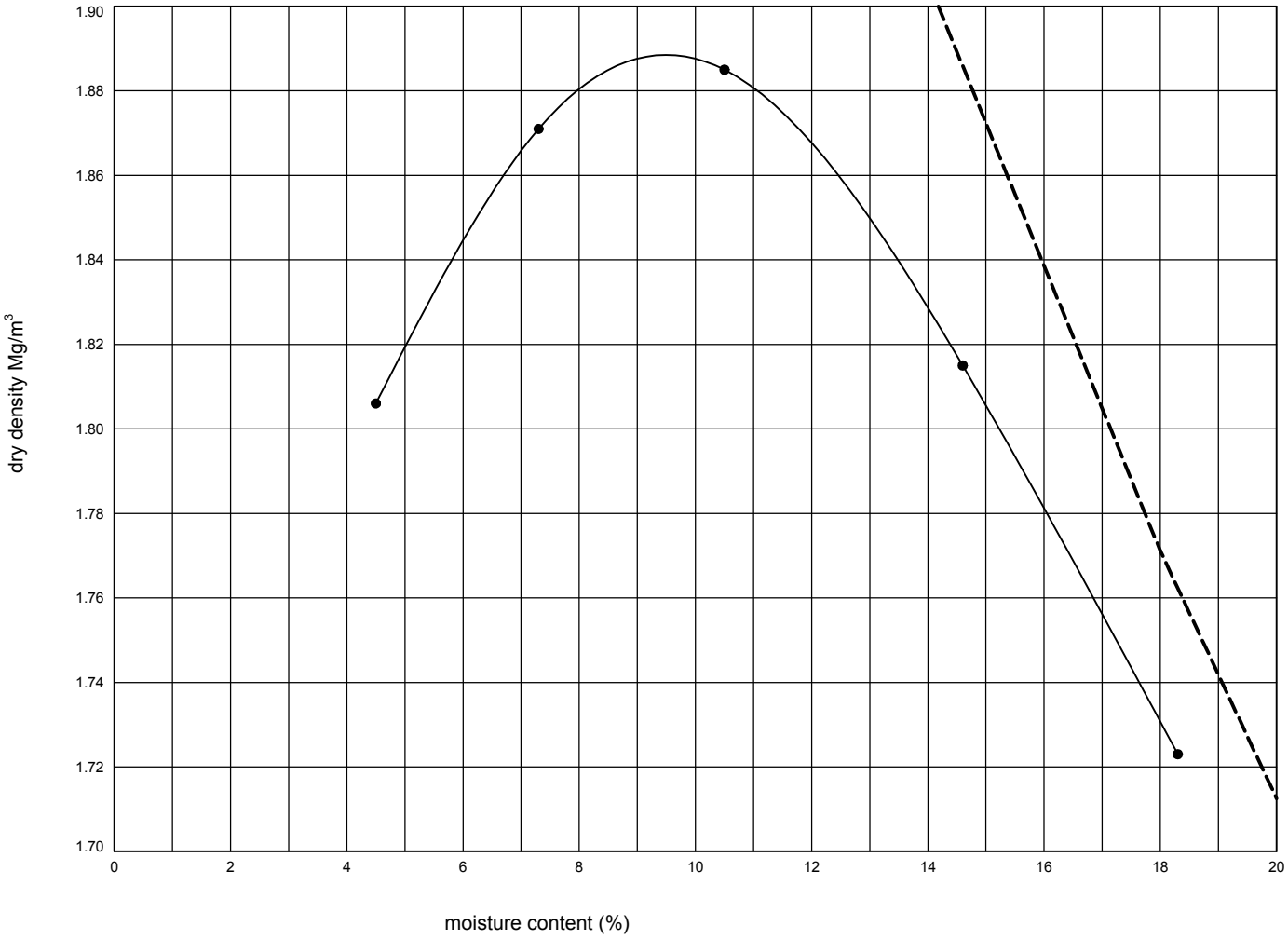
BS.1377 : Part 4 : 1990 : 3

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

DESCRIPTION Brown silty very sandy GRAVEL

BH/TP No.	CP/RC106A
SAMPLE No./TYPE	3B
SAMPLE DEPTH (m)	0.60
SPECIMEN DEPTH (m)	0.60



test method		3.4.4.1 2.5kg dynamic compaction - CBR mould			
preparation procedure		3.2.5.2 (grading zone 4)			
sample preparation		C,R			
proportion retained on 37.5mm sieve	(%)	2.7	initial moisture content	(%)	22
proportion retained on 20mm sieve	(%)	8.6	maximum dry density	(Mg/m^3)	1.89
particle density	(Mg/m^3)	#2.60	optimum moisture content	(%)	9.6

remarks:

– – – – – represents 0% air voids curve

# denotes particle density has been assigned
an assumed value
C denotes sample has been chopped to pass 20mm sieve
S denotes sample has been shredded to pass 20mm sieve
R denotes sample material has been recycled between/for points

CONTRACT	CHECKED
31847	**JC**

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DRY DENSITY/MOISTURE CONTENT RELATIONSHIP

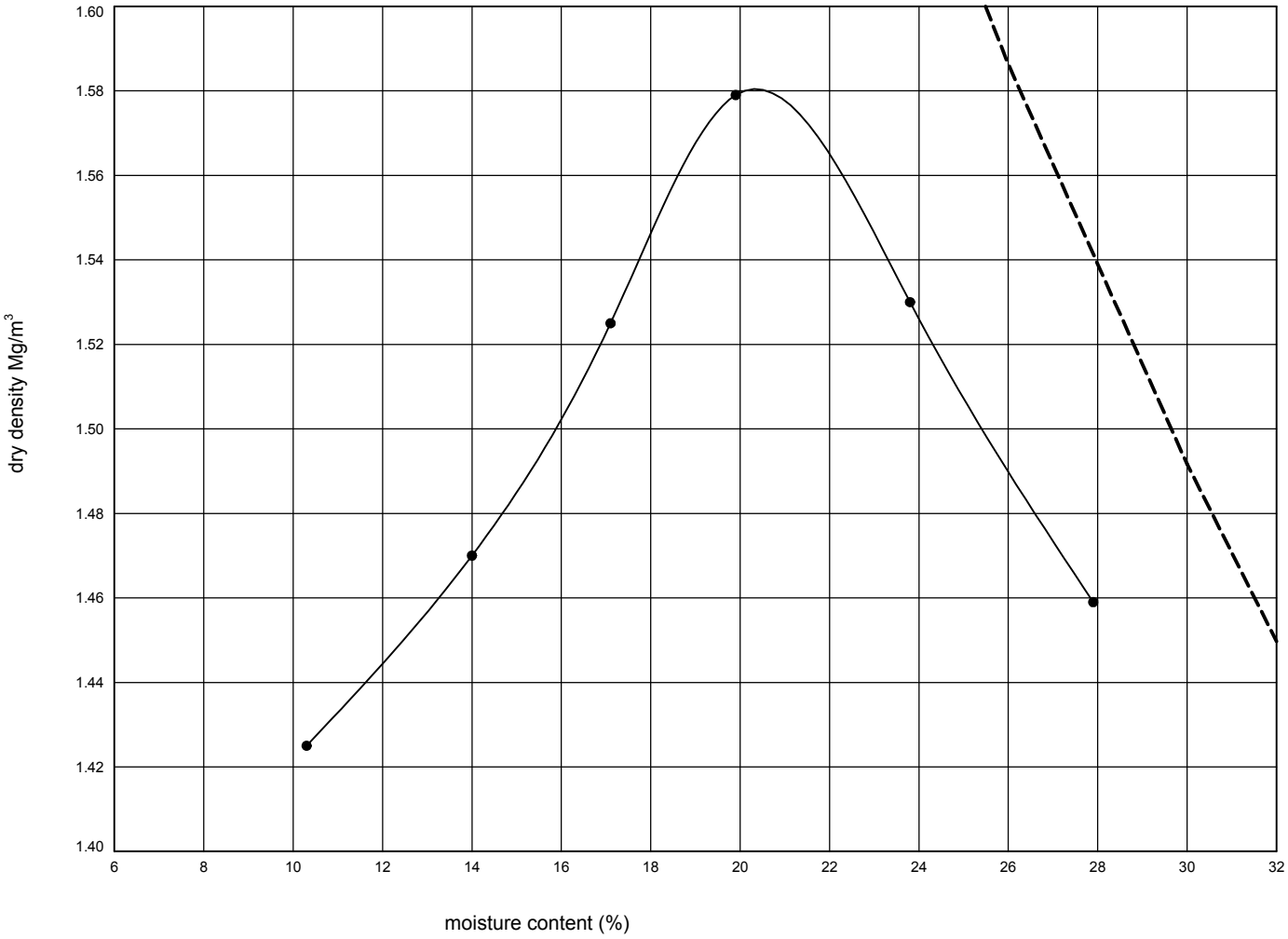
BS.1377 : Part 4 : 1990 : 3

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

DESCRIPTION Grey clayey very sandy GRAVEL

BH/TP No.	WS102
SAMPLE No./TYPE	2B
SAMPLE DEPTH (m)	0.60
SPECIMEN DEPTH (m)	0.60



test method		3.3.4.1 2.5kg dynamic compaction - 1L mould			
preparation procedure		Grading zone X (Test not applicable)			
sample preparation		C,R			
proportion retained on 37.5mm sieve	(%)	15.6	initial moisture content	(%)	23
proportion retained on 20mm sieve	(%)	13.1	maximum dry density	(Mg/m^3)	1.58
particle density	(Mg/m^3)	#2.70	optimum moisture content	(%)	20

remarks:

– – – – – represents 0% air voids curve

# denotes particle density has been assigned
an assumed value
C denotes sample has been chopped to pass 20mm sieve
S denotes sample has been shredded to pass 20mm sieve
R denotes sample material has been recycled between/for points
Test carried out non standard as requested

CONTRACT	CHECKED
31847	**JC**

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DRY DENSITY/MOISTURE CONTENT RELATIONSHIP

BS.1377 : Part 4 : 1990 : 3

CLIENT	ASK PROPERTY DEVELOPMENTS LTD	BH/TP No.	WS106
SITE	PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER	SAMPLE No./TYPE	2B
		SAMPLE DEPTH (m)	0.60
DESCRIPTION	Brown slightly gravelly very clayey SAND	SPECIMEN DEPTH (m)	0.60

test method		3.3.4.1 2.5kg dynamic compaction - 1L mould			
preparation procedure		3.2.4.1 (grading zone 1)			
sample preparation		C,R			
proportion retained on 37.5mm sieve	(%)	0	initial moisture content	(%)	20
proportion retained on 20mm sieve	(%)	0	maximum dry density	(Mg/m^3)	1.77
particle density	(Mg/m^3)	#2.70	optimum moisture content	(%)	15

remarks:

– – – – – represents 0% air voids curve

# denotes particle density has been assigned
an assumed value
C denotes sample has been chopped to pass 20mm sieve
S denotes sample has been shredded to pass 20mm sieve
R denotes sample material has been recycled between/for points

CONTRACT	CHECKED
31847	**JC**

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Geotechnical Engineering Limited

CALIFORNIA BEARING RATIO

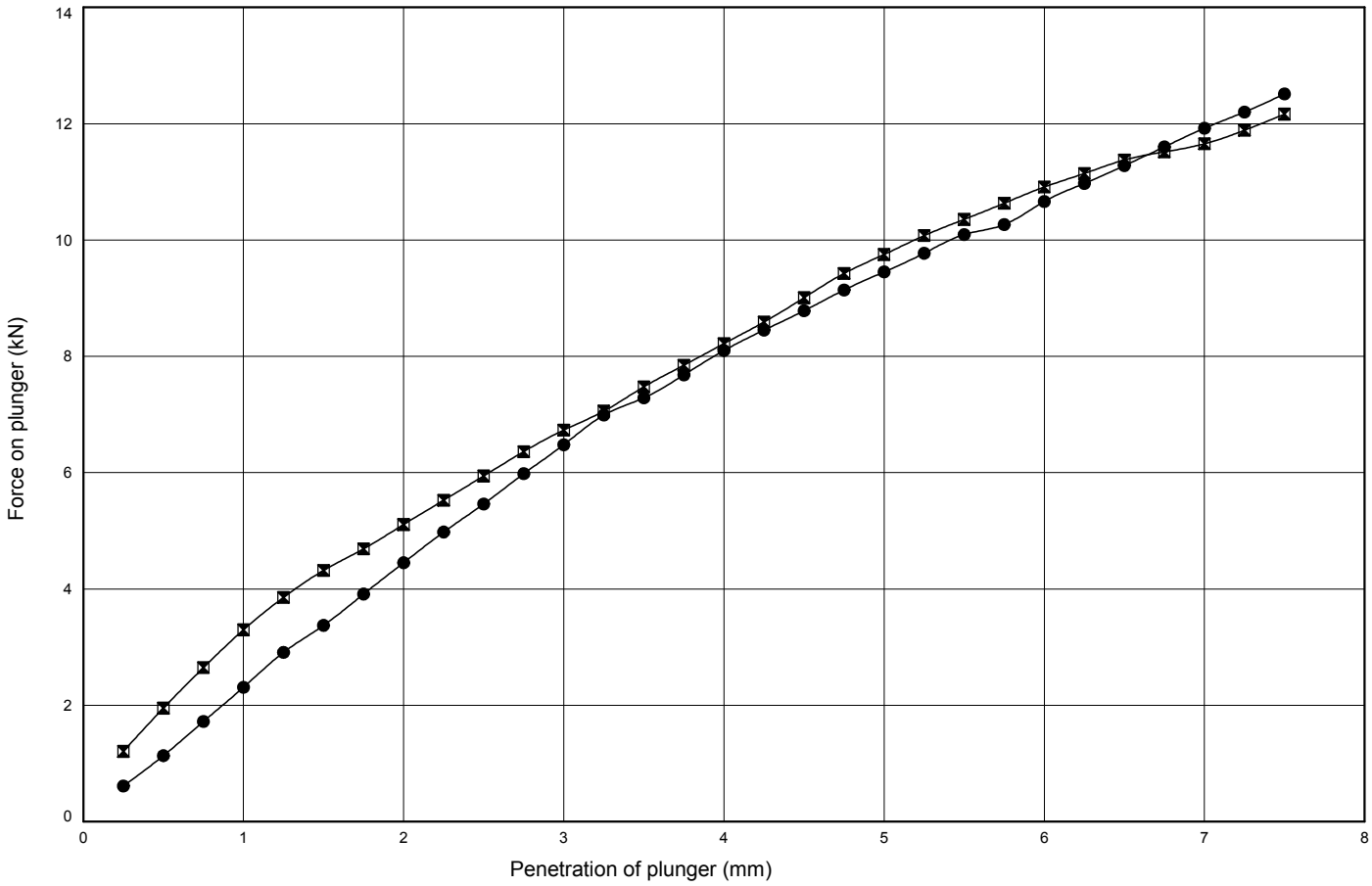
BS.1377 : Part 4 : 1990 : 7

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

DESCRIPTION Dark brown slightly silty gravelly SAND

BH/TP No.	CP/RC101A
SAMPLE No./TYPE	1B
SAMPLE DEPTH (m)	0.30
SPECIMEN DEPTH (m)	0.30



sample preparation:	Dynamic compaction - 2.5Kg rammer		
proportion >20mm removed (%)	7.2	sample condition	Unsoaked
surcharge mass (kg)	10	amount of swell (mm)	N/A
INITIAL CONDITIONS		FINAL CONDITIONS	
moisture content (%)	6.1	moisture content - top (%)	6.4
bulk density (Mg/m^3)	1.98	moisture content - base (%)	6.2
dry density (Mg/m^3)	1.87		

remarks:

CBR value top (%)	47
CBR value base (%)	49
average CBR value (%)	48

Top Base

CONTRACT	CHECKED
31847	**JC**

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Geotechnical Engineering Limited

CALIFORNIA BEARING RATIO

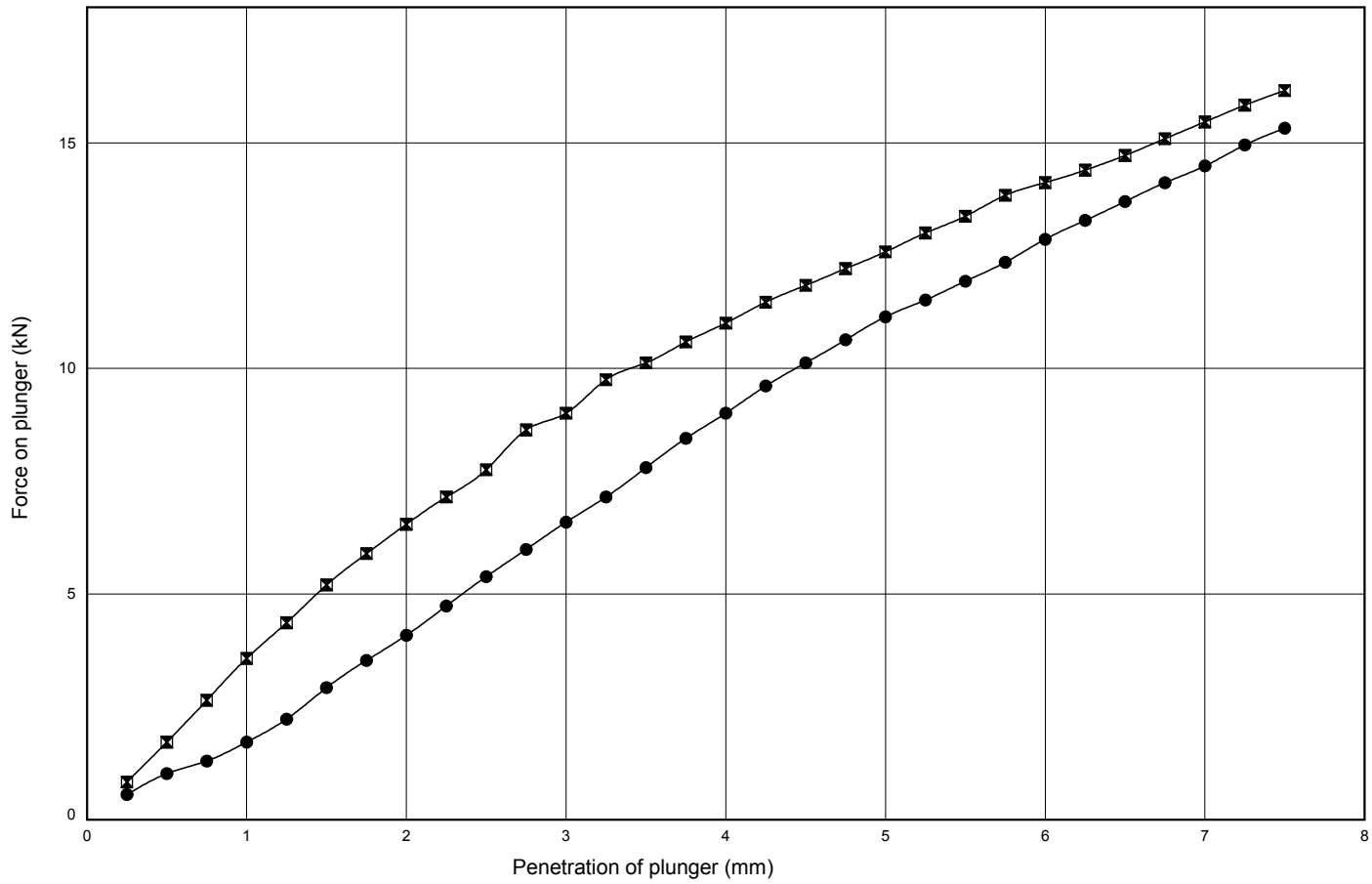
BS.1377 : Part 4 : 1990 : 7

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

DESCRIPTION Grey clayey very sandy GRAVEL with high cobble content

BH/TP No.	CP/RC117A
SAMPLE No./TYPE	1B
SAMPLE DEPTH (m)	0.30
SPECIMEN DEPTH (m)	0.30



sample preparation:	Dynamic compaction - 2.5Kg rammer		
proportion >20mm removed (%)	22.4	sample condition	Unsoaked
surcharge mass (kg)	10	amount of swell (mm)	N/A
INITIAL CONDITIONS		FINAL CONDITIONS	
moisture content (%)	17	moisture content - top (%)	17
bulk density (Mg/m^3)	1.94	moisture content - base (%)	17
dry density (Mg/m^3)	1.66		

remarks:

Non Standard

CBR value top (%)	56
CBR value base (%)	63
average CBR value (%)	59

Top Base

CONTRACT	CHECKED
31847	**JC**

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CALIFORNIA BEARING RATIO

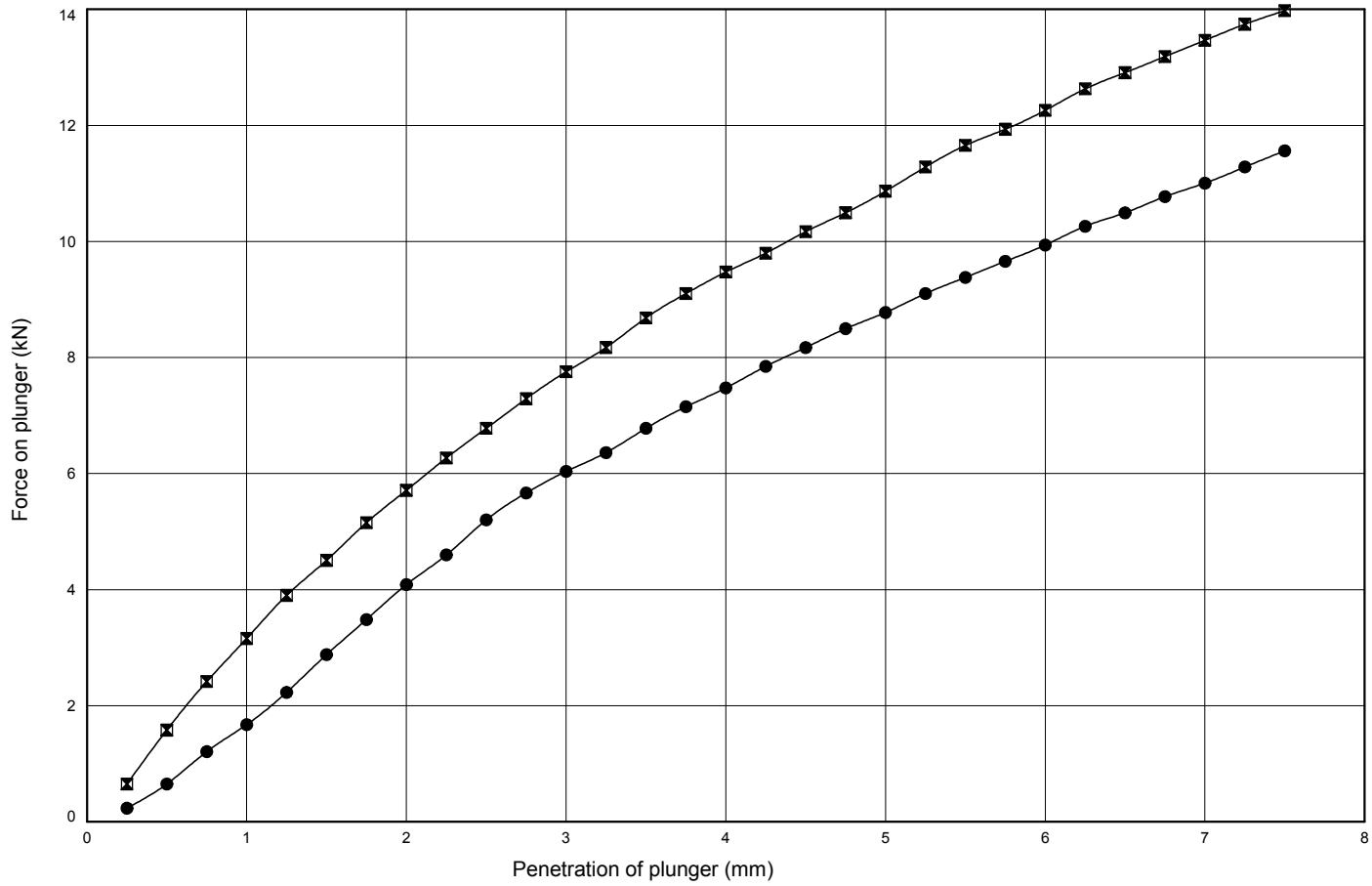
BS.1377 : Part 4 : 1990 : 7

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

DESCRIPTION Dark grey silty very sandy GRAVEL

BH/TP No.	TP101
SAMPLE No./TYPE	1B
SAMPLE DEPTH (m)	0.20
SPECIMEN DEPTH (m)	0.20



sample preparation:	Dynamic compaction - 2.5Kg rammer		
proportion >20mm removed (%)	5.1	sample condition	Unsoaked
surcharge mass (kg)	10	amount of swell (mm)	N/A
INITIAL CONDITIONS		FINAL CONDITIONS	
moisture content (%)	11	moisture content - top (%)	10
bulk density (Mg/m^3)	2.05	moisture content - base (%)	14
dry density (Mg/m^3)	1.84		

remarks:

CBR value top (%)	44
CBR value base (%)	54
average CBR value (%)	

Top Base

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31847	**JC**

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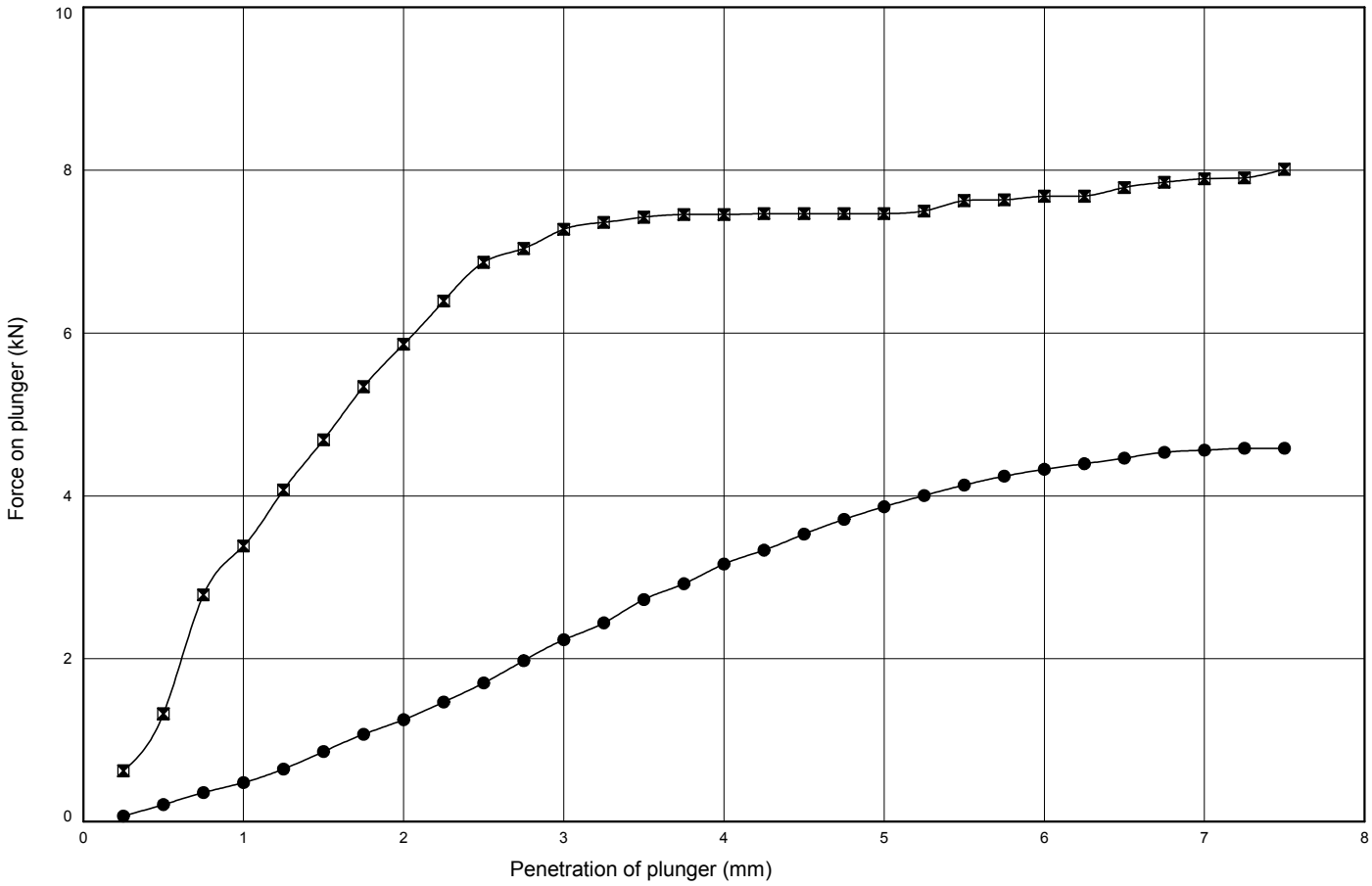
CALIFORNIA BEARING RATIO

BS.1377 : Part 4 : 1990 : 7

CLIENT	ASK PROPERTY DEVELOPMENTS LTD	BH/TP No.	TP101
SITE	PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER	SAMPLE No./TYPE	2B
		SAMPLE DEPTH (m)	0.60
DESCRIPTION	Orangish brown slightly clayey very gravelly SAND	SPECIMEN DEPTH (m)	0.60



sample preparation:	Dynamic compaction - 2.5Kg rammer		
proportion >20mm removed (%)	10.8	sample condition	Unsoaked
surcharge mass (kg)	10	amount of swell (mm)	N/A
INITIAL CONDITIONS		FINAL CONDITIONS	
moisture content (%)	7.7	moisture content - top (%)	7.7
bulk density (Mg/m^3)	1.99	moisture content - base (%)	7.9
dry density (Mg/m^3)	1.85		

remarks:

CBR value top (%)	19
CBR value base (%)	48
average CBR value (%)	

Top Base

CONTRACT	CHECKED
31847	**JC**

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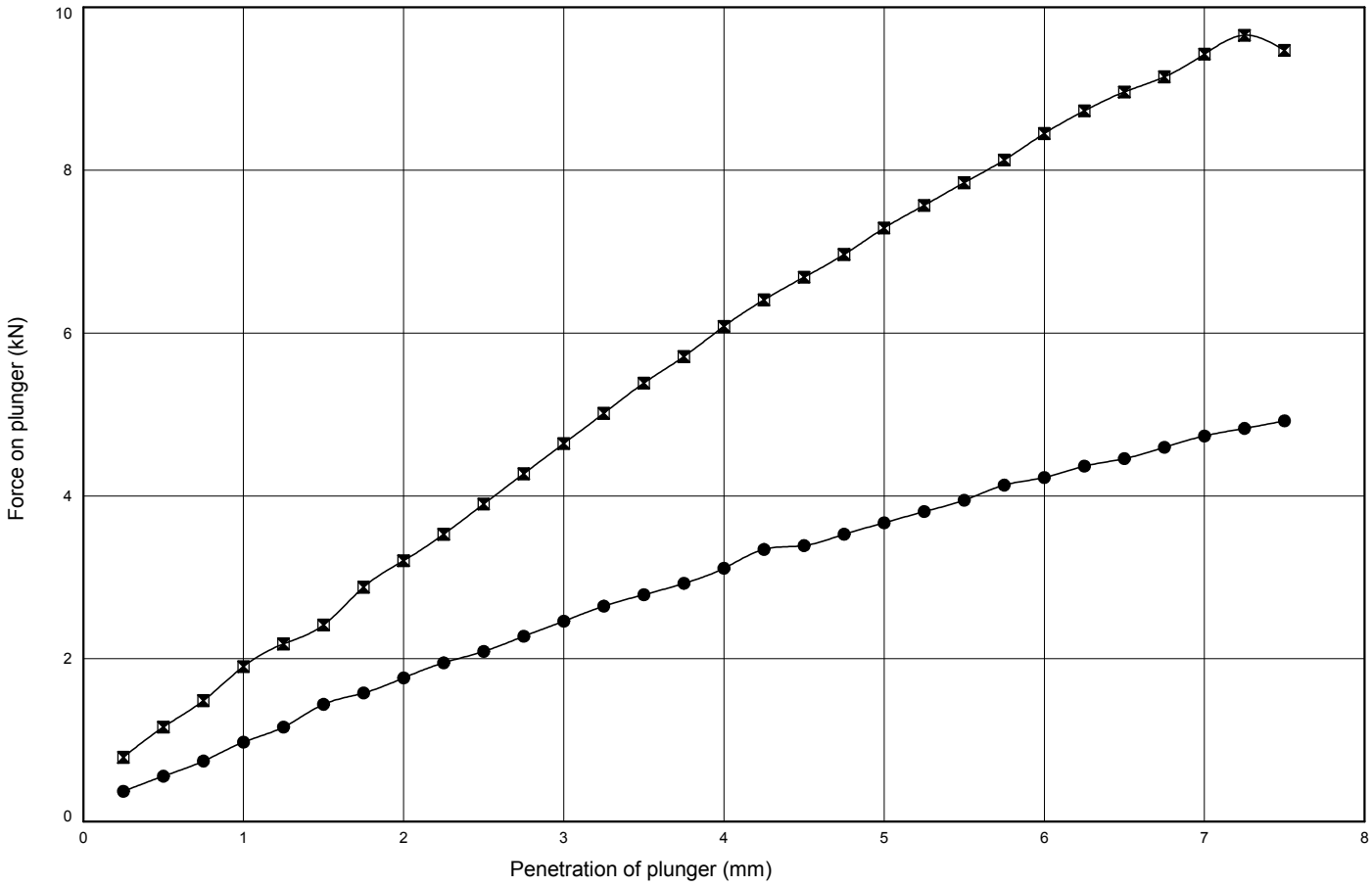
Geotechnical Engineering Limited

CALIFORNIA BEARING RATIO

BS.1377 : Part 4 : 1990 : 7

CLIENT	ASK PROPERTY DEVELOPMENTS LTD	BH/TP No.	TP102
SITE	PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER	SAMPLE No./TYPE	2B
		SAMPLE DEPTH (m)	1.10
DESCRIPTION	Brown slightly gravelly slightly sandy CLAY	SPECIMEN DEPTH (m)	1.10



sample preparation:	Dynamic compaction - 2.5Kg rammer		
proportion >20mm removed (%)	2.5	sample condition	Unsoaked
surcharge mass (kg)	10	amount of swell (mm)	N/A
INITIAL CONDITIONS		FINAL CONDITIONS	
moisture content (%)	17	moisture content - top (%)	16
bulk density (Mg/m^3)	2.15	moisture content - base (%)	17
dry density (Mg/m^3)	1.83		

remarks:

CBR value top (%)	2.5
CBR value base (%)	2.7
average CBR value (%)	2.6

Top Base

CONTRACT	CHECKED
31847	**JC**

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Geotechnical Engineering Limited

CALIFORNIA BEARING RATIO

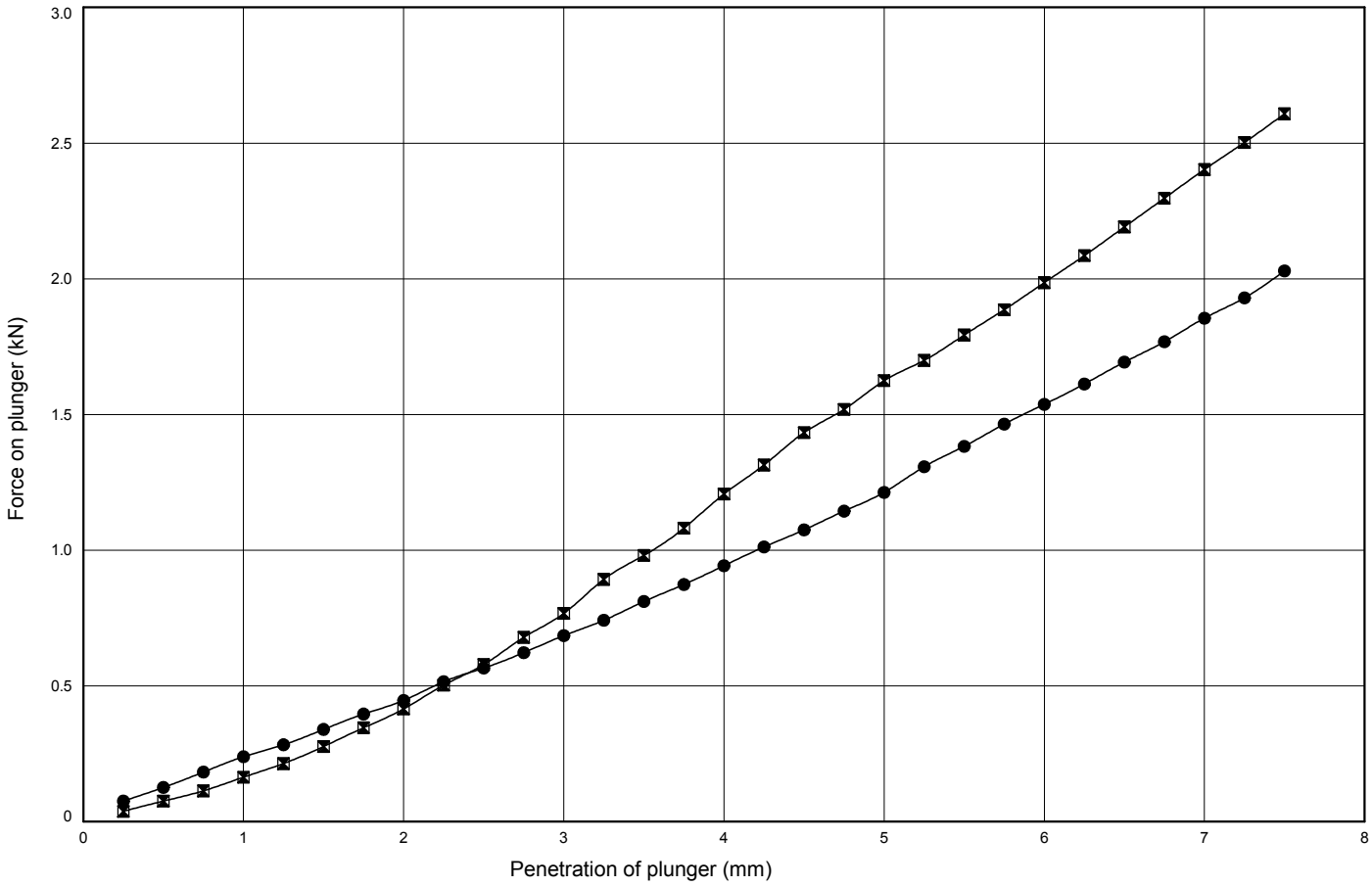
BS.1377 : Part 4 : 1990 : 7

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

DESCRIPTION Brown clayey very gravelly SAND

BH/TP No.	TP105
SAMPLE No./TYPE	1B
SAMPLE DEPTH (m)	0.30
SPECIMEN DEPTH (m)	0.30



sample preparation:	Dynamic compaction - 2.5Kg rammer		
proportion >20mm removed (%)	15.7	sample condition	Unsoaked
surcharge mass (kg)	10	amount of swell (mm)	N/A
INITIAL CONDITIONS		FINAL CONDITIONS	
moisture content (%)	14	moisture content - top (%)	15
bulk density (Mg/m^3)	2.17	moisture content - base (%)	14
dry density (Mg/m^3)	1.90		

remarks:

CBR value top (%)	6.1
CBR value base (%)	8.1
average CBR value (%)	

Top Base

CONTRACT	CHECKED
31847	**JC**

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Geotechnical Engineering Limited

CALIFORNIA BEARING RATIO

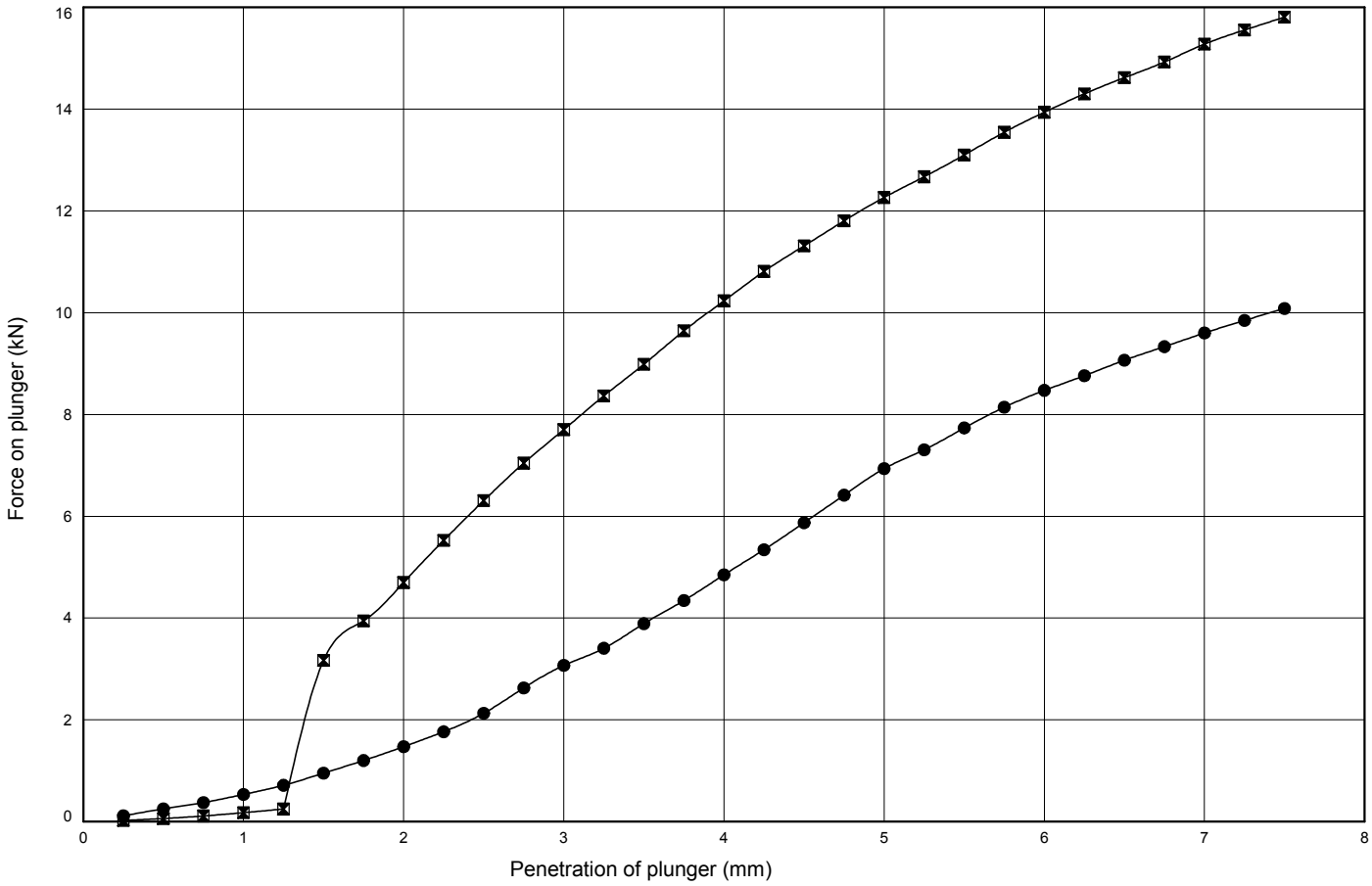
BS.1377 : Part 4 : 1990 : 7

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

DESCRIPTION Brown slightly clayey sandy GRAVEL

BH/TP No.	TP105
SAMPLE No./TYPE	2B
SAMPLE DEPTH (m)	1.00
SPECIMEN DEPTH (m)	1.00



sample preparation:	Dynamic compaction - 2.5Kg rammer		
proportion >20mm removed (%)	15.9	sample condition	Unsoaked
surcharge mass (kg)	10	amount of swell (mm)	N/A
INITIAL CONDITIONS		FINAL CONDITIONS	
moisture content (%)	10	moisture content - top (%)	11
bulk density (Mg/m^3)	2.25	moisture content - base (%)	11
dry density (Mg/m^3)	2.05		

remarks:

CBR value top (%)	35
CBR value base (%)	61
average CBR value (%)	

Top Base

CONTRACT	CHECKED
31847	**JC**

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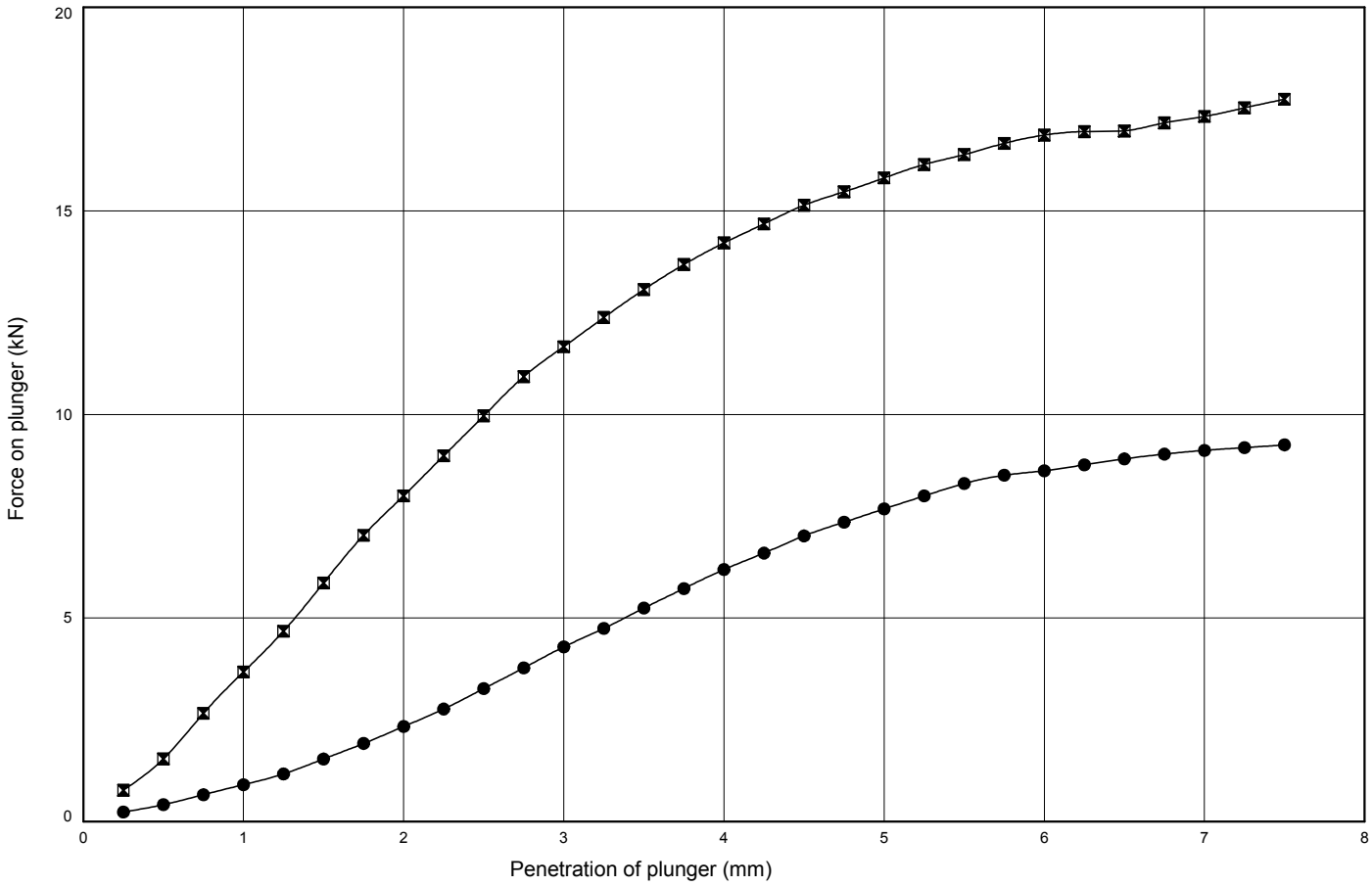
CALIFORNIA BEARING RATIO

BS.1377 : Part 4 : 1990 : 7

CLIENT	ASK PROPERTY DEVELOPMENTS LTD	BH/TP No.	TP107
SITE	PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER	SAMPLE No./TYPE	2B
		SAMPLE DEPTH (m)	1.20
DESCRIPTION	Orangish brown slightly clayey very gravelly SAND	SPECIMEN DEPTH (m)	1.20



sample preparation:	Dynamic compaction - 2.5Kg rammer		
proportion >20mm removed (%)	9.9	sample condition	Unsoaked
surcharge mass (kg)	10	amount of swell (mm)	N/A
INITIAL CONDITIONS		FINAL CONDITIONS	
moisture content (%)	7.6	moisture content - top (%)	8.2
bulk density (Mg/m^3)	2.17	moisture content - base (%)	8.4
dry density (Mg/m^3)	2.02		

remarks:

CBR value top (%)	38
CBR value base (%)	79
average CBR value (%)	

Top Base

CONTRACT	CHECKED
31847	**JC**

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CALIFORNIA BEARING RATIO

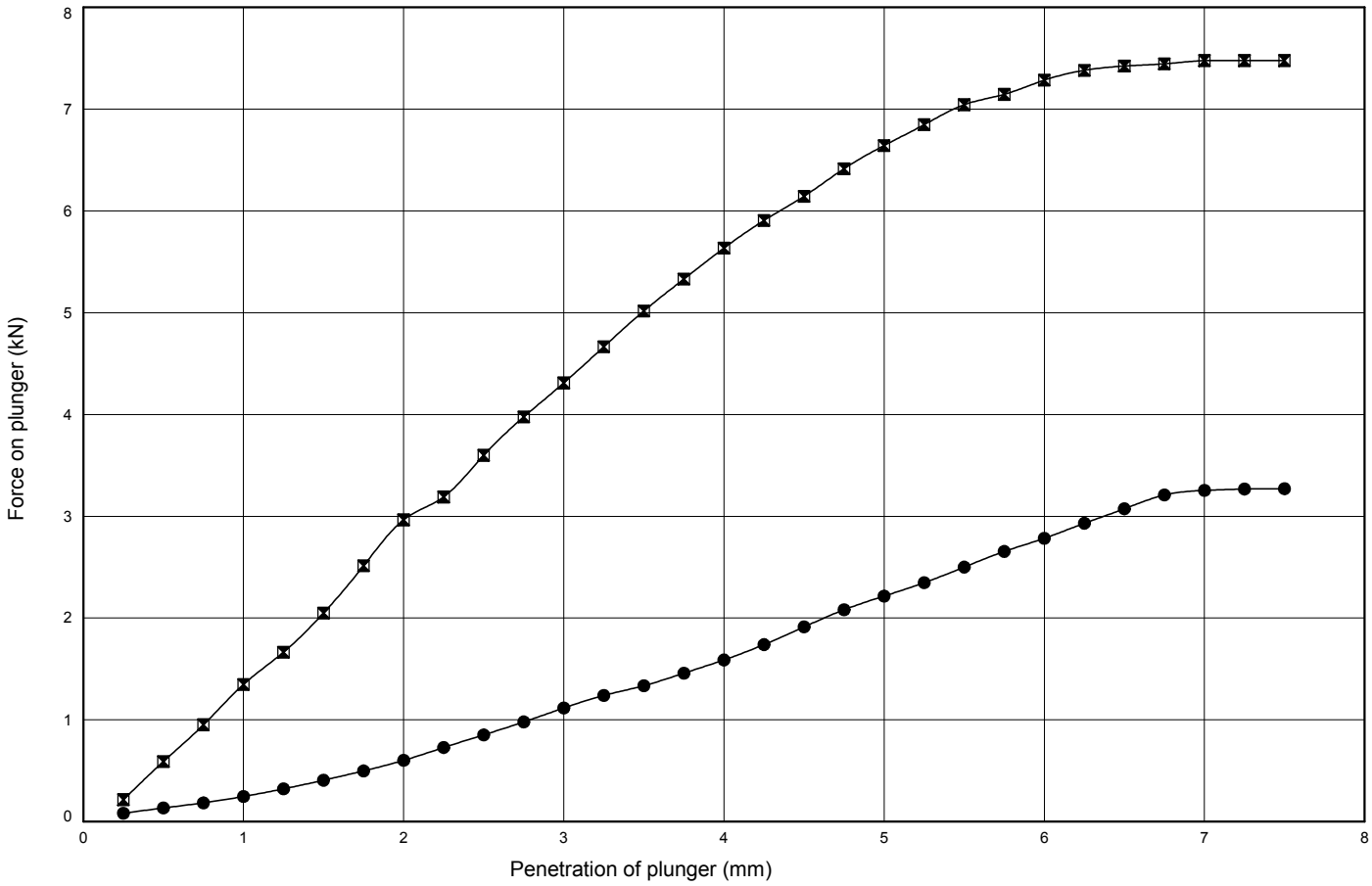
BS.1377 : Part 4 : 1990 : 7

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

DESCRIPTION Dark orangish brown slightly clayey very sandy GRAVEL

BH/TP No.	TP107
SAMPLE No./TYPE	3B
SAMPLE DEPTH (m)	2.40
SPECIMEN DEPTH (m)	2.40



sample preparation:	Dynamic compaction - 2.5Kg rammer		
proportion >20mm removed (%)	12.3	sample condition	Unsoaked
surcharge mass (kg)	10	amount of swell (mm)	N/A
INITIAL CONDITIONS		FINAL CONDITIONS	
moisture content (%)	9.6	moisture content - top (%)	14
bulk density (Mg/m^3)	2.11	moisture content - base (%)	13
dry density (Mg/m^3)	1.92		

remarks:

CBR value top (%)	11
CBR value base (%)	33
average CBR value (%)	

Top Base

CONTRACT	CHECKED
31847	**JC**

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CALIFORNIA BEARING RATIO

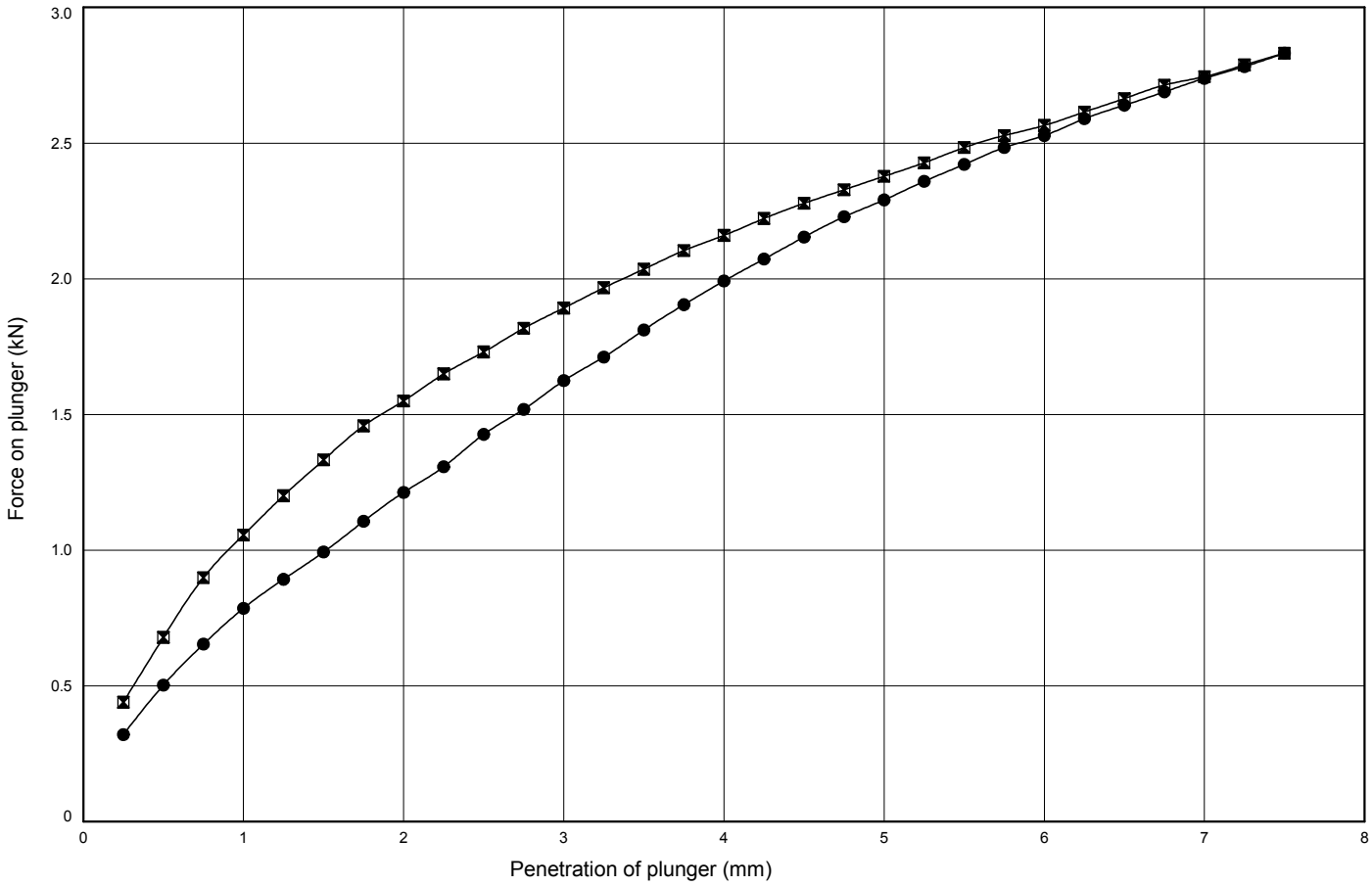
BS.1377 : Part 4 : 1990 : 7

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

DESCRIPTION Orangish brown slightly sandy slightly gravelly silty CLAY

BH/TP No.	TP110
SAMPLE No./TYPE	1B
SAMPLE DEPTH (m)	0.40
SPECIMEN DEPTH (m)	0.40



sample preparation:	Dynamic compaction - 2.5Kg rammer		
proportion >20mm removed (%)	0.9	sample condition	Unsoaked
surcharge mass (kg)	10	amount of swell (mm)	N/A
INITIAL CONDITIONS		FINAL CONDITIONS	
moisture content (%)	19	moisture content - top (%)	19
bulk density (Mg/m^3)	2.03	moisture content - base (%)	19
dry density (Mg/m^3)	1.70		

remarks:

CBR value top (%)	11
CBR value base (%)	13
average CBR value (%)	12

Top Base

CONTRACT	CHECKED
31847	**JC**

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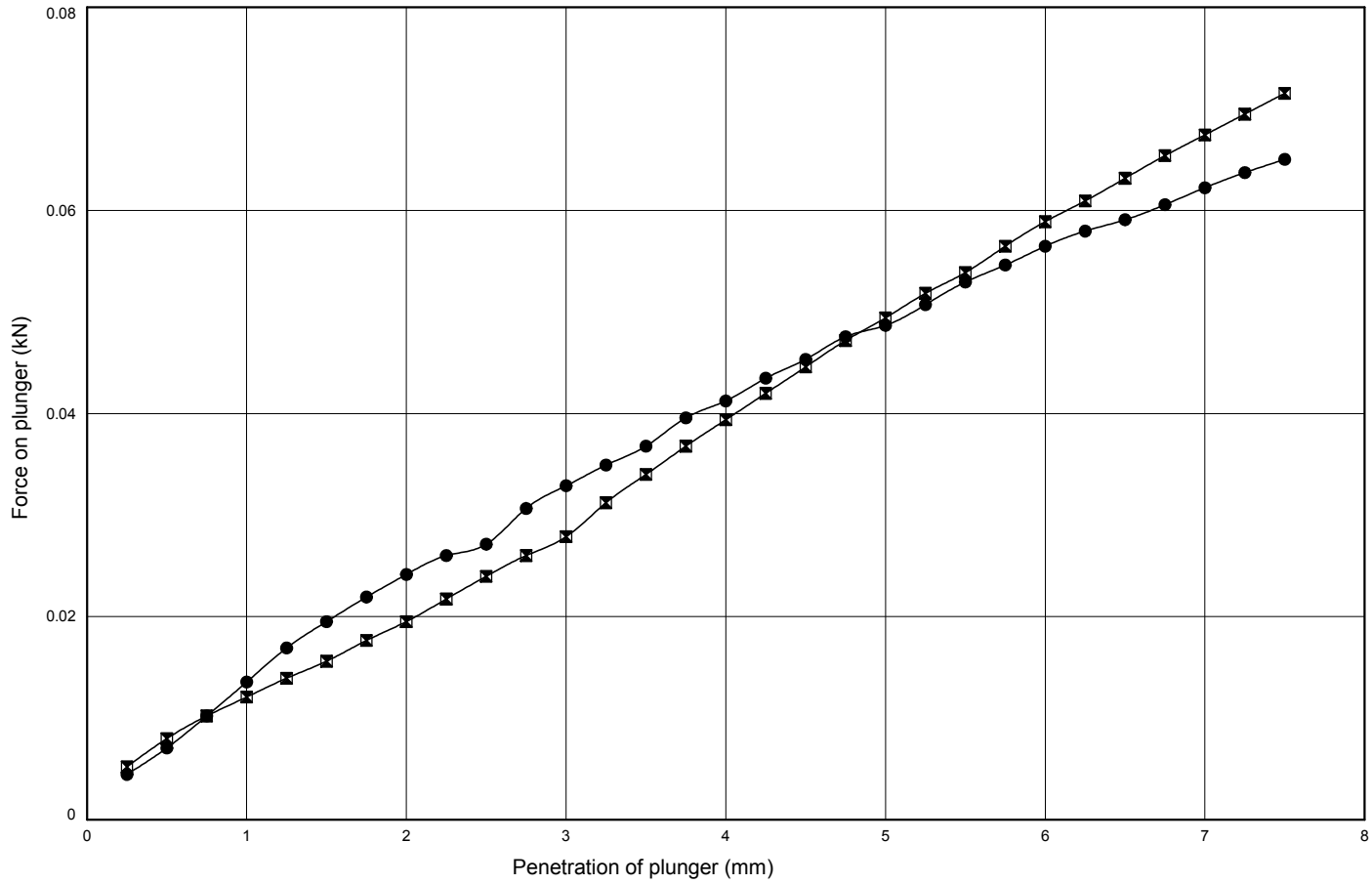
CALIFORNIA BEARING RATIO

BS.1377 : Part 4 : 1990 : 7

CLIENT	ASK PROPERTY DEVELOPMENTS LTD	BH/TP No.	TP110
SITE	PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER	SAMPLE No./TYPE	5B
		SAMPLE DEPTH (m)	2.80
DESCRIPTION	Orangish brown slightly gravelly sandy CLAY	SPECIMEN DEPTH (m)	2.80



sample preparation:	Dynamic compaction - 2.5Kg rammer		
proportion >20mm removed (%)	0	sample condition	Unsoaked
surcharge mass (kg)	10	amount of swell (mm)	N/A
INITIAL CONDITIONS		FINAL CONDITIONS	
moisture content (%)	20	moisture content - top (%)	19
bulk density (Mg/m^3)	2.08	moisture content - base (%)	18
dry density (Mg/m^3)	1.74		

remarks:

CBR value top (%)	0.24
CBR value base (%)	0.25
average CBR value (%)	0.25

Top Base

CONTRACT	CHECKED
31847	**JC**

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CALIFORNIA BEARING RATIO

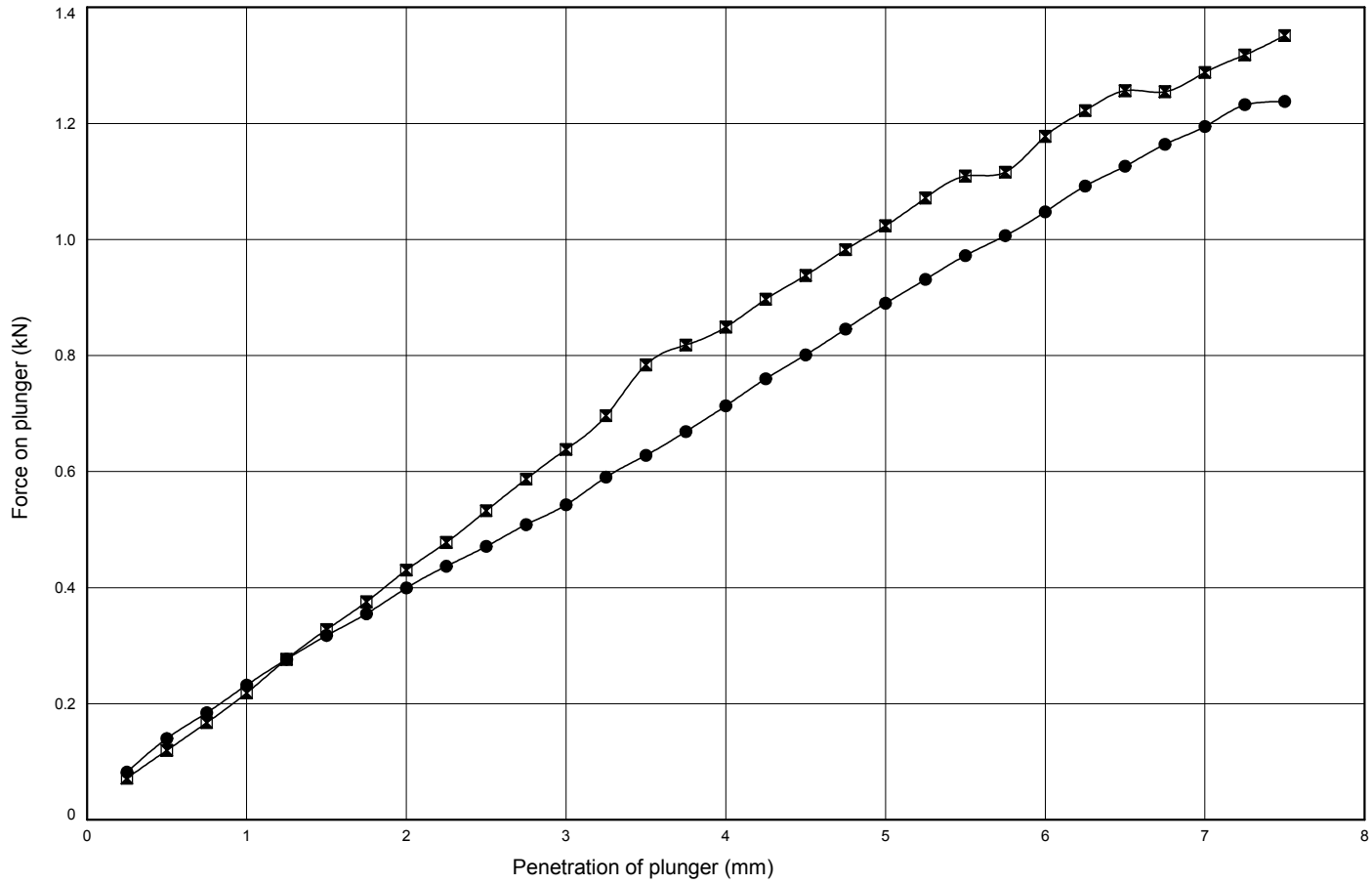
BS.1377 : Part 4 : 1990 : 7

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

DESCRIPTION Brown slightly sandy gravelly silty CLAY

BH/TP No.	TP111
SAMPLE No./TYPE	2B
SAMPLE DEPTH (m)	0.80
SPECIMEN DEPTH (m)	0.80



sample preparation:	Dynamic compaction - 2.5Kg rammer		
proportion >20mm removed (%)	4.5	sample condition	Unsoaked
surcharge mass (kg)	10	amount of swell (mm)	N/A
INITIAL CONDITIONS		FINAL CONDITIONS	
moisture content (%)	18	moisture content - top (%)	19
bulk density (Mg/m^3)	2.03	moisture content - base (%)	18
dry density (Mg/m^3)	1.72		

remarks:

CBR value top (%)	4.5
CBR value base (%)	5.1
average CBR value (%)	4.8

Top Base

CONTRACT	CHECKED
31847	**JC**

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CALIFORNIA BEARING RATIO

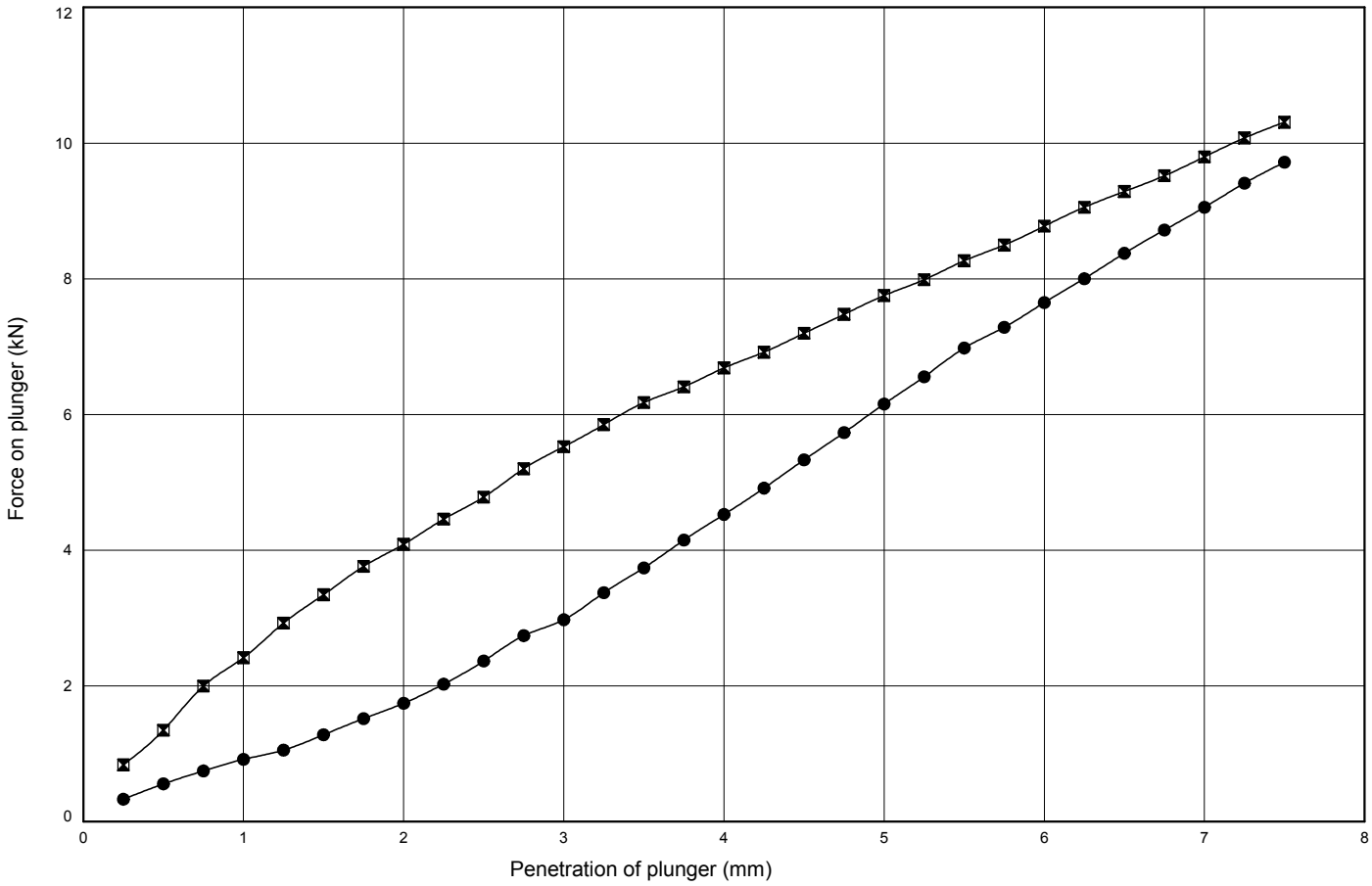
BS.1377 : Part 4 : 1990 : 7

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

DESCRIPTION Dark brown slightly clayey very sandy GRAVEL

BH/TP No.	WS110
SAMPLE No./TYPE	2B
SAMPLE DEPTH (m)	0.60
SPECIMEN DEPTH (m)	0.60



sample preparation:	Dynamic compaction - 2.5Kg rammer		
proportion >20mm removed (%)	40.7	sample condition	Unsoaked
surcharge mass (kg)	10	amount of swell (mm)	N/A
INITIAL CONDITIONS		FINAL CONDITIONS	
moisture content (%)	15	moisture content - top (%)	15
bulk density (Mg/m^3)	1.98	moisture content - base (%)	15
dry density (Mg/m^3)	1.73		

remarks:

Test carried out non standard as requested

CBR value top (%)	31
CBR value base (%)	39
average CBR value (%)	

Top Base

CONTRACT	CHECKED
31847	**JC**

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UNDRAINED TRIAXIAL COMPRESSION

BS.1377 : Part 7 : 1990 : 8 and 9

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

borehole /trial pit no.	sample		specimen depth (m)	code	moisture content (%)	density		cell pressure (kPa)	deviator stress (kPa)	failure strain (%)	failure mode	shear strength* (kPa)	description and remarks
	no./ type	depth (m)				bulk (Mg/m^3)	dry (Mg/m^3)						
CP/RC101A	15LS	5.80	5.82	UU100	15.4	2.22	1.92	120	175	20.0	I	88	Brown slightly sandy slightly gravelly silty CLAY
CP/RC101B	11LS	5.90	6.05	UU100	13.2	2.25	1.99	120	153	20.0	B	77	Brown slightly sandy slightly gravelly CLAY
CP/RC102A	15LS	6.95	6.95	UU100	12.7	2.22	1.97	140	217	20.3	S	109	Brown slightly sandy slightly gravelly CLAY
CP/RC102A	22LS	9.90	10.00	UU100	15.7	2.21	1.91	200	187	13.1	S	94	Brown slightly sandy slightly gravelly CLAY
CP/RC103	13LS	4.80	4.85	UU100	14.3	2.09	1.83	100	233	20.5	B	117	Brown slightly sandy slightly gravelly CLAY
CP/RC103	18LS	6.80	6.82	UU100	14.4	2.14	1.87	140	331	20.0	B	166	Brown slightly sandy slightly gravelly CLAY
CP/RC104A	13LS	5.70	5.80	UU100	13.2	2.24	1.98	120	302	20.0	I	151	Brown slightly sandy slightly gravelly CLAY
CP/RC105	14LS	5.75	5.78	UU100	12.6	2.25	2.00	120	390	19.8	I	195	Brown slightly sandy slightly gravelly silty CLAY
CP/RC105	19LS	7.80	7.80	UU100	13.9	2.21	1.94	160	319	20.0	B	160	Brown slightly sandy slightly gravelly silty CLAY
CP/RC108	16LS	6.60	6.60	UU100	13.9	2.21	1.94	140	468	20.2	I	234	Brown slightly sandy slightly gravelly CLAY

general remarks: * shear strength taken as half deviator stress at failure for each stage.
# denotes sample unsuitable to test.

code:
CD - Consolidated drained
CU - Consolidated undrained
UU - Unconsolidated undrained

M - Multistage
S - Set of 3 specimens
R - Remoulded

38 - 38mm dia. x 76mm
70 - 69mm dia. x 140mm
100 - 106mm dia. x 200mm

failure mode:
B - barrelling (plastic failure)
S - shear (brittle failure)
I - intermediate
O - other (see remarks)

membrane correction applied
sample taken vertically (unless specified)
rate of strain = 2%/min (unless specified)

membrane thickness:
38 - 0.2mm 70 - 0.4mm
106 - 0.4mm

CONTRACT **31847**

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Geotechnical Engineering Limited

UNIAXIAL COMPRESSIVE STRENGTH OF ROCK

I.S.R.M. Suggested Methods : 2007 Edition

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

borehole no.	sample no./type	sample depth (m)	specimen depth (m)	diameter D (mm)	height H (mm)	H/D	moisture content (%)	bulk density (Mg/m³)	loading rate (kN/min)	time to failure (min:sec)	UCS (MPa)	description and coding test remarks
CP/RC101B	27Cs	13.05	13.10	89.1	215.7	2.42	15.8	2.16	10	4:20	6.86	Reddish brown SANDSTONE Ax
CP/RC101B	33C	20.20	20.80	89.3	233.7	2.62	10.4	2.30	10	11:22	17.76	Reddish brown SANDSTONE Ax
CP/RC101B	37Cs	25.20	25.20	89.4	227.3	2.54	11.6	2.26	10	5:51	9.24	Reddish brown SANDSTONE Ax,Ca
CP/RC102A	28C	14.20	15.40	89.3	202.8	2.27	6.7	2.13	10	6:20	9.80	Reddish brown SANDSTONE Ax,Ca
CP/RC102A	29C	15.70	16.90	88.7	169.3	1.91	7.7	2.05	10	4:00	6.20	Reddish brown SANDSTONE Ax,Ca
CP/RC102A	30C	17.20	17.30	88.8	223.0	2.51	10.9	2.28	10	6:45	10.80	Reddish brown SANDSTONE Ax
CP/RC102A	31C	18.70	19.55	73.7	219.6	2.98	12.9	3.36	10	5:00	11.30	Reddish brown SANDSTONE Ax,Ca
CP/RC102A	32C	20.20	20.70	71.5	190.7	2.67	10.6	3.21	10	5:10	12.70	Reddish brown SANDSTONE Ax,Ca
CP/RC102A	33C	21.70	22.90	88.9	229.1	2.58	6.4	2.14	10	7:15	11.50	Reddish brown SANDSTONE Ax
CP/RC102A	35Cs	23.75	23.80	89.1	244.8	2.75	7.9	2.23	10	9:52	15.70	Reddish brown SANDSTONE Ax
CP/RC102A	38Cs	27.10	27.10	88.7	233.9	2.64	10.6	2.19	10	6:22	10.20	Reddish brown SANDSTONE Ca
CP/RC103	35C	17.20	17.75	88.9	243.3	2.74	11.7	2.24	10	9:05	14.40	Reddish brown SANDSTONE Ax
CP/RC104A	33C	14.70	15.70	89.3	181.5	2.03	13.8	2.20	10	8:15	13.00	Reddish brown SANDSTONE Ax,Ca
CP/RC104A	34C	16.20	16.70	89.3	233.3	2.61	11.2	2.23	10	5:40	9.00	Reddish brown SANDSTONE Ax
CP/RC104A	35Cs	17.00	17.00	89.2	213.7	2.40	12.0	2.23	10	3:40	5.80	Reddish brown SANDSTONE Ax
CP/RC104A	36C	17.70	18.75	89.5	217.3	2.43	8.3	2.28	10	7:01	11.40	Reddish brown SANDSTONE Ax
CP/RC104A	38Cs	19.40	19.40	89.6	225.8	2.52	11.1	2.25	10	5:41	8.90	Reddish brown SANDSTONE Ax
CP/RC104A	39C	20.70	21.00	89.9	203.8	2.27	12.1	2.23	10	9:18	14.50	Reddish brown SANDSTONE Ax
CP/RC104A	44Cs	27.20	27.20	89.5	233.5	2.61	10.3	2.30	10	8:12	12.90	Reddish brown SANDSTONE Ax

general remarks:

Sample obtained from vertically drilled core (unless specified).

Test machine - ELE 1500.

CODING

moisture condition :
N - natural moisture content
F - fully saturated
S - soaked
P - air/partially dried

sample storage :
U - sample not wrapped
F - sample wrapped in cling film/foil
W - sample waxed
G - sample contained in sealed Geoline

failure mode:
Ax - axial cleavage
Ca - cataclasis
Sh - shear
Ex - explosive

CONTRACT	CHECKED
31847	**JC**

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Geotechnical Engineering Limited

UNIAXIAL COMPRESSIVE STRENGTH OF ROCK

I.S.R.M. Suggested Methods : 2007 Edition

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

borehole no.	sample no./type	sample depth (m)	specimen depth (m)	diameter D (mm)	height H (mm)	H/D	moisture content (%)	bulk density (Mg/m³)	loading rate (kN/min)	time to failure (min:sec)	UCS (MPa)	description and coding test remarks
CP/RC105	31C	17.20	18.10	89.2	249.2	2.80	12.7	2.20	10	5:01	7.80	Reddish brown SANDSTONE Ax,Ca
CP/RC105	33C	18.70	19.60	89.4	194.7	2.18	14.3	2.18	10	6:15	9.70	Reddish brown SANDSTONE Ax,Ca
CP/RC105	37C	23.60	24.70	89.1	202.3	2.27	10.4	2.29	10	8:20	13.30	Reddish brown SANDSTONE Ax
CP/RC108	35Cs	16.55	16.60	88.4	222.0	2.51	12.4	2.23	10	5:39	8.97	Reddish brown SANDSTONE Ax,Ca
CP/RC108	38Cs	19.50	19.50	84.8	223.0	2.63	11.2	2.26	10	6:28	11.13	Reddish brown SANDSTONE Ax
CP/RC108	41Cs	21.75	21.80	86.3	220.4	2.55	10.4	2.30	10	4:58	8.30	Reddish brown SANDSTONE Ax
CP/RC108	46Cs	26.50	26.70	89.3	224.7	2.52	11.9	2.26	10	7:30	11.93	Reddish brown SANDSTONE Ax

general remarks:

Sample obtained from vertically drilled core (unless specified).

Test machine - ELE 1500.

CODING

moisture condition :
N - natural moisture content
F - fully saturated
S - soaked
P - air/partially dried

sample storage :
U - sample not wrapped
F - sample wrapped in cling film/foil
W - sample waxed
G - sample contained in sealed Geoline

failure mode:
Ax - axial cleavage
Ca - cataclasis
Sh - shear
Ex - explosive

CONTRACT	CHECKED
31847	**JC**

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POINT LOAD STRENGTH TEST RESULTS

I.S.R.M. Suggested Methods 2007 Edition

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

borehole /trial pit no.	sample depth (m)	test type	test orientation	moisture condition	width W (mm)	length L (mm)	platen sep. D (mm)	failure load P (kN)	equiv. dia. De (mm)	Is (MPa)	size factor F	Is(50) (MPa)	rock type
CP/RC101B	16.40	D	Y	P		55	90	1.73	90.00	0.21	1.30	0.28	Reddish brown SANDSTONE
CP/RC101B	16.40	A	X	P	90		60	3.71	82.92	0.54	1.26	0.68	Reddish brown SANDSTONE
CP/RC101B	17.00	D	Y	P		70	90	0.87	90.00	0.11	1.30	0.14	Reddish brown SANDSTONE
CP/RC101B	17.00	A	X	P	90		70	2.12	89.56	0.26	1.30	0.34	Reddish brown SANDSTONE
CP/RC101B	17.10	D	Y	P		70	90	1.07	90.00	0.13	1.30	0.17	Reddish brown SANDSTONE
CP/RC101B	17.10	A	X	P	90		65	0.74	86.30	0.10	1.28	0.13	Reddish brown SANDSTONE
CP/RC101B	17.85	D	Y	P		65	90	0.50	90.00	0.06	1.30	0.08	Reddish brown SANDSTONE
CP/RC101B	17.85	A	X	P	90		45	0.83	71.81	0.16	1.18	0.19	Reddish brown SANDSTONE
CP/RC101B	18.00	D	Y	P		80	90	0.59	90.00	0.07	1.30	0.09	Reddish brown SANDSTONE
CP/RC101B	18.00	A	X	P	90		90	0.88	101.55	0.08	1.38	0.12	Reddish brown SANDSTONE
CP/RC101B	18.30	D	Y	P		45	90	1.76	90.00	0.22	1.30	0.28	Reddish brown SANDSTONE
CP/RC101B	18.30	A	X	P	90		40	2.03	67.70	0.44	1.15	0.51	Reddish brown SANDSTONE
CP/RC101B	18.85	D	Y	P		60	90	1.50	90.00	0.18	1.30	0.24	Reddish brown SANDSTONE
CP/RC101B	18.85	A	X	P	90		50	2.09	75.69	0.36	1.21	0.44	Reddish brown SANDSTONE
CP/RC101B	19.20	D	Y	P		60	90	1.17	90.00	0.14	1.30	0.19	Reddish brown SANDSTONE
CP/RC101B	19.20	A	X	P	90		60	1.42	82.92	0.21	1.26	0.26	Reddish brown SANDSTONE
CP/RC101B	19.65	D	Y	P		30	90	1.06	90.00	0.13	1.30	0.17	Reddish brown SANDSTONE
CP/RC101B	19.65	A	X	P	90		35	1.31	63.33	0.33	1.11	0.36	Reddish brown SANDSTONE

remarks: Tests carried out in accordance with I.S.R.M.(2007): Suggested Methods for Determining Point Load Strength. Int. J. Rock Mech. Min. Sci. and Geotech. Abstr. Vol.22 No. 2.

test type:
D - diametral
A - axial
I - Irregular lump

test orientation relative to discontinuities:
X - perpendicular
Y - parallel
Z - oblique
U - unknown

moisture condition:
N - natural moisture content
P - partially air dried
S - soaked

CONTRACT **31847**

CHECKED **JC**

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Geotechnical Engineering Limited

POINT LOAD STRENGTH TEST RESULTS

I.S.R.M. Suggested Methods 2007 Edition

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

borehole /trial pit no.	sample depth (m)	test type	test orientation	moisture condition	width W (mm)	length L (mm)	platen sep. D (mm)	failure load P (kN)	equiv. dia. De (mm)	Is (MPa)	size factor F	Is(50) (MPa)	rock type
CP/RC101B	21.80	D	Y	P		55	90	1.40	90.00	0.17	1.30	0.22	Reddish brown SANDSTONE
CP/RC101B	21.80	A	X	P	90		70	2.99	89.56	0.37	1.30	0.48	Reddish brown SANDSTONE
CP/RC101B	22.00	D	Y	P		40	90	1.39	90.00	0.17	1.30	0.22	Reddish brown SANDSTONE
CP/RC101B	22.00	A	X	P	90		35	2.10	63.33	0.52	1.11	0.58	Reddish brown SANDSTONE
CP/RC101B	22.60	D	Y	P		35	90	0.85	90.00	0.10	1.30	0.14	Reddish brown SANDSTONE
CP/RC101B	22.60	A	X	P	90		35	1.17	63.33	0.29	1.11	0.32	Reddish brown SANDSTONE
CP/RC101B	23.55	D	Y	P		40	90	0.26	90.00	0.03	1.30	0.04	Reddish brown SANDSTONE
CP/RC101B	23.55	A	X	P	90		70	1.60	89.56	0.20	1.30	0.26	Reddish brown SANDSTONE
CP/RC101B	23.90	D	Y	P		55	90	0.81	90.00	0.10	1.30	0.13	Reddish brown SANDSTONE
CP/RC101B	23.90	A	X	P	90		45	1.77	71.81	0.34	1.18	0.40	Reddish brown SANDSTONE
CP/RC101B	24.15	D	Y	P		35	90	0.89	90.00	0.11	1.30	0.14	Reddish brown SANDSTONE
CP/RC101B	24.15	A	X	P	90		35	0.98	63.33	0.24	1.11	0.27	Reddish brown SANDSTONE
CP/RC101B	25.05	D	Y	P		70	90	0.87	90.00	0.11	1.30	0.14	Reddish brown SANDSTONE
CP/RC101B	25.05	A	X	P	90		70	1.14	89.56	0.14	1.30	0.18	Reddish brown SANDSTONE
CP/RC101B	25.45	D	Y	P		40	90	0.52	90.00	0.06	1.30	0.08	Reddish brown SANDSTONE
CP/RC101B	25.45	A	X	P	90		35	0.88	63.33	0.22	1.11	0.24	Reddish brown SANDSTONE
CP/RC101B	25.80	D	Y	P		40	90	0.63	90.00	0.08	1.30	0.10	Reddish brown SANDSTONE
CP/RC101B	25.80	A	X	P	90		45	1.04	71.81	0.20	1.18	0.24	Reddish brown SANDSTONE

remarks: Tests carried out in accordance with I.S.R.M.(2007): Suggested Methods for Determining Point Load Strength. Int. J. Rock Mech. Min. Sci. and Geotech. Abstr. Vol.22 No. 2.

test type:
D - diametral
A - axial
I - Irregular lump

test orientation relative to discontinuities:
X - perpendicular
Y - parallel
Z - oblique
U - unknown

moisture condition:
N - natural moisture content
P - partially air dried
S - soaked

CONTRACT **31847**

CHECKED **JC**

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POINT LOAD STRENGTH TEST RESULTS

I.S.R.M. Suggested Methods 2007 Edition

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

borehole /trial pit no.	sample depth (m)	test type	test orientation	moisture condition	width W (mm)	length L (mm)	platen sep. D (mm)	failure load P (kN)	equiv. dia. De (mm)	Is (MPa)	size factor F	Is(50) (MPa)	rock type
CP/RC101B	26.30	D	Y	P		50	90	0.85	90.00	0.10	1.30	0.14	Reddish brown SANDSTONE
CP/RC101B	26.30	A	X	P	90		50	1.26	75.69	0.22	1.21	0.27	Reddish brown SANDSTONE
CP/RC101B	26.60	D	Y	P		50	90	0.97	90.00	0.12	1.30	0.16	Reddish brown SANDSTONE
CP/RC101B	26.60	A	X	P	90		50	1.26	75.69	0.22	1.21	0.26	Reddish brown SANDSTONE
CP/RC101B	27.00	D	Y	P		80	90	0.95	90.00	0.12	1.30	0.15	Reddish brown SANDSTONE
CP/RC101B	27.00	A	X	P	90		75	1.82	92.71	0.21	1.32	0.28	Reddish brown SANDSTONE
CP/RC102A	23.50	D	Y	P		50	90	0.74	90.00	0.09	1.30	0.12	Reddish brown SANDSTONE
CP/RC102A	23.50	A	X	P	90		45	1.85	71.81	0.36	1.18	0.42	Reddish brown SANDSTONE
CP/RC102A	23.60	D	Y	P		70	90	1.47	90.00	0.18	1.30	0.24	Reddish brown SANDSTONE
CP/RC102A	23.60	A	X	P	90		70	2.38	89.56	0.30	1.30	0.38	Reddish brown SANDSTONE
CP/RC102A	24.50	D	Y	P		50	90	1.18	90.00	0.15	1.30	0.19	Reddish brown SANDSTONE
CP/RC102A	24.50	A	X	P	90		45	1.58	71.81	0.31	1.18	0.36	Reddish brown SANDSTONE
CP/RC102A	25.15	D	Y	P		80	90	0.66	90.00	0.08	1.30	0.11	Reddish brown SANDSTONE
CP/RC102A	25.15	A	X	P	90		55	0.94	79.39	0.15	1.23	0.18	Reddish brown SANDSTONE
CP/RC102A	25.40	D	Y	P		55	90	0.48	90.00	0.06	1.30	0.08	Reddish brown SANDSTONE
CP/RC102A	25.40	A	X	P	90		65	1.08	86.30	0.14	1.28	0.18	Reddish brown SANDSTONE
CP/RC102A	25.65	D	Y	P		75	90	0.48	90.00	0.06	1.30	0.08	Reddish brown SANDSTONE
CP/RC102A	25.65	A	X	P	90		75	1.08	92.71	0.13	1.32	0.17	Reddish brown SANDSTONE

remarks: Tests carried out in accordance with I.S.R.M.(2007): Suggested Methods for Determining Point Load Strength. Int. J. Rock Mech. Min. Sci. and Geotech. Abstr. Vol.22 No. 2.

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SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

borehole /trial pit no.	sample depth (m)	test type	test orientation	moisture condition	width W (mm)	length L (mm)	platen sep. D (mm)	failure load P (kN)	equiv. dia. De (mm)	Is (MPa)	size factor F	Is(50) (MPa)	rock type
CP/RC102A	26.60	D	Y	P		50	90	0.94	90.00	0.12	1.30	0.15	Reddish brown SANDSTONE
CP/RC102A	26.60	A	X	P	90		45	1.38	71.81	0.27	1.18	0.31	Reddish brown SANDSTONE
CP/RC102A	26.90	D	Y	P		60	90	1.01	90.00	0.12	1.30	0.16	Reddish brown SANDSTONE
CP/RC102A	26.90	A	X	P	90		55	0.78	79.39	0.12	1.23	0.15	Reddish brown SANDSTONE
CP/RC102A	27.50	D	Y	P		70	90	1.53	90.00	0.19	1.30	0.25	Reddish brown SANDSTONE
CP/RC102A	27.50	A	X	P	90		100	2.60	107.05	0.23	1.41	0.32	Reddish brown SANDSTONE
CP/RC103	15.10	D	Y	P		120	90	0.33	90.00	0.04	1.30	0.05	Reddish brown SANDSTONE
CP/RC103	15.10	A	X	P	90		60	0.66	82.92	0.10	1.26	0.12	Reddish brown SANDSTONE
CP/RC103	15.35	I	U	P	80	100	75	0.23	87.40	0.03	1.29	0.04	Reddish brown SANDSTONE
CP/RC103	15.60	D	Y	P		30	90	0.71	90.00	0.09	1.30	0.11	Reddish brown SANDSTONE
CP/RC103	15.60	A	X	P	90		40	1.11	67.70	0.24	1.15	0.28	Reddish brown SANDSTONE
CP/RC103	15.80	D	Y	P		65	90	0.67	90.00	0.08	1.30	0.11	Reddish brown SANDSTONE
CP/RC103	15.80	A	X	P	90		45	0.61	71.81	0.12	1.18	0.14	Reddish brown SANDSTONE
CP/RC103	16.20	D	Y	P		50	90	0.33	90.00	0.04	1.30	0.05	Reddish brown SANDSTONE
CP/RC103	16.20	A	X	P	90		60	0.78	82.92	0.11	1.26	0.14	Reddish brown SANDSTONE
CP/RC103	16.70	D	Y	P		70	90	0.47	90.00	0.06	1.30	0.08	Reddish brown SANDSTONE
CP/RC103	16.70	A	X	P	90		70	1.12	89.56	0.14	1.30	0.18	Reddish brown SANDSTONE
CP/RC103	18.90	D	Y	P		50	90	0.90	90.00	0.11	1.30	0.14	Reddish brown SANDSTONE

remarks: Tests carried out in accordance with I.S.R.M.(2007): Suggested Methods for Determining Point Load Strength. Int. J. Rock Mech. Min. Sci. and Geotech. Abstr. Vol.22 No. 2.

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POINT LOAD STRENGTH TEST RESULTS

I.S.R.M. Suggested Methods 2007 Edition

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

borehole /trial pit no.	sample depth (m)	test type	test orientation	moisture condition	width W (mm)	length L (mm)	platen sep. D (mm)	failure load P (kN)	equiv. dia. De (mm)	Is (MPa)	size factor F	Is(50) (MPa)	rock type
CP/RC103	18.90	A	X	P	90		50	1.29	75.69	0.23	1.21	0.27	Reddish brown SANDSTONE
CP/RC103	19.65	D	Y	P		35	75	0.27	75.00	0.05	1.20	0.06	Reddish brown SANDSTONE
CP/RC103	19.65	A	X	P	75		30	0.42	53.52	0.14	1.03	0.15	Reddish brown SANDSTONE
CP/RC103	20.00	D	Y	P		60	80	1.25	80.00	0.20	1.24	0.24	Reddish brown SANDSTONE
CP/RC103	20.00	A	X	P	80		70	1.99	84.44	0.28	1.27	0.35	Reddish brown SANDSTONE
CP/RC103	23.35	D	Y	P		55	90	0.98	90.00	0.12	1.30	0.16	Reddish brown SANDSTONE
CP/RC103	23.35	A	X	P	90		50	1.09	75.69	0.19	1.21	0.23	Reddish brown SANDSTONE
CP/RC103	23.60	D	Y	P		80	90	1.11	90.00	0.14	1.30	0.18	Reddish brown SANDSTONE
CP/RC103	23.60	A	X	P	90		80	2.03	95.75	0.22	1.34	0.30	Reddish brown SANDSTONE
CP/RC103	23.90	D	Y	P		70	90	0.94	90.00	0.12	1.30	0.15	Reddish brown SANDSTONE
CP/RC103	23.90	A	X	P	90		65	1.77	86.30	0.24	1.28	0.30	Reddish brown SANDSTONE
CP/RC103	26.00	D	Y	P		50	90	0.21	90.00	0.03	1.30	0.03	Reddish brown SANDSTONE
CP/RC103	26.00	A	X	P	90		45	0.90	71.81	0.17	1.18	0.20	Reddish brown SANDSTONE
CP/RC103	26.20	D	Y	P		40	90	0.61	90.00	0.07	1.30	0.10	Reddish brown SANDSTONE
CP/RC103	26.20	A	X	P	90		45	0.97	71.81	0.19	1.18	0.22	Reddish brown SANDSTONE
CP/RC103	26.50	D	Y	P		55	90	0.78	90.00	0.10	1.30	0.13	Reddish brown SANDSTONE
CP/RC103	26.50	A	X	P	90		35	1.12	63.33	0.28	1.11	0.31	Reddish brown SANDSTONE
CP/RC103	27.35	D	Y	P		25	90	1.07	90.00	0.13	1.30	0.17	Reddish brown SANDSTONE

remarks: Tests carried out in accordance with I.S.R.M.(2007): Suggested Methods for Determining Point Load Strength. Int. J. Rock Mech. Min. Sci. and Geotech. Abstr. Vol.22 No. 2.

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S - soaked

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POINT LOAD STRENGTH TEST RESULTS

I.S.R.M. Suggested Methods 2007 Edition

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

borehole /trial pit no.	sample depth (m)	test type	test orientation	moisture condition	width W (mm)	length L (mm)	platen sep. D (mm)	failure load P (kN)	equiv. dia. De (mm)	Is (MPa)	size factor F	Is(50) (MPa)	rock type
CP/RC103	27.35	A	X	P	90		20	0.87	47.87	0.38	0.98	0.37	Reddish brown SANDSTONE
CP/RC103	28.00	D	Y	P		50	90	0.58	90.00	0.07	1.30	0.09	Reddish brown SANDSTONE
CP/RC103	28.00	A	X	P	90		50	0.53	75.69	0.09	1.21	0.11	Reddish brown SANDSTONE
CP/RC103	28.60	D	Y	P		50	90	0.22	90.00	0.03	1.30	0.04	Reddish brown SANDSTONE
CP/RC103	28.60	A	X	P	90		50	1.45	75.69	0.25	1.21	0.30	Reddish brown SANDSTONE
CP/RC104A	22.70	D	Y	P		50	90	1.15	90.00	0.14	1.30	0.18	Reddish brown SANDSTONE
CP/RC104A	22.70	A	X	P	90		60	1.13	82.92	0.16	1.26	0.21	Reddish brown SANDSTONE
CP/RC104A	22.80	D	Y	P		30	90	0.47	90.00	0.06	1.30	0.08	Reddish brown SANDSTONE
CP/RC104A	22.80	A	X	P	90		45	0.59	71.81	0.11	1.18	0.13	Reddish brown SANDSTONE
CP/RC104A	23.60	D	Y	P		45	90	1.37	90.00	0.17	1.30	0.22	Reddish brown SANDSTONE
CP/RC104A	23.60	A	X	P	90		40	1.51	67.70	0.33	1.15	0.38	Reddish brown SANDSTONE
CP/RC104A	24.20	D	Y	P		50	90	0.87	90.00	0.11	1.30	0.14	Reddish brown SANDSTONE
CP/RC104A	24.20	A	X	P	90		60	0.54	82.92	0.08	1.26	0.10	Reddish brown SANDSTONE
CP/RC104A	24.70	D	Y	P		55	90	2.00	90.00	0.25	1.30	0.32	Reddish brown SANDSTONE
CP/RC104A	24.70	A	X	P	90		50	1.43	75.69	0.25	1.21	0.30	Reddish brown SANDSTONE
CP/RC104A	24.85	D	Y	P		45	90	1.48	90.00	0.18	1.30	0.24	Reddish brown SANDSTONE
CP/RC104A	24.85	A	X	P	90		65	2.65	86.30	0.36	1.28	0.45	Reddish brown SANDSTONE
CP/RC104A	25.80	D	Y	P		60	90	1.42	90.00	0.18	1.30	0.23	Reddish brown SANDSTONE

remarks: Tests carried out in accordance with I.S.R.M.(2007): Suggested Methods for Determining Point Load Strength. Int. J. Rock Mech. Min. Sci. and Geotech. Abstr. Vol.22 No. 2.

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CP/RC104A	25.80	A	X	P	90		65	2.55	86.30	0.34	1.28	0.44	Reddish brown SANDSTONE
CP/RC104A	26.20	D	Y	P		60	90	2.14	90.00	0.26	1.30	0.34	Reddish brown SANDSTONE
CP/RC104A	26.20	A	X	P	90		60	2.00	82.92	0.29	1.26	0.36	Reddish brown SANDSTONE
CP/RC104A	26.50	D	Y	P		60	90	1.21	90.00	0.15	1.30	0.19	Reddish brown SANDSTONE
CP/RC104A	26.50	A	X	P	90		60	1.60	82.92	0.23	1.26	0.29	Reddish brown SANDSTONE
CP/RC104A	28.45	D	Y	P		55	90	0.91	90.00	0.11	1.30	0.15	Reddish brown SANDSTONE
CP/RC104A	28.45	A	X	P	90		45	1.27	71.81	0.25	1.18	0.29	Reddish brown SANDSTONE
CP/RC104A	28.85	D	Y	P		60	90	1.70	90.00	0.21	1.30	0.27	Reddish brown SANDSTONE
CP/RC104A	28.85	A	X	P	90		55	1.89	79.39	0.30	1.23	0.37	Reddish brown SANDSTONE
CP/RC104A	29.50	D	Y	P		50	90	0.60	90.00	0.07	1.30	0.10	Reddish brown SANDSTONE
CP/RC104A	29.50	A	X	P	90		50	1.45	75.69	0.25	1.21	0.30	Reddish brown SANDSTONE
CP/RC105	16.10	D	Y	P		90	90	0.06	90.00	0.01	1.30	0.01	Reddish brown SANDSTONE
CP/RC105	16.10	A	X	P	90		70	0.14	89.56	0.02	1.30	0.02	Reddish brown SANDSTONE
CP/RC105	16.50	D	Y	P		50	90	0.27	90.00	0.03	1.30	0.04	Reddish brown SANDSTONE
CP/RC105	16.50	A	X	P	90		75	0.38	92.71	0.04	1.32	0.06	Reddish brown SANDSTONE
CP/RC105	17.10	D	Y	P		50	90	0.48	90.00	0.06	1.30	0.08	Reddish brown SANDSTONE
CP/RC105	17.10	A	X	P	90		70	0.91	89.56	0.11	1.30	0.15	Reddish brown SANDSTONE
CP/RC105	20.30	D	Y	P		55	90	0.79	90.00	0.10	1.30	0.13	Reddish brown SANDSTONE

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CP/RC105	20.30	A	X	P	90		55	1.14	79.39	0.18	1.23	0.22	Reddish brown SANDSTONE
CP/RC105	21.00	D	Y	P		40	90	0.79	90.00	0.10	1.30	0.13	Reddish brown SANDSTONE
CP/RC105	21.00	A	X	P	90		50	1.27	75.69	0.22	1.21	0.27	Reddish brown SANDSTONE
CP/RC105	21.33	D	Y	P		85	90	0.88	90.00	0.11	1.30	0.14	Reddish brown SANDSTONE
CP/RC105	21.33	A	X	P	90		75	1.59	92.71	0.19	1.32	0.24	Reddish brown SANDSTONE
CP/RC105	21.75	D	Y	P		85	90	0.76	90.00	0.09	1.30	0.12	Reddish brown SANDSTONE
CP/RC105	21.75	A	X	P	90		75	1.18	92.71	0.14	1.32	0.18	Reddish brown SANDSTONE
CP/RC105	22.30	D	Y	P		50	90	0.46	90.00	0.06	1.30	0.07	Reddish brown SANDSTONE
CP/RC105	22.30	A	X	P	90		50	0.63	75.69	0.11	1.21	0.13	Reddish brown SANDSTONE
CP/RC105	22.90	D	Y	P		60	90	0.54	90.00	0.07	1.30	0.09	Reddish brown SANDSTONE
CP/RC105	22.90	A	X	P	90		60	0.93	82.92	0.13	1.26	0.17	Reddish brown SANDSTONE
CP/RC105	25.15	D	Y	P		65	90	2.10	90.00	0.26	1.30	0.34	Reddish brown SANDSTONE
CP/RC105	25.15	A	X	P	90		60	2.79	82.92	0.41	1.26	0.51	Reddish brown SANDSTONE
CP/RC105	25.50	D	Y	P		50	90	1.63	90.00	0.20	1.30	0.26	Reddish brown SANDSTONE
CP/RC105	25.50	A	X	P	90		60	2.72	82.92	0.39	1.26	0.50	Reddish brown SANDSTONE
CP/RC105	26.90	D	Y	P		50	90	1.37	90.00	0.17	1.30	0.22	Reddish brown SANDSTONE
CP/RC105	26.90	A	X	P	90		65	1.86	86.30	0.25	1.28	0.32	Reddish brown SANDSTONE
CP/RC105	27.50	D	Y	P		75	90	1.19	90.00	0.15	1.30	0.19	Reddish brown SANDSTONE

remarks: Tests carried out in accordance with I.S.R.M.(2007): Suggested Methods for Determining Point Load Strength. Int. J. Rock Mech. Min. Sci. and Geotech. Abstr. Vol.22 No. 2.

test type:
D - diametral
A - axial
I - Irregular lump

test orientation relative to discontinuities:
X - perpendicular
Y - parallel
Z - oblique
U - unknown

moisture condition:
N - natural moisture content
P - partially air dried
S - soaked

CONTRACT **31847**

CHECKED **JC**

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Geotechnical Engineering Limited

POINT LOAD STRENGTH TEST RESULTS

I.S.R.M. Suggested Methods 2007 Edition

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

borehole /trial pit no.	sample depth (m)	test type	test orientation	moisture condition	width W (mm)	length L (mm)	platen sep. D (mm)	failure load P (kN)	equiv. dia. De (mm)	Is (MPa)	size factor F	Is(50) (MPa)	rock type
CP/RC105	27.50	A	X	P	90		70	1.95	89.56	0.24	1.30	0.32	Reddish brown SANDSTONE
CP/RC105	28.16	D	Y	P		35	90	0.31	90.00	0.04	1.30	0.05	Reddish brown SANDSTONE
CP/RC105	28.16	A	X	P	90		30	0.30	58.63	0.09	1.07	0.09	Reddish brown SANDSTONE
CP/RC105	28.55	D	Y	P		40	90	0.36	90.00	0.04	1.30	0.06	Reddish brown SANDSTONE
CP/RC105	28.55	A	X	P	90		40	1.29	67.70	0.28	1.15	0.32	Reddish brown SANDSTONE
CP/RC108	16.30	D	Y	P		50	90	0.29	90.00	0.04	1.30	0.05	Reddish brown SANDSTONE
CP/RC108	16.30	A	X	P	90		70	0.83	89.56	0.10	1.30	0.13	Reddish brown SANDSTONE
CP/RC108	17.00	D	Y	P		80	90	1.03	90.00	0.13	1.30	0.16	Reddish brown SANDSTONE
CP/RC108	17.00	A	X	P	90		95	1.86	104.34	0.17	1.39	0.24	Reddish brown SANDSTONE
CP/RC108	17.40	D	Y	P		30	90	0.14	90.00	0.02	1.30	0.02	Reddish brown SANDSTONE
CP/RC108	17.40	A	X	P	90		35	0.61	63.33	0.15	1.11	0.17	Reddish brown SANDSTONE
CP/RC108	17.65	D	Y	P		75	90	0.50	90.00	0.06	1.30	0.08	Reddish brown SANDSTONE
CP/RC108	17.65	A	X	P	90		70	0.50	89.56	0.06	1.30	0.08	Reddish brown SANDSTONE
CP/RC108	18.10	D	Y	P		60	90	0.31	90.00	0.04	1.30	0.05	Reddish brown SANDSTONE
CP/RC108	18.10	A	X	P	90		50	0.30	75.69	0.05	1.21	0.06	Reddish brown SANDSTONE
CP/RC108	18.70	D	Y	P		35	90	0.19	90.00	0.02	1.30	0.03	Reddish brown SANDSTONE
CP/RC108	18.70	A	X	P	90		35	0.15	63.33	0.04	1.11	0.04	Reddish brown SANDSTONE
CP/RC108	23.50	D	Y	P		50	90	0.94	90.00	0.12	1.30	0.15	Reddish brown SANDSTONE

remarks: Tests carried out in accordance with I.S.R.M.(2007): Suggested Methods for Determining Point Load Strength. Int. J. Rock Mech. Min. Sci. and Geotech. Abstr. Vol.22 No. 2.

test type:
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A - axial
I - Irregular lump

test orientation relative to discontinuities:
X - perpendicular
Y - parallel
Z - oblique
U - unknown

moisture condition:
N - natural moisture content
P - partially air dried
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CONTRACT **31847**

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Geotechnical Engineering Limited

POINT LOAD STRENGTH TEST RESULTS

I.S.R.M. Suggested Methods 2007 Edition

CLIENT ASK PROPERTY DEVELOPMENTS LTD

SITE PLOTS 6, 7 & 8 FIRST STREET, MANCHESTER

borehole /trial pit no.	sample depth (m)	test type	test orientation	moisture condition	width W (mm)	length L (mm)	platen sep. D (mm)	failure load P (kN)	equiv. dia. De (mm)	Is (MPa)	size factor F	Is(50) (MPa)	rock type
CP/RC108	23.50	A	X	P	90		40	0.74	67.70	0.16	1.15	0.18	Reddish brown SANDSTONE
CP/RC108	23.80	D	Y	P		60	90	1.27	90.00	0.16	1.30	0.20	Reddish brown SANDSTONE
CP/RC108	23.80	A	X	P	90		95	1.72	104.34	0.16	1.39	0.22	Reddish brown SANDSTONE
CP/RC108	24.40	D	Y	P		55	90	0.66	90.00	0.08	1.30	0.11	Reddish brown SANDSTONE
CP/RC108	24.40	A	X	P	90		50	1.34	75.69	0.23	1.21	0.28	Reddish brown SANDSTONE
CP/RC108	25.80	D	Y	P		80	90	1.48	90.00	0.18	1.30	0.24	Reddish brown SANDSTONE
CP/RC108	25.80	A	X	P	90		90	1.74	101.55	0.17	1.38	0.23	Reddish brown SANDSTONE
CP/RC108	26.30	D	Y	P		50	90	0.45	90.00	0.05	1.30	0.07	Reddish brown SANDSTONE
CP/RC108	26.30	A	X	P	90		45	0.80	71.81	0.16	1.18	0.18	Reddish brown SANDSTONE
CP/RC108	26.85	D	Y	P		80	90	1.98	90.00	0.24	1.30	0.32	Reddish brown SANDSTONE
CP/RC108	26.85	A	X	P	90		90	2.39	101.55	0.23	1.38	0.32	Reddish brown SANDSTONE
CP/RC108	28.55	D	Y	P		80	90	1.20	90.00	0.15	1.30	0.19	Reddish brown SANDSTONE
CP/RC108	28.55	A	X	P	90		90	2.32	101.55	0.22	1.38	0.31	Reddish brown SANDSTONE
CP/RC108	29.00	D	Y	P		40	90	0.96	90.00	0.12	1.30	0.15	Reddish brown SANDSTONE
CP/RC108	29.00	A	X	P	90		40	1.27	67.70	0.28	1.15	0.32	Reddish brown SANDSTONE
CP/RC108	29.45	D	Y	P		100	90	0.76	90.00	0.09	1.30	0.12	Reddish brown SANDSTONE
CP/RC108	29.45	A	X	P	90		60	0.99	82.92	0.14	1.26	0.18	Reddish brown SANDSTONE

remarks: Tests carried out in accordance with I.S.R.M.(2007): Suggested Methods for Determining Point Load Strength. Int. J. Rock Mech. Min. Sci. and Geotech. Abstr. Vol.22 No. 2.

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UKAS TESTING
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Final Report

Report No.:	16-10822-1
Initial Date of Issue:	16-May-2016
Client	Geotechnical Engineering Ltd
Client Address:	Centurion House Olympus Park Quedgeley Gloucester Gloucestershire GL2 4NF
Contact(s):	Claire Andrew
Project	31847/B - Plots 6,7, & 8 First Street, Manchester

Quotation No.:		**Date Received:**	10-May-2016
Order No.:	31847/B	**Date Instructed:**	10-May-2016
No. of Samples:	3		
Turnaround (Wkdays):	5	**Results Due:**	16-May-2016
Date Approved:	16-May-2016		

Approved By:

Details: Martin Dyer, Laboratory Manager

Chemtest
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Results - Soil

Project: 31847/B - Plots 6,7, & 8 First Street, Manchester

Client: Geotechnical Engineering Ltd			**Chemtest Job No.:**		16-10822	16-10822	16-10822
Quotation No.:			**Chemtest Sample ID.:**		291867	291868	291869
Order No.: 31847/B			Client Sample Ref.:		CP/RC104A	CP/RC104A	CP/RC104A
			Client Sample ID.:		1B	4D	7L
			Sample Type:		SOIL	SOIL	SOIL
			Top Depth (m):		0.3	1.2	2.6
			Date Sampled:		09-May-2016	09-May-2016	09-May-2016
Determinand	**Accred.**	**SOP**	**Units**	**LOD**			
Moisture	N	2030	%	0.020	10	10	5.1
pH (2.5:1)	N	2010		N/A	9.8	8.8	8.3
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	0.20	0.040	< 0.010

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Report Information

Key

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S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
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>	"greater than"

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For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at our Coventry laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
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Final Report

Report No.:	16-10830-1
Initial Date of Issue:	16-May-2016
Client	Geotechnical Engineering Ltd
Client Address:	Centurion House Olympus Park Quedgeley Gloucester Gloucestershire GL2 4NF
Contact(s):	Claire Andrew
Project	31847/C - Plots 6,7, & 8 First Street, Manchester

Quotation No.:		**Date Received:**	10-May-2016
Order No.:	31847/C	**Date Instructed:**	10-May-2016
No. of Samples:	4		
Turnaround (Wkdays):	5	**Results Due:**	16-May-2016
Date Approved:	16-May-2016		

Approved By:

Details: Martin Dyer, Laboratory Manager

Chemtest
The right chemistry to deliver results

Results - Soil

Project: 31847/C - Plots 6,7, & 8 First Street, Manchester

Client: Geotechnical Engineering Ltd			**Chemtest Job No.:**		16-10830	16-10830	16-10830	16-10830
Quotation No.:			**Chemtest Sample ID.:**		291913	291914	291915	291916
Order No.: 31847/C			Client Sample Ref.:		CP/RC101B	CP/RC101B	CP/RC102	CP/RC102
			Client Sample ID.:		2D	21D	7D	10D
			Sample Type:		SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		1.00	10.2	2.20	4.20
			Date Sampled:		09-May-2016	09-May-2016	09-May-2016	09-May-2016
Determinand	**Accred.**	**SOP**	**Units**	**LOD**				
Moisture	N	2030	%	0.020	7.0	9.0	11	7.7
pH (2.5:1)	N	2010		N/A	8.5	8.9	8.3	8.5
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	< 0.010	0.021	< 0.010	< 0.010

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Report Information

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>	"greater than"

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Sample Deviation Codes

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B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

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Final Report

Report No.:	16-10825-1
Initial Date of Issue:	16-May-2016
Client	Geotechnical Engineering Ltd
Client Address:	Centurion House Olympus Park Quedgeley Gloucester Gloucestershire GL2 4NF
Contact(s):	Claire Andrew
Project	31847/D - Plots 6,7, & 8 First Street, Manchester

Quotation No.:		**Date Received:**	10-May-2016
Order No.:	31847/D	**Date Instructed:**	10-May-2016
No. of Samples:	4		
Turnaround (Wkdays):	5	**Results Due:**	16-May-2016
Date Approved:	16-May-2016		

Approved By:

Details: Martin Dyer, Laboratory Manager

Chemtest
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Results - Soil

Project: 31847/D - Plots 6,7, & 8 First Street, Manchester

Client: Geotechnical Engineering Ltd			**Chemtest Job No.:**		16-10825	16-10825	16-10825	16-10825
Quotation No.:			**Chemtest Sample ID.:**		291877	291878	291879	291880
Order No.: 31847/D			Client Sample Ref.:		CP/RC106A	CP/RC108	CP/RC108	CP/RC108
			Client Sample ID.:		4B	2B	14D	32D
			Sample Type:		SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		1.00	0.30	6.00	14.4
			Date Sampled:		09-May-2016	09-May-2016	09-May-2016	09-May-2016
Determinand	**Accred.**	**SOP**	**Units**	**LOD**				
Moisture	N	2030	%	0.020	9.4	9.8	11	13
pH (2.5:1)	N	2010		N/A	8.3	9.6	8.4	8.7
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	0.22	0.33	0.079	0.010

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Report Information

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For all other tests the samples were dried at < 37°C prior to analysis
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Sample Deviation Codes

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B - Sample age exceeds stability time (sampling to extraction)
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D - Broken Container

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt
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Final Report

Report No.:	16-10826-1
Initial Date of Issue:	16-May-2016
Client	Geotechnical Engineering Ltd
Client Address:	Centurion House Olympus Park Quedgeley Gloucester Gloucestershire GL2 4NF
Contact(s):	Claire Andrew
Project	31847/E - Plots 6,7, & 8 First Street, Manchester

Quotation No.:		**Date Received:**	10-May-2016
Order No.:	31847/E	**Date Instructed:**	10-May-2016
No. of Samples:	6		
Turnaround (Wkdays):	5	**Results Due:**	16-May-2016
Date Approved:	16-May-2016		

Approved By:

Details: Glynn Harvey, Laboratory Manager

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Results - Soil

Project: 31847/E - Plots 6,7, & 8 First Street, Manchester

Client: Geotechnical Engineering Ltd			**Chemtest Job No.:**		16-10826	16-10826	16-10826	16-10826	16-10826	16-10826
Quotation No.:			**Chemtest Sample ID.:**		291881	291882	291883	291884	291885	291886
Order No.: 31847/E			Client Sample Ref.:		CP/RC101A	CP/RC101A	CP/RC105	CP/RC105	CP/RC105	CP/RC105
			Client Sample ID.:		4B	11D	2B	7L	20D	28C
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		1.20	4.20	0.65	2.75	8.20	12.7
			Date Sampled:		09-May-2016	09-May-2016	09-May-2016	09-May-2016	09-May-2016	09-May-2016
Determinand	**Accred.**	**SOP**	**Units**	**LOD**						
Moisture	N	2030	%	0.020	17	14	8.4	17	13	14
pH (2.5:1)	N	2010		N/A	8.9	8.1	4.9	4.9	8.5	8.8
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	0.069	0.046	0.074	0.051	0.031	< 0.010
Chloride (Extractable)	U	2220	g/l	0.010			< 0.010	< 0.010		
Nitrate (Extractable)	N	2220	g/l	0.010			< 0.010	< 0.010		

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Final Report

Report No.:	16-10828-1
Initial Date of Issue:	16-May-2016
Client	Geotechnical Engineering Ltd
Client Address:	Centurion House Olympus Park Quedgeley Gloucester Gloucestershire GL2 4NF
Contact(s):	Claire Andrew
Project	31847/F - Plots 6,7, & 8 First Street, Manchester

Quotation No.:		**Date Received:**	10-May-2016
Order No.:	31847/F	**Date Instructed:**	10-May-2016
No. of Samples:	2		
Turnaround (Wkdays):	5	**Results Due:**	16-May-2016
Date Approved:	16-May-2016		

Approved By:

Details: Martin Dyer, Laboratory Manager

Chemtest
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Results - Soil

Project: 31847/F - Plots 6,7, & 8 First Street, Manchester

Client: Geotechnical Engineering Ltd			**Chemtest Job No.:**		16-10828	16-10828
Quotation No.:			**Chemtest Sample ID.:**		291911	291912
Order No.: 31847/F			Client Sample Ref.:		CP/RC102A	CP/RC102A
			Client Sample ID.:		11D	27C
			Sample Type:		SOIL	SOIL
			Top Depth (m):		4.20	12.7
			Date Sampled:		09-May-2016	09-May-2016
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
Moisture	N	2030	%	0.020	5.1	6.3
pH (2.5:1)	N	2010		N/A	8.2	8.7
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	0.017	< 0.010

Chemtest
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All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.co.uk

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Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.co.uk

UKAS TESTING
2183

Final Report

Report No.:	16-10918-1
Initial Date of Issue:	17-May-2016
Client	Geotechnical Engineering Ltd
Client Address:	Centurion House Olympus Park Quedgeley Gloucester Gloucestershire GL2 4NF
Contact(s):	Claire Andrew
Project	31847/G - Plots 6, 7 & 8 First Street, Manchester

Quotation No.:		**Date Received:**	11-May-2016
Order No.:	31847/G	**Date Instructed:**	11-May-2016
No. of Samples:	3		
Turnaround (Wkdays):	5	**Results Due:**	17-May-2016
Date Approved:	17-May-2016		

Approved By:

Details: Keith Jones, Technical Manager

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Results - Soil

Project: 31847/G - Plots 6, 7 & 8 First Street, Manchester

Client: Geotechnical Engineering Ltd			**Chemtest Job No.:**		16-10918	16-10918	16-10918
Quotation No.:			**Chemtest Sample ID.:**		292371	292372	292373
Order No.: 31847/G			Client Sample Ref.:		CP/RC103	CP/RC103	CP/RC103
			Client Sample ID.:		1B	9D	29D
			Sample Type:		SOIL	SOIL	SOIL
			Top Depth (m):		0.00	3.20	12.7
			Date Sampled:		10-May-2016	10-May-2016	10-May-2016
Determinand	**Accred.**	**SOP**	**Units**	**LOD**			
Moisture	N	2030	%	0.020	13	5.1	14
pH (2.5:1)	N	2010		N/A	8.3	8.0	8.4
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	0.11	0.055	< 0.010

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Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"

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None of the results in this report have been recovery corrected
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All Asbestos testing is performed at our Coventry laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

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Newmarket
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Tel: 01638 606070
Email: info@chemtest.co.uk

Final Report

Report No.:	16-10923-1
Initial Date of Issue:	17-May-2016
Client	Geotechnical Engineering Ltd
Client Address:	Centurion House Olympus Park Quedgeley Gloucester Gloucestershire GL2 4NF
Contact(s):	Claire Andrew
Project	31847/H - Plots 6, 7 & 8 First Street, Manchester

Quotation No.:		**Date Received:**	11-May-2016
Order No.:	31847/H	**Date Instructed:**	11-May-2016
No. of Samples:	3		
Turnaround (Wkdays):	5	**Results Due:**	17-May-2016
Date Approved:	17-May-2016		

Approved By:

Details: Keith Jones, Technical Manager

Chemtest
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Results - Soil

Project: 31847/H - Plots 6, 7 & 8 First Street, Manchester

Client: Geotechnical Engineering Ltd			**Chemtest Job No.:**		16-10923	16-10923	16-10923
Quotation No.:			**Chemtest Sample ID.:**		292391	292392	292393
Order No.: 31847/H			Client Sample Ref.:		WS102	WS106	WS107A
			Client Sample ID.:		1B	1B	4D
			Sample Type:		SOIL	SOIL	SOIL
			Top Depth (m):		0.3	0.3	1.2
			Date Sampled:		10-May-2016	10-May-2016	10-May-2016
Determinand	**Accred.**	**SOP**	**Units**	**LOD**			
Moisture	N	2030	%	0.020	19	13	6.0
pH (2.5:1)	N	2010		N/A	8.3	8.4	8.2
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	0.035	0.067	0.055

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CB8 0AL
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Final Report

Report No.:	16-10919-1
Initial Date of Issue:	17-May-2016
Client	Geotechnical Engineering Ltd
Client Address:	Centurion House Olympus Park Quedgeley Gloucester Gloucestershire GL2 4NF
Contact(s):	Claire Andrew
Project	31847/I - Plots 6, 7 & 8 First Street, Manchester

Quotation No.:		**Date Received:**	11-May-2016
Order No.:	31847/I	**Date Instructed:**	11-May-2016
No. of Samples:	2		
Turnaround (Wkdays):	5	**Results Due:**	17-May-2016
Date Approved:	17-May-2016		

Approved By:

Details: Keith Jones, Technical Manager

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Results - Soil

Project: 31847/I - Plots 6, 7 & 8 First Street, Manchester

Client: Geotechnical Engineering Ltd			**Chemtest Job No.:**		16-10919	16-10919
Quotation No.:			**Chemtest Sample ID.:**		292374	292375
Order No.: 31847/I			Client Sample Ref.:		CP/RC112	CP/RC113
			Client Sample ID.:		4D	6L
			Sample Type:		SOIL	SOIL
			Top Depth (m):		1.2	2.0
			Date Sampled:		10-May-2016	10-May-2016
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
Moisture	N	2030	%	0.020	17	13
pH (2.5:1)	N	2010		N/A	9.0	9.8
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	0.11	0.11

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APPENDIX C

CHEMICAL ANALYSES

Ian Garstang
Geotechnical Engineering Ltd
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Gloucester
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f: 01452 729 314
e: Ian.garstang@geoeng.co.uk

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

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

Analytical Report Number : 16-15736

Replaces Analytical Report Number : 16-15736, issue no. 1

Project / Site name:	Plots 6,7,8, First Street, Manchester	**Samples received on:**	15/04/2016
Your job number:	31847	**Samples instructed on:**	19/04/2016
Your order number:		**Analysis completed by:**	03/06/2016
Report Issue Number:	2	**Report issued on:**	03/06/2016
Samples Analysed:	1 leachate sample - 2 soil samples		

Signed:

Rexona Rahman
Reporting Manager
For & on behalf of i2 Analytical Ltd.

Signed:

Emma Winter
Assistant Reporting Manager
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 16-15736

Project / Site name: Plots 6,7,8, First Street, Manchester

Lab Sample Number				562993	562995			
Sample Reference				CP/RC101A	CP/RC105			
Sample Number				3	1			
Depth (m)				0.60	0.30			
Date Sampled				14/04/2016	14/04/2016			
Time Taken				1140	0830			
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1			
Moisture Content	%	N/A	NONE	12	15			
Total mass of sample received	kg	0.001	NONE	1.9	2.0			
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Chrysotile	-			
Asbestos in Soil	Type	N/A	ISO 17025	Detected	-			
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	0.002	-			
Asbestos Quantification Total	%	0.001	ISO 17025	0.002	-			
General Inorganics								
pH	pH Units	N/A	MCERTS	8.4	7.2			
Free Cyanide	mg/kg	1	MCERTS	< 1	< 1			
Total Sulphate as SO_4	mg/kg	50	MCERTS	800	500			
Water Soluble Sulphate (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.032	0.11			
Sulphide	mg/kg	1	MCERTS	4.9	< 1.0			
Organic Matter	%	0.1	MCERTS	1.4	1.3			
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	0.20	< 0.05			
Acenaphthylene	mg/kg	0.1	MCERTS	0.26	< 0.10			
Acenaphthene	mg/kg	0.1	MCERTS	0.21	< 0.10			
Fluorene	mg/kg	0.1	MCERTS	0.32	< 0.10			
Phenanthrene	mg/kg	0.1	MCERTS	2.8	< 0.10			
Anthracene	mg/kg	0.1	MCERTS	0.75	< 0.10			
Fluoranthene	mg/kg	0.1	MCERTS	4.5	< 0.10			
Pyrene	mg/kg	0.1	MCERTS	4.1	< 0.10			
Benzo(a)anthracene	mg/kg	0.1	MCERTS	2.0	< 0.10			
Chrysene	mg/kg	0.05	MCERTS	1.8	< 0.05			
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	2.2	< 0.10			
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	0.60	< 0.10			
Benzo(a)pyrene	mg/kg	0.1	MCERTS	1.5	< 0.10			
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	0.74	< 0.10			
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	0.19	< 0.10			
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.96	< 0.05			
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	23.2	< 1.60			
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	17	6.8			
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2			
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0			
Chromium (III)	mg/kg	1	NONE	23	40			
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	23	40			
Copper (aqua regia extractable)	mg/kg	1	MCERTS	91	18			
Lead (aqua regia extractable)	mg/kg	1	MCERTS	360	45			
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.4	0.5			
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	20	25			
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0			
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	180	50			

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Analytical Report Number: 16-15736
Project / Site name: Plots 6,7,8, First Street, Manchester
Your Order No:

Certificate of Analysis - Asbestos Quantification

Methods:

Qualitative Analysis

The samples were analysed qualitatively for asbestos by polarising light and dispersion staining as described by the Health and Safety Executive in HSG 248.

Quantitative Analysis

"The analysis was carried out using our documented in-house method A006 based on HSE Contract Research Report No: 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies et al, 1996) and HSG 248. Our method includes initial examination of the entire representative sample, then fractionation and detailed analysis of each fraction, with quantification by hand picking and weighing.

The limit of detection (reporting limit) of this method is 0.001 %.

The method has been validated using samples of at least 100 g, results for samples smaller than this should be interpreted with caution.

Both Qualitative and Quantitative Analyses are UKAS accredited.

Sample Number	Sample ID	Sample Depth (m)	Sample Weight (g)	Asbestos Containing Material Types Detected (ACM)	PLM Results	Asbestos by hand picking/weighing (%)	Total % Asbestos in Sample
562993	CP/RC101A	0.60	130	Loose Fibres	**Chrysotile**	0.002	**0.002**

Opinions and interpretations expressed herein are outside the scope of UKAS accreditatior

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Analytical Report Number: 16-15736

Project / Site name: Plots 6,7,8, First Street, Manchester

Lab Sample Number				562994				
Sample Reference				CP/RC101A				
Sample Number				4				
Depth (m)				1.00				
Date Sampled				14/04/2016				
Time Taken				1145				
Analytical Parameter (Leachate Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
General Inorganics								
pH	pH Units	N/A	ISO 17025	8.3				
Total Cyanide	µg/l	10	ISO 17025	< 10				
Sulphate as SO_4	mg/l	0.1	ISO 17025	8.5				
Sulphide	µg/l	5	NONE	< 5.0				
Total Phenols								
Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10				
Speciated PAHs								
Naphthalene	µg/l	0.01	NONE	< 0.01				
Acenaphthylene	µg/l	0.01	NONE	< 0.01				
Acenaphthene	µg/l	0.01	NONE	< 0.01				
Fluorene	µg/l	0.01	NONE	< 0.01				
Phenanthrene	µg/l	0.01	NONE	< 0.01				
Anthracene	µg/l	0.01	NONE	< 0.01				
Fluoranthene	µg/l	0.01	NONE	< 0.01				
Pyrene	µg/l	0.01	NONE	< 0.01				
Benzo(a)anthracene	µg/l	0.01	NONE	< 0.01				
Chrysene	µg/l	0.01	NONE	< 0.01				
Benzo(b)fluoranthene	µg/l	0.01	NONE	< 0.01				
Benzo(k)fluoranthene	µg/l	0.01	NONE	< 0.01				
Benzo(a)pyrene	µg/l	0.01	NONE	< 0.01				
Indeno(1,2,3-cd)pyrene	µg/l	0.01	NONE	< 0.01				
Dibenz(a,h)anthracene	µg/l	0.01	NONE	< 0.01				
Benzo(ghi)perylene	µg/l	0.01	NONE	< 0.01				
Total PAH								
Total EPA-16 PAHs	µg/l	0.2	NONE	< 0.2				
Heavy Metals / Metalloids								
Arsenic (dissolved)	µg/l	1.1	ISO 17025	14				
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08				
Chromium (dissolved)	µg/l	0.4	ISO 17025	14				
Copper (dissolved)	µg/l	0.7	ISO 17025	13				
Lead (dissolved)	µg/l	1	ISO 17025	17				
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5				
Nickel (dissolved)	µg/l	0.3	ISO 17025	< 0.3				
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0				
Zinc (dissolved)	µg/l	0.4	ISO 17025	12				
Petroleum Hydrocarbons								
Petroleum Range Organics (C6 - C10)	µg/l	10	NONE	< 10				
Diesel Range Organics (C10 - C25)	µg/l	10	NONE	< 10				
Oil Range Organics (C25 - C40)	µg/l	10	NONE	< 10				

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Analytical Report Number : 16-15736

Project / Site name: Plots 6,7,8, First Street, Manchester

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

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

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
562993	CP/RC101A	3	0.60	Brown loam and sand with gravel and brick.
562995	CP/RC105	1	0.30	Brown loam and clay with gravel.

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Analytical Report Number : 16-15736

Project / Site name: Plots 6,7,8, First Street, Manchester

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Asbestos Quantification - Gravimetric	The analysis was carried out using documented in-house method based on references.	HSE Report No: 83/1996, HSG 248, HSG 264 & SCA Blue Book (draft).	A006	D	ISO 17025
Cr (III) in soil	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
DRO (Leachates)	Determination of dichloromethane extractable hydrocarbons in leachate by GC-MS.	In-house method	L070-PL	W	NONE
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Metals by ICP-OES in leachate	Determination of metals in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Monohydric phenols in leachate	Determination of phenols in leachate by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	ISO 17025
Organic matter in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L023-PL	D	MCERTS
pH in leachate	Determination of pH in leachate by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	ISO 17025
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
PRO (Leachates)	Determination of hydrocarbons C6-C10 by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	NONE
Speciated EPA-16 PAHs in leachate	Determination of PAH compounds in leachate by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L070-PL	W	NONE
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE

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Analytical Report Number : 16-15736

Project / Site name: Plots 6,7,8, First Street, Manchester

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate in leachates	Determination of sulphate in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil""	L039-PL	W	ISO 17025
Sulphate, water soluble, in soil	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	L038-PL	D	MCERTS
Sulphide in leachate	Determination of sulphide in leachate by ion selective electrode.	In-house method	L010-PL	W	NONE
Sulphide in soil	Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode.	In-house method	L010-PL	D	MCERTS
Total cyanide in leachate	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	MCERTS
TPH Oils (Leachate)	Determination of dichloromethane/hexane extractable hydrocarbons in leachate by GC-MS.	In-house method	L070-PL	W	NONE

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

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Analytical Report Number : 16-15738

Project / Site name:	Plots 6,7,8, First Street, Manchester	**Samples received on:**	15/04/2016
Your job number:	31847	**Samples instructed on:**	19/04/2016
Your order number:		**Analysis completed by:**	26/04/2016
Report Issue Number:	1	**Report issued on:**	26/04/2016
Samples Analysed:	1 wac multi sample		

Signed:

Rexona Rahman
Reporting Manager
For & on behalf of i2 Analytical Ltd.

Signed:

Emma Winter
Assistant Reporting Manager
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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Waste Acceptance Criteria Analytical Results

Report No:	**16-15738**						
					Client:	**GEOENG**	
Location	**Plots 6,7,8, First Street, Manchester**						
Lab Reference (Sample Number)	563004				**Landfill Waste Acceptance Criteria Limits**		
Sampling Date	14/04/2016				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	CP/RC101A 2						
Depth (m)	0.30						
Solid Waste Analysis							
TOC (%)**	3.1				3%	5%	6%
Loss on Ignition (%) **	7.7				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.30				1	--	--
Mineral Oil (mg/kg)	580				500	--	--
Total PAH (WAC-17) (mg/kg)	19				100	--	--
pH (units)**	8.0				--	>6	--
Acid Neutralisation Capacity (mol / kg)	11				--	To be evaluated	To be evaluated
Eluate Analysis (BS EN 12457 - 3 preparation utilising end over end leaching procedure)	2:1	8:1		Cumulative 10:1	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
	mg/l	mg/l		mg/kg			
Arsenic *	< 0.010	< 0.010		< 0.050	0.5	2	25
Barium *	0.035	0.021		0.23	20	100	300
Cadmium *	< 0.0005	< 0.0005		< 0.0020	0.04	1	5
Chromium *	0.025	0.019		0.20	0.5	10	70
Copper *	0.010	0.0048		0.053	2	50	100
Mercury *	< 0.0015	< 0.0015		< 0.010	0.01	0.2	2
Molybdenum *	0.0040	< 0.0030		< 0.020	0.5	10	30
Nickel *	< 0.0010	< 0.0010		0.0073	0.4	10	40
Lead *	< 0.0050	0.0068		0.062	0.5	10	50
Antimony *	< 0.0050	< 0.0050		< 0.020	0.06	0.7	5
Selenium *	< 0.010	< 0.010		< 0.040	0.1	0.5	7
Zinc *	0.0012	0.0045		0.042	4	50	200
Chloride *	< 4.0	< 4.0		20	800	4000	25000
Fluoride	1.3	0.49		5.6	10	150	500
Sulphate *	14	2.8		38	1000	20000	50000
TDS	80	30		350	4000	60000	100000
Phenol Index (Monhydric Phenols) *	< 0.13	< 0.13		< 0.50	1	-	-
DOC	11	8.3		85	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	2.0						
Dry Matter (%)	95						
Moisture (%)	4.9						
Stage 1							
Volume Eluate L2 (litres)	0.34						
Filtered Eluate VE1 (litres)	0.16						

Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and I2 cannot be held responsible for any discrepencies with current legislation

*= UKAS accredited (liquid eluate analysis only)
** = MCERTS accrediited

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Analytical Report Number : 16-15738

Project / Site name: Plots 6,7,8, First Street, Manchester

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

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

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
563004	CP/RC101A	2	0.30	Brown sandy loam with gravel.

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Analytical Report Number : 16-15738

Project / Site name: Plots 6,7,8, First Street, Manchester

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Acid neutralisation capacity of soil	Determination of acid neutralisation capacity by addition of acid or alkali followed by electronic probe.	In-house method based on Guidance an Sampling and Testing of Wastes to Meet Landfill Waste Acceptance	L046-PL	W	NONE
BTEX (Sum of BTEX compounds) in soil	Determination of BTEX in soil by headspace GC-MS. Individual components MCERTS accredited	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Chloride in WAC leachate (BS EN 12457-3 Prep)	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260.	L082-PL	W	ISO 17025
DOC in WAC leachate (BS EN 12457-3 Prep)	Determination of dissolved organic carbon in leachate by TOC/DOC NDIR analyser.	In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.	L037-PL	W	NONE
Fluoride in WAC leachate (BS EN 12457-3 Prep)	Determination of fluoride in leachate by 1:1ratio with a buffer solution followed by Ion Selective Electrode.	In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.	L033-PL	W	NONE
Loss on ignition of soil @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L047-PL	D	MCERTS
Metals in WAC leachate (BS EN 12457-3 Prep)	Determination of metals in leachate by acidification followed by ICP-OES.	In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.	L039-PL	W	ISO 17025
Mineral Oil in Soil	Determination of dichloromethane/hexane extractable hydrocarbons in soil by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	NONE
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
PCB's by GC-MS in soil	Determination of PCB by extraction with acetone and hexane followed by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	MCERTS
pH in soil	Determination of pH in soil by addition of water followed by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	MCERTS
Phenol Index in WAC leachate (BS EN 12457-3 Prep)	Determination of monohydric phenols in leachate by continuous flow analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	ISO 17025
Seciated WAC-17 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Sulphate in WAC leachate (BS EN 12457-3 Prep)	Determination of sulphate in leachate by acidification followed by ICP-OES.	In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.	L039-PL	W	ISO 17025
TDS in WAC leachate (BS EN 12457-3 Prep)	Determination of total dissolved solids in leachate by electrometric measurement.	In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.	L004-PL	W	NONE
Total organic carbon in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L023-PL	D	MCERTS

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Analytical Report Number : 16-15738

Project / Site name: Plots 6,7,8, First Street, Manchester

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

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Analytical Report Number : 16-16087

Replaces Analytical Report Number : 16-16087, issue no. 1

Project / Site name:	Plots 6,7 & 8, First Street, Manchester	**Samples received on:**	20/04/2016
Your job number:	31847	**Samples instructed on:**	22/04/2016
Your order number:		**Analysis completed by:**	03/06/2016
Report Issue Number:	2	**Report issued on:**	03/06/2016
Samples Analysed:	7 leachate samples - 9 soil samples		

Signed:

Rexona Rahman
Reporting Manager
For & on behalf of i2 Analytical Ltd.

Signed:

Emma Winter
Assistant Reporting Manager
For & on behalf of i2 Analytical Ltd.

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

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

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

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Analytical Report Number: 16-16087

Project / Site name: Plots 6,7 & 8, First Street, Manchester

Lab Sample Number				565061	565062	565063	565064	565065
Sample Reference				CP/RC102	CP/RC102A	CP/RC101B	CP/RC101B	CP/RC115
Sample Number				2	2	3	5	4
Depth (m)				0.30	0.60	0.60	1.50-1.60	1.00
Date Sampled				18/04/2016	19/04/2016	15/04/2016	15/04/2016	15/04/2016
Time Taken				1050	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	17	16	9.7	17	10
Total mass of sample received	kg	0.001	NONE	2.0	1.9	1.7	1.7	1.9
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	-	-	-	Not-detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-	-
General Inorganics								
pH	pH Units	N/A	MCERTS	7.4	8.1	8.6	8.3	11.0
Free Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Total Sulphate as SO_4	mg/kg	50	MCERTS	320	340	940	460	5500
Water Soluble Sulphate (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.050	0.024	0.084	0.038	0.24
Sulphide	mg/kg	1	MCERTS	< 1.0	< 1.0	7.4	< 1.0	11
Organic Matter	%	0.1	MCERTS	0.6	1.0	1.5	1.5	0.6
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	0.19	< 0.10	< 0.10
Fluorene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	0.13	< 0.10	< 0.10
Phenanthrene	mg/kg	0.1	MCERTS	< 0.10	0.27	1.6	< 0.10	0.39
Anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	0.38	< 0.10	< 0.10
Fluoranthene	mg/kg	0.1	MCERTS	< 0.10	0.42	2.9	< 0.10	0.74
Pyrene	mg/kg	0.1	MCERTS	< 0.10	0.46	2.7	< 0.10	0.84
Benzo(a)anthracene	mg/kg	0.1	MCERTS	< 0.10	0.23	1.5	< 0.10	0.43
Chrysene	mg/kg	0.05	MCERTS	< 0.05	0.19	1.3	< 0.05	0.45
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	< 0.10	0.22	1.7	< 0.10	0.58
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	< 0.10	0.14	0.76	< 0.10	0.24
Benzo(a)pyrene	mg/kg	0.1	MCERTS	< 0.10	0.23	1.4	< 0.10	0.55
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	0.70	< 0.10	0.24
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.95	< 0.05	0.32
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	< 1.60	2.16	16.1	< 1.60	4.78
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	8.1	7.0	18	19	7.2
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	0.3
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (III)	mg/kg	1	NONE	27	19	29	22	28
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	27	19	29	22	28
Copper (aqua regia extractable)	mg/kg	1	MCERTS	25	21	160	48	47
Lead (aqua regia extractable)	mg/kg	1	MCERTS	16	32	530	120	160
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	0.4	0.7	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	27	15	24	23	17
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	75	60	230	69	250

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Analytical Report Number: 16-16087

Project / Site name: Plots 6,7 & 8, First Street, Manchester

Lab Sample Number				565066	565067	565068	565069	
Sample Reference				CP/RC115	CP/RC101A	WS101	WS106	
Sample Number				7	8	1	1	
Depth (m)				2.70	3.30	0.00	0.00	
Date Sampled				18/04/2016	14/04/2016	18/04/2016	18/04/2016	
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	
Moisture Content	%	N/A	NONE	17	13	3.0	12	
Total mass of sample received	kg	0.001	NONE	2.0	1.9	2.0	2.0	
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	Chrysotile	-	
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Detected	Not-detected	
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	< 0.001	-	
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	< 0.001	-	
General Inorganics								
pH	pH Units	N/A	MCERTS	8.6	9.4	8.9	8.4	
Free Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	
Total Sulphate as SO_4	mg/kg	50	MCERTS	490	3100	500	1100	
Water Soluble Sulphate (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.052	0.38	0.021	0.14	
Sulphide	mg/kg	1	MCERTS	< 1.0	8.9	11	11	
Organic Matter	%	0.1	MCERTS	0.9	0.4	7.6	4.7	
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.61	1.3	
Acenaphthylene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	0.53	< 0.10	
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	0.48	0.37	
Fluorene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	0.37	0.47	
Phenanthrene	mg/kg	0.1	MCERTS	1.1	< 0.10	3.4	3.7	
Anthracene	mg/kg	0.1	MCERTS	0.18	< 0.10	1.8	0.95	
Fluoranthene	mg/kg	0.1	MCERTS	1.4	< 0.10	9.8	4.6	
Pyrene	mg/kg	0.1	MCERTS	1.6	< 0.10	17	4.7	
Benzo(a)anthracene	mg/kg	0.1	MCERTS	0.83	< 0.10	5.2	2.5	
Chrysene	mg/kg	0.05	MCERTS	0.75	< 0.05	7.2	2.9	
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	0.88	< 0.10	24	3.4	
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	0.46	< 0.10	7.6	1.2	
Benzo(a)pyrene	mg/kg	0.1	MCERTS	0.93	< 0.10	26	3.0	
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	0.39	< 0.10	16	1.3	
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	3.0	0.40	
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.50	< 0.05	20	1.8	
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	8.95	< 1.60	143	32.6	
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	13	17	12	17	
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	0.6	
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	
Chromium (III)	mg/kg	1	NONE	18	32	24	51	
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	18	32	24	51	
Copper (aqua regia extractable)	mg/kg	1	MCERTS	40	200	94	82	
Lead (aqua regia extractable)	mg/kg	1	MCERTS	160	520	150	190	
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	1.1	< 0.3	0.8	0.8	
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	17	24	22	33	
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	68	210	160	350	

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The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 16-16087
Project / Site name: Plots 6,7 & 8, First Street, Manchester
Your Order No:

Certificate of Analysis - Asbestos Quantification

Methods:

Qualitative Analysis

The samples were analysed qualitatively for asbestos by polarising light and dispersion staining as described by the Health and Safety Executive in HSG 248.

Quantitative Analysis

"The analysis was carried out using our documented in-house method A006 based on HSE Contract Research Report No: 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies et al, 1996) and HSG 248. Our method includes initial examination of the entire representative sample, then fractionation and detailed analysis of each fraction, with quantification by hand picking and weighing.

The limit of detection (reporting limit) of this method is 0.001 %.

The method has been validated using samples of at least 100 g, results for samples smaller than this should be interpreted with caution.

Both Qualitative and Quantitative Analyses are UKAS accredited.

Sample Number	Sample ID	Sample Depth (m)	Sample Weight (g)	Asbestos Containing Material Types Detected (ACM)	PLM Results	Asbestos by hand picking/weighing (%)	Total % Asbestos in Sample
565068	WS101	0.00	160	Loose Fibres	**Chrysotile**	< 0.001	**< 0.001**

Opinions and interpretations expressed herein are outside the scope of UKAS accreditatior

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Analytical Report Number: 16-16087

Project / Site name: Plots 6,7 & 8, First Street, Manchester

Lab Sample Number				565070	565071	565072	565073	565074
Sample Reference				CP/RC102	CP/RC102A	CP/RC101B	CP/RC115	CP/RC115
Sample Number				2	2	3	4	7
Depth (m)				0.30	0.60	0.60	1.00	2.70
Date Sampled				18/04/2016	19/04/2016	15/04/2016	15/04/2016	18/04/2016
Time Taken				1050	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
General Inorganics								
pH	pH Units	N/A	ISO 17025	7.6	6.8	9.1	8.9	8.6
Total Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10	< 10
Sulphate as SO_4	µg/l	100	ISO 17025	2700	8300	13300	42300	8650
Sulphide	µg/l	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Total Phenols								
Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10	< 10
Speciated PAHs								
Naphthalene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Total PAH								
Total EPA-16 PAHs	µg/l	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Heavy Metals / Metalloids								
Arsenic (dissolved)	µg/l	1.1	ISO 17025	< 1.1	7.5	< 1.1	1.3	9.6
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08
Chromium (dissolved)	µg/l	0.4	ISO 17025	< 0.4	3.5	< 0.4	15	2.2
Copper (dissolved)	µg/l	0.7	ISO 17025	2.0	6.6	1.0	6.2	2.0
Lead (dissolved)	µg/l	1	ISO 17025	< 1.0	12	< 1.0	7.8	2.1
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel (dissolved)	µg/l	0.3	ISO 17025	< 0.3	< 0.3	< 0.3	0.3	< 0.3
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Zinc (dissolved)	µg/l	0.4	ISO 17025	2.2	5.0	7.5	29	4.4
Petroleum Hydrocarbons								
Petroleum Range Organics (C6 - C10)	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
Diesel Range Organics (C10 - C25)	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
Oil Range Organics (C25 - C40)	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10

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Analytical Report Number: 16-16087

Project / Site name: Plots 6,7 & 8, First Street, Manchester

Lab Sample Number				565075	565076			
Sample Reference				CP/RC101A	WS101			
Sample Number				8	1			
Depth (m)				3.30	0.00			
Date Sampled				14/04/2016	18/04/2016			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Leachate Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
General Inorganics								
pH	pH Units	N/A	ISO 17025	8.5	8.4			
Total Cyanide	µg/l	10	ISO 17025	< 10	< 10			
Sulphate as SO_4	µg/l	100	ISO 17025	20000	2190			
Sulphide	µg/l	5	NONE	< 5.0	< 5.0			
Total Phenols								
Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10	< 10			
Speciated PAHs								
Naphthalene	µg/l	0.01	NONE	< 0.01	< 0.01			
Acenaphthylene	µg/l	0.01	NONE	< 0.01	< 0.01			
Acenaphthene	µg/l	0.01	NONE	< 0.01	< 0.01			
Fluorene	µg/l	0.01	NONE	< 0.01	< 0.01			
Phenanthrene	µg/l	0.01	NONE	< 0.01	< 0.01			
Anthracene	µg/l	0.01	NONE	< 0.01	< 0.01			
Fluoranthene	µg/l	0.01	NONE	< 0.01	< 0.01			
Pyrene	µg/l	0.01	NONE	< 0.01	< 0.01			
Benzo(a)anthracene	µg/l	0.01	NONE	< 0.01	< 0.01			
Chrysene	µg/l	0.01	NONE	< 0.01	< 0.01			
Benzo(b)fluoranthene	µg/l	0.01	NONE	< 0.01	< 0.01			
Benzo(k)fluoranthene	µg/l	0.01	NONE	< 0.01	< 0.01			
Benzo(a)pyrene	µg/l	0.01	NONE	< 0.01	< 0.01			
Indeno(1,2,3-cd)pyrene	µg/l	0.01	NONE	< 0.01	< 0.01			
Dibenz(a,h)anthracene	µg/l	0.01	NONE	< 0.01	< 0.01			
Benzo(ghi)perylene	µg/l	0.01	NONE	< 0.01	< 0.01			
Total PAH								
Total EPA-16 PAHs	µg/l	0.2	NONE	< 0.2	< 0.2			
Heavy Metals / Metalloids								
Arsenic (dissolved)	µg/l	1.1	ISO 17025	12	< 1.1			
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08			
Chromium (dissolved)	µg/l	0.4	ISO 17025	29	1.1			
Copper (dissolved)	µg/l	0.7	ISO 17025	11	9.9			
Lead (dissolved)	µg/l	1	ISO 17025	31	14			
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5			
Nickel (dissolved)	µg/l	0.3	ISO 17025	< 0.3	0.8			
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0			
Zinc (dissolved)	µg/l	0.4	ISO 17025	8.0	15			
Petroleum Hydrocarbons								
Petroleum Range Organics (C6 - C10)	µg/l	10	NONE	< 10	< 10			
Diesel Range Organics (C10 - C25)	µg/l	10	NONE	< 10	< 10			
Oil Range Organics (C25 - C40)	µg/l	10	NONE	< 10	< 10			

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Analytical Report Number : 16-16087

Project / Site name: Plots 6,7 & 8, First Street, Manchester

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

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

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
565061	CP/RC102	2	0.30	Brown clay and loam with gravel.
565062	CP/RC102A	2	0.60	Brown clay and loam with gravel.
565063	CP/RC101B	3	0.60	Brown loam and sand with gravel and brick.
565064	CP/RC101B	5	1.50-1.60	Brown clay and loam with gravel.
565065	CP/RC115	4	1.00	Brown loam and sand with gravel and rubble.
565066	CP/RC115	7	2.70	Brown clay and loam with gravel.
565067	CP/RC101A	8	3.30	Brown gravelly loam with brick.
565068	WS101	1	0.00	Brown loam and sand with gravel.
565069	WS106	1	0.00	Brown loam and sand with gravel and brick.

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Analytical Report Number : 16-16087

Project / Site name: Plots 6,7 & 8, First Street, Manchester

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Asbestos Quantification - Gravimetric	The analysis was carried out using documented in-house method based on references.	HSE Report No: 83/1996, HSG 248, HSG 264 & SCA Blue Book (draft).	A006	D	ISO 17025
Cr (III) in soil	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
DRO (Leachates)	Determination of dichloromethane extractable hydrocarbons in leachate by GC-MS.	In-house method	L070-PL	W	NONE
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Metals by ICP-OES in leachate	Determination of metals in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Monohydric phenols in leachate	Determination of phenols in leachate by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	ISO 17025
Organic matter in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L023-PL	D	MCERTS
pH in leachate	Determination of pH in leachate by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	ISO 17025
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
PRO (Leachates)	Determination of hydrocarbons C6-C10 by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	NONE
Speciated EPA-16 PAHs in leachate	Determination of PAH compounds in leachate by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L070-PL	W	NONE
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE

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Analytical Report Number : 16-16087

Project / Site name: Plots 6,7 & 8, First Street, Manchester

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate in leachates	Determination of sulphate in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Sulphate, water soluble, in soil	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	L038-PL	D	MCERTS
Sulphide in leachate	Determination of sulphide in leachate by ion selective electrode.	In-house method	L010-PL	W	NONE
Sulphide in soil	Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode.	In-house method	L010-PL	D	MCERTS
Total cyanide in leachate	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	MCERTS
TPH Oils (Leachate)	Determination of dichloromethane/hexane extractable hydrocarbons in leachate by GC-MS.	In-house method	L070-PL	W	NONE

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

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Sample ID	Other_ID	Sample Type	Job	Sample Number	Sample Deviation Code	test_name	test_ref	Test Deviation code
CP/RC101A	8	S	16-16087	565067	c	Sulphide in soil	L010-PL	c
CP/RC101B	3	S	16-16087	565063	c	Sulphide in soil	L010-PL	c
CP/RC101B	5	S	16-16087	565064	c	Sulphide in soil	L010-PL	c
CP/RC115	4	S	16-16087	565065	c	Sulphide in soil	L010-PL	c

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

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Analytical Report Number : 16-16088

Project / Site name:	Plots 6,7 & 8, First Street, Manchester	**Samples received on:**	20/04/2016
Your job number:	31847	**Samples instructed on:**	22/04/2016
Your order number:		**Analysis completed by:**	05/05/2016
Report Issue Number:	1	**Report issued on:**	05/05/2016
Samples Analysed:	2 wac multi samples		

Signed:

Rexona Rahman
Reporting Manager
For & on behalf of i2 Analytical Ltd.

Signed:

Emma Winter
Assistant Reporting Manager
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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Waste Acceptance Criteria Analytical Results

Report No:	**16-16088**						
					Client:	**GEOENG**	
Location	**Plots 6,7 & 8, First Street, Manchester**						
Lab Reference (Sample Number)	565077				**Landfill Waste Acceptance Criteria Limits**		
Sampling Date	15/04/2016				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	CP/RC101B 5						
Depth (m)	1.50-1.60						
Solid Waste Analysis							
TOC (%)**	1.2				3%	5%	6%
Loss on Ignition (%) **	4.4				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.30				1	--	--
Mineral Oil (mg/kg)	54				500	--	--
Total PAH (WAC-17) (mg/kg)	< 1.6				100	--	--
pH (units)**	7.7				--	>6	--
Acid Neutralisation Capacity (mol / kg)	9.0				--	To be evaluated	To be evaluated
Eluate Analysis	2:1	8:1		Cumulative 10:1	Limit values for compliance leaching test		
(BS EN 12457 - 3 preparation utilising end over end leaching procedure)	mg/l	mg/l		mg/kg	using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
Arsenic *	< 0.010	0.013		0.13	0.5	2	25
Barium *	0.014	0.053		0.48	20	100	300
Cadmium *	< 0.0005	< 0.0005		< 0.0020	0.04	1	5
Chromium *	0.0027	0.0045		0.042	0.5	10	70
Copper *	0.0048	0.0091		0.085	2	50	100
Mercury *	< 0.0015	< 0.0015		< 0.010	0.01	0.2	2
Molybdenum *	0.038	0.0089		0.13	0.5	10	30
Nickel *	< 0.0010	0.0027		0.023	0.4	10	40
Lead *	< 0.0050	0.015		0.13	0.5	10	50
Antimony *	< 0.0050	< 0.0050		< 0.020	0.06	0.7	5
Selenium *	< 0.010	< 0.010		< 0.040	0.1	0.5	7
Zinc *	< 0.0010	0.0094		0.081	4	50	200
Chloride *	< 4.0	< 4.0		< 15	800	4000	25000
Fluoride	0.76	0.49		5.3	10	150	500
Sulphate *	12	2.0		34	1000	20000	50000
TDS	320	80		1100	4000	60000	100000
Phenol Index (Monhydric Phenols) *	< 0.13	< 0.13		< 0.50	1	-	-
DOC	5.3	4.1		43	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	1.7						
Dry Matter (%)	83						
Moisture (%)	17						
Stage 1							
Volume Eluate L2 (litres)	0.32						
Filtered Eluate VE1 (litres)	0.25						

Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and I2 cannot be held responsible for any discrepencies with current legislation

*= UKAS accredited (liquid eluate analysis only)
** = MCERTS accrediited

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Waste Acceptance Criteria Analytical Results

Report No:	**16-16088**						
					Client:	**GEOENG**	
Location	**Plots 6,7 & 8, First Street, Manchester**						
Lab Reference (Sample Number)	565078				**Landfill Waste Acceptance Criteria Limits**		
Sampling Date	18/04/2016				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	CP/RC115 7						
Depth (m)	2.70						
Solid Waste Analysis							
TOC (%)**	0.9				3%	5%	6%
Loss on Ignition (%) **	2.8				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.30				1	--	--
Mineral Oil (mg/kg)	13				500	--	--
Total PAH (WAC-17) (mg/kg)	9.0				100	--	--
pH (units)**	7.8				--	>6	--
Acid Neutralisation Capacity (mol / kg)	9.8				--	To be evaluated	To be evaluated
Eluate Analysis	2:1	8:1		Cumulative 10:1	Limit values for compliance leaching test		
(BS EN 12457 - 3 preparation utilising end over end leaching procedure)	mg/l	mg/l		mg/kg	using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
Arsenic *	0.012	0.013		0.13	0.5	2	25
Barium *	0.016	0.011		0.11	20	100	300
Cadmium *	< 0.0005	< 0.0005		< 0.0020	0.04	1	5
Chromium *	0.0068	0.0027		0.031	0.5	10	70
Copper *	0.0040	0.0037		0.038	2	50	100
Mercury *	< 0.0015	< 0.0015		< 0.010	0.01	0.2	2
Molybdenum *	0.022	0.0060		0.073	0.5	10	30
Nickel *	0.0013	0.0011		0.011	0.4	10	40
Lead *	< 0.0050	< 0.0050		0.031	0.5	10	50
Antimony *	0.011	< 0.0050		0.044	0.06	0.7	5
Selenium *	< 0.010	< 0.010		< 0.040	0.1	0.5	7
Zinc *	< 0.0010	0.0035		0.033	4	50	200
Chloride *	4.0	< 4.0		21	800	4000	25000
Fluoride	0.51	0.31		3.3	10	150	500
Sulphate *	38	6.8		94	1000	20000	50000
TDS	280	70		870	4000	60000	100000
Phenol Index (Monhydric Phenols) *	< 0.13	< 0.13		< 0.50	1	-	-
DOC	6.8	4.7		49	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	2.0						
Dry Matter (%)	83						
Moisture (%)	17						
Stage 1							
Volume Eluate L2 (litres)	0.32						
Filtered Eluate VE1 (litres)	0.15						

Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and I2 cannot be held responsible for any discrepencies with current legislatior

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Analytical Report Number : 16-16088

Project / Site name: Plots 6,7 & 8, First Street, Manchester

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

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

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
565077	CP/RC101B	5	1.50-1.60	Brown clay and loam with gravel.
565078	CP/RC115	7	2.70	Brown clay and loam with gravel.

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Analytical Report Number : 16-16088

Project / Site name: Plots 6,7 & 8, First Street, Manchester

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Acid neutralisation capacity of soil	Determination of acid neutralisation capacity by addition of acid or alkali followed by electronic probe.	In-house method based on Guidance an Sampling and Testing of Wastes to Meet Landfill Waste Acceptance	L046-PL	W	NONE
BTEX (Sum of BTEX compounds) in soil	Determination of BTEX in soil by headspace GC-MS. Individual components MCERTS accredited	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Chloride in WAC leachate (BS EN 12457-3 Prep)	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260.	L082-PL	W	ISO 17025
DOC in WAC leachate (BS EN 12457-3 Prep)	Determination of dissolved organic carbon in leachate by TOC/DOC NDIR analyser.	In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.	L037-PL	W	NONE
Fluoride in WAC leachate (BS EN 12457-3 Prep)	Determination of fluoride in leachate by 1:1ratio with a buffer solution followed by Ion Selective Electrode.	In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.	L033-PL	W	NONE
Loss on ignition of soil @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L047-PL	D	MCERTS
Metals in WAC leachate (BS EN 12457-3 Prep)	Determination of metals in leachate by acidification followed by ICP-OES.	In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.	L039-PL	W	ISO 17025
Mineral Oil in Soil	Determination of dichloromethane/hexane extractable hydrocarbons in soil by GC-MS.	In-house method based on USEPA 8270	L076-PL	D	NONE
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
PCB's by GC-MS in soil	Determination of PCB by extraction with acetone and hexane followed by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	MCERTS
pH in soil	Determination of pH in soil by addition of water followed by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	MCERTS
Phenol Index in WAC leachate (BS EN 12457-3 Prep)	Determination of monohydric phenols in leachate by continuous flow analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	ISO 17025
Seciated WAC-17 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Sulphate in WAC leachate (BS EN 12457-3 Prep)	Determination of sulphate in leachate by acidification followed by ICP-OES.	In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.	L039-PL	W	ISO 17025
TDS in WAC leachate (BS EN 12457-3 Prep)	Determination of total dissolved solids in leachate by electrometric measurement.	In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.	L031-PL	W	NONE
Total organic carbon in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L023-PL	D	MCERTS

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Analytical Report Number : 16-16088

Project / Site name: Plots 6,7 & 8, First Street, Manchester

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

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Analytical Report Number : 16-16090

Project / Site name:	Plots 6,7 & 8, First Street, Manchester	**Samples received on:**	20/04/2016
Your job number:	31847	**Samples instructed on:**	22/04/2016
Your order number:		**Analysis completed by:**	04/05/2016
Report Issue Number:	1	**Report issued on:**	04/05/2016
Samples Analysed:	1 soil sample		

Signed:

Rexona Rahman
Reporting Manager
For & on behalf of i2 Analytical Ltd.

Signed:

Dr Irma Doyle
Senior Account Manager
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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Analytical Report Number: 16-16090

Project / Site name: Plots 6,7 & 8, First Street, Manchester

Lab Sample Number				565080				
Sample Reference				CP/RC101B				
Sample Number				4				
Depth (m)				1.00				
Date Sampled				15/04/2016				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1				
Moisture Content	%	N/A	NONE	10				
Total mass of sample received	kg	0.001	NONE	1.6				
General Inorganics								
pH	pH Units	N/A	MCERTS	8.4				
Electrical Conductivity	µS/cm	10	NONE	180				
Redox Potential	mV	-800	NONE	211.90				
Phenols by HPLC								
Catechol	µg/kg	1	NONE	< 1.0				
Resorcinol	µg/kg	1	NONE	< 1.0				
Ethylphenol & Dimethylphenol	µg/kg	1	NONE	< 1.0				
Cresols	µg/kg	1	NONE	< 1.0				
Naphthols	µg/kg	1	NONE	< 1.0				
Isopropylphenol	µg/kg	1	NONE	< 1.0				
Phenol	µg/kg	0.1	NONE	< 0.1				
Trimethylphenol	µg/kg	1	NONE	< 1.0				
Total Phenols								
Total Phenols (HPLC)	µg/kg	7	NONE	< 7.0				
Monoaromatics								
Benzene	ug/kg	1	MCERTS	< 1.0				
Toluene	µg/kg	1	MCERTS	< 1.0				
Ethylbenzene	µg/kg	1	MCERTS	< 1.0				
p & m-xylene	µg/kg	1	MCERTS	< 1.0				
o-xylene	µg/kg	1	MCERTS	< 1.0				
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0				
Petroleum Hydrocarbons								
Mineral Oil (C10 - C20)	mg/kg	10	NONE	12				
Mineral Oil (C11 - C20)	mg/kg	10	NONE	12				
Mineral Oil (C21 - C40)	mg/kg	10	NONE	240				
Chlorinated Solvents								
Total Chlorinated Solvents	µg/kg	100	NONE	< 100				

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Analytical Report Number: 16-16090

Project / Site name: Plots 6,7 & 8, First Street, Manchester

Lab Sample Number				565080				
Sample Reference				CP/RC101B				
Sample Number				4				
Depth (m)				1.00				
Date Sampled				15/04/2016				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/kg	1	ISO 17025	< 1.0				
Chloroethane	µg/kg	1	ISO 17025	< 1.0				
Bromomethane	µg/kg	1	ISO 17025	< 1.0				
Vinyl Chloride	µg/kg	1	ISO 17025	< 1.0				
Trichlorofluoromethane	µg/kg	1	ISO 17025	< 1.0				
1,1-Dichloroethene	µg/kg	1	MCERTS	< 1.0				
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	< 1.0				
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	< 1.0				
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0				
1,1-Dichloroethane	µg/kg	1	MCERTS	< 1.0				
2,2-Dichloropropane	µg/kg	1	NONE	< 1.0				
Trichloromethane	µg/kg	1	MCERTS	< 1.0				
1,1,1-Trichloroethane	µg/kg	1	MCERTS	< 1.0				
1,2-Dichloroethane	µg/kg	1	MCERTS	< 1.0				
1,1-Dichloropropene	µg/kg	1	NONE	< 1.0				
Trans-1,2-dichloroethene	µg/kg	1	NONE	< 1.0				
Benzene	µg/kg	1	MCERTS	< 1.0				
Tetrachloromethane	µg/kg	1	MCERTS	< 1.0				
1,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0				
Trichloroethene	µg/kg	1	MCERTS	< 1.0				
Dibromomethane	µg/kg	1	MCERTS	< 1.0				
Bromodichloromethane	µg/kg	1	NONE	< 1.0				
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0				
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0				
Toluene	µg/kg	1	MCERTS	< 1.0				
1,1,2-Trichloroethane	µg/kg	1	MCERTS	< 1.0				
1,3-Dichloropropane	µg/kg	1	ISO 17025	< 1.0				
Dibromochloromethane	µg/kg	1	ISO 17025	< 1.0				
Tetrachloroethene	µg/kg	1	MCERTS	< 1.0				
1,2-Dibromoethane	µg/kg	1	ISO 17025	< 1.0				
Chlorobenzene	µg/kg	1	MCERTS	< 1.0				
1,1,1,2-Tetrachloroethane	µg/kg	1	NONE	< 1.0				
Ethylbenzene	µg/kg	1	MCERTS	< 1.0				
p & m-Xylene	µg/kg	1	MCERTS	< 1.0				
Styrene	µg/kg	1	MCERTS	< 1.0				
Tribromomethane	µg/kg	1	MCERTS	< 1.0				
o-Xylene	µg/kg	1	MCERTS	< 1.0				
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0				
Isopropylbenzene	µg/kg	1	NONE	< 1.0				
Bromobenzene	µg/kg	1	MCERTS	< 1.0				
n-Propylbenzene	µg/kg	1	ISO 17025	< 1.0				
2-Chlorotoluene	µg/kg	1	NONE	< 1.0				
4-Chlorotoluene	µg/kg	1	NONE	< 1.0				
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0				
tert-Butylbenzene	µg/kg	1	NONE	< 1.0				
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0				
sec-Butylbenzene	µg/kg	1	NONE	< 1.0				
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	< 1.0				
p-Isopropyltoluene	µg/kg	1	ISO 17025	< 1.0				
1,2-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0				
1,4-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0				
Butylbenzene	µg/kg	1	NONE	< 1.0				
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	< 1.0				
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	< 1.0				
Hexachlorobutadiene	µg/kg	1	NONE	< 1.0				
1,2,3-Trichlorobenzene	µg/kg	1	NONE	< 1.0				

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Analytical Report Number: 16-16090

Project / Site name: Plots 6,7 & 8, First Street, Manchester

Lab Sample Number				565080				
Sample Reference				CP/RC101B				
Sample Number				4				
Depth (m)				1.00				
Date Sampled				15/04/2016				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs TICs								
VOCs TICs Compound Name		N/A	NONE	ND				
VOC % Match	%	N/A	NONE	0				

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Project / Site name: Plots 6,7 & 8, First Street, Manchester

Lab Sample Number				565080				
Sample Reference				CP/RC101B				
Sample Number				4				
Depth (m)				1.00				
Date Sampled				15/04/2016				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
Aniline	mg/kg	0.1	NONE	< 0.1				
Phenol	mg/kg	0.2	ISO 17025	< 0.2				
2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1				
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	< 0.2				
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2				
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1				
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2				
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1				
2-Methylphenol	mg/kg	0.3	MCERTS	< 0.3				
Hexachloroethane	mg/kg	0.05	MCERTS	< 0.05				
Nitrobenzene	mg/kg	0.3	MCERTS	< 0.3				
4-Methylphenol	mg/kg	0.2	NONE	< 0.2				
Isophorone	mg/kg	0.2	MCERTS	< 0.2				
2-Nitrophenol	mg/kg	0.3	MCERTS	< 0.3				
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	< 0.3				
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	< 0.3				
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	< 0.3				
Naphthalene	mg/kg	0.05	MCERTS	0.30				
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	< 0.3				
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1				
Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1				
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1				
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	< 0.1				
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	< 0.2				
2-Methylnaphthalene	mg/kg	0.1	NONE	0.3				
2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1				
Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1				
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	< 0.1				
Acenaphthylene	mg/kg	0.1	MCERTS	< 0.10				
Acenaphthene	mg/kg	0.1	MCERTS	1.2				
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	< 0.2				
Dibenzofuran	mg/kg	0.2	MCERTS	0.6				
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	< 0.3				
Diethyl phthalate	mg/kg	0.2	MCERTS	< 0.2				
4-Nitroaniline	mg/kg	0.2	MCERTS	< 0.2				
Fluorene	mg/kg	0.1	MCERTS	0.90				
Azobenzene	mg/kg	0.3	MCERTS	< 0.3				
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0.2				
Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0.3				
Phenanthrene	mg/kg	0.1	MCERTS	5.6				
Anthracene	mg/kg	0.1	MCERTS	1.5				
Carbazole	mg/kg	0.3	MCERTS	0.4				
Dibutyl phthalate	mg/kg	0.2	MCERTS	< 0.2				
Anthraquinone	mg/kg	0.3	MCERTS	< 0.3				
Fluoranthene	mg/kg	0.1	MCERTS	8.0				
Pyrene	mg/kg	0.1	MCERTS	7.1				
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	< 0.3				
Benzo(a)anthracene	mg/kg	0.1	MCERTS	3.5				
Chrysene	mg/kg	0.05	MCERTS	2.8				
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	3.5				
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	1.6				
Benzo(a)pyrene	mg/kg	0.1	MCERTS	2.9				
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	1.4				
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	0.33				
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	1.5				

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Analytical Report Number: 16-16090

Project / Site name: Plots 6,7 & 8, First Street, Manchester

Lab Sample Number				565080				
Sample Reference				CP/RC101B				
Sample Number				4				
Depth (m)				1.00				
Date Sampled				15/04/2016				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs TICs								
SVOCs TICs Compound Name		N/A	NONE	Naphthalene, 2,6-dimethyl-				
SVOC % Match	%	N/A	NONE	96				
SVOCs TICs Compound Name		N/A	NONE	Anthracene, 1-methyl-				
SVOC % Match	%	N/A	NONE	96				
SVOCs TICs Compound Name		N/A	NONE	Z-11,13-Tetradecadien-1-ol acetate				
SVOC % Match	%	N/A	NONE	96				
SVOCs TICs Compound Name		N/A	NONE	Pyrene, 1-methyl-				
SVOC % Match	%	N/A	NONE	95				
SVOCs TICs Compound Name		N/A	NONE	11H-Benzo[b]fluorene				
SVOC % Match	%	N/A	NONE	95				
SVOCs TICs Compound Name		N/A	NONE	9-Octadecenamide, (Z)-				
SVOC % Match	%	N/A	NONE	95				
SVOCs TICs Compound Name		N/A	NONE	Benzenepropanoic acid, 3,5-bis(1,1-dimethylethyl)-4-hydroxy-, octadecyl ester				
SVOC % Match	%	N/A	NONE	95				

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Analytical Report Number : 16-16090

Project / Site name: Plots 6,7 & 8, First Street, Manchester

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

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

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
565080	CP/RC101B	4	1.00	Brown loam and sand with gravel and brick.

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Analytical Report Number : 16-16090

Project / Site name: Plots 6,7 & 8, First Street, Manchester

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Electrical conductivity of soil	Determination of electrical conductivity in soil by addition of saturated calcium sulphate followed by electrometric measurement.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L031-PL	W	NONE
Mineral Oil (Soil)	Determination of mineral oil fraction extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method	L076-PL	D	NONE
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
Phenols, speciated, in soil, by HPLC	Determination of speciated phenols by HPLC.	In house method based on Blue Book Method.	L030-PL	W	NONE
Redox Potential of soil	Determination of redox potential in soil by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L084-PL	W	NONE
Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds in soil by extraction in dichloromethane and hexane followed by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Tentatively identified compounds (SVOC) in soil	Determination of semi-volatile organic compounds total ion count in soil by extraction with dichloromethane and hexane followed by GC-MS followed by a full library scan.	In-house method based on USEPA 8270	L064-PL	D	NONE
Tentatively identified compounds (VOC) in soil	Determination of volatile organic compounds total ion count in soil by headspace GC-MS followed by a full library scan.	In-house method based on USEPA8260	L073-PL	W	NONE
Total Chlorinated Solvents in soil	Determination of chlorinated solvents in soil by headspace GC-MS.	In-house method based on USEPA8260	L017-UK	W	MCERTS
Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

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Sample ID	Other_ID	Sample Type	Job	Sample Number	Sample Deviation Code	test_name	test_ref	Test Deviation code
CP/RC101B	4	S	16-16090	565080	c	Chlorinated Solvents in soil (raw dets)	L017-UK	c
CP/RC101B	4	S	16-16090	565080	c	Mineral Oil (Soil)	L076-PL	c
CP/RC101B	4	S	16-16090	565080	c	Redox Potential of soil	L084-PL	c
CP/RC101B	4	S	16-16090	565080	c	Total Chlorinated Solvents in soil	L017-UK	c

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

Ian Garstang
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Analytical Report Number : 16-16513

Project / Site name:	Plots 6,7&8, First Street, Manchester	**Samples received on:**	27/04/2016
Your job number:	31847	**Samples instructed on:**	28/04/2016
Your order number:		**Analysis completed by:**	06/05/2016
Report Issue Number:	1	**Report issued on:**	06/05/2016
Samples Analysed:	3 leachate samples - 6 soil samples		

Signed:

Rexona Rahman
Reporting Manager
For & on behalf of i2 Analytical Ltd.

Signed:

Emma Winter
Assistant Reporting Manager
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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Analytical Report Number: 16-16513

Project / Site name: Plots 6,7&8, First Street, Manchester

Lab Sample Number				567237	567238	567577	567578	567579
Sample Reference				CP/RC117A	CP/RC117A	CP/RC107	CP/RC107	CP/RC112
Sample Number				3	6	3	4	3
Depth (m)				0.60	1.90	1.00	1.50	0.60
Date Sampled				22/04/2016	22/04/2016	20/04/2016	21/04/2016	20/04/2016
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	-	24
Moisture Content	%	N/A	NONE	12	21	6.8	-	13
Total mass of sample received	kg	0.001	NONE	1.1	1.2	1.4	-	1.4
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	-	Not-detected	Not-detected
General Inorganics								
pH	pH Units	N/A	MCERTS	8.4	7.3	8.1	-	8.7
Free Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	-	< 1
Total Sulphate as SO_4	mg/kg	50	MCERTS	1000	600	190	-	1200
Water Soluble Sulphate (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.061	0.15	0.041	-	0.16
Sulphide	mg/kg	1	MCERTS	1.6	< 1.0	3.9	-	2.9
Organic Matter	%	0.1	MCERTS	1.7	1.0	0.3	-	2.3
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	0.32	< 0.05	< 0.05	-	3.1
Acenaphthylene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	-	0.32
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	-	3.5
Fluorene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	-	2.4
Phenanthrene	mg/kg	0.1	MCERTS	0.82	< 0.10	1.8	-	21
Anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	0.36	-	5.4
Fluoranthene	mg/kg	0.1	MCERTS	1.6	< 0.10	1.9	-	26
Pyrene	mg/kg	0.1	MCERTS	2.7	< 0.10	1.6	-	23
Benzo(a)anthracene	mg/kg	0.1	MCERTS	1.4	< 0.10	0.74	-	12
Chrysene	mg/kg	0.05	MCERTS	1.5	< 0.05	0.68	-	11
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	0.85	< 0.10	0.84	-	13
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	0.71	< 0.10	0.27	-	5.2
Benzo(a)pyrene	mg/kg	0.1	MCERTS	1.2	< 0.10	0.60	-	11
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	0.38	< 0.10	0.37	-	5.8
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	-	1.4
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.61	< 0.05	0.38	-	7.3
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	12.0	< 1.60	9.53	-	151
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	12	18	6.6	-	25
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	-	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	-	< 4.0
Chromium (III)	mg/kg	1	NONE	10	12	19	-	19
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	11	12	19	-	19
Copper (aqua regia extractable)	mg/kg	1	MCERTS	38	53	15	-	89
Lead (aqua regia extractable)	mg/kg	1	MCERTS	430	54	32	-	230
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.5	< 0.3	< 0.3	-	0.6
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	15	33	20	-	31
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	240	170	73	-	170

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Analytical Report Number: 16-16513

Project / Site name: Plots 6,7&8, First Street, Manchester

Lab Sample Number				567580				
Sample Reference				CP/RC112				
Sample Number				9				
Depth (m)				3.50				
Date Sampled				21/04/2016				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1				
Moisture Content	%	N/A	NONE	13				
Total mass of sample received	kg	0.001	NONE	1.5				
Asbestos in Soil	Type	N/A	ISO 17025	-				
General Inorganics								
pH	pH Units	N/A	MCERTS	8.8				
Free Cyanide	mg/kg	1	MCERTS	< 1				
Total Sulphate as SO_4	mg/kg	50	MCERTS	180				
Water Soluble Sulphate (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.044				
Sulphide	mg/kg	1	MCERTS	< 1.0				
Organic Matter	%	0.1	MCERTS	0.2				
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	0.13				
Acenaphthylene	mg/kg	0.1	MCERTS	< 0.10				
Acenaphthene	mg/kg	0.1	MCERTS	0.98				
Fluorene	mg/kg	0.1	MCERTS	0.62				
Phenanthrene	mg/kg	0.1	MCERTS	6.9				
Anthracene	mg/kg	0.1	MCERTS	1.4				
Fluoranthene	mg/kg	0.1	MCERTS	8.7				
Pyrene	mg/kg	0.1	MCERTS	7.7				
Benzo(a)anthracene	mg/kg	0.1	MCERTS	3.3				
Chrysene	mg/kg	0.05	MCERTS	2.6				
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	3.7				
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	0.98				
Benzo(a)pyrene	mg/kg	0.1	MCERTS	3.0				
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	1.5				
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	0.32				
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	1.8				
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	43.6				
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	2.9				
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2				
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0				
Chromium (III)	mg/kg	1	NONE	11				
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	11				
Copper (aqua regia extractable)	mg/kg	1	MCERTS	23				
Lead (aqua regia extractable)	mg/kg	1	MCERTS	38				
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3				
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	14				
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0				
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	59				

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Analytical Report Number: 16-16513

Project / Site name: Plots 6,7&8, First Street, Manchester

Lab Sample Number				567239	567581	567582		
Sample Reference				CP/RC117A	CP/RC107	CP/RC112		
Sample Number				6	3	9		
Depth (m)				1.90	1.00	3.50		
Date Sampled				22/04/2016	20/04/2016	21/04/2016		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Leachate Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
General Inorganics								
pH	pH Units	N/A	ISO 17025	8.7	8.6	8.4		
Total Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10		
Sulphate as SO_4	µg/l	100	ISO 17025	14400	1450	6300		
Sulphide	µg/l	5	NONE	< 5.0	< 5.0	< 5.0		
Total Phenols								
Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10	< 10	< 10		
Speciated PAHs								
Naphthalene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01		
Acenaphthylene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01		
Acenaphthene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01		
Fluorene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01		
Phenanthrene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01		
Anthracene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01		
Fluoranthene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01		
Pyrene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01		
Benzo(a)anthracene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01		
Chrysene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01		
Benzo(b)fluoranthene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01		
Benzo(k)fluoranthene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01		
Benzo(a)pyrene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01		
Indeno(1,2,3-cd)pyrene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01		
Dibenz(a,h)anthracene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01		
Benzo(ghi)perylene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01		
Total PAH								
Total EPA-16 PAHs	µg/l	0.2	NONE	< 0.2	< 0.2	< 0.2		
Heavy Metals / Metalloids								
Arsenic (dissolved)	µg/l	1.1	ISO 17025	< 1.1	1.6	< 1.1		
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08	< 0.08		
Chromium (dissolved)	µg/l	0.4	ISO 17025	< 0.4	1.3	1.9		
Copper (dissolved)	µg/l	0.7	ISO 17025	2.4	2.1	4.5		
Lead (dissolved)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5		
Nickel (dissolved)	µg/l	0.3	ISO 17025	< 0.3	< 0.3	1.3		
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0	< 4.0		
Zinc (dissolved)	µg/l	0.4	ISO 17025	6.2	< 0.4	7.3		
Petroleum Hydrocarbons								
Petroleum Range Organics (C6 - C10)	µg/l	10	NONE	< 10	< 10	< 10		
Diesel Range Organics (C10 - C25)	µg/l	10	NONE	< 10	< 10	< 10		
Oil Range Organics (C25 - C40)	µg/l	10	NONE	< 10	< 10	< 10		

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Analytical Report Number : 16-16513

Project / Site name: Plots 6,7&8, First Street, Manchester

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

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

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
567237	CP/RC117A	3	0.60	Brown loam and sand with gravel.
567238	CP/RC117A	6	1.90	Brown clay and loam with gravel and brick.
567577	CP/RC107	3	1.00	Brown gravelly sand.
567578	CP/RC107	4	1.50	-
567579	CP/RC112	3	0.60	Brown loam and sand with stones.
567580	CP/RC112	9	3.50	Brown sandy clay.

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Analytical Report Number : 16-16513

Project / Site name: Plots 6,7&8, First Street, Manchester

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Cr (III) in soil	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
DRO (Leachates)	Determination of dichloromethane extractable hydrocarbons in leachate by GC-MS.	In-house method	L070-PL	W	NONE
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Metals by ICP-OES in leachate	Determination of metals in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Monohydric phenols in leachate	Determination of phenols in leachate by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	ISO 17025
Organic matter in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L023-PL	D	MCERTS
pH in leachate	Determination of pH in leachate by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	ISO 17025
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
PRO (Leachates)	Determination of hydrocarbons C6-C10 by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	NONE
Speciated EPA-16 PAHs in leachate	Determination of PAH compounds in leachate by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L070-PL	W	NONE
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Sulphate in leachates	Determination of sulphate in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025

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Analytical Report Number : 16-16513

Project / Site name: Plots 6,7&8, First Street, Manchester

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate, water soluble, in soil	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	L038-PL	D	MCERTS
Sulphide in leachate	Determination of sulphide in leachate by ion selective electrode.	In-house method	L010-PL	W	NONE
Sulphide in soil	Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode.	In-house method	L010-PL	D	MCERTS
Total cyanide in leachate	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	MCERTS
TPH Oils (Leachate)	Determination of dichloromethane/hexane extractable hydrocarbons in leachate by GC-MS.	In-house method	L070-PL	W	NONE

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

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Sample ID	Other_ID	Sample Type	Job	Sample Number	Sample Deviation Code	test_name	test_ref	Test Deviation code
CP/RC107	3	S	16-16513	567577	c	Sulphide in soil	L010-PL	c
CP/RC112	3	S	16-16513	567579	c	Sulphide in soil	L010-PL	c
CP/RC112	9	S	16-16513	567580	c	Sulphide in soil	L010-PL	c

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

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Analytical Report Number : 16-16549

Project / Site name:	Plots 6,7&8, First Street, Manchester	**Samples received on:**	28/04/2016
Your job number:	31847	**Samples instructed on:**	28/04/2016
Your order number:		**Analysis completed by:**	06/05/2016
Report Issue Number:	1	**Report issued on:**	06/05/2016
Samples Analysed:	1 soil sample		

Signed:

Rexona Rahman
Reporting Manager
For & on behalf of i2 Analytical Ltd.

Signed:

Emma Winter
Assistant Reporting Manager
For & on behalf of i2 Analytical Ltd.

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

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

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

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting

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Analytical Report Number: 16-16549

Project / Site name: Plots 6,7&8, First Street, Manchester

Lab Sample Number				567583				
Sample Reference				CP/RC107				
Sample Number				3				
Depth (m)				1.00				
Date Sampled				20/04/2016				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1				
Moisture Content	%	N/A	NONE	4.7				
Total mass of sample received	kg	0.001	NONE	1.4				
General Inorganics								
pH (BS1377)	pH Units	N/A	MCERTS	8.2				
Electrical Conductivity	µS/cm	10	NONE	110				
Redox Potential	mV	-800	NONE	215.00				
Phenols by HPLC								
Catechol	µg/kg	1	NONE	< 1.0				
Resorcinol	µg/kg	1	NONE	< 1.0				
Butyl Phenols	µg/kg	1	NONE	< 1.0				
Cresols	µg/kg	1	NONE	< 1.0				
Naphthols	µg/kg	1	NONE	< 1.0				
Phenol	µg/kg	0.1	NONE	< 0.1				
Trimethylphenol	µg/kg	1	NONE	< 1.0				
Total Phenols								
Total Phenols (HPLC)	µg/kg	7	NONE	< 7.0				
Monoaromatics								
Benzene	ug/kg	1	MCERTS	< 1.0				
Toluene	µg/kg	1	MCERTS	< 1.0				
Ethylbenzene	µg/kg	1	MCERTS	< 1.0				
p & m-xylene	µg/kg	1	MCERTS	< 1.0				
o-xylene	µg/kg	1	MCERTS	< 1.0				
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0				
Petroleum Hydrocarbons								
Mineral Oil (C10 - C20)	mg/kg	10	NONE	< 10				
Mineral Oil (C20 - C40)	mg/kg	10	NONE	< 10				
Chlorinated Solvents								
Total Chlorinated Solvents	µg/kg	100	NONE	< 100				

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Analytical Report Number: 16-16549

Project / Site name: Plots 6,7&8, First Street, Manchester

Lab Sample Number				567583				
Sample Reference				CP/RC107				
Sample Number				3				
Depth (m)				1.00				
Date Sampled				20/04/2016				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/kg	1	ISO 17025	< 1.0				
Chloroethane	µg/kg	1	ISO 17025	< 1.0				
Bromomethane	µg/kg	1	ISO 17025	< 1.0				
Vinyl Chloride	µg/kg	1	ISO 17025	< 1.0				
Trichlorofluoromethane	µg/kg	1	ISO 17025	< 1.0				
1,1-dichloroethene	µg/kg	1	MCERTS	< 1.0				
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	< 1.0				
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	< 1.0				
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0				
1,1-dichloroethane	µg/kg	1	MCERTS	< 1.0				
2,2-Dichloropropane	µg/kg	1	NONE	< 1.0				
Trichloromethane	µg/kg	1	MCERTS	< 1.0				
1,1,1-Trichloroethane	µg/kg	1	MCERTS	< 1.0				
1,2-dichloroethane	µg/kg	1	MCERTS	< 1.0				
1,1-Dichloropropene	µg/kg	1	NONE	< 1.0				
Trans-1,2-dichloroethene	µg/kg	1	NONE	< 1.0				
Benzene	µg/kg	1	MCERTS	< 1.0				
Tetrachloromethane	µg/kg	1	MCERTS	< 1.0				
1,2-dichloropropane	µg/kg	1	MCERTS	< 1.0				
Trichloroethene	µg/kg	1	MCERTS	< 1.0				
Dibromomethane	µg/kg	1	MCERTS	< 1.0				
Bromodichloromethane	µg/kg	1	NONE	< 1.0				
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0				
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0				
Toluene	µg/kg	1	MCERTS	< 1.0				
1,1,2-Trichloroethane	µg/kg	1	MCERTS	< 1.0				
1,3-Dichloropropane	µg/kg	1	ISO 17025	< 1.0				
Dibromochloromethane	µg/kg	1	ISO 17025	< 1.0				
Tetrachloroethene	µg/kg	1	MCERTS	< 1.0				
1,2-Dibromoethane	µg/kg	1	ISO 17025	< 1.0				
Chlorobenzene	µg/kg	1	MCERTS	< 1.0				
1,1,1,2-Tetrachloroethane	µg/kg	1	NONE	< 1.0				
Ethylbenzene	µg/kg	1	MCERTS	< 1.0				
p & m-xylene	µg/kg	1	MCERTS	< 1.0				
Styrene	µg/kg	1	MCERTS	< 1.0				
Tribromomethane	µg/kg	1	MCERTS	< 1.0				
o-xylene	µg/kg	1	MCERTS	< 1.0				
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0				
Isopropylbenzene	µg/kg	1	NONE	< 1.0				
Bromobenzene	µg/kg	1	MCERTS	< 1.0				
N-Propylbenzene	µg/kg	1	ISO 17025	< 1.0				
2-Chlorotoluene	µg/kg	1	NONE	< 1.0				
4-Chlorotoluene	µg/kg	1	NONE	< 1.0				
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0				
Tert-Butylbenzene	µg/kg	1	NONE	< 1.0				
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0				
Sec-Butylbenzene	µg/kg	1	NONE	< 1.0				
1,3-dichlorobenzene	µg/kg	1	ISO 17025	< 1.0				
P-Isopropyltoluene	µg/kg	1	ISO 17025	< 1.0				
1,2-dichlorobenzene	µg/kg	1	MCERTS	< 1.0				
1,4-dichlorobenzene	µg/kg	1	MCERTS	< 1.0				
Butylbenzene	µg/kg	1	NONE	< 1.0				
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	< 1.0				
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	< 1.0				
Hexachlorobutadiene	µg/kg	1	NONE	< 1.0				
1,2,3-Trichlorobenzene	µg/kg	1	NONE	< 1.0				

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The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 16-16549

Project / Site name: Plots 6,7&8, First Street, Manchester

Lab Sample Number				567583				
Sample Reference				CP/RC107				
Sample Number				3				
Depth (m)				1.00				
Date Sampled				20/04/2016				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs TICs								
VOCs TICs Compound Name		N/A	NONE	None Detected				
VOC % Match	%	N/A	NONE	0				

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Analytical Report Number: 16-16549

Project / Site name: Plots 6,7&8, First Street, Manchester

Lab Sample Number				567583				
Sample Reference				CP/RC107				
Sample Number				3				
Depth (m)				1.00				
Date Sampled				20/04/2016				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
Aniline	mg/kg	0.1	NONE	< 0.1				
Phenol	mg/kg	0.2	ISO 17025	< 0.2				
2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1				
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	< 0.2				
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2				
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1				
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2				
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1				
2-Methylphenol	mg/kg	0.3	MCERTS	< 0.3				
Hexachloroethane	mg/kg	0.05	MCERTS	< 0.05				
Nitrobenzene	mg/kg	0.3	MCERTS	< 0.3				
4-Methylphenol	mg/kg	0.2	NONE	< 0.2				
Isophorone	mg/kg	0.2	MCERTS	< 0.2				
2-Nitrophenol	mg/kg	0.3	MCERTS	< 0.3				
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	< 0.3				
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	< 0.3				
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	< 0.3				
Naphthalene	mg/kg	0.05	MCERTS	< 0.05				
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	< 0.3				
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1				
Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1				
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1				
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	< 0.1				
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	< 0.2				
2-Methylnaphthalene	mg/kg	0.1	NONE	< 0.1				
2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1				
Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1				
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	< 0.1				
Acenaphthylene	mg/kg	0.1	MCERTS	< 0.10				
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10				
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	< 0.2				
Dibenzofuran	mg/kg	0.2	MCERTS	< 0.2				
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	< 0.3				
Diethyl phthalate	mg/kg	0.2	MCERTS	< 0.2				
4-Nitroaniline	mg/kg	0.2	MCERTS	< 0.2				
Fluorene	mg/kg	0.1	MCERTS	< 0.10				
Azobenzene	mg/kg	0.3	MCERTS	< 0.3				
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0.2				
Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0.3				
Phenanthrene	mg/kg	0.1	MCERTS	1.4				
Anthracene	mg/kg	0.1	MCERTS	0.29				
Carbazole	mg/kg	0.3	MCERTS	< 0.3				
Dibutyl phthalate	mg/kg	0.2	MCERTS	< 0.2				
Anthraquinone	mg/kg	0.3	MCERTS	< 0.3				
Fluoranthene	mg/kg	0.1	MCERTS	1.8				
Pyrene	mg/kg	0.1	MCERTS	1.4				
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	< 0.3				
Benzo(a)anthracene	mg/kg	0.1	MCERTS	0.76				
Chrysene	mg/kg	0.05	MCERTS	0.62				
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	0.68				
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	0.32				
Benzo(a)pyrene	mg/kg	0.1	MCERTS	0.50				
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	0.33				
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	< 0.10				
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.35				

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Analytical Report Number: 16-16549

Project / Site name: Plots 6,7&8, First Street, Manchester

Lab Sample Number				567583				
Sample Reference				CP/RC107				
Sample Number				3				
Depth (m)				1.00				
Date Sampled				20/04/2016				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs TICs								
SVOCs TICs Compound Name		N/A	NONE	Benzo[e]pyrene				
SVOC % Match	%	N/A	NONE	96				

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Analytical Report Number : 16-16549

Project / Site name: Plots 6,7&8, First Street, Manchester

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

Stone content of a sample is calculated as the % weight of the stones not passing a 2 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
567583	CP/RC107	3	1.00	Brown loam and sand with gravel.

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Analytical Report Number : 16-16549

Project / Site name: Plots 6,7&8, First Street, Manchester

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Electrical conductivity of soil	Determination of electrical conductivity in soil by addition of saturated calcium sulphate followed by electrometric measurement.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L031-PL	W	NONE
Mineral Oil (Soil)	Determination of mineral oil fraction extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method	L076-PL	D	NONE
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
Phenols, speciated, in soil, by HPLC	Determination of speciated phenols by HPLC.	In house method based on Blue Book Method.	L030-PL	W	NONE
Redox Potential of soil	Determination of redox potential in soil by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L084-PL	W	NONE
Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds in soil by extraction in dichloromethane and hexane followed by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Tentatively identified compounds (SVOC) in soil	Determination of semi-volatile organic compounds total ion count in soil by extraction with dichloromethane and hexane followed by GC-MS followed by a full library scan.	In-house method based on USEPA 8270	L064-PL	D	NONE
Tentatively identified compounds (VOC) in soil	Determination of volatile organic compounds total ion count in soil by headspace GC-MS followed by a full library scan.	In-house method based on USEPA8260	L073-PL	W	NONE
Total Chlorinated Solvents in soil	Determination of chlorinated solvents in soil by headspace GC-MS.	In-house method based on USEPA8260	L017-UK	W	MCERTS
Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

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Sample ID	Other_ID	Sample Type	Job	Sample Number	Sample Deviation Code	test_name	test_ref	Test Deviation code
CP/RC107	3	S	16-16549	567583	c	Chlorinated Solvents in soil (raw dets)	L017-UK	c
CP/RC107	3	S	16-16549	567583	c	Mineral Oil (Soil)	L076-PL	c
CP/RC107	3	S	16-16549	567583	c	Redox Potential of soil	L084-PL	c
CP/RC107	3	S	16-16549	567583	c	Total Chlorinated Solvents in soil	L017-UK	c

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Analytical Report Number : 16-16752

Replaces Analytical Report Number : 16-16752, issue no. 1

Project / Site name:	Plots 6,7 &8, First Street, Manchester	**Samples received on:**	03/05/2016
Your job number:	31847	**Samples instructed on:**	04/05/2016
Your order number:		**Analysis completed by:**	03/06/2016
Report Issue Number:	2	**Report issued on:**	03/06/2016
Samples Analysed:	2 soil samples		

Signed:

Rexona Rahman
Reporting Manager
For & on behalf of i2 Analytical Ltd.

Signed:

Emma Winter
Assistant Reporting Manager
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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Analytical Report Number: 16-16752

Project / Site name: Plots 6,7 &8, First Street, Manchester

Lab Sample Number				568649	568650			
Sample Reference				CP/RC110	CP/RC111			
Sample Number				None Supplied	None Supplied			
Depth (m)				0.30	0.30			
Date Sampled				27/04/2016	25/04/2016			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1			
Moisture Content	%	N/A	NONE	10	12			
Total mass of sample received	kg	0.001	NONE	1.2	1.7			
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Chrysotile & Amosite	Chrysotile			
Asbestos in Soil	Type	N/A	ISO 17025	Detected	Detected			
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	< 0.001	< 0.001			
Asbestos Quantification Total	%	0.001	ISO 17025	< 0.001	< 0.001			
General Inorganics								
pH	pH Units	N/A	MCERTS	8.5	8.5			
Free Cyanide	mg/kg	1	MCERTS	< 1	< 1			
Total Sulphate as SO_4	mg/kg	50	MCERTS	2300	4100			
Water Soluble Sulphate (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.13	1.0			
Sulphide	mg/kg	1	MCERTS	1.1	20			
Organic Matter	%	0.1	MCERTS	2.1	1.7			
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	0.87	< 0.05			
Acenaphthylene	mg/kg	0.1	MCERTS	1.2	0.45			
Acenaphthene	mg/kg	0.1	MCERTS	1.3	0.20			
Fluorene	mg/kg	0.1	MCERTS	1.0	0.23			
Phenanthrene	mg/kg	0.1	MCERTS	7.5	1.2			
Anthracene	mg/kg	0.1	MCERTS	2.2	0.50			
Fluoranthene	mg/kg	0.1	MCERTS	15	2.6			
Pyrene	mg/kg	0.1	MCERTS	12	2.3			
Benzo(a)anthracene	mg/kg	0.1	MCERTS	8.5	1.3			
Chrysene	mg/kg	0.05	MCERTS	6.7	0.99			
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	8.2	1.8			
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	3.7	0.78			
Benzo(a)pyrene	mg/kg	0.1	MCERTS	7.0	1.6			
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	3.4	0.54			
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	0.87	< 0.10			
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	3.9	0.71			
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	82.9	15.3			
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	35	15			
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2			
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0			
Chromium (III)	mg/kg	1	NONE	17	20			
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	17	20			
Copper (aqua regia extractable)	mg/kg	1	MCERTS	96	83			
Lead (aqua regia extractable)	mg/kg	1	MCERTS	500	330			
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.5	< 0.3			
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	64	42			
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0			
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	300	130			

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Analytical Report Number: 16-16752

Project / Site name: Plots 6,7 &8, First Street, Manchester

Lab Sample Number				568649	568650			
Sample Reference				CP/RC110	CP/RC111			
Sample Number				None Supplied	None Supplied			
Depth (m)				0.30	0.30			
Date Sampled				27/04/2016	25/04/2016			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics								
Benzene	ug/kg	1	MCERTS	-	< 1.0			
Toluene	µg/kg	1	MCERTS	-	< 1.0			
Ethylbenzene	µg/kg	1	MCERTS	-	< 1.0			
p & m-xylene	µg/kg	1	MCERTS	-	< 1.0			
o-xylene	µg/kg	1	MCERTS	-	< 1.0			
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	< 1.0			
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	-	< 0.1			
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	-	< 0.1			
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	< 0.1			
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	< 1.0			
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	< 2.0			
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	< 8.0			
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	< 8.0			
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	< 10			
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	-	< 0.1			
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	-	< 0.1			
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	< 0.1			
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	< 1.0			
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	< 2.0			
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	13			
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	24			
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	38			

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Analytical Report Number: 16-16752
Project / Site name: Plots 6,7 &8, First Street, Manchester
Your Order No:

Certificate of Analysis - Asbestos Quantification

Methods:

Qualitative Analysis

The samples were analysed qualitatively for asbestos by polarising light and dispersion staining as described by the Health and Safety Executive in HSG 248.

Quantitative Analysis

"The analysis was carried out using our documented in-house method A006 based on HSE Contract Research Report No: 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies et al, 1996) and HSG 248. Our method includes initial examination of the entire representative sample, then fractionation and detailed analysis of each fraction, with quantification by hand picking and weighing.

The limit of detection (reporting limit) of this method is 0.001 %.

The method has been validated using samples of at least 100 g, results for samples smaller than this should be interpreted with caution.

Both Qualitative and Quantitative Analyses are UKAS accredited.

Sample Number	Sample ID	Sample Depth (m)	Sample Weight (g)	Asbestos Containing Material Types Detected (ACM)	PLM Results	Asbestos by hand picking/weighing (%)	Total % Asbestos in Sample
568649	CP/RC110	0.30	140	Loose Fibres & Insulation Lagging	**Chrysotile & Amosite**	< 0.001	**< 0.001**
568650	CP/RC111	0.30	117	Loose Fibres	**Chrysotile**	< 0.001	**< 0.001**

Opinions and interpretations expressed herein are outside the scope of UKAS accreditatior

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Analytical Report Number : 16-16752

Project / Site name: Plots 6,7 &8, First Street, Manchester

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

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

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
568649	CP/RC110	None Supplied	0.30	Brown loam and sand with gravel.
568650	CP/RC111	None Supplied	0.30	Brown gravelly loam with brick.

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Analytical Report Number : 16-16752

Project / Site name: Plots 6,7 &8, First Street, Manchester

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Asbestos Quantification - Gravimetric	The analysis was carried out using documented in-house method based on references.	HSE Report No: 83/1996, HSG 248, HSG 264 & SCA Blue Book (draft).	A006	D	ISO 17025
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Cr (III) in soil	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Organic matter in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L023-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Sulphate, water soluble, in soil	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	L038-PL	D	MCERTS
Sulphide in soil	Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode.	In-house method	L010-PL	D	MCERTS
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	MCERTS
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method	L076-PL	W	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

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Sample ID	Other_ID	Sample Type	Job	Sample Number	Sample Deviation Code	test_name	test_ref	Test Deviation code
CP/RC111		S	16-16752	568650	c	Sulphide in soil	L010-PL	c

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

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Analytical Report Number : 16-16772

Project / Site name:	Plots 6,7,8, First Street, Manchester	**Samples received on:**	25/04/2016
Your job number:	31847	**Samples instructed on:**	03/05/2016
Your order number:		**Analysis completed by:**	12/05/2016
Report Issue Number:	1	**Report issued on:**	12/05/2016
Samples Analysed:	2 soil samples		

Signed:

Rexona Rahman
Reporting Manager
For & on behalf of i2 Analytical Ltd.

Signed:

Emma Winter
Assistant Reporting Manager
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 16-16772

Project / Site name: Plots 6,7,8, First Street, Manchester

Lab Sample Number				568709	568710			
Sample Reference				TP103	TP112			
Sample Number				2	3			
Depth (m)				0.80-1.00	1.30-1.50			
Date Sampled				19/04/2016	20/04/2016			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1			
Moisture Content	%	N/A	NONE	8.4	6.3			
Total mass of sample received	kg	0.001	NONE	2.0	1.1			
General Inorganics								
pH	pH Units	N/A	MCERTS	10.2	10.1			
Electrical Conductivity	µS/cm	10	NONE	310	880			
Redox Potential	mV	-800	NONE	239.20	254.90			
Phenols by HPLC								
Catechol	µg/kg	1	NONE	< 1.0	< 1.0			
Resorcinol	µg/kg	1	NONE	< 1.0	< 1.0			
Ethylphenol & Dimethylphenol	µg/kg	1	NONE	< 1.0	< 1.0			
Cresols	µg/kg	1	NONE	< 1.0	< 1.0			
Naphthols	µg/kg	1	NONE	< 1.0	< 1.0			
Isopropylphenol	µg/kg	1	NONE	< 1.0	< 1.0			
Phenol	µg/kg	0.1	NONE	< 0.1	< 0.1			
Trimethylphenol	µg/kg	1	NONE	< 1.0	< 1.0			
Total Phenols								
Total Phenols (HPLC)	µg/kg	7	NONE	< 7.0	< 7.0			
Monoaromatics								
Benzene	ug/kg	1	MCERTS	< 1.0	< 1.0			
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0			
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0			
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0			
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0			
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0			
Petroleum Hydrocarbons								
Mineral Oil (C10 - C20)	mg/kg	10	NONE	< 10	43			
Mineral Oil (C11 - C20)	mg/kg	10	NONE	< 10	43			
Mineral Oil (C21 - C40)	mg/kg	10	NONE	< 10	600			
Chlorinated Solvents								
Total Chlorinated Solvents	µg/kg	100	NONE	< 100	< 100			

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Lab Sample Number				568709	568710			
Sample Reference				TP103	TP112			
Sample Number				2	3			
Depth (m)				0.80-1.00	1.30-1.50			
Date Sampled				19/04/2016	20/04/2016			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/kg	1	ISO 17025	< 1.0	< 1.0			
Chloroethane	µg/kg	1	ISO 17025	< 1.0	< 1.0			
Bromomethane	µg/kg	1	ISO 17025	< 1.0	< 1.0			
Vinyl Chloride	µg/kg	1	ISO 17025	< 1.0	< 1.0			
Trichlorofluoromethane	µg/kg	1	ISO 17025	< 1.0	< 1.0			
1,1-Dichloroethene	µg/kg	1	MCERTS	< 1.0	< 1.0			
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	< 1.0	< 1.0			
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	< 1.0	< 1.0			
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0			
1,1-Dichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0			
2,2-Dichloropropane	µg/kg	1	NONE	< 1.0	< 1.0			
Trichloromethane	µg/kg	1	MCERTS	< 1.0	< 1.0			
1,1,1-Trichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0			
1,2-Dichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0			
1,1-Dichloropropene	µg/kg	1	NONE	< 1.0	< 1.0			
Trans-1,2-dichloroethene	µg/kg	1	NONE	< 1.0	< 1.0			
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0			
Tetrachloromethane	µg/kg	1	MCERTS	< 1.0	< 1.0			
1,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0	< 1.0			
Trichloroethene	µg/kg	1	MCERTS	< 1.0	< 1.0			
Dibromomethane	µg/kg	1	MCERTS	< 1.0	< 1.0			
Bromodichloromethane	µg/kg	1	NONE	< 1.0	< 1.0			
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0	< 1.0			
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0	< 1.0			
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0			
1,1,2-Trichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0			
1,3-Dichloropropane	µg/kg	1	ISO 17025	< 1.0	< 1.0			
Dibromochloromethane	µg/kg	1	ISO 17025	< 1.0	< 1.0			
Tetrachloroethene	µg/kg	1	MCERTS	< 1.0	< 1.0			
1,2-Dibromoethane	µg/kg	1	ISO 17025	< 1.0	< 1.0			
Chlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0			
1,1,1,2-Tetrachloroethane	µg/kg	1	NONE	< 1.0	< 1.0			
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0			
p & m-Xylene	µg/kg	1	MCERTS	< 1.0	< 1.0			
Styrene	µg/kg	1	MCERTS	< 1.0	< 1.0			
Tribromomethane	µg/kg	1	MCERTS	< 1.0	< 1.0			
o-Xylene	µg/kg	1	MCERTS	< 1.0	< 1.0			
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0			
Isopropylbenzene	µg/kg	1	NONE	< 1.0	< 1.0			
Bromobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0			
n-Propylbenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0			
2-Chlorotoluene	µg/kg	1	NONE	< 1.0	< 1.0			
4-Chlorotoluene	µg/kg	1	NONE	< 1.0	< 1.0			
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0			
tert-Butylbenzene	µg/kg	1	NONE	< 1.0	< 1.0			
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0			
sec-Butylbenzene	µg/kg	1	NONE	< 1.0	< 1.0			
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0			
p-Isopropyltoluene	µg/kg	1	ISO 17025	< 1.0	< 1.0			
1,2-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0			
1,4-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0			
Butylbenzene	µg/kg	1	NONE	< 1.0	< 1.0			
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	< 1.0	< 1.0			
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0			
Hexachlorobutadiene	µg/kg	1	NONE	< 1.0	< 1.0			
1,2,3-Trichlorobenzene	µg/kg	1	NONE	< 1.0	< 1.0			

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Analytical Report Number: 16-16772

Project / Site name: Plots 6,7,8, First Street, Manchester

Lab Sample Number				568709	568710			
Sample Reference				TP103	TP112			
Sample Number				2	3			
Depth (m)				0.80-1.00	1.30-1.50			
Date Sampled				19/04/2016	20/04/2016			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs TICs								
VOCs TICs Compound Name		N/A	NONE	None Detected	None Detected			
VOC % Match	%	N/A	NONE	0	0			

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Lab Sample Number				568709	568710			
Sample Reference				TP103	TP112			
Sample Number				2	3			
Depth (m)				0.80-1.00	1.30-1.50			
Date Sampled				19/04/2016	20/04/2016			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
Aniline	mg/kg	0.1	NONE	< 0.1	< 0.1			
Phenol	mg/kg	0.2	ISO 17025	< 0.2	< 0.2			
2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1			
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	< 0.2	< 0.2			
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	< 0.2			
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1	< 0.1			
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	< 0.2			
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1	< 0.1			
2-Methylphenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3			
Hexachloroethane	mg/kg	0.05	MCERTS	< 0.05	< 0.05			
Nitrobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3			
4-Methylphenol	mg/kg	0.2	NONE	< 0.2	< 0.2			
Isophorone	mg/kg	0.2	MCERTS	< 0.2	< 0.2			
2-Nitrophenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3			
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3			
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	< 0.3	< 0.3			
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3			
Naphthalene	mg/kg	0.05	MCERTS	7.2	< 0.05			
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3			
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	< 0.1			
Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1	< 0.1			
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	< 0.1			
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1			
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	< 0.2	< 0.2			
2-Methylnaphthalene	mg/kg	0.1	NONE	8.2	< 0.1			
2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1	< 0.1			
Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1	< 0.1			
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	< 0.1	< 0.1			
Acenaphthylene	mg/kg	0.1	MCERTS	0.27	< 0.10			
Acenaphthene	mg/kg	0.1	MCERTS	9.7	< 0.10			
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	< 0.2	< 0.2			
Dibenzofuran	mg/kg	0.2	MCERTS	4.6	< 0.2			
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	< 0.3	< 0.3			
Diethyl phthalate	mg/kg	0.2	MCERTS	< 0.2	< 0.2			
4-Nitroaniline	mg/kg	0.2	MCERTS	< 0.2	< 0.2			
Fluorene	mg/kg	0.1	MCERTS	6.0	< 0.10			
Azobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3			
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0.2	< 0.2			
Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3			
Phenanthrene	mg/kg	0.1	MCERTS	52	0.85			
Anthracene	mg/kg	0.1	MCERTS	11	0.20			
Carbazole	mg/kg	0.3	MCERTS	4.0	< 0.3			
Dibutyl phthalate	mg/kg	0.2	MCERTS	< 0.2	< 0.2			
Anthraquinone	mg/kg	0.3	MCERTS	2.6	< 0.3			
Fluoranthene	mg/kg	0.1	MCERTS	44	1.2			
Pyrene	mg/kg	0.1	MCERTS	41	1.3			
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	< 0.3	< 0.3			
Benzo(a)anthracene	mg/kg	0.1	MCERTS	15	0.74			
Chrysene	mg/kg	0.05	MCERTS	15	0.69			
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	19	0.98			
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	5.8	0.31			
Benzo(a)pyrene	mg/kg	0.1	MCERTS	15	0.79			
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	7.1	0.39			
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	1.3	< 0.10			
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	9.0	0.45			

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Lab Sample Number				568709	568710			
Sample Reference				TP103	TP112			
Sample Number				2	3			
Depth (m)				0.80-1.00	1.30-1.50			
Date Sampled				19/04/2016	20/04/2016			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs TICs								
SVOCs TICs Compound Name		N/A	NONE	Benzo[ghi]perylene	Ethanone, 1-[4-(methyltelluro)phenyl]-			
SVOC % Match	%	N/A	NONE	99	98			
SVOCs TICs Compound Name		N/A	NONE	Benzo[a]pyrene	1-Naphthalenecarboxylic acid, 2-benzoyl-			
SVOC % Match	%	N/A	NONE	98	93			
SVOCs TICs Compound Name		N/A	NONE	Dibenz(a,e)aceanthrylene	Benzenepropanoic acid, 3,5-bis(1,1-dimethylethyl)-4-hydroxy-, octadecyl ester			
SVOC % Match	%	N/A	NONE	98	93			
SVOCs TICs Compound Name		N/A	NONE	Naphthalene, 1,3-dimethyl-	1-Trimethylsilyl-4-(1-methyl-1-silacyclobutyl)benzene			
SVOC % Match	%	N/A	NONE	97	91			
SVOCs TICs Compound Name		N/A	NONE	Naphthalene, 1,6,7-trimethyl-	1-Trimethylsilyl-4-(1-methyl-1-silacyclobutyl)benzene			
SVOC % Match	%	N/A	NONE	97	91			
SVOCs TICs Compound Name		N/A	NONE	Naphthalene, 2,3,6-trimethyl-	Morphinan-6-one, 4,5-epoxy-3,14-dihydroxy-17-(2-propenyl)-, (5.alpha.)-			
SVOC % Match	%	N/A	NONE	97	91			
SVOCs TICs Compound Name		N/A	NONE	Naphthalene, 2,6-dimethyl-	-			
SVOC % Match	%	N/A	NONE	95	-			
SVOCs TICs Compound Name		N/A	NONE	Phenanthrene, 2-methyl-	-			
SVOC % Match	%	N/A	NONE	95	-			
SVOCs TICs Compound Name		N/A	NONE	Naphthalene, 2-phenyl-	-			
SVOC % Match	%	N/A	NONE	95	-			
SVOCs TICs Compound Name		N/A	NONE	Phenanthrene, 2,5-dimethyl-	-			
SVOC % Match	%	N/A	NONE	95	-			

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Analytical Report Number : 16-16772

Project / Site name: Plots 6,7,8, First Street, Manchester

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

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
568709	TP103	2	0.80-1.00	Brown loam and sand with gravel and brick.
568710	TP112	3	1.30-1.50	Brown loam and sand with gravel and rubble.

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Analytical Report Number : 16-16772

Project / Site name: Plots 6,7,8, First Street, Manchester

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Electrical conductivity of soil	Determination of electrical conductivity in soil by electrometric measurement.	In-house method	L031-PL	W	NONE
Mineral Oil (Soil)	Determination of mineral oil fraction extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method	L076-PL	D	NONE
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
Phenols, speciated, in soil, by HPLC	Determination of speciated phenols by HPLC.	In house method based on Blue Book Method.	L030-PL	W	NONE
Redox Potential of soil	Determination of redox potential in soil by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L084-PL	W	NONE
Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds in soil by extraction in dichloromethane and hexane followed by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Tentatively identified compounds (SVOC) in soil	Determination of semi-volatile organic compounds total ion count in soil by extraction with dichloromethane and hexane followed by GC-MS followed by a full library scan.	In-house method based on USEPA 8270	L064-PL	D	NONE
Tentatively identified compounds (VOC) in soil	Determination of volatile organic compounds total ion count in soil by headspace GC-MS followed by a full library scan.	In-house method based on USEPA8260	L073-PL	W	NONE
Total Chlorinated Solvents in soil	Determination of chlorinated solvents in soil by headspace GC-MS.	In-house method based on USEPA8260	L017-UK	W	MCERTS
Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

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Sample ID	Other_ID	Sample Type	Job	Sample Number	Sample Deviation Code	test_name	test_ref	Test Deviation code
TP103	2	S	16-16772	568709	c	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	c
TP103	2	S	16-16772	568709	c	Chlorinated Solvents in soil (raw dets)	L017-UK	c
TP103	2	S	16-16772	568709	c	Mineral Oil (Soil)	L076-PL	c
TP103	2	S	16-16772	568709	c	Redox Potential of soil	L084-PL	c
TP103	2	S	16-16772	568709	c	Tentatively identified compounds (VOC) in soil	L073-PL	c
TP103	2	S	16-16772	568709	c	Total Chlorinated Solvents in soil	L017-UK	c
TP103	2	S	16-16772	568709	c	Volatile organic compounds in soil	L073B-PL	c
TP112	3	S	16-16772	568710	c	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	c
TP112	3	S	16-16772	568710	c	Chlorinated Solvents in soil (raw dets)	L017-UK	c
TP112	3	S	16-16772	568710	c	Mineral Oil (Soil)	L076-PL	c
TP112	3	S	16-16772	568710	c	Redox Potential of soil	L084-PL	c
TP112	3	S	16-16772	568710	c	Tentatively identified compounds (VOC) in soil	L073-PL	c
TP112	3	S	16-16772	568710	c	Total Chlorinated Solvents in soil	L017-UK	c
TP112	3	S	16-16772	568710	c	Volatile organic compounds in soil	L073B-PL	c

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Analytical Report Number : 16-16775

Project / Site name:	Plots 6,7,8, First Street, Manchester	**Samples received on:**	25/04/2016
Your job number:	31847	**Samples instructed on:**	03/05/2016
Your order number:		**Analysis completed by:**	10/05/2016
Report Issue Number:	1	**Report issued on:**	10/05/2016
Samples Analysed:	3 leachate samples - 7 soil samples		

Signed:

Rexona Rahman
Reporting Manager
For & on behalf of i2 Analytical Ltd.

Signed:

Emma Winter
Assistant Reporting Manager
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 16-16775

Project / Site name: Plots 6,7,8, First Street, Manchester

Lab Sample Number				568716	568717	568718	568719	568720
Sample Reference				TP103	TP109	TP111	TP114	CP/RC116
Sample Number				3	1	1	1	None Supplied
Depth (m)				3.10-3.30	0.10-0.30	0.30-0.50	0.50-0.70	0.00
Date Sampled				19/04/2016	20/04/2016	19/04/2016	20/04/2016	19/04/2016
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	-	-
Moisture Content	%	N/A	NONE	13	15	16	-	-
Total mass of sample received	kg	0.001	NONE	0.82	1.2	1.3	-	-
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	Chrysotile	-	Chrysotile & Amosite
Asbestos in Soil	Type	N/A	ISO 17025	-	-	Detected	Not-detected	Detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	< 0.001	-	< 0.001
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	< 0.001	-	< 0.001
General Inorganics								
pH	pH Units	N/A	MCERTS	-	6.5	8.2	-	-
Free Cyanide	mg/kg	1	MCERTS	-	< 1	< 1	-	-
Total Sulphate as SO_4	mg/kg	50	MCERTS	-	460	2200	-	-
Water Soluble Sulphate (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-	0.023	0.57	-	-
Sulphide	mg/kg	1	MCERTS	-	< 1.0	1.4	-	-
Organic Matter	%	0.1	MCERTS	-	3.5	1.9	-	-
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	-	0.17	0.36	-	-
Acenaphthylene	mg/kg	0.1	MCERTS	-	< 0.10	0.19	-	-
Acenaphthene	mg/kg	0.1	MCERTS	-	< 0.10	0.27	-	-
Fluorene	mg/kg	0.1	MCERTS	-	< 0.10	0.20	-	-
Phenanthrene	mg/kg	0.1	MCERTS	-	1.1	2.2	-	-
Anthracene	mg/kg	0.1	MCERTS	-	0.17	0.38	-	-
Fluoranthene	mg/kg	0.1	MCERTS	-	2.2	4.4	-	-
Pyrene	mg/kg	0.1	MCERTS	-	2.1	5.1	-	-
Benzo(a)anthracene	mg/kg	0.1	MCERTS	-	1.1	3.6	-	-
Chrysene	mg/kg	0.05	MCERTS	-	1.1	2.6	-	-
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	-	0.91	2.7	-	-
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	-	0.50	1.1	-	-
Benzo(a)pyrene	mg/kg	0.1	MCERTS	-	0.68	2.0	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	-	0.33	0.85	-	-
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	-	< 0.10	0.20	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	0.52	1.2	-	-
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	-	10.8	27.2	-	-

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Analytical Report Number: 16-16775

Project / Site name: Plots 6,7,8, First Street, Manchester

Lab Sample Number				568716	568717	568718	568719	568720
Sample Reference				TP103	TP109	TP111	TP114	CP/RC116
Sample Number				3	1	1	1	None Supplied
Depth (m)				3.10-3.30	0.10-0.30	0.30-0.50	0.50-0.70	0.00
Date Sampled				19/04/2016	20/04/2016	19/04/2016	20/04/2016	19/04/2016
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	25	37	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	< 0.2	< 0.2	-	-
Chromium (hexavalent)	mg/kg	4	MCERTS	-	< 4.0	< 4.0	-	-
Chromium (III)	mg/kg	1	NONE	-	19	29	-	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	19	29	-	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	71	140	-	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	150	540	-	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	0.8	3.6	-	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	21	35	-	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	< 1.0	< 1.0	-	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	99	390	-	-
Monoaromatics								
Benzene	ug/kg	1	MCERTS	< 1.0	-	-	-	-
Toluene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
p & m-xylene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
o-xylene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	-	-	-	-
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	-	-	-	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	-	-	-	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	-	-	-	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	-	-	-	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	-	-	-	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	-	-	-	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	-	-	-	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	-	-	-	-
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	-	-	-	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	-	-	-	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	-	-	-	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	-	-	-	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	3.3	-	-	-	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	14	-	-	-	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	17	-	-	-	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	35	-	-	-	-

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Analytical Report Number: 16-16775

Project / Site name: Plots 6,7,8, First Street, Manchester

Lab Sample Number				568721	568722			
Sample Reference				CP/RC116	WS102			
Sample Number				None Supplied	3			
Depth (m)				2.90	1.00-1.20			
Date Sampled				20/04/2016	20/04/2016			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1			
Moisture Content	%	N/A	NONE	14	19			
Total mass of sample received	kg	0.001	NONE	1.5	1.2			
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-			
Asbestos in Soil	Type	N/A	ISO 17025	-	-			
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-			
Asbestos Quantification Total	%	0.001	ISO 17025	-	-			
General Inorganics								
pH	pH Units	N/A	MCERTS	8.4	8.3			
Free Cyanide	mg/kg	1	MCERTS	< 1	< 1			
Total Sulphate as SO_4	mg/kg	50	MCERTS	250	2100			
Water Soluble Sulphate (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.059	0.045			
Sulphide	mg/kg	1	MCERTS	< 1.0	18			
Organic Matter	%	0.1	MCERTS	0.4	3.2			
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	0.47			
Acenaphthylene	mg/kg	0.1	MCERTS	< 0.10	< 0.10			
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10			
Fluorene	mg/kg	0.1	MCERTS	< 0.10	< 0.10			
Phenanthrene	mg/kg	0.1	MCERTS	< 0.10	1.5			
Anthracene	mg/kg	0.1	MCERTS	< 0.10	0.22			
Fluoranthene	mg/kg	0.1	MCERTS	< 0.10	2.0			
Pyrene	mg/kg	0.1	MCERTS	< 0.10	2.0			
Benzo(a)anthracene	mg/kg	0.1	MCERTS	< 0.10	1.2			
Chrysene	mg/kg	0.05	MCERTS	< 0.05	1.0			
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	< 0.10	1.2			
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	< 0.10	0.67			
Benzo(a)pyrene	mg/kg	0.1	MCERTS	< 0.10	1.0			
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	< 0.10	0.60			
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10			
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	0.84			
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	< 1.60	12.7			

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Analytical Report Number: 16-16775

Project / Site name: Plots 6,7,8, First Street, Manchester

Lab Sample Number				568721	568722			
Sample Reference				CP/RC116	WS102			
Sample Number				None Supplied	3			
Depth (m)				2.90	1.00-1.20			
Date Sampled				20/04/2016	20/04/2016			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	3.9	14			
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	0.9			
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0			
Chromium (III)	mg/kg	1	NONE	6.1	15			
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	6.1	15			
Copper (aqua regia extractable)	mg/kg	1	MCERTS	13	78			
Lead (aqua regia extractable)	mg/kg	1	MCERTS	15	580			
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	0.6			
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	8.8	20			
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	2.5	< 1.0			
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	25	360			
Monoaromatics								
Benzene	ug/kg	1	MCERTS	-	< 1.0			
Toluene	µg/kg	1	MCERTS	-	< 1.0			
Ethylbenzene	µg/kg	1	MCERTS	-	< 1.0			
p & m-xylene	µg/kg	1	MCERTS	-	< 1.0			
o-xylene	µg/kg	1	MCERTS	-	< 1.0			
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	< 1.0			
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	-	< 0.1			
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	-	< 0.1			
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	< 0.1			
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	< 1.0			
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	6.5			
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	160			
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	920			
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	1100			
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	-	< 0.1			
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	-	< 0.1			
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	< 0.1			
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	< 1.0			
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	2.7			
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	42			
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	500			
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	540			

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Analytical Report Number: 16-16775
Project / Site name: Plots 6,7,8, First Street, Manchester
Your Order No:

Certificate of Analysis - Asbestos Quantification

Methods:

Qualitative Analysis

The samples were analysed qualitatively for asbestos by polarising light and dispersion staining as described by the Health and Safety Executive in HSG 248.

Quantitative Analysis

"The analysis was carried out using our documented in-house method A006 based on HSE Contract Research Report No: 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies et al, 1996) and HSG 248. Our method includes initial examination of the entire representative sample, then fractionation and detailed analysis of each fraction, with quantification by hand picking and weighing.

The limit of detection (reporting limit) of this method is 0.001 %.

The method has been validated using samples of at least 100 g, results for samples smaller than this should be interpreted with caution.

Both Qualitative and Quantitative Analyses are UKAS accredited.

Sample Number	Sample ID	Sample Depth (m)	Sample Weight (g)	Asbestos Containing Material Types Detected (ACM)	PLM Results	Asbestos by hand picking/weighing (%)	Total % Asbestos in Sample
568718	TP111	0.30-0.50	116	Loose Fibres	**Chrysotile**	< 0.001	**< 0.001**
568720	CP/RC116	0.00	139	Loose Fibres	**Chrysotile & Amosite**	< 0.001	**< 0.001**

Opinions and interpretations expressed herein are outside the scope of UKAS accreditatior

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Analytical Report Number: 16-16775

Project / Site name: Plots 6,7,8, First Street, Manchester

Lab Sample Number				568723	568724	568725		
Sample Reference				TP112	TP114	CP/RC116		
Sample Number				3	3	None Supplied		
Depth (m)				1.30-1.50	2.10-2.30	2.90		
Date Sampled				20/04/2016	20/04/2016	20/04/2016		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Leachate Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
General Inorganics								
pH	pH Units	N/A	ISO 17025	7.3	7.3	7.2		
Total Cyanide	µg/l	10	ISO 17025	67	< 10	< 10		
Sulphate as SO_4	µg/l	100	ISO 17025	32900	9440	13800		
Sulphide	µg/l	5	NONE	< 5.0	< 5.0	< 5.0		
Total Phenols								
Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10	< 10	< 10		
Speciated PAHs								
Naphthalene	µg/l	0.01	NONE	1.1	< 0.01	< 0.01		
Acenaphthylene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01		
Acenaphthene	µg/l	0.01	NONE	0.41	< 0.01	< 0.01		
Fluorene	µg/l	0.01	NONE	0.20	< 0.01	< 0.01		
Phenanthrene	µg/l	0.01	NONE	0.83	< 0.01	< 0.01		
Anthracene	µg/l	0.01	NONE	0.21	< 0.01	< 0.01		
Fluoranthene	µg/l	0.01	NONE	1.1	< 0.01	< 0.01		
Pyrene	µg/l	0.01	NONE	1.2	< 0.01	< 0.01		
Benzo(a)anthracene	µg/l	0.01	NONE	0.52	< 0.01	< 0.01		
Chrysene	µg/l	0.01	NONE	0.54	< 0.01	< 0.01		
Benzo(b)fluoranthene	µg/l	0.01	NONE	0.45	< 0.01	< 0.01		
Benzo(k)fluoranthene	µg/l	0.01	NONE	0.26	< 0.01	< 0.01		
Benzo(a)pyrene	µg/l	0.01	NONE	0.35	< 0.01	< 0.01		
Indeno(1,2,3-cd)pyrene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01		
Dibenz(a,h)anthracene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01		
Benzo(ghi)perylene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01		
Total PAH								
Total EPA-16 PAHs	µg/l	0.2	NONE	7.2	< 0.2	< 0.2		
Heavy Metals / Metalloids								
Arsenic (dissolved)	µg/l	1.1	ISO 17025	19	< 1.1	< 1.1		
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08	< 0.08		
Chromium (dissolved)	µg/l	0.4	ISO 17025	2.2	< 0.4	1.2		
Copper (dissolved)	µg/l	0.7	ISO 17025	16	7.2	1.4		
Lead (dissolved)	µg/l	1	ISO 17025	13	< 1.0	< 1.0		
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5		
Nickel (dissolved)	µg/l	0.3	ISO 17025	1.5	1.7	< 0.3		
Selenium (dissolved)	µg/l	4	ISO 17025	5.7	4.1	< 4.0		
Zinc (dissolved)	µg/l	0.4	ISO 17025	13	5.9	6.6		
Petroleum Hydrocarbons								
Petroleum Range Organics (C6 - C10)	µg/l	10	NONE	< 10	< 10	< 10		
Diesel Range Organics (C10 - C25)	µg/l	10	NONE	< 10	< 10	< 10		
Oil Range Organics (C25 - C40)	µg/l	10	NONE	< 10	< 10	< 10		

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Analytical Report Number : 16-16775

Project / Site name: Plots 6,7,8, First Street, Manchester

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

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

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
568716	TP103	3	3.10-3.30	Brown clay and loam with gravel.
568717	TP109	1	0.10-0.30	Brown loam and clay with gravel and vegetation.
568718	TP111	1	0.30-0.50	Brown loam and clay with gravel and brick.
568719	TP114	1	0.50-0.70	-
568720	CP/RC116	None Supplied	0.00	-
568721	CP/RC116	None Supplied	2.90	Light brown sand with gravel.
568722	WS102	3	1.00-1.20	Brown loam and clay with gravel and glass

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Analytical Report Number : 16-16775

Project / Site name: Plots 6,7,8, First Street, Manchester

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Asbestos Quantification - Gravimetric	The analysis was carried out using documented in-house method based on references.	HSE Report No: 83/1996, HSG 248, HSG 264 & SCA Blue Book (draft).	A006	D	ISO 17025
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Cr (III) in soil	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
D.O. for Gravimetric Quant if Screen/ID positive	Dependent option for Gravimetric Quant if Screen/ID positive scheduled.	In house asbestos methods A001 & A006.	A006-PL	D	NONE
DRO (Leachates)	Determination of dichloromethane extractable hydrocarbons in leachate by GC-MS.	In-house method	L070-PL	W	NONE
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Metals by ICP-OES in leachate	Determination of metals in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Monohydric phenols in leachate	Determination of phenols in leachate by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	ISO 17025
Organic matter in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L023-PL	D	MCERTS
pH in leachate	Determination of pH in leachate by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	ISO 17025
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
PRO (Leachates)	Determination of hydrocarbons C6-C10 by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	NONE
Speciated EPA-16 PAHs in leachate	Determination of PAH compounds in leachate by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L070-PL	W	NONE

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Analytical Report Number : 16-16775

Project / Site name: Plots 6,7,8, First Street, Manchester

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Sulphate in leachates	Determination of sulphate in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Sulphate, water soluble, in soil	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	L038-PL	D	MCERTS
Sulphide in leachate	Determination of sulphide in leachate by ion selective electrode.	In-house method	L010-PL	W	NONE
Sulphide in soil	Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode.	In-house method	L010-PL	D	MCERTS
Total cyanide in leachate	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	MCERTS
TPH Oils (Leachate)	Determination of dichloromethane/hexane extractable hydrocarbons in leachate by GC-MS.	In-house method	L070-PL	W	NONE
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method	L076-PL	W	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

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Sample ID	Other_ID	Sample Type	Job	Sample Number	Sample Deviation Code	test_name	test_ref	Test Deviation code
CP/RC116		S	16-16775	568721	c	Free cyanide in soil	L080-PL	c
CP/RC116		S	16-16775	568721	c	Organic matter in soil	L023-PL	c
CP/RC116		S	16-16775	568721	c	Sulphide in soil	L010-PL	c
TP103	3	S	16-16775	568716	bc	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	bc
TP103	3	S	16-16775	568716	bc	TPHCWG (Soil)	L076-PL	b
TP109	1	S	16-16775	568717	c	Free cyanide in soil	L080-PL	c
TP109	1	S	16-16775	568717	c	Organic matter in soil	L023-PL	c
TP109	1	S	16-16775	568717	c	Sulphide in soil	L010-PL	c
TP111	1	S	16-16775	568718	c	Free cyanide in soil	L080-PL	c
TP111	1	S	16-16775	568718	c	Organic matter in soil	L023-PL	c
TP111	1	S	16-16775	568718	c	Sulphide in soil	L010-PL	c
WS102	3	S	16-16775	568722	c	Free cyanide in soil	L080-PL	c
WS102	3	S	16-16775	568722	c	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	c
WS102	3	S	16-16775	568722	c	Organic matter in soil	L023-PL	c
WS102	3	S	16-16775	568722	c	Sulphide in soil	L010-PL	c

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

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Analytical Report Number : 16-16779

Project / Site name:	Plots 6,7,8, First Street, Manchester	**Samples received on:**	25/04/2016
Your job number:	31847	**Samples instructed on:**	03/05/2016
Your order number:		**Analysis completed by:**	10/05/2016
Report Issue Number:	1	**Report issued on:**	10/05/2016
Samples Analysed:	1 wac multi sample		

Signed:

Rexona Rahman
Reporting Manager
For & on behalf of i2 Analytical Ltd.

Signed:

Emma Winter
Assistant Reporting Manager
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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Waste Acceptance Criteria Analytical Results

Report No:	**16-16779**						
					Client:	**GEOENG**	
Location	**Plots 6,7,8, First Street, Manchester**						
Lab Reference (Sample Number)	568736				**Landfill Waste Acceptance Criteria Limits**		
Sampling Date	20/04/2016				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	WS102 3						
Depth (m)	1.00-1.20						
Solid Waste Analysis							
TOC (%)**	1.8				3%	5%	6%
Loss on Ignition (%) **	5.9				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.30				1	--	--
Mineral Oil (mg/kg)	1200				500	--	--
Total PAH (WAC-17) (mg/kg)	13				100	--	--
pH (units)**	7.2				--	>6	--
Acid Neutralisation Capacity (mol / kg)	5.6				--	To be evaluated	To be evaluated
Eluate Analysis (BS EN 12457 - 3 preparation utilising end over end leaching procedure)	2:1	8:1		Cumulative 10:1	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
	mg/l	mg/l		mg/kg			
Arsenic *	< 0.010	< 0.010		< 0.050	0.5	2	25
Barium *	0.082	0.047		0.52	20	100	300
Cadmium *	< 0.0005	< 0.0005		< 0.0020	0.04	1	5
Chromium *	0.0013	< 0.0010		0.0097	0.5	10	70
Copper *	0.012	0.0052		0.061	2	50	100
Mercury *	< 0.0015	< 0.0015		< 0.010	0.01	0.2	2
Molybdenum *	0.013	< 0.0030		0.036	0.5	10	30
Nickel *	< 0.0010	< 0.0010		< 0.0050	0.4	10	40
Lead *	< 0.0050	0.0077		0.069	0.5	10	50
Antimony *	0.0069	< 0.0050		0.029	0.06	0.7	5
Selenium *	< 0.010	< 0.010		0.046	0.1	0.5	7
Zinc *	0.0011	0.0059		0.052	4	50	200
Chloride *	< 4.0	< 4.0		15	800	4000	25000
Fluoride	4.6	2.2		26	10	150	500
Sulphate *	34	6.4		100	1000	20000	50000
TDS	550	80		1500	4000	60000	100000
Phenol Index (Monhydric Phenols) *	< 0.13	< 0.13		< 0.50	1	-	-
DOC	11	4.9		58	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	1.2						
Dry Matter (%)	81						
Moisture (%)	19						
Stage 1							
Volume Eluate L2 (litres)	0.32						
Filtered Eluate VE1 (litres)	0.25						

Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and I2 cannot be held responsible for any discrepencies with current legislation

*= UKAS accredited (liquid eluate analysis only)
** = MCERTS accrediited

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Analytical Report Number : 16-16779

Project / Site name: Plots 6,7,8, First Street, Manchester

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

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
568736	WS102	3	1.00-1.20	Brown loam and clay with gravel and glass

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Analytical Report Number : 16-16779

Project / Site name: Plots 6,7,8, First Street, Manchester

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Acid neutralisation capacity of soil	Determination of acid neutralisation capacity by addition of acid or alkali followed by electronic probe.	In-house method based on Guidance an Sampling and Testing of Wastes to Meet Landfill Waste Acceptance	L046-PL	W	NONE
BTEX (Sum of BTEX compounds) in soil	Determination of BTEX in soil by headspace GC-MS. Individual components MCERTS accredited	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Chloride in WAC leachate (BS EN 12457-3 Prep)	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260.	L082-PL	W	ISO 17025
DOC in WAC leachate (BS EN 12457-3 Prep)	Determination of dissolved organic carbon in leachate by TOC/DOC NDIR analyser.	In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.	L037-PL	W	NONE
Fluoride in WAC leachate (BS EN 12457-3 Prep)	Determination of fluoride in leachate by 1:1ratio with a buffer solution followed by Ion Selective Electrode.	In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.	L033-PL	W	NONE
Loss on ignition of soil @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L047-PL	D	MCERTS
Metals in WAC leachate (BS EN 12457-3 Prep)	Determination of metals in leachate by acidification followed by ICP-OES.	In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.	L039-PL	W	ISO 17025
Mineral Oil in Soil	Determination of dichloromethane/hexane extractable hydrocarbons in soil by GC-MS.	In-house method based on USEPA 8270	L076-PL	D	NONE
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
PCB's by GC-MS in soil	Determination of PCB by extraction with acetone and hexane followed by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	MCERTS
pH in soil	Determination of pH in soil by addition of water followed by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	MCERTS
Phenol Index in WAC leachate (BS EN 12457-3 Prep)	Determination of monohydric phenols in leachate by continuous flow analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	ISO 17025
Seciated WAC-17 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Sulphate in WAC leachate (BS EN 12457-3 Prep)	Determination of sulphate in leachate by acidification followed by ICP-OES.	In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.	L039-PL	W	ISO 17025
TDS in WAC leachate (BS EN 12457-3 Prep)	Determination of total dissolved solids in leachate by electrometric measurement.	In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.	L031-PL	W	NONE
Total organic carbon in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L023-PL	D	MCERTS

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Analytical Report Number : 16-16779

Project / Site name: Plots 6,7,8, First Street, Manchester

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

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Sample ID	Other_ID	Sample Type	Job	Sample Number	Sample Deviation Code	test_name	test_ref	Test Deviation code
WS102	3	M	16-16779	568736	c	BTEX (Sum of BTEX compounds) in soil	L073B-PL	c
WS102	3	M	16-16779	568736	c	BTEX in soil (Monoaromatics)	L073B-PL	c
WS102	3	M	16-16779	568736	c	Organic Matter (Raw data) in soil	L023-PL	c

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

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Analytical Report Number : 16-18694

Project / Site name:	Plots 6,7 and 8, First Street , Manchester	**Samples received on:**	26/05/2016
Your job number:	31847	**Samples instructed on:**	26/05/2016
Your order number:		**Analysis completed by:**	01/06/2016
Report Issue Number:	1	**Report issued on:**	01/06/2016
Samples Analysed:	1 soil sample		

Signed: CCStone

Dr Claire Stone
Quality Manager
For & on behalf of i2 Analytical Ltd.

Signed:

Emma Winter
Assistant Reporting Manager
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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Analytical Report Number: 16-18694

Project / Site name: Plots 6,7 and 8, First Street , Manchester

Lab Sample Number				579707				
Sample Reference				CP/RC104A				
Sample Number				5				
Depth (m)				1.70-1.80				
Date Sampled				11/04/2016				
Time Taken				1530				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1				
Moisture Content	%	N/A	NONE	23				
Total mass of sample received	kg	0.001	NONE	2.0				
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected				
General Inorganics								
pH	pH Units	N/A	MCERTS	8.1				
Free Cyanide	mg/kg	1	MCERTS	< 1				
Total Sulphate as SO_4	mg/kg	50	MCERTS	160				
Water Soluble Sulphate (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.023				
Sulphide	mg/kg	1	MCERTS	< 1.0				
Organic Matter	%	0.1	MCERTS	< 0.1				
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05				
Acenaphthylene	mg/kg	0.1	MCERTS	< 0.10				
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10				
Fluorene	mg/kg	0.1	MCERTS	< 0.10				
Phenanthrene	mg/kg	0.1	MCERTS	< 0.10				
Anthracene	mg/kg	0.1	MCERTS	< 0.10				
Fluoranthene	mg/kg	0.1	MCERTS	< 0.10				
Pyrene	mg/kg	0.1	MCERTS	< 0.10				
Benzo(a)anthracene	mg/kg	0.1	MCERTS	< 0.10				
Chrysene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	< 0.10				
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	< 0.10				
Benzo(a)pyrene	mg/kg	0.1	MCERTS	< 0.10				
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	< 0.10				
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	< 0.10				
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05				
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	< 1.60				
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	3.4				
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2				
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0				
Chromium (III)	mg/kg	1	NONE	17				
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	17				
Copper (aqua regia extractable)	mg/kg	1	MCERTS	4.8				
Lead (aqua regia extractable)	mg/kg	1	MCERTS	15				
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3				
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	23				
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0				
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	46				

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The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number : 16-18694

Project / Site name: Plots 6,7 and 8, First Street , Manchester

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

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

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
579707	CP/RC104A	5	1.70-1.80	Brown gravelly clay.

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Analytical Report Number : 16-18694

Project / Site name: Plots 6,7 and 8, First Street , Manchester

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Cr (III) in soil	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Organic matter in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L023-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Sulphate, water soluble, in soil	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	L038-PL	D	MCERTS
Sulphide in soil	Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode.	In-house method	L010-PL	D	MCERTS
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

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Sample ID	Other_ID	Sample Type	Job	Sample Number	Sample Deviation Code	test_name	test_ref	Test Deviation code
CP/RC104A	5	S	16-18694	579707	c	Free cyanide in soil	L080-PL	c
CP/RC104A	5	S	16-18694	579707	c	Hexavalent chromium in soil	L080-PL	c
CP/RC104A	5	S	16-18694	579707	c	Cr (III) in soil	L080-PL	c
CP/RC104A	5	S	16-18694	579707	c	Organic matter in soil	L023-PL	c
CP/RC104A	5	S	16-18694	579707	c	Speciated EPA-16 PAHs in soil	L064-PL	c
CP/RC104A	5	S	16-18694	579707	c	Sulphide in soil	L010-PL	c
CP/RC104A	5	S	16-18694	579707	c	pH in soil (automated)	L099-PL	c

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Analytical Report Number : 16-18695

Project / Site name:	Plots 6,7 and 8, First Street, Manchester	**Samples received on:**	26/05/2016
Your job number:	31847	**Samples instructed on:**	26/05/2016
Your order number:		**Analysis completed by:**	03/06/2016
Report Issue Number:	1	**Report issued on:**	03/06/2016
Samples Analysed:	1 wac multi sample		

Signed: CCStone

Dr Claire Stone
Quality Manager
For & on behalf of i2 Analytical Ltd.

Signed:

Emma Winter
Assistant Reporting Manager
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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Waste Acceptance Criteria Analytical Results

Report No:	**16-18695**						
					Client:	**GEOENG**	
Location	**Plots 6,7 and 8, First Street, Manchester**						
Lab Reference (Sample Number)	579708				**Landfill Waste Acceptance Criteria**		
					Limits		
Sampling Date	12/04/2016				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	CP/RC104A						
Depth (m)	0.30						
Solid Waste Analysis							
TOC (%)**	3.0				3%	5%	6%
Loss on Ignition (%) **	7.4				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.30				1	--	--
Mineral Oil (mg/kg)	480				500	--	--
Total PAH (WAC-17) (mg/kg)	810				100	--	--
pH (units)**	8.8				--	>6	--
Acid Neutralisation Capacity (mol / kg)	33				--	To be evaluated	To be evaluated
Eluate Analysis	2:1	8:1		Cumulative 10:1	Limit values for compliance leaching test		
(BS EN 12457 - 3 preparation utilising end over end leaching procedure)	mg/l	mg/l		mg/kg	using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
Arsenic *	< 0.010	< 0.010		0.061	0.5	2	25
Barium *	0.024	0.027		0.26	20	100	300
Cadmium *	< 0.0005	< 0.0005		< 0.0020	0.04	1	5
Chromium *	0.0016	0.0020		0.019	0.5	10	70
Copper *	0.019	0.022		0.21	2	50	100
Mercury *	< 0.0015	< 0.0015		< 0.010	0.01	0.2	2
Molybdenum *	0.068	0.0080		0.18	0.5	10	30
Nickel *	0.0034	0.0029		0.030	0.4	10	40
Lead *	< 0.0050	0.0096		0.081	0.5	10	50
Antimony *	0.012	< 0.0050		0.047	0.06	0.7	5
Selenium *	0.013	< 0.010		0.084	0.1	0.5	7
Zinc *	< 0.0010	0.0056		0.047	4	50	200
Chloride *	33	4.4		93	800	4000	25000
Fluoride	0.87	0.42		4.9	10	150	500
Sulphate *	190	25		520	1000	20000	50000
TDS	210	70		940	4000	60000	100000
Phenol Index (Monhydric Phenols) *	< 0.13	< 0.13		< 0.50	1	-	-
DOC	11	6.0		69	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	2.0						
Dry Matter (%)	90						
Moisture (%)	10						
Stage 1							
Volume Eluate L2 (litres)	0.33						
Filtered Eluate VE1 (litres)	0.30						

Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and I2 cannot be held responsible for any discrepencies with current legislation

*= UKAS accredited (liquid eluate analysis only)
** = MCERTS accrediited

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Analytical Report Number : 16-18695

Project / Site name: Plots 6,7 and 8, First Street, Manchester

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

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
579708	CP/RC104A	None Supplied	0.30	Brown loam and clay with gravel.

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Analytical Report Number : 16-18695

Project / Site name: Plots 6,7 and 8, First Street, Manchester

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Acid neutralisation capacity of soil	Determination of acid neutralisation capacity by addition of acid or alkali followed by electronic probe.	In-house method based on Guidance an Sampling and Testing of Wastes to Meet Landfill Waste Acceptance	L046-PL	W	NONE
BTEX (Sum of BTEX compounds) in soil	Determination of BTEX in soil by headspace GC-MS. Individual components MCERTS accredited	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Chloride in WAC leachate (BS EN 12457-3 Prep)	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260.	L082-PL	W	ISO 17025
DOC in WAC leachate (BS EN 12457-3 Prep)	Determination of dissolved organic carbon in leachate by TOC/DOC NDIR analyser.	In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.	L037-PL	W	NONE
Fluoride in WAC leachate (BS EN 12457-3 Prep)	Determination of fluoride in leachate by 1:1ratio with a buffer solution followed by Ion Selective Electrode.	In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.	L033-PL	W	NONE
Loss on ignition of soil @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L047-PL	D	MCERTS
Metals in WAC leachate (BS EN 12457-3 Prep)	Determination of metals in leachate by acidification followed by ICP-OES.	In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.	L039-PL	W	ISO 17025
Mineral Oil in Soil	Determination of dichloromethane/hexane extractable hydrocarbons in soil by GC-MS.	In-house method based on USEPA 8270	L076-PL	D	NONE
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
PCB's by GC-MS in soil	Determination of PCB by extraction with acetone and hexane followed by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	MCERTS
pH in soil	Determination of pH in soil by addition of water followed by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	MCERTS
Phenol Index in WAC leachate (BS EN 12457-3 Prep)	Determination of monohydric phenols in leachate by continuous flow analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	ISO 17025
Seciated WAC-17 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Sulphate in WAC leachate (BS EN 12457-3 Prep)	Determination of sulphate in leachate by acidification followed by ICP-OES.	In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.	L039-PL	W	ISO 17025
TDS in WAC leachate (BS EN 12457-3 Prep)	Determination of total dissolved solids in leachate by electrometric measurement.	In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.	L031-PL	W	NONE
Total organic carbon in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L023-PL	D	MCERTS

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Analytical Report Number : 16-18695

Project / Site name: Plots 6,7 and 8, First Street, Manchester

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

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Sample ID	Other_ID	Sample Type	Job	Sample Number	Sample Deviation Code	test_name	test_ref	Test Deviation code
CP/RC104A		M	16-18695	579708	c	Acid neutralisation capacity of soil	L046-PL	c
CP/RC104A		M	16-18695	579708	c	BTEX (Sum of BTEX compounds) in soil	L073B-PL	c
CP/RC104A		M	16-18695	579708	c	BTEX in soil (Monoaromatics)	L073B-PL	c
CP/RC104A		M	16-18695	579708	c	Loss on ignition of soil @ 450oC	L047-PL	c
CP/RC104A		M	16-18695	579708	c	Mineral Oil in Soil	L076-PL	c
CP/RC104A		M	16-18695	579708	c	Organic Matter (Raw data) in soil	L023-PL	c
CP/RC104A		M	16-18695	579708	c	PCB's by GC-MS in soil	L027-PL	c
CP/RC104A		M	16-18695	579708	c	Seciated WAC-17 PAHs in soil	L064-PL	c
CP/RC104A		M	16-18695	579708	c	Total organic carbon in soil	L023-PL	c
CP/RC104A		M	16-18695	579708	c	pH in soil	L005-PL	c

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Analytical Report Number : 16-18699

Project / Site name:	Plots 6,7 and 8, First Street, Manchester	**Samples received on:**	26/05/2016
Your job number:	31847	**Samples instructed on:**	26/05/2016
Your order number:		**Analysis completed by:**	01/06/2016
Report Issue Number:	1	**Report issued on:**	01/06/2016
Samples Analysed:	1 soil sample		

Signed: CCStone

Dr Claire Stone
Quality Manager
For & on behalf of i2 Analytical Ltd.

Signed:

Emma Winter
Assistant Reporting Manager
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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Analytical Report Number: 16-18699

Project / Site name: Plots 6,7 and 8, First Street, Manchester

Lab Sample Number				579727				
Sample Reference				CP/RC103				
Sample Number				None Supplied				
Depth (m)				0.30				
Date Sampled				11/04/2016				
Time Taken				1135				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1				
Moisture Content	%	N/A	NONE	7.9				
Total mass of sample received	kg	0.001	NONE	2.0				
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected				
General Inorganics								
pH	pH Units	N/A	MCERTS	8.8				
Free Cyanide	mg/kg	1	MCERTS	< 1				
Total Sulphate as SO_4	mg/kg	50	MCERTS	1700				
Water Soluble Sulphate (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.23				
Sulphide	mg/kg	1	MCERTS	< 1.0				
Organic Matter	%	0.1	MCERTS	0.4				
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05				
Acenaphthylene	mg/kg	0.1	MCERTS	< 0.10				
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10				
Fluorene	mg/kg	0.1	MCERTS	< 0.10				
Phenanthrene	mg/kg	0.1	MCERTS	0.34				
Anthracene	mg/kg	0.1	MCERTS	< 0.10				
Fluoranthene	mg/kg	0.1	MCERTS	0.66				
Pyrene	mg/kg	0.1	MCERTS	0.68				
Benzo(a)anthracene	mg/kg	0.1	MCERTS	0.50				
Chrysene	mg/kg	0.05	MCERTS	0.38				
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	0.62				
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	0.20				
Benzo(a)pyrene	mg/kg	0.1	MCERTS	0.32				
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	< 0.10				
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	< 0.10				
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05				
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	3.70				
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	15				
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.2				
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0				
Chromium (III)	mg/kg	1	NONE	17				
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	17				
Copper (aqua regia extractable)	mg/kg	1	MCERTS	67				
Lead (aqua regia extractable)	mg/kg	1	MCERTS	12				
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3				
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	52				
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0				
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	150				

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Analytical Report Number : 16-18699

Project / Site name: Plots 6,7 and 8, First Street, Manchester

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

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

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
579727	CP/RC103	None Supplied	0.30	Brown loam and gravel with glass.

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The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number : 16-18699

Project / Site name: Plots 6,7 and 8, First Street, Manchester

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Cr (III) in soil	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Organic matter in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L023-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Sulphate, water soluble, in soil	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	L038-PL	D	MCERTS
Sulphide in soil	Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode.	In-house method	L010-PL	D	MCERTS
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

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The results included within the report are representative of the samples submitted for analysis.

Sample ID	Other_ID	Sample Type	Job	Sample Number	Sample Deviation Code	test_name	test_ref	Test Deviation code
CP/RC103		S	16-18699	579727	c	Free cyanide in soil	L080-PL	c
CP/RC103		S	16-18699	579727	c	Hexavalent chromium in soil	L080-PL	c
CP/RC103		S	16-18699	579727	c	Cr (III) in soil	L080-PL	c
CP/RC103		S	16-18699	579727	c	Organic matter in soil	L023-PL	c
CP/RC103		S	16-18699	579727	c	Speciated EPA-16 PAHs in soil	L064-PL	c
CP/RC103		S	16-18699	579727	c	Sulphide in soil	L010-PL	c
CP/RC103		S	16-18699	579727	c	pH in soil (automated)	L099-PL	c

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

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Analytical Report Number : 16-18700

Replaces Analytical Report Number : 16-18700, issue no. 2

Project / Site name:	Plots 6,7 and 8, First Street, Manchester	**Samples received on:**	26/05/2016
Your job number:	31847	**Samples instructed on:**	26/05/2016
Your order number:		**Analysis completed by:**	06/06/2016
Report Issue Number:	3	**Report issued on:**	06/06/2016
Samples Analysed:	2 soil samples		

Signed:

Rexona Rahman
Reporting Manager
For & on behalf of i2 Analytical Ltd.

Signed:

Emma Winter
Assistant Reporting Manager
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 16-18700

Project / Site name: Plots 6,7 and 8, First Street, Manchester

Lab Sample Number				579728	579729			
Sample Reference				CP/RC106A	CP/RC108			
Sample Number				2	2			
Depth (m)				0.60	0.30			
Date Sampled				12/04/2016	12/04/2016			
Time Taken				1520	1605			
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1			
Moisture Content	%	N/A	NONE	9.7	7.1			
Total mass of sample received	kg	0.001	NONE	2.0	2.0			
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected			
General Inorganics								
pH	pH Units	N/A	MCERTS	8.0	8.5			
Free Cyanide	mg/kg	1	MCERTS	< 1	< 1			
Total Sulphate as SO_4	mg/kg	50	MCERTS	1700	1200			
Water Soluble Sulphate (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.68	0.26			
Sulphide	mg/kg	1	MCERTS	3.4	4.1			
Organic Matter	%	0.1	MCERTS	0.8	1.8			
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	0.44	0.93			
Acenaphthylene	mg/kg	0.1	MCERTS	< 0.10	< 0.10			
Acenaphthene	mg/kg	0.1	MCERTS	0.44	0.31			
Fluorene	mg/kg	0.1	MCERTS	0.41	0.31			
Phenanthrene	mg/kg	0.1	MCERTS	4.3	3.5			
Anthracene	mg/kg	0.1	MCERTS	0.73	0.81			
Fluoranthene	mg/kg	0.1	MCERTS	5.3	5.2			
Pyrene	mg/kg	0.1	MCERTS	5.4	4.8			
Benzo(a)anthracene	mg/kg	0.1	MCERTS	3.1	3.3			
Chrysene	mg/kg	0.05	MCERTS	2.2	2.3			
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	3.0	3.3			
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	0.90	1.4			
Benzo(a)pyrene	mg/kg	0.1	MCERTS	1.5	1.7			
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	0.62	0.86			
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	< 0.10	0.22			
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.89	1.1			
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	29.3	29.8			
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	16	14			
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	0.2			
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0			
Chromium (III)	mg/kg	1	NONE	15	18			
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	15	18			
Copper (aqua regia extractable)	mg/kg	1	MCERTS	63	39			
Lead (aqua regia extractable)	mg/kg	1	MCERTS	370	200			
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	0.4			
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	25	34			
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0			
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	170	110			

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Analytical Report Number : 16-18700

Project / Site name: Plots 6,7 and 8, First Street, Manchester

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

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

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
579728	CP/RC106A	2	0.60	Brown loam and gravel.
579729	CP/RC108	2	0.30	Brown loam and gravel.

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Analytical Report Number : 16-18700

Project / Site name: Plots 6,7 and 8, First Street, Manchester

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Cr (III) in soil	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Organic matter in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L023-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Sulphate, water soluble, in soil	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	L038-PL	D	MCERTS
Sulphide in soil	Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode.	In-house method	L010-PL	D	MCERTS
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

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Sample ID	Other_ID	Sample Type	Job	Sample Number	Sample Deviation Code	test_name	test_ref	Test Deviation code
CP/RC106A	2	S	16-18700	579728	c	Free cyanide in soil	L080-PL	c
CP/RC106A	2	S	16-18700	579728	c	Hexavalent chromium in soil	L080-PL	c
CP/RC106A	2	S	16-18700	579728	c	Cr (III) in soil	L080-PL	c
CP/RC106A	2	S	16-18700	579728	c	Organic matter in soil	L023-PL	c
CP/RC106A	2	S	16-18700	579728	c	Speciated EPA-16 PAHs in soil	L064-PL	c
CP/RC106A	2	S	16-18700	579728	c	Sulphide in soil	L010-PL	c
CP/RC106A	2	S	16-18700	579728	c	pH in soil (automated)	L099-PL	c
CP/RC108	2	S	16-18700	579729	c	Free cyanide in soil	L080-PL	c
CP/RC108	2	S	16-18700	579729	c	Hexavalent chromium in soil	L080-PL	c
CP/RC108	2	S	16-18700	579729	c	Cr (III) in soil	L080-PL	c
CP/RC108	2	S	16-18700	579729	c	Organic matter in soil	L023-PL	c
CP/RC108	2	S	16-18700	579729	c	Speciated EPA-16 PAHs in soil	L064-PL	c
CP/RC108	2	S	16-18700	579729	c	Sulphide in soil	L010-PL	c
CP/RC108	2	S	16-18700	579729	c	pH in soil (automated)	L099-PL	c

APPENDIX D

ASBESTOS SCREENING AND QUANTIFICATION

ASBESTOS SCREENING LOCATIONS AND SAMPLES

Geotechnical Engineering Ltd
Centurion House
Olympus Park, Quedgeley
Gloucester GL2 4NF
Tel: 01452 527743

Site: **Plots 6,7 & 8 First Street, Manchester**
Contact: **Ask Property Developments Ltd**
Job No: **31847**

CODE	EASTING	NORTHING	GROUND	SAMPLE DEPTH	BASIC DESCRIPTION	SAMPLE DEPTH	BASIC DESCRIPTION
AOP6-7 A3				0.50m	Gravelly SAND (MG)	1.00m	Gravelly SAND (MG)
AOP6-7 A4	383691	397247	32.40	0.50m	Clayey sandy GRAVEL (MG)	1.00m	Gravelly SAND (MG)
AOP6-7 B2	383693	397267	31.55	0.50m	Gravelly SAND (MG)	1.00m	sandy gravelly CLAY (MG)
AOP6-7 B3	383696	397257	31.55	0.50m	Sandy CLAY (MG)	1.00m	Sandy CLAY (N)
AOP6-7 B4	383703	397247	32.40	0.50m	Sandy GRAVEL(MG)	1.00m	Gravelly SAND (MG)
AOP6-7 B9	383725	397205	33.50	0.50m	Gravelly SAND (MG)	1.00m	Sandy GRAVEL (MG)
AOP6-7 C2				0.50m	Sandy CLAY (MG)	1.00m	Sandy CLAY (MG)
AOP6-7 C3	383705	397262	30.90	0.50m	Sandy GRAVEL (MG)	1.00m	Sandy GRAVEL (MG)
AOP6-7 C4	383709	397253	30.90	0.50m	Sandy GRAVEL (MG)	0.75m	Sandy GRAVEL (MG)
AOP6-7 C9	383731	397206	33.55	0.50m	Gravelly SILT (MG)	1.00m	Gravelly SILT (MG)
AOP6-7 D2				0.50m	Sandy CLAY (MG)	1.00m	Sandy CLAY (MG)
AOP6-7 D3	383711	397264	30.90	0.50m	Gravelly SAND (MG)	1.00m	Gravelly SAND (MG)
AOP6-7 D4	383718	397256	30.95	0.50m	Gravelly SAND (MG)	0.85m	Gravelly SAND (MG)
AOP6-7 D9	383747	397215	33.35	0.50m	Gravelly SAND (MG)	1.00m	Gravelly SILT (MG)
AOP6-7 E3	383719	397268	30.90	0.50m	Gravelly SAND (MG)	1.00m	Gravelly SAND (MG)
AOP6-7 E4	383726	397260	31.00	0.50m	Gravelly SAND (MG)	1.00m	Sandy GRAVEL (MG)
AOP6-7 E6	383740	397240	32.95	0.50m	Gravelly SAND (MG)	1.00m	Gravelly SAND (MG)
AOP6-7 E8	383744	397231	33.10	0.50m	Sandy GRAVEL (MG)	1.00m	Gravelly SAND (MG)
AOP6-7 E9	383753	397221	33.40	0.50m	Gravelly SAND (MG)	1.00m	Sandy gravelly SILT
AOP6-7 F1				0.50m	Sandy CLAY (MG)	1.00m	Sandy CLAY (MG)
AOP6-7 F3	383728	397273	30.90	0.40m	Sandy GRAVEL (MG)		
AOP6-7 F4	383736	397265	30.95	0.50m	Gravelly SAND (MG)	1.00m	Gravelly SAND (MG)
AOP6-7 F6				0.50m	Gravelly SAND (MG)	1.00m	Gravelly SAND (MG)
AOP6-7 F8	383757	397233	33.00	0.50m	Gravelly SAND (MG)	1.00m	Gravelly CLAY (MG)
AOP6-7 F9	383762	397226	33.40	0.50m	Gravelly SAND (MG)	1.00m	Sandy GRAVEL (MG)
AOP6-7 G6	383754	397254	32.10	0.50m	Gravelly SAND (MG)	1.00m	Sandy GRAVEL (MG)
AOP6-7 G8	383761	397241	32.75	0.50m	Gravelly SAND (MG)	1.00m	Gravelly SAND (MG)
AOP6-7 G9	383770	397231	33.25	0.50m	Gravelly SAND (MG)	1.00m	Gravelly SAND (MG)
AOP6-7 H5	383758	397265	31.10	0.50m	Sandy CLAY (MG)	0.83m	Clayey sandy GRAVEL (MG)
AOP6-7 H6	383762	397258	31.45	0.50m	Gravelly SAND (MG)	0.90m	Sandy CLAY (MG)
AOP6-7 H9	383777	397235	32.70	0.50m	Gravelly SAND (MG)	1.00m	Clayey gravelly SAND (MG)
AOP6-7 I9	383788	397240	32.70	0.50m	Clayey SAND (MG)	1.00m	Gravelly SAND (MG)
AOP6-7 J3	383767	397291	30.90	0.50m	Gravelly SAND (MG)		
AOP6-7 J4	383772	397283	30.95	0.50m	Sandy GRAVEL (MG)		
AOP6-7 J5	383776	397276	31.00	0.40m	Sandy GRAVEL (MG)		
AOP6-7 J6	383780	397268	31.20	0.50m	(MG)	0.90m	(MG)
AOP6-7 J7	383784	397260	31.45	0.50m	Sandy GRAVEL (MG)	0.80m	Clayey GRAVEL (MG)
AOP6-7 J8	383788	397252	32.10	0.50m	Sandy GRAVEL (MG)	0.80m	Sandy GRAVEL (MG)
AOP6-7 J9	383793	397244	32.75	0.50m	GRAVEL	1.00m	GRAVEL
AOP6-7 K5	383785	397280	31.00	0.50m	Gravelly SAND (MG)	1.00m	Gravelly SAND (MG)
AOP6-7 K7	383793	397265	31.50	0.50m	(MG)	0.90m	(MG)
AOP6-7 K8	383796	397257	32.05	0.50m	Sandy GRAVEL (MG)	1.00m	Sandy GRAVEL (MG)
AOP6-7 K9	383801	397249	32.85	0.50m	Sandy GRAVEL	1.00m	Sandy GRAVEL
AOP6-7 L3	383784	397301	30.90	0.50m	(MG)	0.90m	(MG)
AOP6-7 L4	383788	397293	30.90	0.50m	(MG)		
AOP6-7 L5	383792	397285	30.95	0.50m	Gravelly SAND (MG)	0.70m	Sandy GRAVEL (MG)
AOP6-7 L6	383796	397277	31.15	0.50m	Gravelly SAND (MG)		
AOP6-7 L7	383800	397269	31.50	1.00m	(MG)		
AOP6-7 L8	383803	397260	32.20	0.50m	Gravelly SAND (MG)	1.00m	Gravelly SAND (MG)
AOP6-7 L9	383807	397252	32.85	0.50m	(MG)	1.00m	(MG)
AOP6-7 M6	383803	397280	31.15	0.50m	Sandy GRAVEL (MG)		
AOP6-7 M7	383807	397272	31.50	0.50m	(MG)	0.90m	(MG)
AOP6-7 M8	383811	397264	32.15	0.50m	Sandy GRAVEL (MG)	1.00m	Gravelly SAND (MG)
AOP6-7 M9	383815	397256	33.00	0.50m	(MG)	1.00m	(MG)
AOP6-7 N1	383792	397325	30.85	0.50m	Sandy GRAVEL (MG)	1.00m	Sandy GRAVEL (MG)
AOP6-7 N2	383796	397317	30.90	0.50m	Mixed MADE GROUND	0.80m	MADE GROUND and BRICK
AOP6-7 N7	383817	397276	31.55	0.50m	Sandy GRAVEL (MG)	1.00m	Gravelly SAND (MG)
AOP6-7 N8	383821	397268	32.30	0.50m	Gravelly SAND (MG)	1.00m	Sandy GRAVEL (MG)
AOP6-7 N9	383825	397261	33.00	0.50m	(MG)	1.00m	(MG)
AOP6-7 O1	383800	397326	30.85	0.50m	MG and GRAVEL	1.00m	Sandy CLAY with brick (MG)
AOP6-7 O2	383803	397320	30.90	0.50m	Sandy GRAVEL (MG)	1.00m	Sandy GRAVEL (MG)
AOP6-7 O3	383808	397313	30.80	0.50m	Mixed MADE GROUND and GRAVEL	0.80m	Mixed MADE GROUND and GRAVEL
AOP6-7 O4	383813	397306	30.85	0.50m	Mixed MADE GROUND and GRAVEL	0.80m	Mixed MADE GROUND
AOP6-7 O5	383815	397298	31.00	0.70m	(MG)		
AOP6-7 O6	383819	397288	31.15	0.50m	(MG)	0.75m	(MG)
AOP6-7 O7	383825	397279	31.75	0.50m	(MG)	0.90m	(MG)
AOP6-7 O8	383827	397271	32.30	0.50m	Gravelly SAND	1.00m	Gravelly SAND
AOP6-7 O9	383832	397264	32.90	0.50m	(MG)	1.00m	(MG)
AOP8A A5	383761	397162	34.55	0.50m	Sandy GRAVEL and topsoil	1.00m	Sandy GRAVEL and SAND
AOP8A B1	383752	397197	33.75	0.50m	SAND (MG)	1.00m	Sandy GRAVEL (MG)
AOP8A B2	383756	397189	33.90	0.50m	Sandy GRAVEL (MG)	1.00m	Sandy GRAVEL (MG)
AOP8A B3	383760	397181	33.90	0.50m	Sandy CLAY (MG)	1.00m	Sandy GRAVEL (MG)
AOP8A B4	383764	397173	34.35	0.50m	Gravel with brick (MG)	0.80m	Gravel with brick (MG)
AOP8A B5	383768	397165	34.50	0.50m	Sandy CLAY with brick (MG)	1.00m	Sandy CLAY with brick (MG)
AOP8A B6	383773	397156	34.70	0.50m	Sandy GRAVEL (MG)	1.00m	Sandy clayey GRAVEL: (MG)
AOP8A B8	383782	397142	34.65	0.50m	Sandy GRAVEL	1.00m	Sandy Gravelly CLAY
AOP8A B9	383788	397135	34.70	0.50m	Clayey GRAVEL	1.00m	Sandy CLAY
AOP8A C1	383758	397201	33.70	0.50m	Sandy GRAVEL (MG)	1.00m	Sandy GRAVEL (MG)
AOP8A C10	383797	397130	34.60	0.50m	CLAY (MG)	1.00m	CLAY (MG)

ASBESTOS SCREENING LOCATIONS AND SAMPLES

Geotechnical Engineering Ltd
Centurion House
Olympus Park, Quedgeley
Gloucester GL2 4NF
Tel: 01452 527743

Site: **Plots 6,7 & 8 First Street, Manchester**
Contact: **Ask Property Developments Ltd**
Job No: **31847**

CODE	EASTING	NORTHING	GROUND	SAMPLE DEPTH	BASIC DESCRIPTION	SAMPLE DEPTH	BASIC DESCRIPTION
AOP8A C11	383802	397123	34.60	0.50m	Gravelly SAND (MG)	1.00m	Gravelly SAND (MG)
AOP8A C2	383764	397194	33.85	0.50m	Sandy GRAVEL (MG)	1.00m	Sandy GRAVEL (MG)
AOP8A C3	383768	397185	33.90	0.50m	Sandy GRAVEL (MG)	1.00m	Sandy GRAVEL (MG)
AOP8A C4	383772	397177	34.15	0.50m	Gravel with brick (MG)	0.80m	Gravel with brick (MG)
AOP8A C5	383776	397169	34.35	0.50m	Sandy CLAY (MG)	1.00m	Sandy GRAVEL (MG)
AOP8A C6	383781	397161	34.10	0.50m	Sandy GRAVEL (MG)	1.00m	Sandy GRAVEL (MG)
AOP8A C7	383785	397153	34.15	0.50m	Sandy GRAVEL	1.00m	Sandy GRAVEL
AOP8A C8	383789	397146	34.15	0.50m	Sandy GRAVEL	1.00m	Sandy GRAVEL
AOP8A C9	383793	397138	34.60	0.50m	Sandy CLAY (MG)	1.00m	SAND + GRAVEL (MG)
AOP8A D10	383806	397135	34.45	0.50m	Sandy GRAVEL (MG)	1.00m	Sandy GRAVEL (MG)
AOP8A D11	383811	397128	34.75	0.50m	Sandy GRAVEL (MG)	1.00m	Sandy CLAY (MG)
AOP8A D2				0.50m	Sandy GRAVEL (MG)	1.00m	Sandy GRAVEL (MG)
AOP8A D3	383779	397191	34.15	0.50m	Sandy GRAVEL (MG)	1.00m	Sandy GRAVEL (MG)
AOP8A D4	383783	397183	34.15	0.50m	Sandy GRAVEL (MG)	1.00m	Sandy GRAVEL (MG)
AOP8A D5	383787	397174	34.15	0.50m	Sandy GRAVEL (MG)	1.00m	Sandy GRAVEL (MG)
AOP8A D6	383791	397167	34.15	0.50m	Sandy GRAVEL (N)	1.00m	Sandy GRAVEL (N)
AOP8A D7	383795	397158	34.15	0.50m	Sandy GRAVEL (MG)	1.00m	Sandy GRAVEL (N)
AOP8A D8	383799	397151	34.15	0.50m	Sandy GRAVEL	1.00m	Sandy GRAVEL
AOP8A D9	383803	397143	34.15	0.50m	Sandy GRAVEL (MG)	1.00m	Sandy GRAVEL (MG)
AOP8A D10				0.50m	Sandy GRAVEL (MG)	1.00m	Sandy GRAVEL (MG)
AOP8A E10	383814	397140	34.55	0.50m	TOPSOIL (MG)	1.00m	Sandy GRAVEL (MG)
AOP8A E11	383818	397131	34.80	0.50m	Sandy GRAVEL (MG)	1.00m	Sandy CLAY (MG)
AOP8A E2	383782	397203	34.05	0.50m	Sandy GRAVEL (MG)	1.00m	Sandy GRAVEL (MG)
AOP8A E3	383787	397195	34.20	0.50m	Sandy (Ashy) GRAVEL (MG)	1.00m	Sandy GRAVEL (MG)
AOP8A E4	383790	397187	34.15	0.50m	Sandy GRAVEL (MG)	1.00m	sandy gravelly CLAY (MG)
AOP8A E5	383795	397178	34.15	0.50m	Sandy GRAVEL with brick (MG)	1.00m	Sandy GRAVEL with brick (MG)
AOP8A E6	383799	397170	34.10	0.50m	Sandy GRAVEL and CLAY (MG)	1.00m	Sandy GRAVEL (MG)
AOP8A E7	383803	397162	34.15	0.50m	Sandy GRAVEL (N)	1.00m	Sandy GRAVEL (N)
AOP8A E8	383806	397155	34.10	0.50m	Sandy GRAVEL	1.00m	Sandy GRAVEL
AOP8A E9	383811	397147	34.40	0.50m	Sandy CLAY	1.00m	Sandy CLAY
AOP8A F10	383821	397143	34.75	0.50m	Sandy GRAVEL (MG)	0.90m	Sandy GRAVEL (MG)
AOP8A F11	383825	397135	34.75	0.50m	Gravelly SAND (MG)	1.00m	Gravelly SAND (MG)
AOP8A F2	383787	397206	33.75	0.50m	Sandy GRAVEL (MG)	0.90m	Sandy GRAVEL (MG)
AOP8A F3	383792	397198	33.95	0.50m	Sandy GRAVEL (MG)	1.00m	SAND (MG)
AOP8A F4	383796	397190	34.10	0.50m	Sandy GRAVEL (MG)	1.00m	Sandy CLAY (MG)
AOP8A F5	383800	397181	34.10	0.50m	Sandy GRAVEL (MG)	1.00m	Sandy GRAVEL (MG)
AOP8A F6	383804	397174	34.10	0.50m	GRAVEL (MG)	1.00m	GRAVEL (MG)
AOP8A F7	383809	397165	34.20	0.50m	Sandy GRAVEL (MG)	1.00m	Sandy GRAVEL (MG)
AOP8A F8	383812	397158	34.05	0.50m	GRAVEL	0.90m	GRAVEL
AOP8A F9	383815	397152	34.10	0.50m	Gravelly SAND (MG)	1.00m	Gravelly SAND (MG)
AOP8B A1	383803	397223	33.50	0.50m	Sandy GRAVEL (MG)	1.00m	Gravelly SAND (MG)
AOP8B A2	383808	397216	33.80	0.35m	silty sandy GRAVEL (MG)		
AOP8B A3	383812	397206	33.90	0.50m	Silty gravelly SAND (MG)	1.00m	Silty gravelly SAND (MG)
AOP8B A4	383817	397198	34.20	0.25m	Clayey GRAVEL (MG)		
AOP8B A6	383826	397182	34.70	0.50m	Clayey GRAVEL (MG)	1.00m	Slightly gravelly silty SAND (MG)
AOP8B B1	383811	397227	33.55	0.50m	Sandy GRAVEL (MG)	0.75m	Gravelly SAND (N)
AOP8B B2	383815	397219	33.80	0.50m	Gravelly SAND (MG)	1.00m	Gravelly SAND (N)
AOP8B B3	383820	397211	34.10	0.50m	Sandy GRAVEL (MG)	1.00m	Sandy GRAVEL (MG)
AOP8B B4	383826	397202	34.35	0.50m	Clayey GRAVEL (MG)	0.60m	Clayey GRAVEL (MG)
AOP8B B5	383830	397194	34.65	0.50m	Clayey GRAVEL (MG)	0.70m	Sandy GRAVEL (MG)
AOP8B B6	383834	397186	34.70	0.50m	slightly gravelly Clayey SAND (MG)	1.00m	Gravelly CLAY (MG)
AOP8B C1	383821	397232	33.50	0.50m	Gravelly SAND (MG)	0.85m	Slightly gravelly CLAY (N)
AOP8B C2	383825	397225	33.80	0.50m	Sandy GRAVEL (MG)		
AOP8B C3	383829	397215	34.20	0.50m	Silty GRAVEL (MG)	0.90m	Clayey GRAVEL (MG)
AOP8B C4	383834	397207	34.45	0.40m	SILT with wood (MG)		
AOP8B C5	383838	397199	34.60	0.50m	Silty sandy GRAVEL (MG)		
AOP8B D1	383831	397237	33.35	0.50m	Gravelly SAND (MG)	0.65m	Gravelly SAND (N)
AOP8B D2	383836	397229	34.00	0.50m	Clayey sandy GRAVEL (MG)	0.90m	Sandy GRAVEL (MG)
AOP8B D6	383851	397194	34.65	0.50m	Gravelly CLAY (MG)	1.00m	Gravelly SILT (MG)
AOP8B E1	383839	397241	33.40	0.50m	Gravelly SAND (MG)	1.00m	Gravelly SAND (MG)
AOP8B E2	383843	397232	33.75	0.50m	Clayey GRAVEL (MG)	1.00m	Slghtly sandy slightly gravelly CLAY (MG)
AOP8B E3	383848	397224	34.05	0.50m	Silty sandy GRAVEL (MG)	0.65m	Sandy GRAVEL (MG)
AOP8B E4	383853	397214	34.30	0.50m	Clayey GRAVEL (MG)	0.80m	Clayey GRAVEL (MG)
AOP8B E5	383854	397206	34.70	0.50m	Sandy GRAVEL (MG)		
AOP8B E6	383858	397198	34.60	0.50m	Sandy GRAVEL (MG)	1.00m	Sandy GRAVEL (MG)
AOP8B F1	383845	397244	33.20	0.50m	Gravelly CLAY (MG)	0.75m	Clayey sandy GRAVEL (MG)
AOP8B F2	383850	397235	33.55	0.50m	Slghtly sandy slightly gravelly CLAY (N)		
AOP8B F3	383853	397226	33.70	0.40m	silty sandy GRAVEL (MG)		
AOP8B F5	383860	397210	34.50	0.35m	Sandy GRAVEL (MG)		
AOP8B F6	383865	397201	34.80	0.50m	slightly sandy clayey GRAVEL (MG)	1.00m	Sandy GRAVEL (MG)
AOP8C A1	383827	397176	34.60	0.50m	Made ground and Tar	1.00m	Sandy GRAVEL (MG)
AOP8C A2	383831	397168	34.70	0.50m	Sandy CLAY (MG)	1.00m	Sandy GRAVEL (MG)
AOP8C A3	383835	397159	34.75	0.50m	Sandy GRAVEL with brick (MG)	1.00m	Sandy GRAVEL with brick (MG)
AOP8C B1	383836	397180	34.65	0.50m	Sandy GRAVEL (MG)	1.00m	Sandy GRAVEL with brick (MG)
AOP8C B2	383840	397172	34.75	0.50m	Sandy CLAY (MG)	1.00m	Sandy GRAVEL (MG)
AOP8C B3	383844	397164	34.75	0.50m	Sandy GRAVEL (MG)	1.00m	Sandy GRAVEL (MG)
AOP8C C1	383844	397184	34.65	0.50m	Sandy GRAVEL (MG)	1.00m	Gravelly SAND (MG)
AOP8C C2	383848	397176	34.70	0.50m	Sandy CLAY (MG)	1.00m	Gravelly SAND (MG)
AOP8C C3	383852	397168	34.60	0.50m	clayey sandy GRAVEL (MG)	1.00m	Gravelly SAND (MG)

ASBESTOS SCREENING LOCATIONS AND SAMPLES

Geotechnical Engineering Ltd
Centurion House
Olympus Park, Quedgeley
Gloucester GL2 4NF
Tel: 01452 527743

Site: **Plots 6,7 & 8 First Street, Manchester**
Contact: **Ask Property Developments Ltd**
Job No: **31847**

CODE	EASTING	NORTHING	GROUND	SAMPLE DEPTH	BASIC DESCRIPTION	SAMPLE DEPTH	BASIC DESCRIPTION
AOP8C D1	383852	397188	34.70	0.80m	GRAVEL (MG)		
AOP8C D2	383856	397180	34.75	0.50m	Gravelly SAND (MG)	1.00m	Gravelly SAND (MG)
AOP8C D3	383860	397172	34.75	0.50m	Clayey gravelly SAND (MG)]	1.00m	Clayey gravelly SAND (MG)]
AOP8C E1	383860	397192	34.70	0.50m	Gravelly SAND (MG)	1.00m	Gravelly SAND (MG)
AOP8C E2	383864	397184	34.75	0.50m	Gravelly SAND (MG)	1.00m	Gravelly SAND (MG)
AOP8C E3	383868	397176	34.75	0.50m	Gravelly SAND (MG)	1.00m	Gravelly SAND (MG)
AOP8C F1	383867	397196	34.75	0.50m	Gravelly SAND (MG)	1.00m	Sandy CLAY (MG)
AOP8C F2	383871	397188	34.70	0.50m	Gravelly SAND (MG)	0.80m	Sandy GRAVEL (MG)
AOP8C F3	383875	397180	34.70	0.50m	Clayey gravelly SAND (MG)	1.00m	Gravelly CLAY (MG)

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Analytical Report Number : 16-18846

Project / Site name:	Plots 6, 6 and 8 First Street Manchester	**Samples received on:**	27/05/2016
Your job number:	31847	**Samples instructed on:**	27/05/2016
Your order number:		**Analysis completed by:**	06/06/2016
Report Issue Number:	1	**Report issued on:**	06/06/2016
Samples Analysed:	75 soil samples		

Signed:

Rexona Rahman
Reporting Manager
For & on behalf of i2 Analytical Ltd.

Signed:

Emma Winter
Assistant Reporting Manager
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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Analytical Report Number: 16-18846

Project / Site name: Plots 6, 6 and 8 First Street Manchester

Lab Sample Number				580623	580624	580625	580626	580627
Sample Reference				AOP8A	AOP8A	AOP8A	AOP8A	AOP8A
Sample Number				C3	C4	C5	C6	C9
Depth (m)				0.50	0.80	0.50	1.00	0.50
Date Sampled				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Chrysotile	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	0.002	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	0.002	-	-	-	-

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Analytical Report Number: 16-18846

Project / Site name: Plots 6, 6 and 8 First Street Manchester

Lab Sample Number				580628	580629	580630	580631	580632
Sample Reference				AOP8A	AOP8A	AOP8A	AOP8A	AOP8A
Sample Number				D10	D11	D2	D3	D4
Depth (m)				1.00	0.50	1.00	0.50	1.00
Date Sampled				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-	-

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Analytical Report Number: 16-18846

Project / Site name: Plots 6, 6 and 8 First Street Manchester

Lab Sample Number				580633	580634	580635	580636	580637
Sample Reference				AOP8A	AOP8A	AOP8A	AOP8A	AOP8A
Sample Number				D5	D7	D9	D10	E10
Depth (m)				0.50	0.50	1.00	0.50	1.00
Date Sampled				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-	-

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Analytical Report Number: 16-18846

Project / Site name: Plots 6, 6 and 8 First Street Manchester

Lab Sample Number				580638	580639	580640	580641	580642
Sample Reference				AOP8A	AOP8A	AOP8A	AOP8A	AOP8A
Sample Number				E11	E2	E3	E4	E5
Depth (m)				0.50	1.00	0.50	1.00	0.50
Date Sampled				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-	-

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Analytical Report Number: 16-18846

Project / Site name: Plots 6, 6 and 8 First Street Manchester

Lab Sample Number				580643	580644	580645	580646	580647
Sample Reference				AOP8A	AOP8A	AOP8A	AOP8A	AOP8A
Sample Number				E6	F10	F11	F2	F3
Depth (m)				1.00	0.50	1.00	0.50	1.00
Date Sampled				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-	-

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Analytical Report Number: 16-18846

Project / Site name: Plots 6, 6 and 8 First Street Manchester

Lab Sample Number				580648	580649	580650	580651	580652
Sample Reference				AOP8A	AOP8A	AOP8A	AOP8A	AOP8A
Sample Number				F4	F5	F6	F7	F9
Depth (m)				0.50	1.00	0.50	1.00	0.50
Date Sampled				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	Crocidolite	Crocidolite	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Detected	Detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	0.001	1.485	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	0.001	1.49	-

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Analytical Report Number: 16-18846

Project / Site name: Plots 6, 6 and 8 First Street Manchester

Lab Sample Number				580653	580654	580655	580656	580657
Sample Reference				AOP8B	AOP8B	AOP8B	AOP8B	AOP8B
Sample Number				A1	A2	A3	A4	A6
Depth (m)				1.00	0.35	1.00	0.35	1.00
Date Sampled				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	Amosite	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Detected	Not-detected	Not-detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	< 0.001	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	< 0.001	-	-	-

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Analytical Report Number: 16-18846

Project / Site name: Plots 6, 6 and 8 First Street Manchester

Lab Sample Number				580658	580659	580660	580661	580662
Sample Reference				AOP8B	AOP8B	AOP8B	AOP8B	AOP8B
Sample Number				B1	B2	B3	B4	B5
Depth (m)				0.50	0.50	1.00	0.50	0.70
Date Sampled				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	Amosite	Chrysotile & Amosite	-	Chrysotile
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Detected	Detected	Not-detected	Detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	< 0.001	< 0.001	-	0.002
Asbestos Quantification Total	%	0.001	ISO 17025	-	< 0.001	< 0.001	-	0.002

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Analytical Report Number: 16-18846

Project / Site name: Plots 6, 6 and 8 First Street Manchester

Lab Sample Number				580663	580664	580665	580666	580667
Sample Reference				AOP8B	AOP8B	AOP8B	AOP8B	AOP8B
Sample Number				B6	C1	C2	C3	C4
Depth (m)				0.50	0.50	0.50	0.90	0.40
Date Sampled				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-	-

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Analytical Report Number: 16-18846

Project / Site name: Plots 6, 6 and 8 First Street Manchester

Lab Sample Number				580668	580669	580670	580671	580672
Sample Reference				AOP8B	AOP8B	AOP8B	AOP8B	AOP8B
Sample Number				C5	D1	D2	D6	E1
Depth (m)				0.50	0.50	0.90	0.50	1.00
Date Sampled				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Chrysotile	-	-	Chrysotile	-
Asbestos in Soil	Type	N/A	ISO 17025	Detected	Not-detected	Not-detected	Detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	< 0.001	-	-	< 0.001	-
Asbestos Quantification Total	%	0.001	ISO 17025	< 0.001	-	-	< 0.001	-

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Analytical Report Number: 16-18846

Project / Site name: Plots 6, 6 and 8 First Street Manchester

Lab Sample Number				580673	580675	580676	580677	580678
Sample Reference				AOP8B	AOP8B	AOP8B	AOP8B	AOP8B
Sample Number				E2	E5	E6	F1	E3
Depth (m)				0.50	0.50	1.00	0.50	0.65
Date Sampled				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	Chrysotile	Chrysotile	Chrysotile	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Detected	Detected	Detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	0.015	< 0.001	< 0.001	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	0.015	< 0.001	< 0.001	-

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Analytical Report Number: 16-18846

Project / Site name: Plots 6, 6 and 8 First Street Manchester

Lab Sample Number				580679	580680	580681	580682	580683
Sample Reference				AOP8B	AOP8B	AOP8C	AOP8C	AOP8C
Sample Number				F5	F6	A1	A2	A3
Depth (m)				0.35	1.00	0.50	1.00	0.50
Date Sampled				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Chrysotile	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	< 0.001	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	< 0.001	-	-	-	-

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Analytical Report Number: 16-18846

Project / Site name: Plots 6, 6 and 8 First Street Manchester

Lab Sample Number				580684	580685	580686	580687	580688
Sample Reference				AOP8C	AOP8C	AOP8C	AOP8C	AOP8C
Sample Number				B1	B2	B3	C1	C2
Depth (m)				1.00	0.50	1.00	0.50	1.00
Date Sampled				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	Chrysotile	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	< 0.001	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	< 0.001	-

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Analytical Report Number: 16-18846

Project / Site name: Plots 6, 6 and 8 First Street Manchester

Lab Sample Number				580689	580690	580691	580692	580693
Sample Reference				AOP8C	AOP8C	AOP8C	AOP8C	AOP8C
Sample Number				C3	D1	D2	D3	E1
Depth (m)				0.50	0.50	1.00	0.50	0.90
Date Sampled				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-	-

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Analytical Report Number: 16-18846

Project / Site name: Plots 6, 6 and 8 First Street Manchester

Lab Sample Number				580694	580695	580696	580697	580698
Sample Reference				AOP8C	AOP8C	AOP8C	AOP8C	AOP8C
Sample Number				E2	E3	F1	F2	F3
Depth (m)				0.50	1.00	0.50	0.80	0.50
Date Sampled				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	Chrysotile	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	< 0.001	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	< 0.001	-

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Analytical Report Number: 16-18846
Project / Site name: Plots 6, 6 and 8 First Street Manchester
Your Order No:

Certificate of Analysis - Asbestos Quantification

Methods:

Qualitative Analysis

The samples were analysed qualitatively for asbestos by polarising light and dispersion staining as described by the Health and Safety Executive in HSG 248.

Quantitative Analysis

"The analysis was carried out using our documented in-house method A006 based on HSE Contract Research Report No: 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies et al, 1996) and HSG 248. Our method includes initial examination of the entire representative sample, then fractionation and detailed analysis of each fraction, with quantification by hand picking and weighing.

The limit of detection (reporting limit) of this method is 0.001 %.

The method has been validated using samples of at least 100 g, results for samples smaller than this should be interpreted with caution.

Both Qualitative and Quantitative Analyses are UKAS accredited.

Sample Number	Sample ID	Sample Depth (m)	Sample Weight (g)	Asbestos Containing Material Types Detected (ACM)	PLM Results	Asbestos by hand picking/weighing (%)	Total % Asbestos in Sample
580623	AOP8A	0.50	136	Hard/Cement Type Material	**Chrysotile**	0.002	**0.002**
580650	AOP8A	0.50	127	Hard/ Cement Type Material	**Crocidolite**	0.001	**0.001**
580651	AOP8A	1.00	141	Hard/Cement Type Material & Loose Fibres	**Crocidolite**	1.485	**1.49**
580654	AOP8B	0.35	145	Loose Fibres	**Amosite**	< 0.001	**< 0.001**
580659	AOP8B	0.50	151	Loose Fibres	**Amosite**	< 0.001	**< 0.001**
580660	AOP8B	1.00	148	Loose Fibres	**Chrysotile & Amosite**	< 0.001	**< 0.001**
580662	AOP8B	0.70	139	Insulation Lagging	**Chrysotile**	0.002	**0.002**
580668	AOP8B	0.50	147	Loose Fibres	**Chrysotile**	< 0.001	**< 0.001**
580671	AOP8B	0.50	146	Loose Fibres	**Chrysotile**	< 0.001	**< 0.001**
580675	AOP8B	0.50	130	Insulation Lagging & Bitumen	**Chrysotile**	0.015	**0.015**
580676	AOP8B	1.00	136	Loose Fibres	**Chrysotile**	< 0.001	**< 0.001**
580677	AOP8B	0.50	124	Loose Fibres	**Chrysotile**	< 0.001	**< 0.001**
580679	AOP8B	0.35	125	Loose Fibres	**Chrysotile**	< 0.001	**< 0.001**
580687	AOP8C	0.50	128	Loose Fibres	**Chrysotile**	< 0.001	**< 0.001**
580697	AOP8C	0.80	137	Loose Fibres	**Chrysotile**	< 0.001	**< 0.001**

Opinions and interpretations expressed herein are outside the scope of UKAS accreditatior

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Analytical Report Number : 16-18846

Project / Site name: Plots 6, 6 and 8 First Street Manchester

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Asbestos Quantification - Gravimetric	The analysis was carried out using documented in-house method based on references.	HSE Report No: 83/1996, HSG 248, HSG 264 & SCA Blue Book (draft).	A006	D	ISO 17025
D.O. for Gravimetric Quant if Screen/ID positive	Dependent option for Gravimetric Quant if Screen/ID positive scheduled.	In house asbestos methods A001 & A006.	A006-PL	D	NONE

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

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Analytical Report Number : 16-18847

Replaces Analytical Report Number : 16-18847, issue no. 1

Project / Site name:	Plots 6, 7 & 8, First Street Manchester	**Samples received on:**	05/05/2016
Your job number:	31847	**Samples instructed on:**	27/05/2016
Your order number:		**Analysis completed by:**	07/06/2016
Report Issue Number:	2	**Report issued on:**	07/06/2016
Samples Analysed:	75 soil samples		

Signed:

Rexona Rahman
Reporting Manager
For & on behalf of i2 Analytical Ltd.

Signed:

Emma Winter
Assistant Reporting Manager
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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Analytical Report Number: 16-18847

Project / Site name: Plots 6, 7 & 8, First Street Manchester

Lab Sample Number				580699	580700	580701	580702	580703
Sample Reference				AOP6-7	AOP6-7	AOP6-7	AOP6-7	AOP6-7
Sample Number				A3	A4	B2	B3	B4
Depth (m)				0.50	1.00	0.50	0.50	1.00
Date Sampled				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	Chrysotile	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Detected	Not-detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	< 0.001	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	< 0.001	-	-

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Analytical Report Number: 16-18847

Project / Site name: Plots 6, 7 & 8, First Street Manchester

Lab Sample Number				580704	580705	580706	580707	580708
Sample Reference				AOP6-7	AOP6-7	AOP6-7	AOP6-7	AOP6-7
Sample Number				B9	C2	C3	C4	C9
Depth (m)				0.50	1.00	0.50	0.75	0.50
Date Sampled				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Amosite	-	-	Amosite & Crocidolite	Chrysotile
Asbestos in Soil	Type	N/A	ISO 17025	Detected	Not-detected	Not-detected	Detected	Detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	< 0.001	-	-	2.698	< 0.001
Asbestos Quantification Total	%	0.001	ISO 17025	< 0.001	-	-	2.70	< 0.001

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Analytical Report Number: 16-18847

Project / Site name: Plots 6, 7 & 8, First Street Manchester

Lab Sample Number				580709	580710	580711	580712	580713
Sample Reference				AOP6-7	AOP6-7	AOP6-7	AOP6-7	AOP6-7
Sample Number				D2	D3	D4	D9	E3
Depth (m)				1.00	0.50	0.85	0.50	1.00
Date Sampled				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	Chrysotile & Amosite	Chrysotile	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Detected	Detected	Not-detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	< 0.001	0.005	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	< 0.001	0.005	-	-

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Analytical Report Number: 16-18847

Project / Site name: Plots 6, 7 & 8, First Street Manchester

Lab Sample Number				580714	580715	580716	580717	580718
Sample Reference				AOP6-7	AOP6-7	AOP6-7	AOP6-7	AOP6-7
Sample Number				E4	E6	E8	E9	F1
Depth (m)				0.50	0.75	0.50	0.50	1.00
Date Sampled				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Chrysotile	Chrysotile	Chrysotile	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Detected	Detected	Detected	Not-detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	0.005	0.004	< 0.001	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	0.005	0.004	< 0.001	-	-

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Analytical Report Number: 16-18847

Project / Site name: Plots 6, 7 & 8, First Street Manchester

Lab Sample Number				580719	580720	580721	580722	580723
Sample Reference				AOP6-7	AOP6-7	AOP6-7	AOP6-7	AOP6-7
Sample Number				F3	F4	F6	F8	F9
Depth (m)				0.40	1.00	0.50	1.00	0.50
Date Sampled				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Chrysotile	-	Anthophyllite	-	Amosite
Asbestos in Soil	Type	N/A	ISO 17025	Detected	Not-detected	Detected	Not-detected	Detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	0.003	-	< 0.001	-	< 0.001
Asbestos Quantification Total	%	0.001	ISO 17025	0.003	-	< 0.001	-	< 0.001

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Analytical Report Number: 16-18847

Project / Site name: Plots 6, 7 & 8, First Street Manchester

Lab Sample Number				580724	580725	580726	580727	580728
Sample Reference				AOP6-7	AOP6-7	AOP6-7	AOP6-7	AOP6-7
Sample Number				G6	G8	G9	H5	H6
Depth (m)				1.00	0.50	1.00	0.50	0.90
Date Sampled				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Amosite & Crocidolite	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	< 0.001	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	< 0.001	-	-	-	-

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Analytical Report Number: 16-18847

Project / Site name: Plots 6, 7 & 8, First Street Manchester

Lab Sample Number				580729	580730	580731	580732	580733
Sample Reference				AOP6-7	AOP6-7	AOP6-7	AOP6-7	AOP6-7
Sample Number				H9	I9	J3	J4	J5
Depth (m)				0.50	1.00	0.50	0.50	0.40
Date Sampled				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	Amosite	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Detected	Not-detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	< 0.001	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	< 0.001	-	-

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Analytical Report Number: 16-18847

Project / Site name: Plots 6, 7 & 8, First Street Manchester

Lab Sample Number				580734	580735	580736	580737	580738
Sample Reference				AOP6-7	AOP6-7	AOP6-7	AOP6-7	AOP6-7
Sample Number				J6	J7	J8	K5	K7
Depth (m)				0.90	0.50	0.80	0.50	0.90
Date Sampled				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	Chrysotile	-	Chrysotile & Amosite	Chrysotile & Amosite
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Detected	Not-detected	Detected	Detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	0.001	-	< 0.001	< 0.001
Asbestos Quantification Total	%	0.001	ISO 17025	-	0.001	-	< 0.001	< 0.001

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Analytical Report Number: 16-18847

Project / Site name: Plots 6, 7 & 8, First Street Manchester

Lab Sample Number				580739	580740	580741	580742	580743
Sample Reference				AOP6-7	AOP6-7	AOP6-7	AOP6-7	AOP6-7
Sample Number				K8	L3	L4	L5	L6
Depth (m)				0.50	0.90	0.50	0.70	0.50
Date Sampled				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Amosite	-	Chrysotile, Amosite	Amosite	Chrysotile
Asbestos in Soil	Type	N/A	ISO 17025	Detected	Not-detected	Detected	Detected	Detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	< 0.001	-	0.004	< 0.001	< 0.001
Asbestos Quantification Total	%	0.001	ISO 17025	< 0.001	-	0.004	< 0.001	< 0.001

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Analytical Report Number: 16-18847

Project / Site name: Plots 6, 7 & 8, First Street Manchester

Lab Sample Number				580744	580745	580746	580747	580748
Sample Reference				AOP6-7	AOP6-7	AOP6-7	AOP6-7	AOP6-7
Sample Number				L7	L8	L9	M6	M7
Depth (m)				0.90	1.00	0.50	0.50	0.90
Date Sampled				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Chrysotile & Amosite	Chrysotile	Chrysotile	Chrysotile & Amosite	Chrysotile & Amosite
Asbestos in Soil	Type	N/A	ISO 17025	Detected	Detected	Detected	Detected	Detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Asbestos Quantification Total	%	0.001	ISO 17025	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001

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Analytical Report Number: 16-18847

Project / Site name: Plots 6, 7 & 8, First Street Manchester

Lab Sample Number				580749	580750	580751	580752	580753
Sample Reference				AOP6-7	AOP6-7	AOP6-7	AOP6-7	AOP6-7
Sample Number				M8	M9	N1	N2	N7
Depth (m)				0.50	1.00	0.50	0.80	0.50
Date Sampled				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Chrysotile	-	-	Chrysotile & Crocidolite	Chrysotile
Asbestos in Soil	Type	N/A	ISO 17025	Detected	Not-detected	Not-detected	Detected	Detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	0.001	-	-	0.005	< 0.001
Asbestos Quantification Total	%	0.001	ISO 17025	0.001	-	-	0.005	< 0.001

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Analytical Report Number: 16-18847

Project / Site name: Plots 6, 7 & 8, First Street Manchester

Lab Sample Number				580754	580755	580756	580757	580758
Sample Reference				AOP6-7	AOP6-7	AOP6-7	AOP6-7	AOP6-7
Sample Number				N8	N9	O1	O2	O3
Depth (m)				1.00	0.50	1.00	0.50	0.80
Date Sampled				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	Chrysotile	Chrysotile & Amosite & Crocidolite	Amosite & Crocidolite	Chrysotile
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Detected	Detected	Detected	Detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	< 0.001	0.677	< 0.001	< 0.001
Asbestos Quantification Total	%	0.001	ISO 17025	-	< 0.001	0.677	< 0.001	< 0.001

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Analytical Report Number: 16-18847

Project / Site name: Plots 6, 7 & 8, First Street Manchester

Lab Sample Number				580759	580760	580761	580762	580763
Sample Reference				AOP6-7	AOP6-7	AOP6-7	AOP6-7	AOP6-7
Sample Number				O4	O5	O6	O7	O9
Depth (m)				0.50	0.70	0.75	0.50	1.00
Date Sampled				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Chrysotile & Amosite	-	Chrysotile	Chrysotile	Chrysotile
Asbestos in Soil	Type	N/A	ISO 17025	Detected	Not-detected	Detected	Detected	Detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	0.003	-	< 0.001	< 0.001	< 0.001
Asbestos Quantification Total	%	0.001	ISO 17025	0.003	-	< 0.001	< 0.001	< 0.001

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Analytical Report Number: 16-18847

Project / Site name: Plots 6, 7 & 8, First Street Manchester

Lab Sample Number				580764	580765	580766	580767	580768
Sample Reference				AOP8A	AOP8A	AOP8A	AOP8A	AOP8A
Sample Number				B1	B2	B3	B4	B5
Depth (m)				0.50	1.00	0.50	0.80	0.50
Date Sampled				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Chrysotile	Chrysotile & Anthophyllite	Crocidolite	Chrysotile	Chrysotile
Asbestos in Soil	Type	N/A	ISO 17025	Detected	Detected	Detected	Detected	Detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	< 0.001	< 0.001	< 0.001	0.069	< 0.001
Asbestos Quantification Total	%	0.001	ISO 17025	< 0.001	< 0.001	< 0.001	0.069	< 0.001

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Analytical Report Number: 16-18847

Project / Site name: Plots 6, 7 & 8, First Street Manchester

Lab Sample Number				580769	580770	580771	580772	580773
Sample Reference				AOP8A	AOP8A	AOP8A	AOP8A	AOP8A
Sample Number				B6	C1	C10	C11	C2
Depth (m)				1.00	0.50	1.00	0.50	1.00
Date Sampled				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-	-

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Analytical Report Number: 16-18847
Project / Site name: Plot 6,6,8 First Street Manchester
Your Order No:

Certificate of Analysis - Asbestos Quantification

Methods:

Qualitative Analysis

The samples were analysed qualitatively for asbestos by polarising light and dispersion staining as described by the Health and Safety Executive in HSG 248.

Quantitative Analysis

"The analysis was carried out using our documented in-house method A006 based on HSE Contract Research Report No: 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies et al, 1996) and HSG 248. Our method includes initial examination of the entire representative sample, then fractionation and detailed analysis of each fraction, with quantification by hand picking and weighing.

The limit of detection (reporting limit) of this method is 0.001 %.

The method has been validated using samples of at least 100 g, results for samples smaller than this should be interpreted with caution.

Both Qualitative and Quantitative Analyses are UKAS accredited.

Sample Number	Sample ID	Sample Depth (m)	Sample Weight (g)	Asbestos Containing Material Types Detected (ACM)	PLM Results	Asbestos by hand picking/weighing (%)	Total % Asbestos in Sample
580701	AOP6-7	0.50	140	Loose Fibres	**Chrysotile**	< 0.001	**< 0.001**
580704	AOP6-7	0.50	131	Loose Fibres	**Amosite**	< 0.001	**< 0.001**
580707	AOP6-7	0.75	132	Insulation Lagging	**Amosite & Crocidolite**	2.698	**2.70**
580708	AOP6-7	0.50	117	Loose Fibres	**Chrysotile**	< 0.001	**< 0.001**
580710	AOP6-7	0.50	142	Loose Fibres	**Chrysotile & Amosite**	< 0.001	**< 0.001**
580711	AOP6-7	0.85	115	Loose Fibres & Insulation Lagging	**Chrysotile**	0.005	**0.005**
580714	AOP6-7	0.50	141	Loose Fibres & Insulation Lagging	**Chrysotile**	0.005	**0.005**
580715	AOP6-7	0.75	136	Insulation Lagging	**Chrysotile**	0.004	**0.004**
580716	AOP6-7	0.50	156	Loose Fibres	**Chrysotile**	< 0.001	**< 0.001**
580719	AOP6-7	0.40	130	Loose Fibres	**Chrysotile**	0.003	**0.003**
580721	AOP6-7	0.50	138	Loose Fibres	**Anthophyllite**	< 0.001	**< 0.001**
580723	AOP6-7	0.50	147	Loose Fibres	**Amosite**	< 0.001	**< 0.001**
580724	AOP6-7	1.00	126	Loose Fibres	**Chrysotile & Amosite & Crocidolite**	< 0.001	**< 0.001**
580731	AOP6-7	0.50	155	Loose Fibres	**Amosite**	< 0.001	**< 0.001**
580735	AOP6-7	0.50	144	Insulation Lagging & Loose Fibres	**Chrysotile**	0.001	**0.001**
580737	AOP6-7	0.50	170	Insulation Lagging & Loose Fibres	**Chrysotile & Amosite**	< 0.001	**< 0.001**
580738	AOP6-7	0.90	152	Loose Fibres	**Chrysotile & Amosite**	< 0.001	**< 0.001**
580739	AOP6-7	0.50	140	Loose fibres	**Amosite**	< 0.001	**< 0.001**

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Analytical Report Number: 16-18847
Project / Site name: Plot 6,6,8 First Street Manchester
Your Order No:

Certificate of Analysis - Asbestos Quantification

Methods:

Qualitative Analysis

The samples were analysed qualitatively for asbestos by polarising light and dispersion staining as described by the Health and Safety Executive in HSG 248.

Quantitative Analysis

"The analysis was carried out using our documented in-house method A006 based on HSE Contract Research Report No: 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies et al, 1996) and HSG 248. Our method includes initial examination of the entire representative sample, then fractionation and detailed analysis of each fraction, with quantification by hand picking and weighing.

The limit of detection (reporting limit) of this method is 0.001 %.

The method has been validated using samples of at least 100 g, results for samples smaller than this should be interpreted with caution.

Both Qualitative and Quantitative Analyses are UKAS accredited.

Sample Number	Sample ID	Sample Depth (m)	Sample Weight (g)	Asbestos Containing Material Types Detected (ACM)	PLM Results	Asbestos by hand picking/weighing (%)	Total % Asbestos in Sample
580741	AOP6-7	0.50	141	Insylation lagging	**Chrysotile, Amosite**	0.004	**0.004**
580742	AOP6-7	0.70	135	Loose fibres	**Amosite**	< 0.001	**< 0.001**

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Analytical Report Number: 16-18847
Project / Site name: Plot 6,6,8 First Street Manchester
Your Order No:

Certificate of Analysis - Asbestos Quantification

Methods:

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Both Qualitative and Quantitative Analyses are UKAS accredited.

Sample Number	Sample ID	Sample Depth (m)	Sample Weight (g)	Asbestos Containing Material Types Detected (ACM)	PLM Results	Asbestos by hand picking/weighing (%)	Total % Asbestos in Sample
580743	AOP6-7	0.50	138	Loose fibres	**Chrysotile**	< 0.001	**< 0.001**
580744	AOP6-7	0.90	121	Insulation Lagging	**Chrysotile & Amosite**	< 0.001	**< 0.001**
580745	AOP6-7	1.00	124	Insulation Lagging	**Chrysotile**	< 0.001	**< 0.001**
580746	AOP6-7	0.50	135	Loose Fibres	**Chrysotile**	< 0.001	**< 0.001**
580747	AOP6-7	0.50	123	Loose Fibres	**Chrysotile & Amosite**	< 0.001	**< 0.001**
580748	AOP6-7	0.90	137	Loose Fibres	**Chrysotile & Amosite**	< 0.001	**< 0.001**
580749	AOP6-7	0.50	134	Loose Fibres & Bitumen	**Chrysotile**	0.001	**0.001**
580752	AOP6-7	0.80	135	Loose Fibres & Insulation Lagging	**Chrysotile & Crocidolite**	0.005	**0.005**
580753	AOP6-7	0.50	132	Loose Fibres	**Chrysotile**	< 0.001	**< 0.001**
580755	AOP6-7	0.50	135	Loose Fibres	**Chrysotile**	< 0.001	**< 0.001**
580756	AOP6-7	1.00	126	Loose Fibres & Hard/Cement Type Material	**Chrysotile & Amosite & Crocidolite**	0.677	**0.677**
580757	AOP6-7	0.50	133	Loose Fibres	**Amosite & Crocidolite**	< 0.001	**< 0.001**
580758	AOP6-7	0.80	135	Loose Fibres	**Chrysotile**	< 0.001	**< 0.001**
580759	AOP6-7	0.50	130	Insulation Lagging & Loose Fibres	**Chrysotile & Amosite**	0.003	**0.003**
580761	AOP6-7	0.75	141	Insulation Lagging	**Chrysotile**	< 0.001	**< 0.001**
580762	AOP6-7	0.50	130	Loose Fibres	**Chrysotile**	< 0.001	**< 0.001**
580763	AOP6-7	1.00	132	Loose Fibres	**Chrysotile**	< 0.001	**< 0.001**
580764	AOP8A	0.50	137	Loose Fibres	**Chrysotile**	< 0.001	**< 0.001**
580765	AOP8A	1.00	126	Loose Fibres	**Chrysotile & Anthophyllite**	< 0.001	**< 0.001**

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Analytical Report Number: 16-18847
Project / Site name: Plot 6,6,8 First Street Manchester
Your Order No:

Certificate of Analysis - Asbestos Quantification

Methods:

Qualitative Analysis

The samples were analysed qualitatively for asbestos by polarising light and dispersion staining as described by the Health and Safety Executive in HSG 248.

Quantitative Analysis

"The analysis was carried out using our documented in-house method A006 based on HSE Contract Research Report No: 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies et al, 1996) and HSG 248. Our method includes initial examination of the entire representative sample, then fractionation and detailed analysis of each fraction, with quantification by hand picking and weighing.

The limit of detection (reporting limit) of this method is 0.001 %.

The method has been validated using samples of at least 100 g, results for samples smaller than this should be interpreted with caution.

Both Qualitative and Quantitative Analyses are UKAS accredited.

Sample Number	Sample ID	Sample Depth (m)	Sample Weight (g)	Asbestos Containing Material Types Detected (ACM)	PLM Results	Asbestos by hand picking/weighing (%)	Total % Asbestos in Sample
580766	AOP8A	0.50	120	Loose Fibres	**Crocidolite**	< 0.001	**< 0.001**

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Analytical Report Number: 16-18847
Project / Site name: Plot 6,6,8 First Street Manchester
Your Order No:

Certificate of Analysis - Asbestos Quantification

Methods:

Qualitative Analysis

The samples were analysed qualitatively for asbestos by polarising light and dispersion staining as described by the Health and Safety Executive in HSG 248.

Quantitative Analysis

"The analysis was carried out using our documented in-house method A006 based on HSE Contract Research Report No: 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies et al, 1996) and HSG 248. Our method includes initial examination of the entire representative sample, then fractionation and detailed analysis of each fraction, with quantification by hand picking and weighing.

The limit of detection (reporting limit) of this method is 0.001 %.

The method has been validated using samples of at least 100 g, results for samples smaller than this should be interpreted with caution.

Both Qualitative and Quantitative Analyses are UKAS accredited.

Sample Number	Sample ID	Sample Depth (m)	Sample Weight (g)	Asbestos Containing Material Types Detected (ACM)	PLM Results	Asbestos by hand picking/weighing (%)	Total % Asbestos in Sample
580767	AOP8A	0.80	129	Hard/Cement Type Material & Loose Fibres	**Chrysotile**	0.069	**0.069**
580768	AOP8A	0.50	131	Loose Fibres	**Chrysotile**	< 0.001	**< 0.001**

Opinions and interpretations expressed herein are outside the scope of UKAS accreditatior

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Analytical Report Number : 16-18847

Project / Site name: Plots 6, 7 & 8, First Street Manchester

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Asbestos Quantification - Gravimetric	The analysis was carried out using documented in-house method based on references.	HSE Report No: 83/1996, HSG 248, HSG 264 & SCA Blue Book (draft).	A006	D	ISO 17025
D.O. for Gravimetric Quant if Screen/ID positive	Dependent option for Gravimetric Quant if Screen/ID positive scheduled.	In house asbestos methods A001 & A006.	A006-PL	D	NONE

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

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APPENDIX E

EXPLORATORY HOLE COORDINATES AND LEVELS

EXPLORATORY HOLE COORDINATES AND LEVELS

Geotechnical Engineering Ltd
Centurion House
Olympus Park, Quedgeley
Gloucester GL2 4NF
Tel: 01452 527743

Site: **Plots 6,7 & 8 First Street, Manchester**
Contact: **Ask Property Developments Ltd**
Job No: **31847**

CODE	EASTING	NORTHING	GROUND
CBR102	383800	397211	33.60
CBR103	383801	397196	33.90
CBR105	383819	397161	34.55
CBR106	383826	397147	34.65
CBR107	383774	397239	32.45
CBR108	383764	397265	31.10
CBR109	383756	397278	31.00
CP/RC101	383755	397191	33.90
CP/RC101A	383756	397189	33.90
CP/RC101B	383764	397193	33.90
CP/RC102	383808	397142	34.40
CP/RC102A	383813	397133	34.65
CP/RC103	383816	397227	33.65
CP/RC104	383848	397219	34.25
CP/RC104A	383848	397216	34.35
CP/RC105	383848	397169	34.75
CP/RC106	383792	397185	34.15
CP/RC106A	383791	397185	34.15
CP/RC106B	383784	397186	34.05
CP/RC107	383779	397164	34.15
CP/RC108	383826	397211	34.10
CP/RC109	383761	397225	33.40
CP/RC110	383753	397265	32.10
CP/RC111	383713	397256	30.85
CP/RC112	383767	397306	30.90
CP/RC113	383790	397256	31.90
CP/RC115	383827	397268	32.45
CP/RC116	383803	397268	31.55
CP/RC117	383802	397309	30.85
CP/RC117A	383803	397310	30.90
WS102	383709	397272	30.90
WS105	383749	397266	31.05
WS106	383706	397239	32.85
WS107	383733	397239	33.00
WS107A	383734	397239	33.00
WS110	383767	397228	30.85
TP101	383836	397235	33.65
TP102	383825	397229	33.65
TP103	383839	397224	34.10
TP104	383826	397217	34.10
TP105	383777	397202	34.00
TP106	383761	397180	33.95
TP107	383791	397166	34.15
TP108	383776	397150	34.65
TP109	383824	397116	35.10
TP110	383867	397184	34.70
TP111	383832	397174	34.70

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Centurion House
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Gloucester GL2 4NF
Tel: 01452 527743

Site: **Plots 6,7 & 8 First Street, Manchester**
Contact: **Ask Property Developments Ltd**
Job No: **31847**

CODE	EASTING	NORTHING	GROUND
TP112	383848	397205	34.70
TP113	383780	397177	34.15
TP114	383849	397184	34.70
OP101	383736	397195	33.60
OP102	383759	397206	33.50
OP103	383779	397217	33.45
OP104	383796	397225	33.35
OP105	383812	397233	33.25
OP107	383846	397251	33.05
OP110	383866	397214	33.85
OP112	383885	397178	34.45
OP113	383787	397217	33.40
OP116	383813	397168	34.25
OP118	383832	397131	34.70