

CONSULTANCY, SITE INVESTIGATION
CONSTRUCTION MATERIALS TESTING,
CONTAMINATED LAND SURVEYS, DESK
STUDIES, RISK ASSESSMENT.



**GROUND INVESTIGATION
FOR
10 ABBOT'S PLACE
LONDON
NW6 4NP.**

DATE: December 2023

REPORT NO: 231779



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- A Borehole & Trial Pit Location Plan.**
- B Borehole & Trial Pit Logs.**
- C Laboratory Analysis**
- D Contamination Analysis**

1. INTRODUCTION.

1.1 This Ground Investigation has been prepared following instructions from;

Qaim Structures Limited
Arena Business Centre
100 Berkshire Place
Wokingham
RG41 5RD

1.2 MRH Geotechnical Limited were requested to;

- Excavate Four Trial Pits to identify Foundation Profiles.
- Sink Two Boreholes to 8m Depth.
- Install a Ground Water/Gas Monitoring Standpipe.
- Carry Out an Infiltration Test.
- Carry Out 3 Suites of Wide-Range Contamination Analysis.
- Provide Bearing Capacity Analysis for new Foundations.

1.3 The site is located to the northern side of Abbot's Place to the rear of 41 Priory Road of which it was once part of the grounds.

1.4 The site slopes down slightly from west to east following the general topography of the surrounding area, although ground level at the western end of the site is slightly lower than pavement level outside of the boundary wall.

2. DETAILS OF FIELDWORK.

2.1 Site Work.

2.1.1 Two Borehole (BH1 & BH2) were sunk within the garden area of the property.

2.1.2 Four Trial Pits (TP1-4) were excavated across the site, with two (TPs 1 and 3) excavated adjacent to the house, while the remaining excavations were carried out on the boundary walls.

2.1.3 Samples were recovered and sealed in airtight containers before being forwarded to the laboratory for testing and detailed descriptions.

Additional Contamination Samples were sealed in Glass and Polypropylene containers appropriate to the proposed testing suite.

2.1.4 The Borehole and Trial Pit Location Plan is presented in Appendix A.

2.1.5 The site works were carried out on 23rd November 2023.

2.2 Revealed Strata.

2.2.1 Borehole 1 was sunk in the garden area to the east of the building in a small flower bed.

Topsoil was found to extend to a depth of 0.3m below ground level where firm brown silty CLAY was encountered. The clay became stiff at a depth of 1.2m and stiff to very stiff at 2.4m.

At a depth of 4.6m the strata became very stiff dark brown silty CLAY with traces of Selenite noted from 6.0m depth.

The Borehole was completed at a depth of 8.0m and a Groundwater Monitoring Standpipe was installed.

The Borehole was dry on completion.

2.2.2 Borehole 2 was sunk in the western portion of the site in the narrow, paved garden area between the building and the front boundary wall.

A ground surface of Paving onto a mortar and concrete bed extended to a depth of 0.2m below ground level where firm brown and grey mottled silty CLAY was encountered. The clay became firm to stiff with a little gravel at a depth of 1.2m and stiff at 2.1m.

A thin claystone bed was encountered between 3.2m and 3.4m and a slight seepage was noted at this point.

Beneath the claystone stiff to very stiff brown silty CLAY was encountered which became very stiff dark brown silty CLAY with traces of Selenite at 5.6m depth.

The Borehole was completed at a depth of 8.0m and was dry on completion.

An Infiltration Test was attempted but no discernible infiltration was observed within 30mins and the test was abandoned.

2.2.3 Trial Pit 1 was excavated to the left of the front door on the eastern elevation of the building.

A 50mm thick concrete surface was found to rest on Made Ground comprising brick and brickwork which may be related to the corridor which once linked the building to the rear of 41 Priory Road.

Beneath the Made Ground Natural Strata comprising firm brown silty CLAY was encountered.

The foundation of the building was found to rest on the Natural Strata at a depth of 505mm below ground level.

2.2.4 Trial Pit 2 was excavated in the south-west corner of the site, exposing the boundary wall foundations.

The Trial Pit was excavated through a surface covering of paving resting on a mortar bed, which in turn rested on Made Ground comprising soft dark grey silty clay with brick which extended to a depth of 0.7m below ground level.

Beneath the Made Ground, Natural Strata comprising firm brown silty CLAY was encountered and proved to a depth of 1.0m by hand-augering a borehole in the base of the pit.

The western boundary wall was found to rest on the Made Ground at a depth of 335mm below ground level. Although a boundary wall a slate dampproof course was present in the wall 410mm above ground level on site. This appears to be related to the level of the concrete slab in the adjoining enclosure which formerly held an Electricity Sub-Station.

There was no notable foundation for the front boundary wall visible in the excavation. Ground level in the garden is approximately 300mm lower within the site compared to the pavement level on the other side of the wall, and a band of concrete within the exposed wall appears to have been the original foundation. It the corner of the site the bricks extend onto the top of the newer concrete foundation for the western boundary wall.



Trial Pit 2.

- 2.2.5 Trial Pit 3 was excavated on the southern elevation of the property through the paved surface which rested on a mortar bed and concrete oversite extending to 190mm below ground level. Beneath this lay a thin horizon of orange sand and gravel which in turn rested on Made Ground comprising soft dark grey silty clay with a little gravel which extended to a depth of 650mm where the Natural Strata was encountered.

The Natural Strata comprised firm grey-brown and brown mottled silty CLAY.

The foundation of the building was found to rest on the Natural Strata.

- 2.2.6 Trial Pit 4 was excavated on the northern garden wall in the existing flower/shrub bed.

Topsoil was found to extend to a depth of 0.65m where it rested on Natural Strata comprising firm brown silty CLAY.

The foundation of the garden wall sat at a depth of 0.80m below existing ground level.

- 2.2.7 The British Geological Survey map of the area shows the client site to be located upon Bedrock Deposits of the London Clay Formation.

- 2.2.8 The Bedrock Deposits of the London Clay Formation comprise 'bioturbated or poorly laminated, blue-grey or grey-brown, slightly calcareous, silty to very silty clay, clayey silt and sometimes silt, with some layers of sandy clay. It commonly contains thin courses of carbonate concretions ('cementstone nodules') and disseminated pyrite. It also includes a few thin beds of shells and fine sand partings or pockets of sand, which commonly increase towards the base and towards the top of the formation. At the base, and at some other levels, thin beds of black rounded flint gravel occurs in places. Glauconite is present in some of the sands and in some clay beds, and white mica occurs at some levels.' (BGS Lexicon of Named Rock Units).

- 2.2.9 The Natural Strata encountered is indicative of the London Clay Formation.

2.3 Groundwater.

- 2.3.1 No Groundwater Seepages were encountered in Borehole 1. A small seepage was observed from the Claystone Band in Borehole 2 but the Borehole was found to be dry on completion.

- 2.3.2 No Groundwater Seepages were encountered in the Trial Pits.

3. LABORATORY TESTING.

- 3.1 The soil samples recovered were all subjected to a Natural Moisture Content determination, with six samples representing the London Clay material also subjected to Atterberg Limit assessments.
- 3.2 The results are tabulated in Appendix C and categorise clay strata of the London Clay to be of Very High Plasticity.
- 3.3 When compared to the NHBC Standards Chapter 4.2 Building Near Tress 2021, the results are indicative of High Potential for Moisture Content Related Volume Change.
- 3.4 Soluble Sulphate Concentrations were measured in the three samples subjected to the Wide-Range Contamination Suite with a further sample taken at depth.

While concentrations in the samples of the near-surface materials fall within BRE Class DS-1, the sample from 3m depth reaches into BRE Class DS-4. The presence of Selenite crystals in the clay are also indicative of high sulphate levels.

Concrete should be specified accordingly.

4. FOUNDATION DESIGN & ASSESSMENT.

- 4.1 The findings of the Boreholes and Trial Pits across the site indicate Natural London Clay Strata to be present beneath a thin horizon of hardstanding and Made Ground associated with construction on site.
- 4.2 The foundations of the existing building have been found to rest on the London Clay Bedrock Strata.
- 4.3 With regard to proposed foundation designs, the in-situ testing indicates the following Allowable Bearing Capacities (based on a Factor of Safety = 3) within the Natural Strata at depths below current ground/floor level at each location:

Borehole No.	Depth (m)	Allowable Bearing Capacity (kN/m ²)	Strata
1	1.0m	140 (Clay)	London Clay
	2.0m	200 (Clay)	London Clay
	3.0m	240 (Clay)	London Clay
2	1.0m	140 (Clay)	London Clay
	2.5m	220 (Clay)	London Clay
	3.0m	260 (Clay)	London Clay

- 4.4 However, if greater loadings are anticipated and a piled foundation scheme is adopted then Sample Strengths (kN/m²) are included on the Borehole Logs in Appendix B.

5. CONTAMINATION ASSESSMENT.

- 5.1 Three samples of near-surface strata were subjected to a Wide-Range Contamination Suite of analysis.
- 5.2 Each sample was subjected to a Wide Range Contamination Suite comprising; Metals (As, B, Cd, Cr, Cr_{vi}, Cu, Pb, Hg, Ni, Se & Zn), Speciated & Total Polycyclic Aromatic Hydrocarbons (PAHs), Water Soluble Sulphate, pH, and Organic Matter.
- 5.3 The results of the contamination analysis were compared with the Defra/Environment Agency Category 4 Screening Levels (C4SL) for a Residential with the provision for Home Grown Produce Setting (Ref.5) and where no C4SL has been published by the Environment Agency, to Suitable for Use Levels published by Land Quality Management and The Chartered Institute of Environmental Health (Ref.6).
- 5.4 The full Sample Analysis Report is included in Appendix C of this report.
- 5.5 Concentrations of all contaminants within the suite were found to be below the relevant Guideline Limits.
- 5.6 No Remediation of the site will be necessary as part of the proposed development.

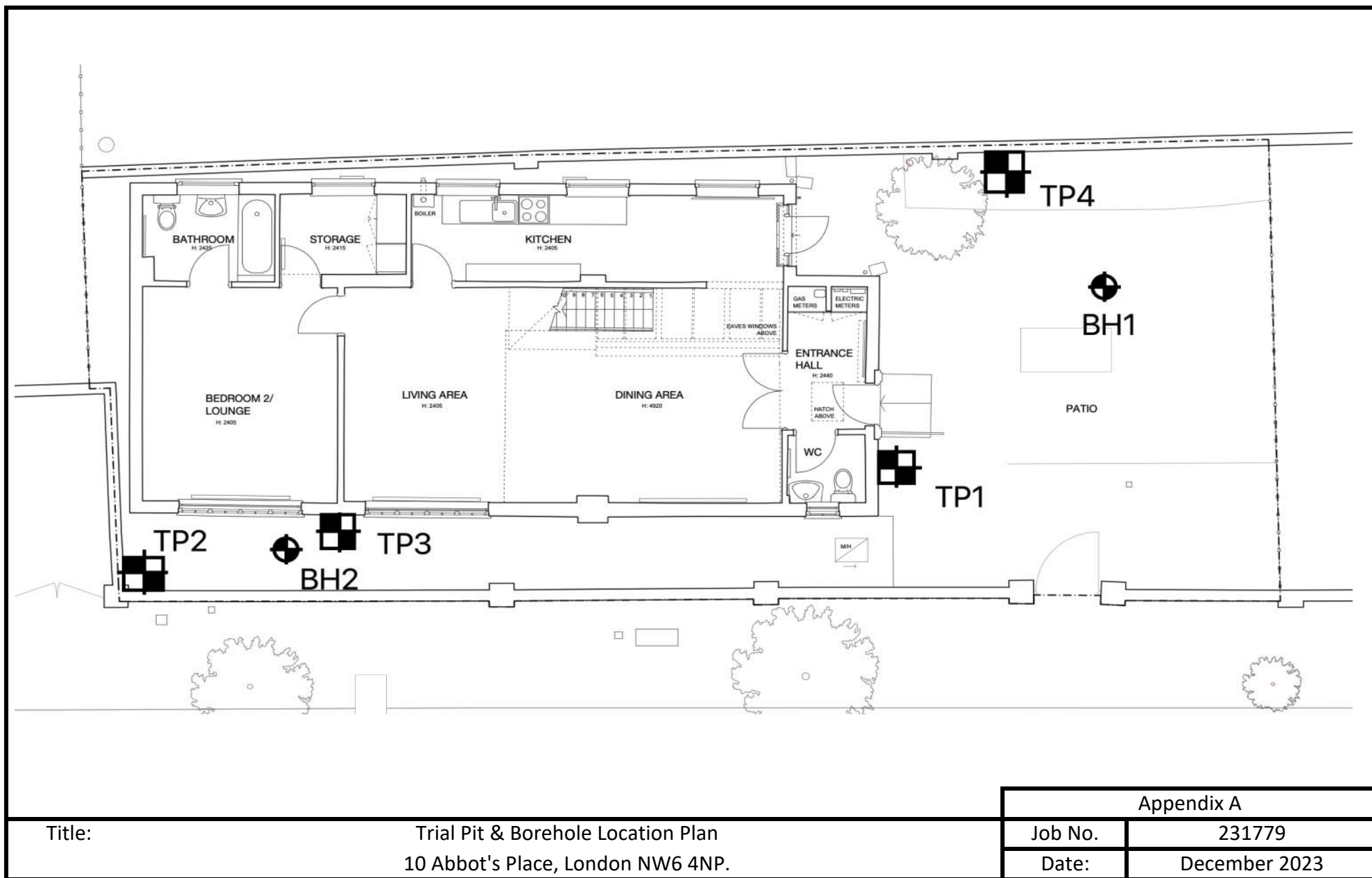


Steven Brooks BEng.(Hons)
MRH Geotechnical Limited

6. REFERENCES:

1. 'Code of Practice for Ground Investigations', BS 5930:2015, British Standards Institution, 2015.
2. 'Methods of Test for Soils for Civil Engineering Purposes', BS 1377-2:1990, British Standards Institution, 1990.
3. 'NHBC Standards – Chapter 4.2 – Building Near Trees', NHBC, 2021.
4. 'Concrete in Aggressive Ground', Special Digest 1, BRE, 2005.
5. 'Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination' SP1010 + Appendices A-I, Defra, 2013.
6. 'The LQM/CIEH S4ULs for Human Health Risk Assessment', Land Quality Management Ltd & The Chartered Institute of Environmental Health, Land Quality Press, 2015.

Appendix A
Borehole & Trial Pit Location Plan



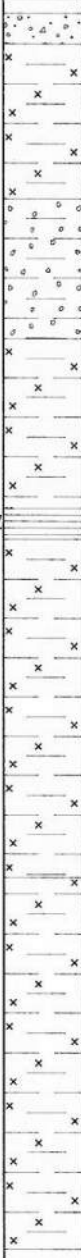
Appendix A

Title: Trial Pit & Borehole Location Plan
10 Abbot's Place, London NW6 4NP.

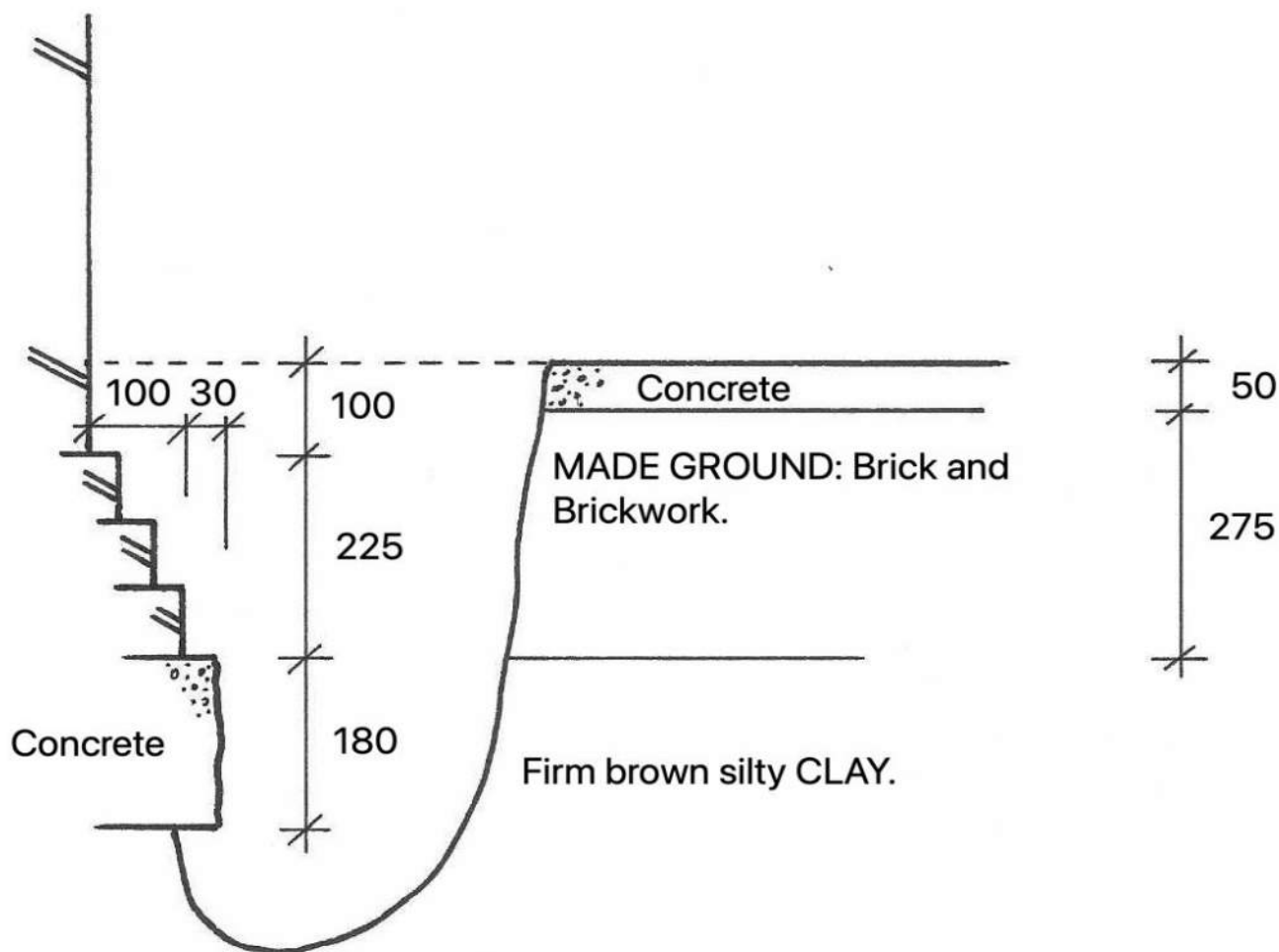
Job No.	231779
Date:	December 2023

Appendix B
Borehole & Trial Pit Logs

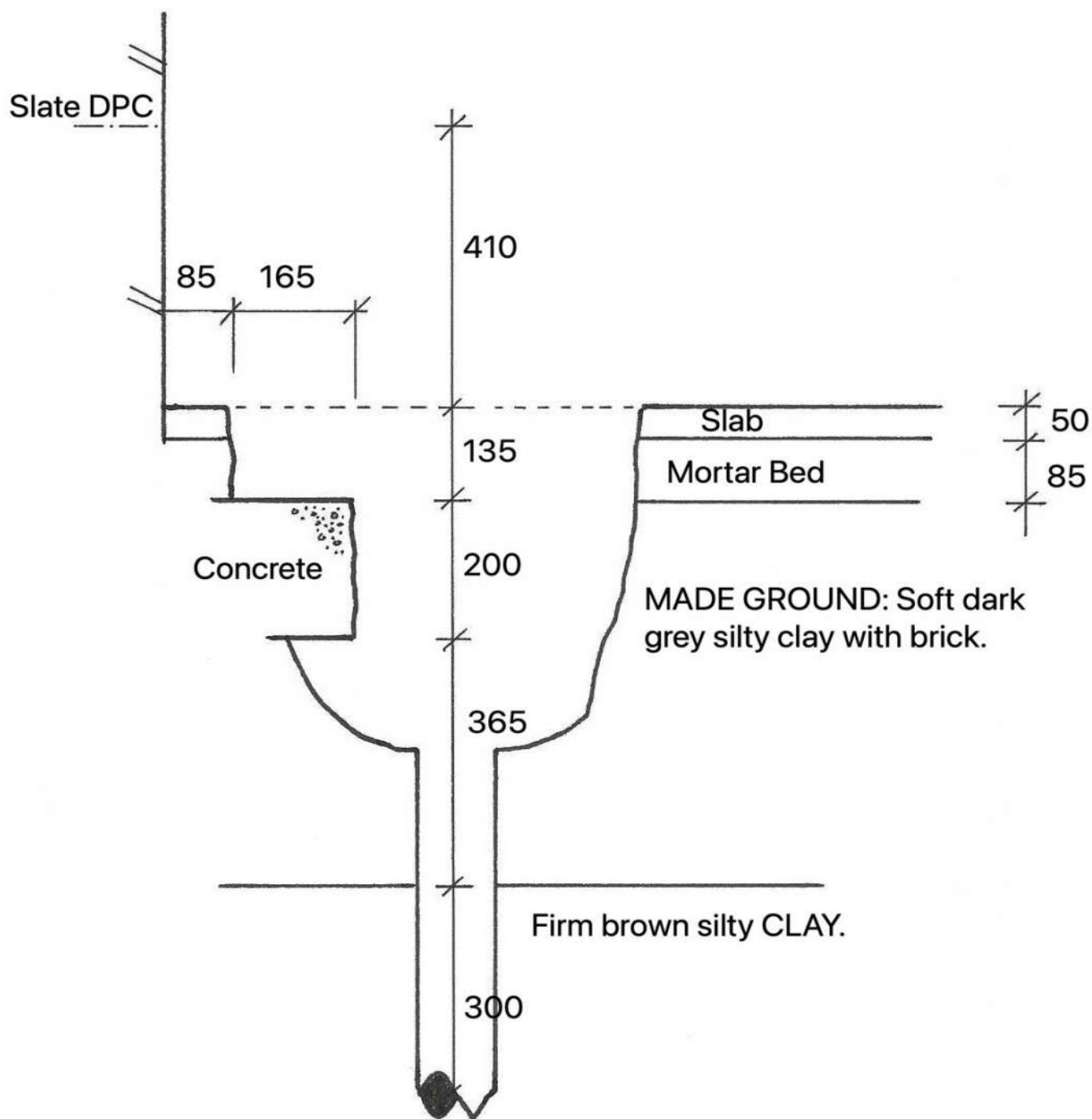
BOREHOLE LOG - M R H GEOTECHNICAL							HOLE NO. BH 1	
CLIENT Qaim Structures Ltd							SITE 10 Abbotts Place, London NW6 4NP	
DATE OF FIELDWORK 23/11/23-23/11/23			SCALE 1:50	LEVEL/POSITION GROUND / AS APPENDIX A		OPERATOR PA	LOGGED BY SB	JOB NO. 231779
SAMPLE DEPTH	RECORD TYPE	SPT N (Cu-kN/m ²)	Standp/ Piezo	DESCRIPTION OF STRATUM (thickness)			DEPTH	LEGEND
				TOPSOIL (0.30)				
0.50	D1			Firm brown silty CLAY (0.90)			0.30	
1.00	D2	(70)						
1.50	D3	(100)		Stiff brown silty CLAY (1.20)			1.20	
2.00	D4	(100)						
2.50	D5	(120)		Stiff to very stiff brown silty CLAY (2.20)			2.40	
3.00	D6	(120)						
3.50	D7	(120)						
4.00	D8	(120)						
4.50	D9	(130)		Very stiff dark brown silty CLAY with traces of selenite from 6.0m (3.40)			4.60	
5.00	D10	(140)						
5.50	D11	(150)						
6.00	D12	(170)						
7.00	D13	(170)						
8.00	D14	(170)		Standpipe installed Borehole ends			8.00	
GROUNDWATER AND CASING INFORMATION				BORING METHOD AND REMARKS				
DEPTH STRUCK	DEPTH CASED	ELAPSED TIME	WATER LEVEL	DEPTH SEALED	REMARKS ON GROUNDWATER AND CASING		Mechanical auger Stanpipe installed	
-	-	-	-	-	Dry on completion. Standpipe installed			
					KEY: D = Disturbed Sample B = Bulk Sample U = Undisturbed Sample W = Water Sample All dimensions are in metres unless otherwise stated			

BOREHOLE LOG - M R H GEOTECHNICAL							HOLE NO. BH 2	
CLIENT Qaim Structures Ltd							SITE 10 Abbotts Place, London NW6 4NP	
DATE OF FIELDWORK 23/11/23-23/11/23			SCALE 1:50	LEVEL/POSITION GROUND / AS APPENDIX A		OPERATOR PA	LOGGED BY SB	JOB NO. 231779
SAMPLE DEPTH	RECORD TYPE	SPT N (Cu-kN/m ²)	Standp/ Piezo	DESCRIPTION OF STRATUM (thickness)			DEPTH	LEGEND
0.50	D1			Slab over mortar / CONCRETE (0.20) Firm brown and grey mottled silty CLAY (1.00)			0.20	
1.00	D2	(70)						
1.50	D3			Firm to stiff dark brown CLAY with a little gravel (0.90)			1.20	
2.00	D4							
2.50	D5	(110)		Stiff brown silty CLAY (1.10)			2.10	
3.00	D6	(130)						
3.50	D7	(110)		CLAYSTONE (0.20) Slight water seepage			3.20	
4.00	D8	(130)		Stiff to very stiff brown silty CLAY (2.20)			3.40	
4.50	D9	(120)						
5.00	D10	(120)						
5.50	D11	(120)						
6.00	D12	(130)		Very stiff dark brown silty CLAY with traces of selenite (2.40)			5.60	
7.00	D13	(140)						
8.00	D14	(150)		Borehole ends			8.00	

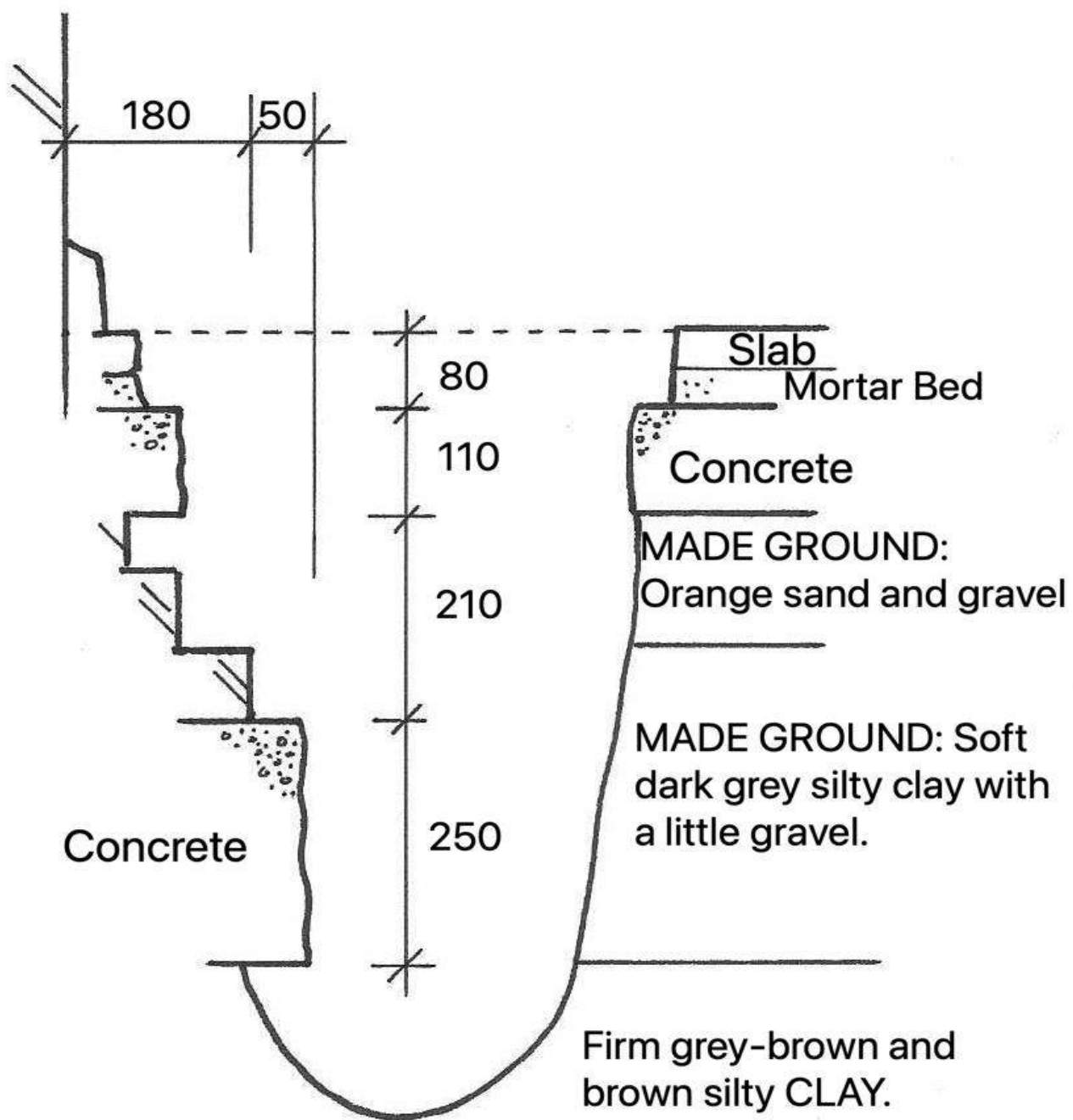
GROUNDWATER AND CASING INFORMATION						BORING METHOD AND REMARKS	
DEPTH STRUCK	DEPTH CASED	ELAPSED TIME	WATER LEVEL	DEPTH SEALED	REMARKS ON GROUNDWATER AND CASING	Mechanical auger	
3.30	-	-	-	-	Slight seepage from Claystone. Dry on completion	KEY: D = Disturbed Sample B = Bulk Sample U = Undisturbed Sample W = Water Sample All dimensions are in metres unless otherwise stated	



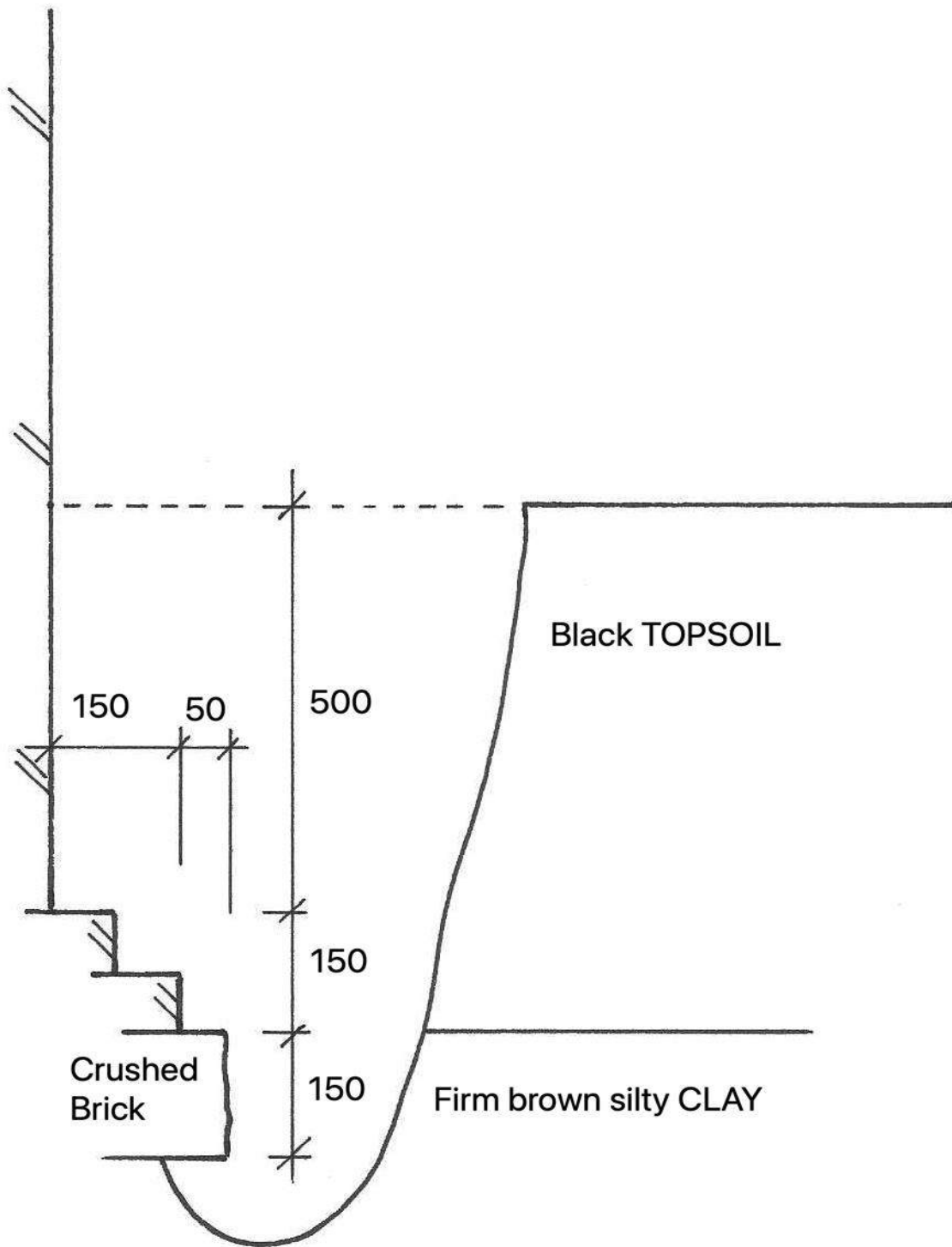
		Appendix B	
Title:	Trial Pit 1 10 Abbot's Place, London NW6 4NP.	Job No.	231779
		Date:	December 2023



		Appendix B	
Title:	Trial Pit 2 10 Abbot's Place, London NW6 4NP.	Job No.	231779
		Date:	December 2023



		Appendix B	
Title:	Trial Pit 3 10 Abbot's Place, London NW6 4NP.	Job No.	231779
		Date:	December 2023



		Appendix B	
Title:	Trial Pit 4 10 Abbot's Place, London NW6 4NP.	Job No.	231779
		Date:	December 2023

Appendix C
Laboratory Analysis

MRH Geotechnical Limited

14 Frederica Road, Chingford, London E4 7AL

**TEST SUMMARY**

WATER CONTENT, LIQUID AND PLASTIC LIMIT PROFILE

CLIENT	Qaim Structures Ltd	DATE SAMPLED	23-Nov-23
SITE	10 Abbot's Place, London NW6 4NP	DATE RECEIVED	24-Nov-23
SAMPLED BY	Steve Brooks	DATE TESTED	29-Nov-23
JOB NUMBER	231779	DATE OF CERTIFICATE	01-Dec-23

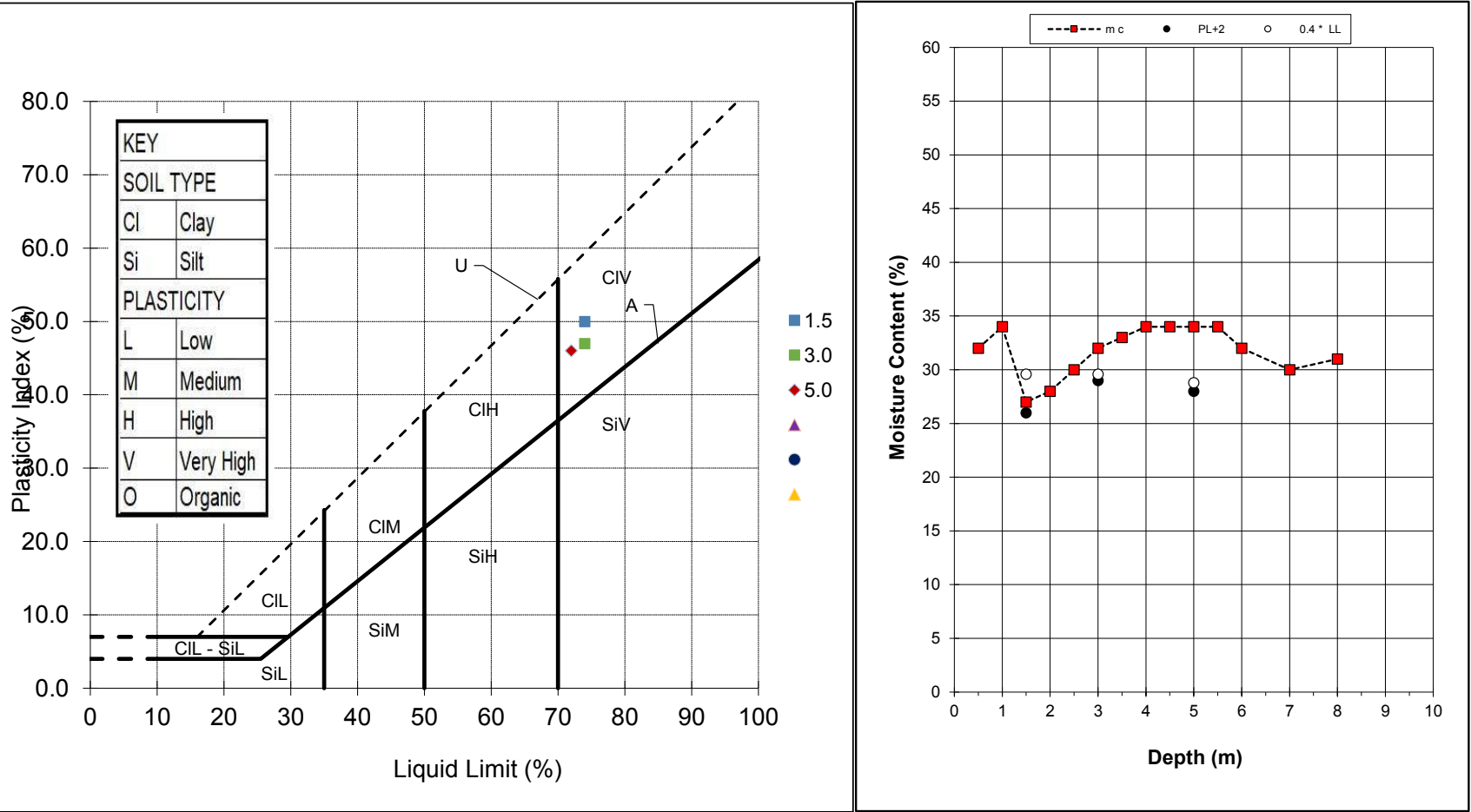
Sample Number	TP/BH Number	Depth (m)	< 425 m (%)	m c (%)	L.L (%)	P.L (%)	P.I.	Sample Description
23177901	1	0.50		32				Firm brown silty CLAY
23177902	1	1.00		34				Firm brown silty CLAY
23177903	1	1.50		27	74	24	50	Stiff brown silty CLAY
23177904	1	2.00		28				Stiff brown silty CLAY
23177905	1	2.50		30				Stiff to very stiff brown silty CLAY
23177906	1	3.00		32	74	27	47	Stiff to very stiff brown silty CLAY
23177907	1	3.50		33				Stiff to very stiff brown silty CLAY
23177908	1	4.00		34				Stiff to very stiff grey brown silty CLAY
23177909	1	4.50		34				Very stiff grey brown silty CLAY
23177910	1	5.00		34	72	26	46	Very stiff grey brown silty CLAY
23177911	1	5.50		34				Very stiff grey brown silty CLAY
23177912	1	6.00		32				Very stiff grey brown silty CLAY trace Selenite
23177913	1	7.00		30				Very stiff grey brown silty CLAY trace Selenite
23177914	1	8.00		31				Very stiff grey brown silty CLAY trace Selenite

Remarks

Moisture contents not corrected for gravel content

Liquid limit reported is the average of two determinations, corrected in accordance with Clayton and Jukes 1978

Client : Qaim Structures Ltd
Site : 10 Abbot's Place, London NW6 4NP
BH/TP : 1



MRH Geotechnical Limited

14 Frederica Road, Chingford, London E4 7AL

**TEST SUMMARY**

WATER CONTENT, LIQUID AND PLASTIC LIMIT PROFILE

CLIENT	Qaim Structures Ltd	DATE SAMPLED	23-Nov-23
SITE	10 Abbot's Place, London NW6 4NP	DATE RECEIVED	24-Nov-23
SAMPLED BY	Steve Brooks	DATE TESTED	29-Nov-23
JOB NUMBER	231779	DATE OF CERTIFICATE	01-Dec-23

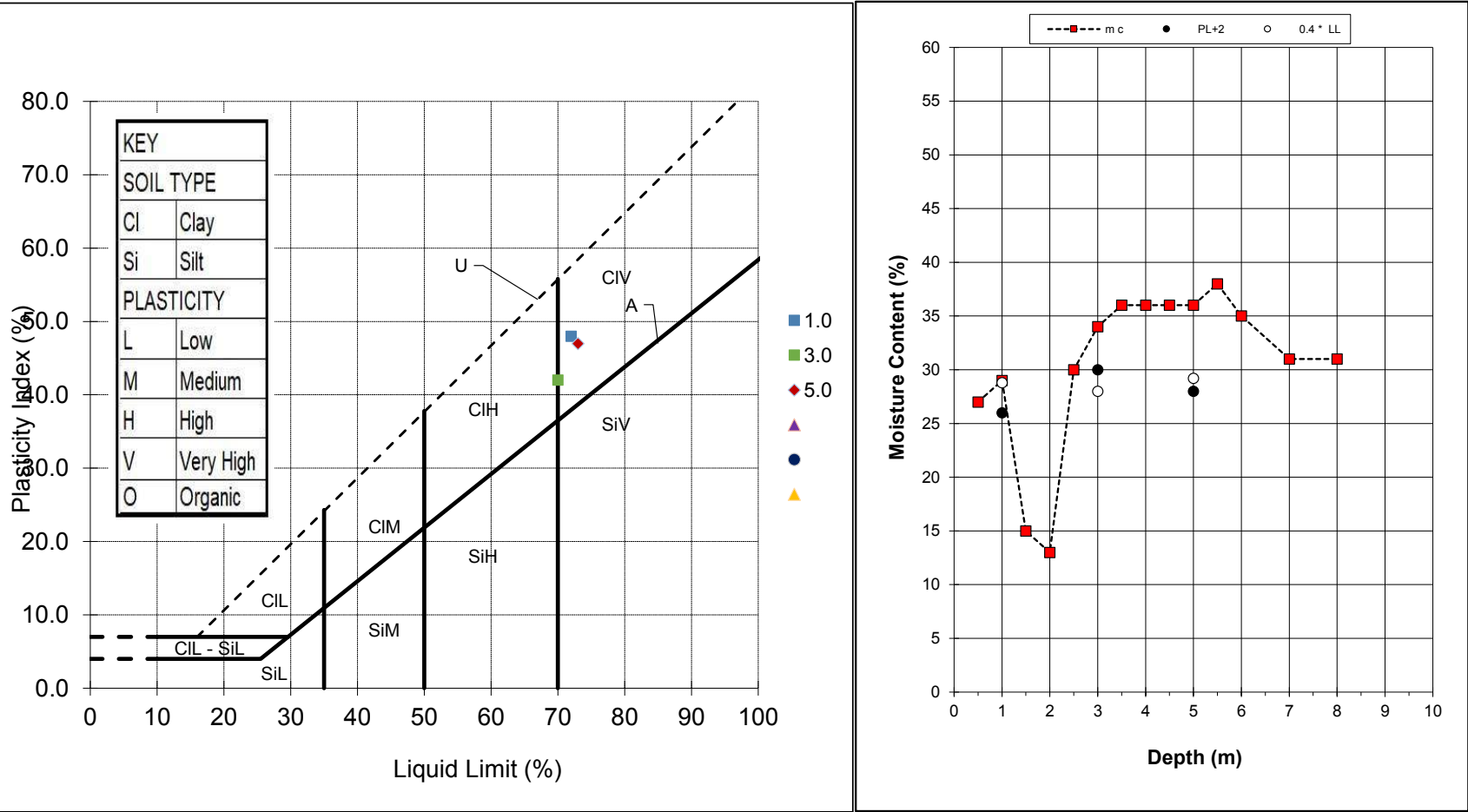
Sample Number	TP/BH Number	Depth (m)	< 425 m (%)	m c (%)	L.L (%)	P.L (%)	P.I.	Sample Description
23177914	2	0.50		27				Firm brown silty CLAY
23177915	2	1.00		29	72	24	48	Firm to stiff brown silty CLAY
23177916	2	1.50		15				Firm brown silty CLAY with trace to a little gravel
23177917	2	2.00		13				Firm brown silty CLAY with trace to a little gravel
23177918	2	2.50		30				Stiff to very stiff brown silty CLAY
23177919	2	3.00		34	70	28	42	Stiff to very stiff brown silty CLAY
23177920	2	3.50		36				Stiff to very stiff brown silty CLAY
23177921	2	4.00		36				Stiff to very stiff brown & blue-grey silty CLAY
23177922	2	4.50		36				Stiff to very stiff grey brown silty CLAY
23177923	2	5.00		36	73	26	47	Stiff to very stiff grey brown silty CLAY
23177924	2	5.50		38				Stiff to very stiff grey brown silty CLAY trace Selenite
23177925	2	6.00		35				Very stiff grey brown silty CLAY trace Selenite
23177926	2	7.00		31				Very stiff grey brown silty CLAY trace Selenite
23177927	2	8.00		31				Very stiff grey brown silty CLAY trace Selenite

Remarks

Moisture contents not corrected for gravel content

Liquid limit reported is the average of two determinations, corrected in accordance with Clayton and Jukes 1978

Client : Qaim Structures Ltd
Site : 10 Abbot's Place, London NW6 4NP
BH/TP : 2



Appendix D
Contamination Analysis

**Steve Brooks**

MRH Geotechnical Ltd
14 Frederica Road
Chingford
London
E4 7AL

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

t: 01923 225404

f: 01923 237404

e: reception@i2analytical.com

e: steve@mrhgeotechnical.com

Analytical Report Number : 23-72362

Project / Site name: 10 Abbots Place London, NW6 4NP

Samples received on: 30/11/2023

Your job number: 231779

**Samples instructed on/
Analysis started on:** 30/11/2023

Your order number:

Analysis completed by: 08/12/2023

Report Issue Number: 1

Report issued on: 11/12/2023

Samples Analysed: 4 soil samples

Signed: *A. Czerwińska*

Agnieszka Czerwińska
Reporting Specialist

For & on behalf of i2 Analytical Ltd.

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

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

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

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

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

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

Analytical Report Number: 23-72362

Project / Site name: 10 Abbots Place London, NW6 4NP

Lab Sample Number				2896578	2896579	2896580	2896581
Sample Reference				BH1	BH2	TP4	BH1
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.25-0.50	0.25-0.50	0.65-0.80	3.00
Date Sampled				23/11/2023	23/11/2023	23/11/2023	23/11/2023
Time Taken				1005	1430	1510	1020
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	%	0.01	NONE	18	16	18	20
Total mass of sample received	kg	0.001	NONE	0.9	1	1	0.5

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.7	8.2	8.4	-
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	37	96	370	-
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.0185	0.048	0.185	3.22
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	18.5	48	185	-
Organic Matter (automated)	%	0.1	MCERTS	1.1	0.3	0.6	-

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.09	-
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-
Phenanthrene	mg/kg	0.05	MCERTS	0.05	0.11	0.12	-
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-
Fluoranthene	mg/kg	0.05	MCERTS	0.05	0.11	0.13	-
Pyrene	mg/kg	0.05	MCERTS	0.09	0.25	0.24	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-

Total PAH

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

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	13	14	11	-
Boron (water soluble)	mg/kg	0.2	MCERTS	1.1	0.6	3	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	-
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	43	39	50	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	16	11	16	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	39	17	34	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	17	13	18	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	68	47	69	-

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

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* 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 *
2896578	BH1	None Supplied	0.25-0.50	Brown clay and sand.
2896579	BH2	None Supplied	0.25-0.50	Brown clay and sand with gravel.
2896580	TP4	None Supplied	0.65-0.80	Brown clay and sand with gravel and vegetation.
2896581	BH1	None Supplied	3	Brown clay.

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Water matrix abbreviations:

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/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. Refer to CoA for analyte specific accreditation.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
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
Organic matter (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
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.	L038-PL	D	MCERTS

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

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

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

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

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