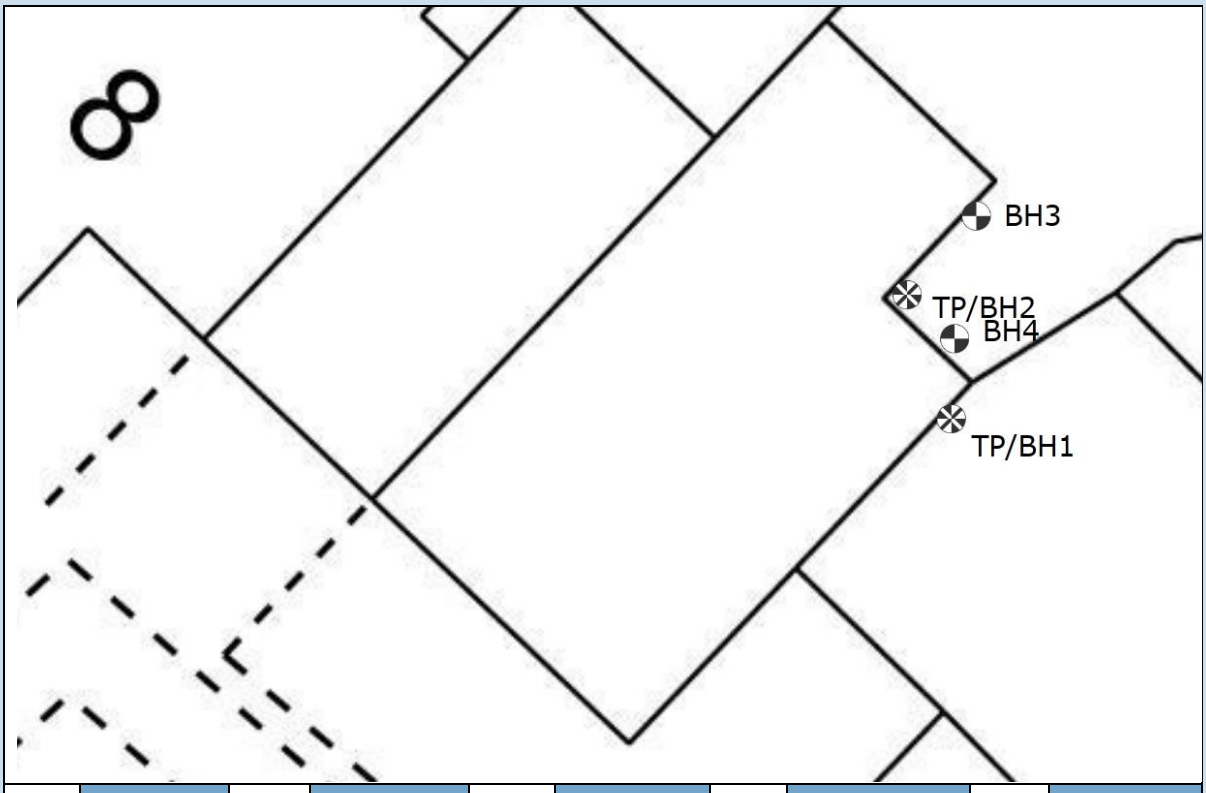
GEOTECHNICAL
for SMS (AVI, PRE)

4 Theodora Way, Pinner, HA5 2RA

Client:	SMS (AVI, PRE)
Client Contact:	Ian Domigan
Client Ref:	IFS-AVI-SUB-22-0102007
Policy Holder:	Mr Alan Hutchinson
Report Date:	13 August 2024
Our Ref:	C65772G34667

Site Plan



	Borehole		Foul Water Drain	FMH	Foul Manhole		Foul Rodding Point		Foul Vent Pipe
	Trial Pit / Borehole		Surface Water Drain	RMH	Rain Water Manhole		Surface Rodding Point		Rain Water Gully
	Trial Pit		Combined Drain	MH	Combined Manhole				

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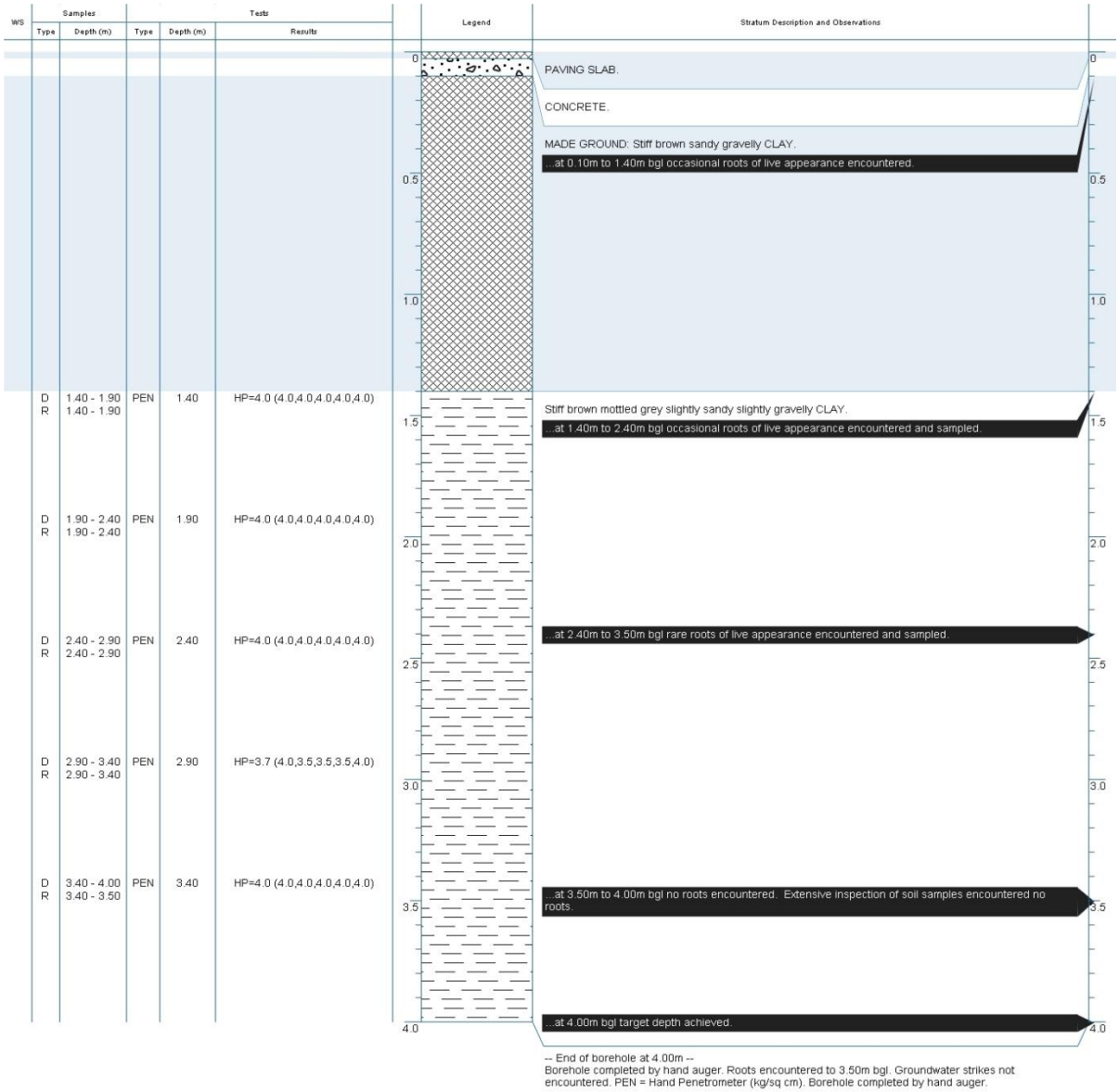
BH3 Borehole Log



-- End of borehole at 4.00m --
Borehole completed by hand auger. Roots encountered to 3.50m bgl. Groundwater strikes not encountered. PEN = Hand Penetrometer (kg/sq cm). Borehole completed by hand auger.

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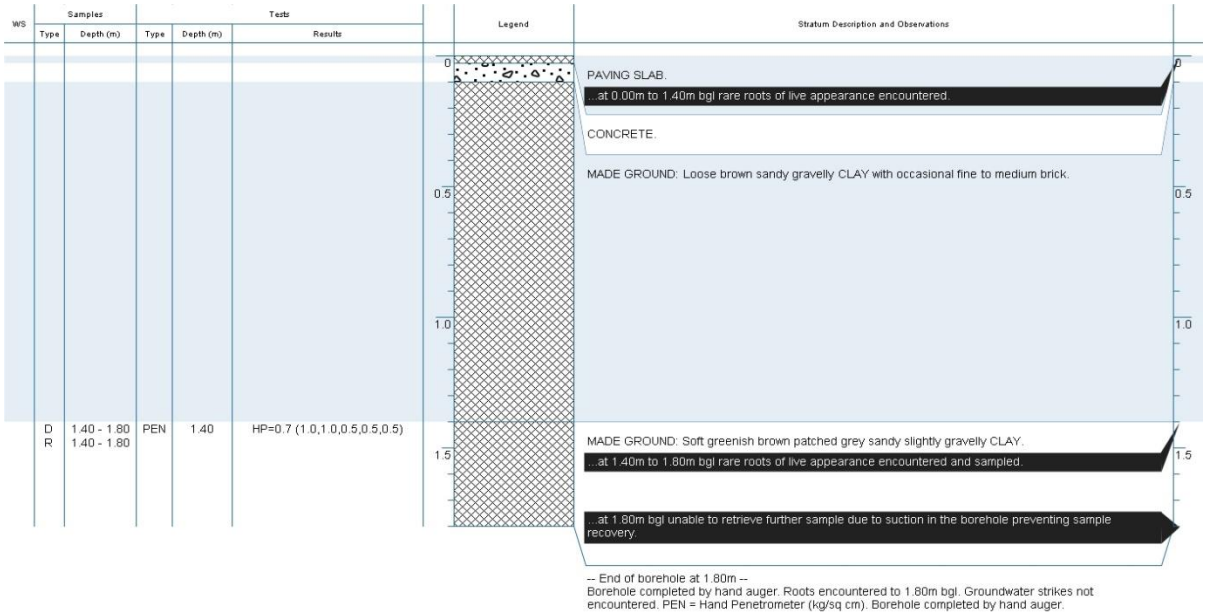
BH4 Borehole Log



WS	Samples Type	Samples Depth (m)	Tests Type	Tests Depth (m)	Tests Results	Legend	Stratum Description and Observations
						0	PAVING SLAB. ...at 0.00m to 1.40m bgl rare roots of live appearance encountered. CONCRETE. MADE GROUND: Loose brown sandy gravelly CLAY with occasional fine to medium brick.
	D R	1.40 - 1.80 1.40 - 1.80	PEN	1.40	HP=0.7 (1.0,1.0,0.5,0.5,0.5)	1.5	MADE GROUND: Soft greenish brown patched grey sandy slightly gravelly CLAY. ...at 1.40m to 1.80m bgl rare roots of live appearance encountered and sampled. ...at 1.80m bgl unable to retrieve further sample due to suction in the borehole preventing sample recovery.

-- End of borehole at 1.80m --
Borehole completed by hand auger. Roots encountered to 1.80m bgl. Groundwater strikes not encountered. PEN = Hand Penetrometer (kg/sq cm). Borehole completed by hand auger.

Site Observations

GENERAL:
Site Investigation works (BH 3) undertaken on 5 August 2024 during dry weather (i.e. no rain).
Site Investigation works (BH 4) undertaken on 5 August 2024 during dry weather (i.e. no rain).

HEALTH AND SAFETY:
Negative signal obtained in Power, Radio and Genny mode on the Cable Avoidance Tool (CAT) (BH3).
Negative signal obtained in Power, Radio and Genny mode on the Cable Avoidance Tool (CAT) (BH4).

BOREHOLE:
At 4.00m bgl target depth achieved in BH3.
6At 1.80m bgl unable to retrieve further sample due to suction in the borehole preventing sample recovery in BH4.

ROOTS:
At 0.10m to 1.40m bgl occasional roots of live appearance encountered in BH3.
At 1.40m to 2.40m bgl occasional roots of live appearance encountered and sampled in BH3.
At 2.40m to 3.50m bgl rare roots of live appearance encountered and sampled in BH3.
At 3.50m to 4.00m bgl no roots encountered. Extensive inspection of soil samples encountered no roots in BH3.
At 0.00m to 1.40m bgl rare roots of live appearance encountered in BH4.
At 1.40m to 1.80m bgl rare roots of live appearance encountered and sampled in BH4.

IN SITU TESTING:
Hand Penetrometer (PEN) undertaken at 1.40m bgl (BH 3) within the hand excavated trial pit and thereafter in the hand auger borehole at maximum 0.50m intervals.
Hand Penetrometer (PEN) undertaken at 1.40m bgl (BH 4) within the hand excavated trial pit and thereafter in the hand auger borehole at maximum 0.50m intervals.

WATER STRIKES:
No water strikes (NWS) encountered (BH 3).
No water strikes (NWS) encountered (BH 4).

Environmental Services

SOIL ANALYSIS
for Subsidence Management Services

4 Theodora Way, Pinner, HA5 2RA

Client:	Subsidence Management Services
Claim Number:	4502041027
Policy Holder:	Mr Alan Hutchinson
Report Date:	21/08/2024
Our Ref:	L28169

Compiled By:

Name	Position	Signature
Saira Dougan	Laboratory Supervisor	

Checked By:

Name	Position	Signature
Bob Walker	Laboratory Manager	

Date samples received:	12-Aug-24
Water Content Test Date:	12-Aug-24
Atterberg Limits Test Date:	15-Aug-24
Oedometer Test Date:	19-Aug-24

UKAS TESTING

9265

Environmental Services

Notes relating to soils testing

Unless otherwise stated, all soil testing was undertaken by Environmental Services at unit 10H Maybrook Business Park, B76 1AL for SubsNetUK of Unit 4 Linnet Court, Cawledge Business Park, Alnwick, NE66 2GD

Soil samples have been prepared in accordance with BS1377:Part 1: 2016 Section 7

Descriptions of soil samples within the laboratory have been undertaken generally in accordance with BS5930:2015. Descriptions of soil samples fall outside of the scope of UKAS accreditation and may have been shortened to remove tertiary components for ease of reference.

The graphical representation of 40% of the LL and the numerical representation of the modified plasticity index (mod. PI) fall outside of the scope of UKAS accreditation.

Following the issue of this soil analysis report, samples will be retained for at least 28 days should additional testing, or referencing, be required. It should be noted that any tests undertaken on soils retained subsequent to the issue of this report may not give an accurate indication of the in-situ conditions of the sample.

The results contained herein relate only to items tested and no others. Additionally as the laboratory is not responsible for the sampling process it takes no responsibility for the condition of the samples and all samples are tested "as received".

Where samples of the same test type are not tested on the same day, or the testing spans multiple days, the test date states the day of the final test or the test date of the final sample.

All information above the laboratory reference on the cover page of this report are as provided by the customer and the laboratory is not responsible for any errors or omissions therein.

Water Content Tests are undertaken in accordance with ISO 17892:Part 1:2014

The Liquid Limit test is undertaken in accordance with BS1377:Part 2:2022 using an 80g cone with a 30° tip. Sieve percentages reported in blue denote that the sample has been sieved otherwise it has been prepared from its natural state. Sieve percentage reported in BOLD denote that the sample has been oven-dried prior to testing.
Unless otherwise specified herein, the one-point cone penetrometer method has been used. Atterberg results depicted in green have not been tested and are duplicates of the preceding sample, included for reference only.

The Plastic Limit test and the determination of the Plasticity Index is undertaken in accordance with BS1377:Part 2:2022. Where a plastic limit has been denoted with an asterisk (*) then it has been derived from the liquid limit and has not been tested.

The Oedometer swell/strain test method is based upon BS1377:Part 5:1990 Section 4.4 ‘Determination of swelling and collapse characteristics’ and unless otherwise stated is undertaken on a remoulded, disturbed, sample.

The Oedometer Swell/Strain Test is undertaken in a controlled environment within a temperature range of 16°C and 24°C

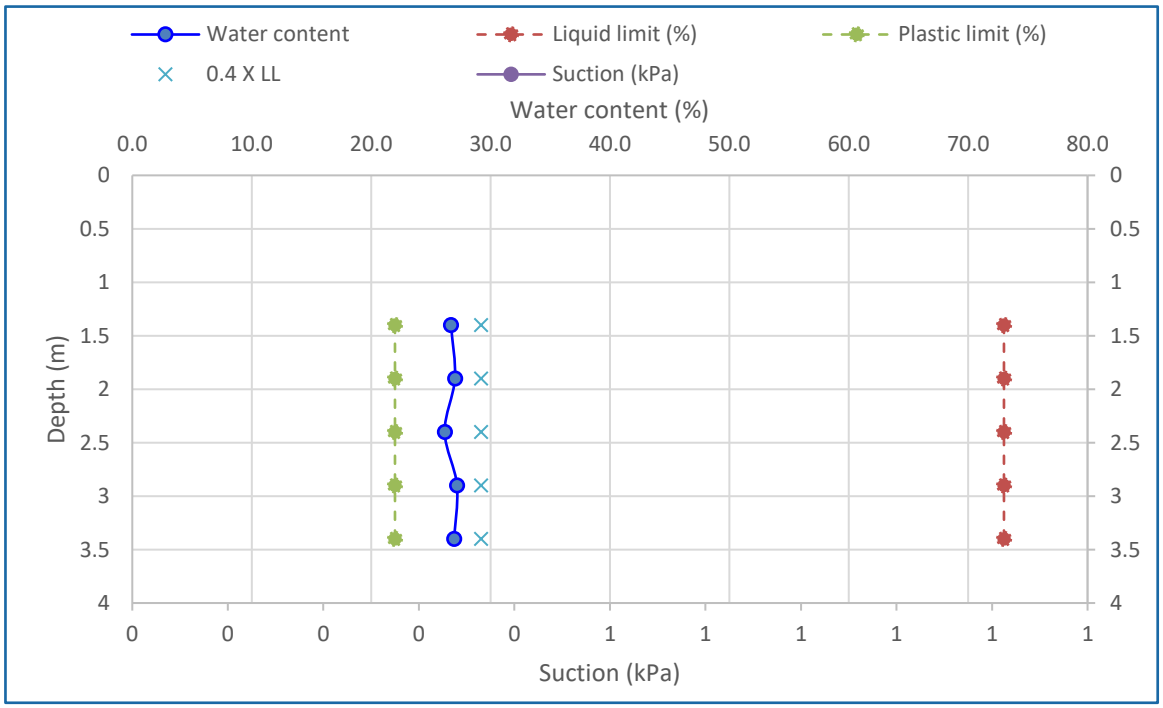
If you would like to provide feedback on this report or any laboratory services or performance, please complete the form below. All appropriate feedback will be used in the continual improvement of laboratory services.

Laboratory feedback form

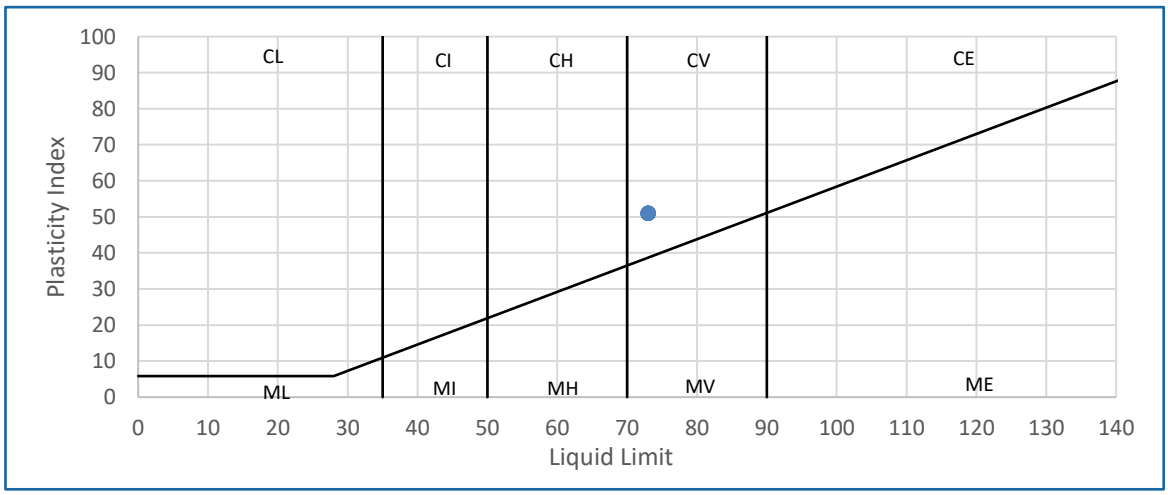
Environmental Services

Samples from BH3

Lab Ref	Depth (m)	WC (%)	LL (%)	PL (%)	PI (%)	.425 mm(%)	mod. PI (%)	Av. Suc. (kPa)	Description
1	1.4	26.7	73	22	51	97	49		Firm brown CLAY with rare gravel. Gravel is fine and medium.
2	1.9	27.0	73	22	51	97	49		Firm brown CLAY
3	2.4	26.2	73	22	51	97	49		Firm brown CLAY
4	2.9	27.2	73	22	51	97	49		Firm brown CLAY
5	3.4	26.9	73	22	51	97	49		Firm brown CLAY



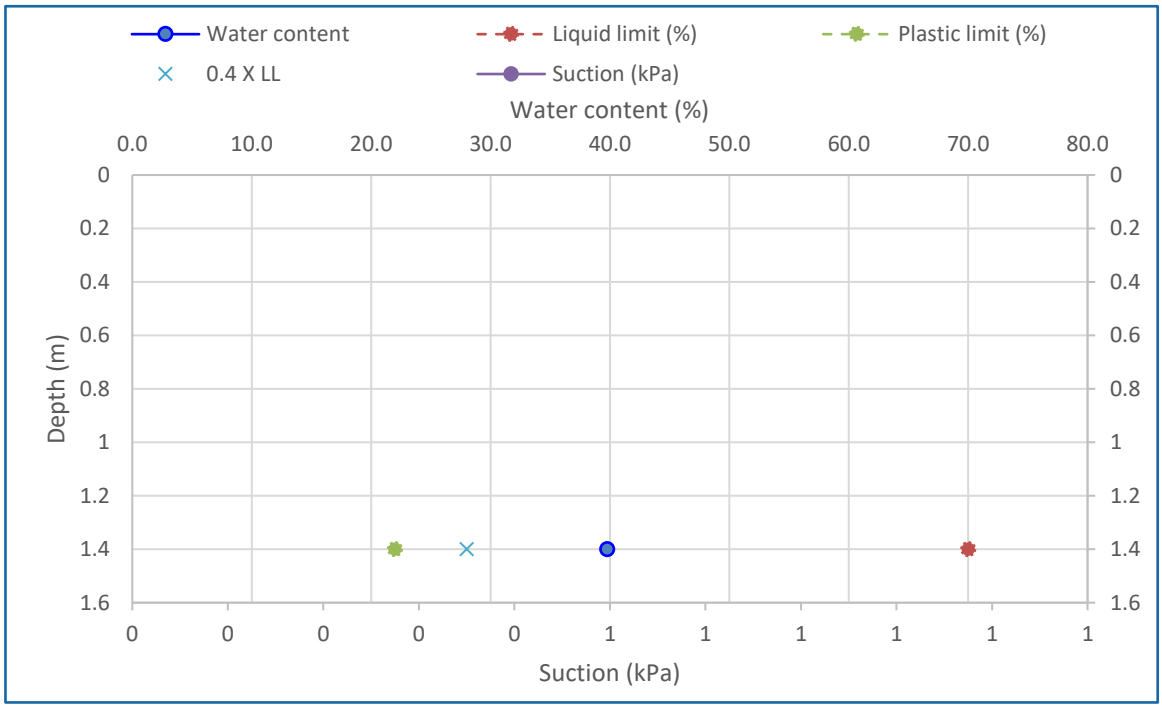
Plasticity Chart for Casagrande Classification



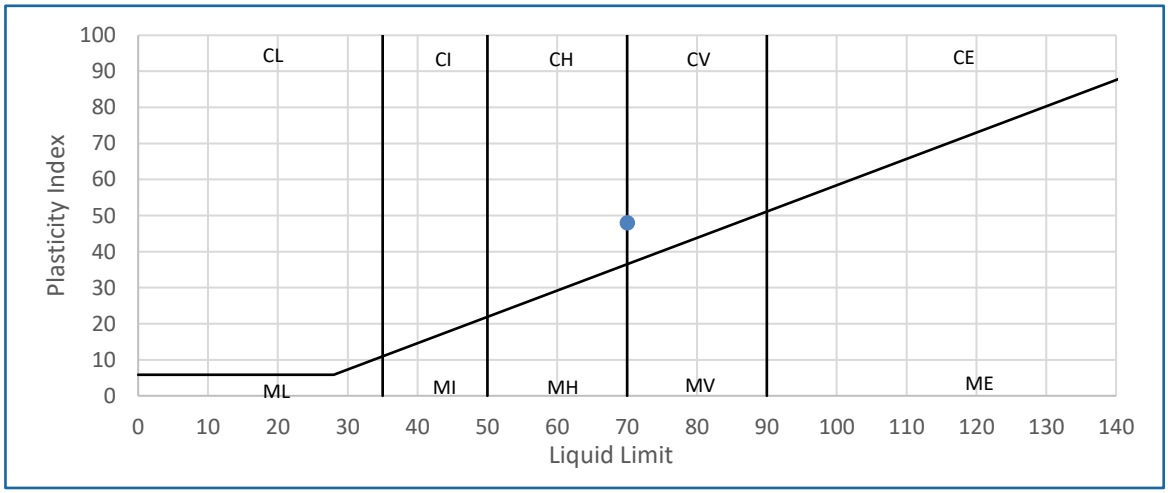
Environmental Services

Samples from BH4

Lab Ref	Depth (m)	WC (%)	LL (%)	PL (%)	PI (%)	.425 mm(%)	mod. PI (%)	Av. Suc. (kPa)	Description
6	1.4	39.8	70	22	48	67	32		Soft to firm brown CLAY with rare gravel. Gravel is fine



Plasticity Chart for Casagrande Classification

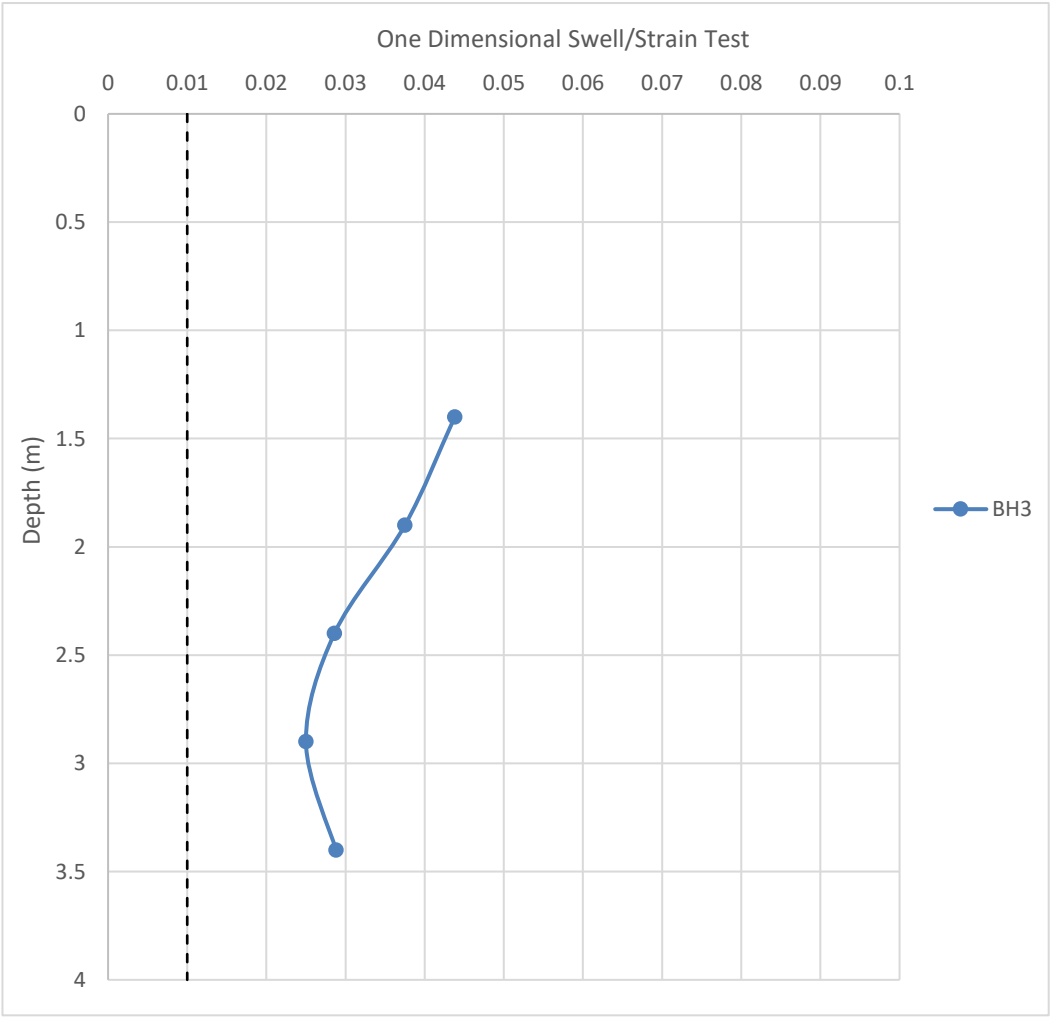


Environmental Services

Summary of Oedometer Testing for BH3

Lab Ref	Depth (m)	Strain	Heave (mm)	Remarks
1	1.4	0.0438	30.7	
2	1.9	0.0375	9.4	
3	2.4	0.0286	7.1	
4	2.9	0.025	6.3	
5	3.4	0.0288	7.2	

BH 3 estimate of heave	61mm



Deviating Samples

The table below details any samples deviating from laboratory procedure or deviating in condition to an extent whereby the validity of results may be affected. A test denoted "I" is likely to have had testing abandoned but where a test result has been provided a non-standard procedure may have been used, details of which will be provided upon request.

LAB REF	CONDITION	WC	ATT	SUC	OED
1					
2					
3					
4					
5					
6					

Key

D	Delay in sample receipt
C	Contaminated sample
B	Sample not bagged correctly
S	Sample too sandy (unsuitable for testing)
G	Sample too gravelly (unsuitable for testing)
V	Sample too soft (unsuitable for preparation)
L	Sample too silty
I	Insufficient sample
O	Too much organic content (unsuitable for testing)
N	Non-standard procedure used
H	Sample depth too shallow
X	Testing result too similar to above sample

References

The following provides a brief interpretation of the test results by comparison of the results to published classifications. The Atterberg Limit test may be used to classify the plasticity of soils; the plasticity classes defined in BS5930:2015 "Code of Practice for Site Investigations" are as follows.

CL (ML)	CLAY and CLAY/SILT of Low plasticity
CI (MI)	CLAY and CLAY/SILT of Intermediate plasticity
CH (MH)	CLAY and CLAY/SILT of High plasticity
CV (MV)	CLAY and CLAY/SILT of Very High plasticity
CE (ME)	CLAY and CLAY/SILT of Extremely High plasticity
O	The letter O is added to prefixes to symbolise a significant proportion of organic matter.
NP	Non-plastic

The Plasticity Index (PI) Result obtained from the Atterberg Limit tests may also be used to classify the potential for volume change of fine soils, in accordance with the National House Building Council's standards - Chapter 4.2 (2003) "Building Near Trees", as summarised below.

Modified PI < 10	Non Classified.
Modified PI = 10 to <20	Low volume change potential.
Modified PI = 20 to <40	Medium volume change potential.
Modified PI = 40 or greater	High volume change potential.

The 2003 edition of Chapter 4.2 also permits use of the Plasticity Index without modification. The classifications for this are grouped by soil type (soils with similar visual soils description and using unmodified Plasticity Indices.

ROOT IDENTIFICATION
for SMS (AVI, PRE)

4 Theodora Way, Pinner, HA5 2RA

Intec
Parc Menai, Bangor,
Gwynedd, North Wales
LL57 4FG
Tel: 01248 672652

Client:	SMS (AVI, PRE)
Client Contact:	Ian Domigan
Claim Number:	4502041027
Client Reference:	IFS-AVI-SUB-22-0102007
Policy Holder:	Mr Alan Hutchinson
Report Date:	13 August 2024
Our Ref:	R58334

Sub Sample	Species Identified		Root Diameter	Starch
BH3:				
1.4-2.4m	*Aesculus* spp.	1	3 mm	Abundant
2.4-3.5m	broadleaved species, too decayed for positive identification	2	1.5 mm	Absent
BH4:				
1.4-1.8m	probably *Aesculus* spp.	3	1.5 mm	Absent

Comments:

1 - Plus 4 others also identified as *Aesculus* spp.
2 - Plus 2 others the same. The few features present suggest probably *Aesculus* spp.
3 - Plus 2 others the same. Very decayed roots.

Aesculus spp. are horse chestnuts.

Signed: G S Turner

Unless we are otherwise instructed in writing, the above sample material will normally be disposed of 6 years after the date of this report.

SubsNetUK