

# SOIL ANALYSIS

## for Subsidence Management Services

**16 Warley Way, Frinton On Sea, CO13 9PA**

Client: Subsidence Management Services  
Claim Number: 102309310  
Policy Holder: Mr Andrew Weaving  
Report Date: 07/12/2020  
Our Ref: L19922

Compiled By:

Name	Position	Signature
Saira Dougan	Laboratory Technician	

Checked By:

Name	Position	Signature
Bob Walker	Laboratory Manager	

Date samples received: 16-Nov-20  
Water Content Test Date: 24-Nov-20  
Atterberg Limits Test Date: 04-Dec-20  
  
Oedometer Test Date: 29-Nov-20



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### 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.

This Soil Analysis Report may not be reproduced, in part or in full, without written approval of the laboratory.

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 2:1990 Section 4.4 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.

Unless otherwise specified herein, the four-point cone penetrometer method has been used with increasing water content

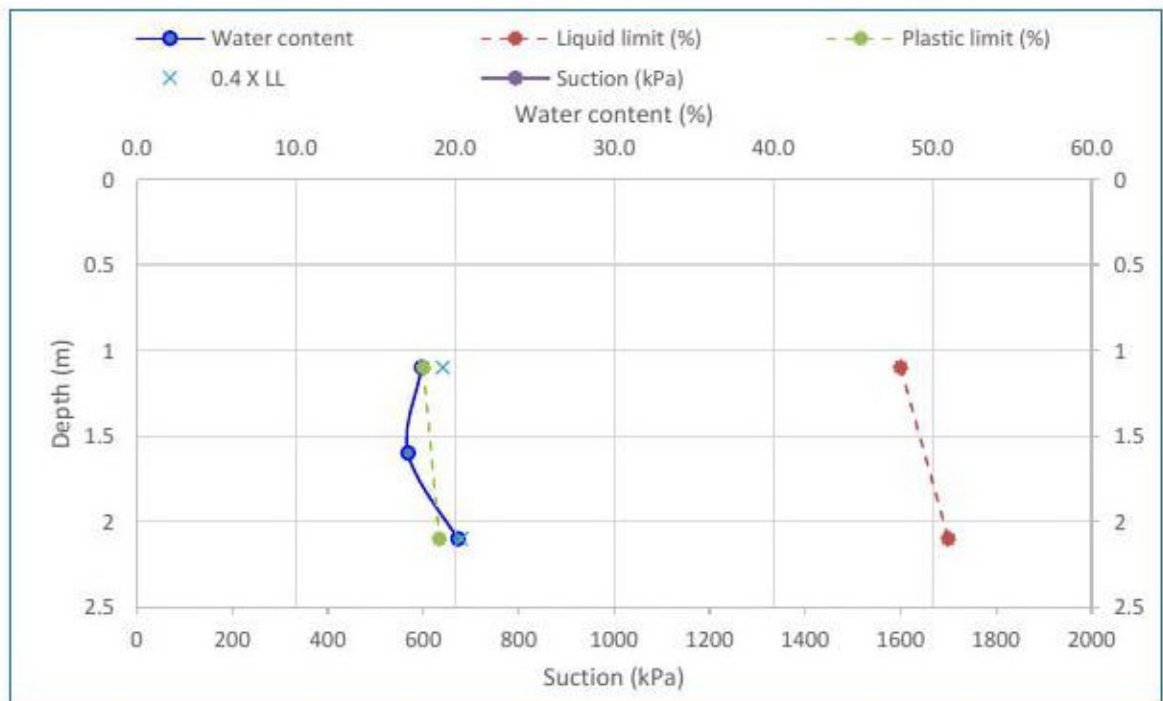
The Plastic Limit test and the determination of the Plasticity Index is undertaken in accordance with BS1377:Part 2:1990. Where a plastic limit has been denoted with an asterisk (\*) then it has been derived from the liquid limit and has not been tested.

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.

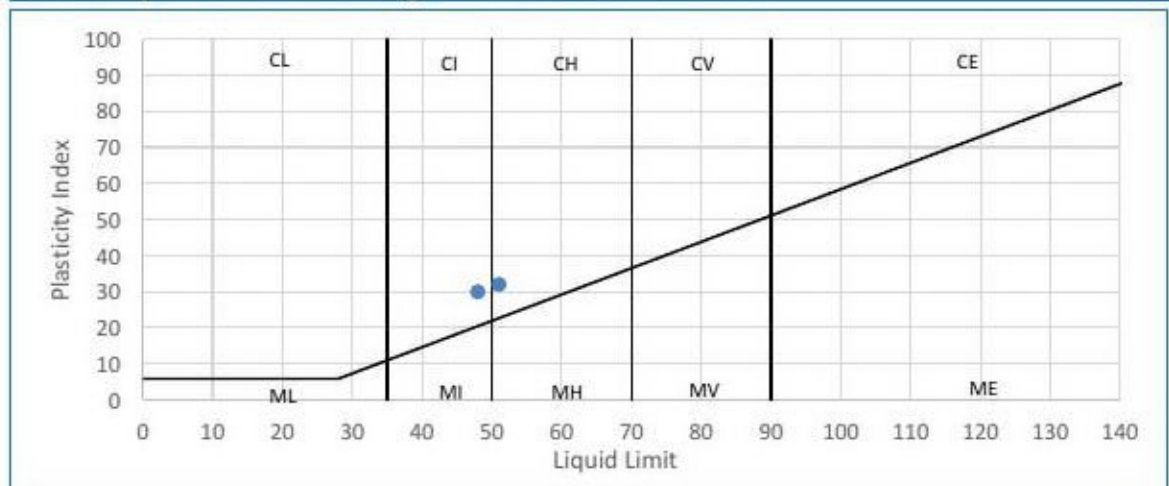
The Oedometer Swell/Strain Test is undertaken in a controlled environment within a temperature range of 16°C and 24°C

### Samples from BH1

Lab Ref	Depth (m)	MC (%)	LL (%)	PL (%)	PI (%)	.425 mm(%)	mod. PI (%)	Av. Suc. (kPa)	Description
1	1.1	17.9	48	18	30	100	30		Stiff brown/orange-brown slightly sandy CLAY with rare gravel. Gravel is fine
2	1.6	17.0							Stiff brown/orange-brown slightly sandy CLAY with rare gravel. Gravel is fine
3	2.1	20.2	51	19	32	92	29		Stiff brown/orange-brown/grey veined slightly sandy slightly gravelly CLAY . Gravel is fine

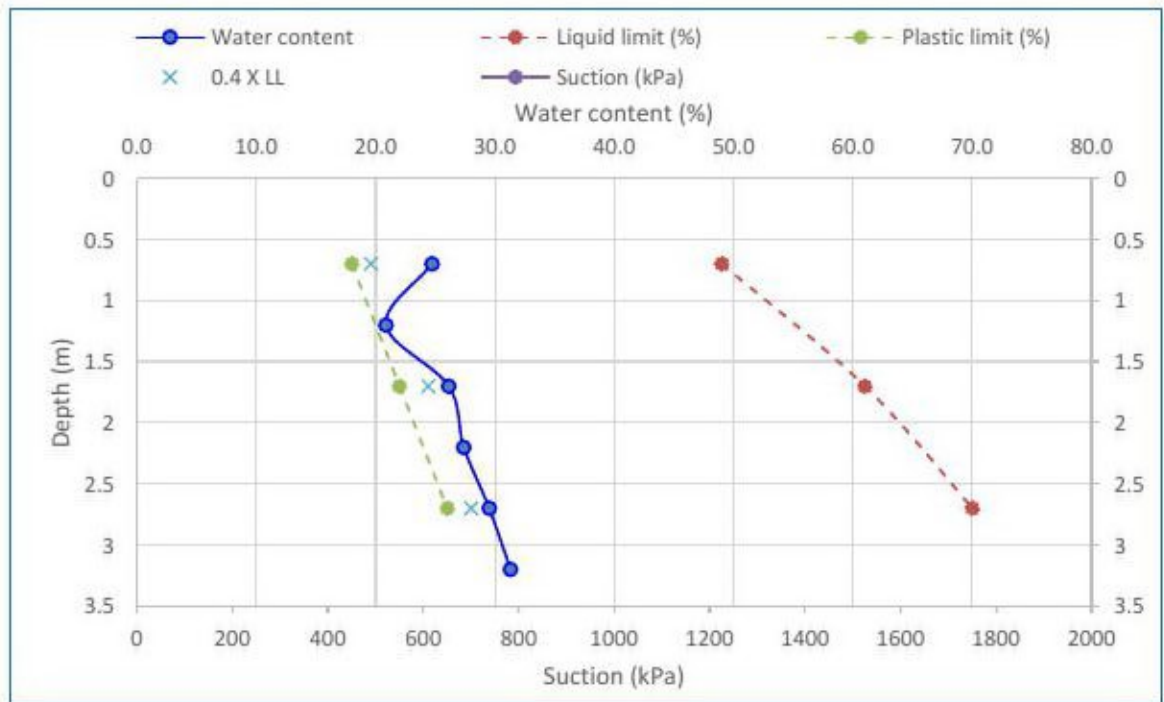


### Plasticity Chart for Casagrande Classification

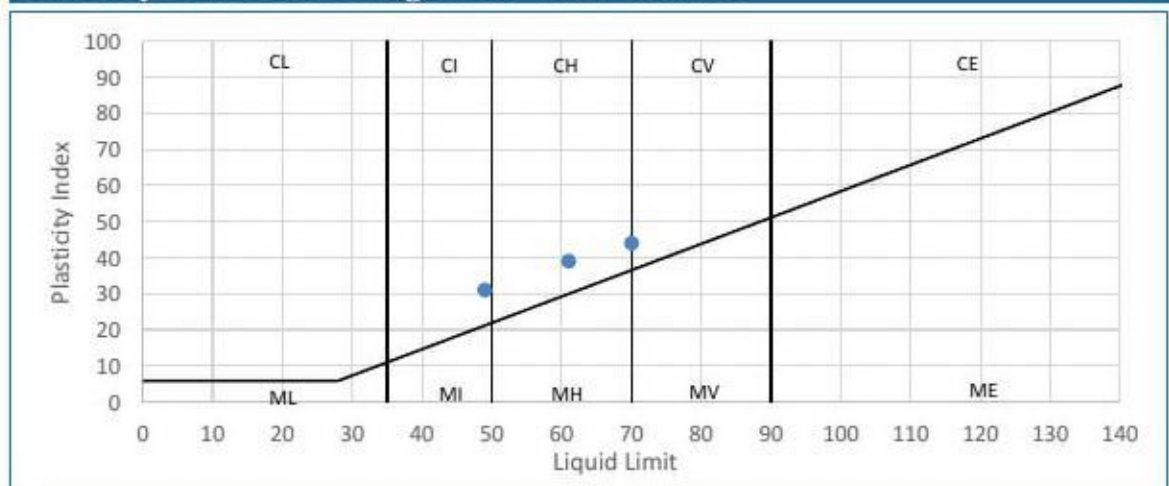


## Samples from BH2

Lab Ref	Depth (m)	MC (%)	LL (%)	PL (%)	PI (%)	.425 mm(%)	mod. PI (%)	Av. Suc. (kPa)	Description
4	0.7	24.7	49	18	31	100	31		Soft brown/orange-brown/grey veined slightly sandy CLAY with rare gravel. Gravel is fine
5	1.2	20.9							Soft to firm brown/orange-brown slightly sandy CLAY with rare gravel. Gravel is fine
6	1.7	26.1	61	22	39	100	39		Firm brown/grey veined CLAY with rare gravel and sand. Gravel is fine
7	2.2	27.4							Firm brown/orange-brown/grey veined CLAY with rare gravel and sand. Gravel is fine
8	2.7	29.5	70	26	44	100	44		Firm brown/grey veined CLAY with rare gravel and sand. Gravel is fine
9	3.2	31.3							Soft to firm brown/grey veined CLAY with rare gravel and sand. Gravel is fine

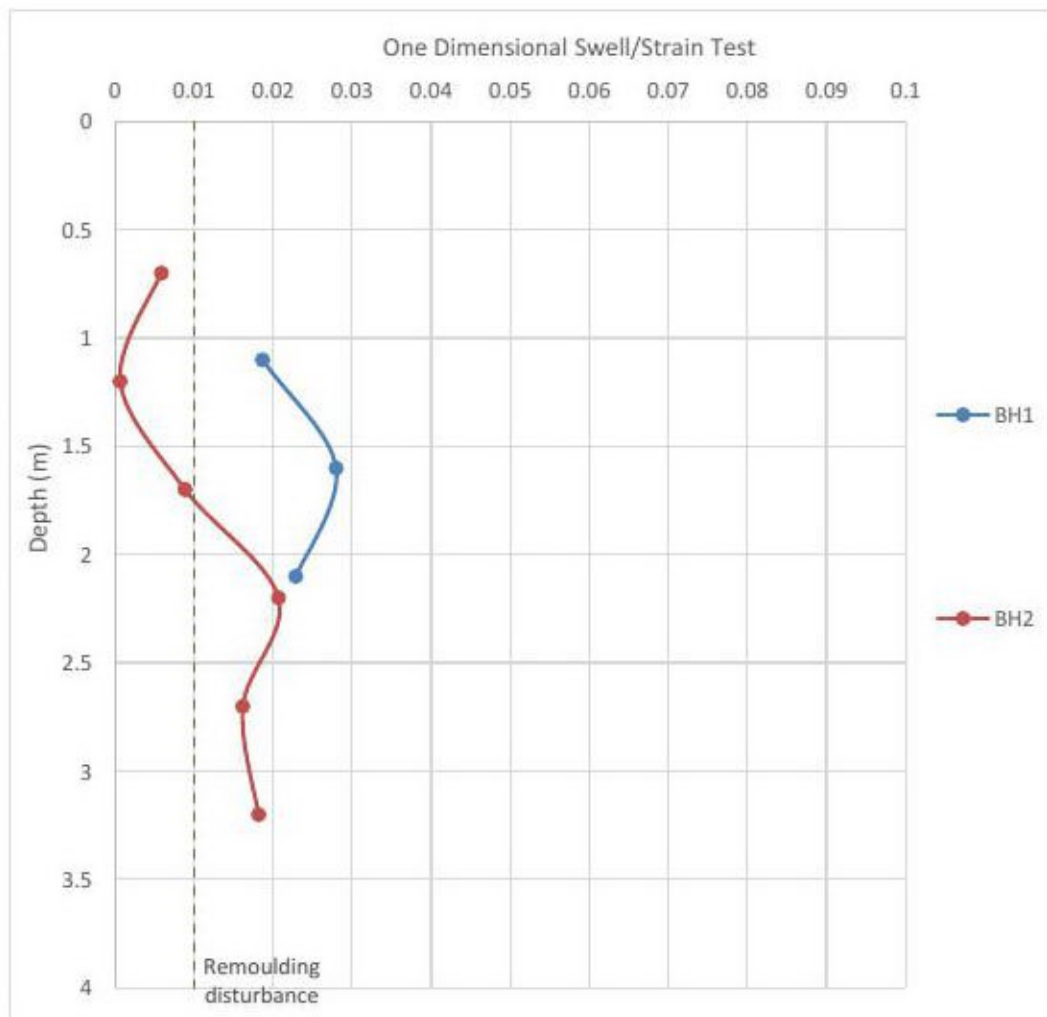


## Plasticity Chart for Casagrande Classification



### Summary of Oedometer Testing

Lab Ref	Depth (m)	Strain	Heave (mm)	Remarks
1	1.1	0.0187	4.8	
2	1.6	0.028	4.5	
3	2.1	0.0229	3.2	
4	0.7	0.0059	0	
5	1.2	0.0007	0	
6	1.7	0.0089	0	
7	2.2	0.0207	2.7	
8	2.7	0.0162	1.6	
9	3.2	0.0182	2	



# Environmental Services

### 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					
7					
8					
9					

#### 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

### 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).