ST Consult
Environmental & Geotechnical

Factual Site Investigation Report

Desk Studies | Risk Assessments | Site Investigations | Geotechnical | Contamination Investigations | Remediation Design and Validation

Site: No64 Delancey Street, Camden, London

Client: Mr & Mrs Shah & LBH Wembley Engineering

Report Date: 4th April 2019

Project Reference: JN1243

AGS ace CHAS BSI ISO 9001 ISO 14001 BS18001

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A INTRODUCTION

1 Authority

Our authority for carrying out this work was given by way of an email instruction from Darcy Kitson-Boyce of LBH Wembley, dated 13th March 2019.

2 Location

The site is located at No64 Delancey Street, Camden, in London. The approximate National Grid Reference for the centre of the site is TQ 287 835.

3 Background Information

We understand that the proposals for the site comprise the construction of a basement extension to the rear of the existing building.

4 Object

This is a factual ground investigation report only, with no interpretation of the data.

The object of the investigation was to carry out a geotechnical investigation to confirm ground conditions.

The borehole locations was agreed with LBH Wembley onsite.

5 Scope

This report presents our exploratory hole log and limited geotechnical test results only. No interpretation is given.

A formal desk study, wider geotechnical and contamination assessment were outside the requested scope of works. Soil waste characterisation did not form part of our brief for this investigation.

As with any site there may be differences in soil conditions between exploratory hole positions.

This factual ground investigation report is not an engineering design and the figures and calculations contained within should be used by the Engineer, taking note that variations will apply, according to variations in design loading, in techniques used, and in site conditions. Our figures therefore should not supersede the Engineer's design.

The site investigation was conducted and this report has been prepared for the sole internal use and reliance of Mr & Mrs Shah & LBH Wembley Engineering and their appointed Engineers. This report shall not be relied upon or transferred to any other parties without the express written authorization of Southern Testing Laboratories Limited. If an unauthorised third party comes into possession of this report they rely on it at their peril and the authors owe them no duty of care and skill.

J. Kelly PhD	C. Ward BSc FGS
(Countersigned)	(Signed)

For and on behalf of Southern Testing Laboratories Limited

B SETTING

6 The Site

The site forms part of the rear garden of a large terraced house in Camden, London. The site and surrounding area itself is generally flat.

7 Geology

The British Geological Survey Map indicates that the site geology consists of the London Clay Formation.

London Clay is a well-known stiff (high strength) blue-grey, fissured clay, which weathers to a brown colour near the surface. It contains thin layers of nodular calcareous mudstone - "claystone" - from place to place, and crystals of water clear calcium sulphate (selenite) are common.

C GROUND INVESTIGATION

8 Investigation Method

The fieldwork was undertaken on the 19th March 2019. In general accordance with the original enquiry, and discussions with LBH Wembley, the strategy for the work comprised the following:-

- 1 No. window sampler borehole using handheld equipment.
- The window sampler borehole positon was started with a 1.2m deep hand-dug services inspection pit.
- Small disturbed samples were taken from the borehole, at regular depths.
- Geotechnical testing has been undertaken on a limited number of samples; the remaining samples will be retained for a period of 1 month following issue of this report.

D ENCOUNTERED GROUND CONDITIONS

The soils encountered are described in detail on the attached exploratory hole log (Appendix B).

9 Soils as Found

The soils encountered are summarised in the table below.

Depth	Soil Type	Description
-1.0m	MADE GROUND	Paving slabs and bedding sand over concrete Over Dark brown / black gravelly SAND. With brick fragments and ash Over Brown gravelly sandy CLAY, with brick fragments and rootlets
-4.0m+	CLAY	Firm becoming stiff brown mottled grey silty CLAY

10 Groundwater Strikes

Groundwater was not encountered during the site investigation.

E IN-SITU FIELD TESTING

The following in-situ test and sampling methods were employed where possible. Descriptions are given in Appendix B, with the test results recorded on the borehole logs.

- Disturbed Sampling

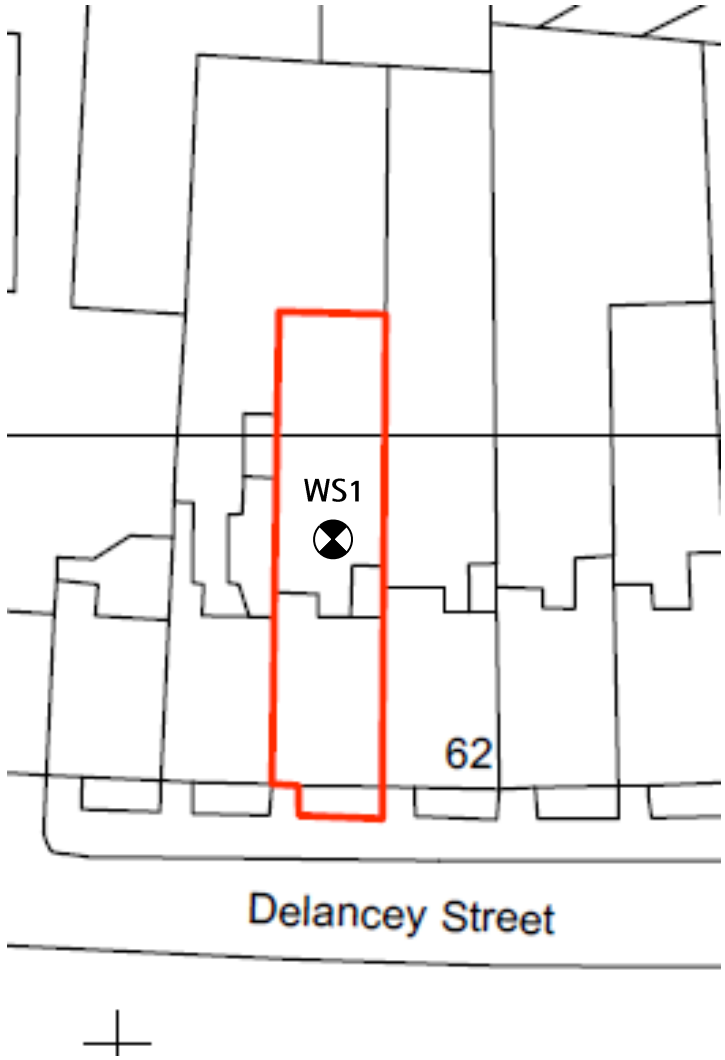
F GEOTECHNICAL LABORATORY TESTS

The following tests were carried out on selected samples, as scheduled by the client LBH Wembley. Test method references and results are given in Appendix C. The laboratory testing was completed by i2 analytical, Watford, Hertfordshire- UKAS testing laboratory number 4041.

- Atterberg Limit
- pH & water soluble sulphate

APPENDIX A

Site & Fieldwork Location Plans



NB: Positions of Boreholes and/or Trial Pits are only indicative unless dimensioned

Site: 64 Delancey Street, Camden, London	STL: JN1243	Fig No: 1
Date: 20 March 2019		

Southern Testing

Southern Testing: Keeble House, Stuart Way, East Grinstead, West Sussex RH19 4QA
ST Consult: Twigden Barns, Brixworth Road, Creaton, Northampton NN6 8NN

ST Consult

APPENDIX B

Engineers Logs

Southern Testing ST Consult

www.southerntesting.co.uk tel:01342 333100 www.stconsult.co.uk tel:01604 500020

Start - End Date	Project ID:	Hole Type:	WS1
19/03/2019	JN1243	WS	Sheet 1 of 1

Project Name:	64 Delancey Street	Remarks:	Co-ordinates:	Level:	Logger:
					CW
Location:	Camden, London	Hand dug starter pit excavated to 1.2m bgl. No groundwater was encountered			
Client:	LBH Wembley Engineering				

Well	Water Strikes	Samples and Insitu Testing: Depth (m bgl)	Type	Results	Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
						(0.05)		0.05	Paving slab
						(0.10)		0.15	Bedding Sand
						(0.05)		0.20	Concrete
						(0.30)		0.50	MADE GROUND comprising dark brown / black gravelly SAND. Gravel consists of brick fragments with scattered ash
						(0.50)			MADE GROUND comprising brown gravelly sandy CLAY with scattered brick fragments and rootlets
		1.00	D					1.00	Firm brown silty CLAY with scattered orange-brown sand partings
		1.50	D			(1.30)			
		2.00	D					2.30	Stiff brown mottled grey silty CLAY
		2.50	D						*20mm Root*
		3.00	D			(1.70)			
		3.50	D						
		4.00	D					4.00	End of Borehole at 4.00m

Hole Details		Casing Details		Waterstrike (m bgl)						Standing/Chiselling (m bgl)			
Depth (m bgl)	Dia. (mm)	Depth (m bgl)	Dia. (mm)	Date	Depth Strike	Depth Casing	Depth Sealed	Rose to:	Time (mins)	From	To	Time	Remarks

APPENDIX C

Geotechnical Test Results

Callum Ward
ST Consult Ltd
Twigden Barns
Brixworth Road
Creaton
Northamptonshire
NN6 8NN

t: 01604 500020
f: 01604 500021
e: cward@stconsult.co.uk

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

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 19-34209

Project / Site name:	64 Delancey Street, London	**Samples received on:**	20/03/2019
Your job number:		**Samples instructed on:**	20/03/2019
Your order number:	JN1243	**Analysis completed by:**	03/04/2019
Report Issue Number:	1	**Report issued on:**	03/04/2019
Samples Analysed:	2 soil samples		

Signed:

Rexona Rahman
Head of Customer Services
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: 19-34209

Project / Site name: 64 Delancey Street, London
Your Order No: JN1243

Lab Sample Number				1184179	1184180			
Sample Reference				WS1	WS1			
Sample Number				None Supplied	None Supplied			
Depth (m)				1.50	3.00			
Date Sampled				Deviating	Deviating			
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	23	19			
Total mass of sample received	kg	0.001	NONE	0.29	0.28			
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	8.0	7.5			
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.063	0.26			

Analytical Report Number : 19-34209

Project / Site name: 64 Delancey Street, London

* 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 *
1184179	WS1	None Supplied	1.50	Brown clay.
1184180	WS1	None Supplied	3.00	Brown clay.

Analytical Report Number : 19-34209

Project / Site name: 64 Delancey Street, London

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 2, 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
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 (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 based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	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.

Sample ID	Other_ID	Sample Type	Job	Sample Number	Sample Deviation Code	test_name	test_ref	Test Deviation code
WS1		S	19-34209	1184179	a			
WS1		S	19-34209	1184180	a			

Key: a - No sampling date b - Incorrect container
c - Holding time d - Headspace e - Temperature

TEST CERTIFICATE

Liquid and Plastic Limits

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

4041

Tested in Accordance with: BS 1377-2: 1990: Clause 4.3 and 5

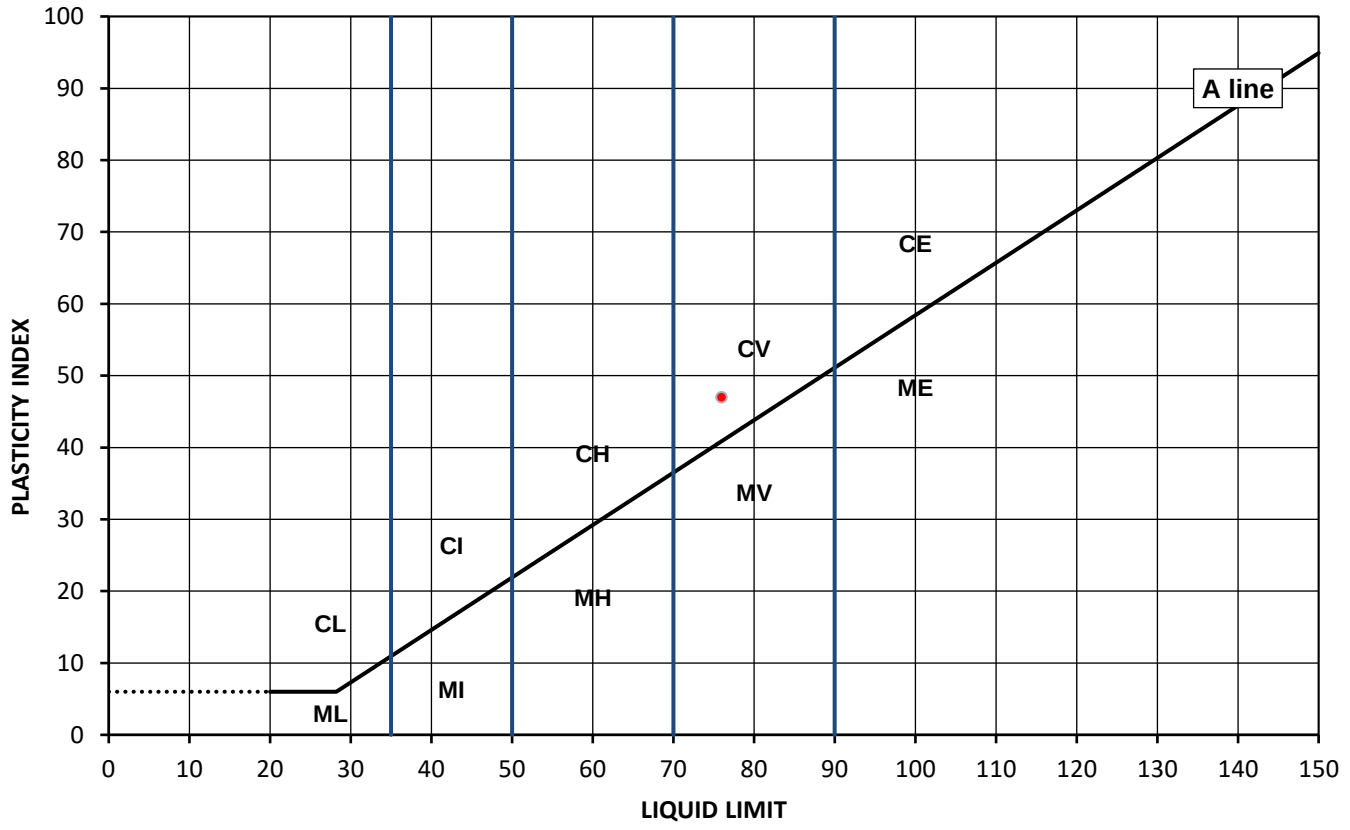
Client:	ST Consult Ltd	Client Reference:	19-34212
Client Address:	Twigden Barns, Brixworth Road, Creaton, Northamptonshire, NN6 8NN	Job Number:	19-34212
		Date Sampled:	Not Given
		Date Received:	20/03/2019
Contact:	Callum Ward	Date Tested:	27/03/2019
Site Name:	64 Delancey Street, London	Sampled By:	Not Given
Site Address:	Not Given		

Test Results:

Laboratory Reference:	1184188	Depth Top [m]:	1.50
Hole No.:	WS1	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	D
Soil Description:	Brown CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
31	76	29	47	100



Legend, based on BS 5930:2015 Code of practice for site investigations

		Plasticity		Liquid Limit
C	Clay	L	Low	below 35
M	Silt	I	Medium	35 to 50
		H	High	50 to 70
		V	Very high	70 to 90
		E	Extremely high	exceeding 90
	Organic	O	append to classification for organic material (eg CHO)	

Note: Moisture Content by BS 1377-2: 1990: Caluse 3.2

Remarks:

Approved: Dariusz Piotrowski
PL Geotechnical Laboratory Manager
Date Reported: 03/04/2019

Signed: Darren Berrill
Geotechnical General Manager
for and on behalf of i2 Analytical Ltd **GF 236.5**

TEST CERTIFICATE

Liquid and Plastic Limits

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

4041

Tested in Accordance with: BS 1377-2: 1990: Clause 4.3 and 5

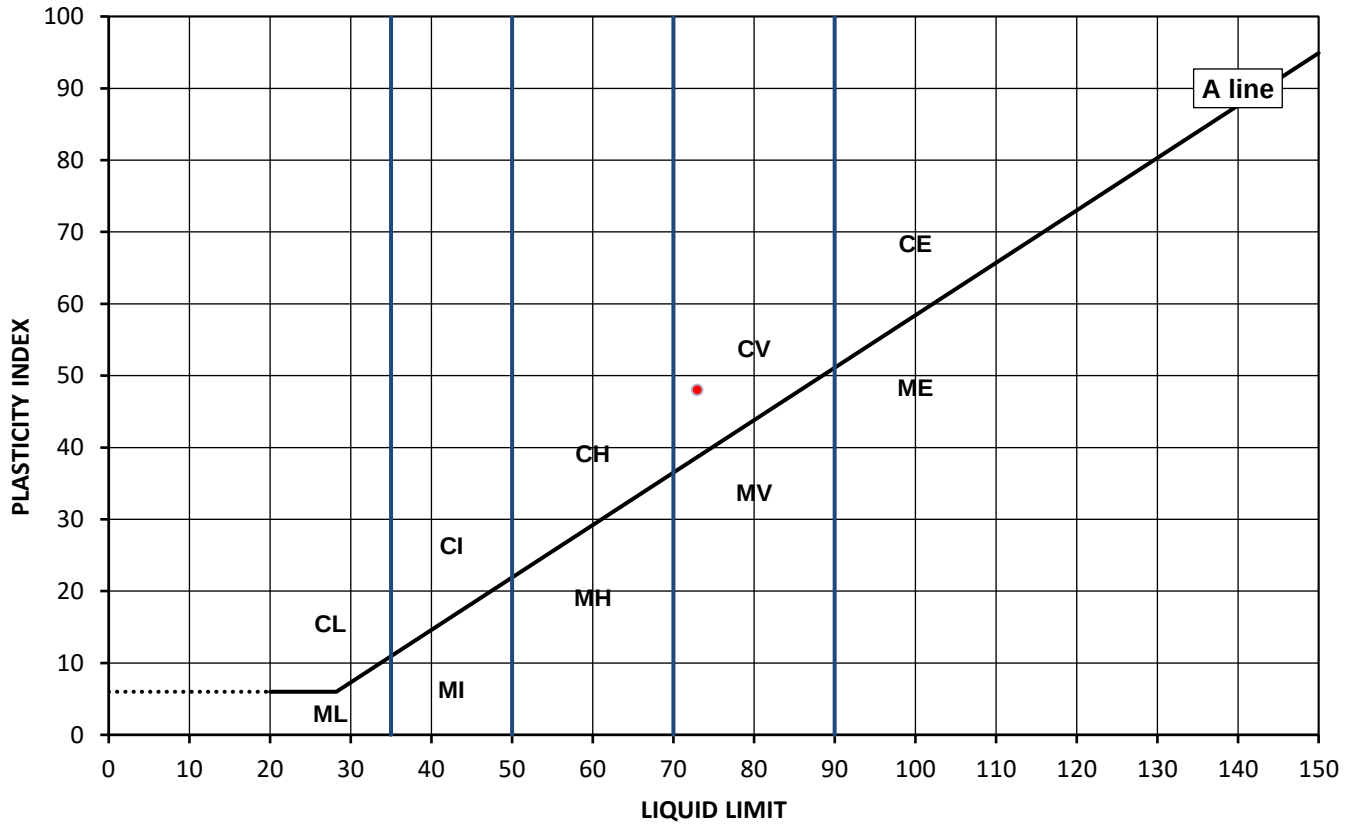
Client:	ST Consult Ltd	Client Reference:	19-34212
Client Address:	Twigden Barns, Brixworth Road, Creaton, Northamptonshire, NN6 8NN	Job Number:	19-34212
		Date Sampled:	Not Given
		Date Received:	20/03/2019
Contact:	Callum Ward	Date Tested:	27/03/2019
Site Name:	64 Delancey Street, London	Sampled By:	Not Given
Site Address:	Not Given		

Test Results:

Laboratory Reference:	1184189	Depth Top [m]:	3.00
Hole No.:	WS1	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	D
Soil Description:	Brown CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
29	73	25	48	100



Legend, based on BS 5930:2015 Code of practice for site investigations

		Plasticity		Liquid Limit
C	Clay	L	Low	below 35
M	Silt	I	Medium	35 to 50
		H	High	50 to 70
		V	Very high	70 to 90
		E	Extremely high	exceeding 90
	Organic	O	append to classification for organic material (eg CHO)	

Note: Moisture Content by BS 1377-2: 1990: Caluse 3.2

Remarks:

Approved: Dariusz Piotrowski
PL Geotechnical Laboratory Manager
Date Reported: 03/04/2019

Signed: Darren Berrill
Geotechnical General Manager
for and on behalf of i2 Analytical Ltd **GF 236.5**

SUMMARY REPORT

Summary of Classification Test Results

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

UKAS TESTING 4041

Environmental Science

Tested in Accordance with:

MC by BS 1377-2: 1990: Clause 3.2; WC by BS EN 17892-1: 2014; Atterberg by BS 1377-2: 1990: Clause 4.3, Clause 4.4 and 5; PD by BS 1377-2: 1990: Clause 8.2

Client: ST Consult Ltd

Client Address: Twigden Barns, Brixworth Road, Creaton, Northamptonshire, NN6 8NN

Contact: Callum Ward

Site Name: 64 Delancey Street, London

Site Address: Not Given

Client Reference: 19-34212

Job Number: 19-34212

Date Sampled: Not Given

Date Received: 20/03/2019

Date Tested: 27/03/2019

Sampled By: Not Given

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	MC	WC	Atterberg				Density			Total Porosity#		
		Reference	Depth Top	Depth Base	Type					% Passing 425um	LL	PL	PI	bulk	dry	PD			
			m	m				%	%	%	%	%	%	Mg/m3	Mg/m3	Mg/m3	%		
1184188	WS1	Not Given	1.50	Not Given	D	Brown CLAY	Atterberg 4 Point	31		100	76	29	47						
1184189	WS1	Not Given	3.00	Not Given	D	Brown CLAY	Atterberg 4 Point	29		100	73	25	48						

Note: # Non accredited; NP - Non plastic

Comments:

Approved: Dariusz Piotrowski
PL Geotechnical Laboratory Manager
Date Reported: 03/04/2019

Signed: Darren Berrill
Geotechnical General Manager
for and on behalf of i2 Analytical Ltd **GF 238.7**