

**Underside of foundation not determined, > 1.20m**



Title : **TRIAL PIT 2**

Project Location : 10 Ferncroft Avenue, Hampstead, NW3 7PH

**RECORD OF HAND  
EXCAVATED TRIAL PIT**

Job No : RML 7096

Scale : Not To Scale

Figure No. **2**

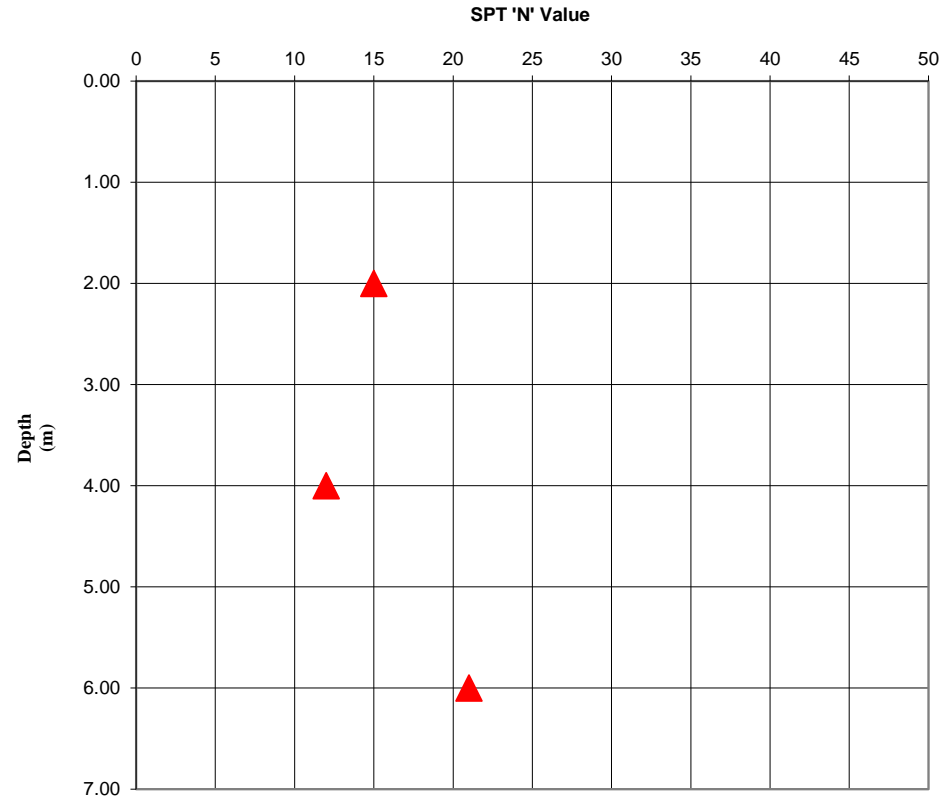
Date : 14 Aug. 2019

**Project Name :** 20 Ferncroft Avenue, Hampstead, NW3 7PH

**Job No. :** RML 7096

**Date :** September 2019

BH1					
Depth (m)	SPT 'N' value				
2.00	15				
4.00	12				
6.00	21				





PROJECT NAME :  
PROJECT NO:

20 Ferncroft Avenue, Hampstead, NW3 7PH  
RML 7096

Date	September 2019
Page	1 of 1

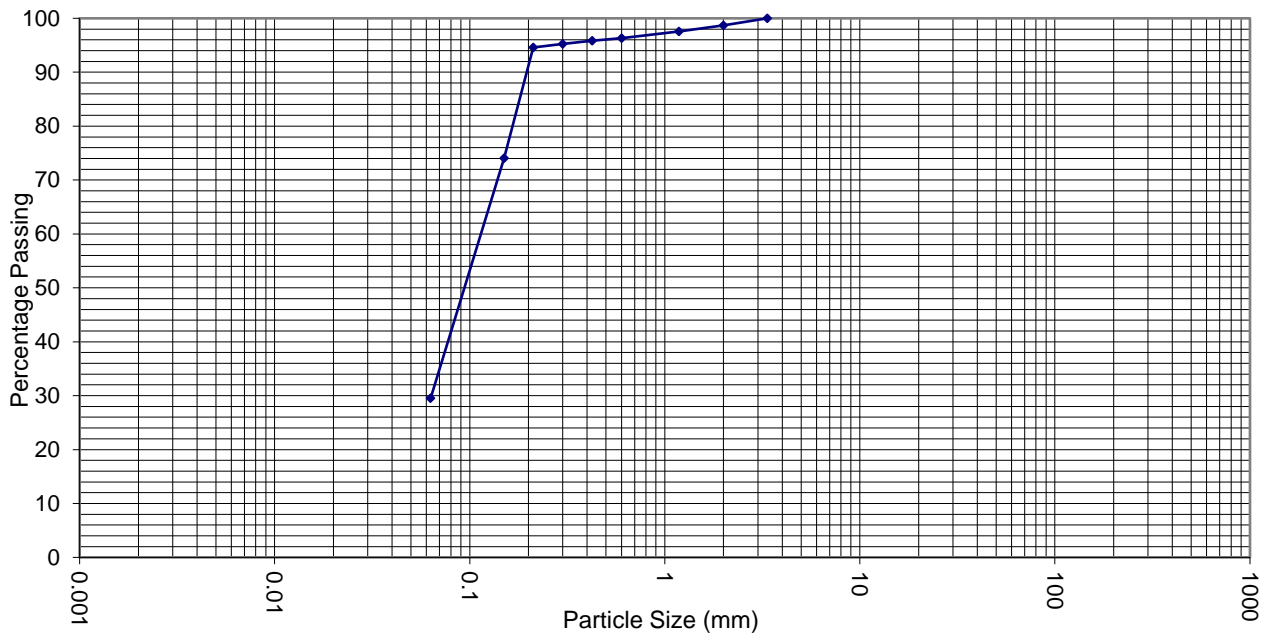
Sample Details			Description	Classification Tests					Density Tests		Undrained Triaxial Compression Tests			Chemical Results				Other tests and comments
BH No.	Depth (m)	Sample No.		MC (%)	LL (%)	PL (%)	PI (%)	<425 mic (%)	Bulk (Mg/m <sup>3</sup> )	Dry (Mg/m <sup>3</sup> )	Cell Pressure kPa	Deviator Stress kPa	Mean Shear Stress kPa	pH	W/S SO <sub>4</sub> (g/l)	Total SO <sub>4</sub> (%)	Water SO <sub>4</sub> (g/l)	
BH1	0.50	D2																
BH1	1.00	D3	Firm brown silty CLAY with pockets of orange-brown and grey silt and occasional selenite crystals.	30	66	28	38	100	1.97	1.52	20	119	59	8.8	0.11			Class CH
BH1	1.50	D4												5.3	0.10			
BH1	2.00	D5	Stiff brown silty CLAY with pockets of orange-brown silt and occasional selenite crystals.	29	62	28	34	100	1.99	1.54	40	228	114					Class CH
BH1	3.00	D7	Stiff grey-brown silty CLAY with pockets of red-brown and orange-brown silt and occasional selenite crystals.	30					2.00	1.54	60	195	97					
BH1	4.00	D9	Stiff grey-brown silty CLAY with pockets of red-brown and orange-brown silt and occasional selenite crystals.	38					1.99	1.44	80	210	105					
BH1	7.00	D15	Firm grey very silty CLAY with pockets of orange-brown silt and occasional selenite crystals.	12					1.99	1.78	140	132	66					
DIS2	0.50	D2												9.6				

**SUMMARY OF GEOTECHNICAL TESTING**

## Results of Particle Size Distribution Tests

<b>Project Name :</b> 20 Ferncroft Avenue, Hampstead, NW3 7PH		<b>Project No.</b> RML 7096	
<b>Borehole No.</b> BH1	<b>Sample No.</b> D11	<b>Depth (m)</b> 5.00	
<b>Test Method : BS 1377 : Part 2 : 1990 : Clause 9</b>			

Sieve (mm)	Passing (%)	Sieve (mm)	Passing (%)
200	100	2	99
125	100	1.18	98
90	100	0.6	96
75	100	0.425	96
63	100	0.3	95
50	100	0.212	95
37.5	100	0.15	74
28	100	0.063	30
20	100	Pipette	
14	100	Particle Size	% Passing
10	100		
6.3	100		
5	100		
3.35	100		



CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Mediu	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

**Description :**

**Orange-brown, clayey, silty fine SAND.**

# ELAB



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## THE ENVIRONMENTAL LABORATORY LTD

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**Analytical Report Number:** 19-24469

**Issue:** 1

**Date of Issue:** 23/08/2019

**Contact:** Malcolm Price

**Customer Details:** Risk Management Ltd  
10 Coopers Place  
Combe Lane  
Godalming  
SurreyGU8 5SZ

**Quotation No:** Q19-01475

**Order No:** RML 7096

**Customer Reference:** RML 7096

**Date Received:** 16/08/2019

**Date Approved:** 23/08/2019

**Details:** 20 Ferncroft Avenue, Hampstead, NW3 7PH

**Approved by:** 

Mike Varley, Technical Manager

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Any comments, opinions or interpretations expressed herein are outside the scope of UKAS accreditation (Accreditation Number 2683)

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## Sample Summary

Report No.: 19-24469, issue number 1

Elab No.	Client's Ref.	Date Sampled	Date Scheduled	Description	Deviations
181755	BH1 D2 0.50	13/08/2019	16/08/2019	Sandy loam	
181756	BH1 D4 1.50	13/08/2019	16/08/2019	Silty clayey loam	
181757	DIS2 D2 0.50	13/08/2019	16/08/2019	Sandy loam	

# Results Summary

Report No.: 19-24469, issue number 1

ELAB Reference	181755	181756	181757
Customer Reference	D2	D4	D2
Sample ID			
Sample Type	SOIL	SOIL	SOIL
Sample Location	BH1	BH1	DIS2
Sample Depth (m)	0.50	1.50	0.50
Sampling Date	13/08/2019	13/08/2019	13/08/2019

Determinand	Codes	Units	LOD			
<b>Soil sample preparation parameters</b>						
Moisture Content	N	%	0.1	16.7	n/t	25.6
Stones Content	N	%	0.1	57.5	n/t	46.5
Material removed	N	%	0.1	57.5	< 0.1	46.5
Description of Inert material removed	N		0	Stones	None	Stones
<b>Metals</b>						
Arsenic	M	mg/kg	1	39.4	n/t	27.9
Cadmium	M	mg/kg	0.5	0.8	n/t	< 0.5
Chromium	M	mg/kg	5	36.6	n/t	38.5
Copper	M	mg/kg	5	1510	n/t	156
Lead	M	mg/kg	5	17600	n/t	987
Mercury	M	mg/kg	0.5	< 0.5	n/t	< 0.5
Nickel	M	mg/kg	5	30.9	n/t	41.5
Selenium	M	mg/kg	1	< 1.0	n/t	< 1.0
Zinc	M	mg/kg	5	320	n/t	166
<b>Anions</b>						
Water Soluble Sulphate	M	g/l	0.02	0.11	0.10	n/t
<b>Inorganics</b>						
Free Cyanide	N	mg/kg	1	< 1.0	n/t	< 1.0
Hexavalent Chromium	N	mg/kg	0.8	< 0.8	n/t	< 0.8
Total Cyanide	M	mg/kg	1	< 1.0	n/t	< 1.0
<b>Miscellaneous</b>						
pH	M	pH units	0.1	8.8	5.3	9.6
<b>Phenols</b>						
Phenol	M	mg/kg	1	< 1	n/t	< 1
M,P-Cresol	N	mg/kg	1	< 1	n/t	< 1
O-Cresol	N	mg/kg	1	< 1	n/t	< 1
3,4-Dimethylphenol	N	mg/kg	1	< 1	n/t	< 1
2,3-Dimethylphenol	M	mg/kg	1	< 1	n/t	< 1
2,3,5-trimethylphenol	M	mg/kg	1	< 1	n/t	< 1
Total Monohydric Phenols	N	mg/kg	5	< 5	n/t	< 5
<b>Polyaromatic hydrocarbons</b>						
Naphthalene	M	mg/kg	0.1	2.1	n/t	0.1
Acenaphthylene	M	mg/kg	0.1	0.9	n/t	< 0.1
Acenaphthene	M	mg/kg	0.1	0.3	n/t	< 0.1
Fluorene	M	mg/kg	0.1	0.5	n/t	< 0.1
Phenanthrene	M	mg/kg	0.1	11.3	n/t	0.6
Anthracene	M	mg/kg	0.1	2.4	n/t	0.1
Fluoranthene	M	mg/kg	0.1	13.4	n/t	0.6
Pyrene	M	mg/kg	0.1	10.5	n/t	0.5
Benzo(a)anthracene	M	mg/kg	0.1	5.4	n/t	0.3
Chrysene	M	mg/kg	0.1	5.6	n/t	0.4
Benzo(b)fluoranthene	M	mg/kg	0.1	4.8	n/t	0.5
Benzo(k)fluoranthene	M	mg/kg	0.1	4.5	n/t	0.8
Benzo(a)pyrene	M	mg/kg	0.1	5.0	n/t	0.5
Indeno(1,2,3-cd)pyrene	M	mg/kg	0.1	3.3	n/t	0.3
Dibenzo(a,h)anthracene	M	mg/kg	0.1	0.9	n/t	< 0.1
Benzo[g,h,i]perylene	M	mg/kg	0.1	2.8	n/t	0.1
Total PAH(16)	M	mg/kg	0.4	73.7	n/t	4.8

# Results Summary

Report No.: 19-24469, issue number 1

ELAB Reference	181755	181756	181757
Customer Reference	D2	D4	D2
Sample ID			
Sample Type	SOIL	SOIL	SOIL
Sample Location	BH1	BH1	DIS2
Sample Depth (m)	0.50	1.50	0.50
Sampling Date	13/08/2019	13/08/2019	13/08/2019

Determinand	Codes	Units	LOD			
<b>BTEX</b>						
Benzene	M	ug/kg	10	< 10.0	n/t	< 10.0
Toluene	M	ug/kg	10	< 10.0	n/t	< 10.0
Ethylbenzene	M	ug/kg	10	< 10.0	n/t	< 10.0
Xylenes	M	ug/kg	10	< 10.0	n/t	< 10.0
MTBE	N	ug/kg	10	< 10.0	n/t	< 10.0
<b>TPH CWG</b>						
>C5-C6 Aliphatic	N	mg/kg	0.01	< 0.01	n/t	< 0.01
>C6-C8 Aliphatic	N	mg/kg	0.01	< 0.01	n/t	< 0.01
>C8-C10 Aliphatic	N	mg/kg	1	< 1.0	n/t	< 1.0
>C10-C12 Aliphatic	M	mg/kg	1	< 1.0	n/t	< 1.0
>C12-C16 Aliphatic	M	mg/kg	1	< 1.0	n/t	< 1.0
>C16-C21 Aliphatic	M	mg/kg	1	< 1.0	n/t	15.8
>C21-C35 Aliphatic	M	mg/kg	1	< 1.0	n/t	403
>C35-C40 Aliphatic	M	mg/kg	1	< 1.0	n/t	24.6
Total aliphatic hydrocarbons (>C5 - C40)	N	mg/kg	1	< 1.0	n/t	443
>C5-C7 Aromatic	N	mg/kg	0.01	< 0.01	n/t	< 0.01
>C7-C8 Aromatic	N	mg/kg	0.01	< 0.01	n/t	< 0.01
>C8-C10 Aromatic	N	mg/kg	1	< 1.0	n/t	< 1.0
>C10-C12 Aromatic	M	mg/kg	1	< 1.0	n/t	< 1.0
>C12-C16 Aromatic	M	mg/kg	1	< 1.0	n/t	< 1.0
>C16-C21 Aromatic	M	mg/kg	1	2.3	n/t	5.9
>C21-C35 Aromatic	M	mg/kg	1	3.9	n/t	282
>C35-C40 Aromatic	M	mg/kg	1	1.5	n/t	13.1
Total aromatic hydrocarbons (>C5 - C40)	N	mg/kg	1	7.8	n/t	301
Total petroleum hydrocarbons (>C5 - C40)	N	mg/kg	1	8.1	n/t	744





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## Results Summary

Report No.: 19-24469, issue number 1

### Asbestos Results

Analytical result only applies to the sample as submitted by the client. Any comments, opinions or interpretations (marked #) in this report are outside UKAS accreditation (Accreditation No2683). They are subjective comments only which must be verified by the client.

Elab No	Depth (m)	Clients Reference	Description of Sample Matrix #	Asbestos Identification	Gravimetric Analysis Total (%)	Gravimetric Analysis by ACM Type (%)	Free Fibre Analysis (%)	Total Asbestos (%)
181755	0.50	BH1 D2	Brown Soil, Stones, Clinker, Brick	No asbestos detected	n/t	n/t	n/t	n/t
181757	0.50	DIS2 D2	Brown Soil, Stones, Clinker	No asbestos detected	n/t	n/t	n/t	n/t

## Method Summary

Report No.: 19-24469, issue number 1

Parameter	Codes	Analysis Undertaken On	Date Tested	Method Number	Technique
<b>Soil</b>					
Free cyanide	N	As submitted sample	22/08/2019	107	Colorimetry
Hexavalent chromium	N	As submitted sample	20/08/2019	110	Colorimetry
pH	M	Air dried sample	22/08/2019	113	Electromeric
Aqua regia extractable metals	M	Air dried sample	20/08/2019	118	ICPMS
Phenols in solids	M	As submitted sample	20/08/2019	121	HPLC
PAH (GC-FID)	M	As submitted sample	21/08/2019	133	GC-FID
Water soluble anions	M	Air dried sample	20/08/2019	172	Ion Chromatography
Low range Aliphatic hydrocarbons soil	N	As submitted sample	21/08/2019	181	GC-MS
Low range Aromatic hydrocarbons soil	N	As submitted sample	21/08/2019	181	GC-MS
BTEX in solids	M	As submitted sample	21/08/2019	181A	GC-MS
Total cyanide	M	As submitted sample	22/08/2019	204	Colorimetry
TPH CWG soil by gc-gc	M	As submitted sample	20/08/2019	214	
Asbestos identification	U	Air dried sample	22/08/2019	PMAN	Microscopy

Tests marked N are not UKAS accredited



## Report Information

Report No.: 19-24469, issue number 1

### Key

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U	hold UKAS accreditation
M	hold MCERTS and UKAS accreditation
N	do not currently hold UKAS accreditation
^	MCERTS accreditation not applicable for sample matrix
*	UKAS accreditation not applicable for sample matrix
S	Subcontracted to approved laboratory UKAS Accredited for the test
SM	Subcontracted to approved laboratory MCERTS/UKAS Accredited for the test
NS	Subcontracted to approved laboratory. UKAS accreditation is not applicable.
I/S	Insufficient Sample
U/S	Unsuitable sample
n/t	Not tested
<	means "less than"
>	means "greater than"

Soil sample results are expressed on an air dried basis (dried at < 30°C), and are uncorrected for inert material removed.

ELAB are unable to provide an interpretation or opinion on the content of this report.

The results relate only to the sample received.

PCB congener results may include any coeluting PCBs

Uncertainty of measurement for the determinands tested are available upon request

Unless otherwise stated, sample information has been provided by the client

### Deviation Codes

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- |   |                                                          |
|---|----------------------------------------------------------|
| a | No date of sampling supplied                             |
| b | No time of sampling supplied (Waters Only)               |
| c | Sample not received in appropriate containers            |
| d | Sample not received in cooled condition                  |
| e | The container has been incorrectly filled                |
| f | Sample age exceeds stability time (sampling to receipt)  |
| g | Sample age exceeds stability time (sampling to analysis) |

Where a sample has a deviation code, the applicable test result may be invalid.

### Sample Retention and Disposal

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All soil samples will be retained for a period of one month

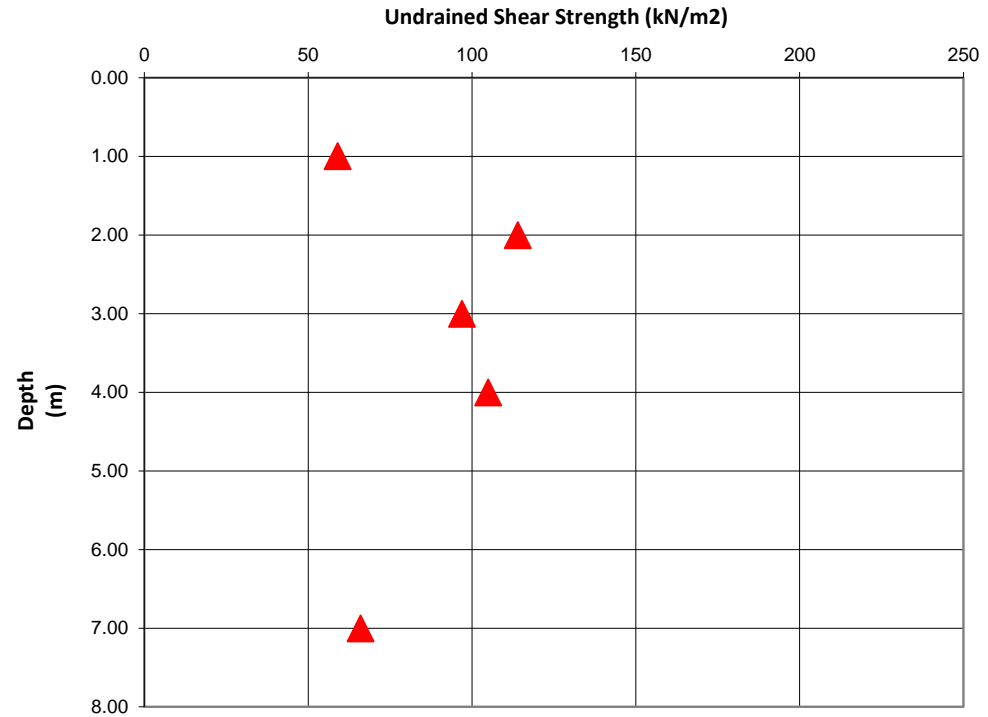
All water samples will be retained for 7 days following the date of the test report

Charges may apply to extended sample storage

**Project Name : 20 Ferncroft Avenue, Hampstead, NW3 7PH**

**Job No. : RML 7096**  
**Date : September 2019**

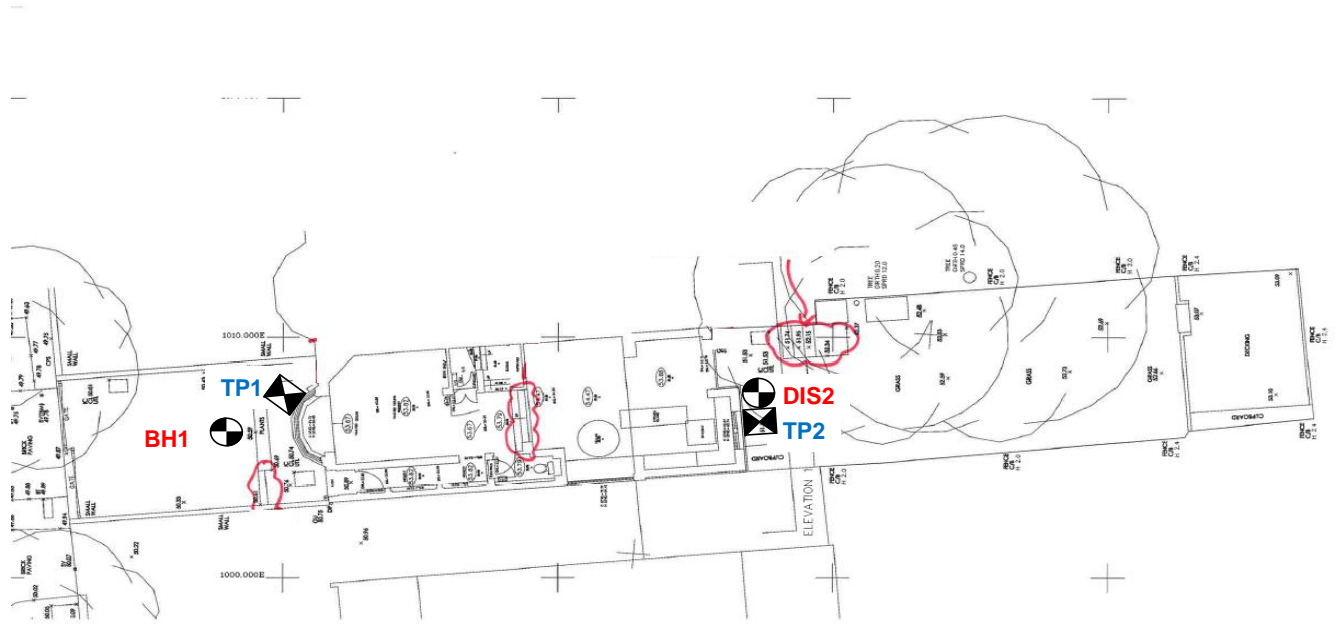
BH1					
Depth (m)	Shear Strength (kN/m <sup>2</sup> )				
1.00	59				
2.00	114				
3.00	97				
4.00	105				
7.00	66				





**Key**

-  Borehole Location
-  Trial Pit Location



Title : **SKETCH FIELDWORK LOCATION PLAN**

**RISK MANAGEMENT LIMITED**  
 Unit 10 Coopers Place, Combe Lane,  
 Godalming, Surrey GU8 5SZ  
 Tel : 01883 343572

Project Location : 20 Ferncroft Avenue, Hampstead, NW3 7PH

Report Date : September 2019	Scale : NTS
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Drawn By : MSP	Drg. No. RML 7096 /1
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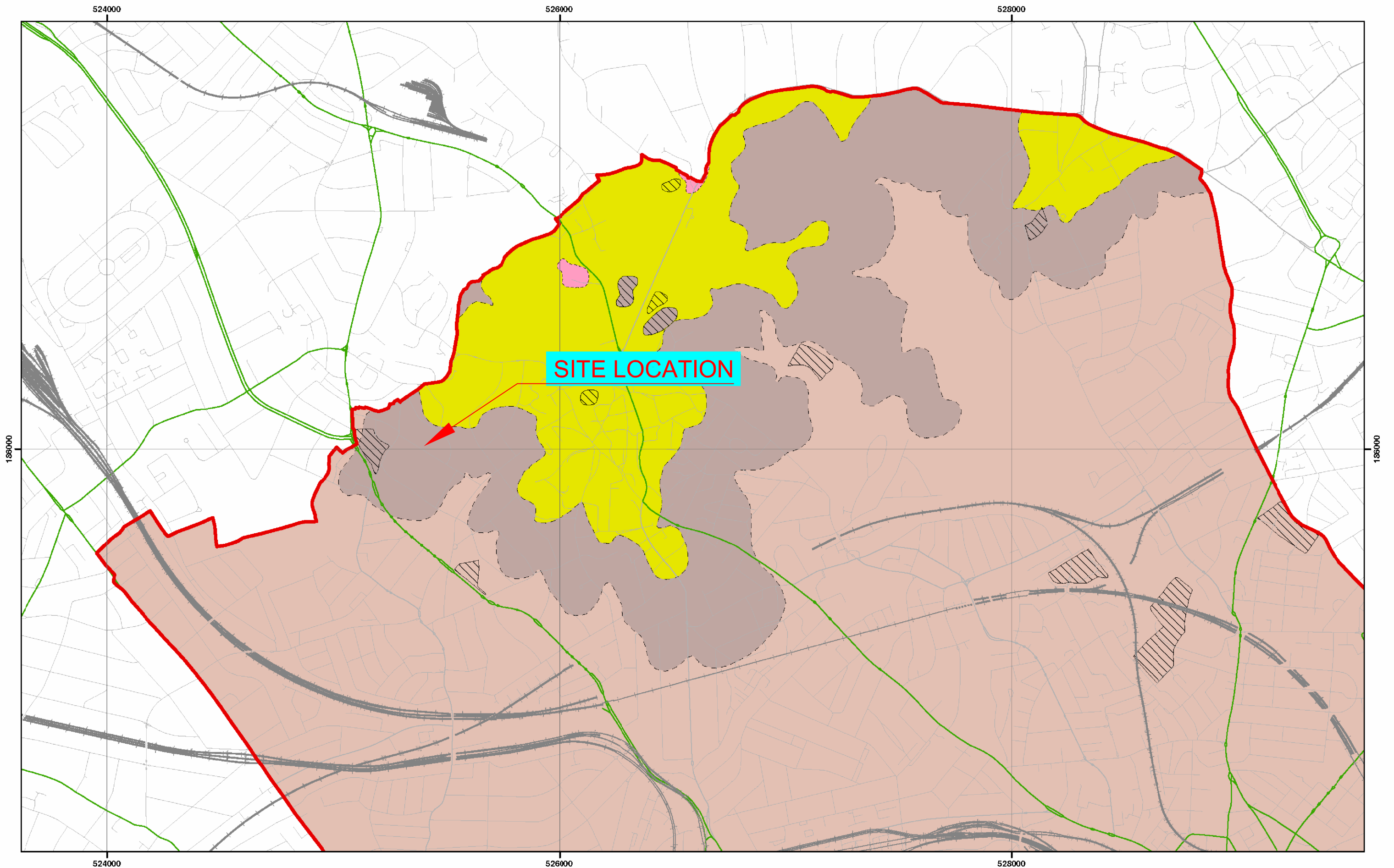


**Appendix J**

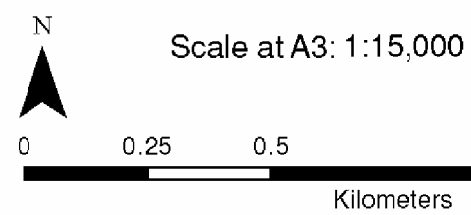
The London Borough of Camden Geological, Hydrogeological and Hydrological Study Maps  
The London Borough of Camden Geological SFRA Maps

JOB NO:	P19-461	ISSUE NO:	1	ISSUE DATE:	12/12/19	Page 25 of 33
AUTHOR:	CMM/GPB	OFFICE:	London	CHECKED BY:	SL	





Data Source: BGS Mapping - Scale 1:10,000



Coordinate System:  
British National Grid  
GCS\_OSGB\_1936

**Legend**

- |                          |                                    |                                |                                |
|--------------------------|------------------------------------|--------------------------------|--------------------------------|
| London Borough of Camden | <b>BGS 1:10K Artificial Ground</b> | <b>BGS 1:10K Drift Geology</b> | <b>BGS 1:10K Solid Geology</b> |
| Railway Lines            | MADE GROUND                        | ALLUVIUM                       | CLAYGATE MEMBER                |
| A Roads                  | WORKED GROUND                      | HACKNEY GRAVEL FORMATION       | LAMBETH GROUP                  |
|                          |                                    | LANGLEY SILT FORMATION         | LONDON CLAY FORMATION          |
|                          |                                    | LYNCH HILL GRAVEL FORMATION    |                                |
|                          |                                    | STANMORE GRAVEL FORMATION      |                                |

NB. Geological boundaries are largely indicative based on available geological mapping data

**Camden Geological, Hydrogeological  
and Hydrological Study**  
North Camden Geological Map

213923

FIGURE 4