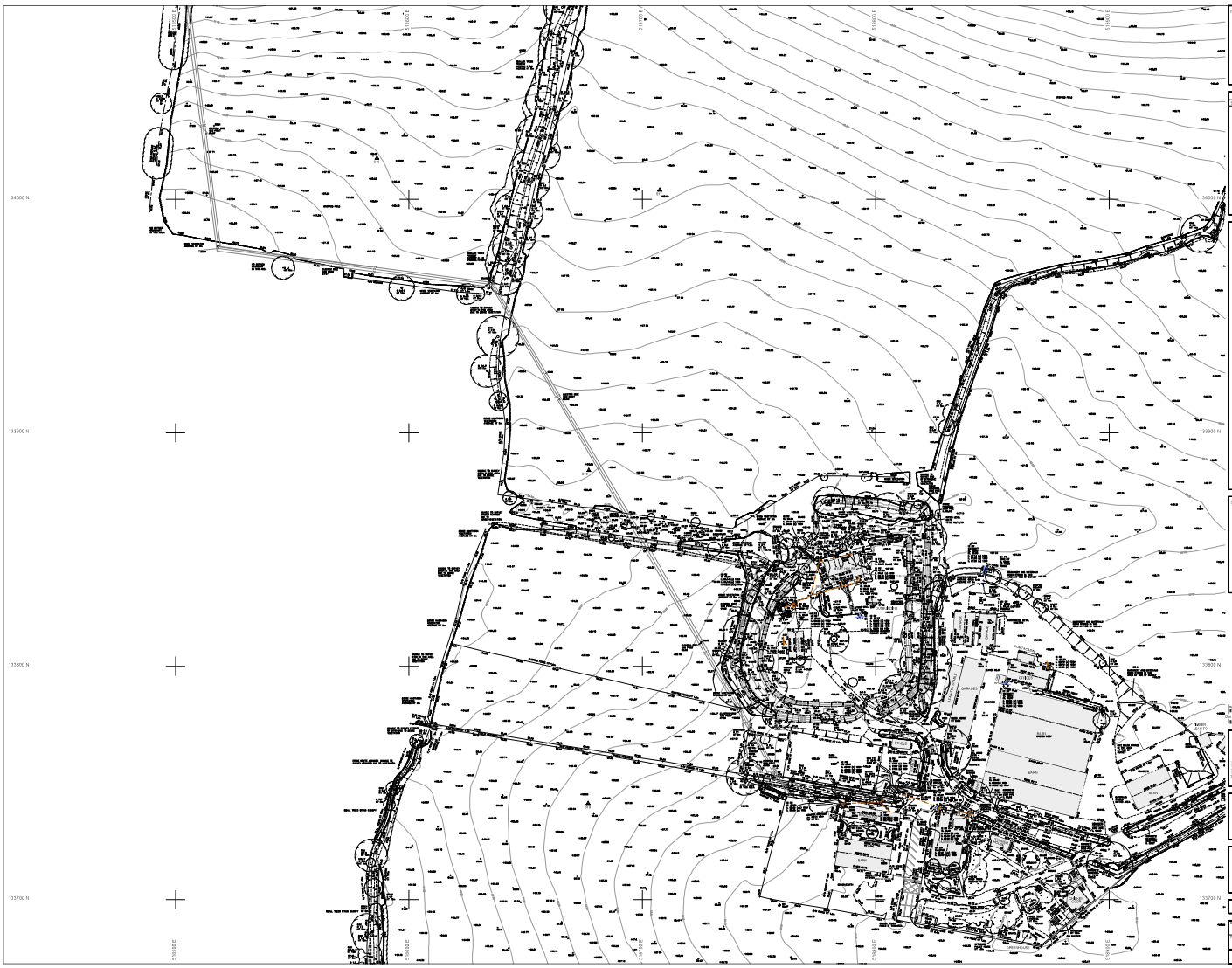


Notes:

1. ALL LEVELS ARE BASED ON ORDNANCE DATUM, DERIVED FROM THE OSGM15 BENCHMARK NETWORK. THE SURVEY CONTROL WAS ESTABLISHED BY GNSS RTK METHODS AND ADJUSTED TO THE OSTN15 GRID SYSTEM. ALL COORDINATES ARE GIVEN IN METRES TO THE BRITISH NATIONAL GRID SYSTEM (TM) BASED ON ETRS89 DATUM.
2. ALL SERVICES ARE PLOTTED FROM VISIBLE EVIDENCE AND RECORDS SUPPLIED BY THE VARIOUS STATUTORY UNDERTAKERS. NO GUARANTEE CAN BE GIVEN AS TO THE ACCURACY OR COMPLETENESS OF THIS INFORMATION.
3. TREE HEIGHTS ARE PLOTTED IN METRES AND ARE ESTIMATED.
4. NO PUBLIC RIGHT OF WAY CROSS OVER OR ADJACENT TO THE SITE.
5. ALL DIMENSIONS SHOULD BE CHECKED ON SITE BEFORE ANY WORK IS COMMENCED.

Coordinate Table

Point	Description	Easting	Northing	Level
50	PEG	519969.208	133952.290	64.231
51	PEG	519966.206	133932.777	63.781
52	PEG	519961.205	133884.986	63.189
53	PEG	519958.204	133865.473	63.253
54	PEG	519949.203	133772.230	61.235
55	PEG	519946.202	133752.717	61.468
56	PEG	519942.715	133729.918	61.683
57	PEG	519934.218	133655.214	64.241
58	PEG	519930.217	133617.218	64.298
59	PEG	519928.216	133598.715	64.298
510	PEG	519139.206	134361.471	73.490
511	PEG	519137.214	134341.958	74.281
512	PEG	519135.213	134321.460	74.295
513	PEG	519135.209	134301.962	74.295
514	PEG	519135.208	134282.463	74.295
515	PEG	519137.211	134143.977	64.230
516	PEG	519138.211	134124.478	64.230
517	PEG	519137.203	134083.249	64.231
518	PEG	519137.202	134063.750	64.231
519	PEG	519136.201	133914.266	64.253
520	PEG	519136.274	133911.269	64.253
521	PEG	519131.213	133894.211	64.253

TOPOGRAPHICAL KEY

Sheet Layout (Not to Scale)

N

mksurveys

Legal & General

Phase 1
Rusper Road
Horsham
West Sussex

Topographical Survey

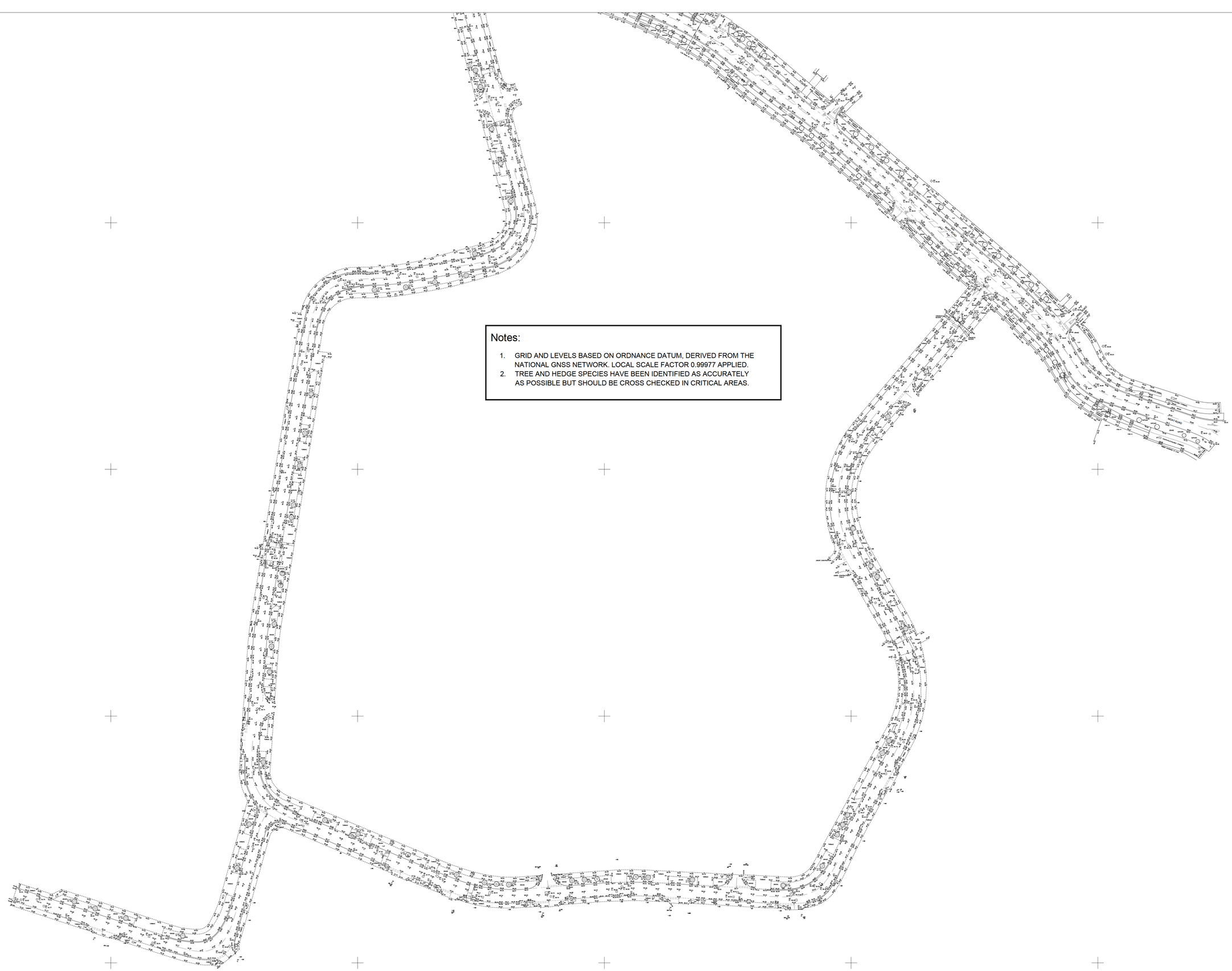
Scale	Sheet Size	Sheet Number	Date
1:500	A0	5	January 2026

Project Number	Rev	Surveyed by	Checked by	Approved by
27971	-	PG/JH	AJ	CP



Notes:

1. GRID AND LEVELS BASED ON ORDNANCE DATUM, DERIVED FROM THE NATIONAL GNSS NETWORK. LOCAL SCALE FACTOR 0.99977 APPLIED.
2. TREE AND HEDGE SPECIES HAVE BEEN IDENTIFIED AS ACCURATELY AS POSSIBLE BUT SHOULD BE CROSS CHECKED IN CRITICAL AREAS.



Notes:

1. GRID AND LEVELS BASED ON ORDNANCE DATUM, DERIVED FROM THE NATIONAL GNSS NETWORK. LOCAL SCALE FACTOR 0.99977 APPLIED.
2. TREE AND HEDGE SPECIES HAVE BEEN IDENTIFIED AS ACCURATELY AS POSSIBLE BUT SHOULD BE CROSS CHECKED IN CRITICAL AREAS.

Appendix C

Endeavour Drilling Ground Investigation

GROUND INVESTIGATION REPORT (FACTUAL)

Phase 1- Land North of Horsham, West Sussex

Moathouse Farm,

Rusper Road,

Horsham,

RH12 4QR,

Client: Legal & General (Strategic Land North of Horsham) Ltd

Consultant: Stantec UK Limited

March 2020

Report No: END20-007

Endeavour Drilling Ltd
Unit 7
Mapledean Industrial Estate
Maldon Road
Latchingdon
Essex
CM3 6LG

GROUND INVESTIGATION REPORT (FACTUAL)

Phase 1 - Land North of Horsham, West Sussex

Author: Jake Wood BSc (Hons), FGS

Signed: [redacted]

Checked By: Oliver Wendland BSc (Hons), FGS

Signed: [redacted]

Revision	Date	Description	Prepared	Checked
FINAL	19.03.20	Factual Report	JJW	OW

CONTENTS: -

1. INTRODUCTION 4
2. LIMITATIONS 4
3. FIELDWORK 5
4. LABORATORY TESTING 10

APPENDIX: -

APPENDIX A: SITE LOCATION PLAN
APPENDIX B: ROTARY CORED BOREHOLE LOGS
APPENDIX C: FALLING HEAD TESTS RESULTS (BOREHOLES)
APPENDIX D: WINDOWLESS SAMPLE BOREHOLE RECORDS
APPENDIX E: MACHINE EXCAVATED TRIAL PIT RECORDS
APPENDIX F: TRL-DCP INSITU TEST RESULTS
APPENDIX G: SOAKAWAY TEST RESULTS
APPENDIX H: HAND EXCAVATED TRIAL PIT RECORDS
APPENDIX I: MONITORING RESULTS
APPENDIX J: GEOTECHNICAL LABORATORY RESULTS
APPENDIX K: CHEMICAL ANALYSIS RESULTS

1. INTRODUCTION

Endeavour Drilling Limited received instruction to carry out Phase 1 ground investigations to aid in the design and construction of a proposed residential development located on Land North of Horsham, West Sussex. The nearest postcode to the site is RH12 4QR.

The ground investigation was instructed by Stantec UK Limited, on behalf of the client; Legal and General (Strategic Land North of Horsham) Ltd and comprised of eight (8) rotary core boreholes, six (6) windowless sample boreholes, fifty-six (56) machine excavated trial pits, with associated sampling and insitu testing, one (1) infiltration test, fifty-five (55) TRL-DCP insitu tests, surface water sampling from four (4) selected locations from existing water courses and finally, variable head tests were carried out at the location of two (2) rotary core boreholes. Laboratory testing, comprising of geotechnical and chemical testing was also undertaken.

It should be noted that one (1) windowless sample borehole (WS203) and one (1) machine excavated trial pit (TP209) along with its associated infiltration test was not carried out due to restricted access. Two additional (2) infiltration tests were not carried out at TP247 and TP252 due to groundwater accumulating in the trial pit. One (1) TRL-DCP was abandoned at TP233 due to services in close proximity.

Semi-permanent groundwater standpipes were installed within all of the rotary core boreholes and all of the window sample boreholes for future gas and groundwater monitoring.

This report presents the factual findings of the ground investigation, together with the results of the geotechnical and chemical laboratory testing.

Where applicable, investigation techniques, sampling, logging of soils and insitu testing complied with the requirements of British Standard BS5930: 2015 – 'Code of Practice for Site Investigations'.

2. LIMITATIONS

This report is based upon the results of the ground investigation and on details of the scheme provided by the consultant; Stantec.

This report has been prepared for the benefit of Legal and General (Strategic Land North of Horsham) Ltd and its contents should not be relied upon by others without the written authority of Endeavour Drilling Limited (ED).

If any unauthorised third party makes use of this report they do so at their own risk and ED owes them no duty of care or skill.

All information provided by others is taken in good faith as being accurate, but ED cannot and does not accept any liability for the detailed accuracy, errors, or omissions within such information.

Subsoils are by their nature hidden from view and no investigation can be exhaustive to the extent that all ground conditions are revealed. Conditions may well be present beneath the site which were not evident from the investigations carried out.

3. FIELDWORK

The fieldwork was undertaken between the 28th November and 20th December 2019 and comprised the following:

- Eight (8) rotary core boreholes formed to final depths of between 8.0mbgl and 19.50mbgl.
- Six (6) windowless sample boreholes drilled to depths of between 1.75mbgl and 4.80mbgl.
- Fifty-six (56) machine excavated trial pits were formed to depths ranging from between 0.50m and 4.0mbgl.
- One (1) soakaway test carried out in accordance with BRE365, within one trial pit.
- Fifty-six (55) dynamic cone penetration tests (TRL-DCPs) were completed from surface.
- Six (6) falling head tests carried out at the location of two rotary core boreholes.
- Four (4) water samples selected locations from existing water courses.
- Groundwater and gas monitoring totalling six (6) visits.

The exploratory hole positions for the ground investigation were predetermined by a representative of Stantec prior to undertaking the fieldwork. An exploratory hole location plan is presented as Figure 1 in Appendix A.

All exploratory positions were service traced with Ground Penetrating Radar and subsequently scanned using a Cable Avoidance Tool (CAT), for the presence of underground buried services by suitably trained ED staff.

3.1. Rotary Cored Boreholes

In total, eight rotary boreholes utilising a Comacchio 205 track-mounted rotary drilling rig, employing a PWF triple tube core barrel utilising a water drilling flush method were completed. This rotary drilling method is designed to maximise core recovery and produces 93mm diameter core retrieved in rigid plastic liners. Dynamic sampling techniques commenced from between 1.20mbgl and 3.00mbgl in cohesive strata, whilst rotary rock coring commenced from between 2.0 and 3.0mbgl once mudstone was encountered and to target depth.

Disturbed and environmental samples were recovered from the cohesive strata for possible future geotechnical and chemical analysis.

Standard or Cone Penetration Tests (SPT / CPT) were undertaken using an automatic trip hammer at 1.00m intervals to 6.0mbgl and at 1.50m centres where possible to target depth. The number of blows required to advance a standard split spoon over the final 300mm of a 450mm total drive was recorded and is shown on the borehole records as the penetration resistance ('N' value).

The retrieved plastic core liners were split open to expose the core and to allow detailed logging and photography by an engineering geologist. In addition, selected sub samples were taken of appropriately sized intact core to allow for laboratory testing.

Upon completion a combination of 19mm and 50mm HDPE standpipes were installed and finished at surface with a raised cover. The design of the standpipes can be summarised in Table 1 below.

Table 1: Standpipe Design (Rotary Core)

BH No.	Standpipe Diameter (mm)	Slotted Section (mbgl)	Plain Section (mbgl)	Gravel Surround (mbgl)	Bentonite Seal (mbgl)
BH201	50	1.00 – 6.00	GL – 1.00	1.00 – 6.00	0.20 – 1.00
BH202	19	1.00 – 7.00	GL – 1.00	1.00 – 7.00	0.20 – 1.00
BH203	50	1.00 – 6.00	GL – 1.00	1.00 – 6.00	0.20 – 1.00
BH204	50	1.00 – 6.00	GL – 1.00	1.00 – 6.00	0.20 – 1.00
BH205	50	1.00 – 6.00	GL – 1.00	1.00 – 6.00	0.20 – 1.00
BH206	50	1.00 – 6.00	GL – 1.00	1.00 – 6.00	0.20 – 1.00
BH207	19	6.00 – 7.00	GL – 6.00	6.00 – 7.00	0.20 – 6.00
BH208	50	1.00 – 6.00	GL – 1.00	1.00 – 6.00	0.20 – 1.00

The rotary cored borehole logs are presented in Appendix B and give both descriptions and depths of strata encountered, together with details of samples taken, in-situ tests, photographs and any other relevant information.

3.2. Falling Head Test

In total, six falling head tests were carried out within rotary boreholes BH202 and BH207, during the drilling process at depths of 2mbgl, 4mbgl and 6mbgl and as specified by the consultant Stantec UK Ltd.

All permeability tests were carried out in accordance with BS 5930:1999. The results of the tests are given within Appendix C.

It should be noted that it was not possible to calculate the permeability due to a low rate of fall.

3.3. Windowless Sample boreholes

In total, six windowless sample boreholes were completed utilising a Dando Terrier rig operated by a two-man crew. These rigs use hydraulics to lift a percussive hammer to drive a series of small diameter tubes into the ground.

It should be noted that all window samples were terminated prior to reaching target depth, were further driving would have caused loss or damage of equipment. Further details are shown in the remarks section on the typed logs.

Three window samples (WS202, WS204, WS205) were terminated due to encountering services whilst hand pitting prior to drilling. These inspection pits were backfilled with arisings and reinstated.

Small disturbed and larger bulk samples were recovered from throughout the window samples for possible future chemical and geotechnical testing. Samples required for chemical analysis were recovered in plastic containers and then stored in refrigerated cool boxes for transport to the analytical laboratory.

Standard Penetration Tests (SPT / CPT), were undertaken at 1.20mbgl at the bottom of each inspection pit and 1.00m intervals to the base of the borehole.

Upon completion 50mm diameter HDPE groundwater standpipes were installed within all window samples and finished at surface with either a flush or raised cover. The design of the standpipes can be summarised in Table 2 overleaf.

Table 2: Standpipe Design (Windowless Samples)

BH No.	Diameter (mm)	Slotted Section (mbgl)	Plain Section (mbgl)	Gravel Surround (mbgl)	Bentonite Seal (mbgl)
WS201	50	1.00 – 2.00	GL – 1.00	1.00 – 2.00	0.20 – 1.00
WS202A	50	0.80 – 1.80	GL – 0.80	0.80 – 1.80	0.20 – 0.80
WS204A	50	1.00 – 2.00	GL – 1.00	1.00 – 2.00	0.20 – 1.00
WS205A	50	0.60 – 1.60	GL – 0.60	0.60 – 1.60	0.20 – 0.60
WS206	50	1.00 – 2.00	GL – 1.00	1.00 – 2.00	0.20 – 1.00
WS207A	50	1.00 – 4.50	GL – 1.00	1.00 – 4.50	0.20 – 1.00

The windowless sample borehole records are presented in Appendix D and give both descriptions and depths of strata encountered, together with details of samples taken.

3.4. Machine Excavated Trial Pits

In total, fifty-six trial pits were mechanically excavated utilising both an eight tonne and thirteen tonne tracked excavator. Each trial pit was formed to a depth ranging from 0.50mbgl (TP233) to 4.00mbgl (various).

It should be noted that TP233 was terminated at 0.50mbgl prior to reaching target depth due to encountering a suspected water pipe.

Small disturbed and larger bulk samples were recovered from throughout the window samples for possible future chemical and geotechnical testing. Samples required for chemical analysis were recovered in plastic containers and then stored in refrigerated cool boxes for transport to the analytical laboratory.

A note was made of any groundwater encountered, and of the stability of the trial pit sides during excavation.

The trial pit logs are presented in Appendix E and give both descriptions and depths of the strata encountered, together with details of samples taken, insitu tests, and any other relevant information.

3.5. TRL-DCP Insitu Tests

In total, fifty-five TRL-DCP tests were completed from surface.

The TRL-DCP uses an 8kg hammer dropping over a height of 575mm and a 60º cone that has a maximum diameter of 20mm. The instrument is held vertically. A hammer is lifted to the handle before the operator lets it fall freely to achieve penetration of the ground surface.

Penetration readings are taken in increments of 100mm and the number of blows between each reading is recorded and is proportional to the insitu density of the material encountered.

The results are presented in Appendix F.

3.6. Soakaway Testing

One soakaway test was carried out within one trial pit (TP202) utilising a thirteen tonne tracked excavator. This test was carried out at a targeted depth specified by the Consultant and were undertaken in general accordance with BRE Digest 365 “Soakaway Design” 2007.

The dimensions of the pit were measured and then filled with water, the fall in water level was measured at regular intervals in order that infiltration rates may be calculated.

The results are presented in Appendix G.

3.7. Hand Excavated Trial Pits

In total, three trial pits were hand excavated utilising insulated hand tools to gather additional environmental samples for possible future chemical analysis. Each hand pit was formed to a target depth of 1.20mbgl.

A note was made of any groundwater encountered, and of the stability of the trial pit sides during excavation.

The hand pits logs are presented in Appendix H and give both descriptions and depths of the strata encountered, together with details of samples taken, insitu tests, and any other relevant information.

3.8. Gas & Groundwater Monitoring

The standpipes as detailed in Table 1 and 2 above, have been monitored by a ED technician every two weeks for a period of twelve weeks, totalling six visits for methane, carbon dioxide and oxygen using a GA2000 Infra-Red Gas Analyser. Atmospheric pressure, gas flow rate and water levels were also recorded during each visit. The groundwater monitoring results are presented in appendix I.

3.9. Geology

The British Geological Survey 1:50,000 scale, Solid and Drift Edition, indicates that majority of the site is underlain by the Weald Clay Formation. At Moathouse Farm an ironstone band can be found that runs in an East-West trend and Alluvium is present to the South East of the site near Channels Brook.

4. LABORATORY TESTING

The laboratory testing programme comprised of both geotechnical and chemical testing for use in classifying and assessing the ground conditions encountered.

Laboratory testing was undertaken by UKAS / MCERTS accredited laboratories; the geotechnical testing by I2 Analytical and chemical analysis by ALS Environmental. The results are included in Appendices J and K respectively.

4.1. Geotechnical Testing

The geotechnical laboratory testing was undertaken to provide classification and strength data on selected samples.

Twenty-seven samples were tested for moisture content to enable the material to be classified and its engineering behaviour assessed in accordance with BS1377, Part 2:1990; clause 3.2, 4.4, 5.3 and 5.4.

Atterberg limits were determined for Twenty-seven samples of cohesive material to enable the material to be classified and its engineering behaviour assessed in accordance with BS1377, Part 2:1990; clause 3.2, 4.4, 5.3 and 5.4.

Twenty-five particle size distribution tests were carried out, using the wet sieve method. These tests were undertaken in accordance with BS1377, Part 2:1990; clause 9.

The quantitative determination of the particle size distribution for fine soils, from coarse silt to clay was undertaken on eighteen samples, assessed in accordance with BS1377, Part 2: 1990, clause 9.4, using the sedimentation by pipette method.

Fifty-six samples were tested for shear strength using a calibrated laboratory hand shear vane.

Twelve samples were tested for dry density and moisture content relationship in accordance with BS1377, Part 4:1990; clause 3.5 for heavy compaction using a 2.50kg rammer with a freefall height of 450mm.

Fourteen uniaxial compressive strength tests were performed on suitable samples of rock, with the deformation in uniaxial compression also being recorded together with seventeen point load tests. All tests were undertaken in general accordance with ISRM suggested methods 1981-1985.

4.2. Chemical Testing

Thirty-seven samples of soil were analysed for a comprehensive range of determinants summarised in Tables 3 to 5 presented below:

Table 3: Stantec basic soil suite

Arsenic	*Zinc*
Cadmium	*Water Soluble Sulphate*
Chromium	*TPH – CWG (C5 - 35)*
Copper	*Speciated PAH*
Lead	*Phenols*
Mercury	*Asbestos Screen*
Nickel	*Soil Organic Matter*
Selenium *Polychlorinated Biphenyls (PCB)*	*pH*

Table 4: Stantec herbicides soil suite

Organophosphorus	*Triazine Herbicides*
Organochlorine	*Acid Herbicides*

Table 5: Stantec geochemical test suite

Asbestos Quantification by Gravimetric Analysis	*Asbestos Quantification by Phase Contrast Optical Microscopy*

In order to evaluate any aggressive tendency of the sub soil to buried concrete, thirteen soil samples were analysed in accordance with the BRE SD1 Suite, comprising pH, total sulphate, total sulphide, water soluble sulphate, chloride, nitrate and magnesium.

A total of eleven water samples were recovered during the second round of monitoring and were analysed for a comprehensive range of determinants summarised in Table 6 and Table 7 below:

Table 6: Stantec basic water suite

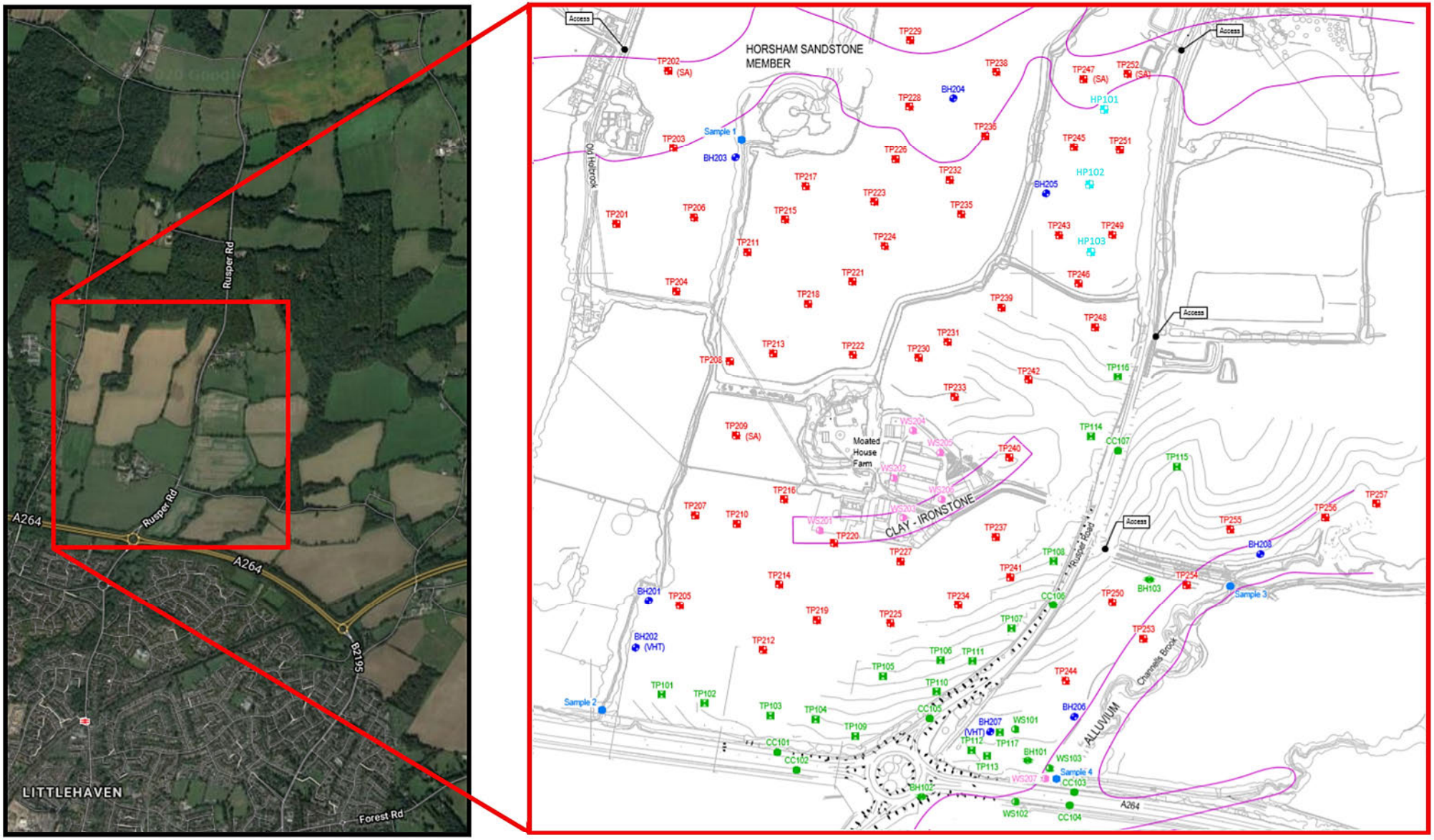
Arsenic	*Chloride*
Cadmium	*Water Soluble Sulphate*
Chromium	*TPH – CWG (C5 - 35)*
Copper	*Speciated PAH*
Lead	*Phenols*
Mercury	*pH*
Nickel	*Calcium*
Selenium *Polychlorinated Biphenyls (PCB)*	*Dissolved Organic Carbon*
Zinc	*Total Alkalinity*
Ammoniacal Nitrogen	*Electrical Conductivity*

Table 7: Stantec herbicides water suite

Pesticides Suite I	*Pesticides Suite III*
Pesticides Suite II	

APPENDIX A

Site Location Plan



PROJECT:
PHASE 1 LAND NORTH OF HORSHAM, WEST SUSSEX

TITLE:
EXPLORATORY HOLE LOCATION PLAN

CLIENT:
LEGAL AND GENERAL LTD

endeavour drilling
GEO-ENVIRONMENTAL DRILLING SPECIALISTS

SCALE:	JOB No.
NTS	J4175
DRAWN: JJW	DATE:
CHECKED: MJS	29/01/20

KEY:
- Deep Boreholes
- Trial Pit
- Windowless Sample Borehole
- Surface Water Sample Location
- Hand Pit
- (SA) Soakaway Location
- (VHT) Variable Head Test Location
- Existing Exploratory Hole Locations (Hydrock, 2019)

REV:	DATE:	DETAILS:	DRW:	CHK:

DWG No: FIGURE 1

REV:

APPENDIX B

Rotary Core Borehole Records

endeavour drilling

Contract Name:	Client:	Borehole ID:
P1, Land North of Horsham, West Sussex	Legal and General (Strategic Land North of Horsham) Ltd	BH201

Contract Number:	Date Started:	Logged By:	Checked By:	Status:	Sheet 1 of 2
J4175	26/11/2019	OW	MJS	FINAL	

Geobore 'S' Rotary Drilling Log	Easting:	Northing:	Ground Level:	Plant Used:	Print Date:	Scale:
	518567.1	133617.2	53.36mOD	Comacchio205	21/02/2020	1:50

Weather: Frequent showers | Termination: Reached target depth | SPT Hammer: SPT5 Energy Ratio: 65%

Depth	TCR	SCR	RQD	FI	Sample	SPT	Level (mAOD)	Depth (m) (Thickness)	Strata Description	Water Strike	Backfill/ Installation
					0.35 D1 0.50 ES1 HV 0.50m, 83kPa 0.80		53.10	0.25	TOPSOIL - Light brown sandy CLAY with frequent rootlets <2mm (living).		
								(0.45)	Stiff light brown mottled orangish brown and light grey sandy CLAY. [RESIDUAL WEALD CLAY FORMATION]		
							52.66	0.70			
					0.80 - 1.20 B1 D2 HV 0.90m, 75kPa 1.00 ES2 1.50 D3	SPT(S) 1.20m, N=19 (4,3/4,5,5,5)		(0.50)	Stiff light brown mottled orangish brown and light grey sandy CLAY with frequent extremely weak, gravel of fine to coarse angular to sub-angular sandstone, mudstone and limestone. (RESIDUAL WEALD CLAY FORMATION)		
							52.16	1.20			
								(0.80)	Stiff dark brown mottled orangish brown sandy CLAY with occasional gravel of extremely weak fine to coarse angular to sub-rounded mudstone and ironstone lithorelics and occasional lenses of light grey silty clay (<4mm in thickness). (RESIDUAL WEALD CLAY FORMATION)		
							51.36	2.00			
2.00 - 3.50	100	12	7	25	1.80 - 2.00 D4 2.00 - 2.45 UT1 2.84 - 2.94 C1	SPT(S) 2.50m, 45 (15,10/45 for 280mm)	50.76	2.60			
								(0.60)	Stiff dark brown mottled dark orangish brown sandy CLAY with occasional to rare extremely weak, fine to coarse angular to subangular, fine to coarse mudstone lithorelics and occasional lens of light grey silty clay. (DESTRUCTURED WEALD CLAY FORMATION)		
								(0.90)	*...between 2.45m to 2.50mbgl becoming fissured. Fissures are extremely closely to very closely spaced, planar with rough and smooth surfaces. Apertures are tight to moderately wide and clean.*		
					3.10 - 3.42 C2	SPT(C) 3.50m, 100 (14,11/100,,,)	49.86	3.50	Very stiff to light grey slightly sandy CLAY with dark orange staining penetrating up to 12mm, thickly interbedded with very weak dark brownish grey thickly laminated mudstone. Fractures are horizontal, extremely closely to closely spaced (20-100-40) planar with rough surfaces. Apertures are moderately wide to wide and clean. Weathering is dark orangish brown and dark brown penetrating up to 20mm on fractured surfaces. (DISTINCTLY TO PARTIALLY WEATHERED CLAY)		
3.50 - 4.50	100	56	32	16	4.00 - 4.18 C3						
						SPT(C) 4.50m, 100 (17,8/100,,,)		(2.50)			
4.50 - 6.00	100	85	51	13	5.55 - 5.90 C4				Extremely weak to very weak thinly laminated to thinly bedded MUDSTONE. With occasional bands recovered as very stiff clay. Fractures are horizontal, very closely to closely spaced (30-180-70) planar with rough surfaces. Apertures are partly open to moderately wide and clean. Weathering is dark orange and reddish brown penetrating up to 3mm along fractured surfaces. (PARTIALLY WEATHERED WEALD CLAY FORMATION)		
						SPT(C) 6.00m, 100 (25,/100 for 262mm)	47.36	6.00			
6.00 - 7.50	100	98	73	6	6.40 - 6.75 C5				*...below 4.70mbgl weathering becoming rare. Between 4.50m to 6.00m fractures are horizontal to subhorizontal, very closely to widely spaced (20-350-123), planar with rough and smooth surfaces. Apertures are tight to wide with occasional clay infilling.*		
						SPT(C) 7.50m, 100 (25,/100 for 240mm)		(3.00)	Weak dark grey thinnly to thickly laminated MUDSTONE with rare localised bands recovered as very stiff silty clay (<262mm). Fractures are horizontal, closely to widely spaced, (40-356-132) planar with rough and smooth surfaces. Apertures are moderately wide to wide with occasional clay infilling. (UNWEATHERED WEALD CLAY FORMATION)		
7.50 - 9.00	100	89	26	20	8.42 - 8.58 C6				*...Between 7.50-9.00m fractures are horizontal to subhorizontal very closely to closely spaced (8mm-140mm-49). planar with rough and smooth surfaces. Apertures are tight to moderately wide with occasional clay infilling.*		
						SPT(C) 9.00m, 100 (10,15/100 for 262mm)	44.36	9.00			
9.00 - 10.50	100	93	49	8	9.86 - 10.14 C7				Moderately weak thickly laminated MUDSTONE. Fractures are horizontal to subhorizontal, closley to medium spaced (80-220-100) planar with rough and smooth surfaces. Apertures are moderately wide to wide with occasional mudstone recovered as angular to subangular, fine to coarse gravel. (UNWEATHERED WEALD CLAY FORMATION)		

Start & End of Shift Observations

Date	Time	Depth (m)	Casing (m)	Water (m)
25-11-2019	16:00	2.60	1.50	
26-11-2019	16:00	4.50	1.50	
27-11-2019	16:00	12.00	1.50	

Borehole Diameter

Depth (m)	Dia (mm)
1.20	300
2.00	130

Casing Diameter

Depth (m)	Dia (mm)

Flush Information

Top (m)	Base (m)	Flush Type	Return	Flush Colour

Installation

Top (m)	Base (m)	Type	Dia (mm)
0.00	1.00	PLAIN	50
1.00	6.00	SLOTTED	50

Remarks:

1. Inspection pit hand excavated to 1.20mbgl. 2. Dynamic sampled to 2.0mbgl, then rotary cored with PWF and water flush to 12.0mbgl. 3. No ground water encountered before water flush. 4. 50mm monitoring well installed to 6.0mbgl on completion.

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
1.20			20	0.96	

Fracture spacing reported as Index average over 1m. TCR, SCR and RQD reported in %

endeavour drilling

Contract Name:	Client:	Borehole ID:
P1, Land North of Horsham, West Sussex	Legal and General (Strategic Land North of Horsham) Ltd	BH201

Contract Number:	Date Started:	Loggged By:	Checked By:	Status:	Sheet 2 of 2
J4175	26/11/2019	OW	MJS	FINAL	

Geobore 'S' Rotary Drilling Log	Easting:	Northing:	Ground Level:	Plant Used:	Print Date:	Scale:
	518567.1	133617.2	53.36mOD	Comacchio205	21/02/2020	1:50

Weather: Frequent showers | Termination: Reached target depth | SPT Hammer: SPT5 Energy Ratio: 65%

Samples & In Situ Testing							Strata Details				Groundwater	
Depth	TCR	SCR	RQD	FI	Sample	SPT	Level (mAOD)	Legend	Depth (m) (Thickness)	Strata Description	Water Strike	Backfill/ Installation
						SPT(C) 10.50m, 100 (25 for 20mm/100 for 50mm)			(3.00)	**please note run 10.50m to 12.00mbgl still stuck in barrel within borehole.		
							41.36		12.00	End of Borehole at 12.00m		

11 12 13 14 15 16 17 18 19 20

Start & End of Shift Observations				
Date	Time	Depth (m)	Casing (m)	Water (m)
25-11-2019	16:00	2.60	1.50	
26-11-2019	16:00	4.50	1.50	
27-11-2019	16:00	12.00	1.50	

Borehole Diameter		Casing Diameter	
Depth (m)	Dia (mm)	Depth (m)	Dia (mm)
1.20	300		
2.00	130		

Flush Information				
Top (m)	Base (m)	Flush Type	Return	Flush Colour

Installation			
Top (m)	Base (m)	Type	Dia (mm)
0.00	1.00	PLAIN	50
1.00	6.00	SLOTTED	50

Remarks:

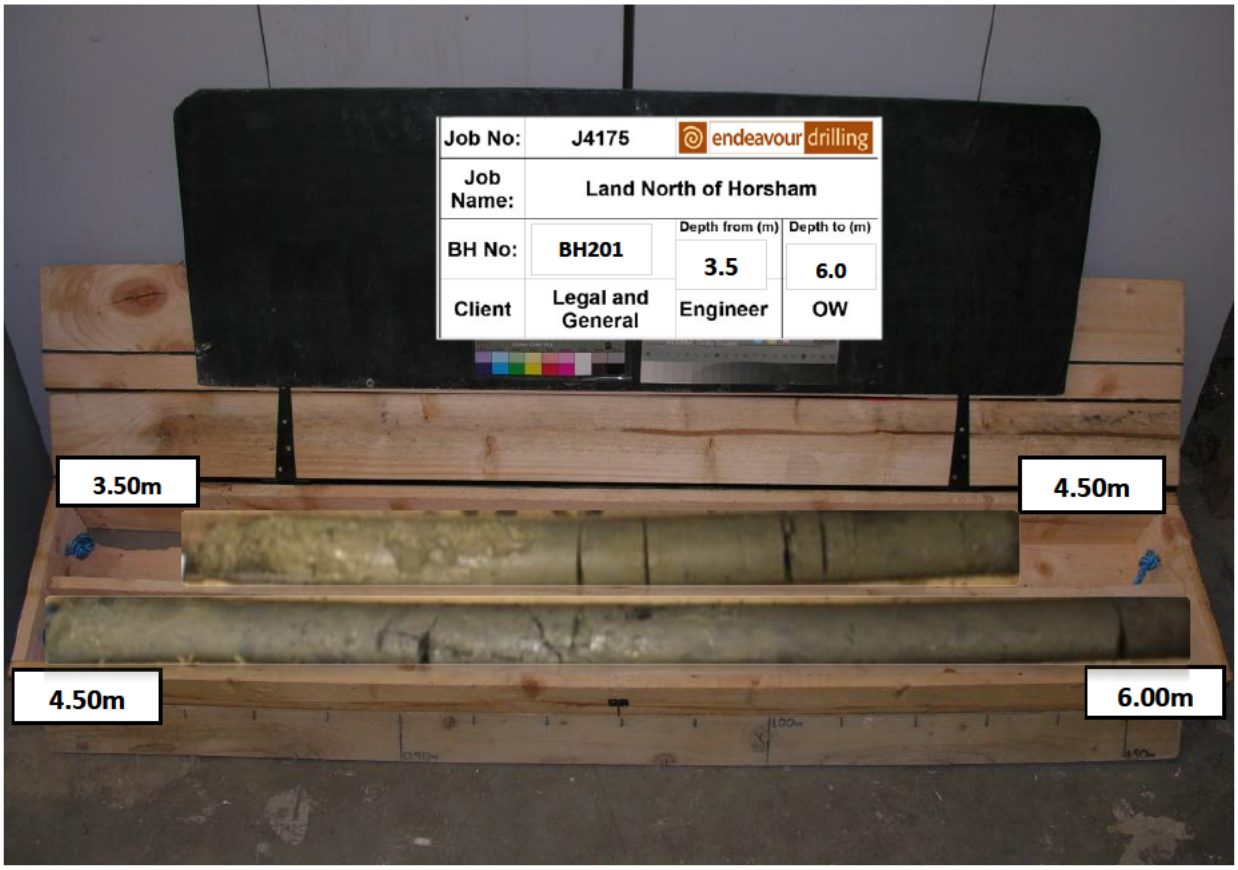
1. Inspection pit hand excavated to 1.20mbgl. 2. Dynamic sampled to 2.0mbgl, then rotary cored with PWF and water flush to 12.0mbgl. 3. No ground water encountered before water flush. 4. 50mm monitoring well installed to 6.0mbgl on completion.

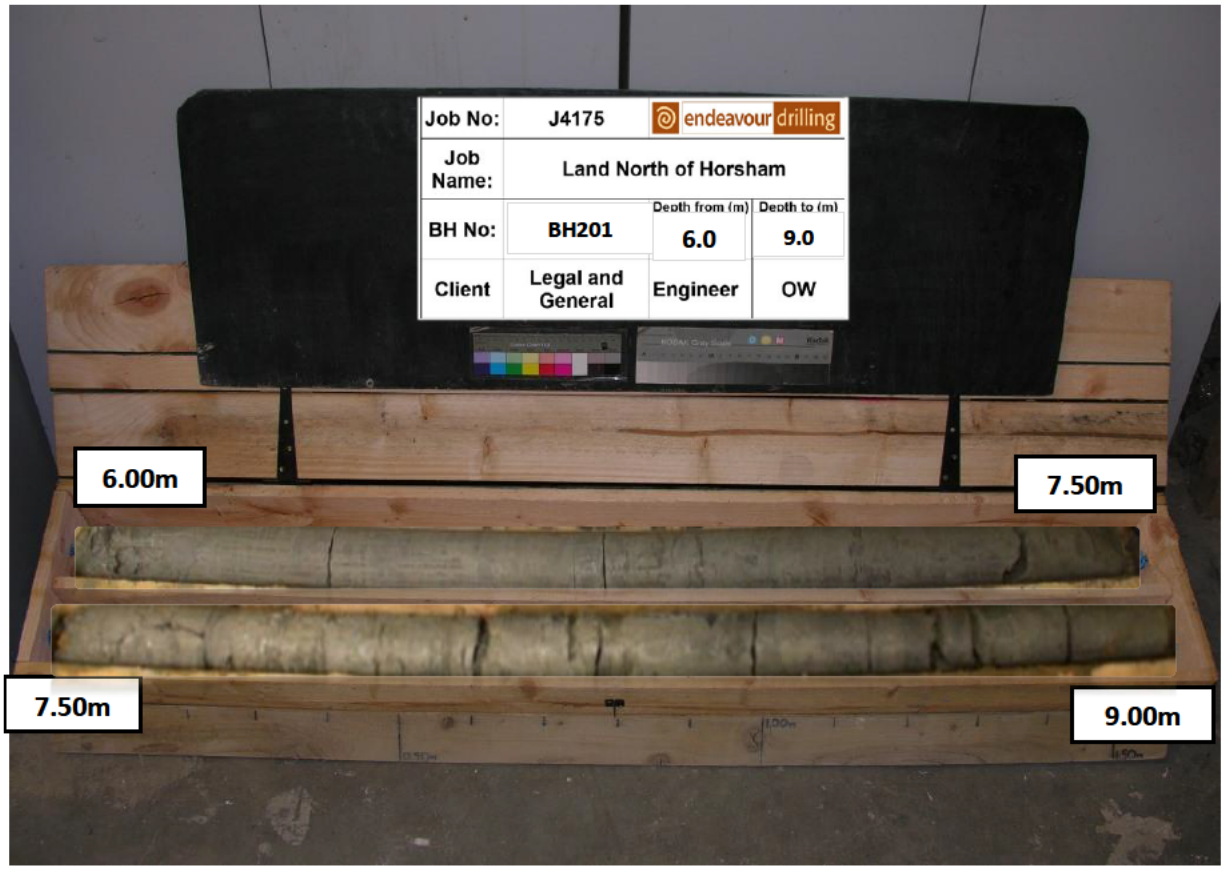
Water Strikes

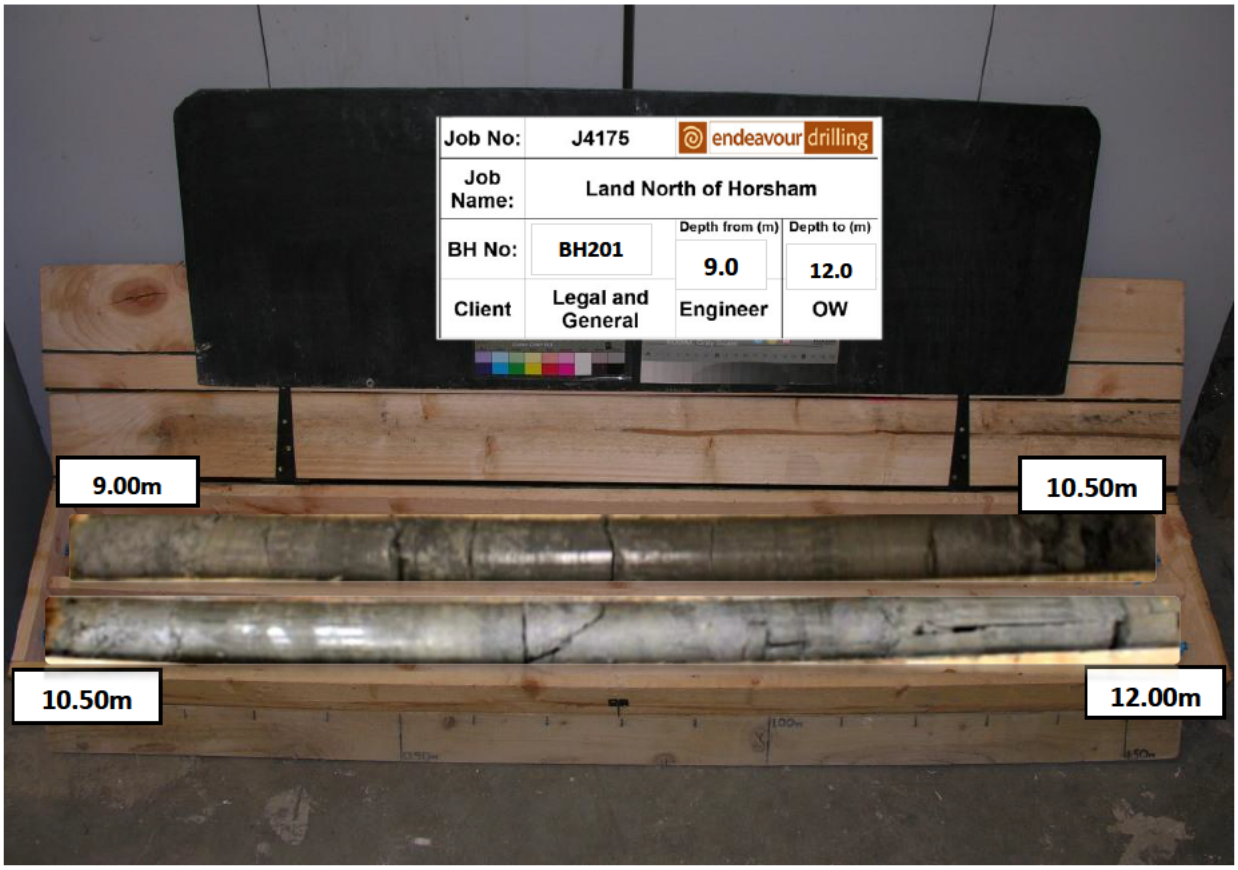
Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
1.20			20	0.96	

Fracture spacing reported as Index average over 1m. TCR, SCR and RQD reported in %


Job No: J4175
endeavour drilling
Job Name: Land North of Horsham
BH No: BH201
Depth from (m) 1.2
Depth to (m) 3.5
Client Legal and General
Engineer OW
1.20m
2.00m
2.00m
3.50m


Job No: J4175
endeavour drilling
Job Name: Land North of Horsham
BH No: BH201
Depth from (m) 3.5
Depth to (m) 6.0
Client Legal and General
Engineer OW
3.50m
4.50m
4.50m
6.00m


Job No: J4175
endeavour drilling
Job Name: Land North of Horsham
BH No: BH201
Depth from (m) 6.0
Depth to (m) 9.0
Client Legal and General
Engineer OW
6.00m
7.50m
7.50m
9.00m


Job No: J4175
endeavour drilling
Job Name: Land North of Horsham
BH No: BH201
Depth from (m) 9.0
Depth to (m) 12.0
Client Legal and General
Engineer OW
9.00m
10.50m
10.50m
12.00m

endeavour drilling

Contract Name:	Client:	Borehole ID:
P1, Land North of Horsham, West Sussex	Legal and General (Strategic Land North of Horsham) Ltd	BH202

Contract Number:	Date Started:	Loggged By:	Checked By:	Status:	Sheet 1 of 3
J4175	03/12/2019	OW	MJS	FINAL	

Geobore 'S' Rotary Drilling Log	Easting:	Northing:	Ground Level:	Plant Used:	Print Date:	Scale:
	518551.6	133562.9	52.35mOD	Commacchio 205	21/02/2020	1:50

Weather: | Termination: Reached target depth | SPT Hammer: SPT5 Energy Ratio: 65%

Depth	TCR	SCR	RQD	FI	Sample	SPT	Level (mAOD)	Legend	Depth (m) (Thickness)	Strata Description	Groundwater: Water Strike	Groundwater: Backfill/ Installation
					0.20 ES1 0.35 ES2 0.40 D1 HV 0.40m, 79kPa		52.10		0.25	TOPSOIL - Light brown sandy CLAY, with frequent rootlets.		
									(0.65)	Stiff light greyish brown mottled orangish brown and bluish grey sandy CLAY. (RESIDUAL WEALD CLAY FORMATION)		
							51.45		0.90 (0.30)			
1.20 - 2.00	100	10	0	21	0.90 - 1.20 B1 1.00 D2 1.60 - 1.75 C1	SPT(C) 1.20m, N=34 (3,4/5,9,10,10)	51.15		1.20	Stiff light brown mottled light brownish grey and dark orangish brown sandy CLAY, with frequent extremely weak to very weak fine to coarse angular to subangular mudstone lithorelics. (DESTRUCTURED WEALD CLAY FORMATION)		
									(1.10)	Very stiff slightly sandy to light brown mottled light grey and orangish brown CLAY, thickly interbedded with extremely weak to very weak light grey weathered dark orangish brown mudstone. Fractures are drilling induced to weakness of rock. (DISTINCTLY WEALD CLAY FORMATION)		
2.00 - 3.00	100	57	15	16	2.40 - 2.47 C2	SPT(C) 2.00m, 100 (6,9/100 for 150mm)	50.05		2.30			
									(2.05)	Extremely weak to very weak thinly laminated to thinly bedded light grey and light brown MUDSTONE. Fractures are horizontal, extremely closely to closely spaced (19 - 150mm) planar with rough surfaces. Apertures are partly open to moderately wide and clean. Weathering is dark orangish brown penetrating <15mm on fractured surfaces. (DISTINCTLY TO PARTIALLY WEATHERED WEALD CLAY FORMATION)		
3.00 - 4.00	80	30	0	10		SPT(C) 3.00m, 100 (6,18/100 for 150mm)				*...between 3.00 - 4.00mbgl with frequent bands recovered as very stiff light grey mottled dark orangish brown sandy clay. Fractures are horizontal, very closely to closely spaced (20 - 70mm) planar with rough surfaces. Apertures are moderately wide and clean.*		
					3.92 - 4.00 C3	SPT(C) 4.00m, N=74 (10,12/10,12,22, 30)	48.00		4.35	*...between 4.00 - 4.35mbgl recovered as slightly sandy clay.*		
4.00 - 5.00	100	60	37	9	4.73 - 4.88 C4					Very weak to weak thinly to thickly laminated MUDSTONE with rare bands recovered as very stiff silty clay. Fractures are horizontal, very closely to closely spaced (40 - 170mm) planar with rough and smooth surfaces. Apertures are moderately wide to wide open with occasional clay infill. (UNWEATHERED WEALD CLAY FORMATION)		
5.00 - 6.00	100	95	37	9		SPT(C) 5.00m, 100 (25 for 75mm/100 for 75mm)						
					5.85 - 6.00 C5	SPT(C) 6.00m, 100 (25 for 75mm/100 for 150mm)			(3.15)	*...between 5.00 - 6.00mbgl fractures are subhorizontal to horizontal, very closely to closely spaced (20 - 150mm) planar with rough and smooth surfaces. Apertures are partly open to moderately wide and clean.*		
6.00 - 7.50	24	0	0							*...between 6.00 - 7.20mbgl no recovery.*		
										...between 7.20 - 7.50 recovered as firm dark grey mottled dark orangish brown clay.		
						SPT(C) 7.50m, 100 (25 for 75mm/100 for 150mm)	44.85		7.50	Weak thinly to thickly laminated MUDSTONE, with occasional bands of hard silty clay. Fractures are subhorizontal to horizontal. Extremely closely to medium spaced (18 - 340mm) planar with rough surfaces. Apertures are tight to wide and clean. (UNWEATHERED WEALD CLAY FORMATION)		
7.50 - 9.00	100	73	67	7	8.40 - 8.74 C6							
					9.18 - 9.52 C7	SPT(C) 9.00m, 100 (25 for 75mm/100 for 75mm)				*...between 9.00 - 10.50mbgl fractures are horizontal, very closely to medium spaced (30 - 320mm) planar with rough surfaces. Apertures are tight*		
9.00 - 10.50	95	80	78	5								

Start & End of Shift Observations

Date	Time	Depth (m)	Casing (m)	Water (m)
03-12-2019	16:00	7.50	1.50	2.91
04-12-2019	16:00	16.50	1.50	2.52
05-12-2019	16:00	19.50	1.50	2.85

Borehole Diameter

Depth (m)	Dia (mm)

Casing Diameter

Depth (m)	Dia (mm)

Flush Information

Top (m)	Base (m)	Flush Type	Return	Flush Colour

Installation

Top (m)	Base (m)	Type	Dia (mm)
0.00	1.00	PLAIN	50
1.00	7.00	SLOTTED	50

Remarks:

1. Inspection pit hand excavated to 1.20mbgl. 2. Rotary cored with PWF and water flush to 19.5mbgl. 3. Ground water encountered at 0.90mbgl (perched). 4. 50mm monitoring well installed to 7.0mbgl on completion.

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
0.90			0		Perched

Fracture spacing reported as Index average over 1m. TCR, SCR and RQD reported in %

endeavour drilling

Contract Name:	Client:	Borehole ID:
P1, Land North of Horsham, West Sussex	Legal and General (Strategic Land North of Horsham) Ltd	BH202

Contract Number:	Date Started:	Loggged By:	Checked By:	Status:	Sheet 2 of 3
J4175	03/12/2019	OW	MJS	FINAL	

Geobore 'S' Rotary Drilling Log	Easting:	Northing:	Ground Level:	Plant Used:	Print Date:	Scale:
	518551.6	133562.9	52.35mOD	Commacchio 205	21/02/2020	1:50

Weather:	Termination: Reached target depth	SPT Hammer: SPT5 Energy Ratio: 65%

Samples & In Situ Testing							Strata Details				Groundwater	
Depth	TCR	SCR	RQD	FI	Sample	SPT	Level (mAOD)	Legend	Depth (m) (Thickness)	Strata Description	Water Strike	Backfill/ Installation
10.50 - 12.00	140	114	108	5	11.00 - 11.43 C8	SPT(C) 10.50m, 100 (25 for 75mm/100 for 75mm)				*...between 10.50 to 12.0m fractures ar horizontal to sub-horizontal very closely to medium spaced (25-43mm) with rough and smooth surfaces. Apertures are tight to wide and clean.*		
12.00 - 13.50	97	85	110	11	12.48 - 12.58 C9	SPT(C) 12.00m, 100 (25 for 75mm/100 for 75mm)			(10.88)	*...between 12.0 and 13.0m fractures are horizontal to sub-vertical very closely to closely spaced (25-110mm) with rough and smooth surfaces. Apertures are tight to wide with occasional clay infilling.* *...at 12.45m with smooth polished fractured surface.*		
13.50 - 15.00	143	130	80	8	14.67 - 14.93 C10	SPT(C) 13.50m, 100 (25 for 75mm/100 for 75mm)				*....between 13.50 and 15m fractures are horizontal to sub-horizontal very closely to medium spaced (40-38mm) planar with rough to smooth surfaces. Apertures are tight to moderately wide with rare clay infilling.*		
15.00 - 16.50	150	118	98	6	15.94 - 16.25 C11	SPT(C) 15.00m, 100 (25 for 75mm/100 for 75mm)				*...between 15.0 and 16.50m are horizontal to sub-vertical very closely to medium spaced (20-29mm) planar with rough surfaces. Apertures are tight to wide and occasionally infilled with stiff clay.* *...at 15.94m fracture is smooth and polished surface.*		
16.50 - 18.00	135	82	49	10	16.74 - 17.04 C12	SPT(C) 16.50m, 100 (25 for 75mm/100 for 150mm)				*...between 16.50 and 18.0m fractures are horizontal to sub-vertical very closely to medium spaced (30-29mm) planar with rough and smooth surfaces. Apertures are tight to moderately wide with occasional clay infill and rare mudstone gravel infill.*		
18.00 - 19.50	142	105	48	12	18.50 - 18.67 C13	SPT(C) 18.00m, 100 (25 for 75mm/100 for 75mm)	33.97		18.38 (0.51)	Moderately weak to medium strong light grey and yellowish brown thinly laminated to very thinly bedded fine grained SANDSTONE with occasional bands recovered as angular to sub-angular fine to coarse gravel. Fractures are horizontal extremely closely to closely spaced (10-140mm) planar with smooth surfaces. Apertures are open to moderately wide and clean. (UNWEATHERED WEALD CLAY FORMATION)		
				12			33.46		18.89 (0.61)			
						SPT(C) 19.50m, 100 (22,3/100 for 75mm)	32.85		19.50	Weak thinly laminated to thickly laminated MUDSTONE with occasional bands of hard silty		

Start & End of Shift Observations				
Date	Time	Depth (m)	Casing (m)	Water (m)
03-12-2019	16:00	7.50	1.50	2.91
04-12-2019	16:00	16.50	1.50	2.52
05-12-2019	16:00	19.50	1.50	2.85

Borehole Diameter		Casing Diameter	
Depth (m)	Dia (mm)	Depth (m)	Dia (mm)

Flush Information				
Top (m)	Base (m)	Flush Type	Return	Flush Colour

Installation			
Top (m)	Base (m)	Type	Dia (mm)
0.00	1.00	PLAIN	50
1.00	7.00	SLOTTED	50

Remarks:

1. Inspection pit hand excavated to 1.20mbgl. 2. Rotary cored with PWF and water flush to 19.5mbgl. 3. Ground water encountered at 0.90mbgl (perched). 4. 50mm monitoring well installed to 7.0mbgl on completion.

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
0.90			0		Perched

Fracture spacing reported as Index average over 1m. TCR, SCR and RQD reported in %

endeavour drilling

Contract Name:	Client:	Borehole ID:
P1, Land North of Horsham, West Sussex	Legal and General (Strategic Land North of Horsham) Ltd	BH202

Contract Number:	Date Started:	Loggged By:	Checked By:	Status:	Sheet 3 of 3
J4175	03/12/2019	OW	MJS	FINAL	

Geobore 'S' Rotary Drilling Log	Easting:	Northing:	Ground Level:	Plant Used:	Print Date:	Scale:
	518551.6	133562.9	52.35mOD	Commacchio 205	21/02/2020	1:50

Weather: | Termination: Reached target depth | SPT Hammer: SPT5 Energy Ratio: 65%

Samples & In Situ Testing | Strata Details | Groundwater

Depth	TCR	SCR	RQD	FI	Sample	SPT	Level (mAOD)	Legend	Depth (m) (Thickness)	Strata Description	Water Strike	Backfill/ Installation
										clay. Fractures are horizontal very closely to closely spaced (30-100mm) planar with rough and smooth surfaces. Apertures are open to moderately wide with occasional clay infill. (UNWEATHERED WEALD CLAY FORMATION)		
										End of Borehole at 19.50m		

21 22 23 24 25 26 27 28 29 30

Start & End of Shift Observations

Date	Time	Depth (m)	Casing (m)	Water (m)
03-12-2019	16:00	7.50	1.50	2.91
04-12-2019	16:00	16.50	1.50	2.52
05-12-2019	16:00	19.50	1.50	2.85

Borehole Diameter

Depth (m)	Dia (mm)

Casing Diameter

Depth (m)	Dia (mm)

Flush Information

Top (m)	Base (m)	Flush Type	Return	Flush Colour

Installation

Top (m)	Base (m)	Type	Dia (mm)
0.00	1.00	PLAIN	50
1.00	7.00	SLOTTED	50

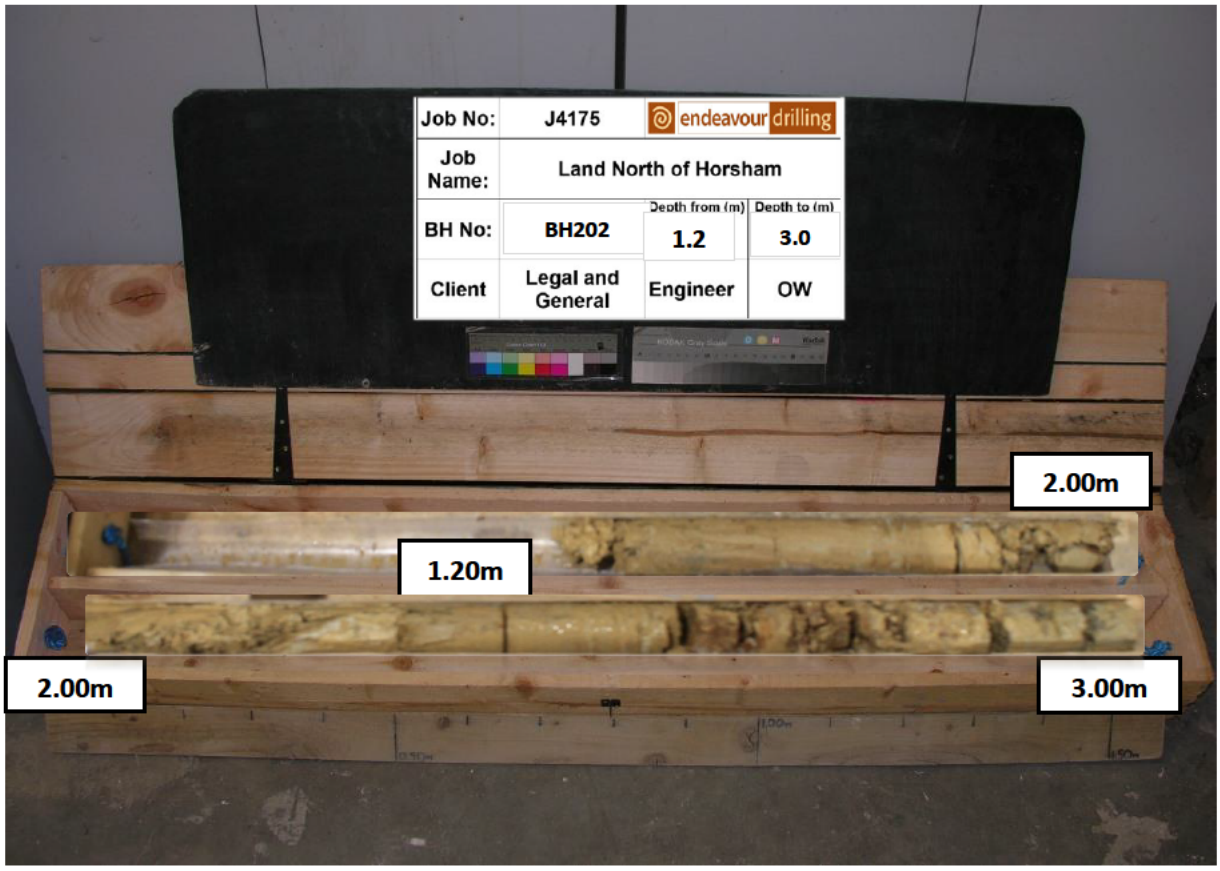
Remarks:

1. Inspection pit hand excavated to 1.20mbgl. 2. Rotary cored with PWF and water flush to 19.5mbgl. 3. Ground water encountered at 0.90mbgl (perched). 4. 50mm monitoring well installed to 7.0mbgl on completion.

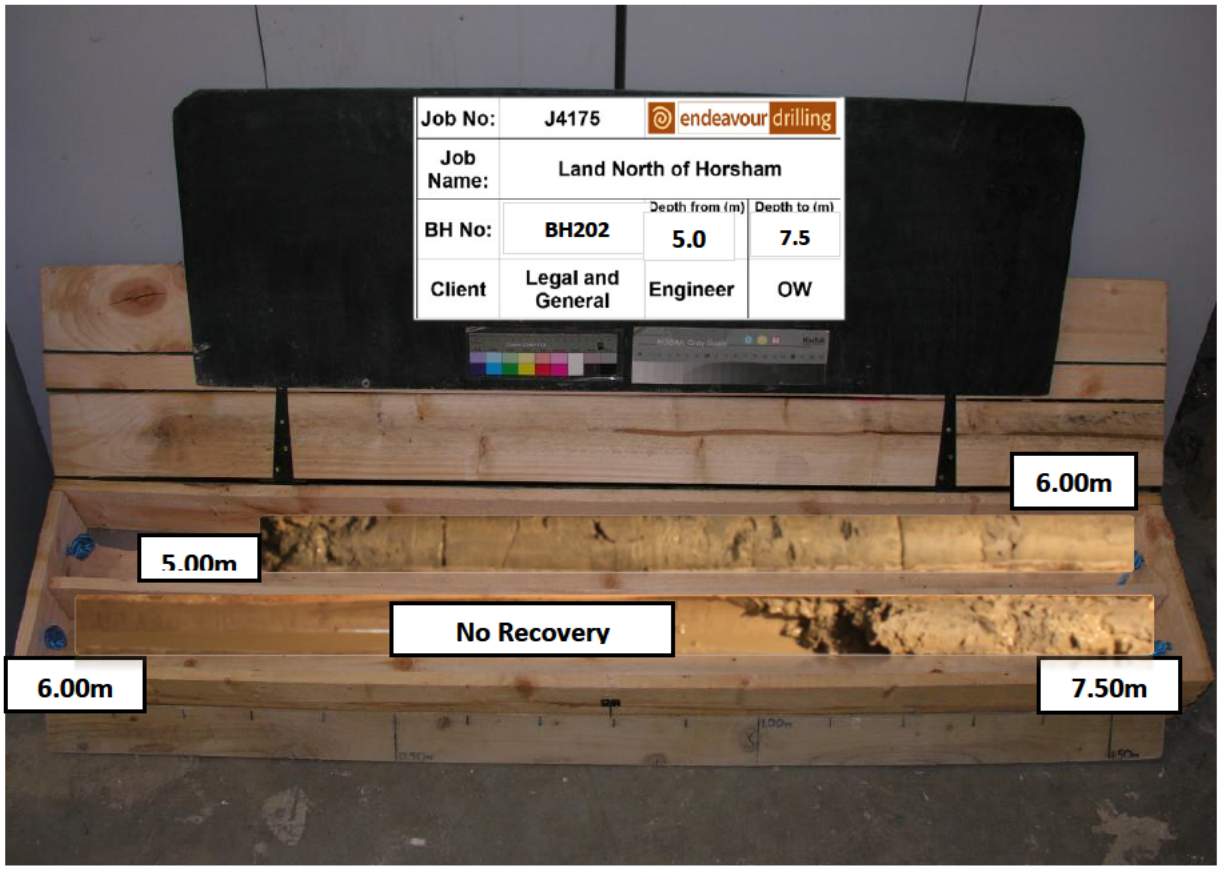
Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
0.90			0		Perched

Fracture spacing reported as Index average over 1m. TCR, SCR and RQD reported in %

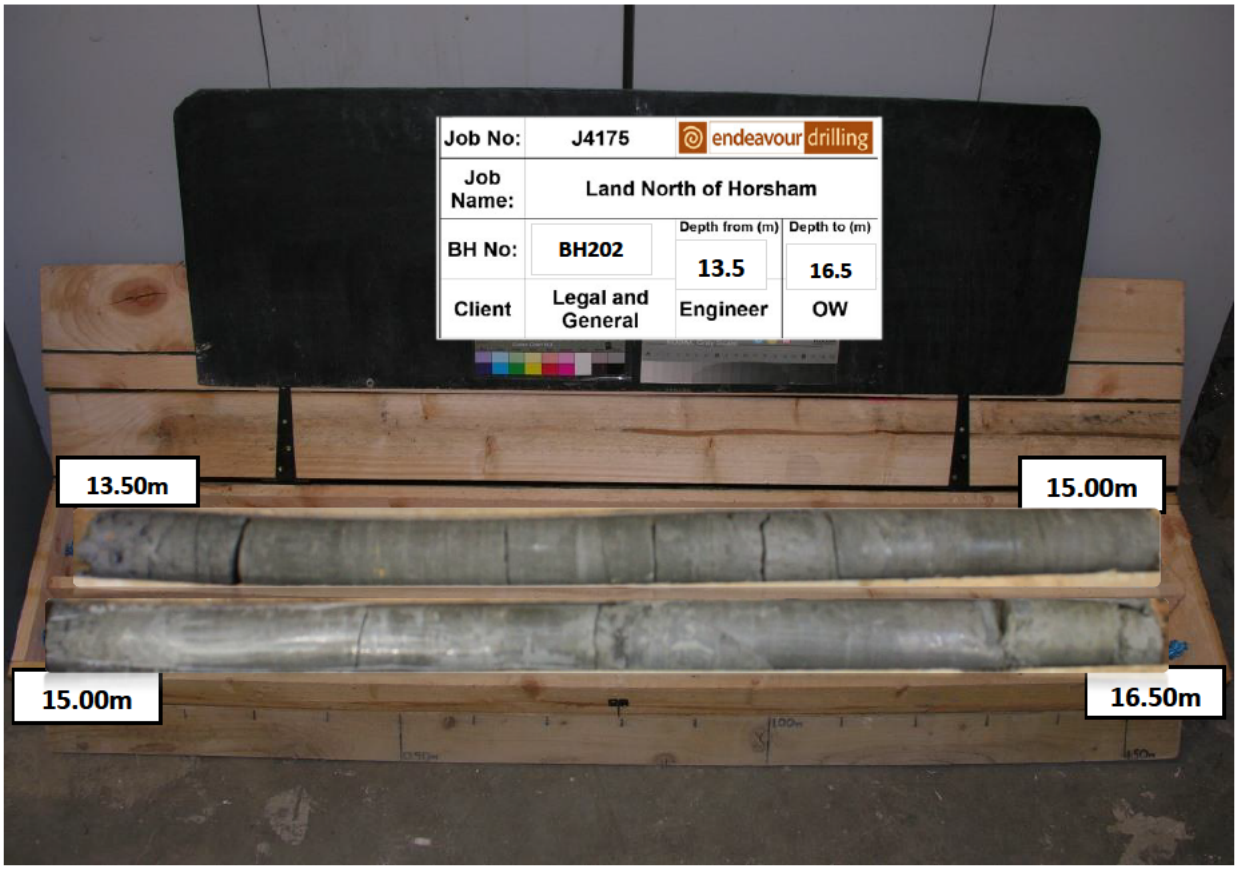

Job No: J4175
endeavour drilling
Job Name: Land North of Horsham
BH No: BH202
Depth from (m): 1.2
Depth to (m): 3.0
Client: Legal and General
Engineer: OW
2.00m
1.20m
2.00m
3.00m


Job No: J4175
endeavour drilling
Job Name: Land North of Horsham
BH No: BH202
Depth from (m): 3.0
Depth to (m): 5.0
Client: Legal and General
Engineer: OW
3.00m
4.00m
4.00m
5.00m


Job No: J4175
endeavour drilling
Job Name: Land North of Horsham
BH No: BH202
Depth from (m): 5.0
Depth to (m): 7.5
Client: Legal and General
Engineer: OW
6.00m
5.00m
No Recovery
6.00m
7.50m


Job No: J4175
endeavour drilling
Job Name: Land North of Horsham
BH No: BH202
Depth from (m): 7.5
Depth to (m): 10.5
Client: Legal and General
Engineer: OW
7.50m
9.00m
9.00m
10.50m


Job No: J4175
endeavour drilling
Job Name: Land North of Horsham
BH No: BH202
Depth from (m) 10.5
Depth to (m) 13.5
Client Legal and General
Engineer OW
10.50
12.00m
12.00m
13.50m


Job No: J4175
endeavour drilling
Job Name: Land North of Horsham
BH No: BH202
Depth from (m) 13.5
Depth to (m) 16.5
Client Legal and General
Engineer OW
13.50m
15.00m
15.00m
16.50m


Job No: J4175
endeavour drilling
Job Name: Land North of Horsham
BH No: BH202
Depth from (m) 16.5
Depth to (m) 19.5
Client Legal and General
Engineer OW
16.50
18.00m
18.00m
19.50m

endeavour drilling

Contract Name:	Client:	Borehole ID:
P1, Land North of Horsham, West Sussex	Legal and General (Strategic Land North of Horsham) Ltd	BH203

Contract Number:	Date Started:	Loggged By:	Checked By:	Status:	Sheet 1 of 2
J4175	06/12/2019	OW	MJS	FINAL	

Geobore 'S' Rotary Drilling Log	Easting:	Northing:	Ground Level:	Plant Used:	Print Date:	Scale:
	518663.6	134139.8	62.05mOD	Comacchio205	21/02/2020	1:50

Weather: Frequent showers | Termination: Reached target depth | SPT Hammer: SPT5 Energy Ratio: 65%

Samples & In Situ Testing							Strata Details				Groundwater	
Depth	TCR	SCR	RQD	FI	Sample	SPT	Level (mAOD)	Legend	Depth (m) (Thickness)	Strata Description	Water Strike	Backfill/ Installation
					0.50 ES1		61.85		0.20	TOP SOIL - Dark brown sandy CLAY with frequent rootlets <2mm (living).		
									(1.00)	Firm light brown mottled orangish brown and light grey sandy CLAY. (RESIDUAL WEALD CLAY FORMATION)		
					1.10 ES2	SPT(C) 1.20m, N=29 (2,2/6,7,9,7)	60.85		1.20			
1.20 - 2.00	100	0	0				60.65		1.40	Firm to stiff light brown mottled orangish brown and slight grey slightly silty CLAY. (RESIDUAL WEALD CLAY FORMATION)		
					1.80 - 2.00 D1	SPT(C) 2.00m, N=34 (4,6/8,8,8,10)			(1.00)	Very stiff dark brownish orange sandy CLAY thinly laminated with extremely weak dark brown bluish grey mudstone recovered as fine to coarse angular to sub-angular gravel. (DESTRUCTURED WEALD CLAY FORMATION)		
2.00 - 3.00	100	23	0				59.65		2.40	Stiff light brown mottled orangish brown and light grey slightly sandy CLAY thickly interbedded with extremely weak dark orangish brown and grey mudstone. Fractures are horizontal very closely to closely spaced (50-90-106) planar with rough and smooth surfaces. Apertures are open to moderately wide and clean. (DISTINCTLY WEATHERED WEALD CLAY FORMATION)		
				10	2.84 - 2.92 C1				(0.90)			
						SPT(C) 3.00m, 100 (8,11/100 for 200mm)	58.75		3.30			
3.00 - 4.00	100	45	0	18	3.48 - 3.57 C2				(0.70)	Very weak thinly laminated to thinly bedded MUDSTONE. Fractures are horizontal very closely to closely spaced (4-10-31) planar with rough and smooth surfaces. Apertures are open to moderately wide and clean. Weathering is dark orange penetrating up to 20mm along fractured surfaces and with frequent bands recovered as stiff silty clay. (PARTIALLY WEATHERED WEALD CLAY FORMATION)		
						SPT(C) 4.00m, N=74 (10,12/12,12,20, 30)	58.05		4.00			
4.00 - 5.00	100	30	0	24	4.20 - 4.76 C3				(2.00)	Very stiff dark grey and dark orangish brown slightly sandy CLAY thickly interbedded with extremely weak partially weathered to very weak dark grey weathered dark orangish brown thickly laminated mudstone. Fractures are horizontal extremely close to very closely spaced (2-21-60mm) planar with rough and smooth surfaces. Apertures are open to tight wide and clean. Weathering penetrating up to 15mm and distinctly to partially weathered. (DISTINCTLY TO PARTIALLY WEATHERED WEALD CLAY FORMATION)		
						SPT(C) 5.00m, 100 (10,13/100 for 285mm)						
5.00 - 6.00	75	0	0		5.82 - 6.00 C4							
						SPT(C) 6.00m, 100 (20,5/100 for 145mm)	56.05		6.00			
				15						*...between 5.0 and 5.25m no recovery.* *...between 5.0-6.0m mudstone bands becoming rare.*		
6.00 - 7.50	95	69	33		6.80 - 6.98 C5					Very weak to weak dark grey thinly to thickly laminated MUDSTONE with rare bands recovered as very stiff silty clay. Fractures are horizontal to sub-horizontal extremely closely to very closely spaced (3-180-61mm) planar with rough to smooth surfaces. Apertures are tight to open with clay infilling and clean. (UNWEATHERED WEALD CLAY FORMATION)		
						SPT(C) 7.50m, 100 (25 for 75mm/100 for 45mm)				*...at 6.80m fractures with smooth polished surfaces.* *...between 7.50 to 9.0m fractures are horizontal extremely closely to medium spaced (5-280-95mm) planar with rough and smooth surfaces. Apertures are tight to open with occasional clay infilling.*		
7.50 - 9.00	79	77	45	13	8.72 - 9.00 C6							
						SPT(C) 9.00m, 100 (21,4/100 for 135mm)			(6.00)			
9.00 - 10.50	98	65	11	14	9.84 - 10.00 C7					*...between 9.0-10.50m fractures are horizontal to sub-horizontal extremely closely to very closely spaced (10-170-60mm) planar with rough to smooth surfaces apertures are tight to clean with frequent clay infilling.*		

Start & End of Shift Observations

Date	Time	Depth (m)	Casing (m)	Water (m)
06-12-2019	16:30	4.00		
09-12-2019	16:30	12.00		

Borehole Diameter

Depth (m)	Dia (mm)
1.20	300

Casing Diameter

Depth (m)	Dia (mm)

Flush Information

Top (m)	Base (m)	Flush Type	Return	Flush Colour

Installation

Top (m)	Base (m)	Type	Dia (mm)
0.00	1.00	PLAIN	50
1.00	6.00	SLOTTED	50

Remarks:

1. Inspection pit hand excavated to 1.20mbgl.

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks

Fracture spacing reported as Index average over 1m. TCR, SCR and RQD reported in %

endeavour drilling

Contract Name:	Client:	Borehole ID:
P1, Land North of Horsham, West Sussex	Legal and General (Strategic Land North of Horsham) Ltd	BH203

Contract Number:	Date Started:	Loggged By:	Checked By:	Status:	Sheet 2 of 2
J4175	06/12/2019	OW	MJS	FINAL	

Geobore 'S' Rotary Drilling Log	Easting:	Northing:	Ground Level:	Plant Used:	Print Date:	Scale:
	518663.6	134139.8	62.05mOD	Comacchio205	21/02/2020	1:50

Weather: Frequent showers | Termination: Reached target depth | SPT Hammer: SPT5 Energy Ratio: 65%

Samples & In Situ Testing							Strata Details				Groundwater	
Depth	TCR	SCR	RQD	FI	Sample	SPT	Level (mAOD)	Legend	Depth (m) (Thickness)	Strata Description	Water Strike	Backfill/ Installation
10.50 - 12.00	100	83	37	8	10.90 - 11.20 C8	SPT(C) 10.50m, 100 (25 for 0mm/100 for 10mm)				*...between 10.50 to 12.0m fractures are horizontal to sub-horizontal (20-260-93mm extremely closely to medium spaced planar with rough to smooth surfaces. Apertures are tight to open with frequent clay infilling.*		
						SPT(C) 12.00m, 100 (25 for 0mm/100 for 10mm)	50.05		12.00	End of Borehole at 12.00m		

11 12 13 14 15 16 17 18 19 20

Start & End of Shift Observations				
Date	Time	Depth (m)	Casing (m)	Water (m)
06-12-2019	16:30	4.00		
09-12-2019	16:30	12.00		

Borehole Diameter	
Depth (m)	Dia (mm)
1.20	300

Casing Diameter	
Depth (m)	Dia (mm)

Remarks:

1. Inspection pit hand excavated to 1.20mbgl.

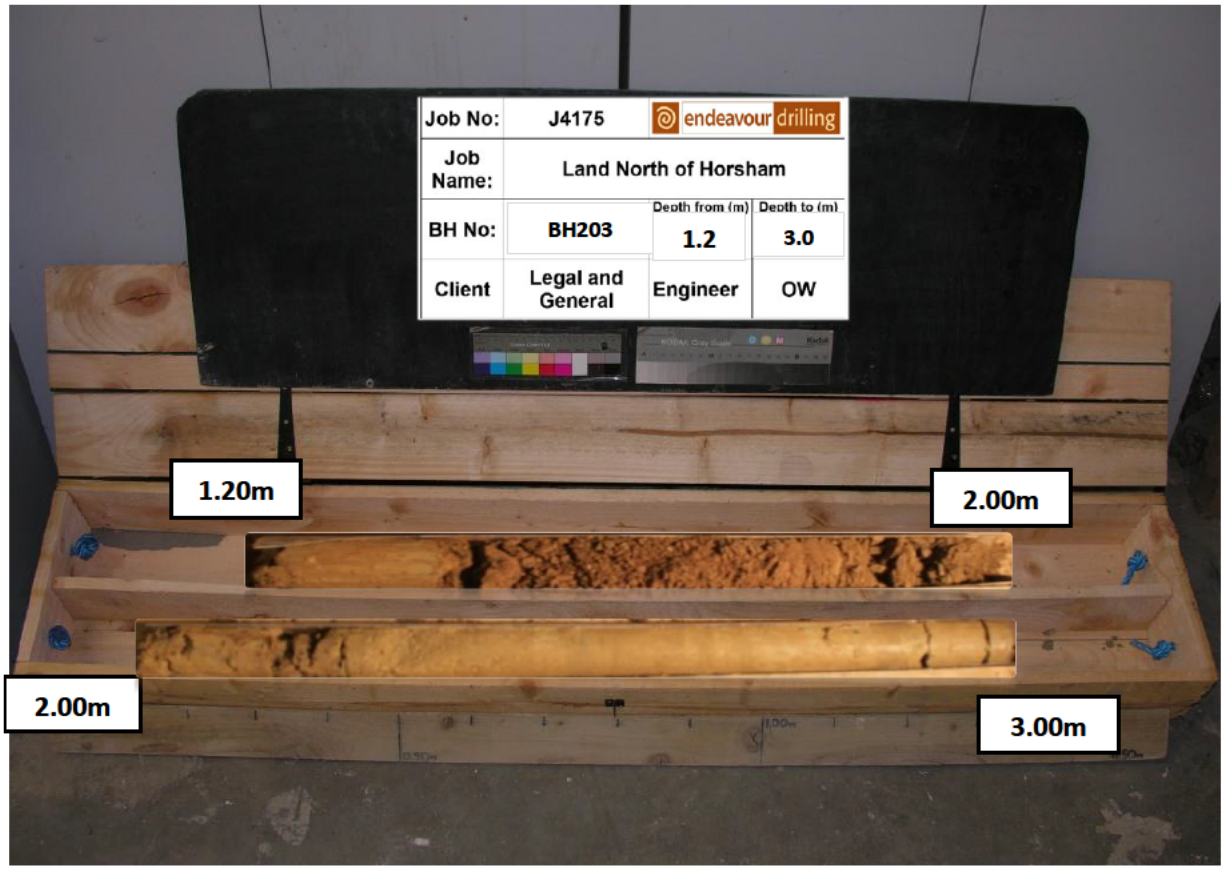
Flush Information				
Top (m)	Base (m)	Flush Type	Return	Flush Colour

Installation			
Top (m)	Base (m)	Type	Dia (mm)
0.00	1.00	PLAIN	50
1.00	6.00	SLOTTED	50

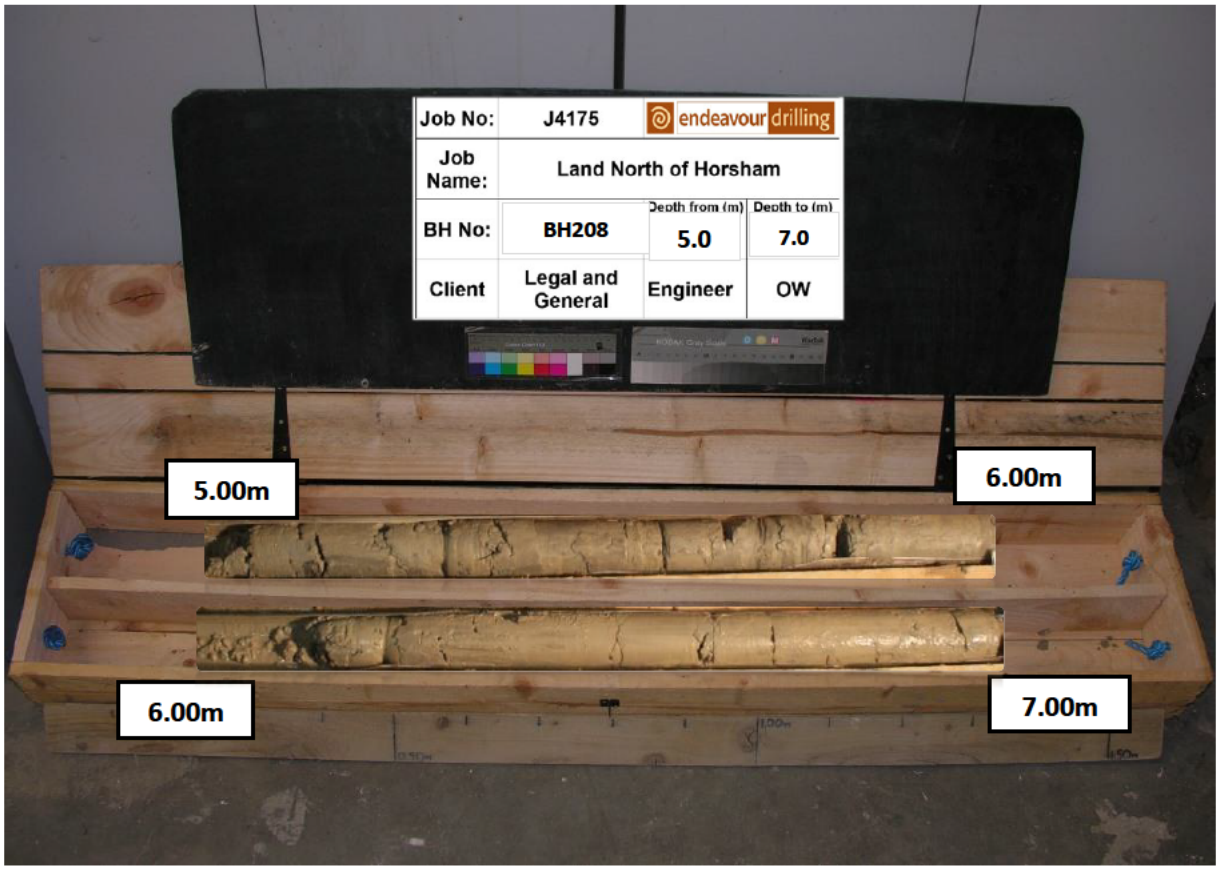
Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks

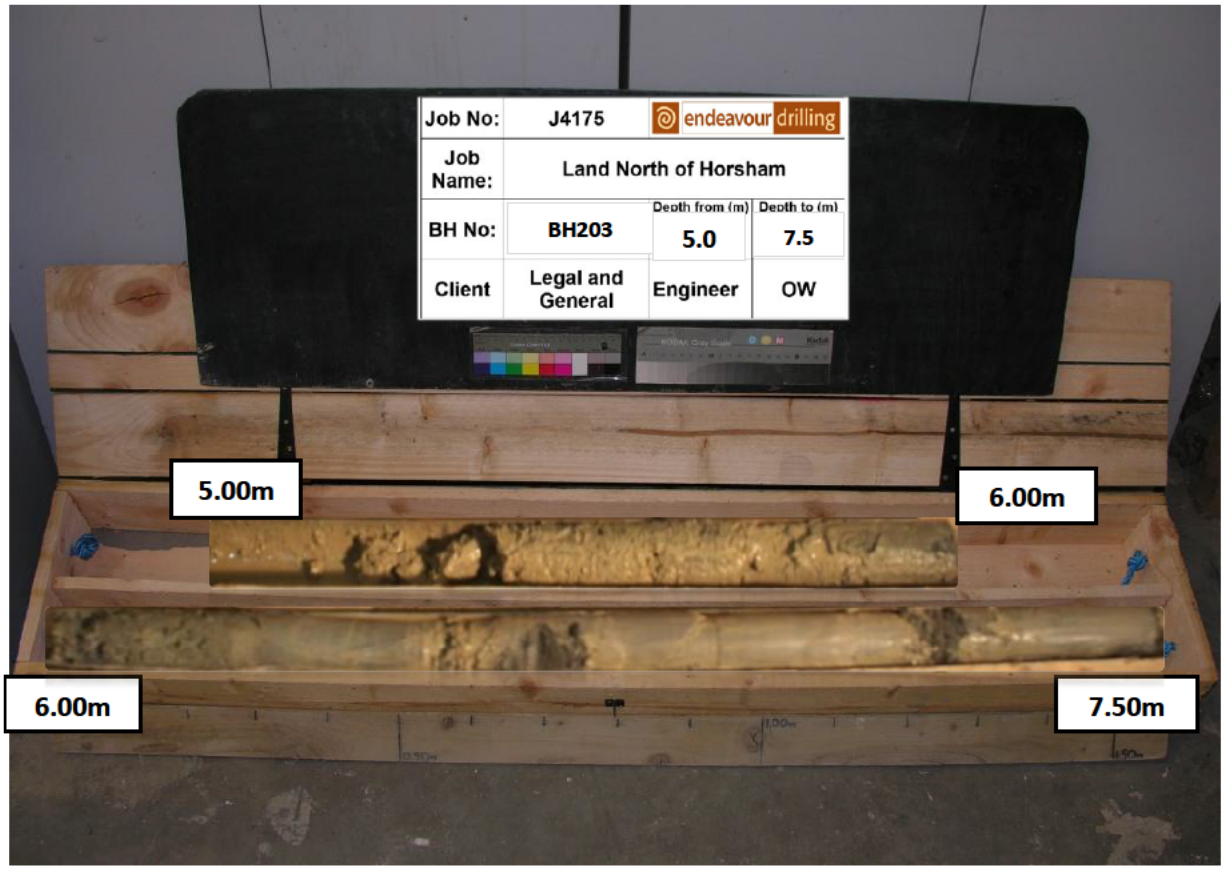
Fracture spacing reported as Index average over 1m. TCR, SCR and RQD reported in %


Job No: J4175
endeavour drilling
Job Name: Land North of Horsham
BH No: BH203
Depth from (m) 1.2
Depth to (m) 3.0
Client Legal and General
Engineer OW
1.20m
2.00m
2.00m
3.00m

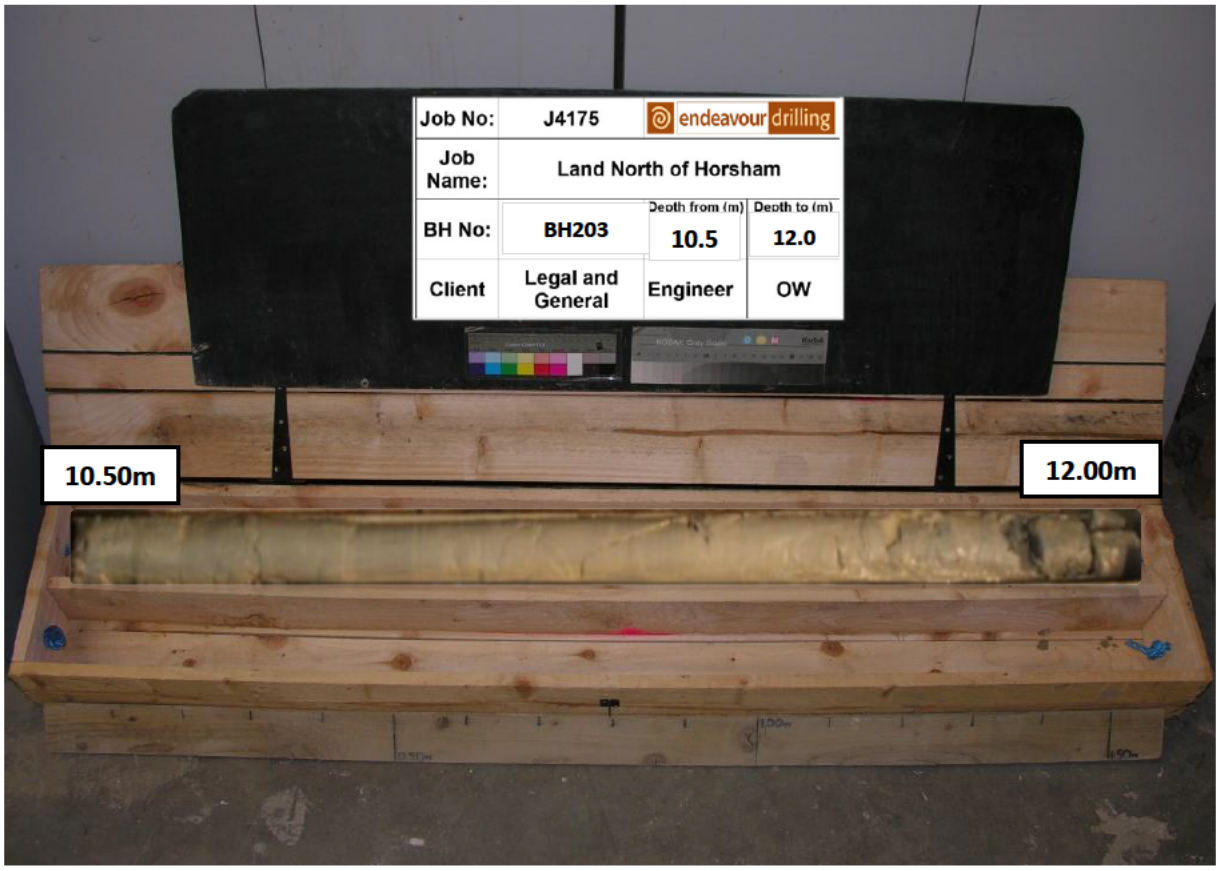

Job No: J4175
endeavour drilling
Job Name: Land North of Horsham
BH No: BH203
Depth from (m) 3.0
Depth to (m) 5.0
Client Legal and General
Engineer OW
3.00m
4.00m
4.00m
5.00m


Job No: J4175
endeavour drilling
Job Name: Land North of Horsham
BH No: BH208
Depth from (m) 5.0
Depth to (m) 7.0
Client Legal and General
Engineer OW
5.00m
6.00m
6.00m
7.00m


Job No: J4175
endeavour drilling
Job Name: Land North of Horsham
BH No: BH208
Depth from (m) 7.0
Depth to (m) 8.0
Client Legal and General
Engineer OW
7.00m
8.00m


Job No: J4175
endeavour drilling
Job Name: Land North of Horsham
BH No: BH203
Depth from (m) 5.0
Depth to (m) 7.5
Client Legal and General
Engineer OW
5.00m
6.00m
6.00m
7.50m


Job No: J4175
endeavour drilling
Job Name: Land North of Horsham
BH No: BH203
Depth from (m) 7.5
Depth to (m) 10.5
Client Legal and General
Engineer OW
7.50m
9.00m
9.00m
10.50m


Job No: J4175
endeavour drilling
Job Name: Land North of Horsham
BH No: BH203
Depth from (m) 10.5
Depth to (m) 12.0
Client Legal and General
Engineer OW
10.50m
12.00m

endeavour drilling

Contract Name:	Client:	Borehole ID:
P1, Land North of Horsham, West Sussex	Legal and General (Strategic Land North of Horsham) Ltd	BH204

Contract Number:	Date Started:	Loggged By:	Checked By:	Status:	Sheet 1 of 1
J4175	10/12/2019	JJW	MJS	FINAL	

Geobore 'S' Rotary Drilling Log	Easting:	Northing:	Ground Level:	Plant Used:	Print Date:	Scale:
	518910.2	134204.0	69.88mOD	Comacchio205	21/02/2020	1:50

Weather: Frequent showers | Termination: Reached target depth. | SPT Hammer: SPT5 Energy Ratio: 65%

Samples & In Situ Testing							Strata Details				Groundwater	
Depth	TCR	SCR	RQD	FI	Sample	SPT	Level (mAOD)	Legend	Depth (m) (Thickness)	Strata Description	Water Strike	Backfill/ Installation
					0.50 ES1		69.68		0.20 (0.60)	TOP SOIL - Dark brown sandy CLAY with frequent rootlets <2mm (living). Firm light brown mottled orange and grey silty sandy CLAY. (RESIDUAL WEALD CLAY FORMATION)		
					1.20 ES2	SPT(C) 1.20m, N=17 (2,2/3,4,5,5)	69.08		0.80 (0.40)	Firm light brown mottled orange and grey slightly silty slightly sandy slightly gravelly CLAY. Gravel is fine to medium sub-angular of extremely weak mudstone. (RESIDUAL WEALD CLAY FORMATION)		
1.20 - 2.00	97	0	0		1.55 - 1.65 D1		68.68		1.20 (1.20)	Stiff light brown mottled orangish brown and light grey slightly sandy CLAY with occasional fine to medium angular to sub-angular extremely weak mudstone. (DESTRUCTURED WEALD CLAY FORMATION)		
2.00 - 3.00	100	20	0		2.80 - 3.00 D2	SPT(C) 2.00m, N=37 (7,5/6,8,11,12)	67.48		2.40 (1.30)	Very stiff to hard light greyish brown mottled orangish brown CLAY with rare very thinly bedded extremely weak dark brown mudstone. Weathered blackish brown penetrating up to 22mm recovered as sub-angular coarse gravel. (DESTRUCTURED WEALD CLAY FORMATION)		
3.00 - 4.00	100	30	0	34	3.90 - 4.00 C1	SPT(C) 3.00m, N=39 (4,6/8,11,9,11)	66.18		3.70	Extremely weak to very weak thinly laminated and thinly bedded MUDSTONE. Fractures are horizontal extremely closely to closely spaced (3-90-31mm) planar with rough surfaces. Apertures are tight to open with clay infilling. Weathering is dark orangish brown penetrating up to 21mm along fractured surfaces and also with occasional bands recovered as slightly silty slightly sandy clay. (DISTINCTLY WEATHRERED WEALD CLAY FORMATION)		
4.00 - 5.00	100	40	0	22	4.00 - 4.48 C2	SPT(C) 4.00m, N=42 (9,10/11,10,10,11)			(1.80)	*...between 4.0m to 5.0m fractures are horizontal extremely closely to closely spaced (10-90-33mm) planar with rough surfaces. Apertures are tight to open with clay infilling.*		
5.00 - 6.00	100	45	11	22	5.81 - 5.91 C3	SPT(C) 5.00m, 100 (6,16/100 for 225mm)	64.38		5.50	Very weak to weak dark grey thinly to thickly laminated MUDSTONE with occasional bands recovered as very stiff silty clay. Fractures are horizontal extremely closely to closely spaced (5-110-38mm) planar with smooth and rough surfaces. Apertures are open to moderately wide with occasional clay infilling. (UNWEATHRED WEALD CLAY FORMATION)		
6.00 - 7.50	95	57	0	23	7.20 - 7.29 C4	SPT(C) 6.00m, N=46 (6,7/9,11,12,14)			(2.15)	*...between 6.0 to 7.0m fractures are sub-horizontal to horizontal extremely closely to closely spaced (3-80-28mm) planar with smooth surfaces. Apertures are open to moderately wide with rare clay infilling.*		
						SPT(C) 7.50m, N=100 (4,6/14,31,29,26)	62.23		7.65	End of Borehole at 8.00m		

Start & End of Shift Observations					Borehole Diameter		Casing Diameter	
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)
10-12-2019	16:30	5.00						
11-12-2019	16:30	8.00						

Flush Information					Installation			
Top (m)	Base (m)	Flush Type	Return	Flush Colour	Top (m)	Base (m)	Type	Dia (mm)
					0.00	1.00	PLAIN	50
					1.00	6.00	SLOTTED	50

Remarks:

1. Inspection pit hand excavated to 1.20mbgl. 2. water? 3. Dynamic sampled to 3.0mbgl, then rotary cored with PWF and water flush to 8.0mbgl. 4. 50mm monitoring well installed to 6.0mbgl on completion.

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks

Fracture spacing reported as Index average over 1m. TCR, SCR and RQD reported in %


Job No: J4175
endeavour drilling
Job Name: Land North of Horsham
BH No: BH204
Depth from (m) 1.2
Depth to (m) 3.0
Client Legal and General
Engineer OW
1.20m
2.00m
2.00m
3.00m


Job No: J4175
endeavour drilling
Job Name: Land North of Horsham
BH No: BH204
Depth from (m) 3.0
Depth to (m) 5.0
Client Legal and General
Engineer OW
3.00m
4.00m
4.00m
5.00m


Job No: J4175
endeavour drilling
Job Name: Land North of Horsham
BH No: BH204
Depth from (m) 5.0
Depth to (m) 7.5
Client Legal and General
Engineer OW
5.00m
6.00m
6.00m
7.50m

endeavour drilling

Contract Name:	Client:	Borehole ID:
P1, Land North of Horsham, West Sussex	Legal and General (Strategic Land North of Horsham) Ltd	BH205

Contract Number:	Date Started:	Loggged By:	Checked By:	Status:	Sheet 1 of 1
J4175	11/12/2019	OW	MJS	FINAL	

Geobore 'S' Rotary Drilling Log	Easting:	Northing:	Ground Level:	Plant Used:	Print Date:	Scale:
	519014.2	134092.3	64.74mOD	Comacchio205	21/02/2020	1:50

Weather: Frequent showers | Termination: Reached target depth | SPT Hammer: SPT5 Energy Ratio: 65%

Samples & In Situ Testing							Strata Details				Groundwater	
Depth	TCR	SCR	RQD	FI	Sample	SPT	Level (mAOD)	Legend	Depth (m) (Thickness)	Strata Description	Water Strike	Backfill/ Installation
					0.50 ES1		64.54		0.20	TOP SOIL - Dark brown sandy CLAY with frequent rootlets <2mm (living).		
									(1.00)	Firm light brown mottled orange and grey slightly silty slightly sandy slightly gravelly CLAY. Gravel is fine to medium sub-angular of extremely weak mudstone. (RESIDUAL WEALD CLAY FORMATION)		
										...from 1.0mbgl with occasional rootlets (living)		
					1.20 ES2	SPT(C) 1.20m, N=8 (2,2/2,2,2,2)	63.54		1.20			
1.20 - 2.00	100	0	0		1.70 - 2.00 C1				(1.00)	Stiff light brown mottled orangish brown and light grey slightly sandy CLAY. (RESIDUAL WEALD CLAY FORMATION)		
						SPT(C) 2.00m, N=22 (2,3/4,5,5,8)	62.54		2.20			
2.00 - 3.00	100	0	0		2.75 - 3.00 C2					Stiff dark brown mottled light grey sandy CLAY, with frequent fine to coarse angular to subangular extremely weak mudstone lithorelics. (RESIDUAL WEALD CLAY FORMATION)		
						SPT(C) 3.00m, N=42 (3,4/8,8,10,16)						
3.00 - 4.00	100	0	0		3.80 - 4.00 C3				(2.50)			
						SPT(C) 4.00m, N=100 (10,12/22,34,36, 8)				*...from 3.7mbgl becoming occasional very thinly bedded with extremely weak light grey weathered dark orangish brown mudstone recovered as fine to coarse angular to subangular gravel (DESTRUCTURED)*		
4.00 - 5.00	100	30	0	31	4.77 - 4.84 C4		60.04		4.70	Extremely weak to very weak thinly lamiated to thinly bedded dark grey MUDSTONE. Fractures are horizontal extremely closely to closely spaced (3mm - 70mm - 24mm) planar with rough surfaces. Apertures are tight to moderately wide with occasional clay infilling. Weathering dark orangish brown, penetrating <14mm along fractured surfaces, and also with occasional bands recovered as very stiff clay. (DISTINCTLY WEATHERED WEALD CLAY FORMATION)		
						SPT(C) 5.00m, 100 (5,16/100 for 150mm)						
5.00 - 6.00	100	78	23	22	5.67 - 5.79 C5				(1.60)			
						SPT(C) 6.00m, 100 (6,18/100 for 75mm)						
6.00 - 7.00	100	72	45	12	6.80 - 7.00 C6		58.44		6.30	*...between 5.0 - 6.0mbgl fractures are horizontal to subhorizontal extremely closely to closely spaced (3mm - 120mm - 41mm) planar with rough surfaces. Apertures are tight to moderately wide with occasional clay infilling.*		
									(0.70)			
						SPT(C) 7.00m, N=69 (10,12/10,15,21, 23)	57.74		7.00	Very weak thinly laminated to thinly bedded dark grey MUDSTONE with rare bands recovered as silty clay. Fractures are horizontal to subhorizontal extremely closely to medium spaced (20mm - 210mm - 77mm) planar with rough and smooth surfaces. Apertures are open to wide with occasional gravel infill. Weathering is dark orange penetrating <20mm along fractured surfaces. (PARTIALLY WEATHERED WEALD CLAY FORMATION)		
7.00 - 8.00	100	45	0	16	7.80 - 7.90 C7				(1.00)			
						SPT(C) 8.00m, 100 (3,6/100 for 150mm)	56.74		8.00	Very stiff dark grey slightly sandy CLAY, thickly interbedded with with very weak dark grey thinly laminated mudstone. Fractures are horizontal very closely to closely spaced (25mm - 90mm - 38mm) planar with rough and smooth surfaces. Apertures are tight to open and clean. (UNWEATHERED WEALD CLAY FORMATION)		
										End of Borehole at 8.00m		

1 2 3 4 5 6 7 8 9 10

Start & End of Shift Observations

Date	Time	Depth (m)	Casing (m)	Water (m)
11-12-2019	16:00	4.00		
12-12-2019	16:00	8.00		

Borehole Diameter

Depth (m)	Dia (mm)

Casing Diameter

Depth (m)	Dia (mm)

Flush Information

Top (m)	Base (m)	Flush Type	Return	Flush Colour

Installation

Top (m)	Base (m)	Type	Dia (mm)
0.00	1.00	PLAIN	50
1.00	6.00	SLOTTED	50

Remarks:

1. Inspection pit hand excavated to 1.20mbgl. 2. Rotary cored with PWF and water flush to 8.0mbgl. 3. No ground water encountered. 4. 50mm monitoring well installed to 6.0mbgl on completion.

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks

Fracture spacing reported as Index average over 1m. TCR, SCR and RQD reported in %