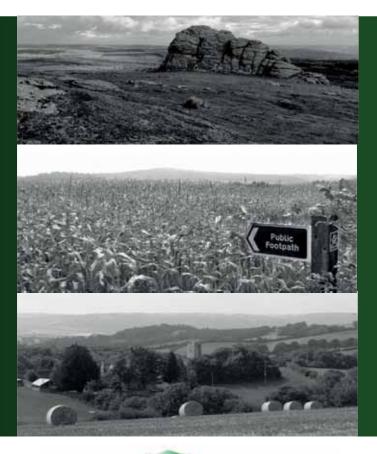
GROUND INVESTIGATION REPORT Proposed School Development Woodlands Meed Primary School, Burgess Hill

Prepared for: Hampshire County Council

Date: October 2018

Report No: 6225





Consulting Geo-Technical & Geo-Environmental Engineers Site Investigation Contractors

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REPORT TITLE	:	Ground Investigation Report:
		Proposed School Development
		Woodlands Meed Primary School, Burgess Hill
REPORT STATUS	:	Final
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	Hampshire County Council is proposing the construction of a new school
Proposals	development within land at Woodlands Meed Primary School, Burgess Hill. Final
	designs are yet to be confirmed but will comprise a new teaching block of two to
Geology	 three storeys along with associated infrastructure. The Geological Map of the area shows the site to be underlain by the Weald Clay Formation which typically comprises dark grey thinly-bedded mudstones with subordinate siltstones and fine- to medium-grained sandstones. No Superficial Deposits are shown to overlie the solid geology of the area.
	In order to confirm the underlying ground conditions at the site, field investigations comprising 5No. cable percussive boreholes were undertaken in August and September 2018. The soil sequence beneath the proposed development consisted of topsoil to a depth
Field Investigatic	of between 0.20m and 0.40m. The topsoil was overlying Residual Soils comprising soft, becoming firm to stiff yellowish brown mottled light grey and orange brown slightly sandy silty CLAY to a depth of between 5.40m and 7.20m. The Residual Soils were underlain by the Weald Clay Formation comprising very stiff very thinly laminated light grey and dark grey slightly sandy silty CLAY to the maximum investigated depth of 15.00m bgl.
	Perched groundwater was encountered within BH01, BH02 BH04 and BH05 at depths of between 4.00m and 4.40m, typically with minimal rise. Deeper groundwater was encountered within BH04 and BH05 at a depth of between 9.50m and 14.80 rising to a depth of between 8.70 and 5.64m after 20 minutes.
Chemical Testing Evaluation	Three samples of soil collected from the site were tested for a site-specific suite of contaminants. The soil chemical testing has revealed no elevations above the relevant guidelines.
	Due to the softer upper Residual Soil deposits, likely high plasticity within these soils and the presence of mature trees to the north west of the site, two foundation solutions have been considered:
su Foundation and Floor	ot design proposals
Engineering Recommendations Recommendations <i>Slap Solntin</i> <i>Slap Solntin</i>	<u>Option 2</u> - If Option 1 is considered not feasible then a piled foundation solution could be considered. The driven piles (friction) will likely be founded within the unweathered Weald Clay Formation. Pile depths will be a function of the required loads and pile diameters; however initial calculations suggest that for a 250mm square precast concrete pile (12m) a safe working load of typically 250kN should be achieved. Allowances should also be made for negative skin friction.
	Void former may be required along the inside faces of foundations and underground beams and suspended concrete floors due to the plastic nature of the surface soils. In addition, floor slabs should be designed as suspended.
Earthwork	proposed earthworks at the site.
Buried Concrete	All buried concrete should, as a minimum, conform to Class AC-1s of BRE Special Digest 1 for foundations within the Weald Clay Formation.



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Annex A: Desktop Plans Annex B: Exploratory Hole Logs Annex C: In-situ Test Results Annex D: Chemical Test Results Annex E: Soil Property Test Results

Drawings

Drawing 2.1: Site Location Plan Drawing 3.1: Exploratory Hole Location Plan Drawing 3.2: SPT vs Depth



SECTION 1 Introduction and Proposed Development

Hampshire County Council is proposing the construction of a new school development within land at Woodlands Meed Primary School, Burgess Hill. Final designs are yet to be confirmed but will comprise a new teaching block of two to three storeys along with associated infrastructure.

Hampshire County Council are the Consulting Engineers for the proposed development.

Terra Firma (South) have been commissioned as Geo-technical and Geo-environmental Engineers to carry out a Ground Investigation of the site.

The main objectives of the Ground Investigation were to:

- Determine the type, strength and bearing characteristics of the shallow superficial deposits and underlying solid geology,
- Provide recommendations for a suitable and economic foundation/floor slab solution for the development, and
- Collect representative samples for laboratory testing, and provide an evaluation of the results.

The Ground Investigation has been undertaken in accordance with the following advisory guidance:

- Code of Practice for Site Investigations (BS 5930): 2015
- Investigation of Potentially Contaminated Sites CoP (BS 10175): 2011
- Methods of test for soils for civil engineering purposes In-situ tests (BS 1377-9): 1999

In order to achieve the above objectives, Terra Firma (South) carried out an assessment programme including a review of existing data, followed by a field investigation to determine the prevailing ground conditions and also to collect and analyse soil samples from selected locations around the site.

The scope of the works including the schedule for in-situ and laboratory testing was determined by Hampshire County Council.

A comprehensive desk study, other than an inspection of geological maps, has not been requested or undertaken as part of this investigation. Nor has a preliminary risk assessment been completed.

1.2 Limitations and Exceptions of Investigation

Hampshire County Council has requested that a Ground Investigation Report (GIR) be performed in order to establish the ground conditions at the site and collect representative samples for laboratory analysis.

The Ground Investigation was conducted and this report has been prepared for the sole internal reliance of Hampshire County Council and their design and construction team. This report shall not be relied upon or transferred to any other parties without the express written authorisation of Terra Firma (South). 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.

The report represents the findings and opinions of experienced geo-environmental and geo-technical consultants. Terra Firma (South) does not provide legal advice and the advice of lawyers may also be required.



The subsurface geological profiles, any contamination and other plots are generalised by necessity and have been based on the information found at the locations of the exploratory holes and depths sampled and tested.

The ground investigation was limited by the following site constraints:

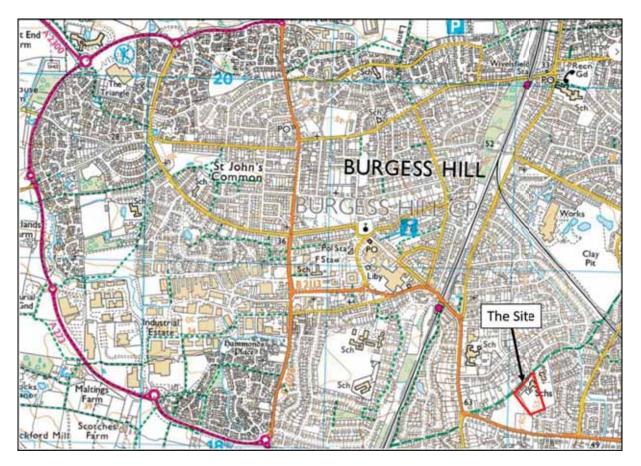
• The sensitive nature of the site (active school)

SECTION 2 Site Setting

2.1 Physical Setting

The proposed development is to be located within property boundaries of Woodlands Meed Primary School, Burgess Hill RH15 0DP.

The site is centred approximately on National Grid Reference (NGR) 532126, 118279. The site location is presented in **Drawing 2.1** below.



Drawing 2.1: Site Location Plan

The site is roughly rectangular in shape in shape with a plan area of approximately 1.517 hectares and sits at approximately 54m above ordnance datum (aod).

The topography of the site slopes gently to the east. The topography of the surrounding area also typically slopes towards the East.

The site is bound by school buildings of Woodlands Mead school to the north, Birchwood Grove Primary school to the east and by residential dwellings to the south and west.

2.1.1 Current Use and Site Conditions

A walk-over survey was undertaken on the [23rd of August 2018 by a Terra Firma (South) Engineer. The site is accessed via the adjacent Birchwood Grove Primary School. At the time of the walk-over survey the site currently comprises an open field laid to grass used as a recreational field for the Woodlands Meed Primary School.



2.2 Geological Setting

The 1:50, 000-scale Geological Map of the area shows the site to be underlain by the Weald Clay Formation of Cretaceous Age. The Weald Clay Formation typically comprise dark grey thinly-bedded mudstones with subordinate siltstones and fine- to medium-grained sandstones.

No Superficial Deposits are shown to overlie the solid geology of the area.

Due to the nature and history of the site the presence of significant made ground is not expected.

2.3 Historical Setting

The history of the site has been traced using historic maps from a GroundSure MapInsight Report. The relevant maps are presented in **Annex A**, and summarised below:

<u> 1874 – 1977</u>

The site is situated within open fields likely used for agriculture. The site remains largely unchanged up to 1977.

<u> 1977 – To Present</u>

From 1977 the current Woodlands Meed school has occupied the north of the site with the area proposed for development comprising a playing field. However, the school is named Newick House School.

SECTION 3 Field Investigation

3.1 General

The site works were scoped by Hampshire County Council and comprised the following:

- 5No. cable percussive boreholes [BH01-BH02]
- 2No. in-situ variable head tests [BH04 & BH05]

The site works were carried out at the site on the 23^{rd} and 24^{th} of August 2018 and again between the 30^{th} of August and 1^{st} of September 2018.

It was requested that site works be completed within the school holidays to avoid disruption to the schools working day.

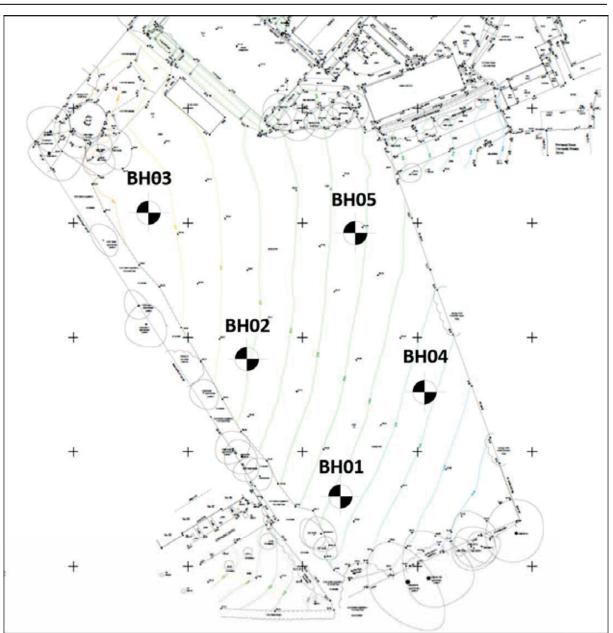
Prior to the site works, the following Health and Safety measures were undertaken:

- Risk Assessment & Method Statement (RAMS) was issued and approved beforehand,
- Underground Utility Plans were obtained by the relevant Statutory Undertakers,
- Site meetings were held with the caretaker of the school to outline the schedule of works and arrange the necessary safety measures to be implemented,
- Before any excavation, all exploratory hole locations were scanned using a Cable Avoidance Tool (CAT), and
- Before any drilling, a 1.20m deep inspection pit was excavated at each borehole location.

The exploratory holes were set out at locations provided by Hampshire County Council, and adjusted where necessary to take account of the site constraints detailed in Section 1.1.

The site works were supervised by Terra Firma (South), who also logged the exploratory holes to the requirements of BS5930:2015.

The exploratory hole logs and in-situ test results are presented in Annex B and Annex C respectively, and their locations shown on Drawing 3.1 below.



Drawing 3.1: Exploratory Hole Location Plan

3.2 Exploratory Holes

3.2.1 Cable Percussive Boreholes

The cable percussive boreholes (150mm diameter) were sunk using a Dando 2500 drilling rig as described in EN ISO 22475-1:2006.

Standard Penetration Tests using either a split spoon or solid cone (SPT(S/C)) were undertaken at regular depths during the drilling in accordance with BS EN ISO 22476-3. Typically, tests were undertaken at the base of an inspection pit and every metre for the first 5m, and then every 1.5m thereafter, a final test was undertaken at the base of each borehole.

Undisturbed (U100) and disturbed bulk/small soil samples were taken at regular depths during the drilling.



Boreholes BH01, BH02 and BH05 were backfilled and reinstated using arisings.

Boreholes BH03 and BH04 were installed with a gas and ground water monitoring pipe, the details of which are summarised in the section below.

During drilling, standing time/day works were incurred due to the following reasons:

- Inspection Pits (5No. Hours)
- Collecting Water (2No. Hours)
- Water observations (1.5No. Hours)
- Rising Head Tests (2No. Hours)
- Chiselling/ Slow progress (2No. Hours)

3.2.2 Borehole Installations

Groundwater and/or gas monitoring systems were installed in boreholes BH03 and BH04, terminating below both the depth of made ground and groundwater.

The standpipe installation details for the boreholes are as follows:

	Table 3.1: Standpipe Installation Details						
Borehole	Top of Response	Bottom of Response	Pipe Detail				
No.	Zone (m)	Zone (m)					
вноз	1.00	14.00	Lockable Flush cover set in concrete surround Plain (50mm) to top of Response Zone with gas valve				
BH04	1.00	14.00	Slotted (50mm) Response Zone with geotextile sock and gravel surround Top sealed with bentonite				

3.3 In-situ Testing

3.3.1 Strength Testing

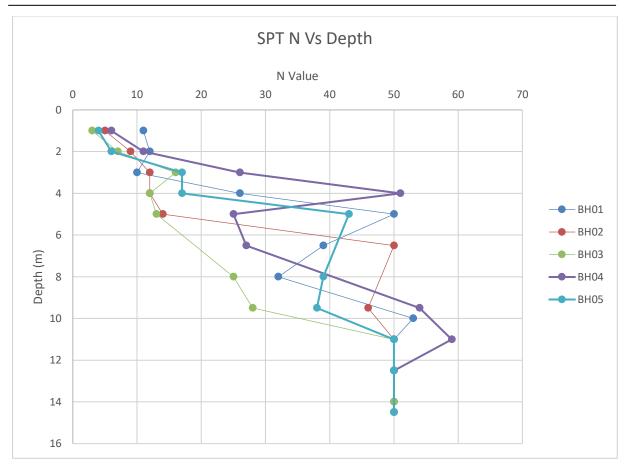
<u>SPTs</u>

SPT N Values taken within the Residual Soils revealed an average N value of 18 (Range 3 to 51).

SPT N Values taken within the Bedrock revealed an average N value of 45.6 (Range 25 to >50).

Drawing 3.2 below presents the distribution of SPT N values against depth (mbgl).

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Drawing 3.2: SPT vs Depth

3.3.2 Variable Head Permeability Testing

During the site investigation, in-situ permeability tests were undertaken within BH04 and BH05 and where possible were carried out to the requirements of BS 5930:1999+A2:2010 (Section 4).

The appropriate calculation sheets are presented in Annex C and the results given in the table below.

Table 3.2: Infiltration Test Results							
Soak away Test	Soak away TestDepthTypeSoil TypeInfiltration Rate(m)(m/s)						
BH04	5.00	Dising Hood	Clay	6.89 x 10 ⁻¹¹			
BH05	5.00	Rising Head	Clay	1.02 x 10 ⁻¹⁰			

During drainage design, consideration should be given to the variability encountered across the site.

It should also be noted that soakaways would only be effective above the depth of groundwater.

3.4 Sampling

3.4.1 Sampling Quality Assurance

Care was taken to ensure that sampling quality assurance occurred during site works. This included the following measures:



- The use of nitrile gloves at each sampling point.
- Stainless steel shovels were used to collect soil samples. The tool was cleaned with distilled water between each sample point.
- Soil samples were stored at a temperature below 4 degrees.
- Soil samples were stored within sample containers according to the chemical testing required.
- No head space was left in sample containers.

3.4.2 Soil Chemical Test Sampling Regime

During the intrusive investigation small disturbed soil and/or water samples were collected for chemical testing.

The sample locations and depths are illustrated in the table below:

	Table 3.3: Chemical Test Sample Descriptions					
Samp	le No.	Sample Type	Description			
BH01	0.50	RS	Yellowish brown mottled orange brown and pale grey slightly sandy silty CLAY			
BH03	0.50	RS	Yellowish brown mottled orange brown and pale grey slightly sandy silty CLAY			
BH05	0.50	RS	Yellowish brown mottled orange brown and pale grey slightly sandy silty CLAY			

Notes

• Sample Type: RS (Residual Soils)

3.4.3 Soil Property Test Sampling Regime

During the intrusive investigation bulk soil samples were collected for soil property testing.

The sample locations and depths are illustrated in the following table:

	Table 3.4: Soil Property Test Sample Descriptions					
Sample No. Sample Type Description						
BH01	1.00	RS	Brown CLAY			
BH01	1.00	RS	Brown to grey CLAY			
BH01	2.00	RS	Brown to grey CLAY			
BH01	3.00	RS	Brown CLAY			
BH01	5.00	RS	Brown slightly sandy CLAY			
BH01	5.00	RS	Brown CLAY			
BH01	7.00	В	Grey sandy CLAY			
BH01	10.00	В	Grey slightly sandy CLAY			
BH01	11.00	В	Grey CLAY			
BH01	12.00	В	Grey CLAY			
BH01	14.00	В	Grey slightly sandy CLAY			
BH02	1.00	RS	Brown slightly gravelly CLAY			
BH02	1.00	RS	Brown CLAY			
BH02	2.00	RS	Brown CLAY			
BH02	4.00	RS	Brown slightly sandy CLAY			
BH02	5.00	RS	Brown CLAY			
BH02	6.00	RS	Yellowish brown to grey CLAY			
BH02	8.00	В	Grey CLAY			



BH02 10.00 B Grey Slightly sandy CLAY BH03 1.00 RS Brown CLAY BH03 1.00 RS Brown CLAY BH03 2.00 RS Brown CLAY BH03 2.00 RS Brown CLAY BH03 3.00 RS Brown CLAY BH03 4.00 RS Brown Slightly sandy CLAY BH03 4.00 RS Brown Slightly sandy CLAY BH03 4.00 RS Brown slightly sandy CLAY BH03 5.00 RS Mottled brown slity CLAY BH03 5.00 RS Brown slightly sandy CLAY BH03 9.00 B Grey CLAY BH03 1.00 B Grey CLAY BH03 1.00 B Grey CLAY BH04 1.00 RS Brown slightly sandy CLAY BH04 1.00 RS Brown CLAY BH04 1.00 RS Brown CLAY BH04 0.0	BH02	8.00	В	Brown slightly silty CLAY
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BH0410.00BDark grey CLAYBH0412.00BGrey slightly sandy CLAYBH051.00RSBrown CLAYBH051.00RSBrown CLAYBH052.00RSBrown CLAYBH053.00RSBrown CLAYBH054.00RSBrown CLAYBH055.00RSBrown Sandy CLAYBH055.00RSBrown sandy CLAYBH056.00BGrey slightly sandy CLAYBH057.00BGrey slightly sandy CLAYBH059.00BGrey slightly sandy CLAY	BH04	8.50	В	Dark brown slightly silty CLAY
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BH05 9.00 B Grey CLAY	BH05	6.00	В	Grey slightly sandy CLAY
BH05 9.00 B Grey CLAY	BH05	7.00	В	Grey slightly sandy CLAY
BH05 11.00 B Grey CLAY	BH05	9.00	В	
	BH05	11.00	В	Grey CLAY
BH05 12.00 B Grey sandy CLAY	BH05	12.00	В	Grey sandy CLAY

Notes

• Sample Type: TS (Topsoil), MG (Made Ground), SD (Superficial Deposits), RS (Residual Soils), B (Bedrock)



4.1 Summary

The ground conditions encountered by the exploratory holes were variable across the site and but can in general be summarised as shown in the following table:

	Table 4.1: Summary of Ground Conditions					
Depth	Depth (mbgl) Thickness (m) Stratum					
From	То	Min	Max			
0.00	0.20/ 0.40	0.20	0.40	Grass over soft dark brown sandy silty CLAY. Rare flint gravel. Frequent rootlets.	Topsoil	
0.20/ 0.40	5.40/ 7.20	5.05	6.80	Soft, becoming firm to stiff yellowish brown mottled light grey and orange brown slightly sandy silty CLAY.	Residual Soils	
5.40/ 7.20	>15.00	Unpr	oven	Very stiff very thinly laminated light grey and dark grey slightly sandy silty CLAY. Locally weakly cemented.	Bedrock (Weald Clay Formation)	

4.2 Stability

Due to the hole stability casing was not needed to advance the boreholes.

4.3 Strata Details

4.3.1 Topsoil

The Topsoil layer was encountered within all exploratory holes.

No visual or olfactory contamination was observed within the topsoil material.

4.3.2 Residual Soils

The Residual Soils were encountered within all exploratory boreholes and comprised typically brown mottled orange brown and light grey slightly sandy silty CLAY. In general, the upper 2.00m of the Residual Soils were noted as being soft.

No visual or olfactory contamination was observed within the residual soils.

4.3.3 Bedrock Geology

terrafirma(south)

The Bedrock Geology was encountered within all exploratory boreholes and typically comprised a very stiff thinly laminated slightly sandy silty CLAY which was locally weakly cemented with depth.



4.4 Water Strikes

During site works, perched groundwater was encountered within BH01, BH02 BH04 and BH05 at depths of between 4.00m and 4.40m, typically with minimal rise. Deeper groundwater was encountered within BH04 and BH05 at a depth of between 9.50m and 14.80 rising to a depth of between 8.70 and 5.64m after 20 minutes.

Groundwater encountered by the exploratory holes can in general be summarised as shown in the following table:

	Table 4.2: Summary of Groundwater									
Hole Location	Groundwater Strike Depth (mbgl)	Groundwater Depth (mbgl) after 20 mins	Comments	Water Bearing Strata						
BH01	4.10	4.02	Very slow inflow	RS						
BH02	4.40	4.40	No rise	RS						
РНО4	4.00	4.00	No rise	RS						
BH04 14.80		5.64	Fast Rise	В						
DUOE	4.30	4.30	No rise	RS						
BH05	9.50	8.70	Slow rise	В						

Notes

• Water Bearing Strata: RS (Residual Soils), B (Solid Bedrock)

SECTION 5 Laboratory Chemical Testing

5.1 General

During the recent site works, 3No. soil samples were taken and despatched to the laboratories of Chemtest for laboratory chemical testing.

The following chemical testing was undertaken:

	Table 5.1: Summary of Chemical Testing Suites								
Inorganics	Metals	Arsenic (As), Boron (B), Cadmium (Cd), Chromium (Cr), Hexavalent Chromium (CrVI), Copper (Cu), Lead (Pb), Mercury (Hg), Nickel (Ni), Selenium (Se), Zinc (Zn)							
	General	oH (acidity), Cyanide (CN ⁻), Thiocyanate (SCN ⁻), Ammoniacal Nitrogen (NH ₄ - N), Sulphide (S ²⁻), Sulphur (S), Sulphate (SO ⁴), Organic Matter (OM)							
Orgar	lics	Phenol Poly-Aromatic Hydrocarbons (PAH) Petroleum Hydrocarbons (PH): EPH							
Miscella	neous	Asbestos ID							
Waste Acceptance Criteria		Single Stage [Full]							

The results of the above chemical tests are presented in Annex D and evaluated below.

5.2 Generic Evaluation

The laboratory chemical test results have been evaluated by comparison with published Generic Assessment Criteria (GAC), with preference in the following order:

- 1. Category 4 Screening Levels (C4SLs) Department for Environment, Food and Rural Affairs (DEFRA, 2014),
- 2. Suitable for Use Levels (S4ULs) Land Quality Management & Chartered Institute of Environmental Health (LQM & CIEH, 2015),
- 3. Soil Guideline Values (SGVs) EA / DEFRA, 2002-2009,
- 4. Generic Assessment Criteria (GAC) Contaminated Land: Applications in Real Environments (CL:AIRE, 2010), and
- 5. Generic Assessment Criteria (GAC) derived by Terra Firma (South).

The above sources typically have derived GAC with reference to the EA's Contaminated Land Exposure Assessment (CLEA) model and using the CLEA software.

The GAC are currently applicable to the following land uses:

- 1. Residential (with consumption of home-grown produce),
- 2. Residential (without consumption of home-growm produce),
- 3. Allotments,
- 4. Commercial,
- 5. Public Open Space (Residential), and
- 6. Public Open Space (Park).



5.2.1 Soils

A summary of the Inorganic (Metals) soil chemical test results are shown in the table below.

Table 5.2: S	Table 5.2: Soil Chemical Test Results – Inorganics (Metals)									
Substance	Land Use / Guideline Values	Measured Levels of Substances (mg/kg)								
	POS-R	Min	Max	Number of exceedances						
Arsenic	79	5.2	28	0						
Cadmium	220	0.23	4.4	0						
Chromium	1500	32	44	0						
Chromium VI	21	<0.50	<0.50	0						
Copper	12000	29	130	0						
Lead	630	28	83	0						
Mercury (Total)	120	<0.10	1.6	0						
Nickel	230	18	39	0						
Selenium	1100	0.27	1.0	0						
Zinc	81000	110	680	0						

Notes

- C4SL Provisional Category 4 Screening Levels
- S4UL Suitable for Use Levels
- POS-R (Public Open Space- Residential)
- A total of three representative soil samples were tested for the above substances

A summary of the Inorganic (General) soil chemical test results are shown in the table below.

Table 5.3: Soil	Table 5.3: Soil Chemical Test Results – Inorganics (General)								
Substance	Land Use / Guideline Values	Measured Levels of Substances (mg/kg)		Number of exceedances					
	R <u>wo</u> HP*	Min	Max	- 6_					
pH (pH Units)	Considered in BRE SD1, BS3882, BS8601 and/or UKWIR	4.8	7.8	-					
Cyanide (Total)	8	<0.50	<0.50	0					
Cyanide (Free)	1.0 (LoD)	<0.50	<0.50	0					
Thiocyanate	170	<5.0	<5.0	0					
Organic Matter	Considered in Organic Contaminant Guideline Value Assessment, BS3882 and/or BS8601	0.57	2.1	-					
Ammoniacal Nitrogen	570	2.0	4.0	0					
Sulphate (2:1) (mg/l)	Considered in BRE SD1	21.8	39.1	-					
Sulphide	Considered in BRE SD1	<1.0	<1.0	-					
Sulphur	-	0.009	0.033	-					
Sulphate (Total) (mg/kg)	Considered in BRE SD1	280	820	-					



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Notes

- SGV Soil Guideline Value
 - GAC Generic Assessment Criteria
 - *In the absence of POS-R Guideline Values, a Residential w/o Home Produce Scenario has been used.
 - LoD Limit of Detection
 - - No comparable Guideline Value
 - A total of three representative soil samples were tested for the above substances

A summary of the Organic (General) soil chemical test results are shown in the table below.

Table 5.4: Soil Chemical Test Results – Organics (General)								
Substance		Land Use / Guideline Values	Measured Substance	Number of exceedances				
	SOM	POS-R	Min	Max	∠ ô			
	1.0	440			0			
Total Phenol	2.5	690	<0.30	<0.30	0			
	6.0	1300			0			
Total PAH [*]		-	<2.0	<2.0	-			
Total EPH (C10-C40) **	1.0	3800 ⁺						
	2.5	3800+	<10	<10	0			
	6.0	3800+						

Notes

- S4UL Suitable for Use Levels
- POS-R (Public Open Space- Residential)
- SOM Soil Organic Matter
- * Total PAH Poly-Aromatic Hydrocarbons, EPA 16 (See Speciated PAH Results Table)
- ** Total EPH Extractable Petroleum Hydrocarbons
- ⁺ Based on worse-case Aromatic C₁₆-C₂₁ fraction
- - No comparable Guideline Value
- A total of three representative soil samples were tested for these substances

In order to accurately assess the risk from Total PAH, speciation was undertaken, which splits the total PAH concentration into its sixteen components.

A summary of the Organic (Speciated PAH) soil chemical test results are shown in the table below.

Table 5.5: Soil Chemical Test Results – Organics (Speciated PAH)								
Substance		Land Use / Guideline Values	Measured Substance		Number of exceedances			
	SOM	POS-R	Min	Max	e e			
Naphthalene	1.0	4900			0			
	2.5	4900	<0.10	<0.10	0			
	6.0	4900			0			
Acenaphthylene	1.0	15000			0			
	2.5	15000	<0.10	<0.10	0			
	6.0	15000			0			
Acenaphthene	1.0	15000			0			
	2.5	15000	<0.10	<0.10	0			
	6.0	15000			0			



Fluerene	1.0	0000			0
Fluorene	1.0	9900			_
	2.5	9900	<0.10	<0.10	0
	6.0	9900			0
Phenanthrene	1.0	3100			0
	2.5	3100	<0.10	<0.10	0
	6.0	3100			0
Anthracene	1.0	74000			0
	2.5	74000	<0.10	<0.10	0
	6.0	74000			0
Fluoranthene	1.0	3100			0
	2.5	3100	<0.10	<0.10	0
	6.0	3100			0
Pyrene	1.0	7400			0
	2.5	7400	<0.10	<0.10	0
	6.0	7400			0
Benzo(a)anthracene	1.0	29			0
	2.5	29	<0.10	<0.10	0
	6.0	29			0
Chrysene	1.0	57			0
	2.5	57	<0.10	<0.10	0
	6.0	57			0
Benzo(b)fluoranthene	1.0	7.1			0
	2.5	7.2	<0.10	<0.10	0
	6.0	7.2			0
Benzo(k)fluoranthene	1.0	190			0
	2.5	190	<0.10	<0.10	0
	6.0	190			0
Benzo(a)pyrene		10	<0.05	<0.10	0
Indeno(1,2,3-c,d)pyrene	1.0	82			0
····	2.5	82	<0.10	<0.10	0
	6.0	82			0
Dibenzo(a,h)anthracene	1.0	0.57			0
	2.5	0.57	<0.10	<0.10	0
	6.0	0.58			0
Benzo(g,h,i)perylene	1.0	640			0
	2.5	640	<0.10	<0.10	0
	6.0	640			0
	0.0	5.0	I		

Notes

- C4SL Provisional Category 4 Screening Levels
- S4UL Suitable for Use Levels
- POS-R (Public Open Space- Residential)
- SOM Soil Organic Matter
- A total of three representative soil samples were tested for these substances

A summary of the Miscellaneous (Asbestos) soil chemical test results are shown in the table below.

Table 5.6: Soil Chemical Test Results – Miscellaneous (Asbestos)								
Sample No. ID Result Comments Total Mass								
BH01	0.50m	Not Detected	-	-				
BH03	0.50m	Not Detected	-	-				
BH05	0.50m	Not Detected	-					



5.2.2 Contaminants of Concern

Contaminants of concern are those whose measured concentrations exceed the relevant Tier 1 CLEA Soil Guideline Value or CIEH Generic Assessment Criteria.

It can be seen from Tables 5.2 to 5.5 that low chemical concentrations were encountered and none exceeded the Tier 1 guideline values for a POS – Residential land-use scenario.

In addition, no asbestos was encountered within the samples analysed.

It is therefore considered that there is negligible risk to site receptors due to contaminants with the sites near surface soils

5.3 Waste Acceptance Procedure

Any materials to be removed from site should be subject to the Waste Acceptance Procedure (WAP) in order to appropriately classify the waste for the correct type of landfill.

Based on the results of the WAC testing, the shallow deposits have been classed as inert waste.

We recommend that the attached results be made available to the relevant parties to determine its classification and acceptance before haulage.

The results of the WAC testing have been included in Annex D.



SECTION 6 Geotechnical Laboratory Testing Results

6.1 General

A number of bulk, undisturbed and solid core samples were collected, and dispatched to the UKAS accredited laboratories of i2 Analytical for soil and/or rock property testing, in accordance with the following:

- 1. Methods of test for soils for civil engineering purposes Parts 1 to 8 (BS 1377): 1999.
- 2. The International Society for Rock Mechanics (ISRM) Methods: 1985.

The results of the below property tests are presented in Annex E and discussed below.

6.1.1 Classification Testing

In order to assess the classification characteristics underlying the site, bulk samples were collected, and dispatched to the laboratory for the following soil property tests:

- 15No. Moisture Content (MC)
- 39No. Plasticity Index (P.I)
- 1No. Bulk Density (BD)

In addition, in order to assess the aggressiveness of the underlying the site, bulk samples were collected and dispatched to the laboratory for the following soil chemical tests:

• 3No. BRE SD1 Suite A

A summary of the soil classification test results are shown in the table below.

	Table 6.1: Summary of Soil Classification Test Results								
	Test		Minimum	Maximum	Average				
Ν	Ioisture Content	%	14	33	23.1				
~	Liquid Limit	%	39	87	61.8				
Plasticity	Plastic Limit	%	20	32	25.5				
last	Plasticity Index	%	17	56	36.3				
4	% <425µm	%	87	100	99.7				
	Bulk Density	Mg/m ³	1.82	1.82	-				
	Total Sulphate	%	-	-	-				
BRE	2:1 Sulphate	g/l	0.019	0.35	0.216				
	pН	-	6.0	7.4	6.5				

Notes:

• For full classification results see Annex E

6.1.2 Shear Strength Testing

In order to assess the shear strength characteristics underlying the site, undisturbed samples were collected and dispatched to the laboratory for the following soil property tests:

- 3No. CD (3 x 38mm samples)
- 5No. Shear box (60mm)

A summary of the shearbox test results is given in the table below:



	Table 6.2: Summary of Shearbox Test Results																
		Location	BH01			BH02 BH03				BH04			BH05				
Consolidate	d	Depth	2.00m			4.00m			5.00m			1.00m			1.00m		
Undrained	(CD)	Unit		RS			RS			RS			RS			RS	
Cell	Pressure	:	100	100 200 400		200	400	800	200	400	800	100	200	400	100	200	400
Angle of	Peak	+		14.0			17.0		13.0			14.0			12.0		
Resistance	Residua	Φ	-				-			-							
Effective	Peak	. kPa	18.0		33.0		51.0			68.0			33.0				
Cohesion	Residua	I KPa		-					-		-						

A summary of the effective (CU) triaxial test results is given in the table below:

	Table 6.3: Summary of Soil Shear Strength (Effective) Test Results										
		Location	BH02				BH03		BH04		
Consolidate	d	Depth	8.00m			6.50m			8.50m		
Undrained ((CD)	Unit		В		RS			В		
Cell	Pressure	9	50 100 200			50 100 200			50	100	200
Angle of	Peak	Φ		35.0		32.5			36.0		
Resistance	Residua	al Ψ		-		-			-		
Effective	Peak	kPa		0		0			0		
Cohesion	Residua	al	-			-			-		

October 2018

SECTION 7 Engineering Recommendations

7.1 Preparation of Site

Prior to the main site works, any buildings to be demolished should be subject to a full asbestos survey.

A structural survey should be undertaken of any existing buildings and structures (road and pavement structures,) including pictorial records. This should be updated throughout the site development phases.

Any existing buildings, foundations, floor slabs, concrete/tarmac hard standings beneath the proposed buildings should be broken up and removed from site and disposed of at a suitable landfill facility. Alternatively, the crushed site won materials may be re-used as structural fill, subject to laboratory chemical testing.

Significant allowances should be made for dealing with any historic foundations, floor slabs, basement structures and other buried obstructions.

The existing grass and scrub vegetation, including all roots and any trees to be removed (and not subject to preservation orders) should be grubbed up and removed from beneath the proposed buildings and roadways.

If required, reduced levels should be brought up to the required levels with well, compacted imported granular materials. Department of Transport (DoT) Type 2 sub-base or similar may be used and should be compacted in layers, in accordance with the Specification for Highway Works. Alternatively, appropriately selected inert imported fill could be used.

Allowances should be made for removing any 'soft spots/area' and their replacement with well compacted granular materials as previously described. The excavated materials will be unacceptable as structural fill and should be removed from site and taken to an appropriately licensed tip.

Due to the sloping nature of the site it may be necessary to undertake a cut and fill exercise in some areas in order to create level plateaux for the development and to facilitate the construction of access roads. Increasing the steepness of the existing slopes is not recommended. Retaining walls may, therefore, be required.

On placing any fill onto the existing ground, the existing ground should be cut and benched to avoid slippage at the interface of the existing ground and fill material. Appropriate drainage measures should be incorporated at the top and bottom of any slopes. Such drainage measures should be positively connected to an appropriate source.

All materials to be removed from site should be subject to the appropriate Waste Acceptance Protocol (WAP) and taken to an appropriately licensed tip.

Contingencies should be made for the protection/diversion of any underground services present beneath the site brought about as a result of the proposed works.

Contingencies should also be made for the protection and any necessary temporary/permanent support of nearby walls.



7.2 Foundation and Floor Slab Solution

The soil sequence beneath the proposed development consisted of topsoil to a depth of between 0.20m and 0.40m. The topsoil was overlying Residual Soils comprising firm, becoming stiff yellowish brown mottled light grey and orange brown slightly sandy silty CLAY to a depth of between 5.40m and 7.20m. The Residual Soils were underlain by the Weald Clay Formation comprising Very stiff very thinly laminated light grey and dark grey slightly sandy silty CLAY to the maximum investigated depth of 15.00m bgl.

Perched groundwater was encountered within BH01, BH02 BH04 and BH05 at depths of between 4.00m and 4.40m, typically with minimal rise. Deeper groundwater was encountered within BH04 and BH05 at a depth of between 9.50m and 14.80 rising to a depth of between 8.70 and 5.64m after 20 minutes.

Due to the softer upper Residual Soil deposits, high plasticity within these soils and the presence of mature trees to the north west of the site, two foundation solutions have been considered:

Option 1: Shallow Traditional Foundations

The topsoil and softer upper Residual Soil deposits are variable in respect to their thickness and geotechnical properties and if foundations were extended to these strata in their current state it would lead to unacceptable levels of differential settlement.

Therefore, in order to avoid unacceptable levels of differential settlement it is considered that any shallow mass concrete strip/trench foundations would need to be extended into the lower firm to stiff deposits encountered at depths of between 2m and 3m bgl.

Although the above depth is likely to be economically restrictive it is understood that a cut and fill exercise is planned in order to create a level plateau for the proposed building. The details of this exercise including any finished levels have yet to be finalised and therefore the above solution will need to be firmed up following confirmation of design proposals as it may not be feasible.

For the above foundations founded within the above in-situ material, an allowable bearing pressure of 100kN/m² may be used for design purposes.

The founding depths would be below the minimum depth to avoid damage from frost heave or thermal shrinkage.

It should be noted that foundation depths greater than those quoted above may be required close to the root systems of existing or proposed trees and hedges, particularly within the NW corner (Willow & Oak). The National House Building Council (NHBC) Chapter 4.2 gives Guidelines as to the appropriate depth of foundation based on the type of tree, distance of the foundation from the tree and the plasticity index of the in-situ materials although preliminary calculations suggest depths in excess of 2.50m.

Void former may be required along the inside faces of foundations and underground beams and suspended concrete floors due to the plastic nature of the surface soils. In addition, floor slabs should be designed as suspended.

Allowances should be made for the removal of any 'soft spots' and their replacement with a suitable concrete mix or well-compacted granular material in layers to the specification for Highway Works.

All foundation formations should be inspected by a suitably qualified Engineer before being concreted.



Option 2: Piles

If Option 1, which comprises a traditional foundation solution is considered not feasible then an alternative piled foundation solution could be considered.

The piles will likely be founded within the un-weathered Weald Clay Formation encountered at a depth of between 5.40m and 7.20m.

Due to the cohesive nature of the Weald Clay Formation, the piles are unlikely to be end-bearing. It is, however, likely that the majority of necessary loads will be transferred to the Weald Clay Formation via skin friction (friction piles).

Due to the nature of the site, and potential for sub-artesian water within the deeper Weald Clay Formation, driven pre-cast concrete drive piles would be appropriate.

Allowances should also be made for negative skin friction that could develop in the Weald Clay Formation. A conservative value of 75kN can be assumed per pile.

Pile depths will be a function of the required loads and pile diameters; however initial calculations suggest that for a 250mm square pre-cast concrete pile (12m) a safe working load of typically 250kN should be achieved.

For the above size and type of pile founded within the Weald Clay Formation the total settlements should not exceed 10mm, with differential movements between adjacent piles being less than half this value.

The above estimated working loads, type and length of piles should be confirmed by the specialist piling contractor. It may also be prudent to drive a number of test piles at selected locations to confirm their drivability, anticipated lengths and safe working loads.

During the piling operations a rigorous check should be kept on vibrations. Should these vibrations exceed permissible levels then measures should be taken to reduce levels to acceptable levels. Should such vibrations exceed acceptable limits and they cannot be reduced then consideration should also be given to a bored pile solution.

All foundation formations should be inspected by a suitably qualified Engineer before being concreted.

It is recommended that the floor slabs be designed as suspended.

7.3 Retaining Wall Recommendations

Due to the sloping nature of the site it is expected that a cut will be required into the slope to facilitate the construction of the school building. Therefore, retaining walls will be required.

Due to the soft nature of the underlying deposits the retaining wall foundation will likely have to be piled. Alternatively, a secant style retaining wall can be utilised.

The following estimates are based on P.I/ ϕ' guidelines from CIRIA Report 104, Design of Retaining Walls Embedded in Stiff Clays, 1984 and G.E. Barnes, Soil Mechanics Principles and Practice, 2nd Ed., 2000 and CIRIA C574: Engineering in Chalk, in addition to the shear strength test results.

The effective cohesion and angles of shearing resistance of the encountered materials have been determined as the following:



	Table 7.1 Retaining Wall Design Parameters									
Stratum Description	Average Effective Cohesion (c') kN/m ²	Average Effective Angle of Shearing Resistance (φ') degrees								
Residual Soils	0 - 68	12 - 33								
Bedrock	0	35-36								

Allowances should be made for incorporating drainage behind the retaining walls in order to prevent the build-up of hydrostatic pressure.

7.4 Slope Stability

Due to the nature of the underlying natural deposits and bedrock structure there are no major potential instability issues during the construction of the proposed retaining walls, provided the recommendations within this section are adhered to.

It is recommended that any slope (temporary or permanent) formed through the weathered deposits should not exceed an angle of 1 in 1.5.

For slopes battered steeper than 1 in 1.5, measures to support the slope in a temporary cut condition should be allowed for. In addition, any excavations should be undertaken in small sections in a sympathetic manner and where possible during dry conditions.

Any slope failure or slumping will be small-scale and localised to surface material only.

During the site development/construction phases stability surveys should be undertaken at regular intervals, including pictorial records. Any evidence of slope instability should be reported to a qualified engineer and appropriate remedial measure implemented.

Allowances should be made for incorporating drainage behind the walls in order to prevent the buildup of hydrostatic pressure.

7.5 Excavations and Formations

Most shallow excavations should be possible with normal soil excavating machinery, although significant allowances should be made for a hydraulic breaker when excavating out any historic foundations, concrete floor slabs and other buried obstructions.

Shallow perched groundwater inflows were encountered between 4.00m and 4.40m depth. Therefore, excavations are unlikely to encounter significant groundwater inflows. Any inflows together with rainwater infiltration should be dealt with by conventional pumping techniques.

It should also be noted that during times of high rainfall a higher groundwater table may be encountered.

The sides of excavations will generally be stable, although support in the form of planking and strutting or other proprietary means may be required especially within the granular deposits.



The sub-formations/formations will be susceptible to loosening, softening and deterioration by exposure to weather (rain, frost and drying conditions), the action of water (flood water or removal of groundwater) and site traffic. As a minimum the formation/base of excavations must be protected by concrete blinding or a minimum thickness of 200mm of hard-core immediately after exposure.

Formations should never be left unprotected and continuously exposed to rain causing degradation, or left exposed/uncovered overnight, unless permitted by a qualified engineer.

Construction plant and other vehicular traffic should not be operated on unprotected formations.

As a minimum the formation/excavation surfaces must be protected by a minimum thickness of 200mm of hard cover (suitable granular material) immediately after exposure.

Allowances should be made for trimming, re-trimming and re-compaction if necessary and for the removal of soft spots and their replacement with well compacted granular materials.

Allowances should be made for special precautions to prevent formation deterioration in addition to the above.

It is recommended that approval be gained from a qualified engineer of the formation condition before covering them with any subsequent construction.

7.6 Earthworks

Soil property testing comprising Plasticity Index (PI) Testing was undertaken on shallow samples from beneath the site.

Based on the above testing, the following classes should be adopted for any proposed earthworks:

Cohesive Deposits:

• Class 2B (General Cohesive Fill)

It is likely that the in-situ materials can be used as structural fill. This material should be placed at or close to its optimum moisture content/maximum dry density and compacted in layers as per the requirements of the Specification for Highway Works, Table 6/4 Method 2 for cohesive material.

These requirements should be followed by the appointed groundwork's contractor.

In order to ensure that the materials are being placed at or near to their maximum dry density, in-situ density tests should be undertaken during the earthworks. Following completion of the earthworks plate loading tests should be undertaken on the finished plateau.

On placing any fill onto the existing ground, to avoid slippage at this interface the existing ground should be cut and benched. Appropriate drainage measures should be incorporated at the top and bottom of any slopes. Such drainage measures should be positively connected to an appropriate source.

7.7 Storm Drainage

Two in-situ variable head tests were undertaken at two locations (BH04 and BH05) in accordance with the requirements of BS 5930:1999+A2:2010 (Section 4).



It is unlikely shallow or deep soakaways will be viable at the site. In addition, soakaways would only be effective above the level of groundwater. Perched groundwater was encountered within BH01, BH02 BH04 and BH05 at depths of between 4.00m and 4.40m. Deeper groundwater was encountered within BH04 and BH05 at a depth of between 9.50m and 14.80 with a sub-artesian rise to a depth of between 8.70 and 5.64m after 20 minutes.

7.8 Protection of Buried Concrete

The laboratory chemical tests undertaken on the sites near surface soils recorded total sulphate contents of 0.019 g/l and 0.35g/l and pH values 6.0 and 7.4.

Groundwater is considered to be static given the low infiltration rates encountered.

Based upon the above it is therefore recommended that all buried concrete should conform to Class AC-1s of BRE Special Digest 1 (2005).



Annex A: Desktop Plans



TerraFirma South

THE SLATE BARN, LOWER LOWLEY, DEVON, EX6 7BP

Groundsure Reference: Your Reference: 6225_

Report Date 3 Oct 2018

GS-5497953

Report Delivery Email - pdf Method:

Enviro Insight

Address: WOODLANDS MEED COLLEGE, WOODLANDS MEED COLLEGE, BIRCHWOOD GROVE ROAD, BURGESS HILL, RH15 0DP

Dear Sir/ Madam,

Thank you for placing your order with Groundsure. Please find enclosed the Groundsure Enviro Insight as requested.

If you need any further assistance, please do not hesitate to contact our helpline on 08444 159000 quoting the above Groundsure reference number.

Yours faithfully,

Managing Director Groundsure Limited

Enc. Groundsure Enviroinsight

Groundsure Enviro Insight LOCATION INTELLIGENCE

Address:	WOODLANDS MEED COLLEGE, WOODLANDS MEED COLLEGE, BIRCHWOOD GROVE ROAD, BURGESS HILL, RH15 0DP
Date:	3 Oct 2018
Reference:	GS-5497953
Client:	TerraFirma South

NW

NE

Е



W

SW

Aerial Photograph Capture date: 30-Jun-2015 532127,118291 Grid Reference: Site Size: 1.46ha Report Reference: GS-5497953 Client Reference: 6225_

SE



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Overview of Findings

For further details on each dataset, please refer to each individual section in the main report as listed. Where the database has been searched a numerical result will be recorded. Where the database has not been searched '-' will be recorded.

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1.2 Additional Information – Historical Tank Database	0	0	10	8
1.3 Additional Information – Historical Energy Features Database	0	0	6	12
1.4 Additional Information – Historical Petrol and Fuel Site Database	0	0	0	0
1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database	0	0	0	0
1.6 Historical military sites	0	0	0	0
1.7 Potentially Infilled Land	0	1	5	14
Section 2: Environmental Permits, Incidents and Registers	On-site	0-50m	51-250	251-500
2.1 Industrial Sites Holding Environmental Permits and/or Authorisations				
2.1.1 Records of historic IPC Authorisations	0	0	0	0
2.1.2 Records of Part A(1) and IPPC Authorised Activities	0	0	0	0
2.1.3 Records of Red List Discharge Consents	0	0	0	0
2.1.4 Records of List 1 Dangerous Substances Inventory sites	0	0	0	0
2.1.5 Records of List 2 Dangerous Substances Inventory sites	0	0	0	0
2.1.6 Records of Part A(2) and Part B Activities and Enforcements	0	0	0	0
2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations	0	0	0	0
2.1.8 Records of Licensed Discharge Consents	0	0	2	10
2.1.9 Records of Water Industry Referrals	0	0	0	0
2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site	0	0	0	0
2.2 Records of COMAH and NIHHS sites	0	0	0	0
2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents				
2.3.1 National Incidents Recording System, List 2	0	0	0	0
2.3.2 National Incidents Recording System, List 1	0	0	0	0
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990	0	0	0	0



						1000
Section 3: Landfill and Other Waste Sites	On-site	0-50m	51-250	251-500	501-1000	1000- 1500
3.1 Landfill Sites						
3.1.1 Environment Agency/Natural Resources Wales Registered Landfill Sites	0	0	0	0	0	Not searched
3.1.2 Environment Agency/Natural Resources Wales Historic Landfill Sites	0	0	0	0	0	0
3.1.3 BGS/DoE Landfill Site Survey	0	0	0	0	0	0
3.1.4 Records of Landfills in Local Authority and Historical Mapping Records	0	0	0	0	0	0
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3.2.1 Operational and Non-Operational Waste Treatment, Transfer and Disposal Sites	0	0	0	0	Not searched	Not searche
3.2.2 Environment Agency/Natural Resources Wales Licensed Waste Sites	0	0	0	0	0	0
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4.2 Records of Petrol and Fuel Sites	0		0	0		0
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 5.1 Records of Artificial Ground and Made Ground present beneath the study site 5.2 Records of Superficial Ground and Drift Geology present beneath the study site 5.3 For records of Bedrock and Solid Geology beneath the study 			None id			
 5.1 Records of Artificial Ground and Made Ground present beneath the study site 5.2 Records of Superficial Ground and Drift Geology present beneath the study site 5.3 For records of Bedrock and Solid Geology beneath the study site see the detailed findings section. 			None id	lentified		
 5.1 Records of Artificial Ground and Made Ground present beneath the study site 5.2 Records of Superficial Ground and Drift Geology present beneath the study site 5.3 For records of Bedrock and Solid Geology beneath the study site see the detailed findings section. Section 6: Hydrogeology and Hydrology 6.1 Records of Strata Classification in the Superficial Geology			None id 0-50 Iden	lentified		
 5.1 Records of Artificial Ground and Made Ground present beneath the study site 5.2 Records of Superficial Ground and Drift Geology present beneath the study site 5.3 For records of Bedrock and Solid Geology beneath the study site see the detailed findings section. Section 6: Hydrogeology and Hydrology 6.1 Records of Strata Classification in the Superficial Geology within 500m of the study site	On-site	0-50m	None id 0-50 Iden	DOm tified	501-1000	1000-2000
 5.1 Records of Artificial Ground and Made Ground present beneath the study site 5.2 Records of Superficial Ground and Drift Geology present beneath the study site 5.3 For records of Bedrock and Solid Geology beneath the study site see the detailed findings section. Section 6: Hydrogeology and Hydrology 6.1 Records of Strata Classification in the Superficial Geology within 500m of the study site	On-site	0-50m	None id 0-5(Iden Iden	DOm tified	501-1000	
 5.1 Records of Artificial Ground and Made Ground present beneath the study site 5.2 Records of Superficial Ground and Drift Geology present beneath the study site 5.3 For records of Bedrock and Solid Geology beneath the study site see the detailed findings section. Section 6: Hydrogeology and Hydrology 6.1 Records of Strata Classification in the Superficial Geology within 500m of the study site 6.2 Records of Strata Classification in the Bedrock Geology within 500m of the study site 6.3 Groundwater Abstraction Licences (within 2000m of the study			None id 0-50 Iden Iden 51-250	lentified DOm tified tified 251-500		2000
 5.1 Records of Artificial Ground and Made Ground present beneath the study site 5.2 Records of Superficial Ground and Drift Geology present beneath the study site 5.3 For records of Bedrock and Solid Geology beneath the study site see the detailed findings section. Section 6: Hydrogeology and Hydrology 6.1 Records of Strata Classification in the Superficial Geology within 500m of the study site 6.2 Records of Strata Classification in the Bedrock Geology within 500m of the study site 6.3 Groundwater Abstraction Licences (within 2000m of the study site) 6.4 Surface Water Abstraction Licences (within 2000m of the study 	0	0	None id 0-50 Iden Iden 51-250 0	lentified DOm tified 251-500 0	0	2000 0
 5.1 Records of Artificial Ground and Made Ground present beneath the study site 5.2 Records of Superficial Ground and Drift Geology present beneath the study site 5.3 For records of Bedrock and Solid Geology beneath the study site see the detailed findings section. Section 6: Hydrogeology and Hydrology 6.1 Records of Strata Classification in the Superficial Geology within 500m of the study site 6.2 Records of Strata Classification in the Bedrock Geology within 500m of the study site 6.3 Groundwater Abstraction Licences (within 2000m of the study site) 6.4 Surface Water Abstraction Licences (within 2000m of the study site) 	0	0	None id 0-50 Iden Iden 51-250 0 0	lentified DOm tified 251-500 0 4	0	2000 0 0
 5.1 Records of Artificial Ground and Made Ground present beneath the study site 5.2 Records of Superficial Ground and Drift Geology present beneath the study site 5.3 For records of Bedrock and Solid Geology beneath the study site see the detailed findings section. Section 6: Hydrogeology and Hydrology 6.1 Records of Strata Classification in the Superficial Geology within 500m of the study site 6.2 Records of Strata Classification in the Bedrock Geology within 500m of the study site 6.3 Groundwater Abstraction Licences (within 2000m of the study site) 6.4 Surface Water Abstraction Licences (within 2000m of the study site) 6.5 Potable Water Abstraction Licences (within 2000m of the study site) 	0 0 0	0 0 0	None id 0-50 Iden Iden 51-250 0 0 0	lentified DOm tified 251-500 0 4 0	0 0 0	2000 0 0 Not searche



Section 6: Hydrogeology and Hydrology	0-500m					
	On-site	0-50m	51-250	251-500	501-1000	1000- 1500
6.9 Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site	No	No	No	No	No	Yes
6.10 Ordnance Survey MasterMap Water Network entries within 500m of the site	0	2	8	38	Not searched	Not searched
6.11 Surface water features within 250m of the study site	No	No	Yes	Not searched	Not searched	Not searched

Section 7: Flooding

7.1 Enviroment Agency Zone 2 floodplains within 250m of the study site	Identified
7.2 Environment Agency/Natural Resources Wales Zone 3 floodplains within 250m of the study site	Identified
7.3 Risk of flooding from Rivers and the Sea (RoFRaS) rating for the study site	Very Low
7.4 Flood Defences within 250m of the study site	None identified
7.5 Areas benefiting from Flood Defences within 250m of the study site	None identified
7.6 Areas used for Flood Storage within 250m of the study site	None identified
7.7 Maximum BGS Groundwater Flooding susceptibility within 50m of the study site	Not Prone
7.8 BGS confidence rating for the Groundwater Flooding susceptibility areas	Not Applicable

Section 8: Designated Environmentally Sensitive Sites	On-site	0-50m	51-250	251-500	501-1000	1000- 2000
8.1 Records of Sites of Special Scientific Interest (SSSI)	0	0	0	0	0	6
8.2 Records of National Nature Reserves (NNR)	0	0	0	0	0	0
8.3 Records of Special Areas of Conservation (SAC)	0	0	0	0	0	0
8.4 Records of Special Protection Areas (SPA)	0	0	0	0	0	0
8.5 Records of Ramsar sites	0	0	0	0	0	0
8.6 Records of Ancient Woodlands	0	0	0	0	4	14
8.7 Records of Local Nature Reserves (LNR)	0	0	0	0	0	1
8.8 Records of World Heritage Sites	0	0	0	0	0	0
8.9 Records of Environmentally Sensitive Areas	0	0	0	0	0	0



Section 8: Designated Environmentally Sensitive Sites	On-site	0-50m	51-250	251-500	501-1000	1000- 2000
8.10 Records of Areas of Outstanding Natural Beauty (AONB)	0	0	0	0	0	0
8.11 Records of National Parks	0	0	0	0	1	0
8.12 Records of Nitrate Sensitive Areas	0	0	0	0	0	0
8.13 Records of Nitrate Vulnerable Zones	1	0	0	0	0	1
8.14 Records of Green Belt land	0	0	0	0	0	0
Section 9: Natural Hazards						
9.1 Maximum risk of natural ground subsidence			Lo	OW		
9.1.1 Maximum Shrink-Swell hazard rating identified on the study site			Lo	ow		
9.1.2 Maximum Landslides hazard rating identified on the study site	Very Low					
9.1.3 Maximum Soluble Rocks hazard rating identified on the study site	Negligible					
9.1.4 Maximum Compressible Ground hazard rating identified on the study site	n Negligible					
9.1.5 Maximum Collapsible Rocks hazard rating identified on the study site	e Very Low					
9.1.6 Maximum Running Sand hazard rating identified on the study site	Negligible					
9.2 Radon						
9.2.1 Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level?	The site is not in a Radon Affected Area, as less than 1% of propertie are above the Action Level.					properties
9.2.2 Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment?	No radon protective measures are necessary.					
Section 10: Mining						
10.1 Coal mining areas within 75m of the study site			None ic	lentified		
10.2 Non-Coal Mining areas within 50m of the study site boundary	ry Identified					
10.3 Brine affected areas within 75m of the study site	None identified					



Using this report

The following report is designed by Environmental Consultants for Environmental Professionals bringing together the most up-to-date market leading environmental data. This report is provided under and subject to the Terms & Conditions agreed between Groundsure and the Client. The document contains the following sections:

1. Historical Industrial Sites

Provides information on past land uses that may pose a risk to the study site in terms of potential contamination from activities or processes. Potentially Infilled Land features are also included. This search is conducted using radii of up to 500m.

2. Environmental Permits, Incidents and Registers

Provides information on Regulated Industrial Activities and Pollution Incidents as recorded by Regulatory Authorities, and sites determined as Contaminated Land. This search is conducted using radii up to 500m.

3. Landfills and Other Waste Sites

Provides information on landfills and other waste sites that may pose a risk to the study site. This search is conducted using radii up to 1500m.

4. Current Land Uses

Provides information on current land uses that may pose a risk to the study site in terms of potential contamination from activities or processes. These searches are conducted using radii of up to 500m. This includes information on potentially contaminative industrial sites, petrol stations and fuel sites as well as high pressure gas pipelines and underground electricity transmission lines.

5. Geology

Provides information on artificial and superficial deposits and bedrock beneath the study site.

6. Hydrogeology and Hydrology

Provides information on productive strata within the bedrock and superficial geological layers, abstraction licences, Source Protection Zones (SPZs) and river quality. These searches are conducted using radii of up to 2000m.

7. Flooding

Provides information on river and coastal flooding, flood defences, flood storage areas and groundwater flood areas. This search is conducted using radii of up to 250m.

8. Designated Environmentally Sensitive Sites

Provides information on the Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR), Special Areas of Conservation (SAC), Special Protection Areas (SPA), Ramsar sites, Local Nature Reserves (LNR), Areas of Outstanding Natural Beauty (AONB), National Parks (NP), Environmentally Sensitive Areas, Nitrate Sensitive Areas, Nitrate Vulnerable Zones and World Heritage Sites and Scheduled Ancient Woodland. These searches are conducted using radii of up to 2000m.

9. Natural Hazards

Provides information on a range of natural hazards that may pose a risk to the study site. These factors include natural ground subsidence and radon..

10. Mining

Provides information on areas of coal and non-coal mining and brine affected areas.

11. Contacts

This section of the report provides contact points for statutory bodies and data providers that may be able to provide further information on issues raised within this report. Alternatively, Groundsure provide a free Technical Helpline (08444 159000) for further information and guidance.

Note: Maps

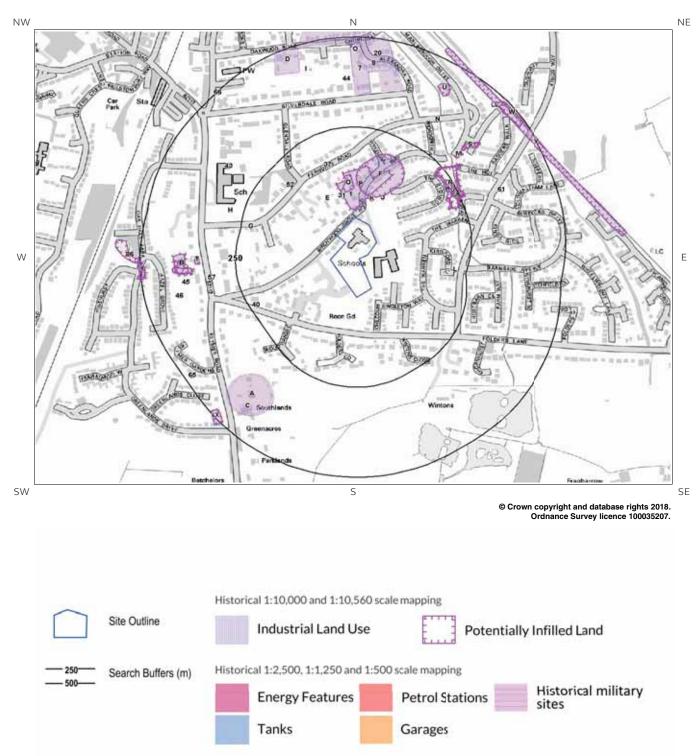
Only certain features are placed on the maps within the report. All features represented on maps found within this search are given an identification number. This number identifies the feature on the mapping and correlates it to the additional information provided below. This identification number precedes all other information and takes the following format -Id: 1, Id: 2, etc. Where numerous features on the same map are in such close proximity that the numbers would obscure each other a letter identifier is used instead to represent the features. (e.g. Three features which overlap may be given the identifier "A" on the map and would be identified separately as features 1A, 3A, 10A on the data tables provided).

Where a feature is reported in the data tables to a distance greater than the map area, it is noted in the data table as "Not Shown".

All distances given in this report are in Metres (m). Directions are given as compass headings such as N: North, E: East, NE: North East from the nearest point of the study site boundary.



1. Historical Land Use





1. Historical Industrial Sites

1.1 Potentially Contaminative Uses identified from 1:10,000 scale Mapping

The systematic analysis of data extracted from standard 1:10,560 and 1:10,000 scale historical maps provides the following information:

Records of sites with a potentially contaminative past land use within 500m of the search boundary: 30

ID	Distance [m]	Direction	Use	Date
1	12	Ν	Nursery	1962
2P	20	Ν	Brick Field	1874
3F	71	NE	Brick Kiln	1874
4Q	73	NW	Unspecified Pit	1874
5A	328	SW	Chimneys	1909
6A	335	SW	Chimneys	1874
7	341	Ν	Nursery	1909
8	341	Ν	Nurseries	1938
90	342	Ν	Nurseries	1962
10T	344	W	Unspecified Heap	1874
11B	363	W	Unspecified Heaps	1938
12B	363	W	Unspecified Heaps	1909
13B	366	W	Unspecified Heaps	1896
14B	375	W	Unspecified Heaps	1874
15A	375	SW	Chimneys	1984
16A	378	SW	Chimneys	1938
17A	380	SW	Chimneys	1962
18A	380	SW	Chimneys	1974
19A	384	SW	Chimneys	1896
20	405	Ν	Nursery	1909
21U	407	NE	Unspecified Pit	1962
22C	408	SW	Chimneys	1974
23C	411	SW	Chimneys	1984
24C	414	SW	Chimneys	1962
251	423	Ν	Unspecified Tank	1909
26D	426	Ν	Nursery	1909
27D	428	Ν	Nursery	1938
28V	470	NE	Cuttings	1874
29W	473	NE	Cuttings	1897
30X	480	SW	Unspecified Pit	1874



18

1.2 Additional Information – Historical Tank Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical tanks within 500m of the search boundary:

ID	Distance (m)	Direction	Use	Date
31	62	NW	Unspecified Tank	1897
32J	77	NE	Unspecified Tank	1897
33E	81	NW	Unspecified Tank	1937
34E	81	NW	Unspecified Tank	1910
35E	81	NW	Unspecified Tank	1937
36F	130	NE	Unspecified Tank	1874
37	156	NW	Unspecified Tank	1910
38G	222	W	Unspecified Tank	1910
39G	223	W	Unspecified Tank	1897
40	232	SW	Unspecified Tank	1910
41H	284	W	Unspecified Tank	1874
42H	284	W	Unspecified Tank	1897
43	336	NW	Unspecified Tank	1910
44	379	Ν	Unspecified Tank	1910
45	384	W	Unspecified Tank	1910
46	407	W	Unspecified Tank	1937
471	423	Ν	Unspecified Tank	1910
481	423	Ν	Unspecified Tank	1897

1.3 Additional Information – Historical Energy Features Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical energy features within 500m of the search boundary:

18

ID	Distance (m)	Direction	Use	Date
49K	59	NE	Electricity Substation	1978
50J	60	NE	Electricity Substation	1977
51K	60	NE	Electricity Substation	1983
52	173	NW	Electricity Substation	1977
53L	219	E	Electricity Substation	1978
54L	219	E	Electricity Substation	1983
55M	294	NE	Electricity Substation	1954
56M	308	NE	Electricity Substation	1970



57	315	W	Electricity Substation	1977
58N	337	NE	Electricity Substation	1970
59N	337	NE	Electricity Substation	1977
60N	337	NE	Electricity Substation	1983
61	355	E	Electricity Substation	1983
62O	472	Ν	Electricity Substation	1977
63O	472	Ν	Electricity Substation	1983
64O	472	Ν	Electricity Substation	1970
65	480	SW	Electricity Substation	1977
66	492	NW	Electricity Substation	1977

1.4 Additional Information – Historical Petrol and Fuel Site Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical petrol stations and fuel sites within 500m of the search boundary:

0

Database searched and no data found.

1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical garage and motor vehicle repair sites within 500m of the search boundary: 0

Database searched and no data found.

1.6 Historical military sites

Certain military installations were not noted on historic mapping for security reasons. Whilst not all military land is necessarily of concern, Groundsure has researched and digitised a number of Ordnance Factories and other military industrial features (e.g. Ordnance Depots, Munitions Testing Grounds) which may be of contaminative concern. This research was drawn from a number of different sources, and should not be regarded as a definitive or exhaustive database of potentially contaminative military installations. The boundaries of sites within this database have been estimated from the best evidence available to Groundsure at the time of compilation.



1874

1897

1874

1938

1909

1962

Records of historical military sites within 500m of the search boundary:

470

473

480

488

488

488

Database searched and no data found.

1.7 Potentially Infilled Land

Records of Potentially Infilled Features from 1:10,000 scale mapping within 500m of the study site: 20

ID	Distance(m)	Direction	Use	Date
67P	20	Ν	Brick Field	1874
68F	71	NE	Brick Kiln	1874
69Q	73	NW	Unspecified Pit	1874
70R	210	E	Pond	1897
71R	216	E	Pond	1938
72R	218	E	Pond	1909
73S	322	NE	Ponds	1874
74S	327	NE	Ponds	1897
75T	344	W	Unspecified Heap	1874
76B	363	W	Unspecified Heaps	1938
77B	363	W	Unspecified Heaps	1909
78B	366	W	Unspecified Heaps	1896
79B	375	W	Unspecified Heaps	1874
80U	407	NE	Unspecified Pit	1962

NE

NE

SW

W

W

W

Cuttings

Cuttings

Unspecified Pit

Ponds

Ponds

Ponds

fall . . е.н. т.

81V

82W

83X

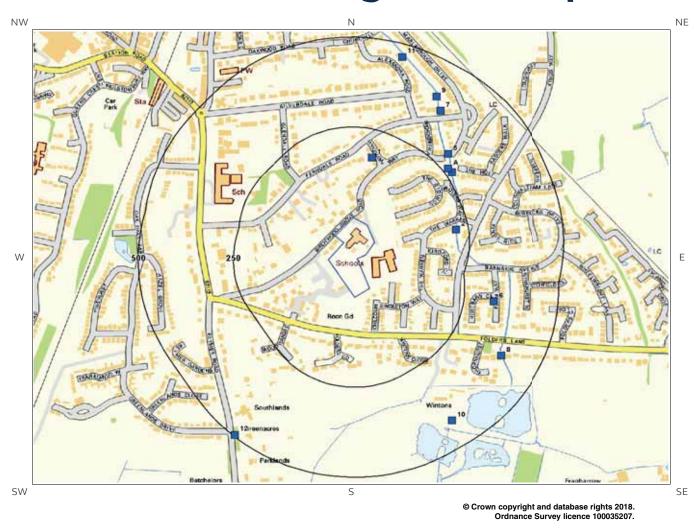
84Y

85Y

86



2. Environmental Permits, Incidents and Registers Map







2. Environmental Permits, Incidents and Registers

2.1 Industrial Sites Holding Licences and/or Authorisations

Searches of information provided by the Environment Agency/Natural Resources Wales and Local Authorities reveal the following information:

2.1.1 Records of historic IPC Authorisations within 500m of the study site:

Database searched and no data found.

2.1.2 Records of Part A(1) and IPPC Authorised Activities within 500m of the study site:

Database searched and no data found.

2.1.3 Records of Red List Discharge Consents (potentially harmful discharges to controlled waters) within 500m of the study site:

0

0

0

Database searched and no data found.

2.1.4 Records of List 1 Dangerous Substances Inventory Sites within 500m of the study site:

0

Database searched and no data found.

2.1.5 Records of List 2 Dangerous Substance Inventory Sites within 500m of the study site:

0

Database searched and no data found.



2.1.6 Records of Part A(2) and Part B Activities and Enforcements within 500m of the study site:

Database searched and no data found.

2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations:

Database searched and no data found.

2.1.8 Records of Licensed Discharge Consents within 500m of the study site:

12

0

0

The following Licensed Discharge Consents records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details		
1	173	Ν	532180 118600	Address: RESIDENTIAL DEVELOPMENT, RESIDENTIAL DEVELOPMENT, BURGESS HILL, WEST SUSSEX Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: S01109 Permit Version: 1	Receiving Water: FRESHWATER RIVER Status: PRE NRA LEGISLATION WHERE ISSUE DATE < 01-SEP-89 (HISTORIC ONLY) Issue date: 22/03/1963 Effective Date: 22-Mar-1963 Revocation Date: 01/07/1991	
2	216	E	532400 118400	Address: 1 O'CLOCK FARM, 1 O'CLOCK FARM, SOUTH OF MARLBOROUGH DR, & NORTH OF FOLDERS BROOK ESTATE, FOLDERS LANE, BURGESS HILL WEST Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: N02081 Permit Version: 1	Receiving Water: FRESHWATER RIVER Status: LAPSED UNDER SCHEDULE 23 ENVIRONMENT ACT 1995 Issue date: 19/01/1976 Effective Date: 19-Jan-1976 Revocation Date: 31/03/1997	
ЗA	264	NE	532380 118570	Address: DEVELOPMENT OF LAND, DEVELOPMENT OF LAND, SOUTH OF WYKEHAM WAY, EAST OF BIRCHWOOD GROVE C.P. SCH, BURGESS HILL WEST SUSSEX Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: N02046 Permit Version: 1	Receiving Water: FRESHWATER RIVER Status: LAPSED UNDER SCHEDULE 23 ENVIRONMENT ACT 1995 Issue date: 01/11/1976 Effective Date: 01-Nov-1976 Revocation Date: 31/03/1997	
4A	267	NE	532390 118560	Address: BIRCHWOOD GROVE C.P. SCHOOL, BIRCHWOOD GROVE C.P. SCHOOL, & SPECIAL SCHOOL, BURGESS HILL, WEST SUSSEX Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: S01939 Permit Version: 1	Receiving Water: FRESHWATER RIVER Status: LAPSED UNDER SCHEDULE 23 ENVIRONMENT ACT 1995 Issue date: 14/09/1970 Effective Date: 14-Sep-1970 Revocation Date: 31/03/1997	
5	290	NE	532380 118610	Address: RESIDENTIAL DEVELOPMENT, RESIDENTIAL DEVELOPMENT, BURGESS HILL, WEST SUSSEX Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER	Receiving Water: FRESHWATER RIVER Status: PRE NRA LEGISLATION WHERE ISSUE DATE < 01-SEP-89 (HISTORIC ONLY) Issue date: 22/03/1963 Effective Date: 22-Mar-1963	



ID	Distance (m)	Direction	NGR	Details			
				Permit Number: S01109 Permit Version: 1	Revocation Date: 01/07/1991		
6	328	E	532500 118200	Address: LAND TO THE NORTH OF FOLDERS LANE, LAND TO THE NORTH OF FOLDERS LAN, BURGESS HILL, WEST SUSSEX Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: N02041 Permit Version: 1	Receiving Water: FRESHWATER RIVER Status: LAPSED UNDER SCHEDULE 23 ENVIRONMENT ACT 1995 Issue date: 14/02/1977 Effective Date: 14-Feb-1977 Revocation Date: 31/03/1997		
7	371	NE	532360 118730	Address: RESIDENTIAL DEVELOPMENT, RESIDENTIAL DEVELOPMENT, BURGESS HILL, WEST SUSSEX Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: S01109 Permit Version: 1	Receiving Water: FRESHWATER RIVER Status: PRE NRA LEGISLATION WHERE ISSUE DATE < 01-SEP-89 (HISTORIC ONLY Issue date: 22/03/1963 Effective Date: 22-Mar-1963 Revocation Date: 01/07/1991		
8	393	SE	532520 118050	Address: 56 FOLDERS LANE, 56 FOLDERS LANE, BURGESS HILL Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: S02556 Permit Version: 1	Receiving Water: FRESHWATER RIVER Status: PRE NRA LEGISLATION WHERE ISSUE DATE < 01-SEP-89 (HISTORIC ONLY Issue date: 31/10/1966 Effective Date: 31-Oct-1966 Revocation Date: 01/07/1991		
9	401	NE	532350 118770	Address: RESIDENTIAL DEVELOPMENT, RESIDENTIAL DEVELOPMENT, BURGESS HILL, WEST SUSSEX Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: S01109 Permit Version: 1	Receiving Water: FRESHWATER RIVER Status: PRE NRA LEGISLATION WHERE ISSUE DATE < 01-SEP-89 (HISTORIC ONLY Issue date: 22/03/1963 Effective Date: 22-Mar-1963 Revocation Date: 01/07/1991		
10	426	SE	532390 117870	Address: WINTONS FARM, WINTONS FARM, FOLDERS LANE, BURGESS HILL, WEST SUSSEX Effluent Type: SEWAGE DISCHARGES - UNSPECIFIED - NOT WATER COMPANY Permit Number: P02967 Permit Version: 1	Receiving Water: FRESHWATER RIVER Status: POST NRA LEGISLATION WHERE ISSUE DATE > 31-AUG-89 (HISTORIC ONLY) Issue date: 12/06/1990 Effective Date: 12-Jun-1990 Revocation Date: 11/11/1996		
11	464	Ν	532260 118880	Address: RESIDENTIAL DEVELOPMENT, RESIDENTIAL DEVELOPMENT, BURGESS HILL, WEST SUSSEX Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: S01109 Permit Version: 1	Receiving Water: FRESHWATER RIVER Status: PRE NRA LEGISLATION WHERE ISSUE DATE < 01-SEP-89 (HISTORIC ONLY Issue date: 22/03/1963 Effective Date: 22-Mar-1963 Revocation Date: 01/07/1991		
12	495	SW	531820 117830	Address: GREENACRES, GREENACRES, KEYMER ROAD, BURGESS HILL Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: N03103 Permit Version: 1	Receiving Water: INTO LAND Status: PRE NRA LEGISLATION WHERE ISSUE DATE < 01-SEP-89 (HISTORIC ONLY Issue date: 23/05/1979 Effective Date: 23-May-1979 Revocation Date:		

2.1.9 Records of Water Industry Referrals (potentially harmful discharges to the public sewer) within 500m of the study site:

Database searched and no data found.

0



2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site:

Database searched and no data found.
2.2 Dangerous or Hazardous Sites

Records of COMAH & NIHHS sites within 500m of the study site:

Database searched and no data found.

2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents

2.3.1 Records of National Incidents Recording System, List 2 within 500m of the study site:

0

0

Database searched and no data found.

2.3.2 Records of National Incidents Recording System, List 1 within 500m of the study site:

Database searched and no data found.

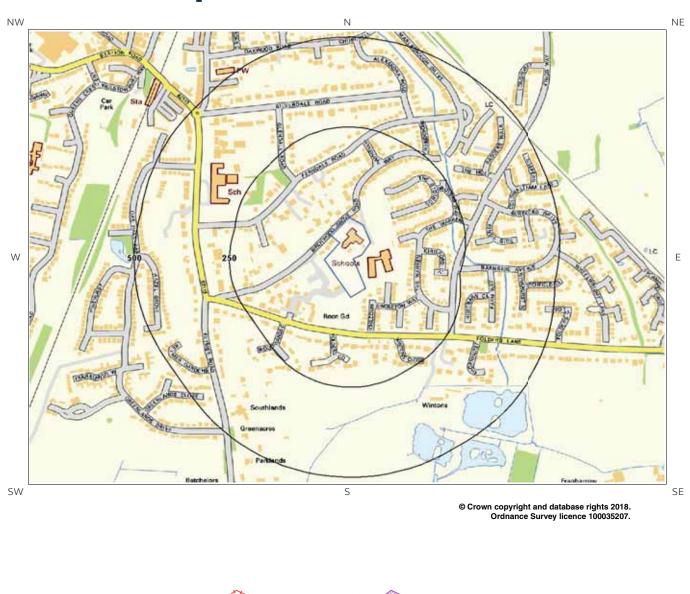
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990

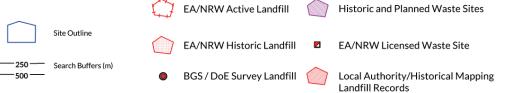
Records of sites determined as contaminated land under Section 78R of the Environmental Protection Act 1990 are there within 500m of the study site 0

Database searched and no data found.



3. Landfill and Other Waste Sites Map







3. Landfill and Other Waste Sites

3.1 Landfill Sites

3.1.1 Records from Environment Agency/Natural Resources Wales landfill data within 1000m of the study site:

Database searched and no data found.

3.1.2 Records of Environment Agency/Natural Resources Wales historic landfill sites within 1500m of the study site:

0

0

Database searched and no data found.

3.1.3 Records of BGS/DoE non-operational landfill sites within 1500m of the study site:

0

Database searched and no data found.

3.1.4 Records of Landfills from Local Authority and Historical Mapping Records within 1500m of the study site:

0

Database searched and no data found.

3.2 Other Waste Sites

3.2.1 Records of waste treatment, transfer or disposal sites within 500m of the study site:

0

Database searched and no data found.



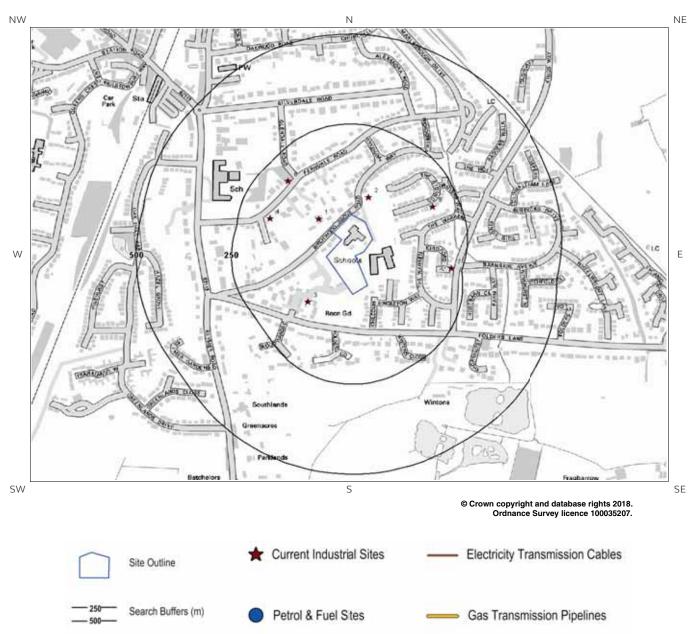
0

3.2.2 Records of Environment Agency/Natural Resources Wales licensed waste sites within 1500m of the study site:

Database searched and no data found.



4. Current Land Use Map





4. Current Land Uses

4.1 Current Industrial Data

Records of potentially contaminative industrial sites within 250m of the study site:

7

The following records are represented as points on the Current Land Uses map.

Distance (m)	Directio n	Company	NGR	Address	Activity	Category
51	NW	Lumafix Ltd	532044 118422	52, Ferndale Road, Burgess Hill, RH15 0HG	Lampshades and Lighting	Consumer Products
65	NE	Electricity Sub Station	532176 118483	RH15	Electrical Features	Infrastructure and Facilities
110	SW	Electricity Sub Station	532017 118192	RH15	Electrical Features	Infrastructure and Facilities
168	W	A N C Consultants	531916 118424	34, Ferndale Road, Burgess Hill, RH15 0HG	Civil Engineers	Engineering Services
181	E	Southern Medical Services	532344 118456	7, The Ridings, Burgess Hill, RH15 OLW	Ambulance and Medical Transportation Services	Health Support Services
182	NW	Electricity Sub Station	531964 118528	RH15	Electrical Features	Infrastructure and Facilities
222	E	Electricity Sub Station	532394 118285	RH15	Electrical Features	Infrastructure and Facilities
	(m) 51 65 110 168 181 182	(m) n 51 NW 65 NE 110 SW 168 W 181 E 182 NW	(m)nCompany51NWLumafix Ltd65NEElectricity Sub Station110SWElectricity Sub Station168WA N C Consultants181ESouthern Medical Services182NWElectricity Sub Station	(m) n Company NGR 51 NW Lumafix Ltd 532044 118422 65 NE Electricity Sub Station 532176 118483 110 SW Electricity Sub Station 532017 118192 168 W A N C Consultants 531916 118424 181 E Southern Medical Services 532344 118456 182 NW Electricity Sub Station 53294 118528 222 F Electricity Sub Station 53294	(m)nCompanyNGRAddress51NWLumafix Ltd532044 11842252, Ferndale Road, Burgess Hill, RH15 0HG65NEElectricity Sub Station532176 118483RH15110SWElectricity Sub Station532017 118192RH15168WA N C Consultants531916 11842434, Ferndale Road, Burgess Hill, RH15 0HG181ESouthern Medical Services532344 1184567, The Ridings, Burgess Hill, RH15 0LW182NWElectricity Sub Station531964 118528RH15222EElectricity S12394532394 RH15	(m)nCompanyNGRAddressActivity51NWLumafix Ltd532044 11842252, Ferndale Road, Burgess Hill, RH15 0HGLampshades and Lighting65NEElectricity Sub Station532176 118483RH15Electrical Features110SWElectricity Sub Station532017 118192RH15Electrical Features168WA N C Consultants531916 11842434, Ferndale Road, Burgess Hill, RH15 0HGCivil Engineers181ESouthern Medical Services532344 1185287, The Ridings, Burgess Hill, RH15 0LWAmbulance and Medical Transportation Services182NWElectricity Sub Station531964 118528RH15Electrical Features222EElectricity S32394532344 RH15RH15Electrical Features

4.2 Petrol and Fuel Sites

Records of petrol or fuel sites within 500m of the study site:

Database searched and no data found.

4.3 National Grid High Voltage Underground Electricity Transmission Cables

This dataset identifies the high voltage electricity transmission lines running between generating power plants and electricity substations. The dataset does not include the electricity distribution network (smaller, lower voltage cables distributing power from substations to the local user network). This information has been extracted from databases held by National Grid and is provided for information only with no guarantee as to its completeness or accuracy. National Grid do not offer any warranty as to the accuracy of the available data and are excluded from any liability for any such inaccuracies or errors.

Records of National Grid high voltage underground electricity transmission cables within 500m of the study site:

Database searched and no data found.

0



4.4 National Grid High Pressure Gas Transmission Pipelines

This dataset identifies high-pressure, large diameter pipelines which carry gas between gas terminals, power stations, compressors and storage facilities. The dataset does not include the Local Transmission System (LTS) which supplies gas directly into homes and businesses. This information has been extracted from databases held by National Grid and is provided for information only with no guarantee as to its completeness or accuracy. National Grid do not offer any warranty as to the accuracy of the available data and are excluded from any liability for any such inaccuracies or errors.

Records of National Grid high pressure gas transmission pipelines within 500m of the study site:

0

Database searched and no data found.



5. Geology

5.1 Artificial Ground and Made Ground

Database searched and no data found.

The database has been searched on site, including a 50m buffer.

5.2 Superficial Ground and Drift Geology

Database searched and no data found.

The database has been searched on site, including a 50m buffer.

5.3 Bedrock and Solid Geology

The database has been searched on site, including a 50m buffer.

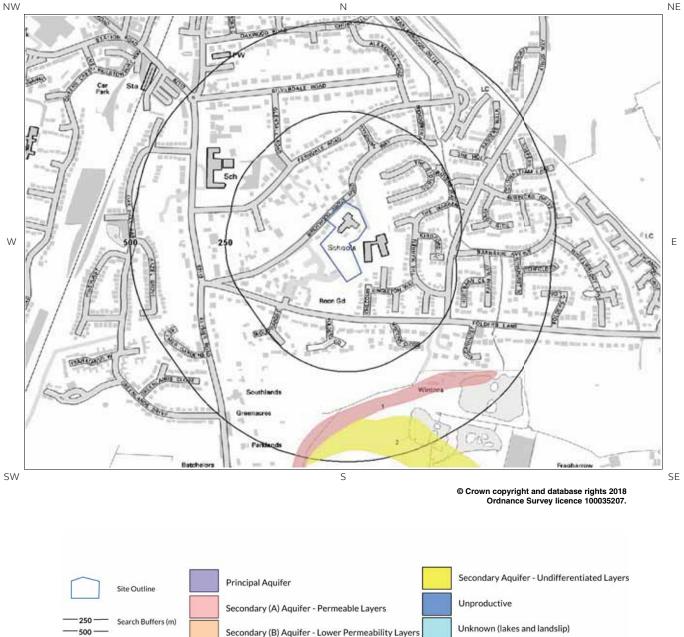
Lex Code	Description	Rock Type
WC-MDST	WEALD CLAY FORMATION	MUDSTONE

(Derived from the BGS 1:50,000 Digital Geological Map of Great Britain)



6 Hydrogeology and Hydrology 6a. Aquifer Within Superficial Geology

NW





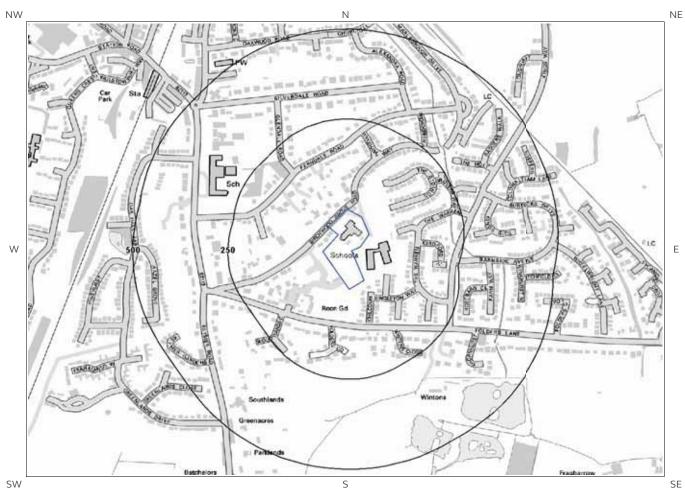
6b. Aquifer Within Bedrock Geology and Abstraction Licences



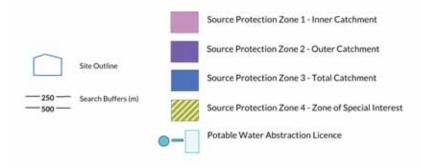




6c. Hydrogeology – Source Protection Zones and Potable Water Abstraction Licences

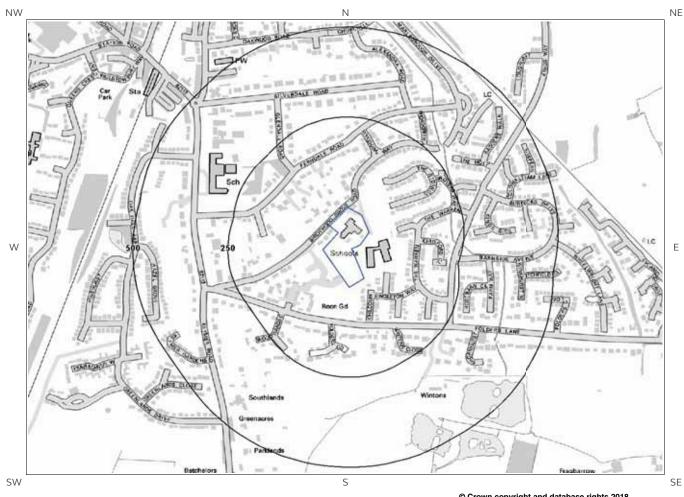


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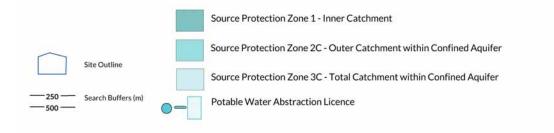




6d. Hydrogeology – Source Protection Zones within confined aquifer

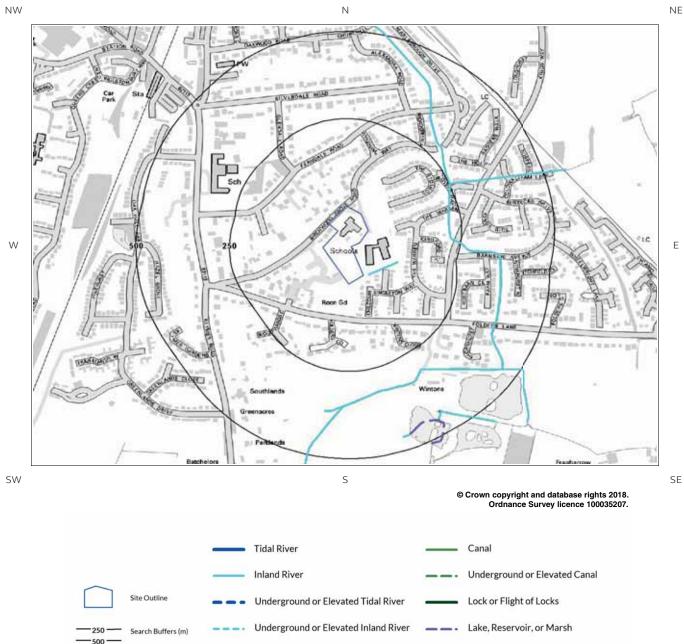


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6e. Hydrology – Watercourse Network and River Quality



Foreshore

General Quality Assessment: Chemistry

General Quality Assessment: Biology

Drain or Transfer



6.Hydrogeology and Hydrology

6.1 Aquifer within Superficial Deposits

Records of strata classification within the superficial geology at or in proximity to the property Yes

From 1 April 2010, the Environment Agency/Natural Resources Wales's Groundwater Protection Policy has been using aquifer designations consistent with the Water Framework Directive. For further details on the designation and interpretation of this information, please refer to the Groundsure Enviro Insight User Guide.

The following aquifer records are shown on the Aquifer within Superficial Geology Map (6a):

ID	Distanc e (m)	Direction	Designation	Description
1	333	S	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
2	382	S	Secondary (undifferentiated)	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type

6.2 Aquifer within Bedrock Deposits

Records of strata classification within the bedrock geology at or in proximity to the property Yes

From 1 April 2010, the Environment Agency/Natural Resources Wales's Groundwater Protection Policy has been using aquifer designations consistent with the Water Framework Directive. For further details on the designation and interpretation of this information, please refer to the Groundsure Enviro Insight User Guide.

The following aquifer records are shown on the Aquifer within Bedrock Geology Map (6b):

ID	Distanc e (m)	Direction	Designation	Description
15	0	On Site	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow
1	58	Ν	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
2	92	E	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
3	302	Ν	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
4	378	W	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
5	437	Ν	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
6	496	Ν	Secondary A	Permeable layers capable of supporting water supplies at a local rather than

Distanc e (m)	Direction	Designation	Description
			studte stands and the second second formation and the

strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

6.3 Groundwater Abstraction Licences

Groundwater Abstraction Licences within 2000m of the study site

Database searched and no data found.

6.4 Surface Water Abstraction Licences

Surface Water Abstraction Licences within 2000m of the study site

The following Surface Water Abstraction Licences records are represented as points, lines and regions on the Aquifer within Bedrock Geology Map (6b):

ID	Distance (m)	Direction	NGR	Details			
16A 324		SE	532310 117940	Status: Historical Licence No: 23/071 Details: Make-Up or Top Up Water Direct Source: Southern Region Surface Waters Point: POINT A AT FOLDERS LANE,BURGESS HILL Data Type: Point Name: Mr A W & Mrs M A Etherington	Annual Volume (m ³): - Max Daily Volume (m ³): - Application No: - Original Start Date: - Expiry Date: 31/03/2004 Issue No: 100 Version Start Date: 22/04/1999 Version End Date:		
17A	324	SE	532310 117940	Status: Historical Licence No: 23/076 Details: Fish Farm/Cress Pond Throughflow Direct Source: Southern Region Surface Waters Point: POINT A AT FOLDERS LANE,BURGESS HILL Data Type: Point Name: Etherington	Annual Volume (m ³): 300000 Max Daily Volume (m ³): 4000 Application No: - Original Start Date: 01/11/2006 Expiry Date: 31/03/2018 Issue No: 2 Version Start Date: 17/09/2014 Version End Date:		
18A	329	SE	532315 117937	Status: Historical Licence No: 23/076 Details: Fish Farm/Cress Pond Throughflow Direct Source: Southern Region Surface Waters Point: POINT A AT FOLDERS LANE,BURGESS HILL Data Type: Point Name: Etherington	Annual Volume (m ³): 300000 Max Daily Volume (m ³): 4000 Application No: - Original Start Date: 01/11/2006 Expiry Date: 31/03/2018 Issue No: 2 Version Start Date: 17/09/2014 Version End Date:		
19A	329	SE	532315 117937	Status: Active Licence No: 23/076/R01 Details: Fish Farm/Cress Pond Throughflow Direct Source: Southern Region Surface Waters Point: POINT A AT FOLDERS LANE,BURGESS HILL Data Type: Point Name: Wintons Fishery	Annual Volume (m ³): 300000 Max Daily Volume (m ³): 4000 Application No: - Original Start Date: 01/04/2018 Expiry Date: 31/03/2030 Issue No: 1 Version Start Date: 01/04/2018 Version End Date:		



None identified

Identified

ID



6.5 Potable Water Abstraction Licences

Potable Water Abstraction Licences within 2000m of the study site None identified

Database searched and no data found.

6.6 Source Protection Zones

Source Protection Zones within 500m of the study site

None identified

Database searched and no data found.

6.7 Source Protection Zones within Confined Aquifer

Source Protection Zones within the Confined Aquifer within 500m of the study site None identified

Historically, Source Protection Zone maps have been focused on regulation of activities which occur at or near the ground surface, such as prevention of point source pollution and bacterial contamination of water supplies. Sources in confined aquifers were often considered to be protected from these surface pressures due to the presence of a low permeability confining layer (e.g. glacial till, clay). The increased interest in subsurface activities such as onshore oil and gas exploration, ground source heating and cooling requires protection zones for confined sources to be marked on SPZ maps where this has not already been done.

Database searched and no data found.

6.8 Groundwater Vulnerability and Soil Leaching Potential

Environment Agency/Natural Resources Wales information on groundwater vulnerability and soil leaching potential within 500m of the study site None identified

Database searched and no data found.

6.9 River Quality

Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site Identified

6.9.1 Biological Quality:

Database searched and no data found.



6.9.2 Chemical Quality:

Chemical quality data is based on the General Quality Assessment Headline Indicators scheme (GQAHI). In England, each chemical sample is measured for ammonia and dissolved oxygen. In Wales, the samples are measured for biological oxygen demand (BOD), ammonia and dissolved oxygen. The results are graded from A ('Very Good') to F ('Bad').

The following Chemical Quality records are shown on the Hydrology Map (6e):

						Chemi	ical Quality	Grade	
ID	Distanc e (m)	Direction	NGR	River Quality Grade	2005	2006	2007	2008	2009
Not shown	1234	SE	533270 117670	River Name: R. Adur East Reach: Burgess Hill Stw - Source End/Start of Stretch: Start of Stretch NGR	С	С	С	С	С

6.10 Ordnance Survey MasterMap Water Network

Ordnance Survey MasterMap Water Network entries within 500m of the study site

This watercourse information is provided by Ordnance Survey MasterMap Water Network. The data provides a detailed centre line following the curve of the waterway precisely, so all distances provided in the report should be understood as measurements to the centreline rather than a measurement to the nearest point of the watercourse. Underground watercourses are inferred from entry and exit points so caution is advised in using these to indicate precise locations of underground watercourses when planning site investigation and development.

The following Ordnance Survey MasterMap Water Network records are represented on the Hydrology Map (6e):

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
1	14 E	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Adur and Teville Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
10	14 E	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Adur and Teville Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
2	56 E	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Adur and Teville Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
11	56 E	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Adur and Teville Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
3	59 E	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Adur and Teville Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions)



ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
				Average Width in Watercourse Section (m): Not Provided
12	59 E	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Adur and Teville Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
4	216 E	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Adur and Teville Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.9
13	216 E	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Adur and Teville Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.9
5	224 E	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Adur and Teville Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
14	224 E	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Adur and Teville Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
6	253 E	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Adur and Teville Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
7	253 E	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Adur and Teville Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.8
15	253 E	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Adur and Teville Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
16	253 E	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Adur and Teville Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.8
8	310 SE	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Adur and Teville Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
17	310 SE	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Adur and Teville Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
9	344 NE	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Adur and Teville Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided



ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
Not shown	344 NE	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Adur and Teville Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
10	350 S	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Adur and Teville Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
11	350 S	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Adur and Teville Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	350 S	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Adur and Teville Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	350 S	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Adur and Teville Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
12	356 NE	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Adur and Teville Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.0
Not shown	356 NE	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Adur and Teville Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.0
13	436 SE	Not specified	Lake, loch or reservoir.	Catchment Area: Adur and Teville Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 4.2
Not shown	436 SE	Not specified	Lake, loch or reservoir.	Catchment Area: Adur and Teville Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 4.2
14	437 SE	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Adur and Teville Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.4
23	437 SE	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Adur and Teville Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.4
15	438 SE	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Adur and Teville Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	438	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Adur and Teville Relationship to Ground Level: On ground surface



ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
	SE			Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
16	439 SE	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Adur and Teville Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
17	439 SE	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Adur and Teville Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	439 SE	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Adur and Teville Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	439 SE	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Adur and Teville Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
18	440 SE	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Adur and Teville Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	440 SE	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Adur and Teville Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
19	443 SE	Not specified	Lake, loch or reservoir.	Catchment Area: Adur and Teville Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	443 SE	Not specified	Lake, loch or reservoir.	Catchment Area: Adur and Teville Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
20	452 SE	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Adur and Teville Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
29	452 SE	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Adur and Teville Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
21	455 SE	Not specified	Lake, loch or reservoir.	Catchment Area: Adur and Teville Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 26.7
Not shown	455 SE	Not specified	Lake, loch or reservoir.	Catchment Area: Adur and Teville Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions)



ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
				Average Width in Watercourse Section (m): 26.7
22	457 SE	Not specified	Lake, loch or reservoir.	Catchment Area: Adur and Teville Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 26.7
Not shown	457 SE	Not specified	Lake, loch or reservoir.	Catchment Area: Adur and Teville Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 26.7
23	459 SE	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Adur and Teville Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
32	459 SE	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Adur and Teville Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
24	460 S	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Adur and Teville Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	460 S	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Adur and Teville Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided

6.11 Surface Water Features

Surface water features within 250m of the study site

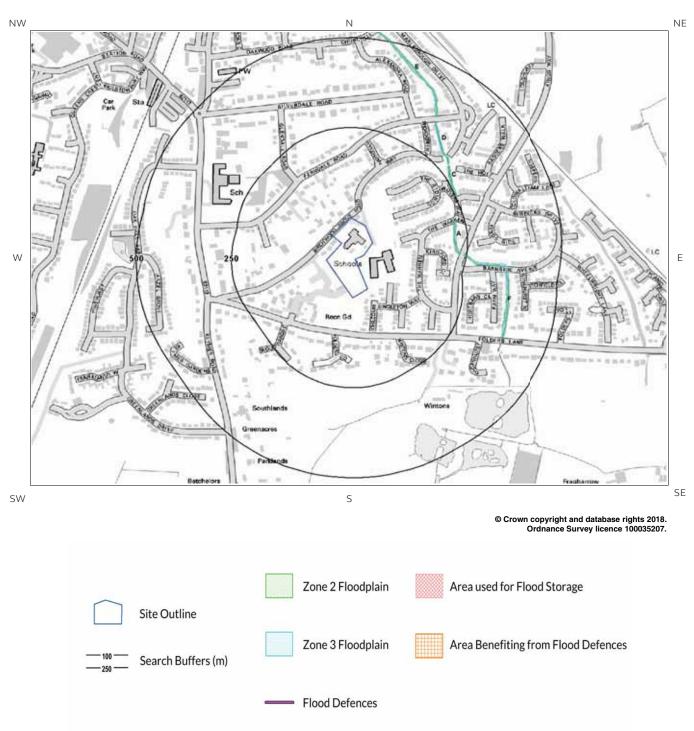
Identified

The following surface water records are not represented on mapping:

Distance (m)	Direction
215	E
244	E

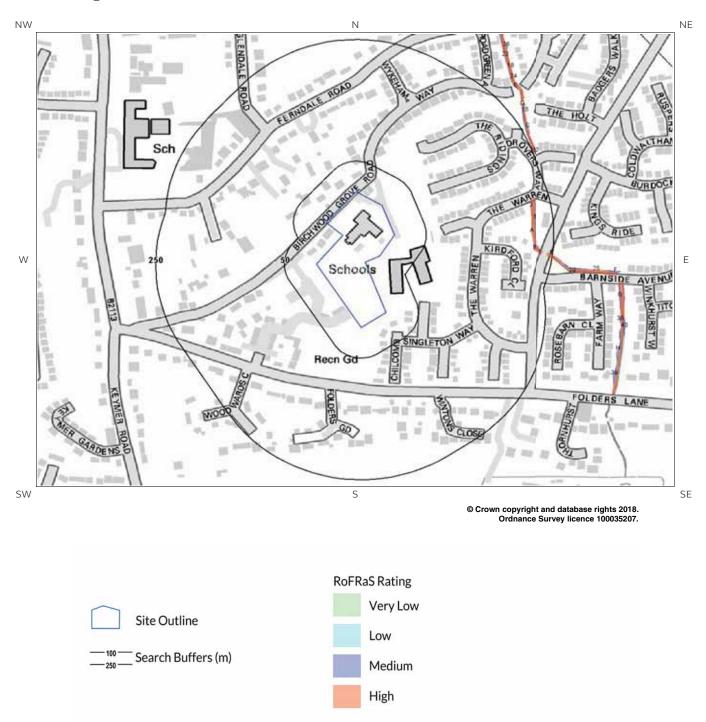


7a. Environment Agency/Natural Resources Wales Flood Map for Planning (from rivers and the sea)





7b. Environment Agency/Natural Resources Wales Risk of Flooding from Rivers and the Sea (RoFRaS) Map





7 Flooding

7.1 River and Coastal Zone 2 Flooding

Environment Agency/Natural Resources Wales Zone 2 floodplain within 250m Identified

Environment Agency/Natural Resources Wales Zone 2 floodplains estimate the annual probability of flooding as between 1 in 1000 (0.1%) and 1 in 100 (1%) from rivers and between 1 in 1000 (0.1%) and 1 in 200 (0.5%) from the sea. Any relevant data is represented on Map 7a – Flood Map for Planning:

ID	Distance (m)	Direction	Update	Туре
1A	213	E	29-May-2018	Zone 2 - (Fluvial /Tidal Models)
2B	242	E	29-May-2018	Zone 2 - (Fluvial /Tidal Models)

7.2 River and Coastal Zone 3 Flooding

Environment Agency/Natural Resources Wales Zone 3 floodplain within 250m Identified

Zone 3 shows the extent of a river flood with a 1 in 100 (1%) or greater chance of occurring in any year or a sea flood with a 1 in 200 (0.5%) or greater chance of occurring in any year. Any relevant data is represented on Map 7a – Flood Map for Planning.

ID	Distance (m)	Direction	Update	Туре
1A	215	E	30-May-2018	Zone 3 - (Fluvial Models)
2B	244	E	30-May-2018	Zone 3 - (Fluvial Models)

7.3 Risk of Flooding from Rivers and the Sea (RoFRaS) Flood Rating

Highest risk of flooding onsite

The Environment Agency/Natural Resources Wales RoFRaS database provides an indication of river and coastal flood risk at a national level on a 50m grid with the flood rating at the centre of the grid calculated and given above. The data considers the probability that the flood defences will overtop or breach by considering their location, type, condition and standard of protection.

RoFRaS data for the study site indicates the property is in an area with a Very Low (less than 1 in 1000) chance of flooding in any given year.

Very Low



7.4 Flood Defences

Flood Defences within 250m of the study site

Database searched and no data found.

None identified

7.5 Areas benefiting from Flood Defences

Areas benefiting from Flood Defences within 250m of the study site

7.6 Areas benefiting from Flood Storage

Areas used for Flood Storage within 250m of the study site

None identified

None identified

7.7 Groundwater Flooding Susceptibility Areas

7.7.1 British Geological Survey groundwater flooding susceptibility areas within 50m of the boundary of the study site None identified

Notes: Groundwater flooding may either be associated with shallow unconsolidated sedimentary aquifers which overlie unproductive aquifers (Superficial Deposits Flooding), or with unconfined aquifers (Clearwater Flooding).

7.7.2 Highest susceptibility to groundwater flooding in the search area based on the underlying geological conditions

Not Prone

The area is not considered to be prone to groundwater flooding based on rock type.

7.8 Groundwater Flooding Confidence Areas

British Geological Survey confidence rating in this result

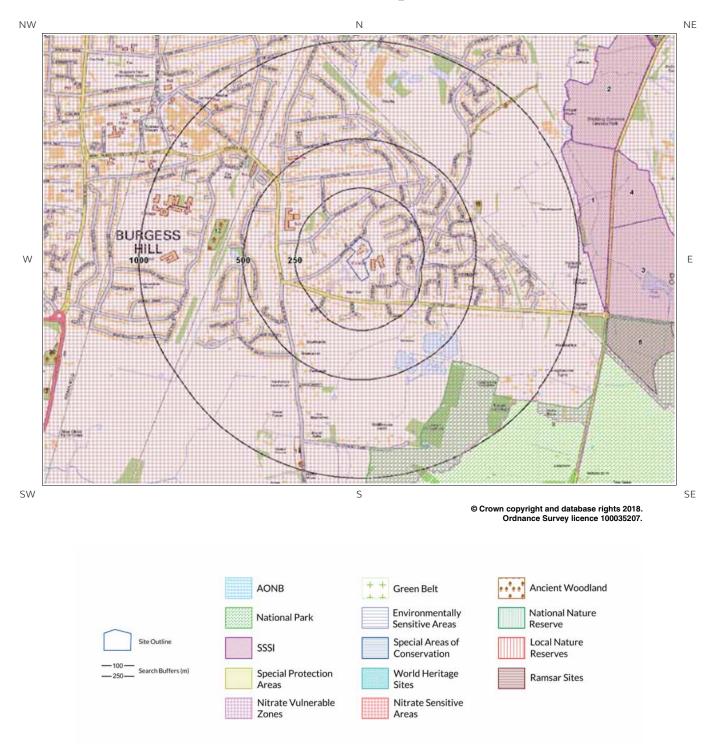
Not Applicable

Notes: Groundwater flooding is defined as the emergence of groundwater at the ground surface or the rising of groundwater into man-made ground under conditions where the normal range of groundwater levels is exceeded.

The confidence rating is on a threefold scale - Low, Moderate and High. This provides a relative indication of the BGS confidence in the accuracy of the susceptibility result for groundwater flooding. This is based on the amount and precision of the information used in the assessment. In areas with a relatively lower level of confidence the susceptibility result should be treated with more caution. In other areas with higher levels of confidence the susceptibility result can be used with more confidence.



8. Designated Environmentally Sensitive Sites Map





8. Designated Environmentally Sensitive Sites

Designated Environmentally Sensitive Sites within 2000m of the study site

Identified

8.1 Records of Sites of Special Scientific Interest (SSSI) within 2000m of the study site:

6

The following Site of Special Scientific Interest (SSSI) records provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	SSSI Name	Data Source
1	1009	E	Ditchling Common	Natural England
2	1108	NE	Ditchling Common	Natural England
3	1138	E	Ditchling Common	Natural England
4	1152	E	Ditchling Common	Natural England
5	1169	E	Ditchling Common	Natural England
6	1703	NE	Ditchling Common	Natural England

8.2 Records of National Nature Reserves (NNR) within 2000m of the study site:

0

Database searched and no data found.

8.3 Records of Special Areas of Conservation (SAC) within 2000m of the study site:

0

Database searched and no data found.

8.4 Records of Special Protection Areas (SPA) within 2000m of the study site:

0

Database searched and no data found.



8.5 Records of Ramsar sites within 2000m of the study site:

Database searched and no data found.

8.6 Records of Ancient Woodland within 2000m of the study site:

18

0

The following records of Designated Ancient Woodland provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	Ancient Woodland Name	Data Source
11	538	E	UNKNOWN	Ancient and Semi-Natural Woodland
12	596	W	UNKNOWN	Ancient and Semi-Natural Woodland
13	723	NE	UNKNOWN	Ancient and Semi-Natural Woodland
14	845	S	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1074	S	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1142	S	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1261	S	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1318	Ν	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1349	SE	UNKNOWN	Ancient and Semi-Natural Woodland
20	1427	W	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1560	W	UNKNOWN	Ancient and Semi-Natural Woodland
22	1570	SW	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1575	E	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1826	NE	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1850	Ν	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1984	E	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1985	NE	UNKNOWN	Ancient Replanted Woodland
Not shown	1994	Ν	UNKNOWN	Ancient Replanted Woodland



1

0

0

8.7 Records of Local Nature Reserves (LNR) within 2000m of the study site:

The following Local Nature Reserve (LNR) records provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	LNR Name	Data Source
Not shown	1850	Ν	Bedelands Farm	Natural England

8.8 Records of World Heritage Sites within 2000m of the study site:

Database searched and no data found.

8.9 Records of Environmentally Sensitive Areas within 2000m of the study site:

Database searched and no data found.

8.10 Records of Areas of Outstanding Natural Beauty (AONB) within 2000m of the study site:

0

Database searched and no data found.

8.11 Records of National Parks (NP) within 2000m of the study site:

1

The following National Park records provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	NP Name	Data Source
8	587	SE	South Downs	Natural England



8.12 Records of Nitrate Sensitive Areas within 2000m of the study site:

0

Database searched and no data found.

8.13 Records of Nitrate Vulnerable Zones within 2000m of the study site:

2

The following Nitrate Vulnerable Zone records produced by DEFRA are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	NVZ Name	Data Source
9	0	On Site	Modified	DEFRA
Not shown	1565	Ν	Modified	DEFRA

8.14 Records of Green Belt land within 2000m of the study site:

Database searched and no data found.

0

9. Natural Hazards Findings

9.1 Detailed BGS GeoSure Data

BGS GeoSure Data has been searched to 50m. The data is included in tabular format. If you require further information on geology and ground stability, please obtain a Groundsure Geo Insight, available from our website. The following information has been found:

9.1.1 Shrink Swell

Maximum Shrink-Swell** hazard rating identified on the study site

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard

Ground conditions predominantly medium plasticity. Do not plant trees with high soil moisture demands near to buildings. For new build, consideration should be given to advice published by the National House Building Council (NHBC) and the Building Research Establishment (BRE). There is a possible increase in construction cost to reduce potential shrink-swell problems. For existing property, there is a possible increase in insurance risk, especially during droughts or where vegetation with high moisture demands is present.

9.1.2 Landslides

Maximum Landslide* hazard rating identified on the study site

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.

9.1.3 Soluble Rocks

Maximum Soluble Rocks* hazard rating identified on the study site

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Soluble rocks are present, but unlikely to cause problems except under exceptional conditions. No special actions required to avoid problems due to soluble rocks. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with soluble rocks.

* This indicates an automatically generated 50m buffer and site.



Negligible

Very Low

Low

Hazard

Hazard

9.1.4 Compressible Ground

Maximum Compressible Ground* hazard rating identified on the study site

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

No indicators for compressible deposits identified. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.

Hazard

9.1.5 Collapsible Rocks

Maximum Collapsible Rocks* hazard rating identified on the study site

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible deposits.

9.1.6 Running Sand

Maximum Running Sand** hazard rating identified on the study site

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

No indicators for running sand identified. No special actions required to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.

Hazard

Negligible

Negligible

Very Low

Hazard

9.2 Radon



9.2.1 Radon Affected Areas

Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level? The site is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.

The radon data in this report is supplied by the BGS/Public Health England and is the definitive map of Radon Affected Areas in Great Britain and Northern Ireland. The dataset was created using long-term radon measurements in over 479,000 homes across Great Britain and 23,000 homes across Northern Ireland, combined with geological data. The dataset is considered accurate to 50m to allow for the margin of error in geological lines, and the findings of this report supercede any answer given in the less accurate Indicative Atlas of Radon in Great Britain, which simplifies the data to give the highest risk within any given 1km grid square. As such, the radon atlas is considered indicative, whereas the data given in this report is considered definitive.

9.2.2 Radon Protection

Is the property in an area where Radon Protection are required for new properties or extensions to existing

ones as described in publication BR211 by the Building Research Establishment? No radon protective measures are necessary.



10. Mining

10.1 Coal Mining

Coal mining areas within 75m of the study site

None identified

Identified

Database searched and no data found.

10.2 Non-Coal Mining

Non-Coal Mining areas within 50m of the study site boundary

The following non-coal mining information is provided by the BGS:

Distance (m)	Direction	Name	Commodity	Assessment of likelihood
0.0	On Site	Not available	Sand/Building Stone	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered

Past underground mine workings may occur. The rock types present in these areas are such that small mineral veins may be present on which it is possible that small scale mining has been undertaken and/or it is possible that limited underground extraction of other materials may have occurred. All such occurrences are likely to be of minor localised extent and infrequent. It should be noted, however, that there is always the possibility of the existence of other sub-surface excavations, such as wells, cess pits, follies, air raid shelters/bunkers and other military structures etc. that could affect surface ground stability but which are outside the scope of this dataset. However, if in a coalfield area you should still consider a Coal Authority mining search for the area of interest.

10.3 Brine Affected Areas

Brine affected areas within 75m of the study site Guidance: No Guidance Required.

None identified



Contact Details

Telephone: 08444 159 000 info@groundsure.com





British **Geological Survey** NATURAL ENVIRONMENT RESEARCH COUNCIL





The Coal Authority



Local Authority Authority: Mid Sussex District Council Phone: 01444 458 166 Web: http://www.midsussex.gov.uk/ Address: Oaklands, Oaklands Road, Haywards Heath, West Sussex,

> Gemapping PLC Virginia Villas, High Street, Hartley Witney, Hampshire RG27 8NW Tel: 01252 845444



Groundsure Helpline

British Geological Survey Enquiries Kingsley Dunham Centre Keyworth, Nottingham NG12 5GG Tel: 0115 936 3143.

Fax: 0115 936 3276.

Email:

Web:www.bgs.ac.uk BGS Geological Hazards Reports and general geological enquiries: enquiries@bgs.ac.uk **Environment Agency** National Customer Contact Centre, PO Box 544

Rotherham, S60 1BY Tel: 03708 506 506

Web: www.environment-agency.gov.uk Email: enquiries@environment-agency.gov.uk Public Health England Public information access office Public Health England, Wellington House 133-155 Waterloo Road, London, SE1 8UG www.gov.uk/phe

Email:enquiries@phe.gov.uk Main switchboard: 020 7654 8000

> The Coal Authority 200 Lichfield Lane Mansfield Notts NG18 4RG

Tel: 0345 7626 848 DX 716176 Mansfield 5 www.coal.gov.uk

Ordnance Survey Adanac Drive, Southampton SO16 0AS Tel: 08456 050505



Acknowledgements: Site of Special Scientific Interest, National Nature Reserve, Ramsar Site, Special Protection Area, Special Area of Conservation data is provided by, and used with the permission of, Natural England/Natural Resources Wales who retain the Copyright and Intellectual Property Rights for the data.

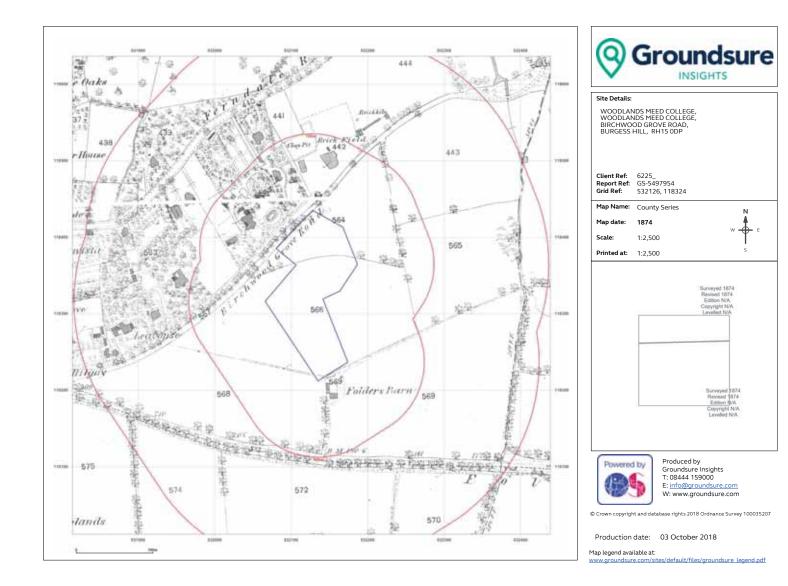
PointX © Database Right/Copyright, Thomson Directories Limited © Copyright Link Interchange Network Limited © Database Right/Copyright and Ordnance Survey © Crown Copyright and/or Database Right. All Rights Reserved. Licence Number [03421028]. This report has been prepared in accordance with the Groundsure Ltd standard Terms and Conditions of business for work of this nature.

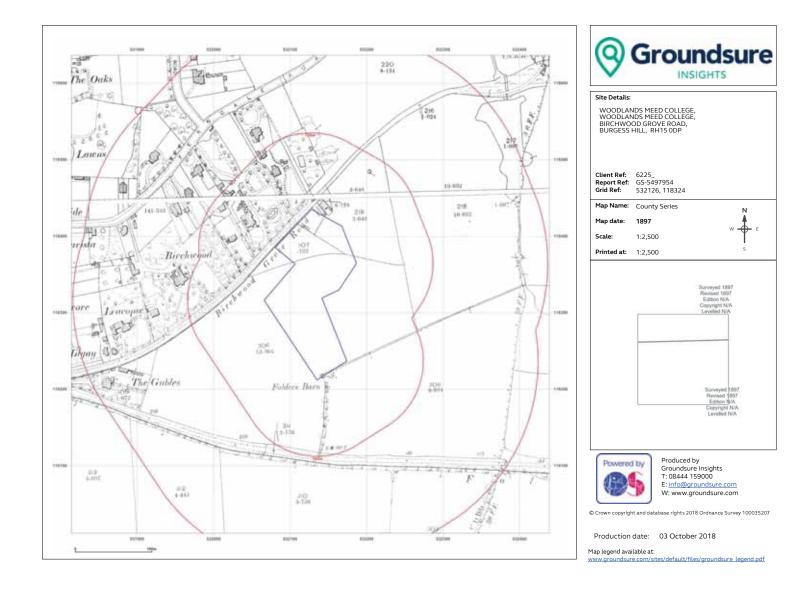


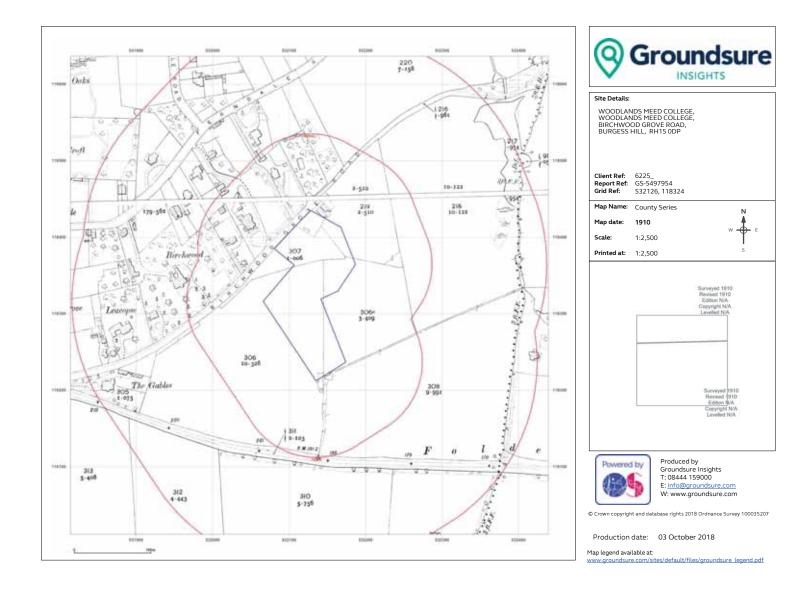
Standard Terms and Conditions

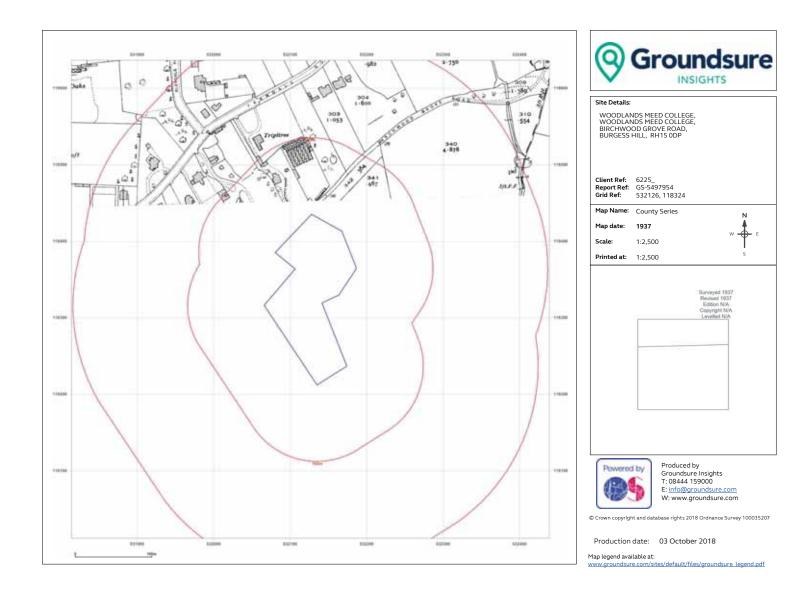
Groundsure's Terms and Conditions can be viewed online at this link:

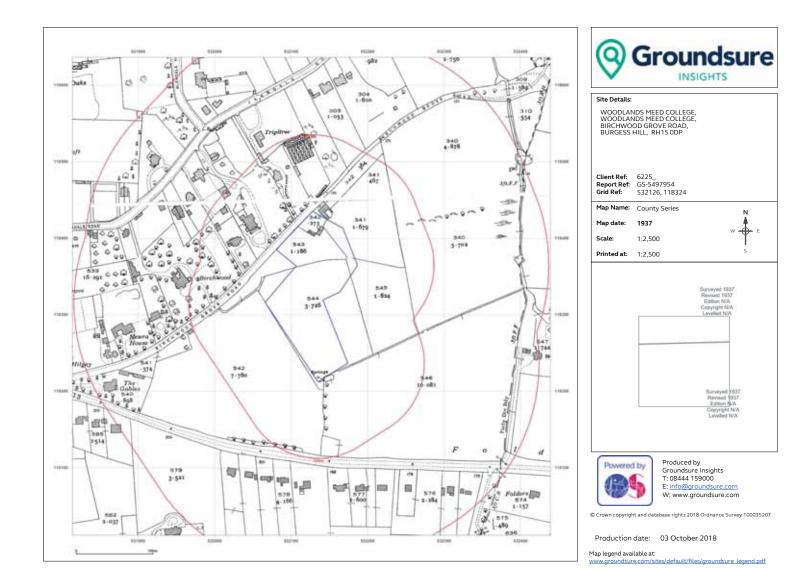
https://www.groundsure.com/terms-and-conditions-may25-2018

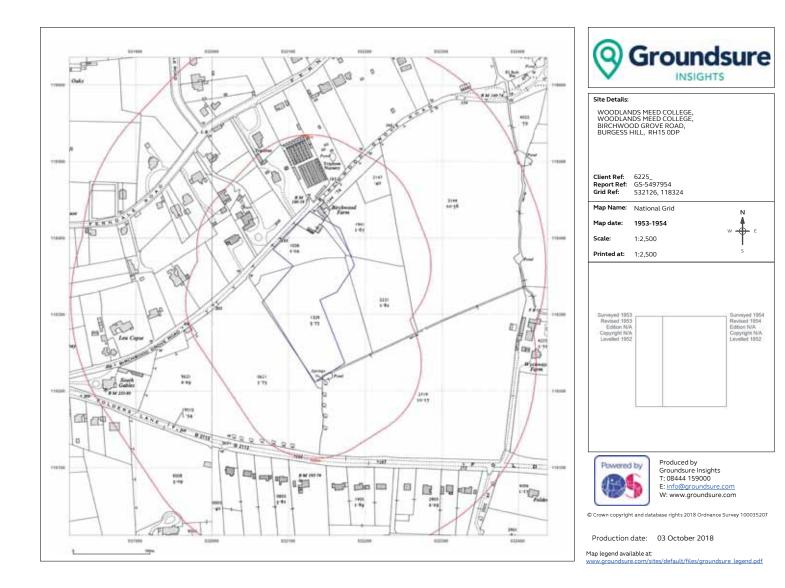


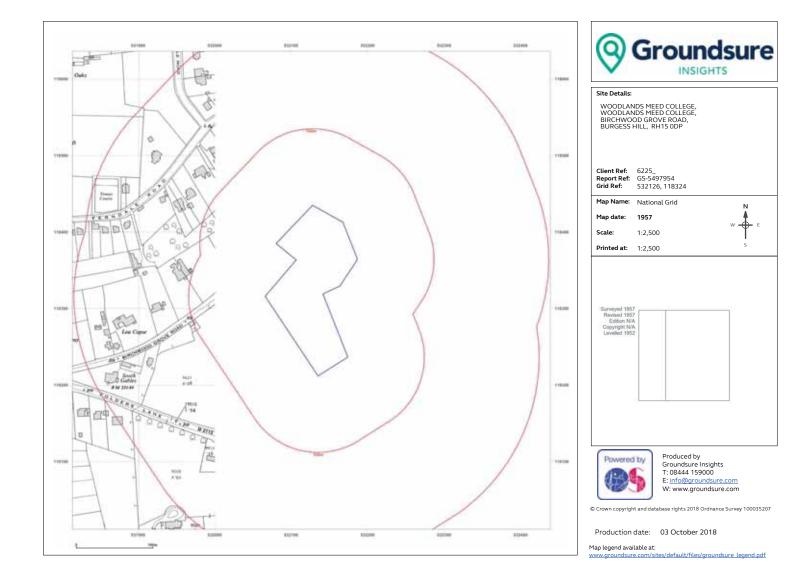


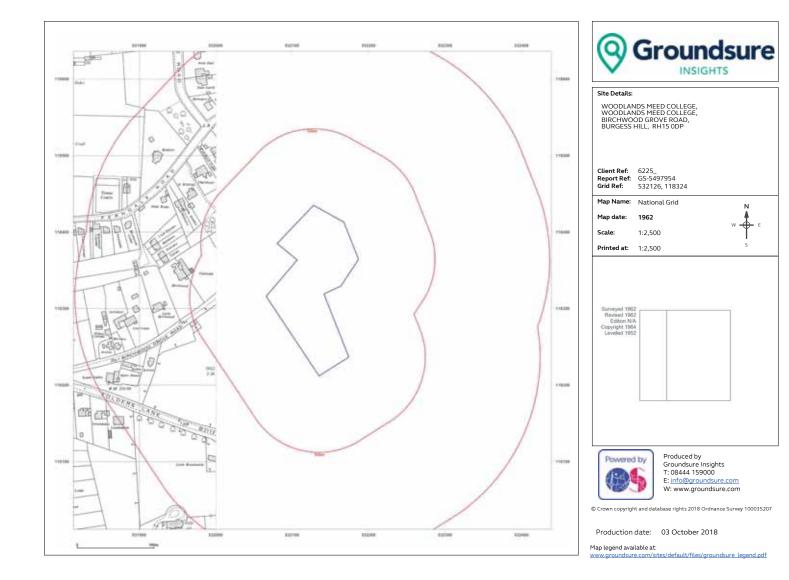


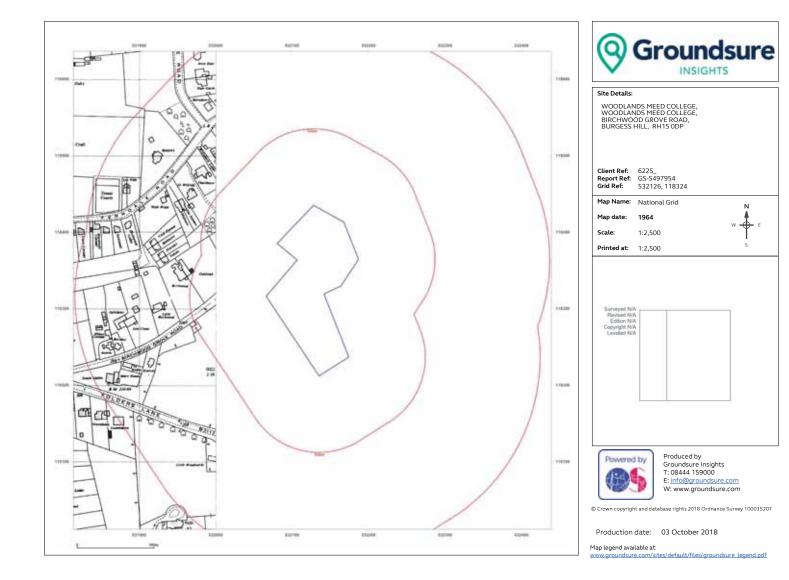


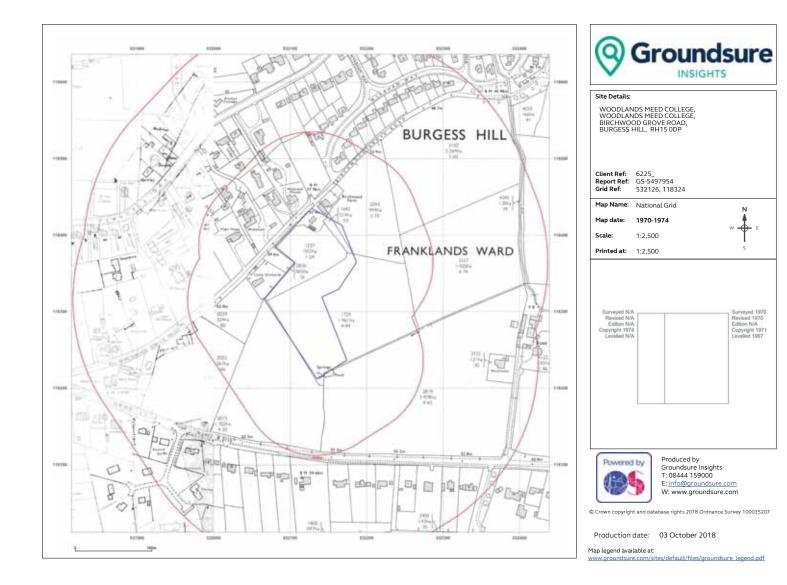


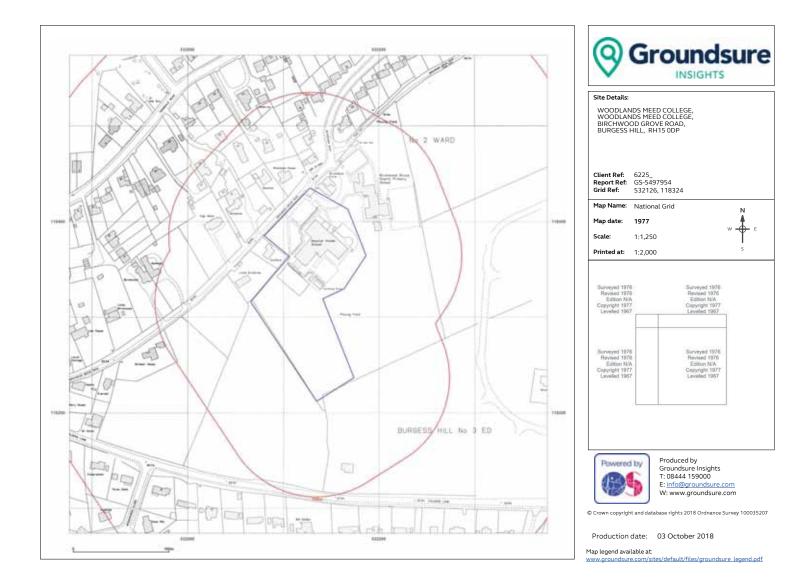


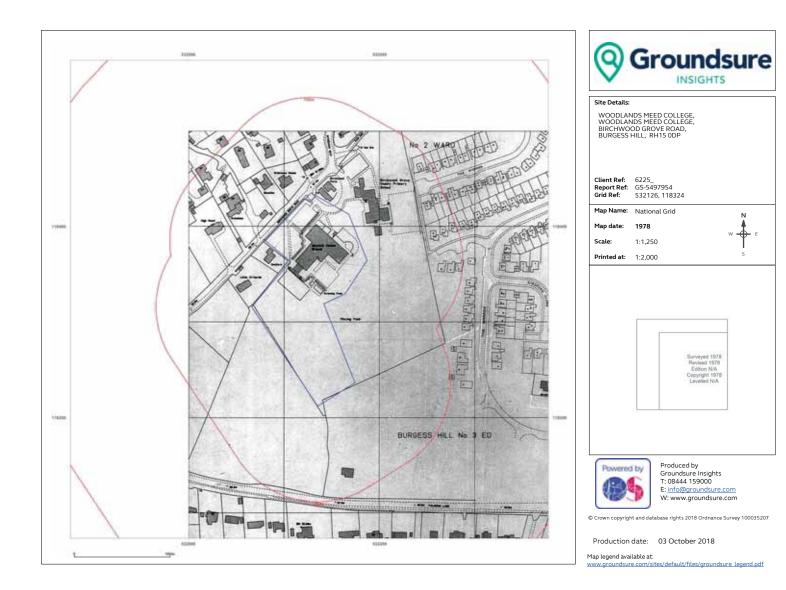




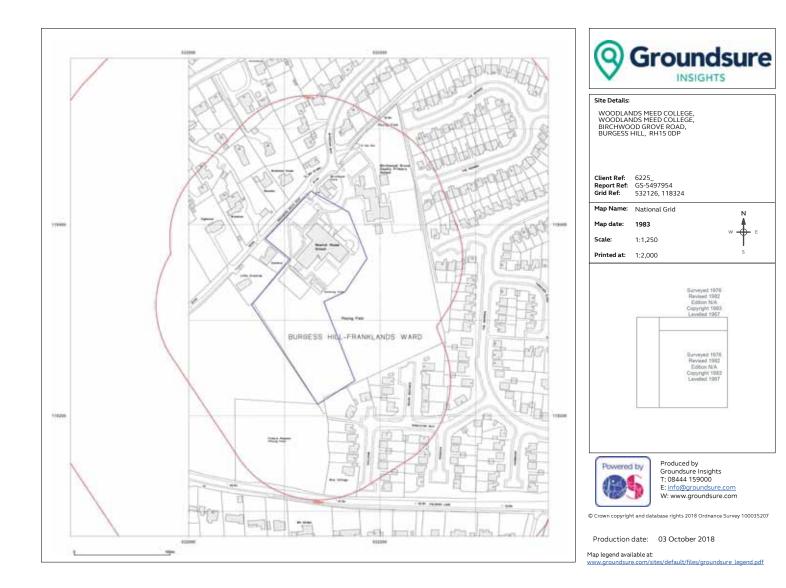


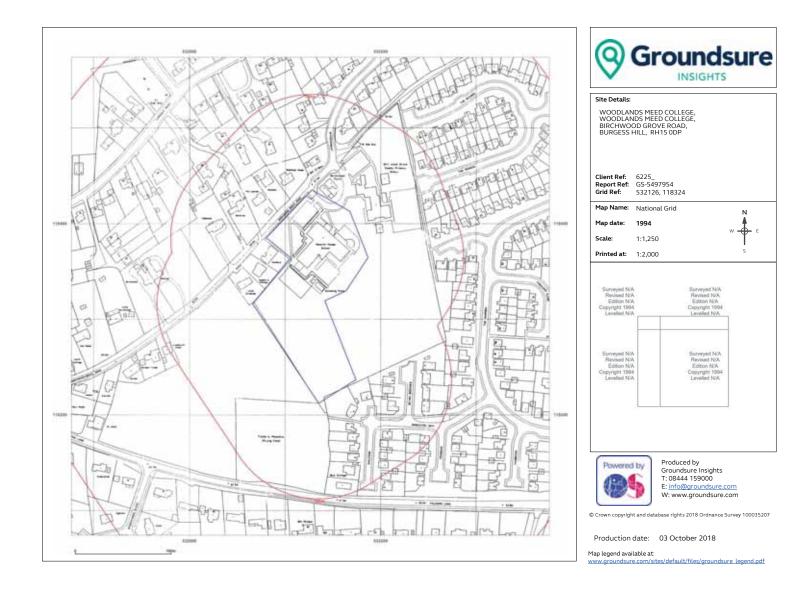


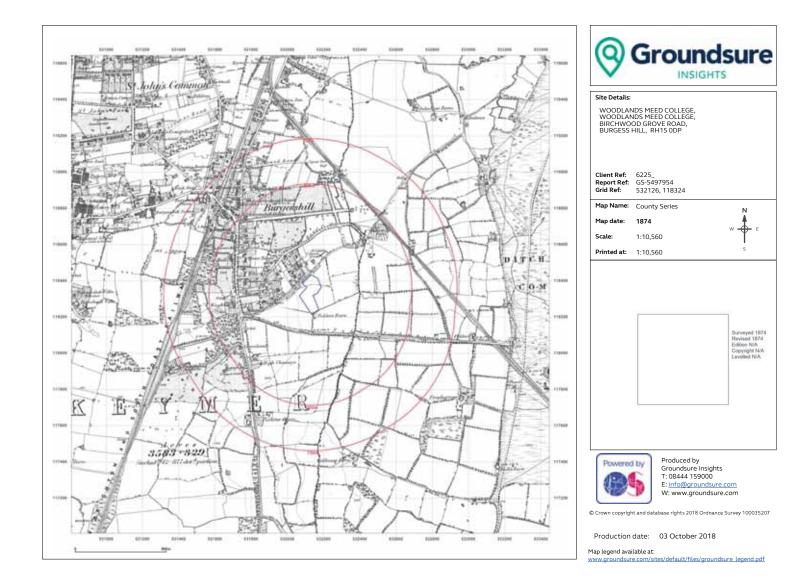


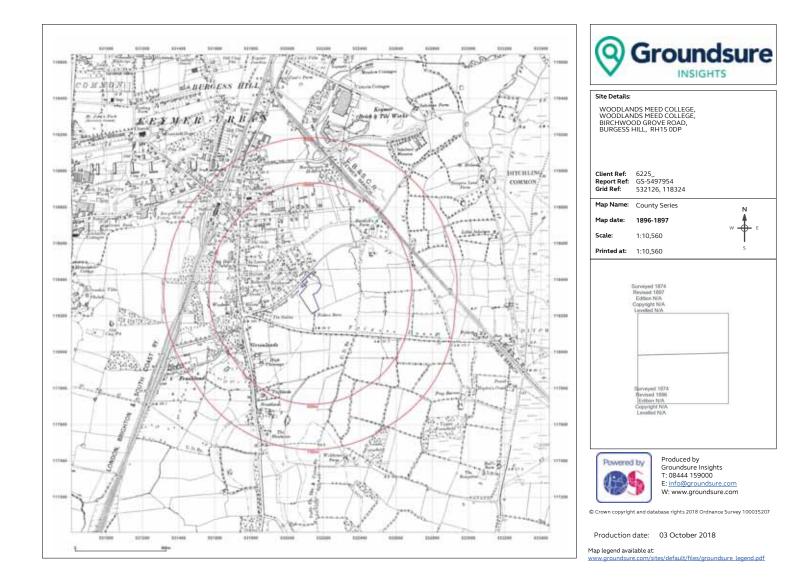


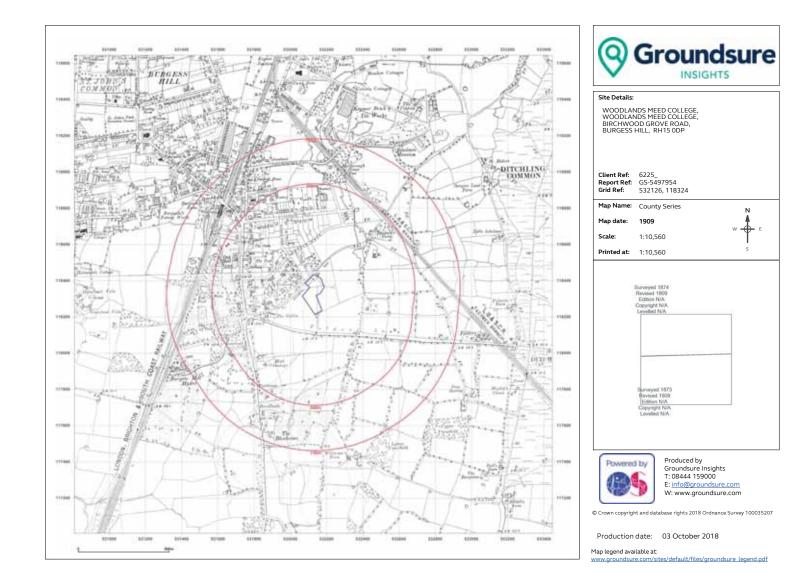


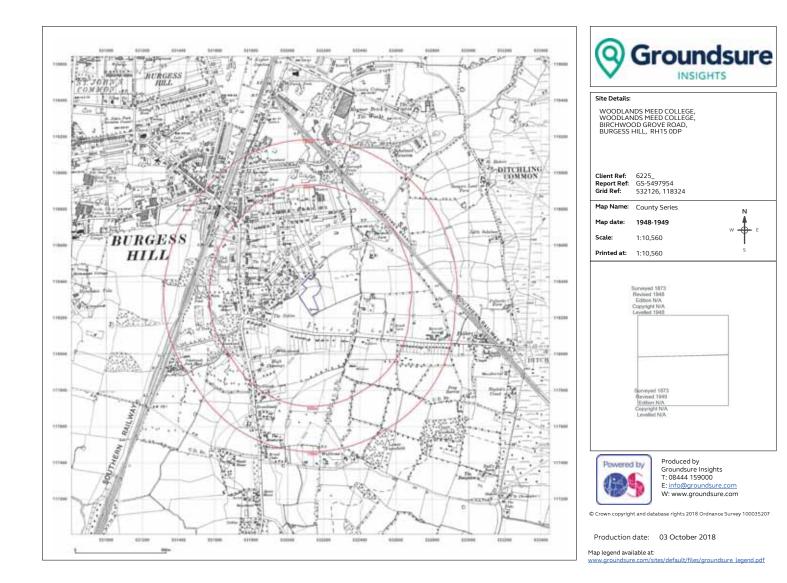


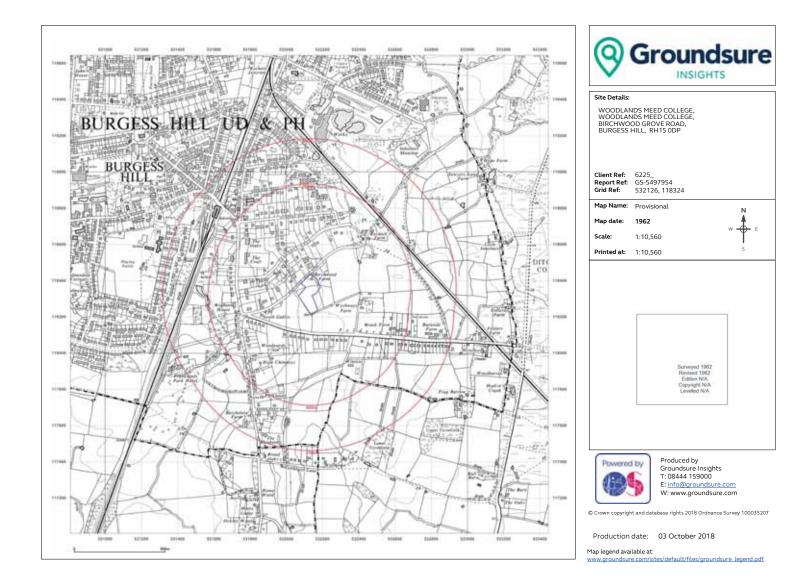


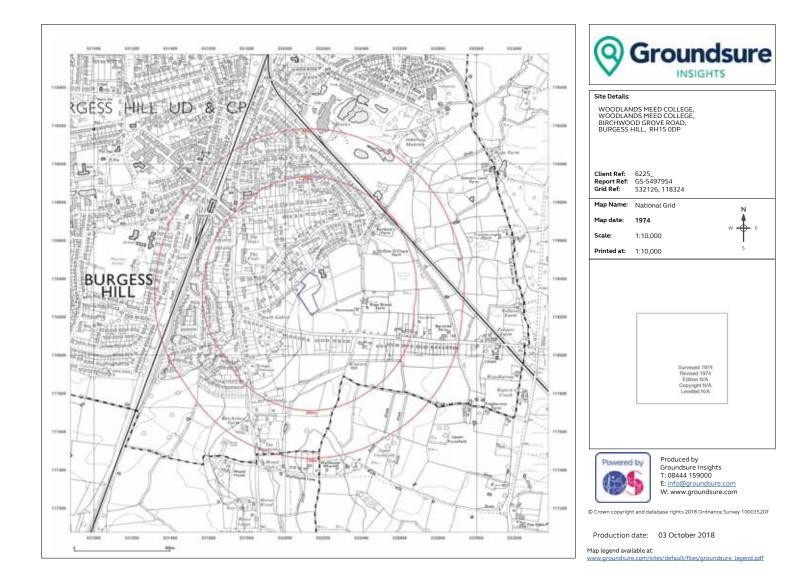


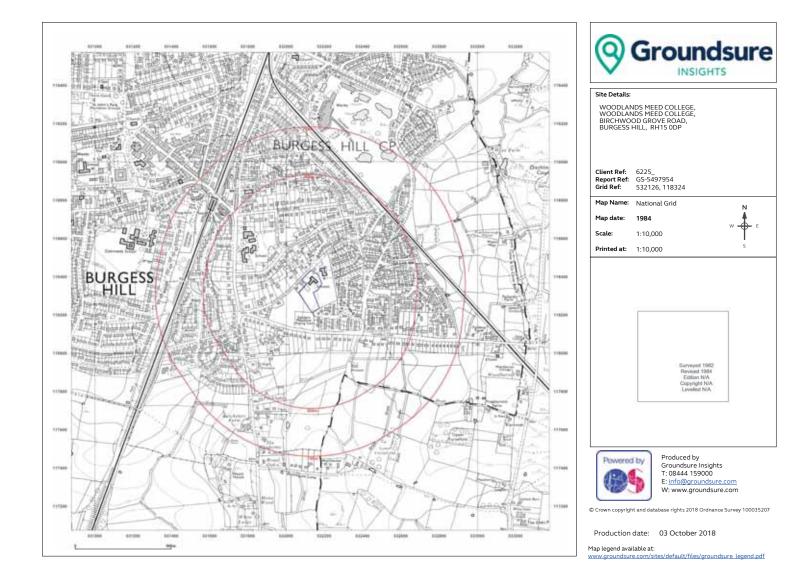


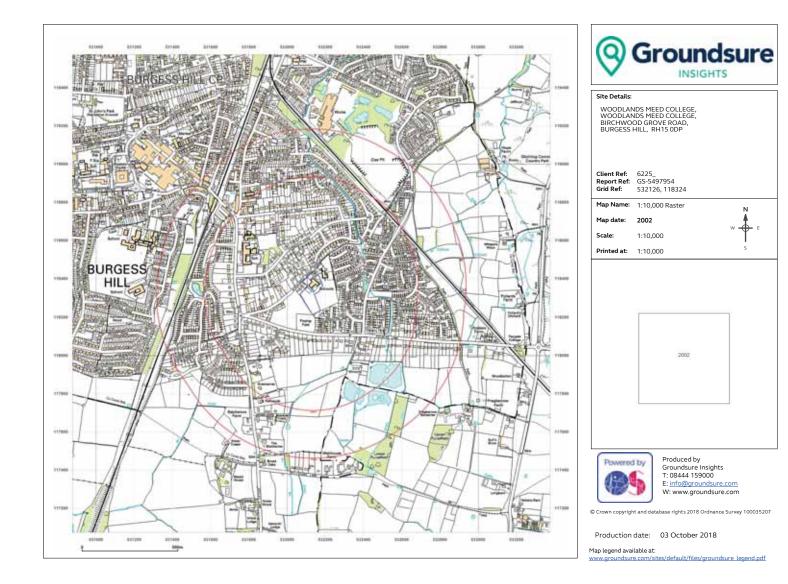


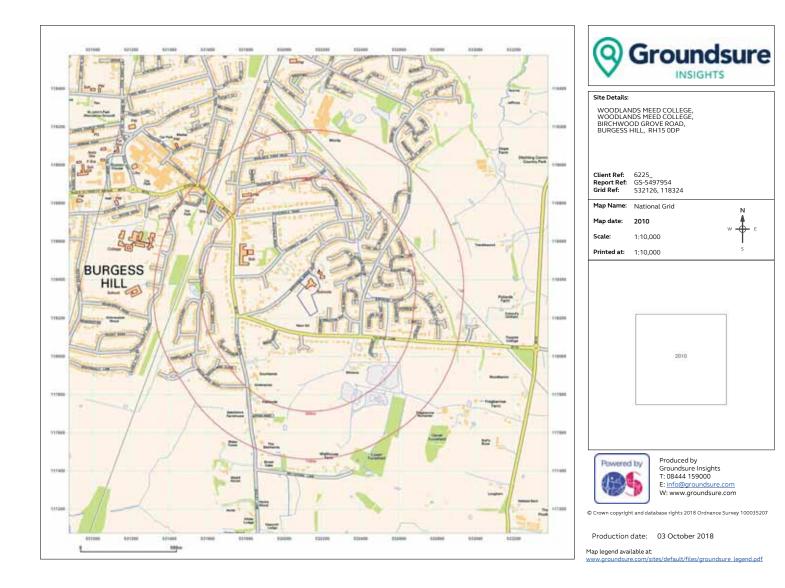


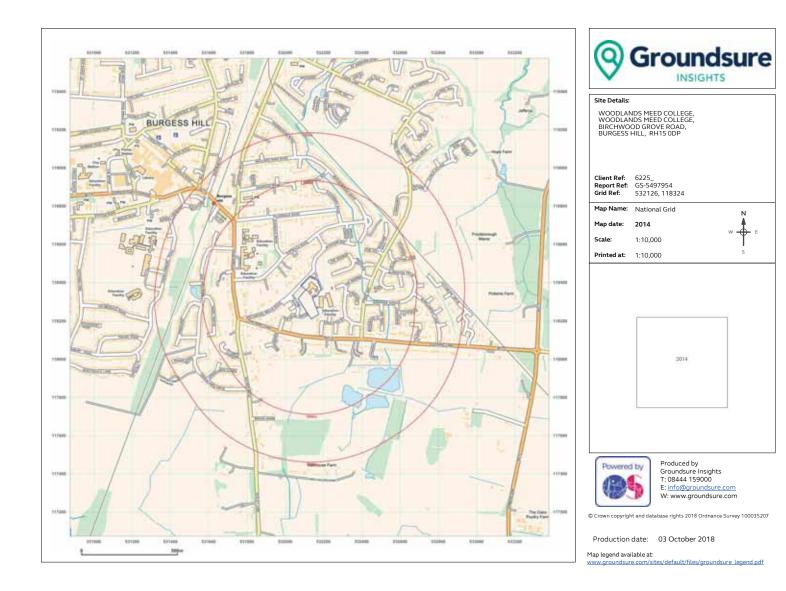












Annex B: Exploratory Hole Logs

irma(south)	Consulting Geo-Technical & Geo-Environmental Engineers Site Investigation Contractors
initia (South)	Site Investigation Contractors

Borehole No. The Slate Barn, Lower Lowley, Dunsford, Exeter, EX6 7BP 01647 252414

terrafirma	1,000	Join Sile II	rescigació	in conta	accord				www.te	rrafirmasouth.co.u	ık			
Project Name							Droic	ct No.	Date			Sheet 1 of Hole Type		
Voodlands Meed F	Primary S	chool					6225	CI NO.		to 23/08/2018		CP		
Client							Co-oi	do		er Strike Details		Logged B		
Hampshire County	Council							us	Depth Strike	Time Elapsed	Rose To	PS		
	Council	Plant Used				E: 4 10						20	4.02	Approved E
Contractor							N:					PS		
Belfort Drilling Serv			Dando	o 2500			L:					Scale 1:50		
		and Results			Dep				Stratum D	escription		Legend \		
Results	Туре	Depth	Casing	Water	(Thick	(0.25)	Level		Grass over soft dark b		V Rare			
					F	0.25		subrounded	fine to medium flint	gravel. Frequent rootl	ets.			
	ES	0.50			E			Firm yellow	ish brown mottled ligh	nt grey slightly sandy	silty CLAY.	3		
	20	0.00			F									
	_			_	F							1		
N=11 (1,0/2,3,3,3)	D D	1.00 1.00 - 1.45	1.00	Dry										
	SPT(S)	1.00			E]		
					F									
					F	(0.05)								
N=12 (1,2/3,3,3,3)	D	2.00	1.00	Dry	2	(3.25)								
	D SPT(S)	2.00 - 2.45 2.00		-	E]=_=_		
					Ē]		
					F									
					F									
N=10 (1,2/3,2,3,2)	D	3.00 3.00 - 3.45	1.00	Dry	- 3									
	SPT(S)	3.00			F							+		
					E	3.50		Firm. becon	ning stiff brown mottle	d orange brown and	liaht arev			
					E				dy silty CLAY.	5	5 5 7	1		
N=26 (2,3/4,4,10,8)	D	4.00	1.00	4.00	4						\	_ }		
	D SPT(S)	4.00 - 4.45 4.00			F						L	×		
		4.00			F							+		
					E							3		
					E	(2.70)]		
50 (3,3/50 for 200mm)	D	5.00 5.00 - 5.45	1.00	4.10	5									
	SPT(S)	5.00			F							1		
					F							-1		
					E]= = =		
	D	6.00			6									
					F	6.20		Vory stiff vo	ry thinly laminated lig	ht grov and dark grov	, aliabtly			
N-20 (2 5/0 40 40 44)		0.50 0.05	4.00	0.00	F			sandy silty (CLAY. Locally weakly			+		
N=39 (3,5/8,10,10,11)	D SPT(S)	6.50 - 6.95 6.50	1.00	6.30	E			bands of cla	aystone/siltstone.]		
					F									
	D	7.00			- 7									
					F							+		
					F									
					E]		
N=32 (5,5/6,8,8,10)	D	8.00	1.00	7.80	- 8									
	D	8.00 - 8.45 8.00		1.00	F									
	SPT(S)	0.00			F							1=_=_		
					F									
					E									
	D	9.00			9									
					F									
blows=70	U	9.50 - 9.95			F									
					F									
N=53 (5,7/9,9,15,20)	D	10.00	1.00	9.80	E									
	ng Detail		Remarks	9.00							Borehole	Diameter		
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terrafirma	a(sou	ith) Consul	lting Geo- vestigatio	Technic n Contra	al & Geo-Envir actors	ronmen	tal Enginee	01647 2		EX6 7BP		BHO	
Project Name						Brois	ct No.	Date				Sheet 2 Hole Ty	
Woodlands Meed I	Primary S	chool				6225		23/08/2018	to 23/0	18/2018		CP	pe
Client						Co-0			ter Strike			Logged	By
Hampshire County	Council						105	Depth Strike			ose To	PS	•
Contractor	-		Plant	Used		E:		4.10	20)	4.02	Approve	d By
Belfort Drilling Serv	vices		Dando			N:					_	PS	
-		and Results	Danac	2000	Depth,	L:						Scale 1	
Results	Туре	Depth	Casing	Water	(Thickness)	Level		Stratum E	Descriptio	n		Legend	Wel
	D SPT(S)	10.00 - 10.45 10.00			(8.30) 		sandy silty C	ry thinly laminated lic CLAY. Locally weakly aystone/siltstone.	ht grey and cemented.	dark grey slig Occasional th	ghtly nin		
55 (17,18/55 for 225mm)	B D SPT(S)	11.00 - 11.45 11.00 - 11.50 11.00	1.00	10.70	- 						-		
	D D	12.00 12.00 - 12.45			- - 						-		
59 (7,11/59 for 200mm)	SPT(S)	12.50	1.00	12.30								+	
	D	13.00			- 13 - 13 						-		
53 (11,26/53 for 225mm)	D D SPT(S)	14.00 14.00 - 14.45 14.00	1.00	13.90	- - - - - - - - - - - - - - - - - - -			End of Boreh	ole at 14.50m		-		
Chicalli					- 15 - 15 - 16 - 16 - 17 - 17 - 17 - 17 - 17 - 17 - 17 - 17								
Depth Top T	ng Detail ō (m) 14.00		emarks o recover	y from l	J100 at 9.50m	n to 9.9	5m		B	Bo ase Depth 14.50	Diamete Diamete 150		arks
		No me	tes: For all sy tres. Stratum	mbols and a thicknesses	abbreviations please s given in brackets.	see key sl	neet. All depths	and measurements in					

X	south	Consulting Geo-Technical & Geo-Environmental Engineers Site Investigation Contractors
IIIId	south	Site Investigation Contractors

Borehole No. The Slate Barn, Lower Lowley, Dunsford, Exeter, EX6 7BP **BH02** 01647 252414 .1

	a(sou								** ** *******	rrafirmasouth.co.u	AIN	Chart 4
Project Name							Proie	ct No.	Date			Sheet 1 of 2 Hole Type
Voodlands Meed F	Primary So	chool					6225			to 24/08/2018		CP
lient							Co-oi	ds	Wat	er Strike Details	5	Logged By
ampshire County	Council								Depth Strike	Time Elapsed	Rose To	PS
Contractor			Plant	Used			E:		4.40	20	4.40	Approved E
Belfort Drilling Serv	vices		Dando				N:					PS
		and Results	Banac	2000			L:					Scale 1:50
Results	Type	Depth	Casing	Water		epth, ckness)	Level		Stratum D	escription		Legend V
rteouto	Type	Doptil	Casing	Water	-	,				prown sandy silty CLA		
					F	(0.40)		subrounded	fine to medium flint	gravel. Frequent rootl	ets.	
	ES	0.50			E	0.40				epth, yellowish browr htly sandy silty CLAY.		
					F			laminated.	··· -··- p -··- 3· - , -··3·	,,,	,	
N=5 (1,0/1,2,1,1)	D	1.00	1.00	Dry	<u> </u> 1							
	D SPT(S)	1.00 - 1.45 1.00			E]
					L							
					F							
N=0 (1 2/2 2 2 2)	D	2.00	1.00	Dry	- 2							
N=9 (1,2/2,2,2,3)	D D	2.00 - 2.45	1.00	Dry	Ę							
	SPT(S)	2.00			F							
					Ē							
					E							
N=12 (1,2/3,2,3,4)	D	3.00 3.00 - 3.45	1.00	Dry	- 3							
	SPT(S)	3.00 - 3.43			F							
					F							
					E	(6.70)						
N=12 (2,3/3,3,3,3)	D	4.00	1.00	Dry	4	. ,						
(_,_,_,_,_,_,_,_,	D SPT(S)	4.00 - 4.45 4.00		,	F							+
	3F1(3)	4.00			F						_	록
					E							
					F							
N=14 (3,3/3,4,3,4)	D D	5.00 5.00 - 5.45	1.00	4.90	5							
	SPT(S)	5.00			E]
					F							
					F							1
	D	6.00			6							
					F							
50 (11,16/50 for	D	6.50 - 6.95	1.00	6.20	F							
150mm)	SPT(S)	6.50			E							
	D	7.00			E,							
	5	1.00			È.	7.10		Very stiff ver	ry thinly laminated lig	ht grey and dark grey	slightly	
					F				CLAY. Locally weakly stone/siltstone.	cemented. Occasion	al thin	
					E							
					F							
blows=90	D U	8.00 8.00 - 8.45			- 8							
					E							
					F							
					F							
	D	9.00			- 9							
					F							
N=46 (6,8/8,7,12,19)	D	9.50 - 9.95	1.00	9.30	F							
	SPT(S)	9.50		-	F							
	D	10.00			E							
Chisellir	ng Details		emarks								Borehole I	Diameter
	o (m)	Duration								Base Dep	oth Diame	ter Remarl
										15.00	150	
1												

terrafirm	a(sou	th) Consult	ting Geo- vestigatio	-Technic	al & Geo-Envir actors	onmen	tal Engine	Dunsfor 01647 2	te Barn, Lower Lov d, Exeter, EX6 7B 52414 rrafirmasouth.co.	Р	Borehole BH0 Sheet 2	2
Project Name Woodlands Meed Client	Primary So	chool				6225	ct No.		to 24/08/2018 ter Strike Detail		Hole Ty CP Logged	pe
Hampshire County						Co-o	rds	Depth Strike	Time Elapsed	S Rose To	PS	Бу
			Plant	llaad		E:		4.40	20	4.40	Approve	d By
Contractor						N:					PS	
Belfort Drilling Ser			Dando	o 2500	1 1	L:					Scale 1	:50
Results	Samples a	and Results Depth	Casing	Water	Depth, (Thickness)	Level		Stratum D	escription		Legend	We
	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,						sandy silty	ery thinly laminated lig r CLAY. Locally weakly laystone/siltstone.	ht grey and dark gre cemented. Occasior	y slightly nal thin		
N=50 (7,8/50 for 225mm)	D D SPT(S)	11.00 11.00 - 11.45 11.00	1.00	10.90	11 (7.90) 1							
N=50 (9,13/50 for 220mm)	D D SPT(S)	12.00 12.50 - 12.95 12.50	1.00	12.30	- 12 - 12 							
	D	13.00			- 							
	D	14.00										
53 (11,17/53 for 220mm)	D SPT(S)	14.50 - 14.95 14.50	1.00	14.40	 			End of Boreh	ole at 15.00m			
					- 16 - 16 - 16 			End of Boreh	ole at 15.00m			

Chi	selling Deta	ils	Remarks	Во	Borehole Diameter					
Depth Top	To (m)	Duration		Base Depth	Diameter	Remarks				
				15.00	150					
			Notes - Far all such als and althous influences and have also at All deaths and an example in	-						
			Notes: For all symbols and abbreviations please see key sheet. All depths and measurements in metres. Stratum thicknesses given in brackets.							

	couth	Consulting Geo-Technical & Geo-Environmental Engineers Site Investigation Contractors
IId	south	Site Investigation Contractors

errafirm	a(sou	ith) Consu	lting Geo- vestigatio	Technic n Contra	al & Geo-Envir actors	ronmen	tal Engineer	rs Dunsfor 01647 2	e Barn, Lower Lov d, Exeter, EX6 7Bl 52414 rrafirmasouth.co.1	p	Borehole I BH03	3
roject Name	Diana	-11					ect No.	Date	t. 00/00/0040		Sheet 1 o Hole Typ	
/oodlands Meed	Primary So	chool				6225			to 30/08/2018		CP	D .,
lient						Co-o	rds		er Strike Detail		Logged I PS	зу
ampshire County	y Council					E:		Depth Strike	Time Elapsed	Rose To	Approved	Bv
ontractor			Plant	Used		N:					PS	Бу
elfort Drilling Ser	vices		Dando	2501		L:					Scale 1:5	50
		and Results			Depth,	L.						
Results	Type	Depth	Casing	Water	(Thickness)	Level		Stratum D	escription		Legend	We
results	Type	Dopui	ousing	Water	(0.40)		TOPSOIL: G		prown sandy silty CL/ gravel. Frequent root			
	ES	0.50			0.40			d orange brown and	firm to stiff with depth I pale grey slightly sa			
N=3 (1,0/1,0,1,1)	D D SPT(S)	1.00 1.00 - 1.45 1.00	1.00	DRY	- 1 - -							
N=7 (1,2/2,1,2,2)	D	2.00	1.00	DRY	- - - - - 2							
	D SPT(S)	2.00 - 2.45 2.00			(3.80) 							
N=16 (1,2/3,4,5,4)	D D SPT(S)	3.00 3.00 - 3.45 3.00	1.00	DRY	- 							
N=12 (2,3/3,3,3,3)	D D SPT(S)	4.00 4.00 - 4.45 4.00	1.00	DRY			Firm, becomi slightly sandy	ing stiff brown mottle y silty CLAY.	ed orange brown and	light grey		
N=13 (2,2/3,3,4,3)	D D SPT(S)	5.00 5.00 - 5.45 5.00	1.00	DRY	5 5 5							
	D	6.00			(3.00) 							
blows=80	U	6.50 - 6.85										
	D	7.00			7 7.20 		sandy silty C	y thinly laminated lig LAY. Locally weakly /stone/siltstone.	ht grey and dark gre cemented. Occasior	y slightly al thin		
N=25 (3,4/4,6,7,8)	D D SPT(S)	8.00 8.00 - 8.45 8.00	1.00	DRY								
	D	9.00			- - - - - -							
N=28 (3,4/5,5,9,9)	D SPT(S)	9.50 - 9.95 9.50	1.00	DRY								
	D D	10.00										
	ing Details To (m)	s R Duration	emarks						Base De 15.00		ter Rema	irks
		Nc	otes; For all sv	mbols and a	abbreviations please	see key st	heet All denths a	nd measurements in				

terrafirma	(sou	th) Consu	lting Geo- vestigatio	Technica n Contra	al & Geo-Envir actors	onmen	tal Engineer	S Dunsfor 01647 2	te Barn, Low rd, Exeter, E 52414 rrafirmasou	X6 7BP	,	Borehole N BH03	6
		,							mannmasou	III.CO.UK		Sheet 2 of	
Project Name							ct No.	Date				Hole Typ	е
Woodlands Meed P	rimary So	chool				6225		30/08/2018				CP	
Client						Co-o	rds		ter Strike E Time Elar		ose To	Logged E PS	ÿ
Hampshire County	Council					E:		Depth Strike	Time Elap	sea R		PS Approved	B ₁
Contractor			Plant	Used		N:					P P	PS	БУ
Belfort Drilling Serv	ices		Dando	2501		L:						Scale 1:5	0
-		and Results			Depth,	L .							
Results	Туре	Depth	Casing	Water	(Thickness)	Level		Stratum E	Description			Legend	We
N=50 (6,8/12,12,20,6)	D D SPT(S)	11.00 11.00 - 11.45 11.00	1.00	DRY			sandy silty Cl	/ thinly laminated lig LAY. Locally weakly /stone/siltstone.					
	D	12.00											
i0 (25 for 95mm/50 for 145mm)	D SPT(S)	12.50 - 12.95 12.50	1.00	DRY									
	D	13.00											
0 (9,10/50 for 225mm)	D SPT(S)	14.00 14.00	1.00	DRY	14 14 								
	D	14.50 - 14.95			-								•••••
					— 15 15.00 —			End of Boreh	ole at 15.00m				
Chisellir			emarks								orehole Diar		
Depth Top To	o (m)	Duration	too: For all au	whole and a	bbreviations please given in brackets.					e Depth 15.00	Diameter 150	Rema	rks

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The Slate Barn, Lower Lowley, Dunsford, Exeter, EX6 7BP 01647 252414

Borehole No.

										www.te	frammasoum.co.	UK	Sheet 1	1 of 2
Project Name								-	ect No.	Date			Hole T	
Woodlands Me	eed F	Primary S	School					6225			to 31/08/2018		CF	
Client								Co-o	rds		ter Strike Detail		Logge	-
Hampshire Co	ounty	Council						E:		Depth Strike 4.00	Time Elapsed	Rose To 4.00	PS	
Contractor				Plant	Used					14.80	20 20	4.00 5.64	Approv	
Belfort Drilling	Serv	vices		Dand	o 2502			N: L:			_		PS Scale	
5			and Results			De	pth,	⊑.					Scale	1.50
Results		Туре	Depth		Water		kness)	Level		Stratum D	Description		Legen	d Well
rtoouno		.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Dopui		mator	-			TOPSOIL: G	rass over soft dark l	brown sandy silty CL	AY. Rare		1
						F	(0.35) 0.35				gravel. Frequent root			
		ES	0.50			F	0.55		Soft, becomin sandy silty C	ng firm, yellowish br LAY.	own mottled light gre	y slightly		_
						F			, , , ,					
N=6 (1,0/1,2,2	1)	D	1.00	1.00	Dry	F.								-
N=0 (1,0/1,2,2,	, ')	D	1.00 - 1.45		Diy	E'								
		SPT(S)	1.00			F							+	
						F							+	
						F	(2.85)						+	
N=11 (1,2/2,2,2	2,5)	D	2.00	1.00	Dry	2								
		D SPT(S)	2.00 - 2.45 2.00			F							1	$\exists \cdot \exists \cdot$
						F							1	
						E]	
						E								
N=26 (2,3/4,7,8	3,7)	D D	3.00 3.00 - 3.45	1.00	Dry	3								
		SPT(S)	3.00 - 3.45	,		F	3.20				ed orange brown and	l light grey		크 뮤니
						F			slightly sandy	y silty CLAY.				
						F								
		_				F.						•		
N=51 (5,7/9,11,1	1,20)	D D	4.00 4.00 - 4.45	1.00	3.90	- 4						-		
		SPT(S)	4.00			F	(2.20)							
						E								
						E								
N=25 (4,4/5,8,6	3 6)	D	5.00	1.00	4.90	- 5								
	.,_,	D SPT(S)	5.00 - 5.45			F							1	
		5P1(5)	5.00			F	5.40		Von etiff von	, think lowingted lie	ht grey and dark gre	u oliabtlu		
						-			sandy silty C	LAY. Locally weakly	cemented. Occasior		▼	
						F			bands of clay	/stone/siltstone.			1	
		D	6.00			6								
						E							1	
N=27 (5,7/11,5,6	6.5)	D	6.50 - 6.95	1.00	Dry	F								
	. ,	SPT(S)	6.50		,	F								
		_				F								
		D	7.00			- 7								
						F								<u> </u>
						E								
						F								
blows=40		D	8.00			- 8								
		Ū	8.00 - 8.45	;		È.							1	<u> -</u> []
						F								<u> </u>
blows=40		U	8.50 - 8.90			F								
						F								
						- 9								
						E								<u> </u>
N=54 (3,8/9,12,1	6 17)	D	9.50 - 9.95	1.00	Dry	F								그니
	-, • •)	SPT(S)	9.50	1.00	2.9	F							+	그네
		D	9.60			F								
			10.00			L		I			F	l		
	-	ng Detai		Remarks		.400		C				Borehole		
Depth Top	l	o (m)	Duration	No recove	ry from l	u100 at	t 8.00m	n. Succe	esstully reat	ttempted at 8.50	0m. Base De 15.00			marks
											13.00			
				Notes: For all s	ymbols and a	abbreviatio	ons please	see key sl	neet. All depths a	ind measurements in				
				metres. Stratum	n thicknesses	s given in I	brackets.	,						

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Borehole No.

cerraini	14(50	Gen Site	nvestigatio	on Contra	actors			www.te	rrafirmasouth.co.	uk	Shee	et 2 of 2
Project Name							ect No.	Date				е Туре
Woodlands Mee	ed Primary	School				6225			to 31/08/2018			CP
Client						Co-o	rds		ter Strike Detail		-	ged By
Hampshire Cou	nty Council					E:		Depth Strike	Time Elapsed	Rose To 4.00		PS
Contractor			Plant	Used		N:		4.00 14.80	20 20	4.00 5.64		oved By PS
Belfort Drilling S	Services		Dando	o 2502		L:						e 1:50
	Samples	s and Results			Depth							
Results		Depth	Casing	Water	(Thickness)	Level		Stratum D	Description		Lege	end Well
Results N=59 (5,9/9,13,13,13,13,13,13,13,13,13,13,13,13,13,	24) D D SPT(S) B nm) D SPT(S) D D	Depth 11.00 11.00 - 11.45 11.00 12.00 - 12.50 12.50 - 12.95 12.50 13.00 14.00 14.50 - 14.95	5 1.00	Water Dry 12.40 8.10	Depth, (Thickness) (9.40) (9.4	Level	sandy silty CL bands of clays	r thinly laminated lig "AY, Locally weakly stone/siltstone.	nd is fine-medium note at 15.00m	y slightly hal thin		end Well
					E							
					⊧ I						_	
							1					
	elling Deta		Remarks		400 -+ 0.00	0		temmt: 1 (0 =		Borehole		
Depth Top	To (m)	Duration I	NO RECOVER	ry from i	1100 at 8.00m	1. Succe	esstully reat	tempted at 8.50	0m. Base De 15.00			Remarks
		1	Notes: For all sy metres. Stratum	mbols and a thicknesse	abbreviations please s given in brackets.	see key st	neet. All depths an	nd measurements in				

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Borehole No.

Decident Monte		1								rrafirmasouth.co.	uk	Sheet 1 of 2
Project Name Woodlands Meed F	Primarv S	chool					6225	ect No.	Date 01/09/2018	to 01/09/201	8	Hole Type CP
Client							Co-o			ter Strike Detai		Logged By
Hampshire County	Council							143	Depth Strike	Time Elapsed		PS
Contractor	-		Plant	Used			_E:		4.30 9.50	20 20	4.30 8.70	Approved By
Belfort Drilling Serv	rices		Dando				N: L:		9.50	20	0.70	PS Scale 1:50
-		and Results				pth,	L.					Scale 1.50
Results	Туре	Depth	Casing	Water		kness)	Level		Stratum E	Description		Legend We
					-	(0.35)		TOPSOIL: Gr	rass over soft dark l	brown sandy silty CL gravel. Frequent roo	AY. Rare	-
					E	0.35				lepth, yellowish brow		
	ES	0.50			-					htly sandy silty CLA		
					F			iaminateu.				
N=4 (1,0/1,0,1,2)	D D	1.00 1.00 - 1.45	1.00	Dry	- 1							
	SPT(S)	1.00			F							1
					-							
					E]
N=6 (1,1/1,2,1,2)	D	2.00	1.00	Dry	- 2							
	D SPT(S)	2.00 - 2.45 2.00		-	F							1
	(-)				E]
					F							
N=47 (0.0/4.4.4.5)	5	0.00	4.00	D.,	È,	(5.25)						1
N=17 (2,3/4,4,4,5)	D D	3.00 3.00 - 3.45	1.00	Dry	3	(3.23)]
	SPT(S)	3.00			F							1
					-							
					E							
N=17 (3,3/3,4,5,5)	D D	4.00 4.00 - 4.45	1.00	Dry	4							
	SPT(S)	4.00 - 4.45 4.00			F						_	▼===
					F							
					E							
N=43 (11,15/8,8,10,17)	D	5.00	1.00	Dry	- 5							
(· · · · ,	D D SPT(S)	5.00 - 5.45 5.00		,	F							
					E							
					E	5.60		Very stiff very	/ thinly laminated lig	ht grey and dark gre	ey slightly	
	5				F.				LAY. Locally weakly stone/siltstone.	cemented. Occasio	nal thin	+
	D	6.00			6							
					E							
blows=70	U	6.50 - 6.95			F							
					E							
	D	7.00			- 7							
					F							+
					E							
					F							+
N=39 (3,4/8,12,10,9)	D	8.00	1.00	Dry	- 8							-+
	D SPT(S)	8.00 - 8.45 8.00			E]
	. ,				L							1
					F							◀
	~	0.00			Ë,]
	D	9.00			9]
					F						k	
N=38 (4,7/6,9,11,12)	D SPT(S)	9.50 - 9.95 9.50	1.00	Dry	F				9.50 to 9.60	m - with gravel of mudstone. Po	ssible thin band.	≒
]
	В	10.00 - 10.50										
Chisellin			emarks								Borehole I	
Depth Top To	o (m)	Duration								Base De 15.00		
										15.00	, 130	
		Not	tes: For all sy	mbols and	abbreviati	ons please	see key sł	neet. All depths ar	nd measurements in	—		
		me	tres. Stratum	thicknesse	s given in	brackets.						

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The Slate Barn, Lower Lowley, Dunsford, Exeter, EX6 7BP 01647 252414 Borehole No.

BH05

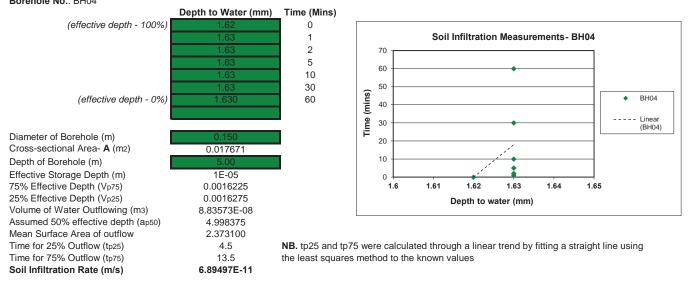
terramma		Site In	vestigatio	n Contra	actors				www.ter	rafirmasouth.co.u	ak	Sheet 2	of 2
Project Name							Proje	ct No.	Date			Hole Ty	
Woodlands Meed F	Primary So	chool					6225			to 01/09/2018	3	CP	•
Client							Co-o	rds	Wat	er Strike Details	S	Logged	Ву
Hampshire County	Council								Depth Strike	Time Elapsed	Rose To	PS	
Contractor			Plant	Used			E:		4.30 9.50	20 20	4.30 8.70	Approve	d By
Belfort Drilling Serv	vices			2502			N:		9.50	20	0.70	PS	
		and Results	Danuc	2002			L:					Scale 1	:50
Results	Type	Depth	Casing	Water	Ue De	pth, kness)	Level		Stratum D	escription		Legend	Well
results	Турс	Dopti	Casing	Water	-			Very stiff ver	ry thinly laminated lig CLAY. Locally weakly	ht grey and dark grey	/ slightly		
					F	(9.40)		sandy silty C bands of cla	CLAY. Locally weakly stone/siltstone.	cemented. Occasion	al thin	1	
					E							1	
					F								
50 (50 for 100mm/50	D	11.00	1.00	10.90	- 11								
for 90mm)	SPT(S)	11.00			F								
					E							3===	
					F								
					F							1	
	D	12.00			- 12 -							7	
					E							1	
50 (7,11/50 for 225mm)	D SPT(S)	12.50 - 12.95 12.50	1.00	12.30	F							+	
	3F1(3)	12.50			F							1	
	D	13.00			- 13								
					E]	
					E							32-2-2	
					F								
	_				F							1	
	D	14.00			- 14							1	
					E]	
50 (8,12/50 for 175mm)	D SPT(S)	14.50 - 14.95 14.50	1.00	14.40	F								
					F							1	
					15	15.00			End of Boreh	ole at 15.00m			-27/2017
					-							_	
					F							_	
					E								
					- 16							_	
					F							_	
					F							_	
					E								
					F							-	
					17							-	
					E							_	
					Ē								
					F							_	
					- 18							_	
					E							_	
					F							_	
					þ							-	
					F							-	
					19 								
					þ							_	
					F							-	
					E								
Chisellir	ng Details	s R	emarks		L		1	1			Borehole [)iameter	
	o (m)	Duration								Base Dep	oth Diame	1	arks
										15.00	150		
		No	otes: For all sy etres. Stratum	mbols and a thicknesses	abbreviati s given in	ons please brackets.	e see key sh	neet. All depths	and measurements in				
I		I										(

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	Exploratory Hole Key Sheet
Samples	
ES EW D U UT P C	Environmental Chemistry Soil Sample (Mulitple containers where appropriate) Environmental Chemistry Water Sample (Mulitple containers where appropriate) Bulk Disturbed Sample Small Disturbed Sample Driven Tube Sample Driven Thin Wall Tube Sample Pushed Piston Sample Core Sample (from rotary core)
G	Gas Sample
In-situ Tests SPT(S) or (C) HV PP	Standard Penetration Test, Split Spoon (S) or Solid Cone (C) Hand Vane Shear Strength Pocket Penetrometer Test
Ground Water	Groundwater Strike
▼	Groundwater Level after standing period
Drilling Records TCR SCR RQD FI NI	Total Core Recovery (given as % of core run) Solid Core Recovery (given as % of core run) Rock Quality Designation (given as % of core run) Fracture Indices Non Intact core run
	Plain Standpipe Slotted Standpipe
Backfill Legends	
Arisings Concrete	Gravel Sand Bentonite/Grout
The assessment of TCR	ribed in accordance with BS 5930:2015. , SCR, RQD and FI excludes artificial fractures caused by drilling dance with BS5930:2015.
-	the results of the Standard Pentration Test recorded in the field.

Annex C: In-situ Test Results

TERRA FIRMA (SOUTH)

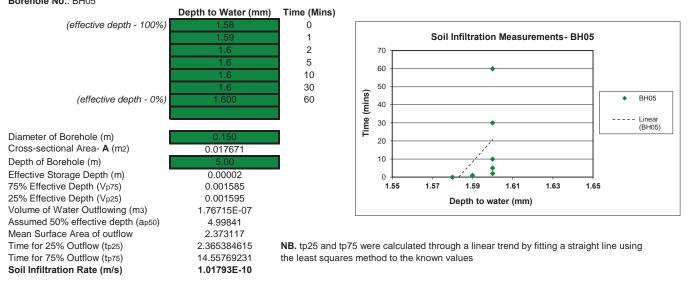
Site Name: Woodlands Meed Primary School, Burgess Hill Date Undertaken: 31/08/2018 Borehole No.: BH04



Soil Infiltration Worksheet: This worksheet has been produced in combination with the document 'BRE Digest 365- September 1991' This worksheet can be used to determine soil infiltration rates from trial pit field measurements Worksheet options are identified by a green background

TERRA FIRMA (SOUTH)

Site Name: Woodlands Meed Primary School, Burgess Hill Date Undertaken: 01/09/2018 Borehole No.: BH05



Soil Infiltration Worksheet: This worksheet has been produced in combination with the document 'BRE Digest 365- September 1991' This worksheet can be used to determine soil infiltration rates from trial pit field measurements Worksheet options are identified by a green background Annex D: Chemical Test Results



Chemistry to deliver results Chemtest Ltd. Depot Road Newmarket CB8 0AL Tel: 01638 606070 Email: info@chemtest.com

Report No.:	18-28352-1		
Initial Date of Issue:	25-Sep-2018		
Client	Terra Firma		
Client Address:	The Slate Barn Lower Lowley Dunsford Devon EX6 7BP		
Contact(s):	Info		
Project	6225 Woodlands Meed Primary School	I	
Quotation No.:		Date Received:	18-Sep-2018
Order No.:	6225	Date Instructed:	18-Sep-2018
No. of Samples:	4		
Turnaround (Wkdays):	5	Results Due:	24-Sep-2018
Date Approved:	25-Sep-2018		
Approved By:			
M.J.			
Details:	Martin Dyer, Laboratory Manager		

<u>Results - Soil</u>

Client: Terra Firma		Cher	mtest Jo	ob No.:	18-28352	18-28352	18-28352
Quotation No.:	(Chemte	st Sam	ple ID.:	690363	690365	690367
		Sa	ample Lo	ocation:	BH01	BH03	BH05
			Sampl	e Type:	SOIL	SOIL	SOIL
			Top Dep	oth (m):	0.50	0.50	0.50
		Bot	tom Dep	oth (m):		1.00	1.00
			Date Sa	ampled:	23-Aug-2018	30-Aug-2018	01-Sep-2018
			Asbest	os Lab:	DURHAM	DURHAM	DURHAM
Determinand	Accred.	SOP	Units	LOD			
АСМ Туре	U	2192		N/A	-	-	-
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	18	18	21
pH	U	2010		N/A	7.8	7.0	4.8
Total Sulphur	Ŭ	2175	%	0.010	0.27	0.033	0.021
Cyanide (Free)	U	2300	mg/kg	0.50	[B] < 0.50	[B] < 0.50	[B] < 0.50
Cyanide (Total)	U	2300	mg/kg	0.50	[B] < 0.50	[B] < 0.50	[B] < 0.50
Thiocyanate	Ŭ	2300	mg/kg	5.0	[B] < 5.0	[B] < 5.0	[B] < 5.0
Sulphide (Easily Liberatable)	N	2325	mg/kg	0.50	10	1.5	5.3
Ammoniacal Nitrogen	U	2425	mg/kg	0.50	2.0	3.4	4.0
Sulphate (Total)	U U	2430	%	0.010	0.43	0.091	0.057
Arsenic	U	2450	mg/kg	1.0	28	19	5.2
Cadmium	Ŭ	2450	mg/kg		4.4	0.29	0.23
Chromium	Ŭ	2450	mg/kg	1.0	44	32	40
Copper	Ŭ	2450	mg/kg		130	29	38
Mercury	Ŭ	2450	mg/kg		1.6	< 0.10	< 0.10
Nickel	U	2450	mg/kg	0.50	18	19	39
Lead	U	2450	mg/kg	0.50	83	41	28
Selenium	U	2450	mg/kg	0.20	1.0	0.78	0.27
Zinc	U	2450	mg/kg	0.50	680	110	110
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Organic Matter	U	2625	%	0.40	0.57	2.1	0.86
Total TPH >C6-C40	U	2670	mg/kg	10	[B] < 10	[B] < 10	[B] < 10
Naphthalene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Fluorene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Benzo[a]anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Chrysene	U	2700	00	0.10	< 0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	Ŭ	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10

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<u>Results - Soil</u>

Project: 6225 Woodlands Mee	ed Primary						
Client: Terra Firma		Che	mtest Jo	ob No.:	18-28352	18-28352	18-28352
Quotation No.:	(Chemte	est Sam	ple ID.:	690363	690365	690367
		Sa	ample Lo	ocation:	BH01	BH03	BH05
			Sampl	e Type:	SOIL	SOIL	SOIL
			Top Dep	oth (m):	0.50	0.50	0.50
		Bot	ttom Dep	oth (m):		1.00	1.00
			Date Sa	ampled:	23-Aug-2018	30-Aug-2018	01-Sep-2018
			Asbest	os Lab:	DURHAM	DURHAM	DURHAM
Determinand	Accred.	SOP	Units	LOD			
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's	U	2700	mg/kg	2.0	< 2.0	< 2.0	< 2.0
Total Phenols	U	2920	mg/kg	0.30	< 0.30	< 0.30	< 0.30

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Results - Single Stage WAC

Chemtest Job No:	18-28352				Landfill	Waste Acceptanc	e Criteria
Chemtest Sample ID:	690363					Limits	
Sample Ref: Sample ID:						Stable, Non- reactive	
Sample Location:	BH01					hazardous	Hazardous
Top Depth(m):	0.50				Inert Waste	waste in non-	Waste
Bottom Depth(m):					Landfill	hazardous	Landfill
Sampling Date:	23-Aug-2018					Landfill	
Determinand	SOP	Accred.	Units				
Fotal Organic Carbon	2625	U	%	0.33	3	5	6
Loss On Ignition	2610	U	%	5.3			10
Fotal BTEX	2760	U	mg/kg	[B] < 0.010	6		
Total PCBs (7 Congeners)	2815	U	mg/kg	< 0.10	1		
FPH Total WAC (Mineral Oil)	2670	U	mg/kg	[B] < 10	500		
Fotal (Of 17) PAH's	2700	N	mg/kg	< 2.0	100		
ъН	2010	U		7.8		>6	
Acid Neutralisation Capacity	2015	N	mol/kg	0.042		To evaluate	To evaluat
Eluate Analysis		1	10:1 Eluate	10:1 Eluate	Limit values	for compliance I	eaching test
-			mg/l	mg/kg	using B	S EN 12457 at L/S	S 10 l/kg
Arsenic	1450	U	< 0.0010	< 0.050	0.5	2	25
Barium	1450	U	< 0.0010	< 0.50	20	100	300
Cadmium	1450	U	< 0.00010	< 0.010	0.04	1	5
Chromium	1450	U	< 0.0010	< 0.050	0.5	10	70
Copper	1450	U	< 0.0010	< 0.050	2	50	100
Mercury	1450	U	< 0.00050	< 0.0050	0.01	0.2	2
Molybdenum	1450	U	< 0.0010	< 0.050	0.5	10	30
Nickel	1450	U	< 0.0010	< 0.050	0.4	10	40
ead	1450	U	< 0.0010	< 0.010	0.5	10	50
Antimony	1450	U	< 0.0010	< 0.010	0.06	0.7	5
Selenium	1450	U	< 0.0010	< 0.010	0.1	0.5	7
Zinc	1450	U	< 0.0010	< 0.50	4	50	200
Chloride	1220	U	1.8	18	800	15000	25000
luoride	1220	U	0.093	< 1.0	10	150	500
luonue	1220	U	< 1.0	< 10	1000	20000	50000
				250	4000	60000	100000
Sulphate	1020	N	25	250	4000	00000	
Sulphate Fotal Dissolved Solids Phenol Index		N U	25 < 0.030	< 0.30	1	-	-

Waste Acceptance Criteria

Dry mass of test portion/kg Moisture (%)

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

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Results - Single Stage WAC

Chemtest Job No:	18-28352				Landfill	Waste Acceptanc	e Criteria
Chemtest Sample ID:	690364					Limits	
Sample Ref: Sample ID:						Stable, Non- reactive	
Sample Location:	BH02					hazardous	Hazardous
Top Depth(m):	0.50				Inert Waste	waste in non-	Waste
Bottom Depth(m):					Landfill	hazardous	Landfill
Sampling Date:	24-Aug-2018					Landfill	
Determinand	SOP	Accred.	Units				
Fotal Organic Carbon	2625	U	%	0.41	3	5	6
Loss On Ignition	2610	U	%	5.5			10
Total BTEX	2760	U	mg/kg	[B] < 0.010	6		
Total PCBs (7 Congeners)	2815	U	mg/kg	< 0.10	1		
TPH Total WAC (Mineral Oil)	2670	U	mg/kg	[B] < 10	500		
Total (Of 17) PAH's	2700	N	mg/kg	< 2.0	100		
bH	2010	U		4.7		>6	
Acid Neutralisation Capacity	2015	N	mol/kg	< 0.0020		To evaluate	To evaluat
Eluate Analysis		1	10:1 Eluate	10:1 Eluate	Limit values	for compliance I	eaching test
-			mg/l	mg/kg	using B	S EN 12457 at L/S	S 10 l/kg
Arsenic	1450	U	< 0.0010	< 0.050	0.5	2	25
Barium	1450	U	< 0.0010	< 0.50	20	100	300
Cadmium	1450	U	< 0.00010	< 0.010	0.04	1	5
Chromium	1450	U	< 0.0010	< 0.050	0.5	10	70
Copper	1450	U	< 0.0010	< 0.050	2	50	100
Mercury	1450	U	< 0.00050	< 0.0050	0.01	0.2	2
Molybdenum	1450	U	< 0.0010	< 0.050	0.5	10	30
Nickel	1450	U	< 0.0010	< 0.050	0.4	10	40
_ead	1450	U	< 0.0010	< 0.010	0.5	10	50
Antimony	1450	U	< 0.0010	< 0.010	0.06	0.7	5
Selenium	1450	U	< 0.0010	< 0.010	0.1	0.5	7
Zinc	1450	U	< 0.0010	< 0.50	4	50	200
Chloride	1220	U	2.5	25	800	15000	25000
Fluoride	1220	U	0.098	< 1.0	10	150	500
	1220	U	3.2	32	1000	20000	50000
Sulphate		N	20	190	4000	60000	100000
	1020						
Sulphate Total Dissolved Solids Phenol Index	1020	U	< 0.030	< 0.30	1	-	

Waste Acceptance Criteria

Dry mass of test portion/kg

oisture (%)

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Results - Single Stage WAC

Chemtest Job No:	18-28352				Landfill	Waste Acceptanc	e Criteria
Chemtest Sample ID:	690365					Limits	
Sample Ref: Sample ID:						Stable, Non- reactive	
Sample Location:	BH03					hazardous	Hazardous
Top Depth(m):	0.50				Inert Waste	waste in non-	Waste
Bottom Depth(m):	1.00				Landfill	hazardous	Landfill
Sampling Date:	30-Aug-2018					Landfill	
Determinand	SOP	Accred.	Units				
Fotal Organic Carbon	2625	U	%	1.2	3	5	6
Loss On Ignition	2610	U	%	5.6			10
Total BTEX	2760	U	mg/kg	[B] < 0.010	6		
Fotal PCBs (7 Congeners)	2815	U	mg/kg	< 0.10	1		
FPH Total WAC (Mineral Oil)	2670	U	mg/kg	[B] < 10	500		
Total (Of 17) PAH's	2700	N	mg/kg	< 2.0	100		
H	2010	U		7.0		>6	
Acid Neutralisation Capacity	2015	N	mol/kg	0.013		To evaluate	To evaluat
Eluate Analysis		I	10:1 Eluate	10:1 Eluate	Limit values	for compliance I	eaching test
-			mg/l	mg/kg	using B	S EN 12457 at L/S	S 10 l/kg
Arsenic	1450	U	< 0.0010	< 0.050	0.5	2	25
Barium	1450	U	< 0.0010	< 0.50	20	100	300
Cadmium	1450	U	< 0.00010	< 0.010	0.04	1	5
Chromium	1450	U	< 0.0010	< 0.050	0.5	10	70
Copper	1450	U	< 0.0010	< 0.050	2	50	100
Mercury	1450	U	< 0.00050	< 0.0050	0.01	0.2	2
Vlolybdenum	1450	U	< 0.0010	< 0.050	0.5	10	30
Nickel	1450	U	< 0.0010	< 0.050	0.4	10	40
_ead	1450	U	< 0.0010	< 0.010	0.5	10	50
Antimony	1450	U	< 0.0010	< 0.010	0.06	0.7	5
Selenium	1450	U	< 0.0010	< 0.010	0.1	0.5	7
Zinc	1450	U	< 0.0010	< 0.50	4	50	200
Chloride	1220	U	1.9	19	800	15000	25000
Fluoride	1220	U	0.39	3.9	10	150	500
	1220	U	3.5	35	1000	20000	50000
			16	160	4000	60000	100000
Sulphate	1020	N	16				
Sulphate Fotal Dissolved Solids Phenol Index	1020 1920	N U	16	< 0.30	1	-	-

Waste Acceptance Criteria

Dry mass of test portion/kg Moisture (%)

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Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request. The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
690363			BH01	23-Aug-2018	В	Amber Glass 250ml
690363			BH01	23-Aug-2018	В	Amber Glass 60ml
690363			BH01	23-Aug-2018	В	Plastic Tub 500g
690364			BH02	24-Aug-2018	В	Amber Glass 250ml
690364			BH02	24-Aug-2018	В	Amber Glass 60ml
690364			BH02	24-Aug-2018	В	Plastic Tub 500g
690365			BH03	30-Aug-2018	В	Amber Glass 250ml
690365			BH03	30-Aug-2018	В	Amber Glass 60ml
690365			BH03	30-Aug-2018	В	Plastic Tub 500g
690367			BH05	01-Sep-2018	В	Amber Glass 250ml
690367			BH05	01-Sep-2018	В	Amber Glass 60ml
690367			BH05	01-Sep-2018	В	Plastic Tub 500g



Test Methods

SOP	Title	Parameters included	Method summary
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2325	Sulphide in Soils	Sulphide	Steam distillation with sulphuric acid / analysis by 'Aquakem 600' Discrete Analyser, using N,N–dimethyl-p-phenylenediamine.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3- band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID



Test Methods

SOP	Title	Parameters included	Method summary		
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID		
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.		
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS		
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.		
640	Characterisation of Waste (Leaching)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge		



Report Information

Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
- < "less than"
- > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation The results relate only to the items tested Uncertainty of measurement for the determinands tested are available upon request None of the results in this report have been recovery corrected All results are expressed on a dry weight basis The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols For all other tests the samples were dried at < 37°C prior to analysis All Asbestos testing is performed at the indicated laboratory Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt All water samples will be retained for 14 days from the date of receipt Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:

customerservices@chemtest.com

Annex E: Soil Property Test Results

4041	

Liquid and Plastic Limits

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



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

Conta Site N	t Addre act: Name:		The S Lower Dunsf Kevin Wood	Scanlor land Me	ท von, E า	X6 7BP	chool							I	Date San Date Rec Date Te	mber: 18 npled: N	3-13298 ot Given 4/09/201 2/10/201	8 8	
	Addres		Not G	iven															
Laboi Hole Samp Soil E	No.: ble Ref Descrip	Reference: ference:	BH01 2	2 Brown CLAY											Depth To epth Bas Sample	e [m]: N	ot Given	I	
	Rece	eived Moist			Liqu	id Limit			Pla	stic Lin	nit	Т	Plast	icity Inde	ex		Passing		n
	Co	ntent [%]				[%]		-		[%]		_		[%]			3S Test		
		29				65				25				40			100)	
	100																		
	100 · 90 ·																A line		
	80 ·																	, 	
	70 ·											_	CE		\checkmark				
	60 ·																		
INDEX	50 ·										cv								
PLASTICITY INDEX	40 ·							C					ME						
PLAS	30 ·										wv								
	20 ·					CI													
	20 10 ·			CL				MI	1										
				ML		МІ													
	0 ·	+ + 0 10	20) 2	0	40	50	60) -	70	80	90	100	110	120	130	140	150	
		0 10	20	, ,	0	40	50	00		2UID LI		70	100	110	120	100	140	100	
				Legend	, base	ed on BS	5930:2		Code of sticity	practic	e for site	e invest	igations Liquid	l imit					
				СС	lay			L	Low				below						
				M	Silt			1	Medi	um			35 to						
								H V	High Very	high			50 to 70 to						
								Ē		mely high	gh			ding 90					
				0	rganio	b		0				ion for o		naterial (eg CHO)			
₹em	arks:																		

Rotali

PL Geotechnical Laboratory Manager

D.J.S-

GF 236.3

Geotechnical General Manager

4041	

Liquid and Plastic Limits

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



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

e Address: Not Given st Results boratory Reference: 1062503 le No.: BH01 mple Reference: 4 il Description: Brown to grey CLAY mple Preparation: Tested in natural condition As Received Moisture Liquid Limit Plastic Limit [%] 30 74 30 74 30 44 100	lient: lient Address: ontact: ite Name:	Kevin Scanlo	irn y evon, EX6 7BP on		Job N Date Sa Date Re Date ∃	erence: 6225 umber: 18-13298 mpled: Not Given ceived: 14/09/2018 Fested: 12/10/2018						
st Results borntory Reference: 1062503 EDEpth Base [m]: Not Given mple Reference: 4 Bescription: Brown to grey CLAY mple Preparation: Tested in natural condition A Received Moisture Content [%] Liquid Limit [%] Plastic Limit [%] Plastic ly Index [%] Passing 425µm BS Test Sieve 30 74 30 44 100 10 0 0 0 0 0 0 0 0 0 0 0 0 0			Woodland Meed Primary School Sampled By: Not Given									
As Received Molsture Content [%] 30 74 30 74 30 74 30 74 30 74 30 74 30 74 30 74 30 44 100 100 100 100 100 100 100	est Results	1062503 BH01 4	y CLAY		Depth Ba	se [m]: Not Given						
Content [%] [%] [%] [%] BS Test Sieve 30 74 30 44 100 Image: Sieve state of the state	As Received Mois			Plastic Limit	Plasticity Index	% Passing 425um						
Image: construction of the system of the												
Image: constrained of the second of the s	30		74	30	44	100						
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 LIQUID LIMIT 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)	90		- Mi	CH MV		A line						
LIQUID LIMIT 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 V Very high 70 to 90 E Extremely high exceeding 90		20 3	30 40 50	60 70 80	90 100 110 120	130 140 150						
Legend, based on BS 5930:2015 Code of practice for site investigations Liquid Limit C Clay L Low below 35 M Silt I Medium 35 to 50 H High 50 to 70 V V Very high 70 to 90 E Extremely high exceeding 90	0 10	20			100 110 120							
		C	Clay	2015 Code of practice for sit Plasticity L Low I Medium H High V Very high	Liquid Limit below 35 35 to 50 50 to 70 70 to 90							
ımarks:		(Drganic	O append to classificat	tion for organic material (eg CH0	C)						
amarks:												
	omorikov											

Potuli Date Reported: 31/10/2018 "Opinions and interpretations expressed here in are outside of the scope of the UKAS Accreditation. This report may not be reproduced other than in full without the prior written approval of the issuing laboratory. The results included within the report are representative of the sample submitted for analysis. The analysis was carried out at 12 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland."

PL Geotechnical Laboratory Manager

Darren Berrill Geotechnical General Manager

GF 236.3

4041	

Liquid and Plastic Limits

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



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

Client Client Conta	Addre	ess:	The S Lower Dunsf	firma Sou Blate Barr r Lowley Ford, Dev Scanlon	n on, E	X6 7BP							Da Da	nt Refere Job Num ate Samp ate Recei Date Tes	iber: 18- bled: Not ved: 14/	13298 t Given 09/2018	
Site N	lame:		Wood	lland Mee		mary Scł	lool							Samplec)
Test Labor Hole I Samp Soil D	No.: le Refe lescrip	Its Reference: erence:	BH01 6 Browr		ral co	ndition							Dej	epth Top oth Base Sample T	[m]: Not		
-	Recei	ived Moist			Liqui	d Limit			Plastic L	imit		Plast	icity Index	(425µm
	Cor	29				%] 68	<u> </u>		[%] 28				[%] 40	\rightarrow	B	S Test : 100	
PLASTICITY INDEX	100 - 90 - 80 - 70 - 60 - 50 - 40 - 30 - 20 - 10 -			CL				СН		CV MV		CE					
	0 -															-	_
	() 10	20) 30)	40	50	60	70	80	90	100	110	120	130	140	150
				C CI	base ay ilt	d on BS s	L	5 Code lasticity Lo Me	v w edium		te invest	Liquid below 35 to	35 50				
							H V E	Ve	gh ery high tremely	high		50 to 70 to excee					
				Or	ganic		С) ap	pend to	classifica	ation for	organic r	material (e	eg CHO)			
Rem	arks:																
Appro	oved:			trowski						s	igned:		Darren Be	rrill cal Gane			

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Rotali

PL Geotechnical Laboratory Manager

D.J.S.

Geotechnical General Manager GF 236.3

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Liquid and Plastic Limits

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



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

Client: Client Address:	The SI Lower Dunsfo	rma South ate Barn Lowley ord, Devon, I	EX6 7BP				Client Reference: 6225 Job Number: 18-13298 Date Sampled: Not Given Date Received: 14/09/2018					
Contact: Site Name:		Scanlon and Meed P	rimarv Scho	ol						sted: 12/10 d By: Not G		
Site Address:		Not Given										
Test Results Laboratory Reference Hole No.: Sample Reference: Soil Description:	BH01 10	05 slightly sand	dy CLAY	Depth Top [m]: 4 Depth Base [m]: 1 Sample Type: 1								
Sample Preparation	: Testec	d in natural c	ondition									
As Received Mo Content [%		Liqu	iid Limit [%]		Plastic [%]			Plasticity Inc [%]	lex		sing 425µm Гest Sieve	
19			56		21			35		100		
100												
90											ne	
20												
80												
70									\angle			
,0								CE				
60												
						cv						
N 50							\mathbf{k}	ME				
50 LINDEX												
OIIS 40				С			-					
PLA				•		мν						
30			СІ									
20												
20		CL		М	H							
10												
	•••••••••		м									
0		ML					_					
0	10 20	30	40 5	50 6	D 70	80	90	100 110	120	130 14	0 150	
					LIQUID	LIMIT						
		econd has	ed on BS 50	30.2015	Code of prac	tice for site	investio	rations				
		Legena, bas			sticity	100 101 310	5 1110030	Liquid Limit				
		C Clay		L	Low			below 35				
		M Silt		I H	Medium High			35 to 50 50 to 70				
				п V	Very high			70 to 90				
				Е	Extremely	high		exceeding 90				
		Organ	ic	0	append to	classificat	ion for o	rganic material				
		Jiyan		0		Jassiillall		game material				
Remarks:							_					
•	ariusz Pioti	rowski pical Laborat				Sig	gned:	Darren	Berrill Anical Gen			

Date Reported: 31/10/2018
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Tested in Accordance with: BS 1377-2: 1990: Clause 4.3 and 5

Client Address: Contact: Site Name:	The Slate Barn Lower Lowley Dunsford, Devo Kevin Scanlon Woodland Mee			Date Sa Date Re Date T	umber: 18-13298 mpled: Not Given ceived: 14/09/2018 Fested: 12/10/2018 led By: Not Given				
Site Address: Test Results Laboratory Reference: Hole No.: Sample Reference: Soil Description:	Not Given								
Sample Preparation: As Received Mois	Tested in natur	iquid Limit	Plastic Limit	Plasticity Index	% Passing 425µm				
Content [%] 20		[%] 43	[%] 22	[%] 21	BS Test Sieve 100				
100			1	1					
90					A line				
80 -									
70				CE					
× 60									
BU 50			CV	ME					
50 FIRAL INDEX			CH MV						
ā ₃₀		CI							
20	CL	•	мн						
10		MI							
0 + + 0 10	20 30	40 50	60 70 80 LIQUID LIMIT	90 100 110 120	130 140 150				
	Legend,	based on BS 5930:	2015 Code of practice for site						
	C Cla M Si		Plasticity L Low I Medium H High V Very high	Liquid Limit below 35 35 to 50 50 to 70 70 to 90					
	0-		E Extremely high	exceeding 90	2.)				
	Or	ganic	O append to classification	on for organic material (eg CH((
Remarks:									

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

Contact: Kevin Scanlon Site Name: Woodland Meed Primary School Site Address: Not Given Test Results Laboratory Reference: 19 Soil Description: Grey slightly sandy CLAY Sample Preparation: Tested in natural condition	
Site Address: Not Given Test Results Depth Top (m): 10.00 Laboratory Reference: 19 Sol Description: Grey slightly sandy CLAY Sample Preparation: Tested in natural condition Account (%) Liquid Limit Plastic Limit Plastic ly index % Passing 4 15 47 23 24 100 00 00 00 00 00 00 % Passing 4 10 0 0 0 0 0 4 100 10 0 0 0 0 0 0 4 100 10 0 <td></td>	
Test Results Laboratory Reference: 1065508 Depth Top [m]: 10.00 Sample Reference: 19 Sample Reference: 19 Sample Reference: Tested in natural condition Mage Reference: Tested in natural condition As Received Moisture Liquid Limit Plastic Limit Plasticity Index % Passing 4 16 47 23 24 100 100 10 10 10 10 10 10 90 0	
Laboratory Reference: 1062508: Depth Top [m]: 10.00 Hole No: Emergence: 19 Source Sample Reference: 39 Source Sample Reference: 30 Sample Reference: 30 Sample Reference: 30 Sample Reference: 30 Sample Reference: 30 Sample Reference: 30 Sample Reference: 40 Sample Reference: 4	
Sample Preparation: Tested in natural condition As Received Moisture 1/2/1 Liquid Limit 1/2/3 Plastic Limit 1/2/3 Res Test Si 15 47 23 24 100 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
As Received Moisture Content [%] Liquid Limit [%] Plastic Limit [%] Plasticity Index [%] % Passing 4 BS Test Si 15 47 23 24 100 00 0 0 0 0 0 0 00 0 0 0 0 0 0 0 00 0 0 0 0 0 0 0 0 00 0 0 0 0 0 0 0 0 0 00 0 </td <td></td>	
Content [%] [%] [%] [%] [%] BS Test Si 15 47 23 24 100	
]
	_
So to the set on BS 5930:2015 Code of practice for site investigations	_
30 20 20 10 10 10 10 10 10 10 10 10 1	_
30 20 20 10 10 0 10 20 10 20 10 20 10 20 10 20 10 20 20 10 20 20 20 20 20 20 20 20 20 2	_
30 20 20 10 10 0 10 20 10 20 10 20 10 20 10 20 10 20 20 10 20 20 20 20 20 20 20 20 20 2	
20 10 10 0 10 10 10 10 10 10 10	
10 0 0 0 10 0 10 20 30 40 50 60 70 80 90 100 10 10 10 10 10 10 10 10	
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140	
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 LIQUID LIMIT Legend, based on BS 5930:2015 Code of practice for site investigations	
LIQUID LIMIT Legend, based on BS 5930:2015 Code of practice for site investigations	⊣ 150
Legend, based on BS 5930:2015 Code of practice for site investigations	150
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)	
Remarks:	
pproved: Dariusz Piotrowski Signed: Darren Berrill	
PL Geotechnical Laboratory Manager Geotechnical General Manager	

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Liquid and Plastic Limits

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

:t:	Terrafirma South Client Reference: 6225 Address: The Slate Barn Job Number: 18-13298 Lower Lowley Date Sampled: Not Given Dunsford, Devon, EX6 7BP Date Received: 14/09/2018 t: Kevin Scanlon Date Tested: 12/10/2018									n 18							
ame:	e.	Woodl	and Me		imary S	chool											
Resu tory I o.: e Ref	Ilts Reference: erence:	10625 BH01 23	10										[Depth Ba	se [m]	Not Give	n
	-		d in natu														
		ure						PI				Pla	sticity Inc [%]	lex		% Passin BS Tes	
	19				64				26				38			10	00
00																	
																- A line	
80 -									-								
70 -														\checkmark			
60 -																	
										cv							
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							С	H •	7	MV							
30 -					СІ				╞								
20 -			CL			1	м	H	╞								
10 -					<u>м</u> і	+			┢								
0 -			ML						 								
(0 10	20) 3	0	40	50	6				90	100	110	120	130	140	150
		I	Legend	, base	ed on BS	\$ 5930			of prac	tice for s	site inve						
							L	Low				belo	w 35				
							H	High	n			50 te	o 70				
							V E			high							
			0	rgani	0		0	appe	end to	classific	ation fo	or organic	c material	(eg CH	C)		
rks:																	
	Idres Resultory I io.: Pre Rece Con 00 900 100 100 00	Iddress: Results tory Reference: o: e Reference: sscription: e Preparation: Received Moist Content [%] 19 00 90 90 90 90 90 90 90 60 70 60 70 60 70 10 0 10 0 10 0 10 0 10 0 0 10 0 10 0 10 0 10 0 10 0 10 0 10 0 10	Iddress: Not Gi Results 10625 tory Reference: 10625 o.: BH01 e Reference: 23 escription: Grey G e Preparation: Tested Received Moisture Content [%] 19 19 00 19 90 19 60 10 70 19 60 10 70 10 60 10 70 10 70 10 70 10 70 10 70 10 70 10 70 10 70 10 70 10 70 10 70 10 70 10 70 10 70 10 70 10 70 10 70 10 70 10 70 7	Indress: Not Given Results 1062510 tory Reference: 23 escription: Grey CLAY e Preparation: Tested in nature Content [%] 19 00 19 90 19 00 19 00 19 01 19 02 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 11 10 12 10 13 10 14 10 15 10 10 10 11 10 12 10 13 10 14 10 15 10 16 10 17 10 18 10 19 10 10 10 10<	Indexess: Not Given Results Itory Reference: 1062510 o.: BH01 e Reference: 23 ascription: Grey CLAY e Preparation: Tested in natural comparison Received Moisture Liquit Content [%] 19 00 19 00 19 00 19 00 19 01 19 02 CL 10 0 10	Independences: Not Given Results 1062510 tory Reference: 23 escription: Grey CLAY e Preparation: Tested in natural condition Received Moisture Liquid Limit Content [%] [%] 19 64 00 64 90 64 01 64 02 64 03 64 04 64 05 64 06 60 60 60 60 60 60 60 60 60 60 60 60 60 60 60 60 60 60 61 62 61 63 61 64 61 70 61 62 61 70 61 70 70 70 70 70 70 70 <	Idress: Not Given Results Horizan Structure Horizan Structure content [%] Grey CLAY e Preparation: Tested in natural condition Received Moisture Liquid Limit Content [%] [%] 19 64 00 Image: Content [%] 90 Image: Content [%] 19 64 00 Image: Content [%] 10 Image: Content [%]	Interference: Not Given Results Interference: 1062510 o.: BH01 BReference: 23 secription: Grey CLAY Bereparation: Tested in natural condition Received Moisture Liquid Limit Image: Content [%] Image: Cont	Index Not Given Results Undex tory Reference: 23 asscription: Grey CLAY a Preparation: Tested in natural condition Received Moisture Liquid Limit PI 19 64 00 0 90 64 00 0 90 64 01 0 90 64 01 0 90 0 <t< td=""><td>Iterestic Not Given Results Enderence: 1062510 0: BH01 Beference: 23 escription: Grey CLAY Enderence: 23 a Preparation: Tested in natural condition Plastic I Plastic I Received Moisture Liquid Limit Plastic I Plastic I Content [%] 19 64 26 00 0 0 0 0 0 00 0 0 0 0 0 00 0 0 0 0 0 00 0 0 0 0 0 00 0 0 0 0 0 00 0 0 0 0 0 00 0 0 0 0 0 00 0 0 0 0 0 00 0 0 0 0 0 00 0 0 0 0 0 00 0 0</td><td>Not Given Results tory Reference: 1062510 o. BH01 a Reference: 23 sscription: Tested in natural condition Received Moisture Liquid Limit Plastic Limit Content [%] 19 64 26 00 0 0 0 0 0 00 0 0 0 0 0 0 00 0 0 0 0 0 0 00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 10 0 0 0 0 0 0</td><td>kdress: Not Given Results BH01 a Reference: 23 scription: Grey CLAY a Preparation: Tested in natural condition Received Moisture Liquid Limit Plastic Limit 00 64 26 00 64 26 00 64 26 00 64 26 00 64 26 00 64 26 00 64 26 00 64 26 00 64 26 00 64 26 00 64 26 00 60 60 00 60 60 00 60 60 00 60 70 80 90 10 20 30 40 50 60 70 80 90 10 20 30 40 50 60 70 80 90 10 20 30 40<</td><td>kdress: Not Given Results BH01 a: BH01 b: Beference: 23 scription: Grey CLAY a: Description: content [%] [%] 19 64 26 00 0 01 0 02 0 03 0 04 0 05 0 06 0 07 0 08 0 09 0 09 0 09 0 09 0 09 0 09 0 09 0 09 0 09 0 09 0 09 0 09 0 09 0 09 0 09 0 09 0 09 0 09 0 09</td><td>Not Given Results Outpy Reference: 1002510 or. BH01 Iteration a Preparation: Tested in natural condition Received Moisture Liquid Limit Plastic Limit Plasticity Inc Content (%) 19 64 26 38 00 0 0 0 0 0 0 00 0 0 0 0 0 0 0 00 0 0 0 0 0 0 0 0 00 0 0 0 0 0 0 0 0 0 0 00 0</td><td>Iddress: Not Given Results Depth 1 0: BH01 0: Breparation: Content [%] Liquid Limit [%] Plastic Limit 19 64 00 Content [%] 01 Content [%] 19 64 00 Ct 01 Ct 02 Ct 03 Ct 04 Ct 05 Ct 04 Ct 05 Ct 04 Ct 05 Ct 05 Ct 06 Ct 07 Ct 08 Ct 09 00 01 Ct 02 Ct 03 Ct</td><td>Iddress: Not Given Results Depth Top (m) Doty Reference: 23 secreption: Grey CLAY a Preparation: Tested in natural condition Reference: Content (%) Liquid Limit Plastic Limit Plasticity Index 19 64 26 38 00 Image: Classical Clasical Classical Classical Classical Classical</td><td>Iddress: Not Given Results: Depth Top [m]: 12.00 0: BH01 0: Grey Reference: 23 0: Grey CLAY 19 64 26 38 19 64 26 38 19 64 26 38 19 64 26 38 10 Grey CLAY</td></t<>	Iterestic Not Given Results Enderence: 1062510 0: BH01 Beference: 23 escription: Grey CLAY Enderence: 23 a Preparation: Tested in natural condition Plastic I Plastic I Received Moisture Liquid Limit Plastic I Plastic I Content [%] 19 64 26 00 0 0 0 0 0 00 0 0 0 0 0 00 0 0 0 0 0 00 0 0 0 0 0 00 0 0 0 0 0 00 0 0 0 0 0 00 0 0 0 0 0 00 0 0 0 0 0 00 0 0 0 0 0 00 0 0 0 0 0 00 0 0	Not Given Results tory Reference: 1062510 o. BH01 a Reference: 23 sscription: Tested in natural condition Received Moisture Liquid Limit Plastic Limit Content [%] 19 64 26 00 0 0 0 0 0 00 0 0 0 0 0 0 00 0 0 0 0 0 0 00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 10 0 0 0 0 0 0	kdress: Not Given Results BH01 a Reference: 23 scription: Grey CLAY a Preparation: Tested in natural condition Received Moisture Liquid Limit Plastic Limit 00 64 26 00 64 26 00 64 26 00 64 26 00 64 26 00 64 26 00 64 26 00 64 26 00 64 26 00 64 26 00 64 26 00 60 60 00 60 60 00 60 60 00 60 70 80 90 10 20 30 40 50 60 70 80 90 10 20 30 40 50 60 70 80 90 10 20 30 40<	kdress: Not Given Results BH01 a: BH01 b: Beference: 23 scription: Grey CLAY a: Description: content [%] [%] 19 64 26 00 0 01 0 02 0 03 0 04 0 05 0 06 0 07 0 08 0 09 0 09 0 09 0 09 0 09 0 09 0 09 0 09 0 09 0 09 0 09 0 09 0 09 0 09 0 09 0 09 0 09 0 09 0 09	Not Given Results Outpy Reference: 1002510 or. BH01 Iteration a Preparation: Tested in natural condition Received Moisture Liquid Limit Plastic Limit Plasticity Inc Content (%) 19 64 26 38 00 0 0 0 0 0 0 00 0 0 0 0 0 0 0 00 0 0 0 0 0 0 0 0 00 0 0 0 0 0 0 0 0 0 0 00 0	Iddress: Not Given Results Depth 1 0: BH01 0: Breparation: Content [%] Liquid Limit [%] Plastic Limit 19 64 00 Content [%] 01 Content [%] 19 64 00 Ct 01 Ct 02 Ct 03 Ct 04 Ct 05 Ct 04 Ct 05 Ct 04 Ct 05 Ct 05 Ct 06 Ct 07 Ct 08 Ct 09 00 01 Ct 02 Ct 03 Ct	Iddress: Not Given Results Depth Top (m) Doty Reference: 23 secreption: Grey CLAY a Preparation: Tested in natural condition Reference: Content (%) Liquid Limit Plastic Limit Plasticity Index 19 64 26 38 00 Image: Classical Clasical Classical Classical Classical Classical	Iddress: Not Given Results: Depth Top [m]: 12.00 0: BH01 0: Grey Reference: 23 0: Grey CLAY 19 64 26 38 19 64 26 38 19 64 26 38 19 64 26 38 10 Grey CLAY

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Page 1 of 1

Geotechnical General Manager

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Liquid and Plastic Limits

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



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

lient: lient Address:	Terrafirma South The Slate Barn Lower Lowley Dunsford, Devon, EX6 7BP		Job Nu Date Sar	rence: 6225 Imber: 18-13298 npled: Not Given eived: 14/09/2018
ontact: ite Name:	Kevin Scanlon Woodland Meed Primary Scho			ested: 12/10/2018
ite Name: ite Address:	Not Given		Sample	ed By: Not Given
est Results aboratory Reference ole No.: ample Reference: oil Description: ample Preparation:			Depth Bas	op [m]: 14.00 se [m]: Not Given Type: D
As Received Mois	ture Liquid Limit	Plastic Limit	Plasticity Index	% Passing 425µm
Content [%]	[%]	[%]	[%]	BS Test Sieve
33	54	22	32	100
100 90 80 70 60 50 40 30 20 10 0		CH MH MH		A line
0 10	0 20 30 40 5	50 60 70 80 LIQUID LIMIT	90 100 110 120	130 140 150
	Legend, based on BS 5 C Clay M Silt Organic	030:2015 Code of practice for site Plasticity L Low I Medium H High V Very high E Extremely high O append to classification	investigations Liquid Limit below 35 35 to 50 50 to 70 70 to 90 exceeding 90 on for organic material (eg CHC)
	Cryanic			,
emarks: pproved: Dar				

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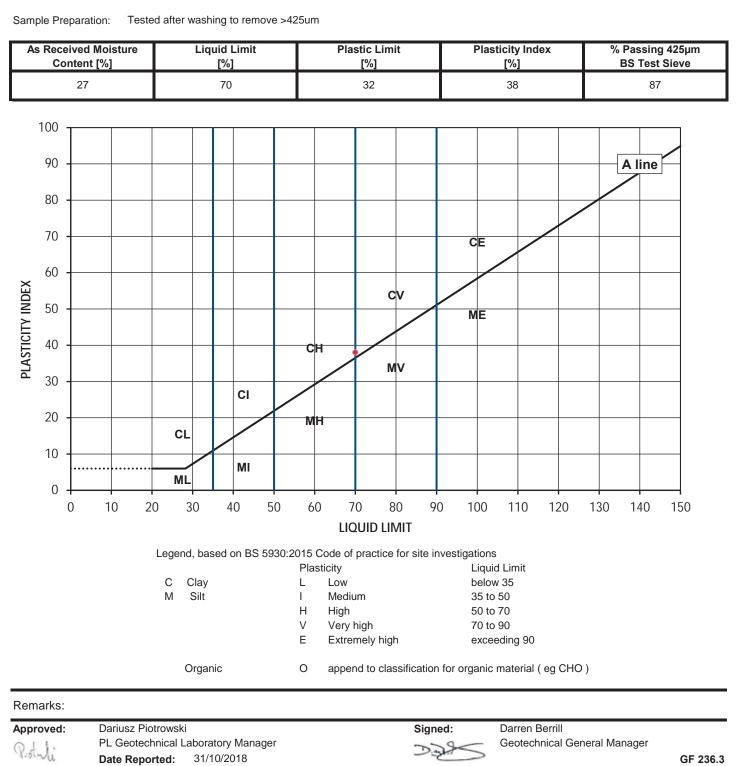
Liquid and Plastic Limits

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



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

Client: Client Address:	Terrafirma South The Slate Barn Lower Lowley	Client Reference: Job Number: Date Sampled:	18-13298
	Dunsford, Devon, EX6 7BP	Date Received:	14/09/2018
Contact:	Kevin Scanlon	Date Tested:	10/10/2018
Site Name:	Woodland Meed Primary School	Sampled By:	Not Given
Site Address:	Not Given		
Test Results			
Laboratory Reference:	1062512	Depth Top [m]:	1.00
Hole No.:	BH02	Depth Base [m]:	Not Given
Sample Reference:	2	Sample Type:	D
Soil Description:	Brown slightly gravelly CLAY		



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Liquid and Plastic Limits

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



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

Client Client	t: t Address:	Terrafirma The Slate Lower Low Dunsford,	Barn /ley	EX6 7BP			Client Reference: 6225 Job Number: 18-13298 Date Sampled: Not Given Date Received: 14/09/2018						
Conta		Kevin Sca			1						ested: 12/		
	Name: Address:	Not Given		rimary Scho	001					Sample	ed By: Not	Given	
Site Address:Not GivenTest ResultsLaboratory Reference:1062514Hole No.:BH02Sample Reference:4Soil Description:Brown CLAY										Depth To Depth Bas Sample			
Samp	ble Preparation:	Tested in r	natural co	ondition									
As	Received Mois Content [%]	ture		id Limit [%]		Plastic [%			Plasticity [%]	Index		assing 425µr 6 Test Sieve	m
	24			64		2			35			100	
PLASTICITY INDEX	100 90 90 80 70 60 50 60 40 30 20 10 0 10 0 10	20	CL 30		C C M 50 60	H 0 70	CV MV 80 D LIMIT ctice for si	90 te investi	CE ME 100 11	0 120		line 140 150	
		С	Clay		Pla: L	sticity Low Modium			Liquid Limi below 35	t			
		М	Silt		I H V E	Medium High Very higł Extremel			35 to 50 50 to 70 70 to 90 exceeding	90			
			Organi	с	0	append t	o classifica	ation for c	organic mater	ial (eg CHO)		
Rem	arks:												
		usz Piotrows	ski				s	igned:	Darro	en Berrill			

Rotali

PL Geotechnical Laboratory Manager

D.J.S.

GF 236.3

4041

Liquid and Plastic Limits

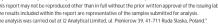
i2 Analytical Ltd 7 Woodshots Meadow Croxley Green Business Park Watford Herts WD18 8YS



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

Client: Client Address:	Terrafirma South The Slate Barn Lower Lowley Dunsford, Devon, EX6 7BP		Job N Date Sa Date Re	erence: 6225 umber: 18-13298 impled: Not Given ceived: 14/09/2018
Contact: Site Name: Site Address:	Kevin Scanlon Woodland Meed Primary Sc Not Given	hool		Fested: 12/10/2018 led By: Not Given
Test Results Laboratory Reference Hole No.: Sample Reference: Soil Description: Sample Preparation:			Depth Ba	op [m]: 4.00 se [m]: Not Given e Type: D
As Received Mois	ture Liquid Limit	Plastic Limit	Plasticity Index	% Passing 425µm
Content [%]	[%] 53	[%] 23	[%] 30	BS Test Sieve 100
100 90 80 70 60 50 40 50 40 20 10 0 0 10 0 10	CL CL MI ML 20 30 40	СH МН 50 60 70 80	CE ME 90 100 110 120	A line
	Legend, based on BS C Clay M Silt Organic	LIQUID LIMIT 5930:2015 Code of practice for site Plasticity L Low I Medium H High V Very high E Extremely high O append to classificati	investigations Liquid Limit below 35 35 to 50 50 to 70 70 to 90 exceeding 90 on for organic material (eg CH0	Э)

Dariusz Piotrowski PL Geotechnical Laboratory Manager Rotali Date Reported: 31/10/2018 "Opinions and interpretations expressed here in are outside of the scope of the UKAS Accreditation. This report may not be reproduced other than in full without the prior written approval of the issuing laboratory. The results included within the report are representative of the sumple submitted for analysis. The analysis was carried out at 12 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland."



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Liquid and Plastic Limits

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



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

Client: Terrafirma South Client Reference: Client Address: The Slate Barn Job Number: Lower Lowley Date Sampled: Date Sampled: Dunsford, Devon, EX6 7BP Date Received: Date Received: Contact: Kevin Scanlon Date Tested: Site Name: Site Name: Woodland Meed Primary School Sampled By: Sampled By:										: 18-13 : Not G : 14/09, : 12/10,	iven /2018 /2018										
est abor lole l amp	-	eference: ence:	10625 BH02 10	516	(Depth T Depth Ba Sample	se [m]	: Not G	iven	
-		ed Moist		d in na		uid	Limit		Г	Pla	astic I	.imit			Plasti	city Ind	ex				425µm
		ent [%] 28] [%] 87					┢		[%] 31			[%] 56			BS Test Sieve 100		Sieve			
PLASHCHY INDEX	100 - 90 - 80 - 70 - 50 - 40 - 30 - 20 -			CI			CI		CF			CV MV	•							ne	
	10 -	•••••	•••••	M	L		МІ														
	0 + 0	10	2	0	30	4	0	50	60		70 QUID	80 LIMIT	90	1	00	110	120	130) 14	0	150
				C M	d, ba Clay Silt Orga		on BS (5930:2		Code o sticity Low Medi High Very Extre	f prac ium high emely	ice for	site inv		Liquid below 35 to 5 50 to 7 70 to 9 excee	35 50 70 90 ding 90	(eg CH(0)			
Rem	arks			Μ	Silt				L I V E	Low Medi High Very Extre	high emely		cation		below 35 to 5 50 to 7 70 to 9 excee	35 50 70 90 ding 90	(eg CH0	0)			

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Liquid and Plastic Limits

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

Client Client	nt Address: The Slate Barn Job Number: 18-13298 Lower Lowley Date Sampled: Not Given Dunsford, Devon, EX6 7BP Date Received: 14/09/2018																	
	ict: lame:					mary Scl	hool									ested: 1 ed By: N		
	ddres	s:	Not G		eurn	mary Sci	1001								Sample	а Бу. Г		1
abor Iole I Samp Soil D	No.: le Ref lescrip	Reference: erence: ution:	CLAY								De	pth Bas	p [m]: 1 e [m]: N Type: D	lot Giver	n			
	Rece	paration:		d in natu	Liqui	d Limit				ic Limi	it	Т	Plas	ticity Inde	x			g 425µm
	Coi	n tent [%] 18	[%] 54					[%] 20			[%] 34		BS Test Sieve					
		-				-				-				-			_	-
	100 - 90 -											Τ					A line	
	80 -																	
	70 -												CE					
	60 -																	
INDEX	50 -						_		_	С	v	\downarrow	ME					
PLASHCHY INDEX	40 -				+		_	СН				-						
PLF	30 -				+	СІ	•			M	V	+						
	20 -			CL	_		$\left\{ \right.$	мн	-			╞						
	10 -		•••••	ML	\checkmark	MI	+		-			┢						
	0 -	0 10	20		0	40	50	60	70	8	0	90	100	110	120	130	140	150
									LIQU	JID LIN	ЛIТ							
				Legend	, base	d on BS		15 Coo Plastic		ractice	for site	e invest	-	d Limit				
					lay			LL	_OW	_			below	v 35				
				MS	Silt				∕lediun ⊣igh	1			35 to 50 to					
								٧	/ery hi	gh ely higł	ו		70 to excee	90 eding 90				
				0	rganic							ion for		material (eg CHO)		
ema	arks:																	
opro	oved:		ısz Piot								Sig	gned:		Darren Be				
1	J:	PL G Date				ry Manag /2018	ger				F	RE	\leq	Geotechn	ical Ger	neral Ma	nager	GF 236

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Liquid and Plastic Limits

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



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

ilient Address: contact: ite Name: ite Address:	Kevin S	owley rd, Devor canlon nd Meed	n, EX6 7B I Primary S					Date Sa Date Rec Date 1	umber: 18-13298 mpled: Not Given ceived: 14/09/2018 Fested: 12/10/2018 led By: Not Given
Yest Results aboratory Reference lole No.: ample Reference: oil Description: ample Preparation:	e: 106252 BH02 22 Grey Cl	0 LAY	I conditior	Depth Ba	op [m]: 12.00 se [m]: Not Given e Type: D				
As Received Mois Content [%]	sture		iquid Limi		Pla	stic Limit [%]	Plast	icity Index [%]	% Passing 425µm BS Test Sieve
23			61			27		34	100
100 90 80 70 60 50 40 30 20 10		CL			CH	CV MV	CE		A line
0 10	Le	ML 30 egend, b C Cla M Silt	40 ased on B	50 55 5930:20	LIC Plasticity L Low I Medi H High V Very	high	Liquic below 35 to 50 to 70 to	50 70 90	130 140 150
		Orga	anic			mely high nd to classificat		eding 90 material (eg CH0	D)

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Liquid and Plastic Limits

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

	Address:	The SI Lower Dunsfo		n, EX6 7BP						Date Sam Date Rece	mber: 18-13 pled: Not G aived: 14/09	Given 9/2018
Contact:Kevin ScanlonDate Tested: 12/10Site Name:Woodland Meed Primary SchoolSampled By: Not 0												
Site A	ddress:	Not Gi										
Labor Hole I Samp	Results ratory Reference No.: ble Reference: Description:	: 106252 BH03 2 Brown									o [m]: 1.00 e [m]: Not G Type: D	iven
Samp	le Preparation:	Tested	l in natura	I condition								
As	Received Mois Content [%]	sture	Li	quid Limit [%]		Plastic [%			Plasticity I [%]	ndex		ssing 425µm Test Sieve
	26			66		2		╈	40		20	100
PLASTICITY INDEX	100 90 80 70 60 50 40 30						CV MV		CE			ine
	20			CI	MI	-						
	10		CL									
			ML	мі								
	0 +				50 60	LIQUI	80 D LIMIT	90	100 110) 120	130 14	40 150
		I	₋egend, b C Cla M Silf			Code of pra sticity Low Medium High Very higl Extreme	ı	te invest	igations Liquid Limit below 35 35 to 50 50 to 70 70 to 90 exceeding S			
			Org	anic	0	append t	o classifica	ition for o	organic materi	al (eg CHO)	
Rema	arks:											
		iusz Piotr	owski				S	igned:	Darre	n Berrill		

PL Geotechnical Laboratory Manager Rotali Date Reported: 31/10/2018 "Opinions and interpretations expressed here in are outside of the scope of the UKAS Accreditation. This report may not be reproduced other than in full without the prior written approval of the issuing laboratory. The results included within the report are representative of the sumple submitted for analysis. The analysis was carried out at 12 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland."

Geotechnical General Manager

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Liquid and Plastic Limits

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



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

Client: Client Address: Contact: Site Name: Site Address:	Terrafirma South The Slate Barn Lower Lowley Dunsford, Devon, EX6 7BP Kevin Scanlon Woodland Meed Primary Sc Not Given	hool	Job Ni Date Sai Date Rec Date T	rence: 6225 umber: 18-13298 mpled: Not Given eeived: 14/09/2018 rested: 12/10/2018 ed By: Not Given		
est Results aboratory Reference: lole No.: ample Reference: oil Description: ample Preparation:	1062522 BH03 3 Brown CLAY Tested in natural condition		Depth Bas	op [m]: 2.00 se [m]: Not Given Type: D		
As Received Moist Content [%]	ture Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve		
26	61	27	34	100		
90 80 70 60 50 40 30 20 10 0 0 10	CL CL MI 20 30 40	СН МЧ 50 60 70 80	CE ME 90 100 110 120	A line A line		
	Legend, based on BS C Clay M Silt Organic	LIQUID LIMIT 5930:2015 Code of practice for site Plasticity L Low I Medium H High V Very high E Extremely high O append to classificatio	investigations Liquid Limit below 35 35 to 50 50 to 70 70 to 90 exceeding 90 on for organic material (eg CHC			

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PL Geotechnical Laboratory Manager

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Liquid and Plastic Limits

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



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

Client: Client Add	Iress:	The Sla Lower I Dunsfo	rd, Devon	, EX6 7BP					C	Date Sam Date Rece	nber: 18-1; pled: Not (ived: 14/0;	3298 Given 0/2018
Contact: Site Name Site Addre		Kevin S Woodla Not Giv	and Meed	Primary Sc	hool					sted: 12/10 d By: Not 0		
Test Res	eults / Reference: eference:		23							Depth Top Depth Base Sample 1	[m]: Not (Given
-	reparation: ceived Moist		in natural	condition		Plastic	Limit		Plasticity In	dox	% Pa	ssing 425µm
	ontent [%]	ure		[%]		[%			[%]	uex		Test Sieve
	26			78		27			51			100
100 90 80 70 60 50 40 30 20 10 0				CI MI	M				CE ME			ine
	0 10	20	30	40	50 6			90	100 110	120	130 1	40 150
						LIQUI) LIMIT					
			egend, ba C Clay M Silt			Code of pracesticity Low Medium High Very high Extremely		investiç	gations Liquid Limit below 35 35 to 50 50 to 70 70 to 90 exceeding 90	1		
			Orga	nic	0	append to	classificati	on for o	rganic material	(eg CHO)	
Remarks Approved		ısz Piotro						jned:	Darren	D "!!		

Piotuli

PL Geotechnical Laboratory Manager

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Liquid and Plastic Limits

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



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

lient Address:	Terrafirma SouthClient Reference: 6225The Slate BarnJob Number: 18-13298Lower LowleyDate Sampled: Not GivenDunsford, Devon, EX6 7BPDate Received: 14/09/2018Kevin ScanlonDate Tested: 12/10/2018											
ontact: ite Name:		Scanlon and Meed Primaı	w School									
te Address:	Not Gi		y School				Sample	ed By: Not Give				
est Results aboratory Reference ole No.: ample Reference: oil Description: ample Preparation:	: 106252 BH03 5 Brown							p [m]: 4.00 e [m]: Not Give Type: D	en			
As Received Mois	sture	Liquid Li	mit	Plastic L	imit	Plasticity			ng 425µm st Sieve			
Content [%] 26		[%] 58		[%] 23		[%] 35			00			
100 90 80 70 60 50 40 30 20 10 0		CL	CI		CV MV	CE			e			
0 10) 20	30 40	50 6	50 70	80 90	100 11	10 120	130 140	150			
				LIQUID	LIMIT							
	I	egend, based or C Clay M Silt Organic		Code of practi asticity Low Medium High Very high Extremely h	ce for site inve igh	estigations Liquid Lim below 35 35 to 50 50 to 70 70 to 90 exceeding or organic mate	190)				
		Organic	0	append to c	lassification fo	or organic mate	erial (eg CHO)				
emarks:												
	iusz Piotr	oweki			Signed	. Dar	ren Berrill					

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PL Geotechnical Laboratory Manager

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Liquid and Plastic Limits

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



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

lient Address: ontact: te Name: te Address:	Kevin So	owley d, Devon, canlon nd Meed F	EX6 7BP Primary Sch	ool				Date Sam Date Rece Date Te	nber: 18-13298 pled: Not Give ived: 14/09/20 sted: 10/10/20 d By: Not Give	n 18 18
est Results aboratory Reference ole No.: ample Reference: oil Description: ample Preparation:	1062526 BH03 9 Brown s							Depth Top Depth Base Sample 1	[m]: Not Give	n
As Received Mois	ture	Liqu	uid Limit		Plastic Limit		Plasticity In	dex	% Passin	
Content [%] 14	+		[%] 42		[%] 21	+	[%] 21		BS Tes 10	
100 90 80 70 60 50 40 30 20 10 0 0 10	20	CL 30	CI MI 40	СН 50 60	M	90	СЕ МЕ 100 110	120	A line	150
	(egend, bas C Clay M Silt Organ		930:2015 C Plast L H V E O	ode of practice for licity Low Medium High Very high Extremely high append to class		Liquid Limit below 35 35 to 50 50 to 70 70 to 90 exceeding 90)	
emarks:										
emarks:	usz Piotro					Signed:		Berrill		

Date Reported: 31/10/2018
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for and on behalf of i2 Analytical Ltd

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Liquid and Plastic Limits

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



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

Site Address: Not Given Test Results Depth Top [m]: 9.00 Sample Reference: 11 Sample Reference: 11 Sample Preparation: Test Given Sample Preparation: Test Given 20 65	Conta Site N	Addre ct: lame:		Kevin Wood	Slate E r Lowl ford, E Scar dland	Barn ley Devo nlon	n, EX	6 7BP hary Sc	hool								Date Date Da	b Nu Sar Rec ate Te	mber: npled: eived: ested:	18-13298 Not Give 14/09/20 12/10/20 Not Give	n 18 18
As Received Molsture Content [%] Liquid Limit [%] [%] [%] Plastic Limit [%] [%] [%] [%] % 20 65 26 39 100 100 90 90 90 90 90 90 90 90 90	est abora lole N amp	Resu atory F No.: Ie Ref	Its Reference: erence:	10625 BH03 11	527	,											Depth	n Bas	e [m]:	Not Give	n
20 65 26 39 100 100 90 90 90 90 90 90 90 90 90	-	Rece	ived Moist		d in n		iquid	Limit		Γ	Pla		.imit	_	Р		Index		%		
90 90 90 90 90 90 90 90 90 90		Cor												\dashv							
And the set of the set																					
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 LIQUID LIMIT 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		90 80 70 60 50 40 30 20 10			CL MI			CH • MV								A line					
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) 10	20	0	30		40	50	60				90	10	0 110) 12	20	130	140	150
Ω regaring Ω annound to all a stratighter for a regaring material (or $\Omega \cup \Omega$)					С	Cla Sil	y t	on BS	5930:2	Plas L I V E	Code o sticity Low Medi High Very Extre	f pract um high emely	ice for s		Lid 50 50 70 ex	quid Limit low 35 to 50 to 70 to 90 ceeding	90		Ň		
Organic O append to classification for organic material (eg CHO)						Urg	anic			0	арре	ind to	UIASSITIC	מווטה זמ	or organ	ne mater	iai (eg	СНО)		

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Liquid and Plastic Limits

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



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

	ict: lame: iddress:	Low Dun Kevi Woo	Slate Barn er Lowley sford, Devo in Scanlon odland Meeo Given						Date Rec Date T	npled: Not Given eived: 14/09/2018 ested: 12/10/2018 ed By: Not Given	
abor Iole I Samp	Results atory Refe No.: le Referen escription:	BH0 ice: 13	2528 3 y CLAY						Depth Bas	op [m]: 11.00 se [m]: Not Given Type: D	
	le Prepara Received Conten	Moisture	ted in natura	al conditior iquid Limi [%]		PI	astic Limit [%]		tity Index	% Passing 425µn BS Test Sieve	
	18			65			22		43	100	
PLASTICITY INDEX	100 90 80 70 60 50 40					СН	cv	CE		A line	
PLAS	30		CL	СІ		мн	MV				
		•••••	ML	МІ							
	0 +	10 2	20 30		50 S 5930:20	LI	70 80 QUID LIMIT	90 100 • investigations Liquid L below 3		130 140 150	
			M Sil			I Med H High V Very	lium	35 to 50 50 to 70 70 to 90 exceed	0 0 0		
			Org	anic		O app	end to classificati	on for organic m	aterial (eg CHC))	
	arks:										

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Liquid and Plastic Limits

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



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

	t Address:	Terrafirma SouthClient Reference: 6225The Slate BarnJob Number: 18-13298Lower LowleyDate Sampled: Not GivenDunsford, Devon, EX6 7BPDate Received: 14/09/2018Kevin ScanlonDate Tested: 12/10/2018											
Conta Site N	act: Name:			Primary Scho	ool			lested: 12/10/2018 pled By: Not Given					
	Address:	Not Giv	/en										
abor Iole I Samp	Results ratory Reference No.: De Reference: Description:	e: 106252 BH03 15 Grey C					Depth Ba	Гор [m]: 13.00 ase [m]: Not Given le Type: D					
-	ble Preparation: Received Moi			l condition quid Limit	PI	astic Limit	Plasticity Index	% Passing 425µm					
73	Content [%]			[%]		[%]	[%]	BS Test Sieve					
	19			61		25	36	100					
	100												
	90 -							A line					
	80 -												
	70 -						CE						
PLASTICITY INDEX	60					cv							
	40						ME						
	30				CH	MV							
	20			СІ	мн								
	10		CL	MI									
	0		ML										
	0 1	0 20	30	40		70 80 9 QUID LIMIT	0 100 110 120	130 140 150					
		L			930:2015 Code o Plasticity	f practice for site i	nvestigations Liquid Limit						
			C Clay M Silt	/			below 35 35 to 50 50 to 70 70 to 90 exceeding 90						
			Orga	anic			n for organic material (eg CH	IO)					
em	arks:												
opro	oved: Da	riusz Piotro		ratory Manage		Sigr	ed: Darren Berrill Geotechnical G						

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Liquid and Plastic Limits

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



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

Client: Client Address: Contact: Site Name: Site Address:	Terrafirma Sout The Slate Barn Lower Lowley Dunsford, Devo Kevin Scanlon Woodland Meed Not Given			Client Reference: 6225 Job Number: 18-13298 Date Sampled: Not Given Date Received: 14/09/2018 Date Tested: 12/10/2018 Sampled By: Not Given								
Test Results Laboratory Reference: Hole No.: Sample Reference: Soil Description: Sample Preparation:		-		Depth Ba	op [m]: 1.00 ise [m]: Not Given e Type: D							
As Received Mois Content [%]	ture L	iquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve							
29		58	24	34	100							
100 90 80 70 60 50 40 30 20 10 0 0 10	CL 20 30	CI MI 40 50	СН СН МИ 60 70 80	CE ME 90 100 110 120	A line							
0 10	Legend, b C Cla M Sil	pased on BS 5930	LIQUID LIMIT 2015 Code of practice for site Plasticity L Low I Medium H High V Very high E Extremely high									

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PL Geotechnical Laboratory Manager

Geotechnical General Manager



Liquid and Plastic Limits

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

Client: Client / Contac Site Na Site Ac	:t: ame:		The S Lowe Duns Kevin	firma So Slate Ba r Lowley ford, De Scanlo dland Me Given	rn / von, n			ool								-	Job Date Date Dat	o Numb Sampl Receiv te Test	red: 14		8 8
Test F _abora Hole N Sample Soil De	Resu itory F o.: e Ref escrip	I lts Reference: erence:	BH04 3 Brown		_	-	-	CLAY									epth		-	00 t Given	
As I		ived Mois ntent [%]	ture		Liqu	uid Li [%]	imit	Т		Pla	stic L [%]	imit			Plastic r	ity Ind %]	ex			Passing S Test	1 425µm Sieve
	001	28				55					25		1			30				100	
PLASTICITY INDEX	90 - 80 - 70 - 60 - 50 - 40 - 30 - 20 - 10 -			CL			СІ		СН			CV MV									
	0 -	D 10	2	0 3	30	40)	50	60		70	80	90	1	00	110	12	01	30	140	150
					l, bas Clay Silt	ed or	n BS 5		15 C Plast L I	ode of	f practi	LIMIT	ite inv	L	tions Liquid L Delow 3 35 to 50	5)					

Remarks:

Approved:	Dariusz Piotrowski	Signed:	Darren Berrill	
011.	PL Geotechnical Laboratory Manager	779	Geotechnical General Manager	
Rotali	Date Reported: 31/10/2018	- 24	\rightarrow	GF 236.3
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Е

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High

Very high

Extremely high

50 to 70

70 to 90

append to classification for organic material (eg CHO)

exceeding 90

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Liquid and Plastic Limits

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



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

	ВР	Job Nu Date Sat	rence: 6225 umber: 18-13298 mpled: Not Given seived: 14/09/2018					
Woodland Meed Prima	y School		ested: 12/10/2018 ed By: Not Given					
		Depth Top [m]: 3.00 Depth Base [m]: Not Given Sample Type: D						
ture Liquid L [%]	mit Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve					
73	28	45	100					
CL	MH							
20 30 40	50 60 70 80	90 100 110 120	130 140 150					
Legend, based or C Clay M Silt Organic	BS 5930:2015 Code of practice for si Plasticity L Low I Medium H High V Very high E Extremely high	Liquid Limit below 35 35 to 50 50 to 70 70 to 90 exceeding 90))					
	The Slate Barn Lower Lowley Dunsford, Devon, EX6 7 Kevin Scanlon Woodland Meed Primary Not Given : 1062535 BH04 4 Brown CLAY Tested in natural conditi iture Liquid Lin [%] 73	The Slate Barn Lower Lowley Dunsford, Devon, EX6 7BP Kevin Scanlon Woodland Meed Primary School Not Given	The Slate Barn Lower Lowley Dunsford, Devon, EX6 7BP Kevin Scanlon Woodland Meed Primary School Not Given 1062535 BH04 4 Brown CLAY Tested in natural condition Tested in natural condition Tested in natural condition Tested in natural condition C C I C C I M Silt C C I M Silt C C Clay M Silt C C Clay C C Cla					

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Rotali

PL Geotechnical Laboratory Manager

Geotechnical General Manager

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Conta Site I	t Address: act: Name:	Kevin Sc Woodlan	e Barn owley I, Devon, anlon d Meed P	EX6 7BP Primary Sch	nool				Jo Date Date Da	Reference: 6 o Number: 1 Sampled: N Received: 1 te Tested: 1 mpled By: N	8-13298 lot Given 4/09/2018 2/10/2018	
	Address: Results	Not Give	n									
Hole Samı	ble Reference:	BH04 5							Depth	h Top [m]: 4 Base [m]: N nple Type: D	lot Given	
	Description: ble Preparation:		ightly san	-								
As	Received Mois Content [%]	sture	Liqu	uid Limit [%]		Plastic [%		Pla	sticity Index [%]		Passing 425µm BS Test Sieve	
	22			59		24			35		100	
	100							•				
	100									[
	90										A line	
	80											
	70 -							CE				
EX	60						cv					
ΔNI Υ	50							ME				
PLASTICITY INDEX	40				- c	н	$\langle -$					
PLA	30						MV					
	20			СІ		H						
	10		CL									
			ML	МІ								
	0 + + 0 10) 20	30	40	50 6	0 70	80	90 100	110 12	0 130	140 150	
						LIQUII	D LIMIT					
		Lee	gend, bas	ed on BS 5		Code of pra	ctice for site	investigation	s id Limit			
		C			L	Low		belo	w 35			
		N	A Silt		I H	Medium High		35 te 50 te				
					V	Very high		70 te	o 90			
					E	Extremely	/ high	exce	eding 90			
			Organ		0				material (eg (

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

Test Results aboratory Reference: 1062537 Depth Top [m]: 6.00 Depth Base [m]: Not Given Sample Reference: 7 Sample Reference: 7 Sample Preparation: Tested in natural condition As Received Moisture Liquid Limit Plastic Limit Plasticity Index % Passing 425 22 57 22 35 100 Output Value 0 Value Value	Conta Site N	t Address: act: Name: Address:	Lower Dunsfo Kevin S		EX6 7BP Primary Schoo	1			Date S Date Re Date	Number: 18-13298 ampled: Not Given aceived: 14/09/2018 Tested: 12/10/2018 bled By: Not Given	
As Received Moisture [%] Liquid Limit [%] Plastic Limit [%] Plastic ty Index [%] BS Test Siev 22 57 22 35 100 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Test Labol Hole Samp Soil [Results ratory Referen No.: Die Reference Description:	nce: 106253 BH04 e: 7 Dark g	37 rey slightly					Depth B	ase [m]: Not Given	
22 57 22 35 10 10 0 0 0 0 0 0 0 0 0 0 0 0 0		Received N	loisture		uid Limit			Pla		% Passing 425µm BS Test Sieve	
			,,0]								
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)		90		ML 30 Legend, bas C Clay M Silt	MI 40 50	0 60 0:2015 Co Plastic L H V E	70 80 LIQUID LIMIT de of practice for s city Low Medium High Very high Extremely high	90 100 site investigation Liqu belo 35 t 50 t 70 t exce	is iid Limit w 35 o 50 o 70 o 90 eeding 90		

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

ite /	Name: Addres			Scanlon and Meed ven	l Prima	ary Sch	ool										12/10/20 Not Give	
abo Iole Sam	No.:	Reference: ference:	106253 BH04 9 Dark gi	88 rey CLAY											Depth To Depth Bat Sample		Not Give	n
	Rece	eparation: Fived Moistr ntent [%]		in natura Li	l cond quid l [%]	Limit			Pla	istic L [%]	mit		Plas	sticity Ind [%]	ex	%	b Passin BS Tes	g 425µm
	0	19			62			⊢		29		╈		33			1(
	100 · 90 · 80 ·																A line	
	70 ·											+	CE					
/ INDEX	60 · 50 ·										cv		ME					
PLASTICITY INDEX	40 -				+			CI	1 • ⁄		MV	_						
д.	30 · 20 ·					СІ		M										
	10 ·	 		CL	\downarrow	мі						_						
	0 -	0 10	20	30	4	0	50	60		70 2 UID	80 LIMIT	90	100	110	120	130	140	150
			L	egend, b C Cla M Silt	y	on BS 5			ticity Low Medi High Very	um		ite inve	Liqu belo 35 to 50 to 70 to	id Limit w 35 o 50 o 70				
				Orga	anic			0	appe	nd to c	lassific	ation fo	r organic	material	(eg CHC))		

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Liquid and Plastic Limits

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



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

	act: Jame: Addres		Kevin S	ord, Devo Scanlon and Meeo ven			nool							_	Date T	ested: 7	14/09/20 12/10/20 Not Giver	18
abor Iole I Samp	No.:	Reference: ference:	BH04 13	39 rey CLAY	/												Not Give	n
-	Rece	eparation: Pived Moist		in natura L	iquid	Limit			Pla	astic L	imit	_	Plas	ticity Inde	ex	%		ig 425µm
	Co	ntent [%] 24	-+		[9 7					[%] 29		+		[%] 42		┢──	BS Test	
						-												
	100 ·																	
	90 ·																A line	
	~ ~																	
	80 ·				╈													
	70 ·				+		_			-			CE		\bigwedge			
	(0																	
Ĕ	60 ·										cv							
	50 ·				+		_			-		\checkmark	ME					
PLASTICITY INDEX	40 ·									•								
LAST	70							С	H /	\boldsymbol{r}	мν							
Ъ	30 ·				+	СІ	+			+		_						
	20 ·						\checkmark	M	u									
				CL				141										
	10 ·	-			┦	м					_							
	0 ·			ML														
		0 10	20	30		40	50	60		70 QUID	80 LIMIT	90	100	110	120	130	140	150
			L	egend, b	asec	on BS s	5930:2			f practi	ce for s	ite inve						
				C Cla				Pla: L	sticity Low				Liqui belov	d Limit v 35				
				M Sil				I H	Med High				35 to 50 to					
								V	Very	high	. ' auk		70 to	90				
								E		emely ł				eding 90				
				Org	anic			0	appe	end to c	lassifica	ation fo	r organic	material (eg CHC))		
-	arks:																	

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

	it Address:	The Slat Lower Lo Dunsford	owley	, EX6 7BP						Date Sa	erence: 622 umber: 18- mpled: Not ceived: 14/0	13298 Given	
Conta		Kevin So		D · · · · O							ested: 12/		
	Name: Address:	Woodlar Not Give		Primary Sc	hool					Sampl	ed By: Not	Given	
	t Results	Not One	511										
_abor Hole I Samp	ratory Reference:	BH04 15) ghtly sand	dy CLAY						Depth Bas	op [m]: 12.0 se [m]: Not Type: D		
Samp	ple Preparation:	Tested in	n natural	condition									
As	s Received Mois Content [%]	ture	Liq	quid Limit [%]		Plas	stic Limit [%]		Plasticity [%]			assing 42 S Test Sie	
	20			58			24		34			100	
	100]
	90											line	_
	80 -							_					-
	70				-			_	CE				-
×	60 -				_			_					-
/ INDE	50				_		cv	\checkmark	ME				-
PLASTICITY INDEX	40					Сн		_					_
PLA	30						MV						_
	20			CI	\downarrow	ИН							-
	10		CL		_								-
	••••••	•••••	ML	мі									
	0 + - + 0 10	20	30	40	50	60 7 LIQ	0 80 2 UID LIMIT	90	100 11	10 120	130	140 1	4 50
		Le	-			5 Code of asticity	practice for s	site inves	tigations Liquid Lim	nit			
			C Clay M Silt		L	Low Mediu	Im		below 35 35 to 50				
		I	Ont		H	High			50 to 70				
					V	Very h			70 to 90	. 00			
			Orga	nic	E		nely high id to classific	ation for	exceeding organic mate))		
20m	narks:		Juga			appoi					- ,		
		- D'						<u>.</u>	-	B ""			
ppro		usz Piotro		atory Mana	aer			Signed:		ren Berrill otechnical Ge	noral Mona	nger	

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

Client: Client	: Address:	The SI Lower	irma South late Barn Lowley ord, Devon,	EX6 7BP							mber: 18- npled: Not	13298 Given	
Conta			Scanlon								ested: 12/		
Site N	lame: .ddress:	Woodl Not Gi		Primary Schoo	DI					Sample	ed By: Not	Given	
Test Labora Hole N Samp	Results atory Reference	ce: 10625 BH05 2								Depth To Depth Bas Sample			
Samp	le Preparation	: Testeo	d in natural	condition									
As	Received Mo Content [%		Liq	uid Limit [%]	Т		c Limit %]	Т	Plasticity [%]	Index		assing 425µm S Test Sieve	١
	31			73			28		45			100	
PLASTICITY INDEX	100 90 80 70 60 50 40 30 20 10 0 0 0			CI MI 40 50 Seed on BS 593	30:2015	H H 0 70 LIQU	CV MV 80 ID LIMIT actice for s	90	CE ME 100 110 gations Liquid Limi below 35			line 140 150	
			M Silt		I H V E	Medium High Very hig Extreme	Jh		35 to 50 50 to 70 70 to 90 exceeding	90			
			Orgai	nic	0			ation for c	organic mater)		
Rema Appro		ariusz Piot	roweki					Signed:	Dorr	en Berrill			

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Piotuli

PL Geotechnical Laboratory Manager

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GF 236.3 for and on behalf of i2 Analytical Ltd

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Liquid and Plastic Limits

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



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

Client: Client Address: Contact: Site Name: Site Address:	Kevin Scanle	arn 9y evon, EX6 7BP		Job Ni Date Sa Date Rec Date T	erence: 6225 umber: 18-13298 mpled: Not Given ceived: 14/09/2018 Fested: 12/10/2018 led By: Not Given
Fest Results Laboratory Reference Hole No.: Sample Reference: Soil Description: Sample Preparation:	BH05 4 Brown CLAY	(itural condition		Depth Bas	op [m]: 2.00 se [m]: Not Given a Type: D
As Received Mois Content [%]	ture	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
30		67	27	40	100
90 80 70 60 50 40 30 20 10 0 0 10 0 10	Legen	MI 30 40 50	CH MH CH MH CH MU CV CV CV CV CV CV CV CV CV CV CV CV CV	CE CE ME 90 100 110 120 investigations Liquid Limit below 35 35 to 50 50 to 70 70 to 90 exceeding 90	A line
		Organic		on for organic material (eg CHC	

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Rotali

PL Geotechnical Laboratory Manager

Geotechnical General Manager

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



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

Client: Client A	ddress:	Terrafirma The Slate Lower Low Dunsford,	Barn vley Devon,	EX6 7BP								Job Nu Date Sar Date Rec	erence: 6 umber: 1 mpled: N ceived: 1	8-13298 ot Given 4/09/201	8
Contact: Site Nar		Kevin Sca Woodland		Primary Sc	hool								ested: 1: ed By: N		
Site Add		Not Given			1001							Sampi	eu by. I		
Hole No Sample	ory Reference:	1062547 BH05 6 Brown CL	AY									epth Bas	op [m]: 3 se [m]: N Type: D	ot Given	
-	Preparation: eceived Moist	Tested in		condition		DI	astic Lin	ait		Diag	ticity Ind	<u> </u>	9/	Dessing	ι 425μm
	Content [%]	ure	Liq	[%]		Pla	[%]	iit		Plas	[%]	ex		BS Test	
	21			73			29				44			100)
PLASTICITY INDEX	0					СН	•			CE				A line	
1	0		CL		_				_						
			ML	MI											
	0 + + 0 10	20	30	40	50 (70 : QUID LI	1 80 MIT	90	100	110	120	130	140	150
		Leg C M	end, bas Clay Silt	sed on BS	5930:2015 Pla L I H V E	asticity Low Medi High Very	ium		e invest	Liquio below 35 to 50 to 70 to	d Limit / 35 50 70				
			Orgar	nic	0				tion for		material	(eg CHC))		
Remark	ks:														
Approve Rotal		isz Piotrows eotechnica	l Labora	Itory Mana	ger			Si	igned:	\leq	Darren E Geotech		neral Ma	nager	GE 226 2

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GF 236.3

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

Conta Site I	t Address: act: Name:	Terrafirma The Slate E Lower Low Dunsford, I Kevin Scar Woodland	Barn ley Devon, EX nlon		ool					D	nt Refere Job Num ate Samp ate Recei Date Tes Sampleo	nber: 18 bled: No ved: 14 sted: 12	-13298 t Given /09/2018 /10/2018	
	Address:	Not Given												
Labo Hole Samı	Results ratory Reference No.: ble Reference: Description:	: 1062548 BH05 8 Brown CLA	Υ							De	epth Top pth Base Sample T	[m]: No		
-	ble Preparation:	Tested in n												
As	Received Mois Content [%]	sture		d Limit %]		Plastic [%				city Inde: [%]	x		Passing S Test S	425µm Sieve
	26		6	68		2	6			42			100	
	100													
	90												line	
	80 -													
	70								CE					
X	60 -								\nearrow					
/ INDI	50						cv	\checkmark	ME					
PLASTICITY INDEX	40 -				с	H /	\bigwedge							
PLAS	30					\land	мν							
				CI										
	20	C	L		М	H								
	10			м										
	0	1		40	50 6	D 70	80	90	100	110	120	130	140	150
	0 10) 20	30	40 !	0 00		D LIMIT	90	100	110	120	130	140	150
		Lege	nd, based	d on BS 5	930:2015	Code of pra	ctice for si	ite invest						
		С	Clay		Pla: L	sticity Low			Liquid below					
		Μ	Silt		I H	Medium High			35 to 5 50 to 7					
					V E	Very hig Extreme			70 to 9					
			Organic		с О		y nign o classifica	ation for 1		-	a CHO)			
			Gryanic		0	սբբերն			աստորը լլ	I GLOUIDI (C				

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

Conta	Addre		Terrafii The Sla Lower Dunsfo Kevin S Woodla	ate Bai Lowley ord, De Scanlo	rn , von, n											-	Date Sa Date Re Date	lumb ample eceive Teste	er: 18 ed: No ed: 14 ed: 12	-13298 it Giver /09/201 /10/201	n 8 8
	lame: \ddres		Not Giv		eu P	nina	ry Sch	001									Samp		sy: NO	t Giver	1
Test Labor Hole I Samp	Resu atory No.:	Ilts Reference: ference:		50	CLA	Y										[Depth T Depth Ba Sampl	ase [r	n]: No		1
amp	ole Pre	eparation:	Tested	l in nat	ural c	ondi	tion														
As		eived Moist ntent [%]	ure		Liqu	uid L [%]	imit			Pla	stic L [%]	imit				city Inc [%]	lex	Т			g 425µm Sieve
		20				39					22					17		T		10	
	100 · 90 ·																			A line	
	80 -																				
	70 ·																\nearrow				
	60 •													C	E						
DEX												cv									
NI VII	50 ·												1	N	/E						
PLASTICITY INDEX	40 •								C			MV									
Ы	30 ·						CI														
	20 ·			CL		•		╀	MI	-	-										
	10 ·						MI	-			-		_								
	0 -			ML																	
		0 10	20	3	0	4()	50	60		70 2UID	80 LIMIT	90	1	00	110	120	1:	30	140	150
			L	_egend	, bas	ed o	n BS 5	930:2		Code of sticity	f pract	ice for	site inv		tions _iquid	Limit					
					Clay Silt				L	Low Medi	um			ł	below 35 to 5	35					
				IVI	Sint				H	High				Ę	50 to 7	0					
									V E	Very Extre	high mely	high			70 to 9 exceed	00 ding 90					
				С	rgan	ic			0	appe	nd to	classifi	cation f	or org	anic m	naterial	(eg CH	0)			
Rema	arks:																				
	oved:	Dariu	usz Piotr	owski									Signed	4.		Darren	Borrill				

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

Client: Client Address: Contact: Site Name:	The S Lower Dunsf Kevin	Scanlon	n, EX6 7BP d Primary Scho	ool		Date Date Da	b Number: 18-13298 Sampled: Not Given Received: 14/09/2018 Inte Tested: 12/10/2018 Impled By: Not Given
Site Address:	Not G					00	impled By. Not Given
Test Results _aboratory Refe Hole No.: Sample Referer Soil Description: Sample Prepara	rence: 10625 BH05 ace: 12 : Grey :	551 slightly sar	ndy CLAY			Depth	th Top [m]: 6.00 Base [m]: Not Given nple Type: D
As Received	Moisture		iquid Limit	Plastic L	.imit	Plasticity Index	% Passing 425µm BS Test Sieve
Conten 20			[%] 51	[%] 23		[%] 28	100
20			01	20		20	100
100							
90 -							A line
80 -							
70						CE	
× 60 -					_		
INDE 50					cv	ME	
blasticity index				СН			
30 L					MV		
20 -			CI	MH			
10		CL					
••••	•••••	ML	MI				
0 0	10 20		40	50 60 70 LIQUID	80 90 LIMIT	0 100 110 12	0 130 140 150
		Legend, b	ased on BS 5	930:2015 Code of pract Plasticity	tice for site inv	vestigations Liquid Limit	
		C Cla M Sili		L Low I Medium H High V Very high		below 35 35 to 50 50 to 70 70 to 90	
		Ora	anic	E Extremely O append to	-	exceeding 90 for organic material (eg	CHO)
		- Oig					
Remarks:	Deci Di						
Approved:	Dariusz Piot		oratory Manage	or	Signe		ı I General Manager

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Liquid and Plastic Limits

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



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

Client Client	: Addre	ess:	The S Lower Dunsfe	irma So late Bai Lowley ord, De	rn , von,	EX6	7BP									-	ient Refe Job N Date Sa Date Re	umbe impleo	r: 18-′ d: Not	13298 Given			
Conta Site N	ict: lame:			Scanlo land Me		Prima	ary Sch	ool												10/201 Given			
	ddres		Not Gi	ven													-						
Labor Hole I Samp	No.:	Reference: ference:	10625 BH05 14 Grey s	52 slightly s	sand	y CL	AY										Depth T Depth Ba Sample	ise [m]: Not				
Samp	le Pre	eparation:	Testeo	d in nati	ural o	cond	ition																
As		vived Moist	ure		Liq	uid l [%]	imit			Pla	astic I [%]	imit			Plas	ticity Ind [%]	ex				j 425μm Sieve		
19						59			24					Ī		35		Γ	100				
	100 -																						
	90 -																		— A	line			
	80 -							-															
	70 ·							-							CE		\checkmark						
×	60 -							-															
/ INDE	50 ·							-				cv			ME								
PLASTICITY INDEX	40 -								С	H													
PLA	30 ·						CI		•			MV											
	20 ·			CL				\vdash	м	н													
	10 ·					\leq	мі	-															
	0 -			ML						0	70				100	110	100	10	0	140	150		
		0 10	20) 3	80	4	0	50	6		70 Quid	80 LIMI		90	100	110	120	13	0	140	150		
				Legend	l, bas	sed o	on BS 5	5930:20		Code o sticity	f prac	tice for	site i	invest	igations Liquio	d Limit							
					Clay Silt				L	Low Medi					below	/ 35							
				IVI	SIII				I H	High					35 to 50 to								
									V E	Very	high emely	high			70 to								
				Organic O append									to classification for organic material (eg CHO)										
Rema	arks:																						
ppro	oved:		isz Piot eotechi			4.0	Martin						Sigr	ned:		Darren I Geotech			Maria				

Date Reported: 31/10/2018
"Opinions and interpretations expressed here in are outside of the scope of the UKAS Accreditation.
This report may not be reproduced other than in full withhout the prior written approval of the issuing laboratory.
The results included within the report are representative of the samples submitted for analysis.
The analysis was carried out at 12 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland."

Piotuli

Page 1 of 1

4041	

Liquid and Plastic Limits

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



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

	act: Jame: Address:	Kevin S Woodla	Lower LowleyDate Sampled: Not GivenDunsford, Devon, EX6 7BPDate Received: 14/09/2018Kevin ScanlonDate Tested: 12/10/2018Woodland Meed Primary SchoolSampled By: Not GivenNot GivenSampled By: Not Given											
abor ole I amp	Results ratory Reference No.: ble Reference: Description:	e: 106255 BH05 17 Grey C					Depti	th Top [m]: 9.00 n Base [m]: Not Given mple Type: D						
-	Received Moi Content [%]	sture		condition quid Limit [%]		Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve						
	21			71		29	42	100						
PLASTICITY INDEX	100			CI	СН	CV CV MV		A line						
	0		30 .egend, ba C Clay M Silt	ased on BS 5	Plastie L H V E	Low Medium High Very high Extremely high		сно)						
	e due u		Olga	anic	0		ion for organic material (eg							
ema	arks:	riusz Piotr					gned: Darren Berri							

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SUMMARY REPORT Summary of Classification Test Results

Tested in Accordance with: MC by BS 1377-2: 1990: Clause 3.2; Atterberg by BS 1377-2: 1990: Clause 4.3, Clause 4.4 and 5; PD by BS 1377-2: 1990: Clause 8.2

Client Terrafirma South Client Address:

The Slate Barn Lower Lowley Dunsford, Devon, EX6 7BP Kevin Scanlon Site Name: Woodland Meed Primary School Not Given Site Address:

Test results

Contact:

			Sample	9		Description				Atter	berg#		Der	nsity			
Laboratory Reference	Hole No.	Reference	Depth Top	Depth Base	Туре		Remarks	MC#	% Passing 425um	LL	PL	PI	bulk	PD	Total Porosity		
			m	m				%	%	%	%	%	Mg/m3	Mg/m3	Mg/m3		 <u> </u>
1062501	BH01	2	1.00	Not Given	D	Brown CLAY	Atterberg 4 Point	29	100	65	25	40					
1062502	BH01	3	1.00	1.45	D	Brown to grey CLAY		23									
1062503	BH01	4	2.00	Not Given	D	Brown to grey CLAY	Atterberg 4 Point	30	100	74	30	44					
1062504	BH01	6	3.00	Not Given	D	Brown CLAY	Atterberg 4 Point	29	100	68	28	40					
1062505	BH01	10	5.00	Not Given	D	Brown slightly sandy CLAY	Atterberg 4 Point	19	100	56	21	35					
1062506	BH01	11	5.00	5.45	D	Brown CLAY		20									
1062507	BH01	14	7.00	Not Given	D	Grey sandy CLAY	Atterberg 4 Point	20	100	43	22	21					
1062508	BH01	19	10.00	Not Given	D	Grey slightly sandy CLAY	Atterberg 4 Point	15	100	47	23	24					
1062509	BH01	22	11.00	11.45	D	Grey CLAY		14									
1062510	BH01	23	12.00	Not Given	D	Grey CLAY	Atterberg 4 Point	19	100	64	26	38					

Note: # UKAS accredited; NP - Non plastic

Comments:

Approved: Dariusz Piotrowski

PL Geotechnical Laboratory Manager Postuli Date Reported: 31/10/2018 of the UKAS Ac

e of the samples submitted for analysis. Pionierow 39, 41-711 Ruda Slaska, Poland.



Signed: DDS Darren Berrill Geotechnical General Manager

GF 238.4

for and on behalf of i2 Analytical Ltd

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

Client Reference: 6225 Job Number: 18-13298

Date Sampled: Not Given Date Received: 14/09/2018

Date Tested: 12/10/2018

Sampled By: Not Given





SUMMARY REPORT Summary of Classification Test Results

Tested in Accordance with: MC by BS 1377-2: 1990: Clause 3.2; Atterberg by BS 1377-2: 1990: Clause 4.3, Clause 4.4 and 5; PD by BS 1377-2: 1990: Clause 8.2

Client: Terrafirma South Client Address: The Slate Barn Lower Lowley Dunsford, Devon, EX6 7BP Contact: Kevin Scanlon

 Contact:
 Kevin Scanion

 Site Name:
 Woodland Meed Primary School

 Site Address:
 Not Given

Test results

		Sample	9						Atterl	berg#		Der	nsity					
Hole No.	Reference	Depth Top	Depth Base	Туре	Description	Remarks	MC#	% Passing 425um	LL	PL	PI	bulk	PD	Total Porosity				
		m	m				%	%	%	%	%	Mg/m3	Mg/m3	Mg/m3				
BH01	26	14.00	Not Given	D	Grey slightly sandy CLAY	Atterberg 4 Point	33	100	54	22	32							
BH02	2	1.00	Not Given	D	Brown slightly gravelly CLAY	Atterberg 4 Point	27	87	70	32	38							
BH02	3	1.00	1.45	D	Brown CLAY		27											
BH02	4	2.00	Not Given	D	Brown CLAY	Atterberg 4 Point	24	100	64	29	35							
BH02	8	4.00	Not Given	D	Brown slightly sandy CLAY	Atterberg 4 Point	21	100	53	23	30							
BH02	10	5.00	Not Given	D	Brown CLAY	Atterberg 4 Point	28	100	87	31	56							
BH02	12	6.00	Not Given	D	Yellowish brown to grey CLAY		25											
BH02	15	8.00	Not Given	D	Grey CLAY		15											
BH02	19	10.00	Not Given	D	Grey slightly sandy CLAY	Atterberg 4 Point	18	100	54	20	34							
BH02	22	12.00	Not Given	D	Grey CLAY	Atterberg 4 Point	23	100	61	27	34							
	No. BH01 BH02 BH02	No. Reference BH01 26 BH02 2 BH02 3 BH02 4 BH02 4 BH02 10 BH02 12 BH02 15 BH02 19	No. Reference Top Reference Top BH01 26 14.00 BH02 2 1.00 BH02 3 1.00 BH02 4 2.00 BH02 4 2.00 BH02 10 5.00 BH02 12 6.00 BH02 15 8.00 BH02 19 10.00 BH02 22 12.00	No. Reference Dep n Dep n Dep n Base m m m m BH01 26 14.00 Not Given BH02 2 1.00 Not Given BH02 3 1.00 1.45 BH02 4 2.00 Not Given BH02 8 4.00 Not Given BH02 10 5.00 Not Given BH02 12 6.00 Not Given BH02 15 8.00 Not Given BH02 19 10.00 Not Given BH02 22 12.00 Not	No. Reference Dep.nt Dep.nt Dep.nt Dep.nt Dep.nt Dep.nt Type BH01 Top m m m m D BH01 26 14.00 Not Given D D BH02 2 1.00 Not Given D BH02 3 1.00 1.45 D BH02 4 2.00 Not Given D BH02 8 4.00 Not Given D BH02 10 5.00 Not Given D BH02 12 6.00 Not Given D BH02 15 8.00 Not Given D BH02 19 10.00 Not Given D BH02 22 12.00 Not Given D	No.ReferenceDeprind TopDeprind BaseTypeDescriptionBH012614.00Kot GivenDGrey slightly sandy CLAYBH0221.00Not GivenDBrown slightly gravelly CLAYBH0231.001.45DBrown CLAYBH0231.001.45DBrown CLAYBH0242.00Not GivenDBrown CLAYBH0284.00Not GivenDBrown CLAYBH021105.00Not GivenDBrown CLAYBH021126.00Not GivenDBrown CLAYBH021158.00Not GivenDGrey CLAYBH021910.00Not GivenDGrey Slightly sandy CLAYBH022212.00Not GivenDGrey Slightly sandy CLAY	No.ReferenceJopHopTypeDescriptionDescriptionRemarksBH0126014.00SiveDGrey slightly sandy CLAYAtterberg 4 PointBH0221.00Not GivenDBrown slightly gravelly CLAYAtterberg 4 PointBH0231.001.45DBrown Slightly gravelly CLAYAtterberg 4 PointBH0231.001.45DBrown CLAYAtterberg 4 PointBH0242.00Not GivenDBrown Slightly sandy CLAYAtterberg 4 PointBH02105.00Not GivenDBrown CLAYAtterberg 4 PointBH021105.00Not GivenDBrown CLAYAtterberg 4 PointBH021126.00Not GivenDYellowish brown to grey CLAYAtterberg 4 PointBH021158.00Not GivenDGrey slightly sandy CLAYAtterberg 4 PointBH021910.00Not GivenDGrey Slightly sandy CLAYAtterberg 4 PointBH021910.00Not GivenDGrey slightly sandy CLAYAtterberg 4 PointBH022212.00Not GivenDGrey slightly sandy CLAYAtterberg 4 PointBH021910.00Not GivenDGrey slightly sandy CLAYAtterberg 4 PointBH021910.00Not GivenDGrey slightly sandy CLAYAtterberg 4 PointBH021910.00<	Note No.ReferenceDepth TopDepth BaseTypeDescriptionRemarksRemarksmmmmm%BH012614.00Not GivenDGrey slightly sandy CLAYAtterberg 4 Point33BH0221.00Not GivenDBrown slightly gravelly CLAYAtterberg 4 Point27BH0231.001.45DBrown Slightly gravelly CLAYAtterberg 4 Point27BH0231.001.45DBrown CLAYAtterberg 4 Point21BH026Not GivenDBrown Slightly sandy CLAYAtterberg 4 Point21BH02105.00Not GivenDBrown slightly sandy CLAYAtterberg 4 Point21BH021105.00Not GivenDBrown Slightly sandy CLAYAtterberg 4 Point28BH021105.00Not GivenDYellowish brown to grey CLAYAtterberg 4 Point25BH021158.00Not GivenDGrey Slightly sandy CLAYAtterberg 4 Point15BH021910.00Not GivenDGrey Slightly sandy CLAYAtterberg 4 Point16BH021910.00Not GivenDGrey Slightly sandy CLAYAtterberg 4 Point16BH021910.00Not GivenDGrey Slightly sandy CLAYAtterberg 4 Point16BH021910.00Not Given <td>No. No.ReferenceDepth TopBaseTypeDescriptionRemarksRemarksPassing 425umMo.mmmm%%BH012614.00Not GivenDGrey slightly sandy CLAYAtterberg 4 Point3.31.00BH0221.00Not GivenDBrown slightly gravelly CLAYAtterberg 4 Point2.78.7BH0231.001.45DBrown CLAYAtterberg 4 Point2.41.00BH0242.00Not GivenDBrown slightly sandy CLAYAtterberg 4 Point2.41.00BH0231.00Not GivenDBrown Slightly sandy CLAYAtterberg 4 Point2.41.00BH026.00Not GivenDBrown Slightly sandy CLAYAtterberg 4 Point2.81.00BH021.105.00Not GivenDBrown Slightly sandy CLAYAtterberg 4 Point2.81.00BH021.105.00Not GivenDBrown Slightly sandy CLAYAtterberg 4 Point2.81.00BH021.158.00Not GivenDGrey Slightly sandy CLAYAtterberg 4 Point1.51.5BH021.158.00Not GivenDGrey Slightly sandy CLAYAtterberg 4 Point1.51.5BH021.158.00Not GivenDGrey Slightly sandy CLAYAtterberg 4 Point1.51.5BH021.9</td> <td>No. Reference Depth Top Depth Base Type Description Remarks Remarks Passing 425 mm LL Mo. m m m m m % <t< td=""><td>No. No.PeterenceDepth TopDepth BaseTypeDescriptionRemarksRemarksPassing A25umLLPLMo.mmmm$-\infty$</td><td>NMM Reference Depth rop Depth Base Type Description Remarks Remarks Passing V25000 LL PL Pl MO m m m m m %</td><td>No. Reference Depth rop Bepth Base Type Description Remarks Remarks Passing t2SUm L PL PI bulk Mo. m m m m m M <</td><td>Note No.Pepth ReferenceDepth TopDepth BaseTypeDescriptionRemarksRemarksPassing ASSumLLPLPLDulkPDMonoMMM<td>Note No. Dept Reference Dept Type Type Description Remarks Passing 425 PL PJ bulk PD $\frac{2}{2}$ Mo m</td><td>Reference Reference <</td><td>Reference No Base No Sector <</td><td>Reference 100 Base Interpretation <thi< td=""></thi<></td></td></t<></td>	No. No.ReferenceDepth TopBaseTypeDescriptionRemarksRemarksPassing 425umMo.mmmm%%BH012614.00Not GivenDGrey slightly sandy CLAYAtterberg 4 Point3.31.00BH0221.00Not GivenDBrown slightly gravelly CLAYAtterberg 4 Point2.78.7BH0231.001.45DBrown CLAYAtterberg 4 Point2.41.00BH0242.00Not GivenDBrown slightly sandy CLAYAtterberg 4 Point2.41.00BH0231.00Not GivenDBrown Slightly sandy CLAYAtterberg 4 Point2.41.00BH026.00Not GivenDBrown Slightly sandy CLAYAtterberg 4 Point2.81.00BH021.105.00Not GivenDBrown Slightly sandy CLAYAtterberg 4 Point2.81.00BH021.105.00Not GivenDBrown Slightly sandy CLAYAtterberg 4 Point2.81.00BH021.158.00Not GivenDGrey Slightly sandy CLAYAtterberg 4 Point1.51.5BH021.158.00Not GivenDGrey Slightly sandy CLAYAtterberg 4 Point1.51.5BH021.158.00Not GivenDGrey Slightly sandy CLAYAtterberg 4 Point1.51.5BH021.9	No. Reference Depth Top Depth Base Type Description Remarks Remarks Passing 425 mm LL Mo. m m m m m % <t< td=""><td>No. No.PeterenceDepth TopDepth BaseTypeDescriptionRemarksRemarksPassing A25umLLPLMo.mmmm$-\infty$</td><td>NMM Reference Depth rop Depth Base Type Description Remarks Remarks Passing V25000 LL PL Pl MO m m m m m %</td><td>No. Reference Depth rop Bepth Base Type Description Remarks Remarks Passing t2SUm L PL PI bulk Mo. m m m m m M <</td><td>Note No.Pepth ReferenceDepth TopDepth BaseTypeDescriptionRemarksRemarksPassing ASSumLLPLPLDulkPDMonoMMM<td>Note No. Dept Reference Dept Type Type Description Remarks Passing 425 PL PJ bulk PD $\frac{2}{2}$ Mo m</td><td>Reference Reference <</td><td>Reference No Base No Sector <</td><td>Reference 100 Base Interpretation <thi< td=""></thi<></td></td></t<>	No. No.PeterenceDepth TopDepth BaseTypeDescriptionRemarksRemarksPassing A25umLLPLMo.mmmm $-\infty$	NMM Reference Depth rop Depth Base Type Description Remarks Remarks Passing V25000 LL PL Pl MO m m m m m %	No. Reference Depth rop Bepth Base Type Description Remarks Remarks Passing t2SUm L PL PI bulk Mo. m m m m m M <	Note No.Pepth ReferenceDepth TopDepth BaseTypeDescriptionRemarksRemarksPassing ASSumLLPLPLDulkPDMonoMMM <td>Note No. Dept Reference Dept Type Type Description Remarks Passing 425 PL PJ bulk PD $\frac{2}{2}$ Mo m</td> <td>Reference Reference <</td> <td>Reference No Base No Sector <</td> <td>Reference 100 Base Interpretation <thi< td=""></thi<></td>	Note No. Dept Reference Dept Type Type Description Remarks Passing 425 PL PJ bulk PD $\frac{2}{2}$ Mo m	Reference <	Reference No Base No Sector <	Reference 100 Base Interpretation Interpretation <thi< td=""></thi<>

Note: # UKAS accredited; NP - Non plastic

Comments:

 Approved:
 Dariusz Piotrowski

 PL Geotechnical Laboratory Manager
 Date Reported: 31/10/2018

Signed:

Darren Berrill Geotechnical General Manager

GF 238.4

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Page 1 of 1

for and on behalf of i2 Analytical Ltd



2 Analytical Ltd 7 Woodshots Meadow Croaley Green Business Park Watford Herts WD18 8YS Client Reference: 6225

Job Number: 18-13298 Date Sampled: Not Given Date Received: 14/09/2018 Date Tested: 10/10 - 12/10/2018 Sampled By: Not Given



Client Address:

Terrafirma South

The Slate Barn Lower Lowley Dunsford, Devon, EX6 7BP

Kevin Scanlon

Not Given

Woodland Meed Primary School

Client

Contact:

SUMMARY REPORT Summary of Classification Test Results

Tested in Accordance with: MC by BS 1377-2: 1990: Clause 3.2; Atterberg by BS 1377-2: 1990: Clause 4.3, Clause 4.4 and 5; PD by BS 1377-2: 1990: Clause 8.2 2 Analytical Ltd 7 Woodshots Meadow Croxley Green Business Park Watford Herts WD18 8YS



Client Reference: 6225 Job Number: 18-13298 Date Sampled: Not Given Date Received: 14/09/2018 Date Tested: 12/10/2018 Sampled By: Not Given

Site Name: Site Address:

Test results

Laboratory Reference			Sample	9			Remarks	MC#		Atter	oerg#		Density				
	Hole No.	Reference	Depth Top m	Depth Base	Туре	Description			% Passing 425um	LL	PL	PI	bulk	PD	Total Porosity		
1062530	BH03	17	1.00	m 1.45	D	Brown CLAY		% 25	%	%	%	%	ivig/m3	Mg/m3	ivig/m3	 	┢
1002550	BH03	17	1.00		D	BIOWITCEAT		25									
1062521	BH03	2	1.00	Not Given	D	Brown CLAY	Atterberg 4 Point	26	100	66	26	40					
1062522	BH03	3	2.00	Not Given	D	Brown CLAY	Atterberg 4 Point	26	100	61	27	34					
1062523	BH03	4	3.00	Not Given	D	Brown CLAY	Atterberg 4 Point	26	100	78	27	51					
1062531	BH03	20	4.00	4.45	D	Brown CLAY		27									
1062524	BH03	5	4.00	Not Given	D	Brown slightly sandy CLAY	Atterberg 4 Point	26	100	58	23	35					
1062526	BH03	9	7.00	Not Given	D	Brown sandy CLAY	Atterberg 4 Point	14	100	42	21	21					
1062527	BH03	11	9.00	Not Given	D	Grey CLAY	Atterberg 4 Point	20	100	65	26	39					
1062532	BH03	23	9.50	9.95	D	Dark grey CLAY		15									Γ
1062528	BH03	13	11.00	Not Given	D	Grey CLAY	Atterberg 4 Point	18	100	65	22	43					Γ

Note: # UKAS accredited; NP - Non plastic

Comments:

 Approved:
 Dariusz Piotrowski

 Dariusz Piotrowski
 PL Geotechnical Laboratory Manager

Opinions and interpretations expressed herein are outside of the UKUS Accreditation.
 PL Geotecnnical Laboratory Manage
 Date Reported: 31/10/2018
 'Opinions and interpretations expressed herein are outside of the scope of the UKUS Accreditation.

This regulation is the reproduced owner and introductine production of the samples submitted for analysis. The results included within the report are representative of the samples submitted for analysis. The analysis was carried out at 12 Analytical Limited, u. Pionierow 39, 41-711 Ruda Slaska, Poland." Page 1 of 1

Signed:

Darren Berrill Geotechnical General Manager

GF 238.4

for and on behalf of i2 Analytical Ltd



SUMMARY REPORT Summary of Classification Test Results

Tested in Accordance with: MC by BS 1377-2: 1990: Clause 3.2; Atterberg by BS 1377-2: 1990: Clause 4.3, Clause 4.4 and 5; PD by BS 1377-2: 1990: Clause 8.2

Client: Terrafirma South Client Address: The Slate Barn Lower Lowley Dunsford, Devon

Lower Lowley Dunsford, Devon, EX6 7BP Contact: Kevin Scanlon Site Name: Woodland Meed Primary School Site Address: Not Given

Test results

			Sample						Atter	berg#		Der	isity					
Laboratory Reference	Hole No.	Reference	Depth Top	Depth Base	Туре	Description			% Passing 425um	LL	PL	PI	bulk	PD	Total Porosity			
			m	m				%	%	%	%	%	Mg/m3	Mg/m3	Mg/m3			
1062529	BH03	15	13.00	Not Given	D	Grey CLAY	Atterberg 4 Point	19	100	61	25	36						
1062541	BH04	18	1.00	1.45	D	Brown CLAY		32										
1062533	BH04	2	1.00	Not Given	D	Brown slightly sandy CLAY	Atterberg 4 Point	29	100	58	24	34						
1062534	BH04	3	2.00	Not Given	D	Brown to grey slightly sandy CLAY	Atterberg 4 Point	28	100	55	25	30						
1062535	BH04	4	3.00	Not Given	D	Brown CLAY	Atterberg 4 Point	28	100	73	28	45						Γ
1062542	BH04	21	4.00	4.45	D	Brown CLAY		16										Γ
1062536	BH04	5	4.00	Not Given	D	Brown slightly sandy CLAY	Atterberg 4 Point	22	100	59	24	35						Γ
1062537	BH04	7	6.00	Not Given	D	Dark grey slightly sandy CLAY	Atterberg 4 Point	22	100	57	22	35						Γ
1062538	BH04	9	8.00	Not Given	D	Dark grey CLAY	Atterberg 4 Point	19	100	62	29	33						Γ
1062543	BH04	24	9.50	9.95	D	Grey silty CLAY		24										Γ

Note: # UKAS accredited; NP - Non plastic

Comments:

 Approved:
 Dariusz Piotrowski

 Oli II.
 PL Geotechnical Laboratory Manager

 Date Reported:
 31/10/2018

 'Opinions and interpretations expressed herein are outside of the Support the UKAS Accreditation.
 31/10/2018



Signed:

Darren Berrill Geotechnical General Manager

GF 238.4

for and on behalf of i2 Analytical Ltd

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

> Client Reference: 6225 Job Number: 18-13298

Date Sampled: Not Given Date Received: 14/09/2018

Date Tested: 12/10/2018

Sampled By: Not Given





SUMMARY REPORT Summary of Classification Test Results

Tested in Accordance with: MC by BS 1377-2: 1990: Clause 3.2; Atterberg by BS 1377-2: 1990: Clause 4.3, Clause 4.4 and 5; PD by BS 1377-2: 1990: Clause 8.2

Client Terrafirma South Client Address: The Slate Barn

Lower Lowley Dunsford, Devon, EX6 7BP Contact: Kevin Scanlon Site Name: Woodland Meed Primary School Not Given Site Address:

Test results

Test Tesuits																	 		
			Sample	9						Atter	berg#		Dei	nsity					
Laboratory Reference	Hole No.	Reference	Depth Top	Depth Base	Туре	Description	Remarks		Remarks		% Passing 425um	Ш	PL	PI	bulk	PD	Total Porosity		
			m	m				%	%	%	%	%	Mg/m3	Mg/m3	Mg/m3				
1062539	BH04	13	10.00	Not Given	D	Dark grey CLAY	Atterberg 4 Point	24	100	71	29	42							
1062540	BH04	15	12.00	12.50	D	Grey slightly sandy CLAY	Atterberg 4 Point	20	100	58	24	34							
1062544	BH05	2	1.00	Not Given	D	Brown CLAY	Atterberg 4 Point	31	100	73	28	45							
1062545	BH05	3	1.00	1.45	D	Brown CLAY		32											
1062546	BH05	4	2.00	Not Given	D	Brown CLAY	Atterberg 4 Point	30	100	67	27	40							
1062547	BH05	6	3.00	Not Given	D	Brown CLAY	Atterberg 4 Point	21	100	73	29	44							
1062548	BH05	8	4.00	Not Given	D	Brown CLAY	Atterberg 4 Point	26	100	68	26	42							
1062549	BH05	9	4.00	4.45	D	Grey CLAY		23											
1062550	BH05	10	5.00	Not Given	D	Brown sandy CLAY	Atterberg 4 Point	20	100	39	22	17							
1062551	BH05	12	6.00	Not Given	D	Grey slightly sandy CLAY	Atterberg 4 Point	20	100	51	23	28							

Note: # UKAS accredited; NP - Non plastic

Comments:

Approved: Dariusz Piotrowski

PL Geotechnical Laboratory Manager Postuli Date Reported: 31/10/2018 of the UKAS Ac

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Page 1 of 1

Signed: DDS Darren Berrill Geotechnical General Manager

GF 238.4

for and on behalf of i2 Analytical Ltd

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

Client Reference: 6225 Job Number: 18-13298

Date Sampled: Not Given Date Received: 14/09/2018

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SUMMARY REPORT Summary of Classification Test Results

Tested in Accordance with: MC by BS 1377-2: 1990: Clause 3.2; Atterberg by BS 1377-2: 1990: Clause 4.3, Clause 4.4 and 5; PD by BS 1377-2: 1990: Clause 8.2

Client Terrafirma South Client Address: The Slate Barn Lower Lowley Dunsford, Devon, EX6 7BP Contact: Kevin Scanlon

Site Name: Woodland Meed Primary School Not Given Site Address:

Test results

			Sample	9						Atter	berg#		Der	nsity			
Laboratory Reference	Hole No.	Reference	Depth Top	Depth Base	Туре	Description	Remarks	MC#	% Passing 425um	LL	PL	PI	bulk	PD	Total Porosity		
			m	m				%	%	%	%	%	Mg/m3	Mg/m3	Mg/m3		L
1062552	BH05	14	7.00	Not Given	D	Grey slightly sandy CLAY	Atterberg 4 Point	19	100	59	24	35					
1062553	BH05	17	9.00	Not Given	D	Grey CLAY	Atterberg 4 Point	21	100	71	29	42					
1062554	BH05	20	11.00	Not Given	D	Grey CLAY		20									Γ
																	Γ
																	Γ
																	Γ
																	Γ
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Comments:

Approved:

Dariusz Piotrowski PL Geotechnical Laboratory Manager Postuli Date Reported: 31/10/2018

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Page 1 of 1

DDS

Darren Berrill Geotechnical General Manager

GF 238.4

for and on behalf of i2 Analytical Ltd

2 Analytical Ltd 7 Woodshots Meadow Croxley Green Business Park Watford Herts WD18 8YS Client Reference: 6225

Job Number: 18-13298

Date Tested: 12/10/2018

Sampled By: Not Given

Date Sampled: Not Given Date Received: 14/09/2018



Signed:

samples submitted for analysis. w 39, 41-711 Ruda Slaska, Poland. e of the



TEST CERTIFICATE

Density Tests - Summary of Results

ested in Accordance with BS EN ISO 17892 - 2: 2014, Clause 5.1

Client: Client Address:	Terrafirma South The Slate Barn Lower Lowley Dunsford Devon, EX6 7BP
Contact:	Kevin Scanlon
Site Name:	Woodland Meed Primary School
Site Address:	Not Given

Test results



Client Reference: 6225 Job Number: 18-13298 Date Sampled: Not Given Date Received: 14/09/2018 Date Tested: 15/10/2018 Sampled By: Not Given

			Sam	ole			Linear	Measure	ement	
Laboratory Reference	Hole No.	Reference	Depth Top [m]	Depth Base [m]	Туре	Description		Dry density Mg/m3		Remarks
1062555	BH05	21	12.00	Not Given	D	Grey sandy CLAY	1.82	1.52	19.7	

Comments:

Approved:

Darren Berrill Geotechnical General Manager



Date Reported:

31/10/2018

Signed:

Darren Berrill Geotechnical General Manager

for and on behalf of i2 Analytical Ltd

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Determination of shear strength using the Small Shearbox

Apparatus Tested in Accordance with BS1377: Part 7: 1990, clause 4.5.4

Client: Client Address:	Terrafirma South The Slate Barn Lower Lowley Dunsford, Devon, EX6 7BP
Contact:	Kevin Scanlon
Site Name:	Woodland Meed Primary School
Site Address:	Not Given

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



Client Reference: 6225 Job Number: 18-13298 Date Sampled: Not Given Date Received: 14/09/2018 Date Tested: 22/10/2018 Sampled By: Not Given

Depth Top [m]: 2.00 Depth Base [m]: Not Given Sample Type: D

Test results

Specimen Details

Laboratory Reference: 1062503 Hole No.: Sample Reference: Soil Description: **Preparation Details**

BH01 4 Brown to grey CLAY

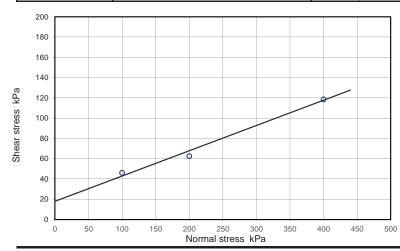
	Height	20.0	20.0	20.0		mm
	Length	60.0	60.0	60.0		mm
	Breadth	60.0	60.0	60.0		mm
	Particle Density - (assumed)	2.65	2.65	2.65		Mg/m ³
Initial	Bulk Density	1.88	1.88	1.89		Mg/m ³
	Moisture Content	28.8	28.8	28.8		%
	Dry density	1.46	1.46	1.47		Mg/m ³
	Voids ratio	0.815	0.815	0.803		
	Degree of Saturation	94	94	95		%
	Consolidation / Normal Stress applied	100	200	400		kPa
Consolidation	Change in height during consolidation	1.140	2.140	3.090		mm
	Voids ratio after consolidation	0.712	0.621	0.524		
After test	Final Moisture content	35.1	34.2	30.9		%
Shearing stage(s)						_
Rate of displacement	Peak	0.00940	0.00940	0.00940		mm/min
Rate of displacement	Residual					mm/min
	Relative horizontal displacement	1.87	1.27	1.68		mm
Peak values, (o)	Shear stress	46.1	62.5	118.6		kPa
	Vertical Movement at peak shear stress	0.31	0.17	0.20		mm
	No. of traverses (including peak run)	1	1	1		
Residual values, (x)	Relative horizontal displacement					mm
Residual Values, (X)	Shear stress					kPa
	Vertical movement at residual shear stress					mm

Test No.

1

2

3



Shear Strength Parameters

Peak stren	gth, (o)	Regression	Manual
с'	kPa	18.00	-
Ø'	degrees	14.0	-

Residual strength, (x)

c 'R	kPa	not assessed	-
Ø 'R	degrees	not assessed	-

Remarks :

Comments:

Approved:

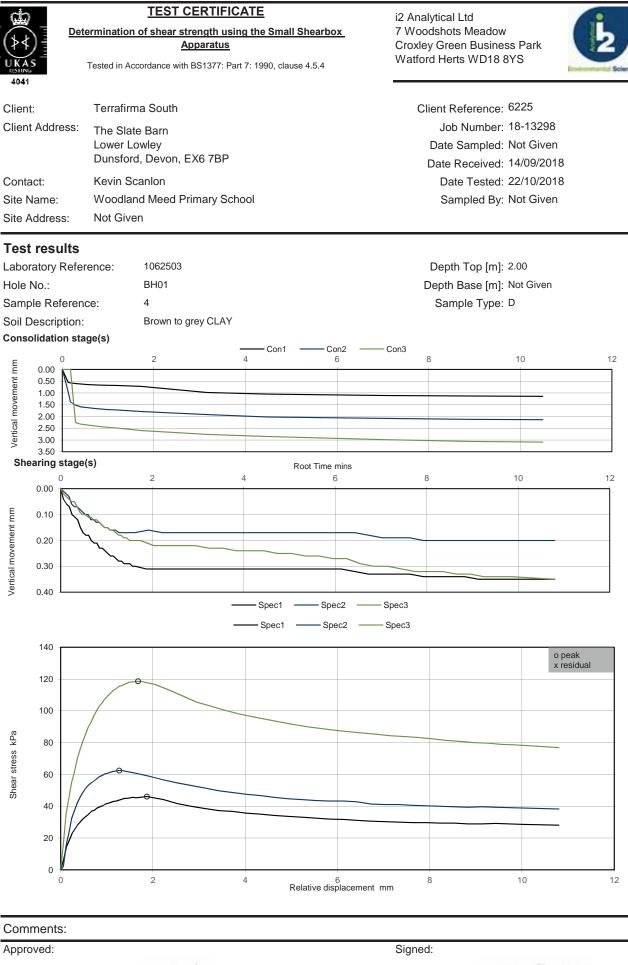
Dariusz Piotrowski PL Geotechnical Laboratory Manager 31/10/2018 Date Reported:

Signed:

Darren Berrill Geotechnical General Manager

for and on behalf of i2 Analytical Ltd

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Piotuli Dariusz Piotrowski PL Geotechnical Laboratory Manager Date Reported: 31/10/2018

Darren Berrill Geotechnical Ge

Manager

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for and on behalf of i2 Analytical Ltd

TEST CERTIFICATE Determination of shear strength using the Small Shearbox

Apparatus Tested in Accordance with BS1377: Part 7: 1990, clause 4.5.4

Client: Client Address:	Terrafirma South The Slate Barn Lower Lowley Dunsford, Devon, EX6 7BP
Contact:	Kevin Scanlon
Site Name:	Woodland Meed Primary School
Site Address:	Not Given

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



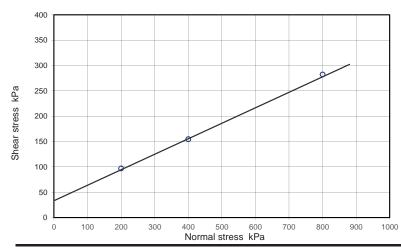
Client Reference: 6225 Job Number: 18-13298 Date Sampled: Not Given Date Received: 14/09/2018 Date Tested: 23/10/2018 Sampled By: Not Given

Test results

Laboratory Reference: 1062515 BH02 Hole No.: Sample Reference: 8 Soil Description: Brown slightly sandy CLAY Preparation Details

Depth Top [m]: 4.00 Depth Base [m]: Not Given Sample Type: D

Specimen Details	Test No). 1	2	3		
	Height	20.0	20.0	20.0		mm
	Length	60.0	60.0	60.0		mm
	Breadth	60.0	60.0	60.0		mm
	Particle Density - (assumed)	2.65	2.65	2.65		Mg/r
Initial	Bulk Density	2.01	2.00	2.01		Mg/r
	Moisture Content	18.8	18.8	18.8		%
	Dry density	1.69	1.68	1.69		Mg/r
	Voids ratio	0.568	0.577	0.568		
	Degree of Saturation	88	86	88		%
Consolidation	Consolidation / Normal Stress applied	200	400	800		kPa
	Change in height during consolidation	1.180	2.700	2.490		mm
	Voids ratio after consolidation	0.475	0.364	0.373		
After test	Final Moisture content	26.2	24.9	23.0		%
Shearing stage(s)	-	-			· · · · · · · · · · · · · · · · · · ·	
Data of diaminations	Peak	0.00969	0.00969	0.00969		mm/
Rate of displacement	Residual					mm/
	Relative horizontal displacement	1.87	2.04	3.07		mm
Peak values, (o)	Shear stress	96.9	154.7	282.2		kPa
	Vertical Movement at peak shear stress	0.33	0.31	0.31		mm
	No. of traverses (including peak run)	1	1	1		
	Relative horizontal displacement					mm
Residual values, (x)	Shear stress					kPa
	Vertical movement at residual shear stress					mm



Shear Strength Parameters

Peak stren	gth, (o)	Regression	Manual
с'	kPa	33.00	-
Øʻ	degrees	17.0	-

Residual strength, (x) T

c 'F	२	kPa	assessed	-
Øʻ	R	degrees	not assessed	-

Remarks :

Comments:

Approved:

Dariusz Piotrowski PL Geotechnical Laboratory Manager 31/10/2018 Date Reported:

Signed:

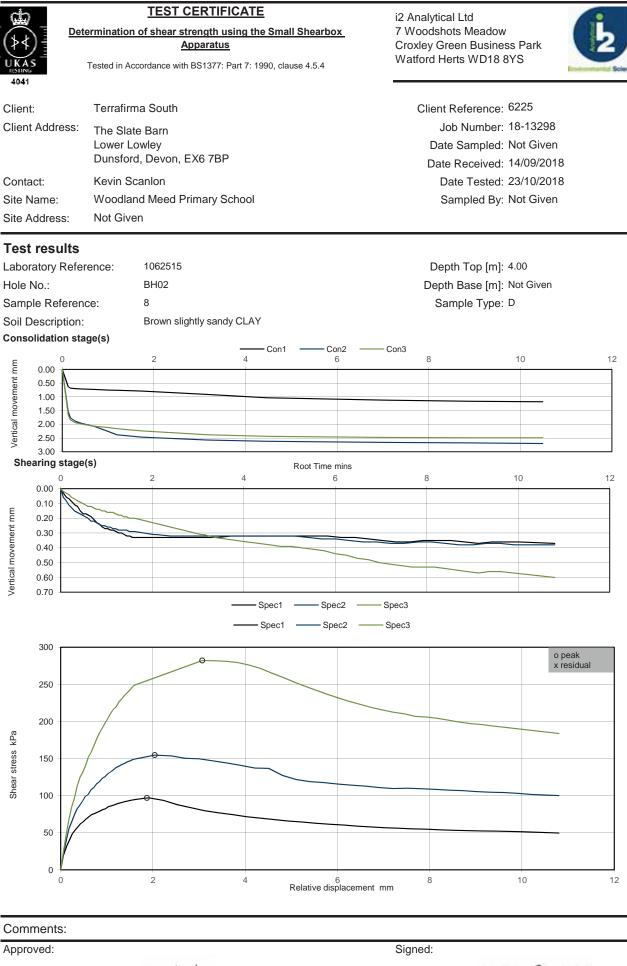
Darren Berrill Geotechnical General Manager

Т

for and on behalf of i2 Analytical Ltd

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Page 1 of 2



Dariusz Piotrowski PL Geotechnical Laboratory Manager Date Reported: 31/10/2018

Piotuli

Darren Berrill Geotechnical Ge Manager

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for and on behalf of i2 Analytical Ltd

TEST CERTIFICATE Determination of shear strength using the Small Shearbox

Apparatus Tested in Accordance with BS1377: Part 7: 1990, clause 4.5.4

Client: Client Address:	Terrafirma South The Slate Barn Lower Lowley Dunsford, Devon, EX6 7BP
Contact:	Kevin Scanlon
Site Name:	Woodland Meed Primary School
Site Address:	Not Given

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



Client Reference: 6225 Job Number: 18-13298 Date Sampled: Not Given Date Received: 14/09/2018 Date Tested: 24/10/2018 Sampled By: Not Given

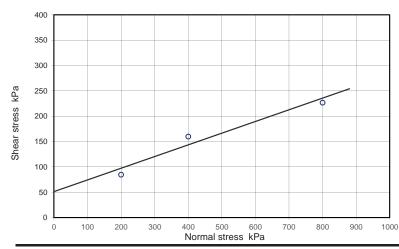
Test results

Laboratory Reference: 1062525 BH03 Hole No.: Sample Reference: 6 Soil Description: Preparation Details

Mottled brown silty CLAY

Depth Top [m]: 5.00 Depth Base [m]: Not Given Sample Type: D

Specimen Details	Test No	. 1	2	3	
	Height	20.0	20.0	20.0	mn
	Length	60.0	60.0	60.0	mn
	Breadth	60.0	60.0	60.0	mn
	Particle Density - (assumed)	2.65	2.65	2.65	Mg
Initial	Bulk Density	1.94	1.95	1.94	Mg
	Moisture Content	28.0	28.0	28.0	%
	Dry density	1.52	1.52	1.52	Mg
	Voids ratio	0.743	0.743	0.743	
	Degree of Saturation	100	100	100	%
	Consolidation / Normal Stress applied	200	400	800	kP
Consolidation	Change in height during consolidation	1.490	2.310	2.800	mr
	Voids ratio after consolidation	0.613	0.542	0.499	
After test	Final Moisture content	29.0	27.4	25.4	%
hearing stage(s)					
Rate of displacement	Peak	0.01575	0.01575	0.01575	mr
cate of displacement	Residual				mr
	Relative horizontal displacement	1.32	1.74	2.22	mr
Peak values, (o)	Shear stress	84.7	159.7	226.9	kP
	Vertical Movement at peak shear stress	0.11	0.14	0.16	mr
	No. of traverses (including peak run)	1	1	1	
	Relative horizontal displacement				mr
Residual values, (x)	Shear stress				kP
	Vertical movement at residual shear stress				mr



Shear Strength Parameters

Peak strength, (o)		Regression	Manual
с'	kPa	51.00	-
Ø'	degrees	13.0	-

Residual strength, (x) Т T

c 'R	kPa	not assessed	-
Ø 'R	degrees	not assessed	-

Remarks :

Comments:

Approved:

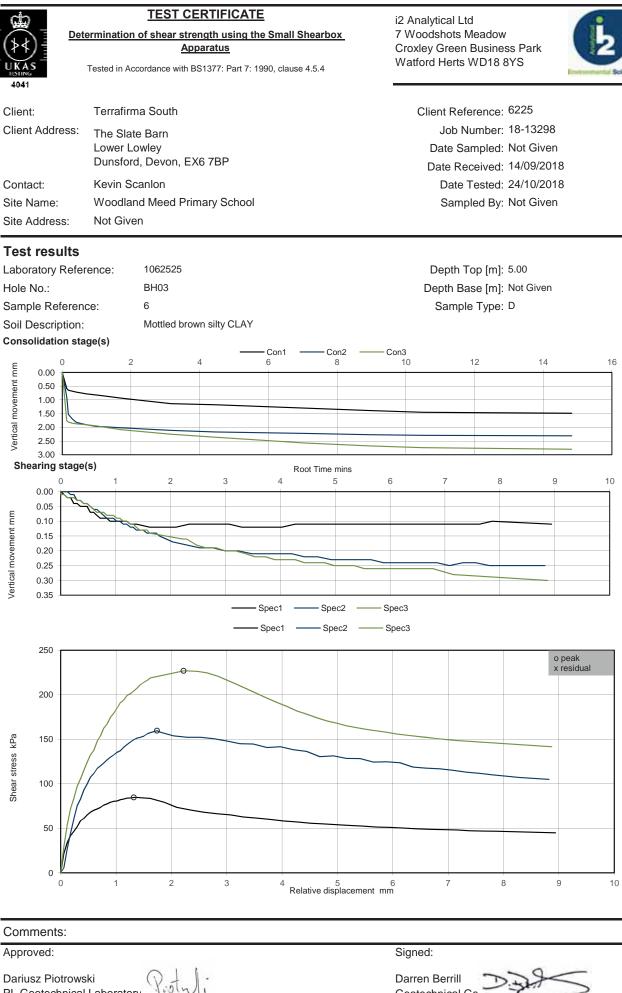
Dariusz Piotrowski PL Geotechnical Laboratory Manager 31/10/2018 Date Reported:

Signed:

Darren Berrill Geotechnical General Manager

for and on behalf of i2 Analytical Ltd

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PL Geotechnical Laboratory Manager Date Reported: 31/10/2018

Geotechnical Ge Manager

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for and on behalf of i2 Analytical Ltd

TEST CERTIFICATE

Determination of shear strength using the Small Shearbox

Apparatus Tested in Accordance with BS1377: Part 7: 1990, clause 4.5.4

Client: Client Address:	Terrafirma South The Slate Barn Lower Lowley Dunsford, Devon, EX6 7BP
Contact:	Kevin Scanlon
Site Name:	Woodland Meed Primary School
Site Address:	Not Given

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



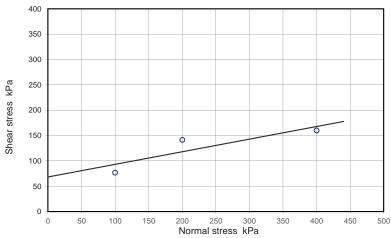
Client Reference: 6225 Job Number: 18-13298 Date Sampled: Not Given Date Received: 14/09/2018 Date Tested: 25/10/2018 Sampled By: Not Given

Test results

Laboratory Reference: 1062533 BH04 Hole No.: Sample Reference: 2 Soil Description: Brown slightly sandy CLAY Preparation Details

Depth Top [m]: 1.00 Depth Base [m]: Not Given Sample Type: D

Specimen Details	Test No.	1	2	3	
	Height	20.0	20.0	20.0	mm
	Length	60.0	60.0	60.0	mm
	Breadth	60.0	60.0	60.0	mm
	Particle Density - (assumed)	2.65	2.65	2.65	Mg
Initial	Bulk Density	2.02	2.02	2.02	Mg
	Moisture Content	20.1	20.1	20.1	%
	Dry density	1.68	1.68	1.68	Mg
	Voids ratio	0.577	0.577	0.577	
	Degree of Saturation	92	92	92	%
	Consolidation / Normal Stress applied	100	200	400	kPa
Consolidation	Change in height during consolidation	0.630	1.400	1.690	mm
	Voids ratio after consolidation	0.527	0.467	0.444	
After test	Final Moisture content	26.0	24.3	23.5	%
Shearing stage(s)	•	-			 · · · · · · · · ·
Data of diaplocoment	Peak	0.03315	0.03315	0.03315	mm
Rate of displacement	Residual				mm
	Relative horizontal displacement	1.87	2.34	2.58	mm
Peak values, (o)	Shear stress	76.9	141.4	160.0	kPa
	Vertical Movement at peak shear stress	0.27	0.44	0.33	mm
	No. of traverses (including peak run)	1	1	1	
Residual values, (x)	Relative horizontal displacement				mm
rtesiduai values, (X)	Shear stress				kPa
	Vertical movement at residual shear stress				mm



Shear Strength Parameters

Peak stren	gth, (o)	Regression	Manual
с'	kPa	68.00	-
Ø'	degrees	14.0	-

Residual strength, (x)

c 'R	kF	Pa not assessed	-
Ø 'F	degi	rees not assessed	-

Remarks :

Comments:

Approved:

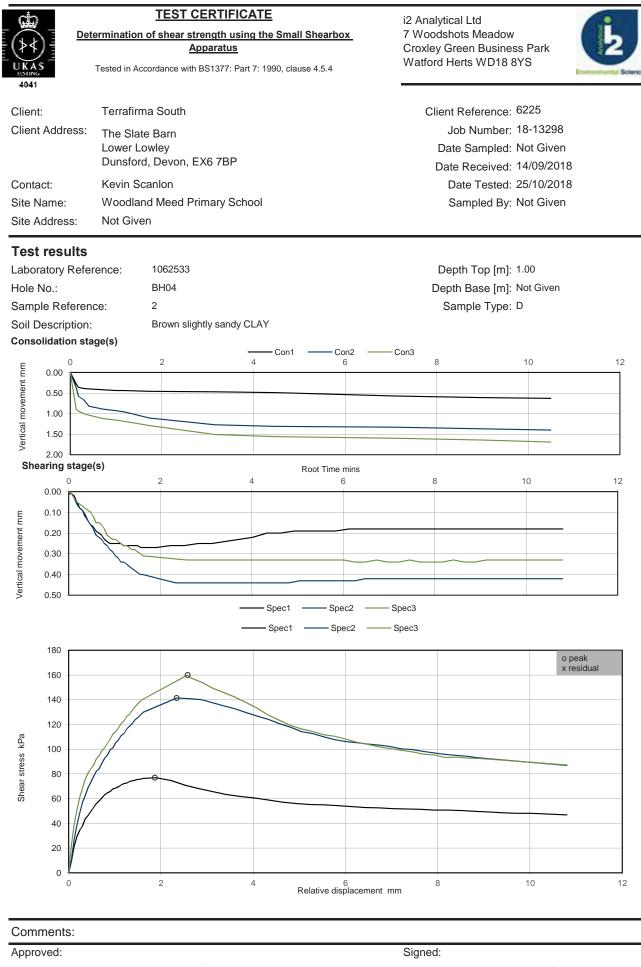
Dariusz Piotrowski PL Geotechnical Laboratory Manager 31/10/2018 Date Reported:

Signed:

Darren Berrill Geotechnical General Manager

for and on behalf of i2 Analytical Ltd

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Dariusz Piotrowski Piotuli PL Geotechnical Laboratory Manager Date Reported: 31/10/2018

Darren Berrill Geotechnical Ge Manager

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for and on behalf of i2 Analytical Ltd

TEST CERTIFICATE

Determination of shear strength using the Small Shearbox

Apparatus Tested in Accordance with BS1377: Part 7: 1990, clause 4.5.4

Client: Client Address:	Terrafirma South The Slate Barn Lower Lowley Dunsford, Devon, EX6 7BP
Contact:	Kevin Scanlon
Site Name:	Woodland Meed Primary School
Site Address:	Not Given

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



Client Reference: 6225 Job Number: 18-13298 Date Sampled: Not Given Date Received: 14/09/2018 Date Tested: 26/10/2018 Sampled By: Not Given

Test results

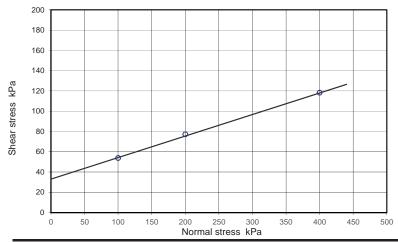
Laboratory Reference: Hole No.: Sample Reference: Soil Description: Preparation Details

BH05 2 Brown CLAY

1062544

Depth Top [m]: 1.00 Depth Base [m]: Not Given Sample Type: D

Specimen Details	Test No	1	2	3]
	Height	20.0	20.0	20.0		mm
	Length	60.0	60.0	60.0		mm
	Breadth	60.0	60.0	60.0		mm
	Particle Density - (assumed)	2.65	2.65	2.65		Mg/m
Initial	Bulk Density	1.88	1.88	1.88		Mg/m
	Moisture Content	30.9	30.9	30.9		%
	Dry density	1.44	1.44	1.44		Mg/m
	Voids ratio	0.840	0.840	0.840		1
	Degree of Saturation	97	97	97		%
	Consolidation / Normal Stress applied	100	200	400		kPa
Consolidation	Change in height during consolidation	0.800	1.730	2.650		mm
	Voids ratio after consolidation	0.766	0.681	0.596		1
After test	Final Moisture content	34.8	32.9	31.9		%
Shearing stage(s)	-				· · · · · ·	
Data of disals some at	Peak	0.00808	0.00808	0.00808		mm/n
Rate of displacement	Residual					mm/n
	Relative horizontal displacement	2.29	1.51	1.80		mm
Peak values, (o)	Shear stress	53.9	77.2	118.3		kPa
	Vertical Movement at peak shear stress	0.42	0.15	0.21		mm
	No. of traverses (including peak run)	1	1	1		1
Desidual values (v)	Relative horizontal displacement					mm
Residual values, (x)	Shear stress					kPa
	Vertical movement at residual shear stress					mm



Shear Strength Parameters

Peak strength, (o)		Regression	Manual
с'	kPa	33.00	-
Ø'	degrees	12.0	-

Residual strength, (x)

c 'R	kPa	not assessed	-
Ø 'R	degrees	not assessed	-

Remarks :

Comments:

Approved:

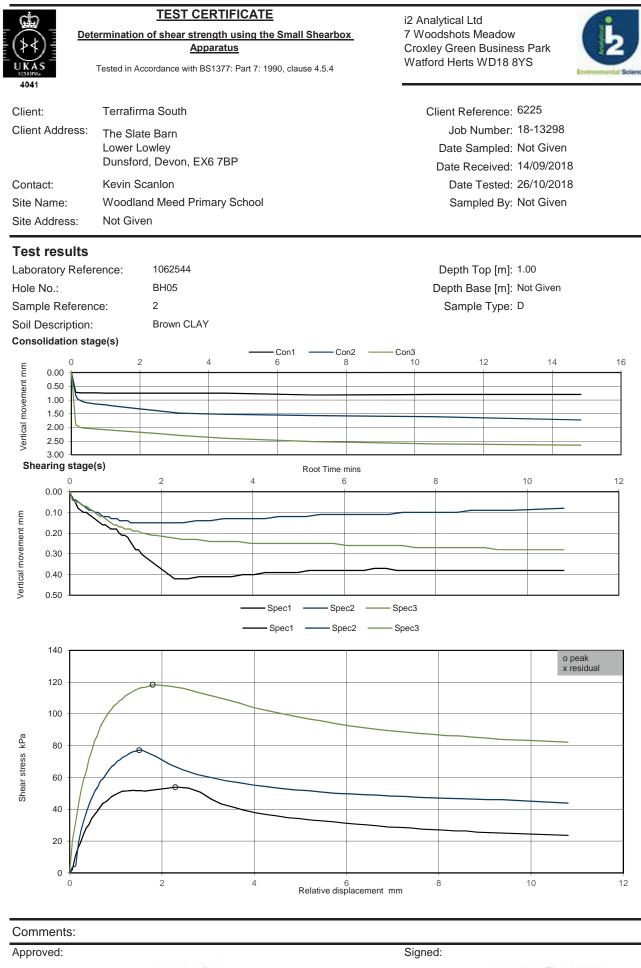
Dariusz Piotrowski PL Geotechnical Laboratory Manager 31/10/2018 Date Reported:

Signed:

Darren Berrill Geotechnical General Manager

for and on behalf of i2 Analytical Ltd

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Dariusz Piotrowski Pintuli PL Geotechnical Laboratory Manager Date Reported: 31/10/2018

Darren Berrill Geotechnical Ge Manager

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for and on behalf of i2 Analytical Ltd



Kevin Scanlon Terrafirma South The Slate Barn Lower Lowley Dunsford Devon EX6 7BP



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

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

e: kevin@terrafirmasouth.co.uk

Analytical Report Number : 18-13302

Project / Site name:	Woodlands Meed Primary School	Samples received on:	08/10/2018
Your job number:	6225	Samples instructed on:	08/10/2018
Your order number:	6225	Analysis completed by:	17/10/2018
Report Issue Number:	1	Report issued on:	17/10/2018
Samples Analysed:	3 soil samples		

Signed

Jordan Hill Reporting Manager 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: 18-13302

Project / Site name: Woodlands Meed Primary School Your Order No: 6225

Tour Order No: 0225

Lab Sample Number		1062592	1062593	1062594			
Sample Reference				BH02	BH02	BH04	
Sample Number				4	8	8	
Depth (m)				2.00	4.00	7.00	
Date Sampled				14/09/2018	14/09/2018	14/09/2018	
Time Taken				0900	0900	0900	
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	
Moisture Content	%	N/A	NONE	16	16	18	
Total mass of sample received	kg	0.001	NONE	0.33	0.46	1.3	

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	6.0	6.2	7.4	
Water Soluble SO4 16hr extraction (2:1 Leachate							
Equivalent)	g/l	0.00125	MCERTS	0.019	0.35	0.28	
Water Soluble SO4 16hr extraction (2:1 Leachate							
Equivalent)	mg/l	1.25	MCERTS	18.5	347	277	





Analytical Report Number : 18-13302

Project / Site name: Woodlands Meed Primary School

* 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 *
1062592	BH02	4	2.00	Light brown clay.
1062593	BH02	8	4.00	Light brown clay and sand.
1062594	BH04	8	7.00	Light grey clay and sand.





Analytical Report Number : 18-13302

Project / Site name: Woodlands Meed Primary School

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.





Contract Number: 40835

Client Ref: Client PO: 6225

Laboratory Report

Report Date: 17-10-2018

Client Terrafirma South The Slate Barn Lower Lowley Dunsford Exeter **EX6 7BP**

Contract Title: Woodlands Meed Primary School For the attention of: Paul Standish

Date Received: 20-09-2018 Date Commenced: 20-09-2018 Date Completed: 17-10-2018

Test Description

Moisture Content BS 1377:1990 - Part 2 : 3.2 - * UKAS

4 Point Liquid & Plastic Limit

BS 1377:1990 - Part 2 : 4.3 & 5.3 - * UKAS

CD 38mm Consolidated drained triaxial compression test on a set of three x 38 mm diameter specimens with the measurement of volume change and pore water pressure including saturation and consolidation, test duration four days. PLEASE NOTE IT IS LIKELY THIS TEST WILL INCUR EXTRA OVER DAY CHARGES. BS 1377:1990 - Part 8 : 8 - @ Non Accredited Test

Disposal of samples for job

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Notes: Observations and Interpretations are outside the UKAS Accreditation

- * denotes test included in laboratory scope of accreditation
- # denotes test carried out by approved contractor
- @ denotes non accredited tests

This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved Signatories:

Alex Wynn (Associate Director) - Ben Sharp (Contracts Manager) - Emma Sharp (Office Manager) Paul Evans (Quality/Technical Manager) - Richard John (Advanced Testing Manager) - Sean Penn (Administrative/Accounts Assistant) Wayne Honey (Administrative/Quality Assistant)

GEO Site & Testing Services Ltd Unit 3-4, Heol Aur, Dafen Ind Estate, Dafen, Llanelli, Carmarthenshire SA14 8QN Tel: 01554 784040 Fax: 01554 784041 info@gstl.co.uk gstl.co.uk

GSTL	LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX (BS 1377 : Part 2 : 1990 Method 5) DESCRIPTIONS	
Contract Number	40835	
Site Name	Woodlands Meed Primary School	

BH Borehole	Sample Number	Sample Type	Depth (m)		Sample Depth (m) Type		n)	Descriptions
BH2	16	u	8.00	-	8.45	Grey silty CLAY		
				-				
				-				
				-				
				-				
				-				
				-				
				-				
				-				
				-				
				-				
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				-				
				-				
				-				
				-				
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				-				
	_			-				

Operators	Checked	16/10/2018	Richard John	ø
RO/MH	Approved	17/10/2018	Ben Sharp	RES



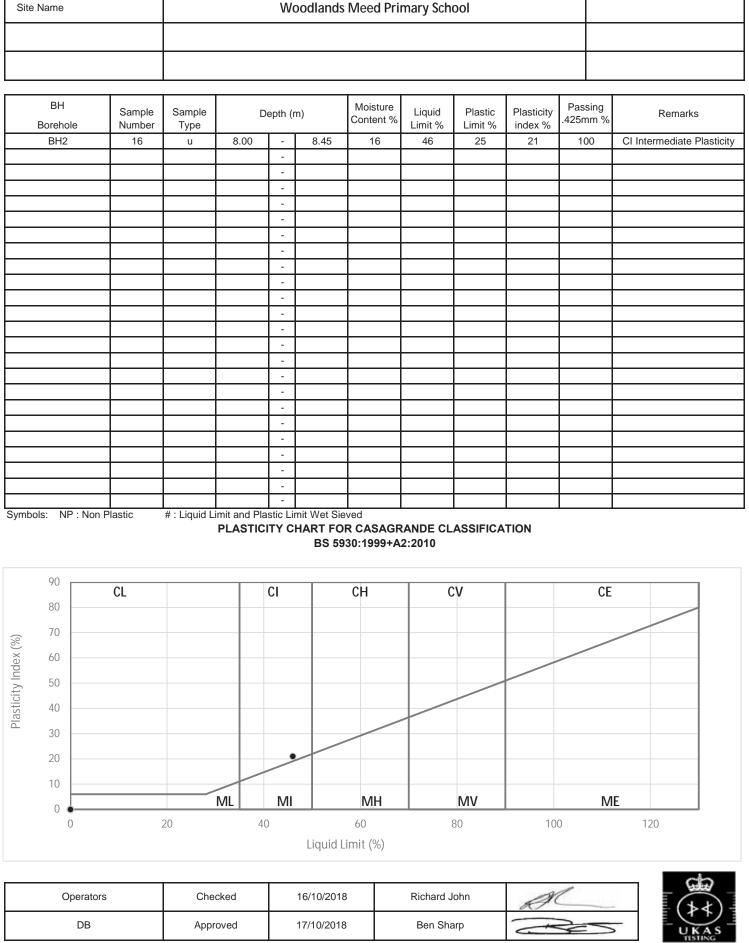


LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX (BS 1377 : Part 2 : 1990 Method 5)

Contract Number

40835

Woodlands Meed Primary School



BS 1377 : Part 8 : 1990 : 38mm Set of Three

Specimen Details

Borehole		BH02	
Sample No.		16	
Depth	m	8.00-8.45	
Date		17/10/2018	
Disturbed / Undisturbed			

Description of Specimen

Brown sl silty CLAY

Initial Specimen Conditions

Thittai Specifien o										
Height	mm	76.00	76.00	76.00						
Diameter	mm	38.00	38.00	38.00						
Area	mm ²	1134.11	1134.11	1134.11						
Volume	cm ³	86.19	86.19	86.19						
Mass	g	175.80	176.00	176.20						
Dry Mass	g	146.30	148.00	150.00						
Density	Mg/m ³	2.04	2.04	2.04						
Dry Density	Mg/m ³	1.70	1.72	1.74						
Moisture Content	%	20	19	17						
Specific Gravity	kN/m ³	2.65	2.65	2.65						
(assume	d/measured)	assumed	assumed	assumed						

Final Specimen Conditions

Moisture Content	%	19	18	17
Density	Mg/m ³	2.12	2.23	2.29
Dry Density	Mg/m ³	1.78	1.89	1.96

DP Grong

Checked and Approved By

17/10/18 Date

> Client Ref 6225

Woodlands Meed Primary School

40835

Contract No



BS 1377 : Part 8 : 1990 : 38mm Set of Three

Specimen Detail	s	
Borehole		BH02
Sample No.		16
Depth	m	8.00-8.45
Date		17/10/2018

Test Setup

Date started	11/10/2018	11/10/2018	11/10/2018
Date Finished	16/10/2018	16/10/2018	16/10/2018
Top Drain Used	у	у	у
Base Drain Used	у	ý	y
Side Drains Used	у	У	у
Pressure System Number	P7	P8	P9
Cell Number	C7	C8	C9

Saturation

Cell Pressure Incr.	kPa	100.00	100.00	100.00
Back Pressure Incr.	kPa	95.00	95.00	95.00
Differential Pressure	kPa	5.00	5.00	5.00
Final Cell Pressure	kPa	400.00	400.00	700.00
Final Pore Pressure	kPa	389.00	394.00	481.00
Final B Value		0.95	0.97	0.95

Consolidation

Effective Pressure	kPa	50.00	100.00	200.00
Cell Pressure	kPa	400.00	400.00	700.00
Back Pressure	kPa	350.00	300.00	500.00
Excess Pore Pressure	kPa	39.00	94.00	181.00
Pore Pressure at End	kPa	350.00	300.00	400.00
Consolidated Volume	cm ³	82.29	78.49	76.39
Consolidated Height	mm	74.85	73.74	73.12
Consolidated Area	mm ²	1099.90	1066.57	1048.15
Vol. Compressibility	m²/MN	0.12928	0.29778	0.28425
Consolidation Coef.	m²/yr.	1.00102	0.47978	0.18386

DP Grong

Checked and Approved By

17/10/18 Date

Client Ref

6225

Woodlands Meed Primary School

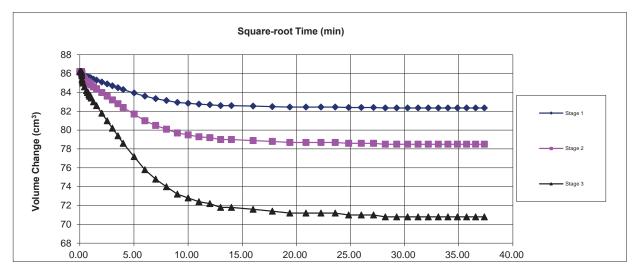
Contract No

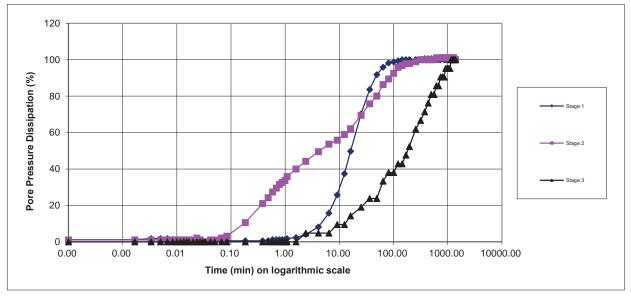


BS 1377 : Part 8 : 1990 : 38mm Set of Three

Specimen DetailsBoreholeBH02Sample No.16Depthm8.00-8.45Date17/10/2018

Consolidation Stage





DP Gronz **Checked and Approved By**

17/10/18 Date

Woodlands Meed Primary School

Client Ref 6225 Contract No



BS 1377 : Part 8 : 1990 : 38mm Set of Three

Specimen Details	S	
Borehole		BH02
Sample No.		16
Depth	m	8.00-8.45
Date		17/10/2018

Shearing

Snearing				
Initial Cell Pressure	kPa	400	400	700
Initial Pore Pressure	kPa	350	300	500
Rate of Strain	mm/min	0.0547	0.0258	0.0098
Max Deviator Stress				
Axial Strain		10.220	10.388	10.367
Axial Stress	kPa	71.757	135.20	254.84
Cor. Deviator stress	kPa	60.262	122.67	242.31
Effective Major Stress	kPa	81.762	167.67	332.31
Effective Minor Stress	kPa	22.500	45.00	90.00
Effective Stress Ratio		3.634	3.726	3.69
s'	kPa	52.131	106.34	211.15
t'	kPa	29.631	61.34	121.15
Max Effective Priciple	e Stress R			
Axial Strain		10.220	10.388	10.367
Axial Stress	kPa	71.757	135.203	254.837
Cor. Deviator stress	kPa	59.262	122.673	242.307
Effective Major Stress	kPa	81.762	167.673	332.307
Effective Minor Stress	kPa	22.500	45.000	90.000
Effective Stress Ratio		3.634	3.726	3.692
s'	kPa	52.131	106.336	211.154
t'	kPa	29.631	61.336	121.154
Shear Resistance Angle	degs			35.0
Cohesion c'	kPa			0

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Checked and Approved By

17/10/18 Date

> **Client Ref** 6225

Woodlands Meed Primary School

40835

Contract No

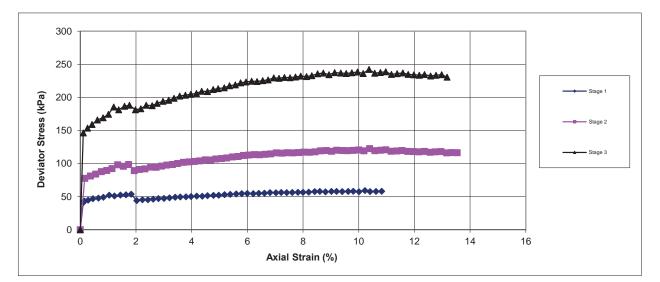


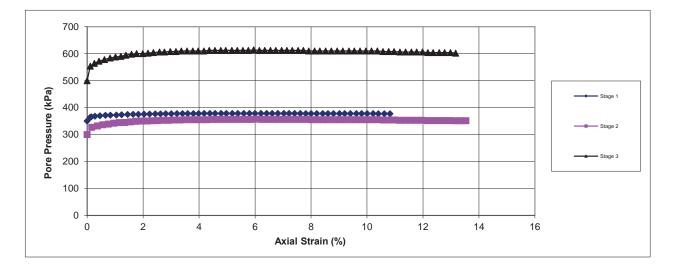
BS 1377 : Part 8 : 1990 : 38mm Set of Three

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		Stage 1
Specimen Details		
Borehole		BH02
Sample No.		16
Depth	m	8.00-8.45
Date		17/10/2018

Shearing Stage





Woodlands Meed Primary School

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17/10/18 Date

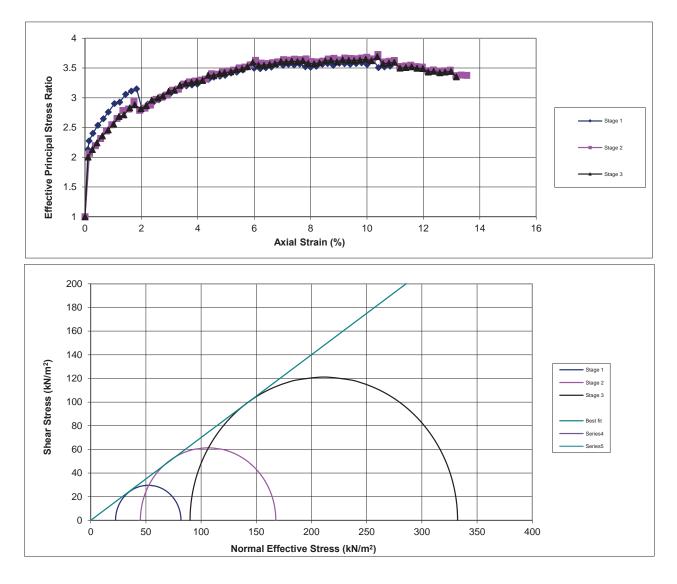
Client Ref 6225 Contract No



BS 1377 : Part 8 : 1990 : 38mm Set of Three

Specimen DetailsBoreholeBH02Sample No.16Depthm8.00-8.45Date17/10/2018

Shearing Stage



DP Gronz **Checked and Approved By**

17/10/18 Date

> Client Ref 6225 Contract No

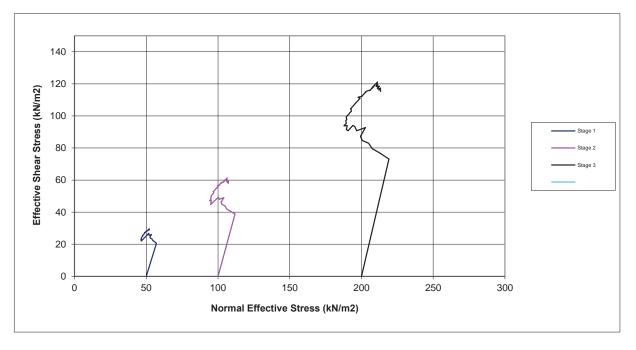




BS 1377 : Part 8 : 1990 : 38mm Set of Three

Specimen Detail	S	
Borehole		BH02
Sample No.		16
Depth	m	8.00-8.45
Date		17/10/2018

Shearing Stage



DP Gronz **Checked and Approved By**

17/10/18

Date

Woodlands Meed Primary School

Client Ref 6225 Contract No 40835



BS 1377 : Part 8 : 1990 : 38mm Set of Three

Sp	eci	men	Details

Borehole	BH02
Sample No.	16
Depth m	8.00-8.45
Date	17/10/2018



DP Gronz

Checked and Approved By

17/10/18 Date

Client Ref 6225 Contract No 40835



Woodlands Meed Primary School

BS 1377 : Part 8 : 1990 : 38mm Set of Three

Specimen Details

Borehole		BH03
Sample No.		8
Depth	m	6.50-6.85
Date		17/10/2018
Disturbed / Undisturbed		

Description of Specimen

Brown sl silty CLAY

Initial Specimen Conditions

mittai opeoimen o	mitial specificit conditions			
Height	mm	76.00	76.00	76.00
Diameter	mm	38.00	38.00	38.00
Area	mm ²	1134.11	1134.11	1134.11
Volume	cm ³	86.19	86.19	86.19
Mass	g	180.20	180.40	180.70
Dry Mass	g	154.40	83.20	152.00
Density	Mg/m ³	2.09	2.09	2.10
Dry Density	Mg/m ³	1.79	0.97	1.76
Moisture Content	%	17	117	19
Specific Gravity	kN/m ³	2.65	2.65	2.65
(assume	d/measured)	assumed	assumed	assumed

Final Specimen Conditions

Moisture Content	%	20	20	19
Density	Mg/m ³	2.25	1.27	2.51
Dry Density	Mg/m ³	1.87	1.05	2.11

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Checked and Approved By

17/10/18 Date

Client Ref 6225

Woodlands Meed Primary School

40835

Contract No



BS 1377 : Part 8 : 1990 : 38mm Set of Three

Specimen Detail	s	
Borehole		BH03
Sample No.		8
Depth	m	6.50-6.85
Date		17/10/2018

Test Setup

Date started	11/10/2018	11/10/2018	11/10/2018
Date Finished	16/10/2018	16/10/2018	16/10/2018
Top Drain Used	у	у	у
Base Drain Used	у	у	у
Side Drains Used	у	у	у
Pressure System Number	P10	P11	P12
Cell Number	C10	C11	C12

Saturation

Cell Pressure Incr.	kPa	100.00	100.00	100.00
Back Pressure Incr.	kPa	95.00	95.00	95.00
Differential Pressure	kPa	5.00	5.00	5.00
Final Cell Pressure	kPa	400.00	300.00	700.00
Final Pore Pressure	kPa	389.00	292.00	481.00
Final B Value		0.95	0.97	0.95

Consolidation

Effective Pressure	kPa	50.00	100.00	200.00
Cell Pressure	kPa	400.00	300.00	700.00
Back Pressure	kPa	350.00	200.00	500.00
Excess Pore Pressure	kPa	39.00	92.00	181.00
Pore Pressure at End	kPa	350.00	200.00	500.00
Consolidated Volume	cm ³	82.59	79.09	71.99
Consolidated Height	mm	74.94	73.91	71.83
Consolidated Area	mm ²	1102.54	1071.83	1009.55
Vol. Compressibility	m ² /MN	0.11933	0.41187	0.32949
Consolidation Coef.	m²/yr.	1.00102	0.32686	0.18386

DP Grong

Checked and Approved By

17/10/18 Date

Client Ref

6225

Woodlands Meed Primary School

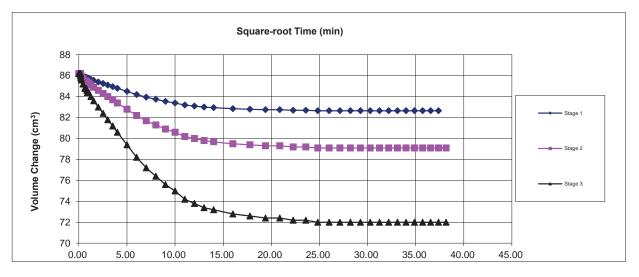
Contract No

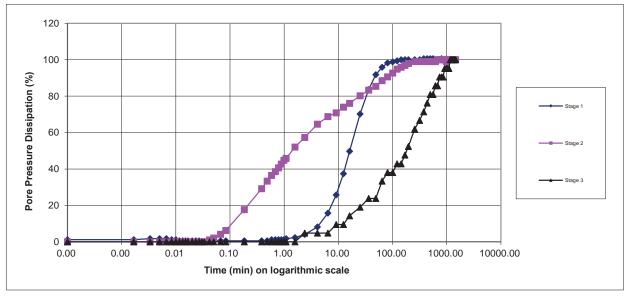


BS 1377 : Part 8 : 1990 : 38mm Set of Three

Specimen DetailsBoreholeBH03Sample No.8Depthm6.50-6.85Date17/10/2018

Consolidation Stage





DP Gronz **Checked and Approved By**

17/10/18 Date

Woodlands Meed Primary School

Client Ref 6225 Contract No



BS 1377 : Part 8 : 1990 : 38mm Set of Three

Specimen Details		
Borehole		BH03
Sample No.		8
Depth	m	6.50-6.85
Date		17/10/2018

Shearing

Initial Pore Pressure Rate of StrainKFRate of StrainmMax Deviator StressAAxial StrainAAxial StressKFCor. Deviator stressKFEffective Major StressKFEffective Minor StressKFEffective Stress Ratios's'KFt'KFMax Effective Priciple StAxial StrainAxial StressAxial StressKF	Pa m/min 0. Pa 6 Pa 6 Pa 94 Pa 94 Pa 22 Sa 22 Sa 3	400 350 .0548 1.828 7.850 8.329 4.829 7.500 3.448 1.164	300 200 0.0176 7.468 140.55 128.61 183.61 55.00 3.338	700 500 0.0096 7.462 271.32 259.26 369.26 110.00 3.36
Rate of StrainmMax Deviator StressAxial StrainAxial StressKFCor. Deviator stressKFEffective Major StressKFEffective Minor StressKFEffective Stress Ratios's'KFt'KFMax Effective Priciple StAxial StrainAxial StressKF	m/min 0. 2a 6 2a 6 2a 94 2a 22 3	.0548 1.828 7.850 8.329 4.829 7.500 8.448	0.0176 7.468 140.55 128.61 183.61 55.00 3.338	0.0096 7.462 271.32 259.26 369.26 110.00
Max Deviator StressAxial StrainAxial StressKFCor. Deviator stressKFEffective Major StressKFEffective Minor StressKFEffective Stress Ratios's'KFt'KFMax Effective Priciple StAxial StrainAxial StressAxial StressKF	Pa 6 Pa 6 Pa 9 Pa 2 3	1.828 7.850 8.329 4.829 7.500 3.448	7.468 140.55 128.61 183.61 55.00 3.338	7.462 271.32 259.26 369.26 110.00
Axial StrainAxial StresskFCor. Deviator stresskFEffective Major StresskFEffective Minor StresskFEffective Stress Ratios's'kFt'kFMax Effective Priciple StAxial StrainkF	Pa 6 Pa 6 Pa 9 Pa 2 3	7.850 8.329 4.829 7.500 3.448	140.55 128.61 183.61 55.00 3.338	271.32 259.26 369.26 110.00
Axial StrainAxial StresskFCor. Deviator stresskFEffective Major StresskFEffective Minor StresskFEffective Stress Ratios's'kFt'kFMax Effective Priciple StAxial StrainkF	Pa 6 Pa 6 Pa 9 Pa 2 3	7.850 8.329 4.829 7.500 3.448	140.55 128.61 183.61 55.00 3.338	271.32 259.26 369.26 110.00
Axial StresskFCor. Deviator stresskFEffective Major StresskFEffective Minor StresskFEffective Stress Ratios's'kFt'kFMax Effective Priciple StAxial StrainkF	Pa 6 Pa 6 Pa 9 Pa 2 3	7.850 8.329 4.829 7.500 3.448	140.55 128.61 183.61 55.00 3.338	271.32 259.26 369.26 110.00
Cor. Deviator stresskFEffective Major StresskFEffective Minor StresskFEffective Stress Ratios's'kFt'kFMax Effective Priciple StAxial StrainAxial StresskF	Pa 66 Pa 94 Pa 22 3	8.329 4.829 7.500 8.448	128.61 183.61 55.00 3.338	259.26 369.26 110.00
Effective Major Stress kF Effective Minor Stress kF Effective Stress Ratio s' kF t' kF Max Effective Priciple St Axial Strain Axial Stress kF	Pa 94 Pa 2 ⁷ 3	4.829 7.500 3.448	183.61 55.00 3.338	369.26 110.00
Effective Minor Stress kF Effective Stress Ratio s' kF t' kF Max Effective Priciple St Axial Strain Axial Stress kF	Pa 2 [°] 3	7.500 3.448	55.00 3.338	110.00
Effective Stress Ratio s' kF t' kF Max Effective Priciple St Axial Strain Axial Stress kF	3	3.448	3.338	
s' kF t' kF Max Effective Priciple St Axial Strain Axial Stress kF				3.36
t' KF Max Effective Priciple St Axial Strain Axial Stress KF	Pa 6	1 164	440.04	
Max Effective Priciple St Axial Strain Axial Stress kF		1.101	119.31	239.63
Axial Strain Axial Stress kF	Pa 3	3.664	64.31	129.63
Axial Stress kF	ress Ratio	-		-
	7	7.206	4.126	7.462
Cor. Deviator stress kF	Pa 7	4.738	137.750	271.319
	Pa 62	2.860	126.503	259.255
Effective Major Stress kF	Pa 9	0.360	180.503	369.255
Effective Minor Stress kF	Pa 2	7.500	54.000	110.000
Effective Stress Ratio	3	3.286	3.343	3.357
s' kF	Pa 5	8.930	117.252	239.628
t' kF	Pa 3	1.430	63.252	129.628
Shear Resistance Angle de	egs			32.5
Cohesion c' kF	Pa			0

DP Gronz

Checked and Approved By

17/10/18 Date

> **Client Ref** 6225

Woodlands Meed Primary School

40835

Contract No

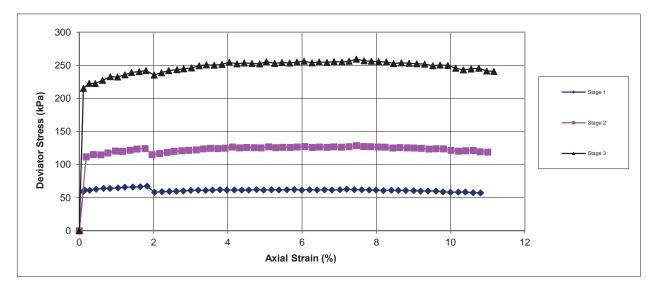


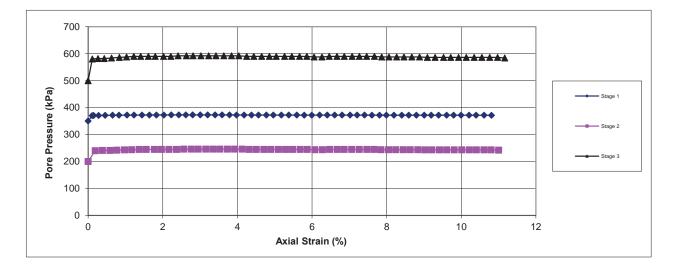
BS 1377 : Part 8 : 1990 : 38mm Set of Three

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Specimen Details		Stage 1
Borehole		BH03
Sample No.		8
Depth	m	6.50-6.85
Date		17/10/2018

Shearing Stage





Woodlands Meed Primary School

DP Grong

Checked and Approved By

17/10/18 Date

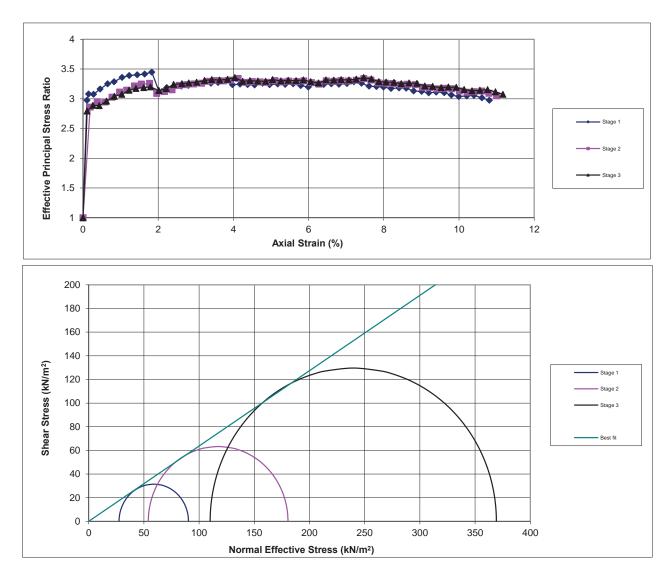
Client Ref 6225 Contract No



BS 1377 : Part 8 : 1990 : 38mm Set of Three

Specimen DetailsBoreholeBH03Sample No.8Depthm6.50-6.85Date17/10/2018

Shearing Stage



DP Granz **Checked and Approved By**

17/10/18 Date

Woodlands Meed Primary School

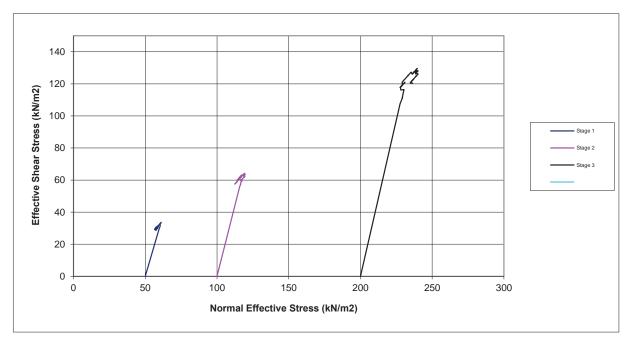
Client Ref 6225 Contract No



BS 1377 : Part 8 : 1990 : 38mm Set of Three

Specimen Detail	S	
Borehole		BH03
Sample No.		8
Depth	m	6.50-6.85
Date		17/10/2018

Shearing Stage



DP Gronz **Checked and Approved By**

17/10/18

Date

Woodlands Meed Primary School

Client Ref 6225 Contract No 40835



BS 1377 : Part 8 : 1990 : 38mm Set of Three

Specimen Deta	ils	
Borehole		BH03
Sample No.		8
Depth	m	6.50-6.85
Date		17/10/2018



DP Giong

Checked and Approved By

17/10/18 Date





Woodlands Meed Primary School

BS 1377 : Part 8 : 1990 : 38mm Set of Three

Specimen Details

Borehole		BH04
Sample No.		11
Depth	m	8.50-8.95
Date		17/10/2018
Disturbed / Undisturbed		Undisturbed

Description of Specimen

Dark brown sl silty CLAY	Dark	brown s	sl siltv	CLAY
--------------------------	------	---------	----------	------

Initial Specimen Conditions

Height	mm	76.00	76.00	76.00
Diameter	mm	38.00	38.00	38.00
Area	mm ²	1134.11	1134.11	1134.11
Volume	cm ³	86.19	86.19	86.19
Mass	g	174.50	174.90	175.00
Dry Mass	g	148.10	148.00	149.00
Density	Mg/m ³	2.02	2.03	2.03
Dry Density	Mg/m ³	1.72	1.72	1.73
Moisture Content	%	18	18	17
Specific Gravity	kN/m ³	2.65	2.65	2.65
(assume	d/measured)	assumed	assumed	assumed

Final Specimen Conditions

Moisture Content	%	21	20	19
Density	Mg/m ³	2.13	2.20	2.32
Dry Density	Mg/m ³	1.77	1.84	1.95

DP Grong

Checked and Approved By

17/10/18 Date

> Client Ref 6225

Woodlands Meed Primary School

40835

Contract No



BS 1377 : Part 8 : 1990 : 38mm Set of Three

Specimen Details	5	
Borehole		BH04
Sample No.		11
Depth	m	8.50-8.95
Date		17/10/2018

Test Setup

Date started	11/10/2018	11/10/2018	11/10/2018
Date Finished	16/10/2018	16/10/2018	16/10/2018
Top Drain Used	у	у	у
Base Drain Used	У	У	y
Side Drains Used	y	у	y
Pressure System Number	P17	P11	P5
Cell Number	C17	C11	C5

Saturation

Cell Pressure Incr.	kPa	100.00	100.00	100.00
Back Pressure Incr.	kPa	95.00	95.00	95.00
Differential Pressure	kPa	5.00	5.00	5.00
Final Cell Pressure	kPa	400.00	400.00	700.00
Final Pore Pressure	kPa	389.00	390.00	481.00
Final B Value		0.95	0.95	0.95

Consolidation

Effective Pressure	kPa	50.00	100.00	200.00
Cell Pressure	kPa	400.00	400.00	700.00
Back Pressure	kPa	350.00	300.00	500.00
Excess Pore Pressure	kPa	39.00	90.00	181.00
Pore Pressure at End	kPa	250.00	300.00	400.00
Consolidated Volume	cm ³	83.69	80.49	76.39
Consolidated Height	mm	75.27	74.32	73.12
Consolidated Area	mm ²	1112.19	1084.11	1048.15
Vol. Compressibility	m²/MN	0.11602	0.22044	0.28425
Consolidation Coef.	m²/yr.	1.00102	0.41369	0.18386

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17/10/18 Date

Client Ref

6225

Woodlands Meed Primary School

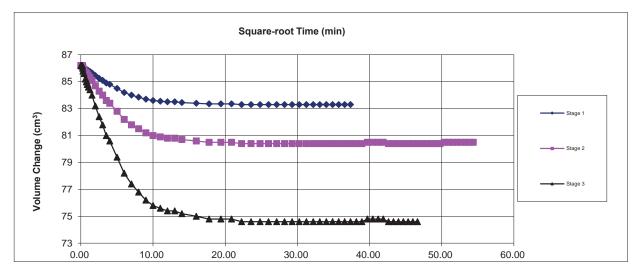
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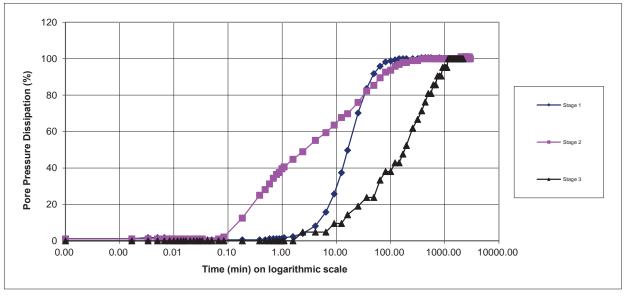


BS 1377 : Part 8 : 1990 : 38mm Set of Three

Specimen DetailsBoreholeBH04Sample No.11Depthm8.50-8.95Date17/10/2018

Consolidation Stage





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Client Ref 6225 Contract No



BS 1377 : Part 8 : 1990 : 38mm Set of Three

Specimen Details	6	
Borehole		BH04
Sample No.		11
Depth	m	8.50-8.95
Date		17/10/2018

Shearing

Snearing				
Initial Cell Pressure	kPa	400	400	700
Initial Pore Pressure	kPa	350	300	500
Rate of Strain	mm/min	0.0550	0.0224	0.0098
Max Deviator Stress				
Axial Strain		10.563	13.212	10.777
Axial Stress	kPa	80.094	154.10	282.61
Cor. Deviator stress	kPa	68.529	141.00	270.02
Effective Major Stress	kPa	91.529	192.00	366.02
Effective Minor Stress	kPa	24.000	51.00	96.00
Effective Stress Ratio		3.814	3.765	3.81
S'	kPa	57.764	121.50	231.01
t'	kPa	33.764	70.50	135.01
Max Effective Priciple	e Stress R	atio		-
Axial Strain		10.563	10.696	10.367
Axial Stress	kPa	80.094	150.416	277.071
Cor. Deviator stress	kPa	67.529	137.824	264.541
Effective Major Stress	kPa	91.529	185.824	358.541
Effective Minor Stress	kPa	24.000	48.000	94.000
Effective Stress Ratio		3.814	3.871	3.814
s'	kPa	57.764	116.912	226.271
t'	kPa	33.764	68.912	132.271
Shear Resistance Angle	degs			36.0
Cohesion c'	kPa			0

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17/10/18 Date

> Client Ref 6225

Woodlands Meed Primary School

40835

Contract No

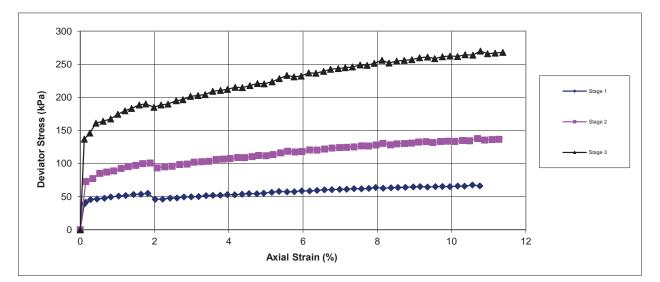


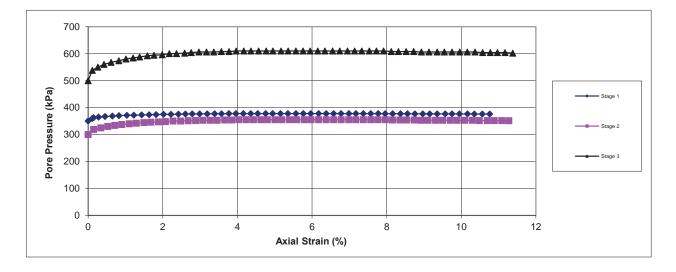
BS 1377 : Part 8 : 1990 : 38mm Set of Three

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		Stage 1
Specimen Details		
Borehole		BH04
Sample No.		11
Depth	m	8.50-8.95
Date		17/10/2018

Shearing Stage





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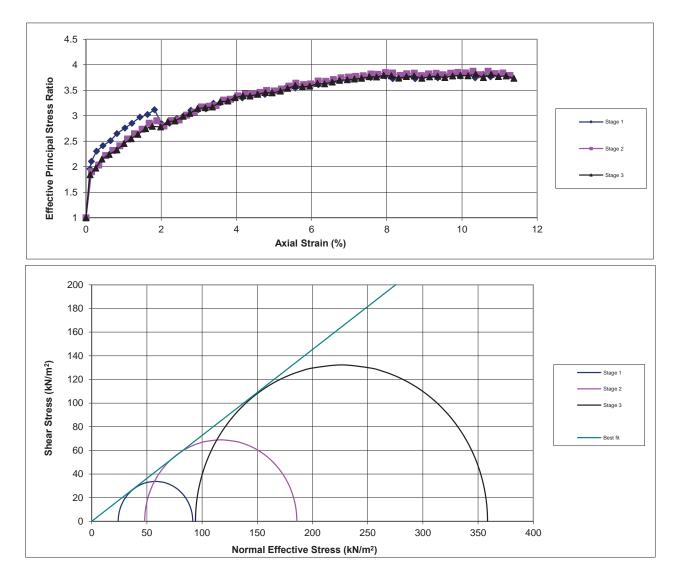
> Client Ref 6225 Contract No



BS 1377 : Part 8 : 1990 : 38mm Set of Three

Specimen DetailsBoreholeBH04Sample No.11Depthm8.50-8.95Date17/10/2018

Shearing Stage



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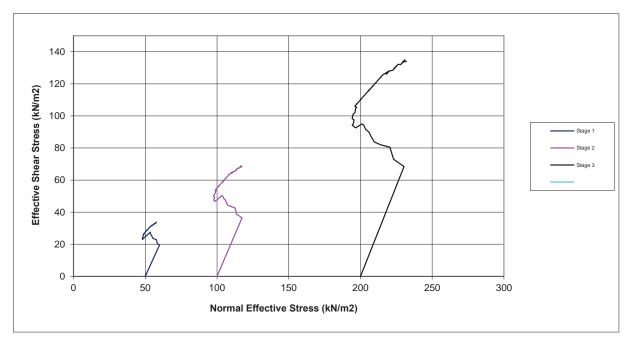
Client Ref 6225 Contract No



BS 1377 : Part 8 : 1990 : 38mm Set of Three

Specimen Details						
Borehole		BH04				
Sample No.		11				
Depth	m	8.50-8.95				
Date		17/10/2018				

Shearing Stage



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17/10/18

Date

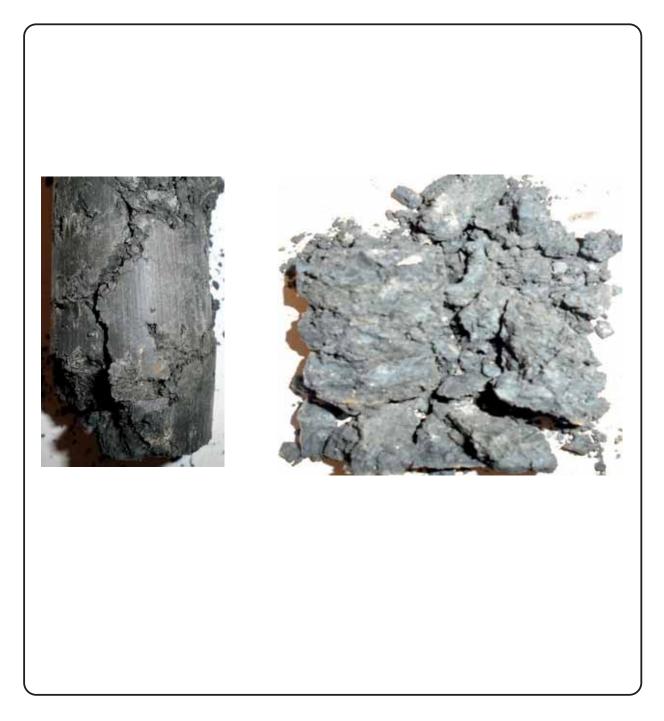
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Client Ref 6225 Contract No 40835



BS 1377 : Part 8 : 1990 : 38mm Set of Three

Specimen Details					
Borehole		BH04			
Sample No.		11			
Depth Date	m	8.50-8.95			
Date		17/10/2018			



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17/10/18 Date





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