GROUND INVESTIGATION REPORT

Proposed School Development
Woodlands Meed Primary School, Burgess Hill

Prepared for: Hampshire County Council

Date: October 2018

Report No: 6225

terrafirma(south)

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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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EXECUTIVE SUMMARY

Proposals		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.
Geology		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.
Field Investigation		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 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.
Engineering Recommendations	*Foundation and Floor Slab Solution*	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: <u>Option 1</u> - Traditional trench / strip foundations within the lower firm to stiff Residual Soils at depths of between 2m and 3m bgl with a bearing pressure of 100kN/m^2. Although this 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 this solution will need to be firmed up following confirmation of design proposals. <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 un-weathered 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 pre-cast 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.
	Earthworks	A Class 2B classification should be adopted for general cohesive fill materials for any 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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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:

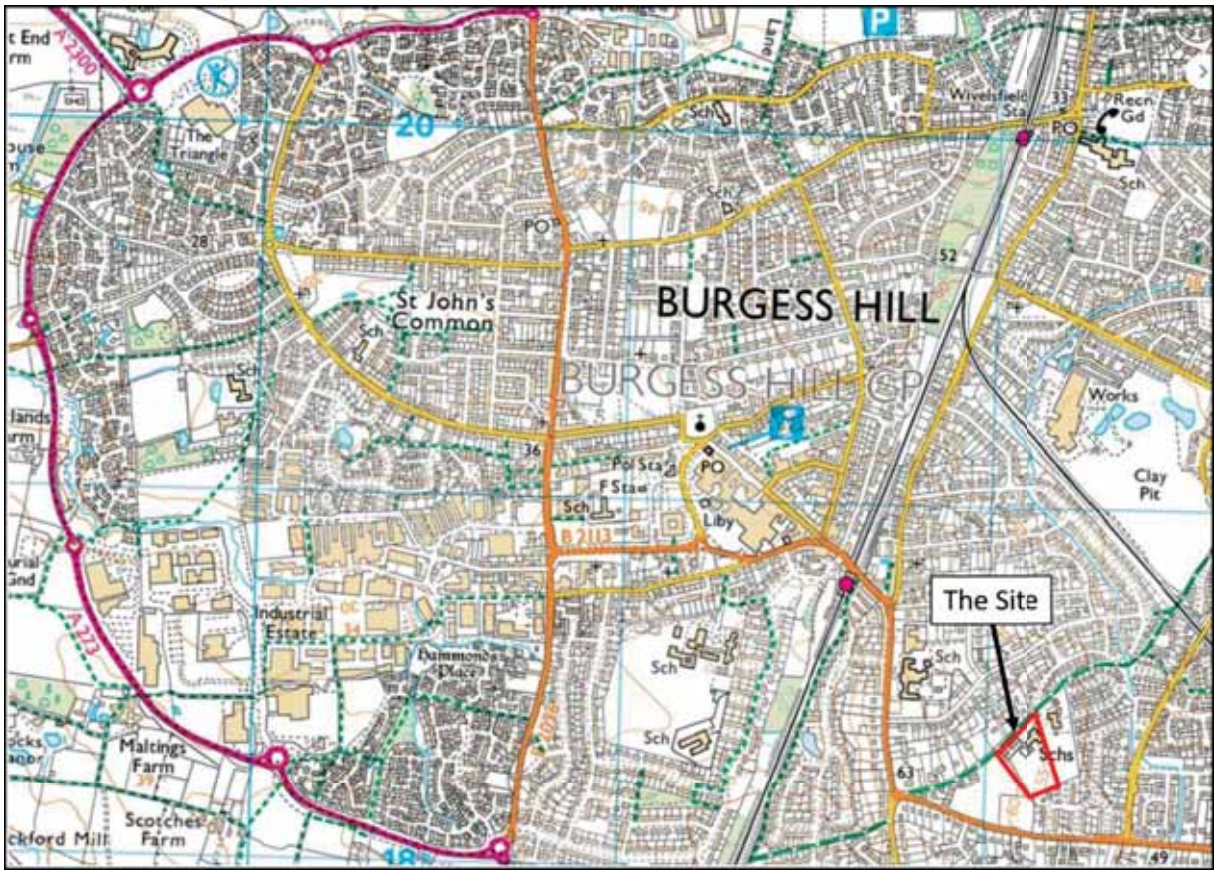
- The sensitive nature of the site (active school)

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:

1874 – 1977

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

1977 – To Present

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 23rd and 24th of August 2018 and again between the 30th of August and 1st of September 2018.

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

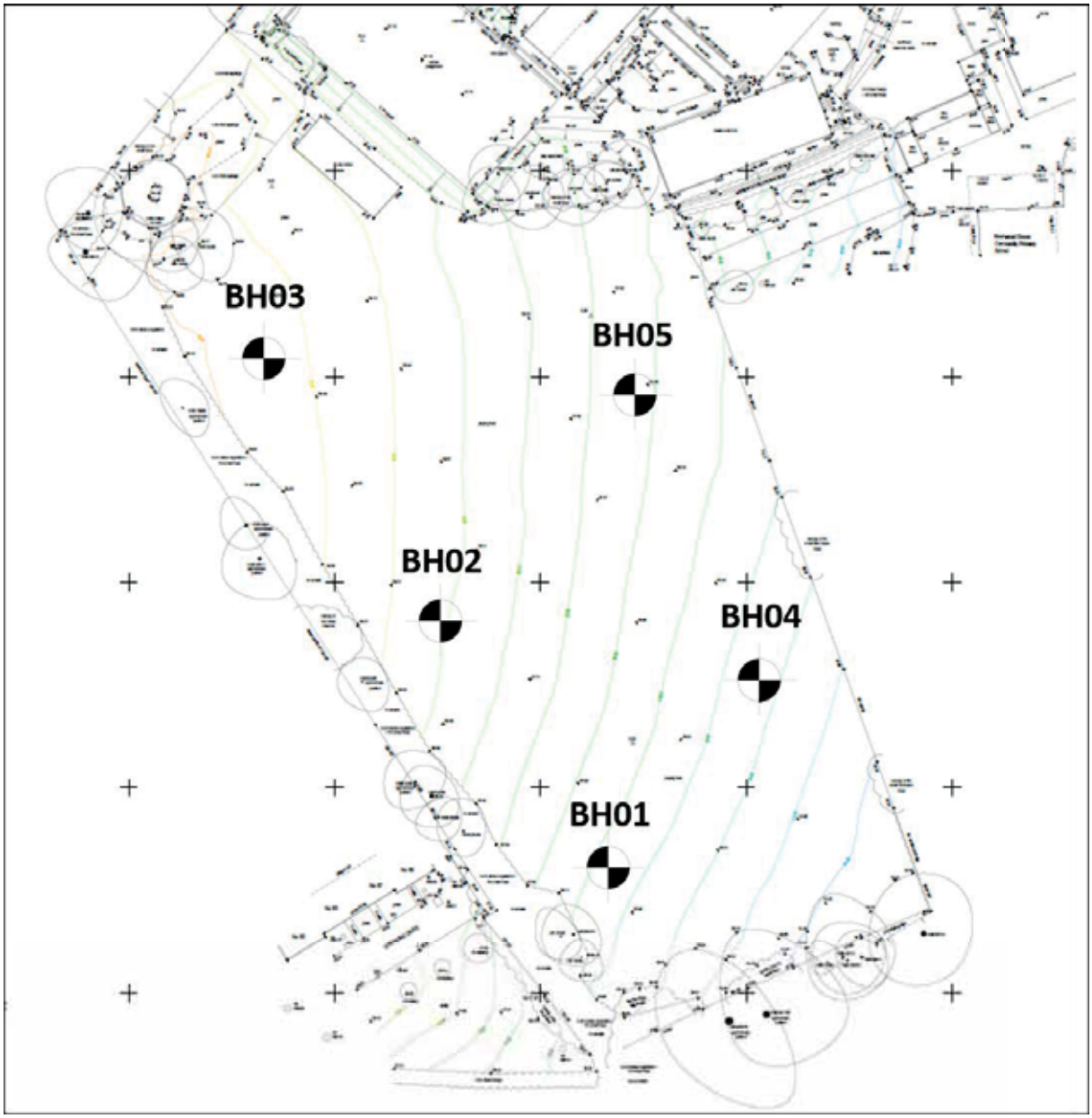
Prior to the site works, the following Health and Safety measures were undertaken:

- 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 No.	Top of Response Zone (m)	Bottom of Response Zone (m)	Pipe Detail
BH03	1.00	14.00	Lockable Flush cover set in concrete surround Plain (50mm) to top of Response Zone with gas valve Slotted (50mm) Response Zone with geotextile sock and gravel surround Top sealed with bentonite
BH04	1.00	14.00	

3.3 In-situ Testing

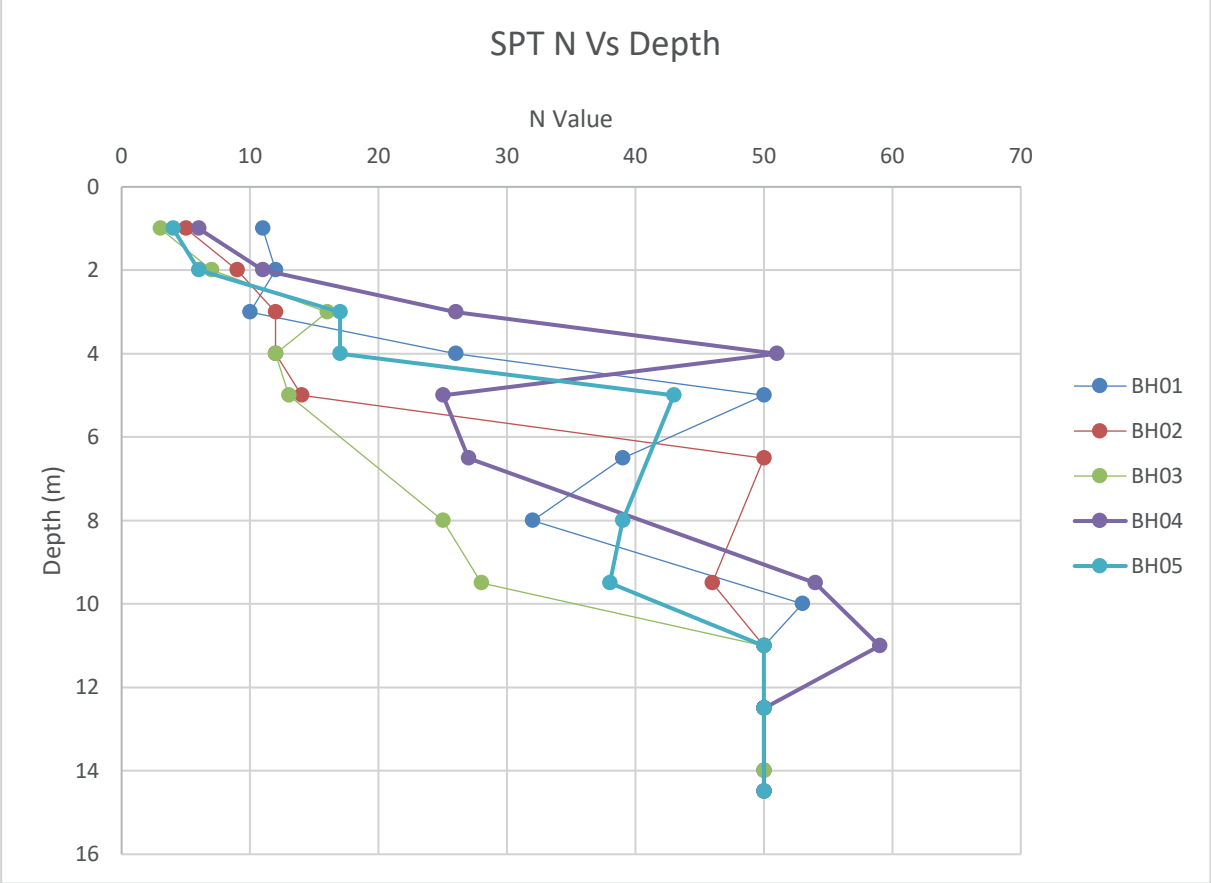
3.3.1 Strength Testing

SPTs

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).



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	Depth (m)	Type	Soil Type	Infiltration Rate (m/s)
BH04	5.00	Rising Head	Clay	6.89×10^{-11}
BH05	5.00		Clay	1.02×10^{-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

Sample 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	B	Grey sandy CLAY
BH01	10.00	B	Grey slightly sandy CLAY
BH01	11.00	B	Grey CLAY
BH01	12.00	B	Grey CLAY
BH01	14.00	B	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	B	Grey CLAY

BH02	8.00	B	Brown slightly silty CLAY
BH02	10.00	B	Grey slightly sandy CLAY
BH02	12.00	B	Grey CLAY
BH03	1.00	RS	Brown CLAY
BH03	1.00	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 CLAY
BH03	5.00	RS	Mottled brown silty CLAY
BH03	6.50	RS	Brown slightly silty CLAY
BH03	7.00	RS	Brown sandy CLAY
BH03	9.00	B	Grey CLAY
BH03	9.50	B	Dark grey CLAY
BH03	11.00	B	Grey CLAY
BH03	13.00	B	Grey CLAY
BH04	1.00	RS	Brown slightly sandy CLAY
BH04	1.00	RS	Brown CLAY
BH04	2.00	RS	Brown to grey slightly sandy CLAY
BH04	3.00	RS	Brown CLAY
BH04	4.00	RS	Brown slightly sandy CLAY
BH04	4.00	RS	Brown CLAY
BH04	6.00	B	Dark grey slightly sandy CLAY
BH04	7.00	B	Light grey CLAY and SAND
BH04	8.00	B	Dark grey CLAY
BH04	8.50	B	Dark brown slightly silty CLAY
BH04	9.50	B	Grey silty CLAY
BH04	10.00	B	Dark grey CLAY
BH04	12.00	B	Grey slightly sandy CLAY
BH05	1.00	RS	Brown CLAY
BH05	1.00	RS	Brown CLAY
BH05	2.00	RS	Brown CLAY
BH05	3.00	RS	Brown CLAY
BH05	4.00	RS	Brown CLAY
BH05	4.00	RS	Grey CLAY
BH05	5.00	RS	Brown sandy CLAY
BH05	6.00	B	Grey slightly sandy CLAY
BH05	7.00	B	Grey slightly sandy CLAY
BH05	9.00	B	Grey CLAY
BH05	11.00	B	Grey CLAY
BH05	12.00	B	Grey sandy CLAY

Notes

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

SECTION 4 Ground Conditions

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 (mbgl)		Thickness (m)		Stratum	
From	To	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	Unproven		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

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*
BH04	4.00	4.00	No rise	*RS*
	14.80	5.64	Fast Rise	*B*
BH05	4.30	4.30	No rise	*RS*
	9.50	8.70	Slow rise	*B*

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	pH (acidity), Cyanide (CN^-), Thiocyanate (SCN^-), Ammoniacal Nitrogen (NH_4-N), Sulphide (S^{2-}), Sulphur (S), Sulphate (SO^4), Organic Matter (OM)
Organics		Phenol Poly-Aromatic Hydrocarbons (PAH) Petroleum Hydrocarbons (PH): EPH
Miscellaneous		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).

The future use of the site i.e. whether it is to be used for residential or commercial has an impact on any risk assessment. In the case of this development the site is to be used for an educational development. Therefore, Public Open Space (Residential) guidelines will be the most suitable for the risk assessment.

5.2.1 Soils

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

Table 5.2: Soil Chemical Test Results – Inorganics (Metals)

Substance	Land Use / Guideline Values	Measured Levels of Substances (mg/kg)		Number of exceedances
	POS-R	Min	Max	
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 Chemical Test Results – Inorganics (General)

Substance	Land Use / Guideline Values	Measured Levels of Substances (mg/kg)		Number of exceedances
	$R_{wo}HP$*	Min	Max	
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	-

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	SOM	Land Use / Guideline Values POS-R	Measured Levels of Substances (mg/kg) Min	Max	Number of exceedances
Total Phenol	1.0	440	<0.30	<0.30	0
	2.5	690			0
	6.0	1300			0
Total PAH*		-	<2.0	<2.0	-
Total EPH (C10-C40) **	1.0	3800+	<10	<10	0
	2.5	3800+			
	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 C_{16}-C_{21} 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	SOM	Land Use / Guideline Values POS-R	Measured Levels of Substances (mg/kg) Min	Max	Number of exceedances
Naphthalene	1.0	4900	<0.10	<0.10	0
	2.5	4900			0
	6.0	4900			0
Acenaphthylene	1.0	15000	<0.10	<0.10	0
	2.5	15000			0
	6.0	15000			0
Acenaphthene	1.0	15000	<0.10	<0.10	0
	2.5	15000			0
	6.0	15000			0

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

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
Moisture Content		%	14	33	23.1
Plasticity	Liquid Limit	%	39	87	61.8
	Plastic Limit	%	20	32	25.5
	Plasticity Index	%	17	56	36.3
	% <425µm	%	87	100	99.7
Bulk Density		Mg/m^3	1.82	1.82	-
BRE	Total Sulphate	%	-	-	-
	2:1 Sulphate	g/l	0.019	0.35	0.216
	pH	-	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																
Consolidated Undrained (CD)		Location	BH01			BH02			BH03			BH04			BH05		
		Depth	2.00m			4.00m			5.00m			1.00m			1.00m		
		Unit	RS			RS			RS			RS			RS		
Cell Pressure			100	200	400	200	400	800	200	400	800	100	200	400	100	200	400
Angle of Resistance	Peak	Φ	14.0			17.0			13.0			14.0			12.0		
	Residual		-			-			-			-			-		
Effective Cohesion	Peak	kPa	18.0			33.0			51.0			68.0			33.0		
	Residual		-			-			-			-			-		

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														
Consolidated Undrained (CD)		Location	BH02			BH03			BH04		
		Depth	8.00m			6.50m			8.50m		
		Unit	B			RS			B		
Cell Pressure			50	100	200	50	100	200	50	100	200
Angle of Resistance	Peak	Φ	35.0			32.5			36.0		
	Residual		-			-			-		
Effective Cohesion	Peak	kPa	0			0			0		
	Residual		-			-			-		

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/m^2 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/m²**	**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 build-up 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).

The appropriate calculation sheets are presented in **Annex C.**

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:	GS-5497953
Your Reference:	6225_
Report Date	3 Oct 2018
Report Delivery Method:	Email - pdf

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

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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 N NE

W E

SW S SE

Aerial Photograph Capture date: 30-Jun-2015
Grid Reference: 532127,118291
Site Size: 1.46ha

Report Reference: GS-5497953
Client Reference: 6225_

Contents Page

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.

Section 1: Historical Industrial Sites	On-site	0-50	51-250	251-500
1.1 Potentially Contaminative Uses identified from 1:10,000 scale mapping	0	2	2	26
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

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
3.2 Landfill and Other Waste Sites Findings						
3.2.1 Operational and Non-Operational Waste Treatment, Transfer and Disposal Sites	0	0	0	0	Not searched	Not searched
3.2.2 Environment Agency/Natural Resources Wales Licensed Waste Sites	0	0	0	0	0	0

Section 4: Current Land Use

	On-site	0-50m	51-250	251-500
4.1 Current Industrial Sites Data	0	0	7	Not searched
4.2 Records of Petrol and Fuel Sites	0	0	0	0
4.3 National Grid Underground Electricity Cables	0	0	0	0
4.4 National Grid Gas Transmission Pipelines	0	0	0	0

Section 5: Geology

5.1 Records of Artificial Ground and Made Ground present beneath the study site	None identified
5.2 Records of Superficial Ground and Drift Geology present beneath the study site	None identified
5.3 For records of Bedrock and Solid Geology beneath the study site see the detailed findings section.	

Section 6: Hydrogeology and Hydrology

	0-500m
6.1 Records of Strata Classification in the Superficial Geology within 500m of the study site	Identified
6.2 Records of Strata Classification in the Bedrock Geology within 500m of the study site	Identified

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
6.3 Groundwater Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	0
6.4 Surface Water Abstraction Licences (within 2000m of the study site)	0	0	0	4	0	0
6.5 Potable Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	0
6.6 Source Protection Zones (within 500m of the study site)	0	0	0	0	Not searched	Not searched
6.7 Source Protection Zones within Confined Aquifer	0	0	0	0	Not searched	Not searched
6.8 Groundwater Vulnerability and Soil Leaching Potential (within 500m of the study site)	0	0	#250GWV#	#500GWV#	Not searched	Not searched

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	Low
9.1.1 Maximum Shrink-Swell hazard rating identified on the study site	Low
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	Negligible
9.1.5 Maximum Collapsible Rocks hazard rating identified on the study site	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 properties are above the Action Level.
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 identified
10.2 Non-Coal Mining areas within 50m of the study site boundary	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.

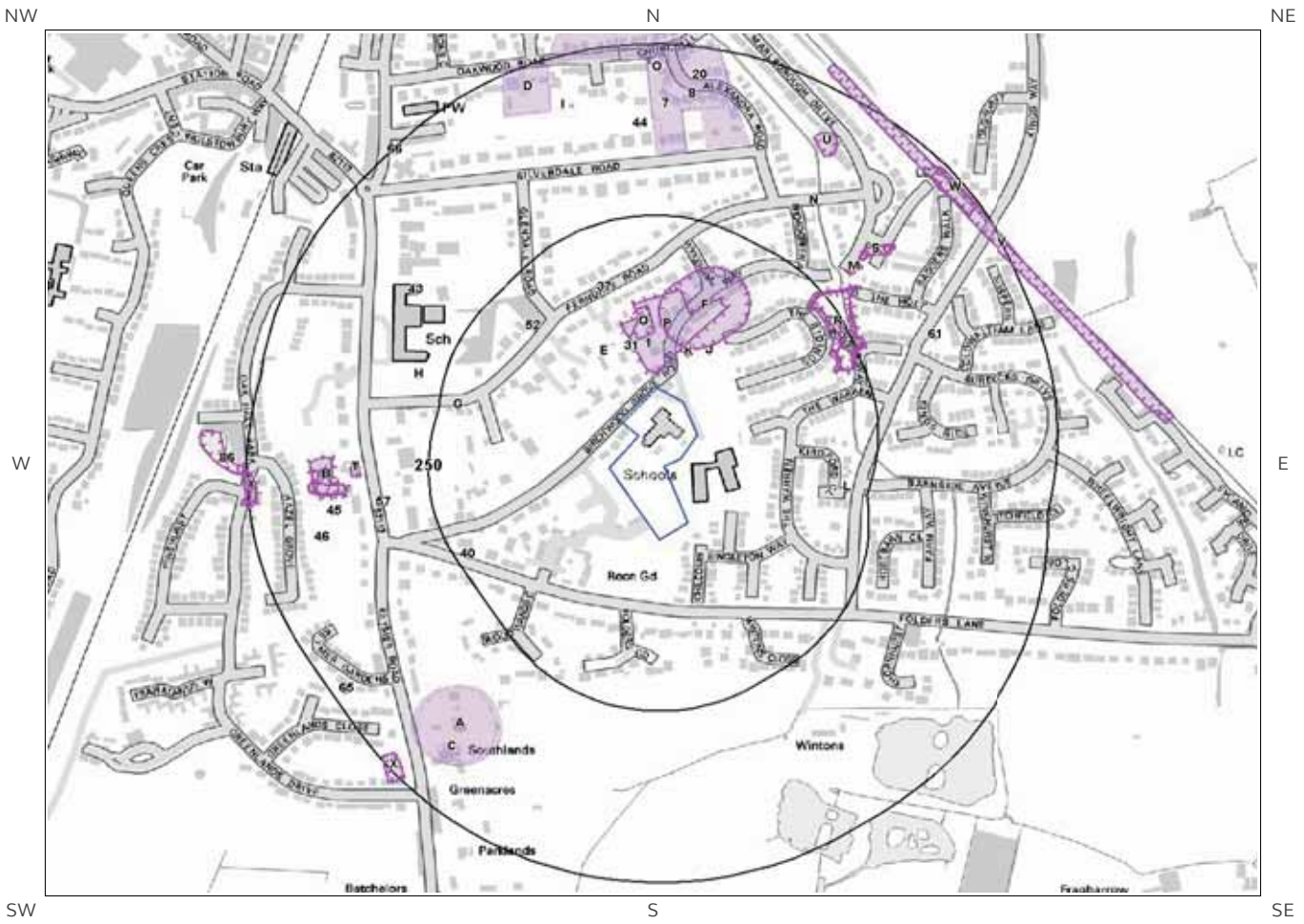
Note: Maps

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



Historical 1:10,000 and 1:10,560 scale mapping

Site Outline

Industrial Land Use

Potentially Infilled Land

250
500
Search Buffers (m)

Historical 1:2,500, 1:1,250 and 1:500 scale mapping

Energy Features

Petrol Stations

Historical military sites

Tanks

Garages

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	N	Nursery	1962
2P	20	N	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	N	Nursery	1909
8	341	N	Nurseries	1938
9O	342	N	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	N	Nursery	1909
21U	407	NE	Unspecified Pit	1962
22C	408	SW	Chimneys	1974
23C	411	SW	Chimneys	1984
24C	414	SW	Chimneys	1962
25I	423	N	Unspecified Tank	1909
26D	426	N	Nursery	1909
27D	428	N	Nursery	1938
28V	470	NE	Cuttings	1874
29W	473	NE	Cuttings	1897
30X	480	SW	Unspecified Pit	1874

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: 18

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	N	Unspecified Tank	1910
45	384	W	Unspecified Tank	1910
46	407	W	Unspecified Tank	1937
47I	423	N	Unspecified Tank	1910
48I	423	N	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	N	Electricity Substation	1977
63O	472	N	Electricity Substation	1983
64O	472	N	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.

Records of historical military sites within 500m of the search boundary: 0

Database searched and no data found.

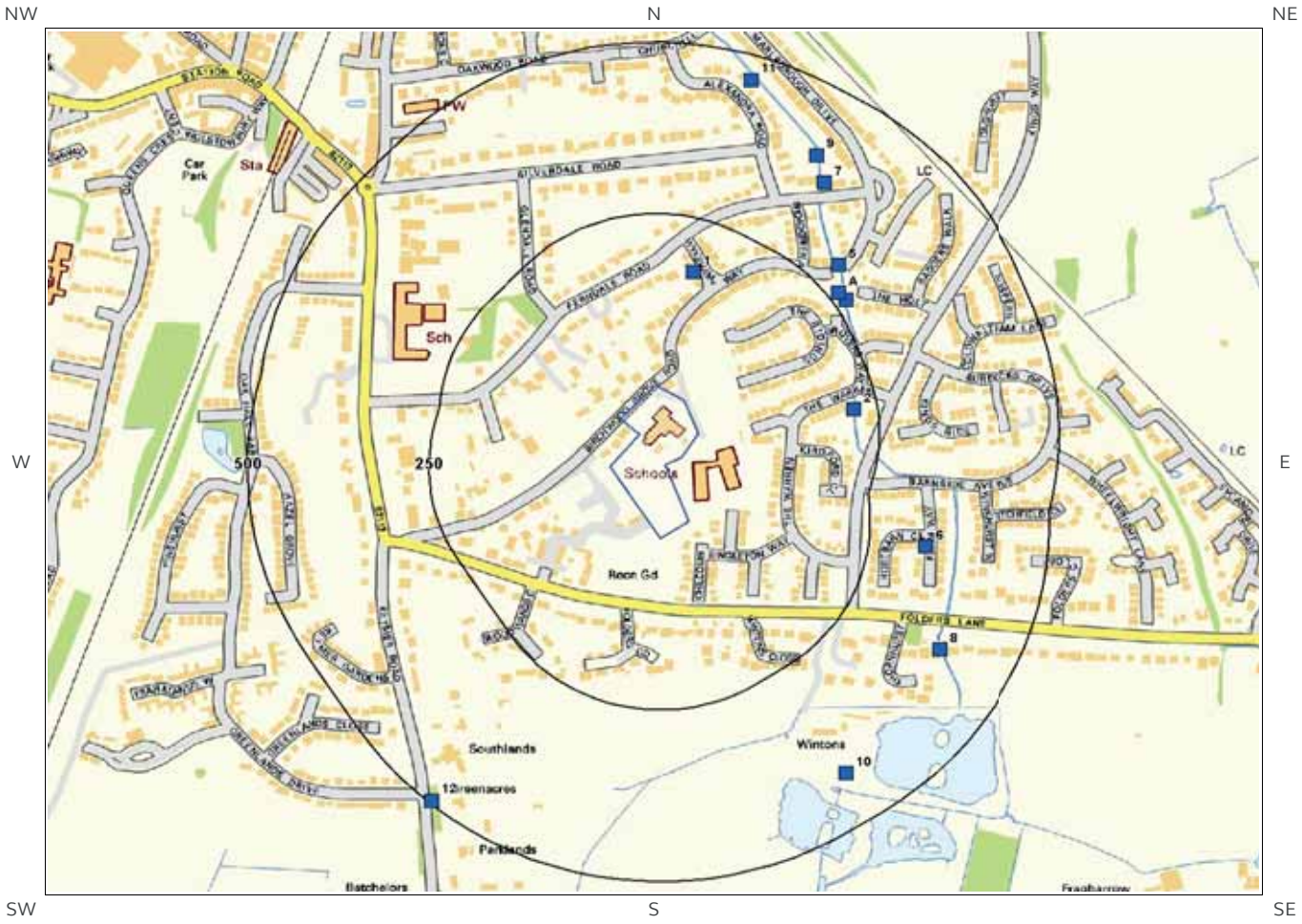
1.7 Potentially Infilled Land

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

The following Historical Potentially Infilled Features derived from the Historical Mapping information is provided by Groundsure:

ID	Distance(m)	Direction	Use	Date
67P	20	N	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
81V	470	NE	Cuttings	1874
82W	473	NE	Cuttings	1897
83X	480	SW	Unspecified Pit	1874
84Y	488	W	Ponds	1938
85Y	488	W	Ponds	1909
86	488	W	Ponds	1962

2. Environmental Permits, Incidents and Registers Map



Site Outline

250 / 500 Search Buffers (m)

Recorded Pollution Incident

Dangerous Substances (List 1)

Dangerous Substances (List 2)

Water Industry Referrals

Licenced Discharge Consents

Red List Discharge Consents

RAS 3 & 4 Authorisations

Part A(1) Authorised Processes and Historic IPC Authorisations

Part A(2) and Part B Authorised Processes

COMAH / NIHHS Sites

Sites Determined as Contaminated Land

Hazardous Substance Consents and Enforcements

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:

0

Database searched and no data found.

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

0

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

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:

0

Database searched and no data found.

2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations:

0

Database searched and no data found.

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

12

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	N	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
3A	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	N	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:

0

Database searched and no data found.

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

0

Database searched and no data found.

2.2 Dangerous or Hazardous Sites

Records of COMAH & NIHHS sites within 500m of the study site: 0

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

Database searched and no data found.

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

0

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.

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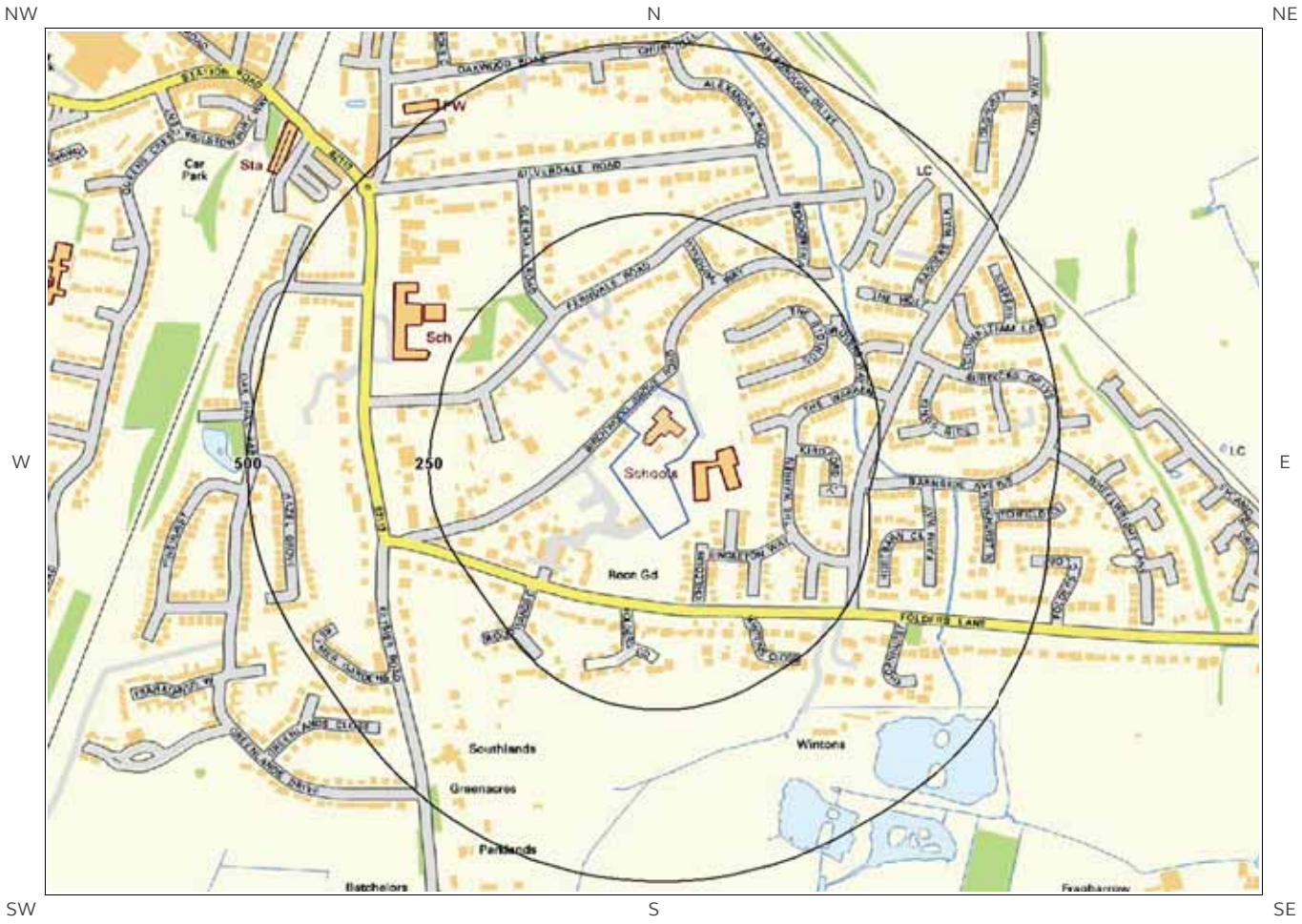
3. Landfill and Other Waste Sites Map



Site Outline

250
500
Search Buffers (m)

EA/NRW Active Landfill

EA/NRW Historic Landfill

BGS / DoE Survey Landfill

Historic and Planned Waste Sites

EA/NRW Licensed Waste Site

Local Authority/Historical Mapping Landfill Records

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:

0

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

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.

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

0

Database searched and no data found.

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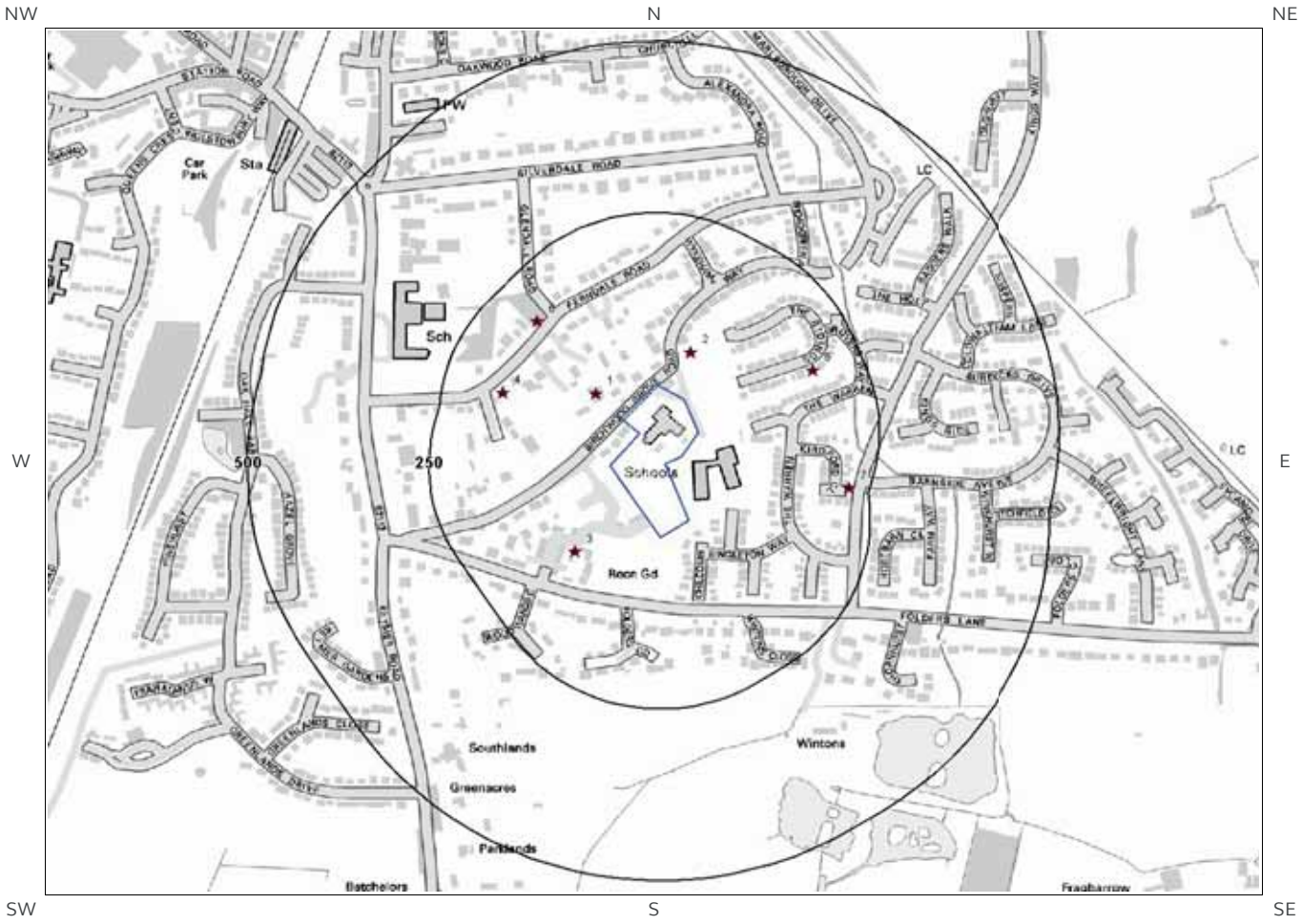
4. Current Land Use Map



Site Outline

Search Buffers (m)
250
500

Current Industrial Sites

Petrol & Fuel Stes

Electricity Transmission Cables

Gas Transmission Pipelines

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.

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
1	51	NW	Lumafix Ltd	532044 118422	52, Ferndale Road, Burgess Hill, RH15 0HG	Lampshades and Lighting	Consumer Products
2	65	NE	Electricity Sub Station	532176 118483	RH15	Electrical Features	Infrastructure and Facilities
3	110	SW	Electricity Sub Station	532017 118192	RH15	Electrical Features	Infrastructure and Facilities
4	168	W	A N C Consultants	531916 118424	34, Ferndale Road, Burgess Hill, RH15 0HG	Civil Engineers	Engineering Services
5	181	E	Southern Medical Services	532344 118456	7, The Ridings, Burgess Hill, RH15 0LW	Ambulance and Medical Transportation Services	Health Support Services
6	182	NW	Electricity Sub Station	531964 118528	RH15	Electrical Features	Infrastructure and Facilities
7	222	E	Electricity Sub Station	532394 118285	RH15	Electrical Features	Infrastructure and Facilities

4.2 Petrol and Fuel Sites

Records of petrol or fuel sites within 500m of the study site: 0

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: 0

Database searched and no data found.

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

Site Outline

250 — 500 — Search Buffers (m)

Principal Aquifer

Secondary (A) Aquifer - Permeable Layers

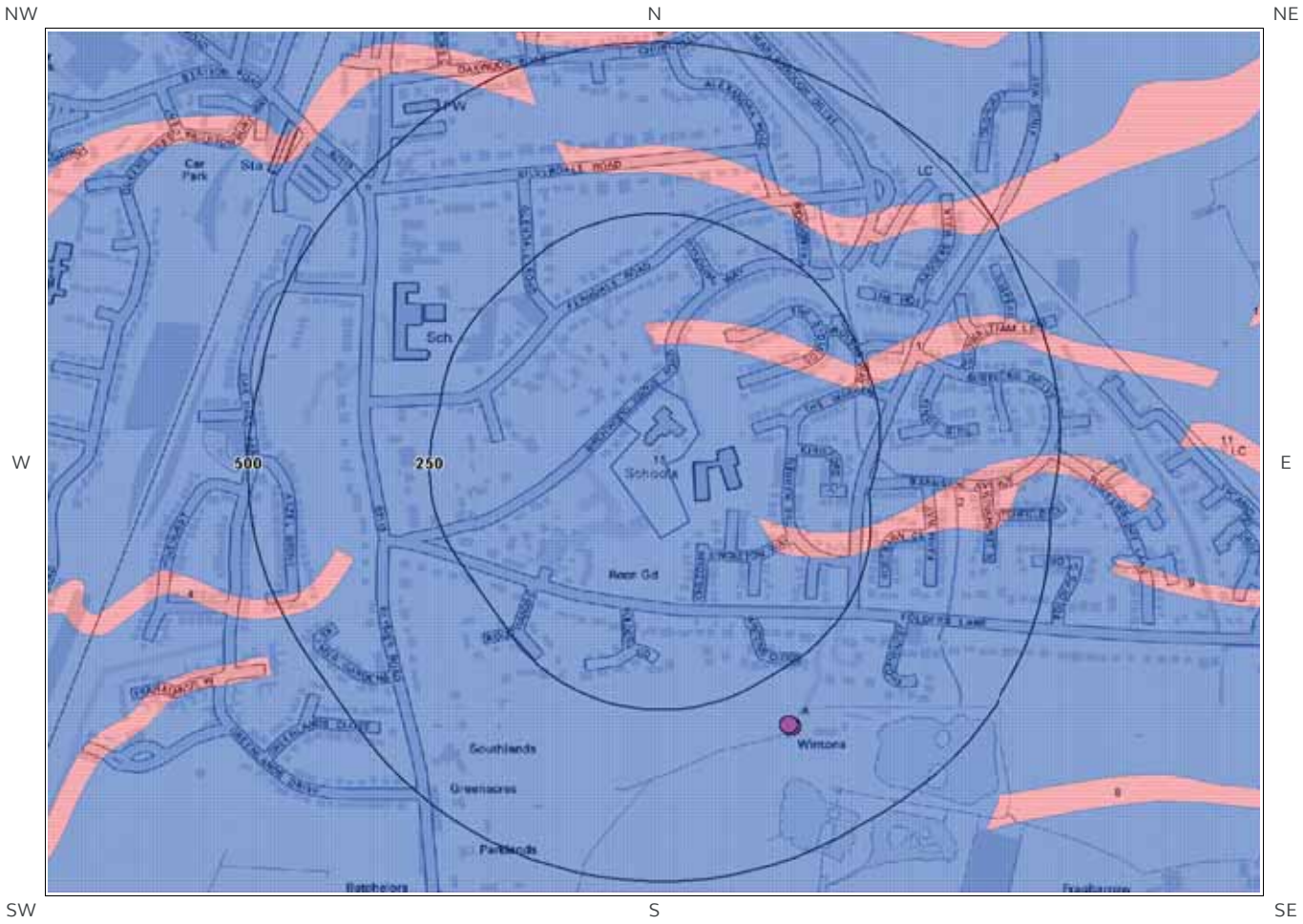
Secondary (B) Aquifer - Lower Permeability Layers

Secondary Aquifer - Undifferentiated Layers

Unproductive

Unknown (lakes and landslip)

6b. Aquifer Within Bedrock Geology and Abstraction Licences



Site Outline

250
500
Search Buffers (m)

Principal Aquifer

Secondary (A) Aquifer - Permeable Layers

Secondary (B) Aquifer - Lower Permeability Layers

Groundwater Abstraction Licence

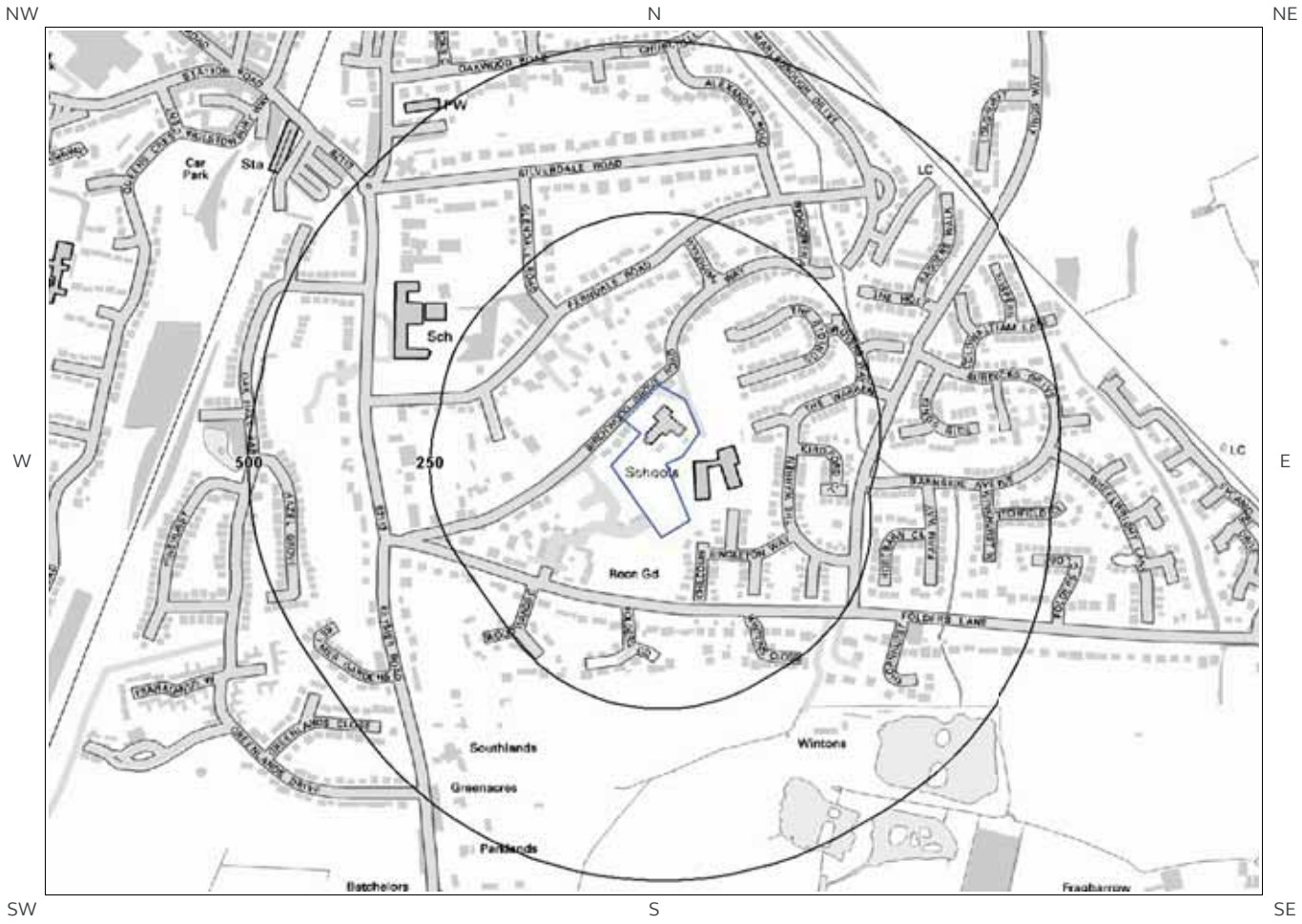
Secondary Aquifer - Undifferentiated Layers

Unproductive

Unknown (lakes and landslip)

Surface Water Abstraction Licence

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



Site Outline

250
500
Search Buffers (m)

Source Protection Zone 1 - Inner Catchment

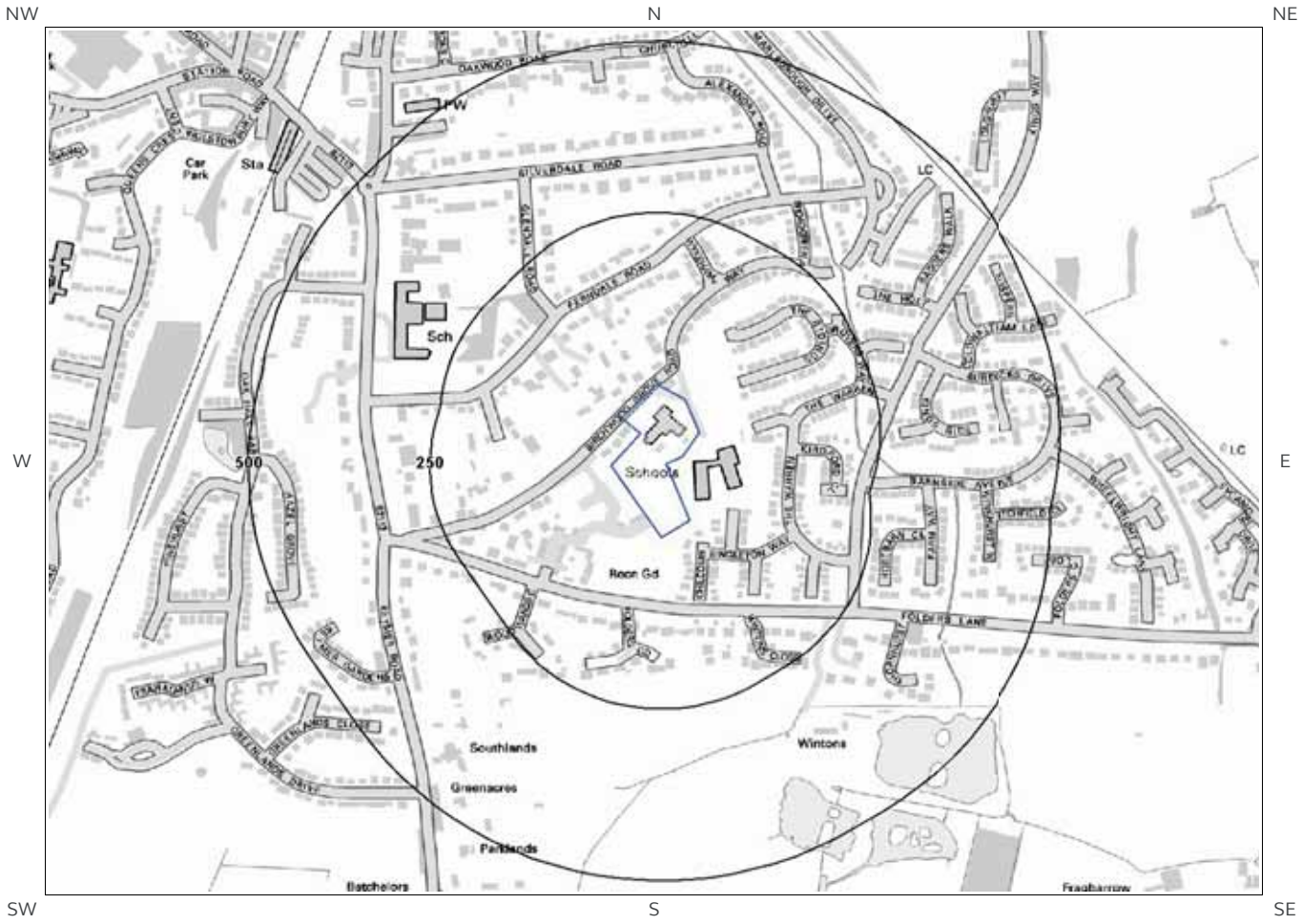
Source Protection Zone 2 - Outer Catchment

Source Protection Zone 3 - Total Catchment

Source Protection Zone 4 - Zone of Special Interest

Potable Water Abstraction Licence

6d. Hydrogeology – Source Protection Zones within confined aquifer



Site Outline

250
500
Search Buffers (m)

Source Protection Zone 1 - Inner Catchment

Source Protection Zone 2C - Outer Catchment within Confined Aquifer

Source Protection Zone 3C - Total Catchment within Confined Aquifer

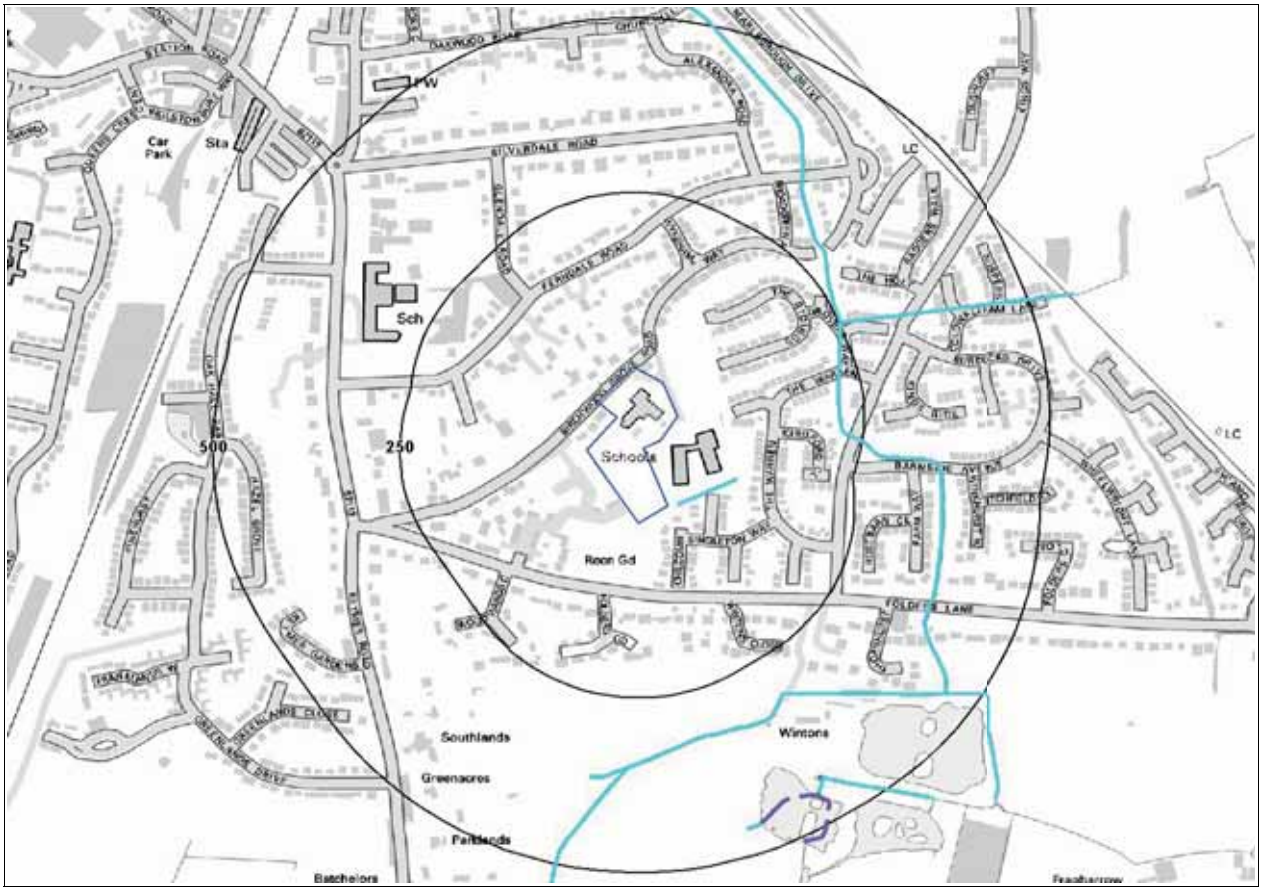
Potable Water Abstraction Licence

6e. Hydrology – Watercourse Network and River Quality

NW N NE

W E

SW S SE



Site Outline

250 — 500 — Search Buffers (m)

Tidal River

Inland River

Underground or Elevated Tidal River

Underground or Elevated Inland River

Foreshore

General Quality Assessment: Chemistry

Canal

Underground or Elevated Canal

Lock or Flight of Locks

Lake, Reservoir, or Marsh

Drain or Transfer

General Quality Assessment: Biology

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	Distance (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	Distance (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	N	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	N	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	N	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	N	Secondary A	Permeable layers capable of supporting water supplies at a local rather than

ID	Distance (m)	Direction	Designation	Description
				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 — None identified

Database searched and no data found.

6.4 Surface Water Abstraction Licences

Surface Water Abstraction Licences within 2000m of the study site — Identified

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:

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):

					Chemical Quality Grade				
ID	Distance (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	C	C	C	C	C

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

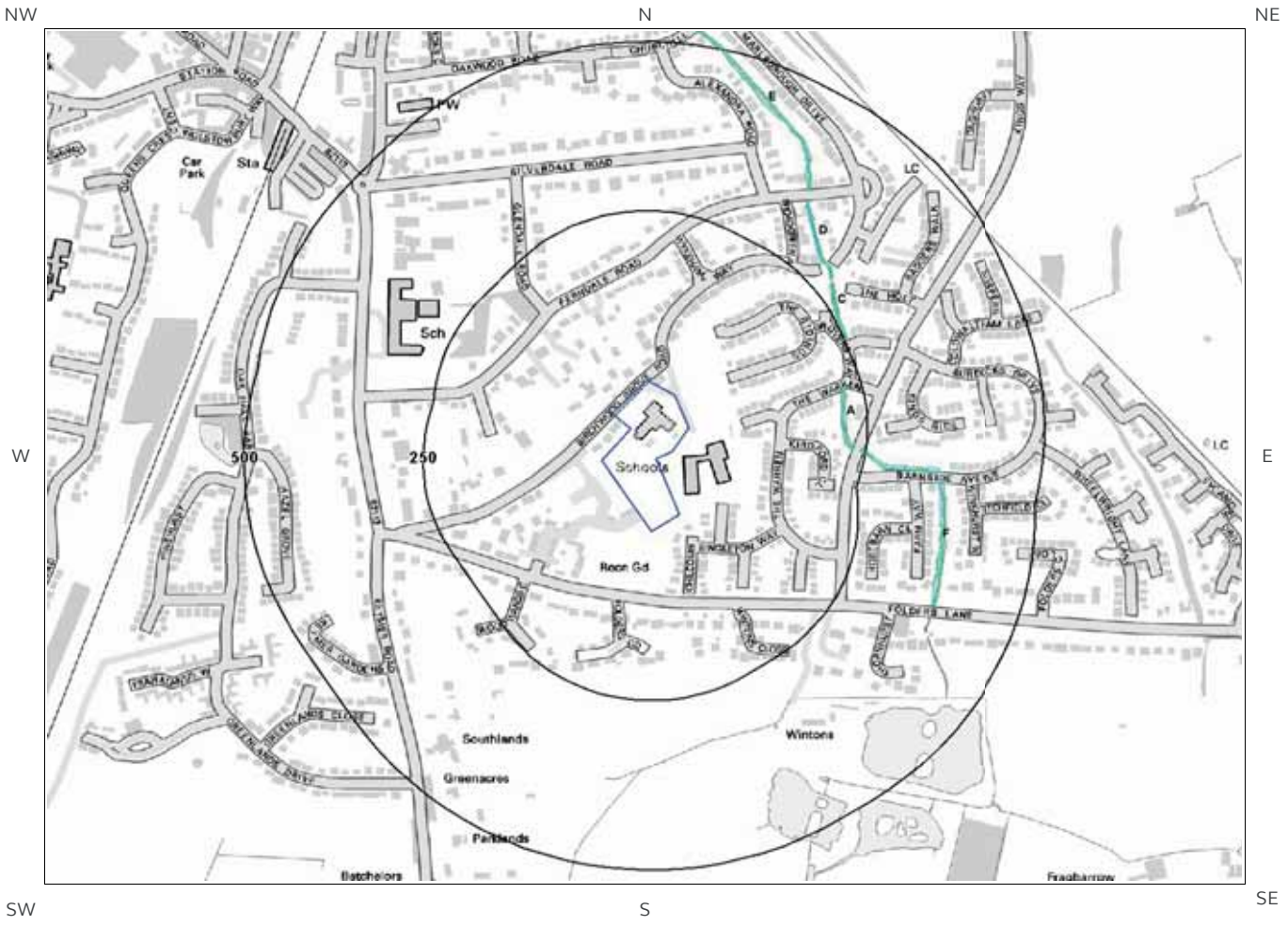
6.11 Surface Water Features

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)



Site Outline

100
250
Search Buffers (m)

Zone 2 Floodplain

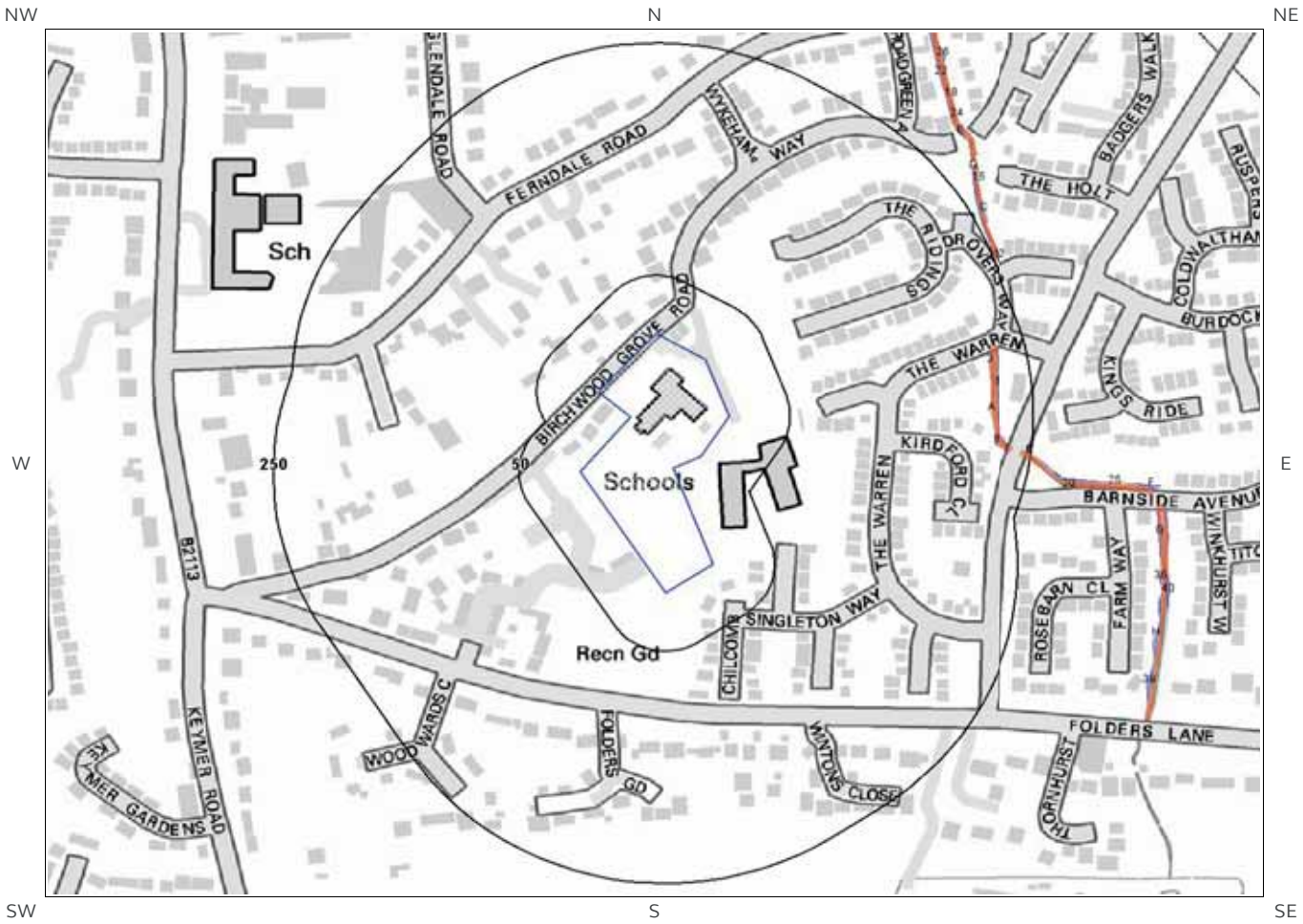
Zone 3 Floodplain

Flood Defences

Area used for Flood Storage

Area Benefiting from Flood Defences

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



Site Outline

100 / 250 Search Buffers (m)

RoFRaS Rating

- Very Low
- Low
- Medium
- High

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	Type
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	Type
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 — Very Low

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.

7.4 Flood Defences

Flood Defences within 250m of the study site — None identified

Database searched and no data found.

7.5 Areas benefiting from Flood Defences

Areas benefiting from Flood Defences within 250m of the study site — None identified

7.6 Areas benefiting from Flood Storage

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

Site Outline

100
250
Search Buffers (m)

AONB
National Park
SSSI
Special Protection Areas
Nitrate Vulnerable Zones
Green Belt
Environmentally Sensitive Areas
Special Areas of Conservation
World Heritage Sites
Nitrate Sensitive Areas
Ancient Woodland
National Nature Reserve
Local Nature Reserves
Ramsar Sites

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:

0

Database searched and no data found.

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

18

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	N	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	N	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	N	UNKNOWN	Ancient Replanted Woodland

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

1

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	N	Bedelands Farm	Natural England

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

0

Database searched and no data found.

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

0

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	N	Modified	DEFRA

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

0

Database searched and no data found.

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 — Low

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 — Very Low

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

Hazard
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 — Negligible

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

Hazard
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.

9.1.4 Compressible Ground

Maximum Compressible Ground* hazard rating identified on the study site — Negligible

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

Hazard
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.

9.1.5 Collapsible Rocks

Maximum Collapsible Rocks* hazard rating identified on the study site — Very Low

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

Hazard
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 — Negligible

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

Hazard
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.

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

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

Database searched and no data found.

10.2 Non-Coal Mining

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

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 — None identified
Guidance: No Guidance Required.

Contact Details

Groundsure Helpline
Telephone: 08444 159 000
info@groundsure.com

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

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

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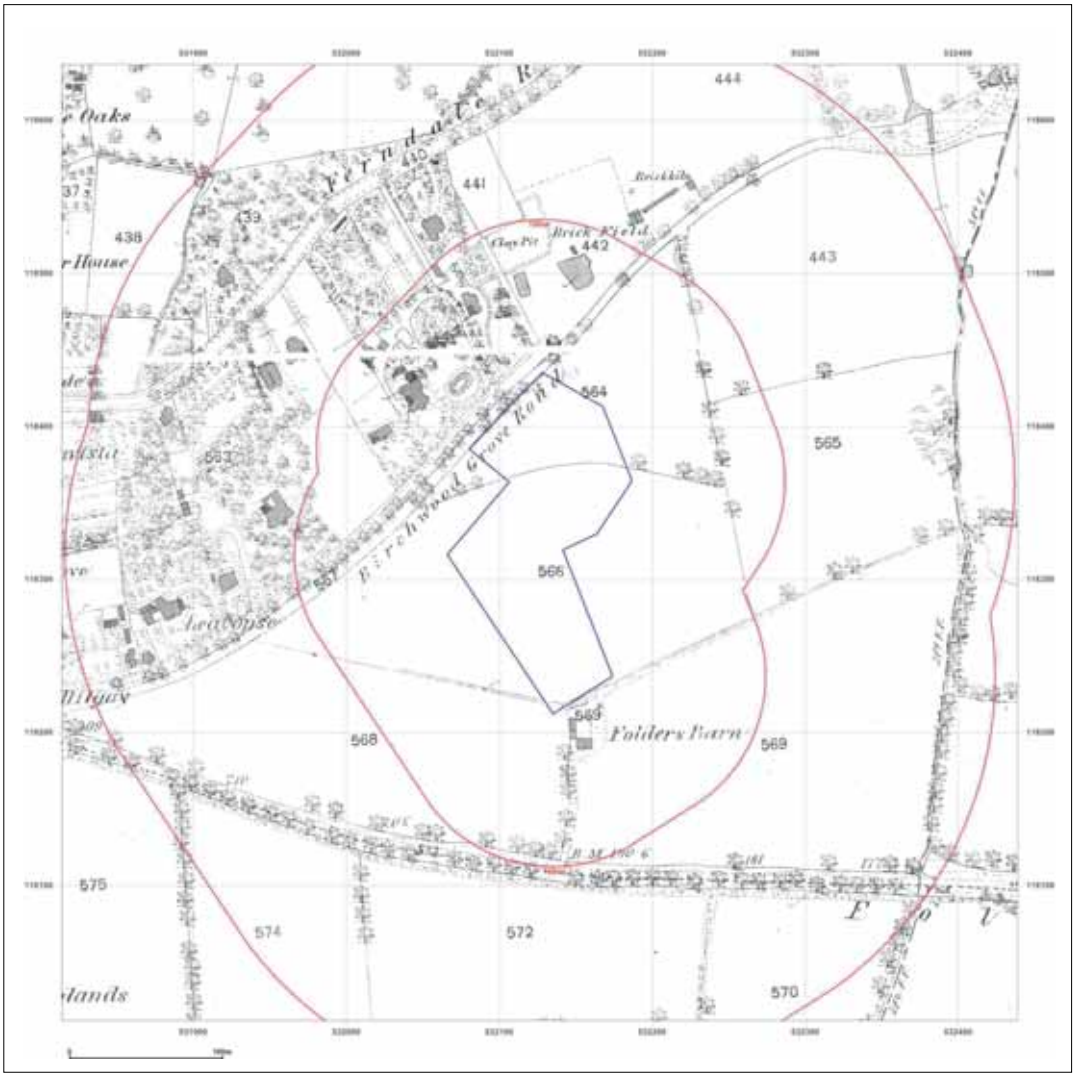

Groundsure INSIGHTS

Site Details:

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

Client Ref: 6225_
Report Ref: GS-5497954
Grid Ref: 532126, 118324

Map Name: County Series
Map date: **1874**
Scale: 1:2,500
Printed at: 1:2,500

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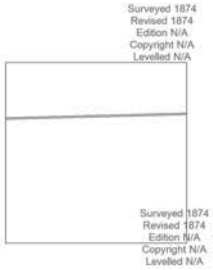

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Production date: 03 October 2018

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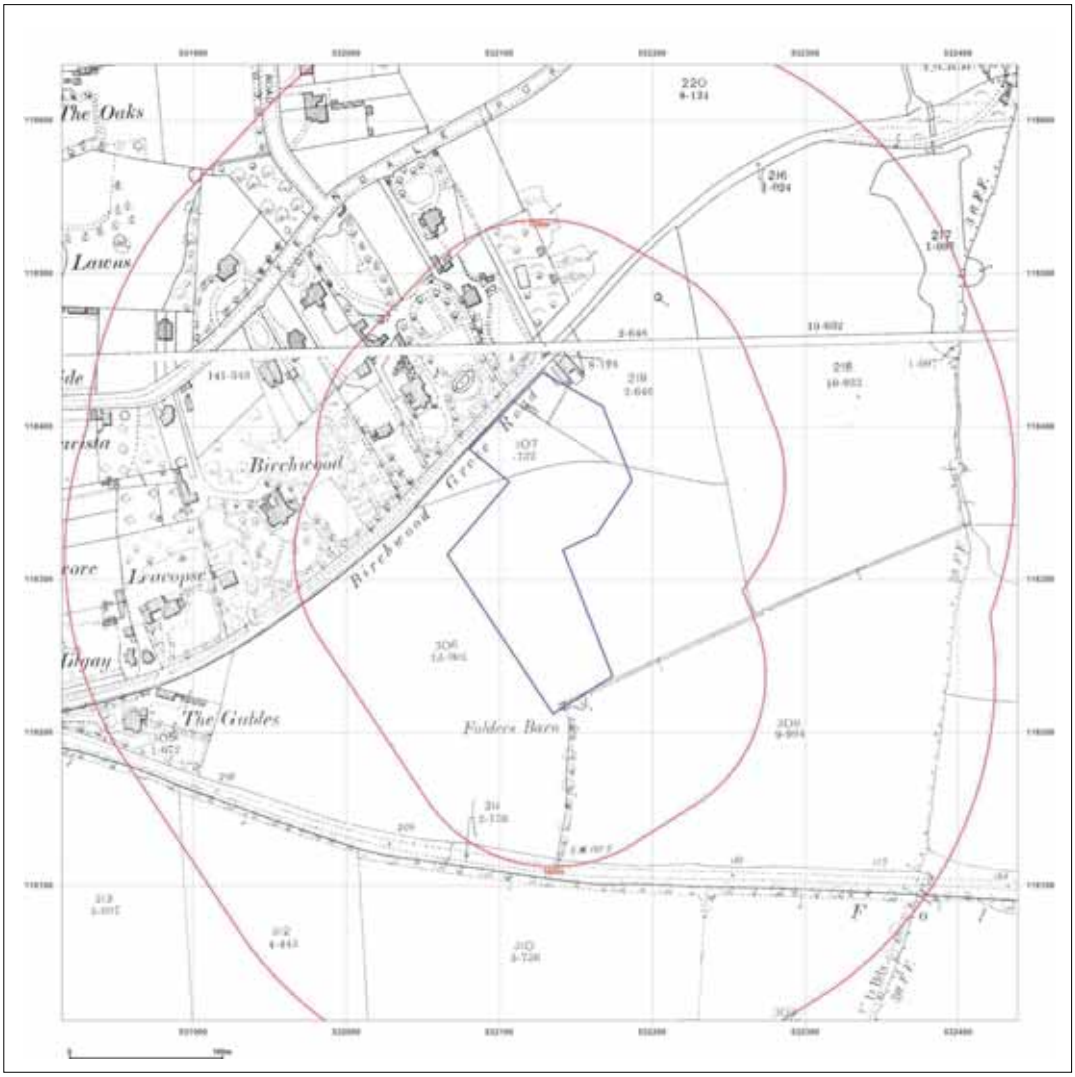

Groundsure INSIGHTS

Site Details:

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

Client Ref: 6225_
Report Ref: GS-5497954
Grid Ref: 532126, 118324

Map Name: County Series
Map date: **1897**
Scale: 1:2,500
Printed at: 1:2,500

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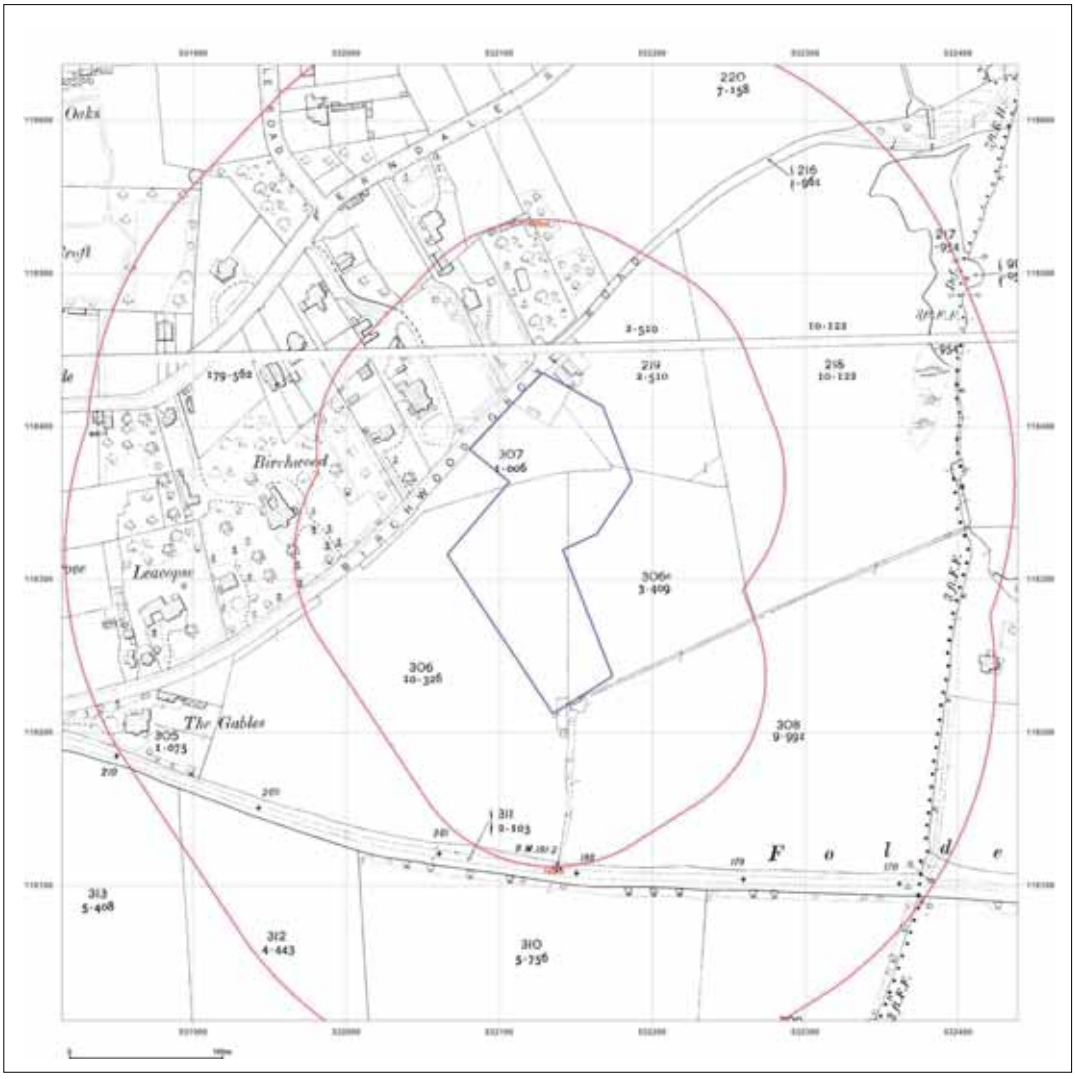

Groundsure INSIGHTS

Site Details:

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

Client Ref: 6225_
Report Ref: GS-5497954
Grid Ref: 532126, 118324

Map Name: County Series
Map date: **1910**
Scale: 1:2,500
Printed at: 1:2,500

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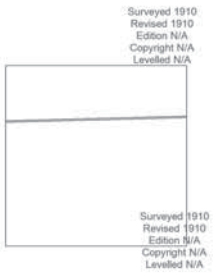

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Groundsure INSIGHTS

Site Details:

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

Client Ref: 6225_
Report Ref: GS-5497954
Grid Ref: 532126, 118324

Map Name: County Series
Map date: **1937**
Scale: 1:2,500
Printed at: 1:2,500

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Revised 1937
Edition N/A
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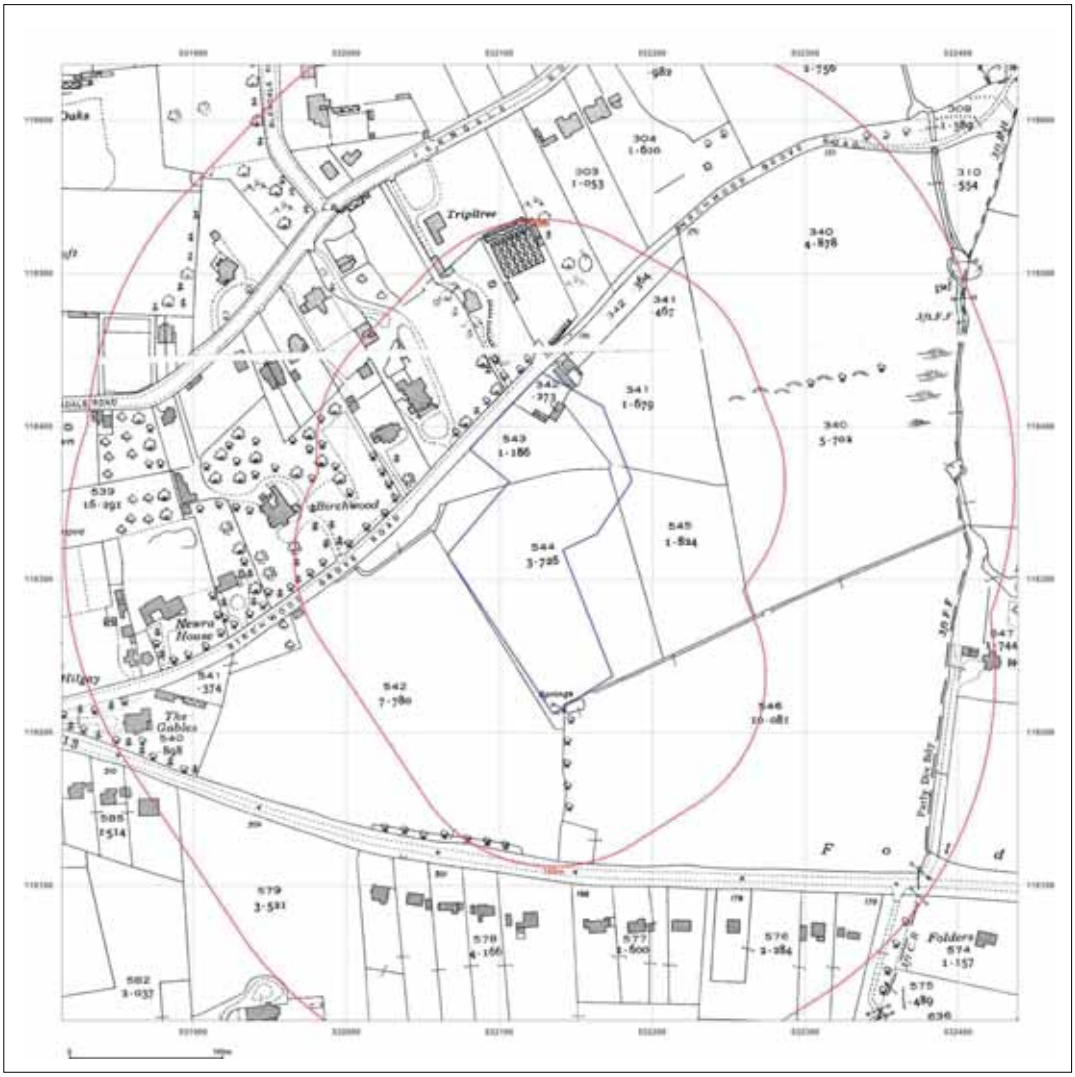

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Site Details:

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

Client Ref: 6225_
Report Ref: GS-5497954
Grid Ref: 532126, 118324

Map Name: County Series
Map date: **1937**
Scale: 1:2,500
Printed at: 1:2,500

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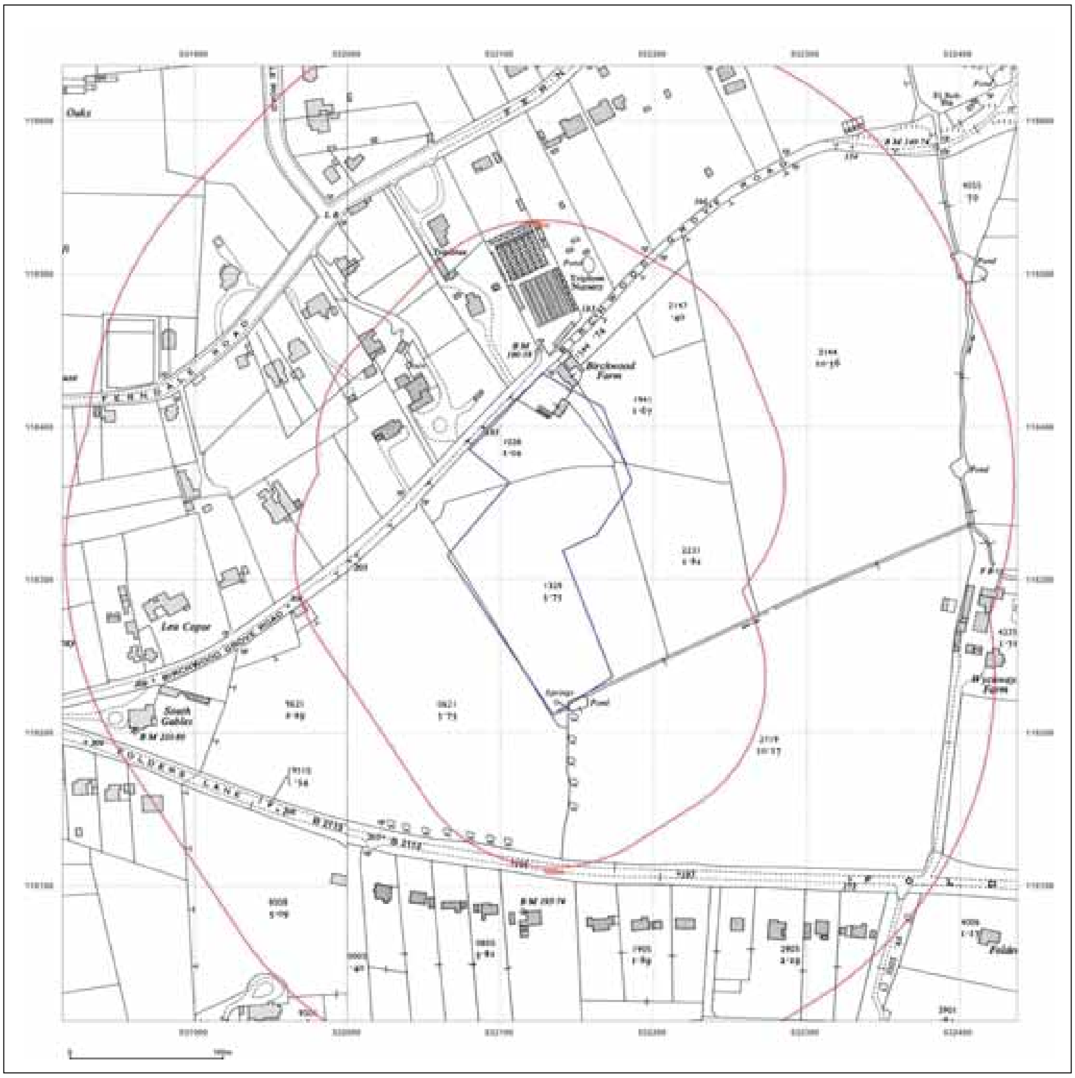

Site Details:

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

Client Ref: 6225_
Report Ref: GS-5497954
Grid Ref: 532126, 118324

Map Name: National Grid

Map date: 1953-1954

Scale: 1:2,500

Printed at: 1:2,500

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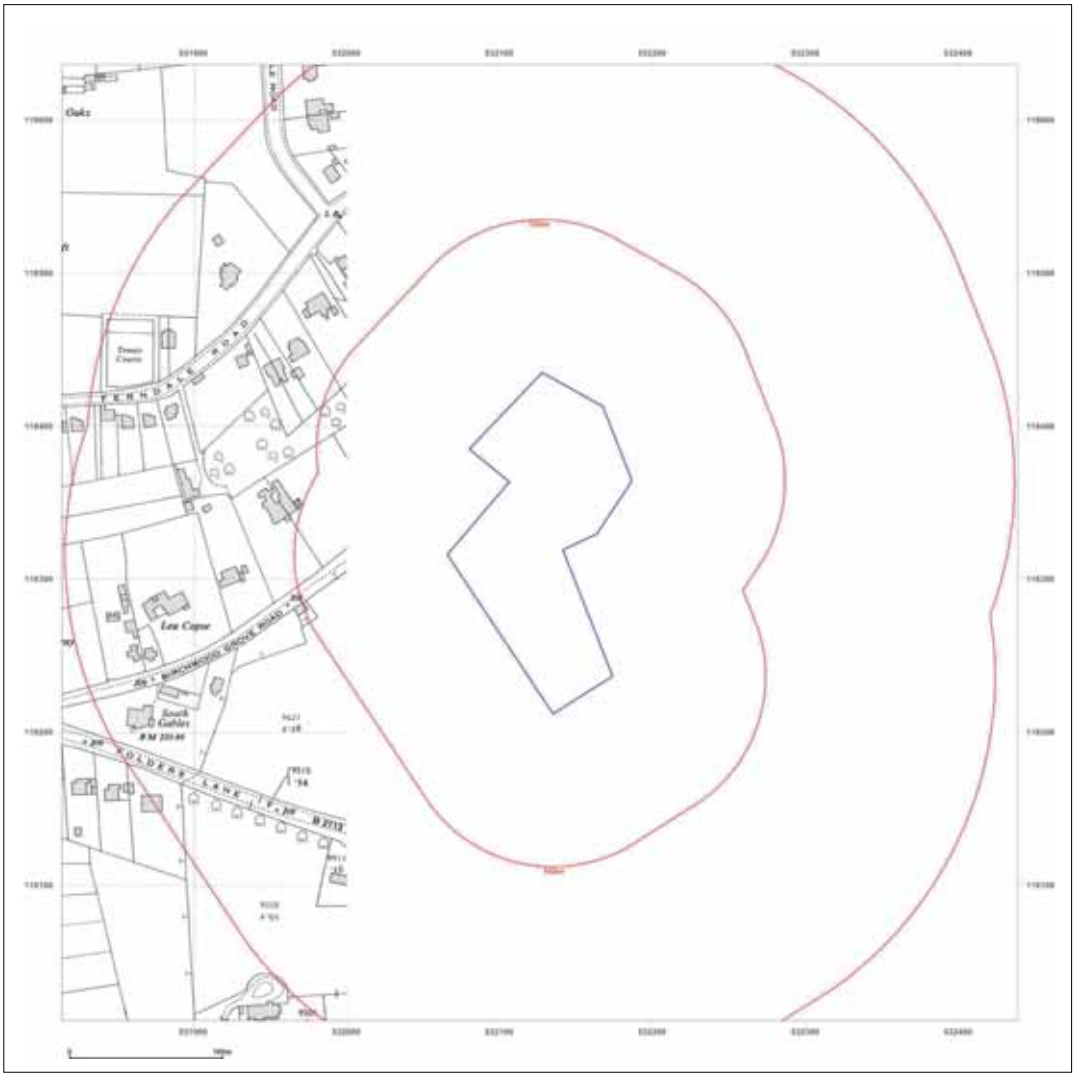

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Site Details:

WOODLANDS MEED COLLEGE,
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Client Ref: 6225_
Report Ref: GS-5497954
Grid Ref: 532126, 118324

Map Name: National Grid
Map date: **1957**
Scale: 1:2,500
Printed at: 1:2,500

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Surveyed 1957
Revised 1957
Edition N/A
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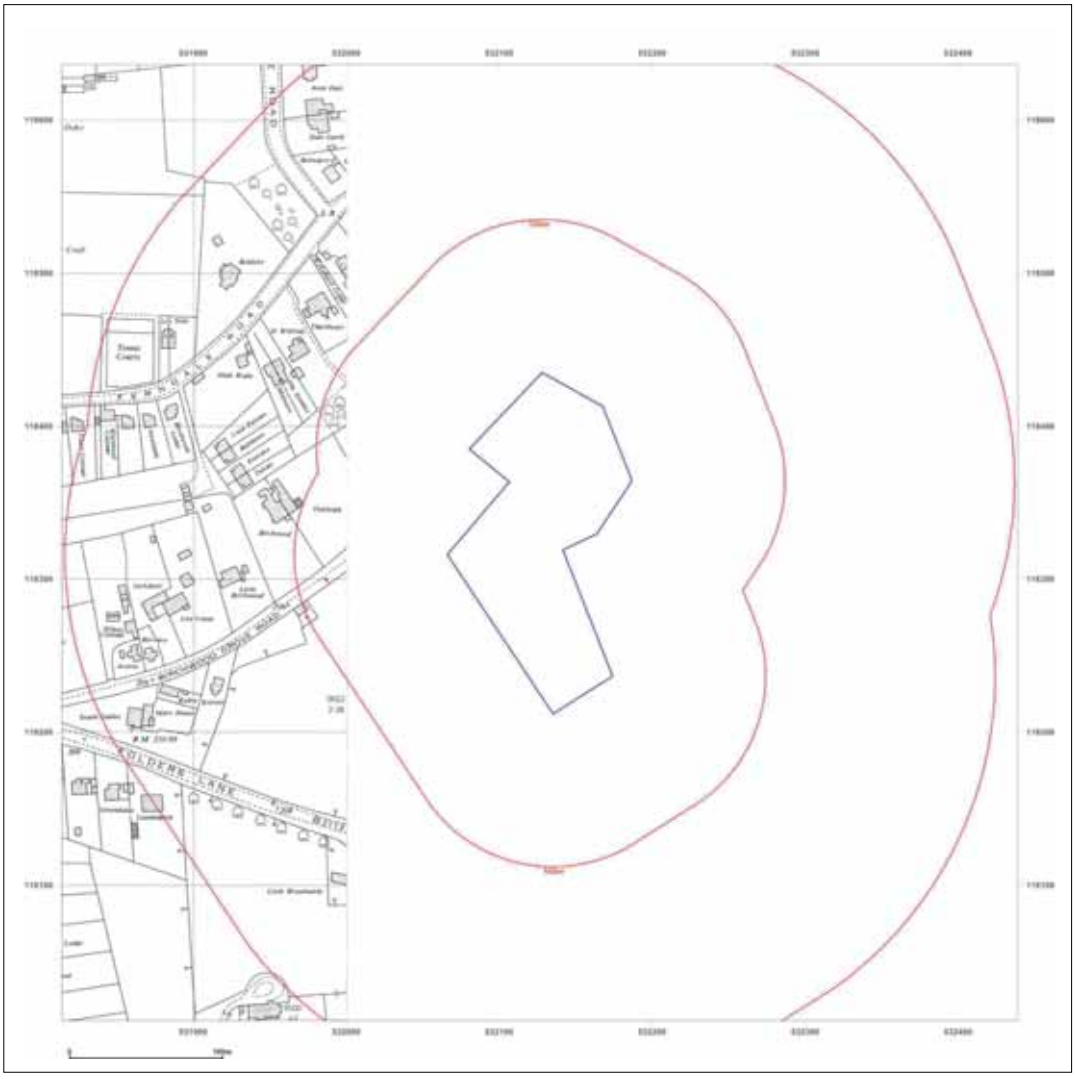

Groundsure INSIGHTS

Site Details:

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

Client Ref: 6225_
Report Ref: GS-5497954
Grid Ref: 532126, 118324

Map Name: National Grid
Map date: **1962**
Scale: 1:2,500
Printed at: 1:2,500

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Surveyed 1962
Revised 1962
Edition N/A
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Site Details:

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BIRCHWOOD GROVE ROAD,
BURGESS HILL, RH15 0DP

Client Ref: 6225_
Report Ref: GS-5497954
Grid Ref: 532126, 118324

Map Name: National Grid
Map date: **1964**
Scale: 1:2,500
Printed at: 1:2,500

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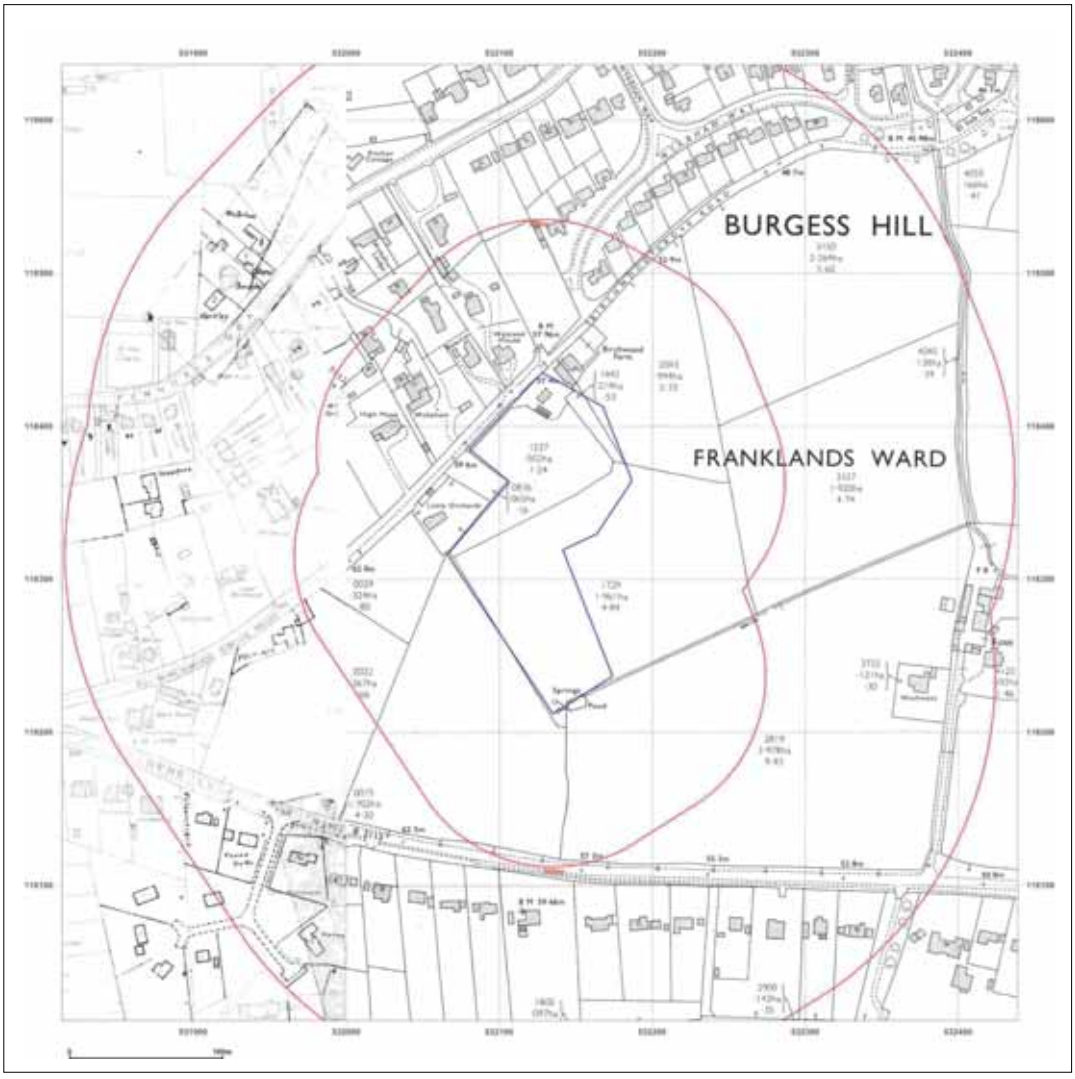

Groundsure INSIGHTS

Site Details:

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

Client Ref: 6225_
Report Ref: GS-5497954
Grid Ref: 532126, 118324

Map Name: National Grid
Map date: **1970-1974**
Scale: 1:2,500
Printed at: 1:2,500

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Surveyed N/A
Revised N/A
Edition N/A
Copyright 1974
Levelled N/A

Surveyed 1970
Revised 1970
Edition N/A
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Site Details:

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BURGESS HILL, RH15 0DP

Client Ref: 6225_
Report Ref: GS-5497954
Grid Ref: 532126, 118324

Map Name: National Grid
Map date: **1977**
Scale: 1:1,250
Printed at: 1:2,000

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Surveyed 1976
Revised 1976
Edition N/A
Copyright 1977
Levelled 1967

Surveyed 1976
Revised 1976
Edition N/A
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Levelled 1967

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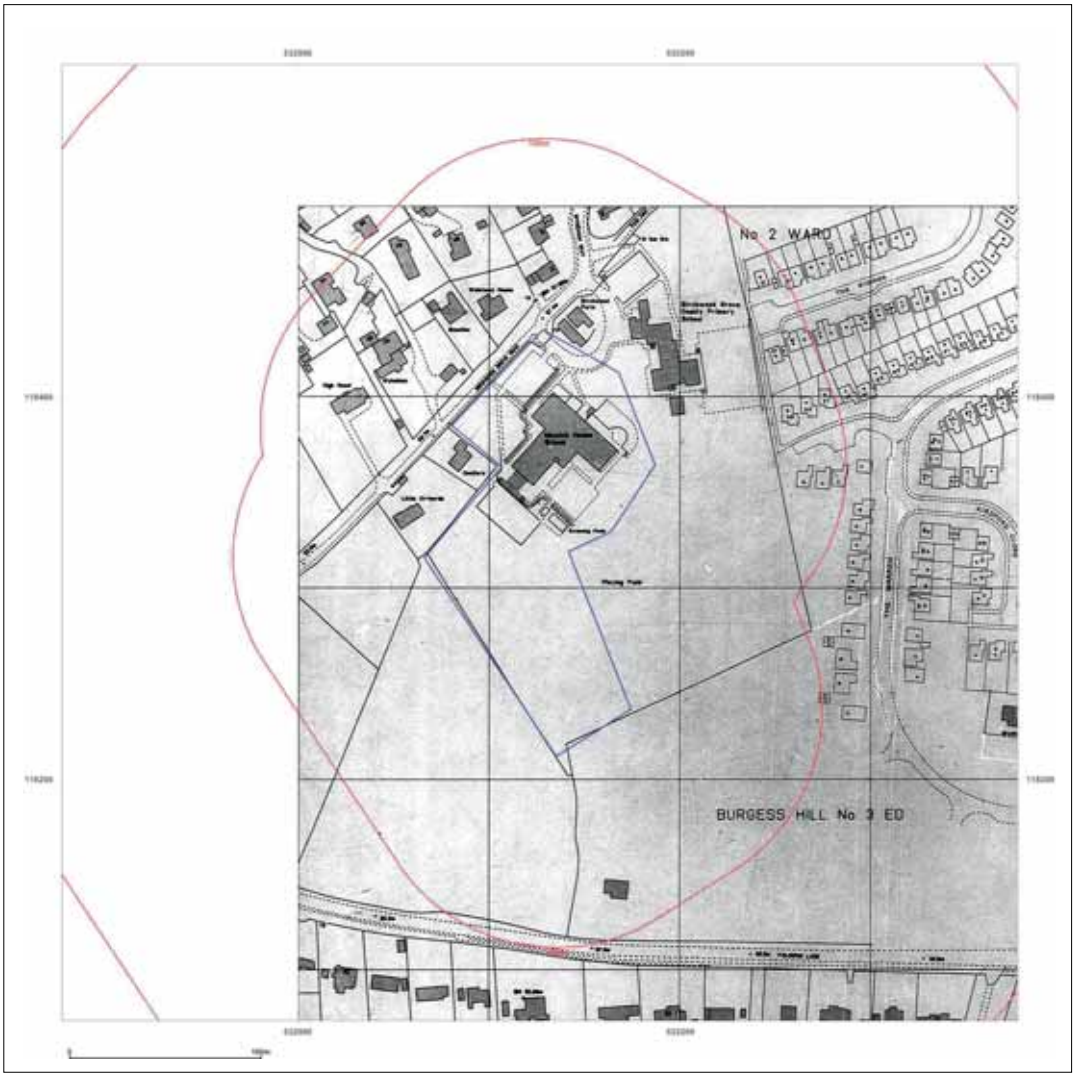

Groundsure INSIGHTS

Site Details:

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

Client Ref: 6225_
Report Ref: GS-5497954
Grid Ref: 532126, 118324

Map Name: National Grid
Map date: **1978**
Scale: 1:1,250
Printed at: 1:2,000

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Surveyed 1978
Revised 1978
Edition N/A
Copyright 1978
Levelled N/A

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Site Details:

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

Client Ref: 6225_
Report Ref: GS-5497954
Grid Ref: 532126, 118324

Map Name: National Grid
Map date: **1980-1981**
Scale: 1:1,250
Printed at: 1:2,000

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Surveyed N/A
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A

Surveyed N/A
Revised N/A
Edition N/A
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Groundsure INSIGHTS

Site Details:

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

Client Ref: 6225_
Report Ref: GS-5497954
Grid Ref: 532126, 118324

Map Name: National Grid
Map date: **1983**
Scale: 1:1,250
Printed at: 1:2,000

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Revised 1982
Edition N/A
Copyright 1983
Levelled 1967

Surveyed 1976
Revised 1982
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Groundsure INSIGHTS

Site Details:

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

Client Ref: 6225_
Report Ref: GS-5497954
Grid Ref: 532126, 118324

Map Name: National Grid
Map date: **1994**
Scale: 1:1,250
Printed at: 1:2,000

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Revised N/A
Edition N/A
Copyright 1994
Levelled N/A

Surveyed N/A
Revised N/A
Edition N/A
Copyright 1994
Levelled N/A

Surveyed N/A
Revised N/A
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Edition N/A
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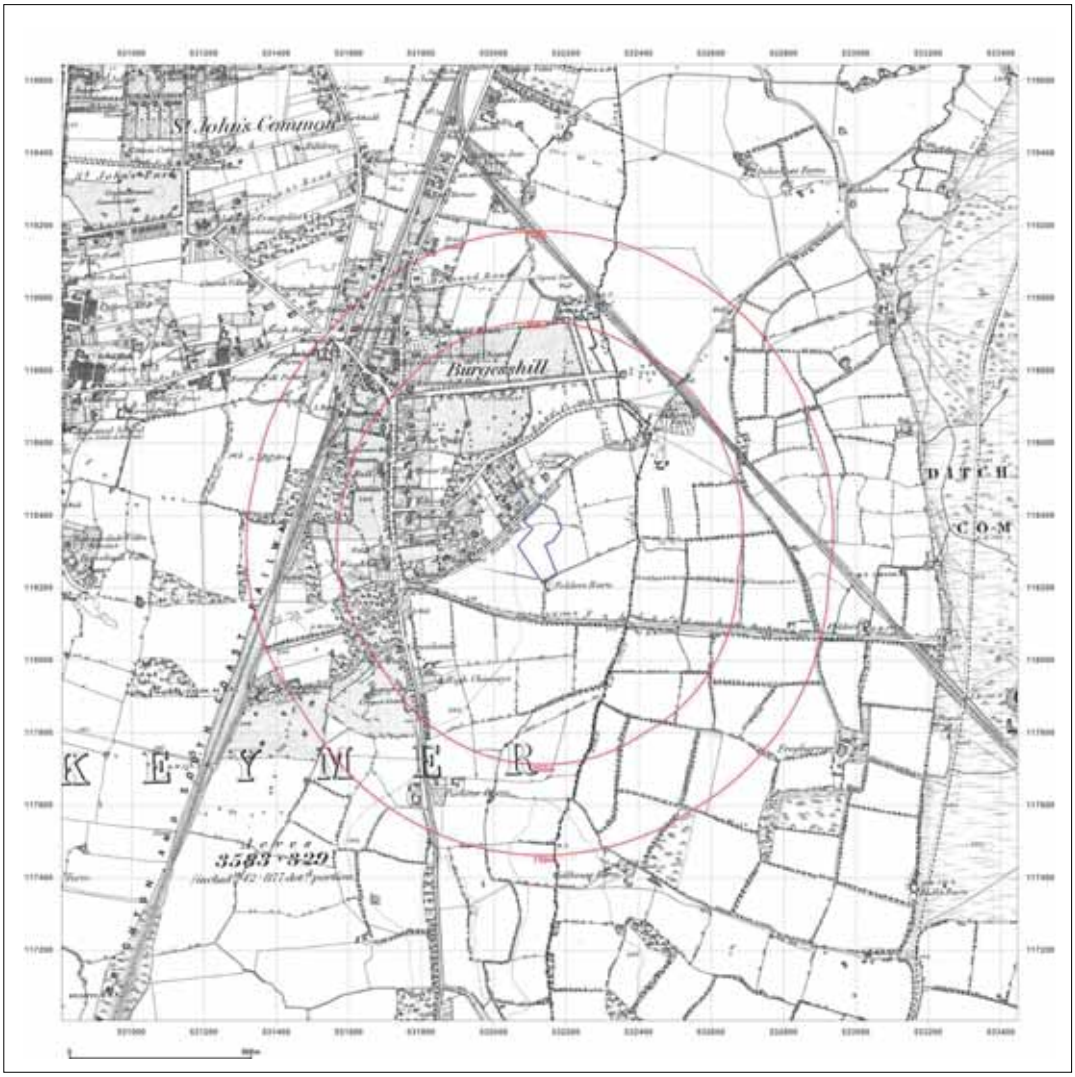

Groundsure INSIGHTS

Site Details:

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

Client Ref: 6225_
Report Ref: GS-5497954
Grid Ref: 532126, 118324

Map Name: County Series
Map date: **1874**
Scale: 1:10,560
Printed at: 1:10,560

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Surveyed 1874
Revised 1874
Edition N/A
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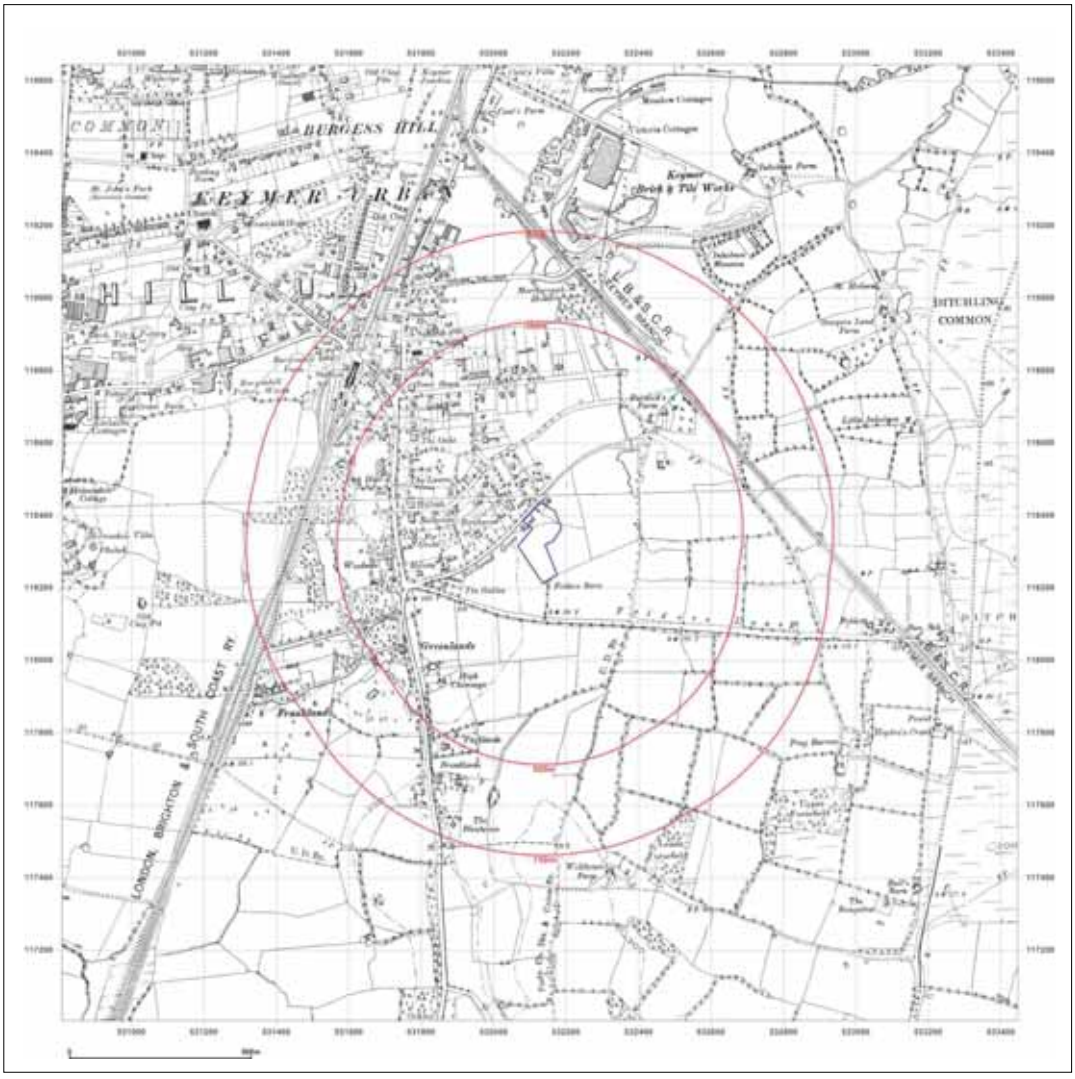

Groundsure INSIGHTS

Site Details:

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

Client Ref: 6225_
Report Ref: GS-5497954
Grid Ref: 532126, 118324

Map Name: County Series
Map date: **1896-1897**
Scale: 1:10,560
Printed at: 1:10,560

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Revised 1897
Edition N/A
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Surveyed 1874
Revised 1896
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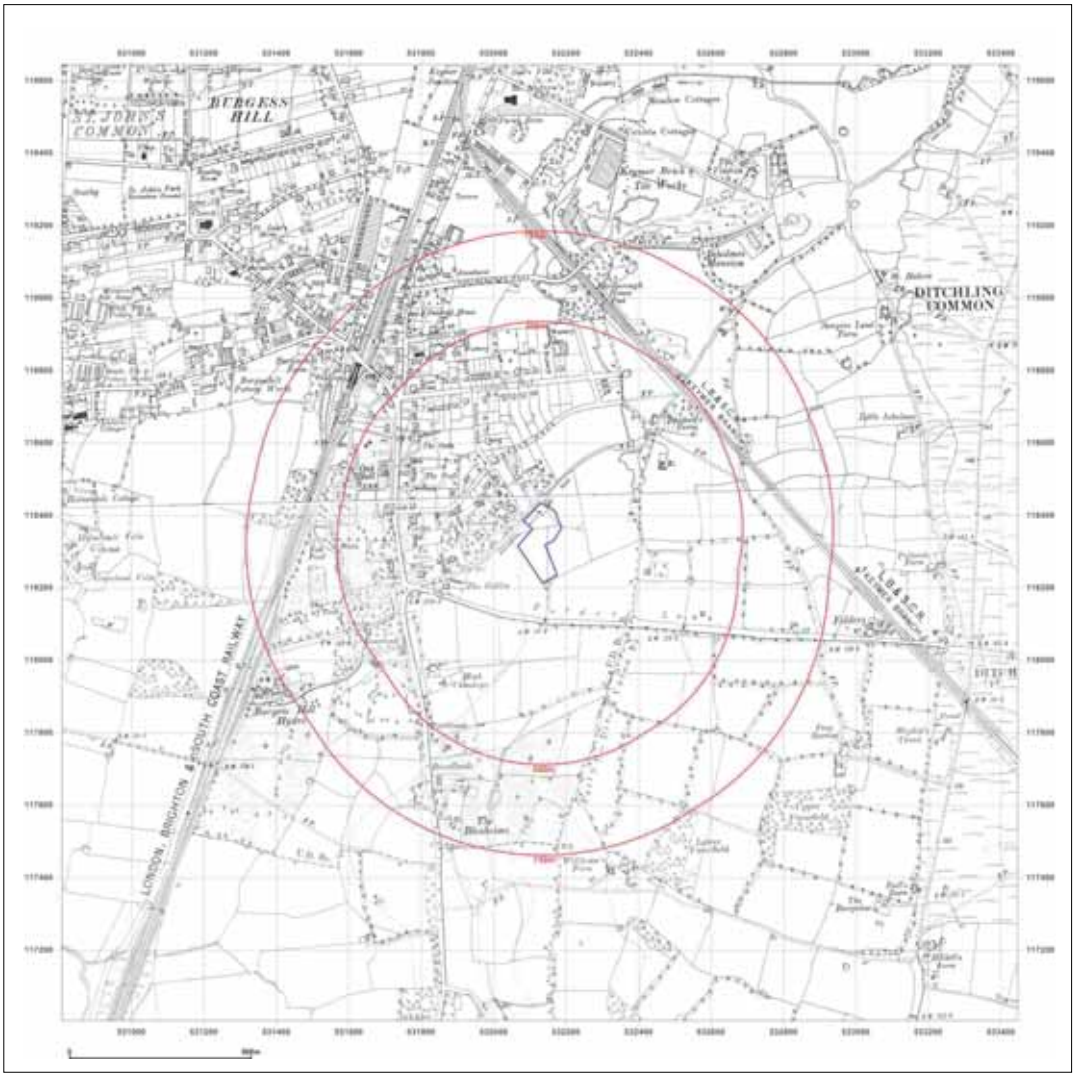

Groundsure INSIGHTS

Site Details:

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

Client Ref: 6225_
Report Ref: GS-5497954
Grid Ref: 532126, 118324

Map Name: County Series
Map date: **1909**
Scale: 1:10,560
Printed at: 1:10,560

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Levelled N/A

Surveyed 1873
Revised 1909
Edition N/A
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Site Details:

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

Client Ref: 6225_
Report Ref: GS-5497954
Grid Ref: 532126, 118324

Map Name: County Series
Map date: **1948-1949**
Scale: 1:10,560
Printed at: 1:10,560

N
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Surveyed 1873
Revised 1948
Edition N/A
Copyright N/A
Levelled 1948

Surveyed 1873
Revised 1949
Edition N/A
Copyright N/A
Levelled N/A

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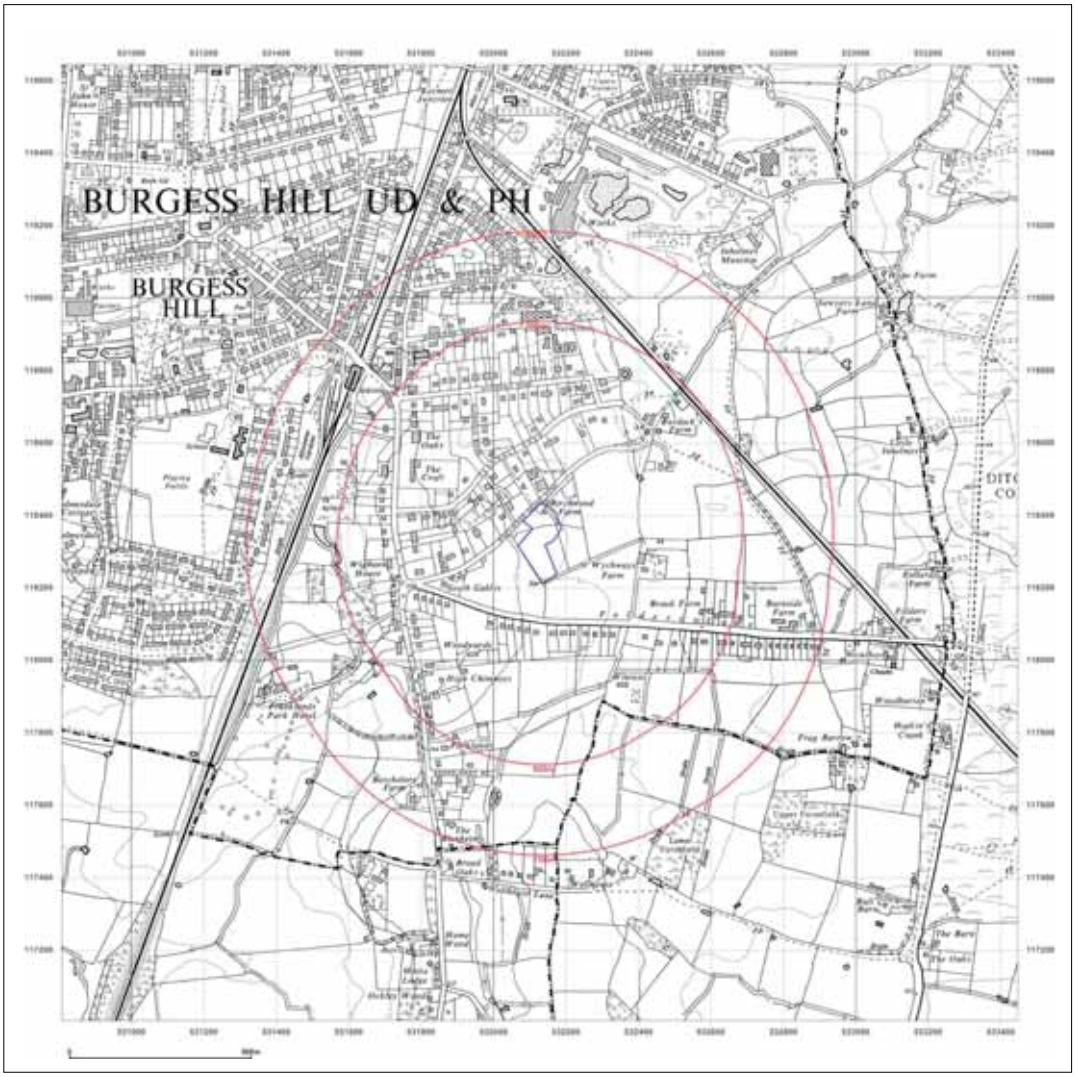

Groundsure INSIGHTS

Site Details:

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

Client Ref: 6225_
Report Ref: GS-5497954
Grid Ref: 532126, 118324

Map Name: Provisional
Map date: **1962**
Scale: 1:10,560
Printed at: 1:10,560

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Surveyed 1962
Revised 1962
Edition N/A
Copyright N/A
Levelled N/A

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W: www.groundsure.com

Production date: 03 October 2018

Map legend available at:
www.groundsure.com/sites/default/files/groundsure_legend.pdf

Groundsure INSIGHTS

Site Details:

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

Client Ref: 6225_
Report Ref: GS-5497954
Grid Ref: 532126, 118324

Map Name: National Grid
Map date: **1974**
Scale: 1:10,000
Printed at: 1:10,000

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Surveyed 1974
Revised 1974
Edition N/A
Copyright N/A
Levelled N/A

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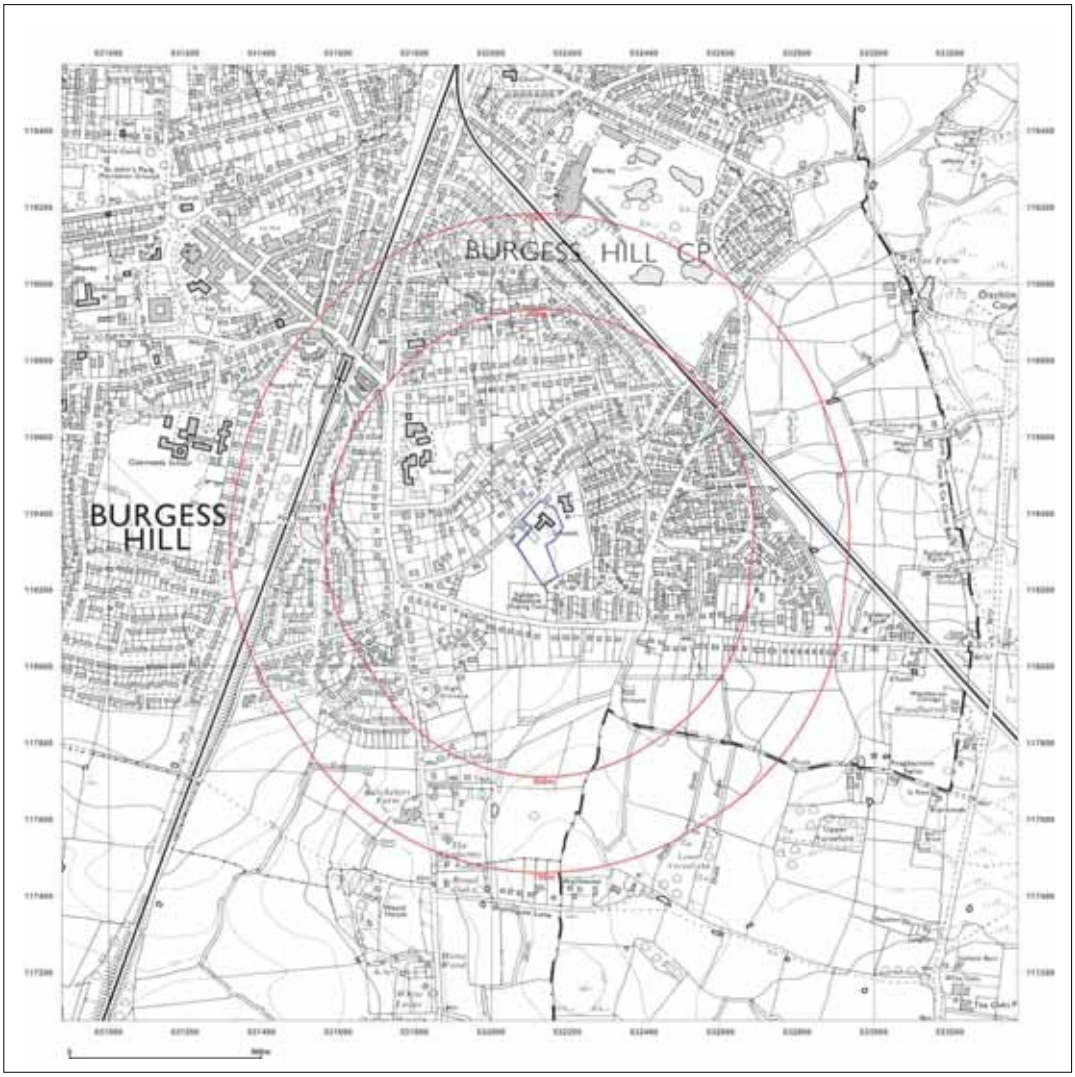
Production date: 03 October 2018

Map legend available at:
www.groundsure.com/sites/default/files/groundsure_legend.pdf



Groundsure INSIGHTS

Site Details:

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

Client Ref: 6225_
Report Ref: GS-5497954
Grid Ref: 532126, 118324

Map Name: National Grid
Map date: **1984**
Scale: 1:10,000
Printed at: 1:10,000

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Surveyed 1982
Revised 1984
Edition N/A
Copyright N/A
Levelled N/A

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Production date: 03 October 2018

Map legend available at:
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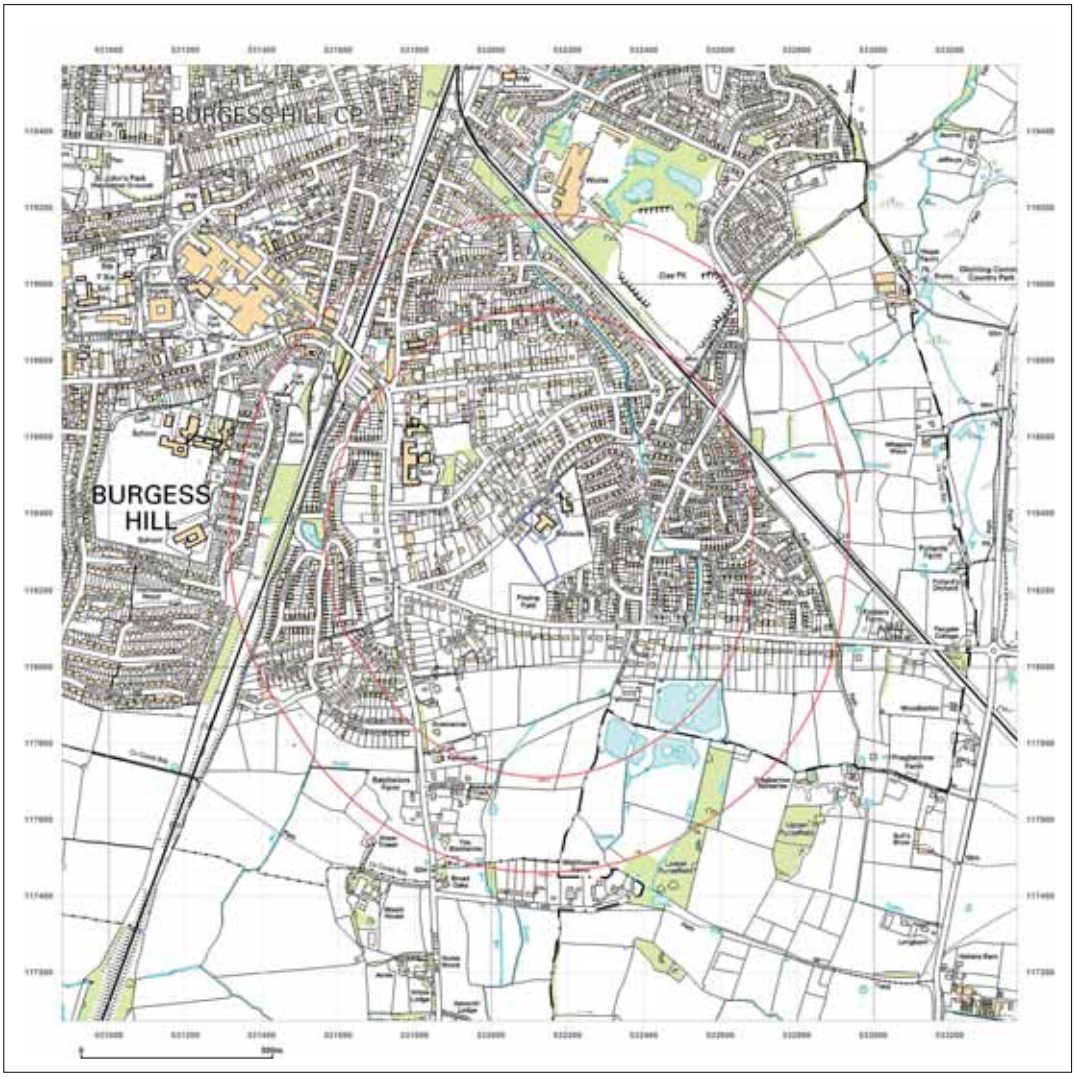

Groundsure INSIGHTS

Site Details:

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

Client Ref: 6225_
Report Ref: GS-5497954
Grid Ref: 532126, 118324

Map Name: 1:10,000 Raster
Map date: **2002**
Scale: 1:10,000
Printed at: 1:10,000

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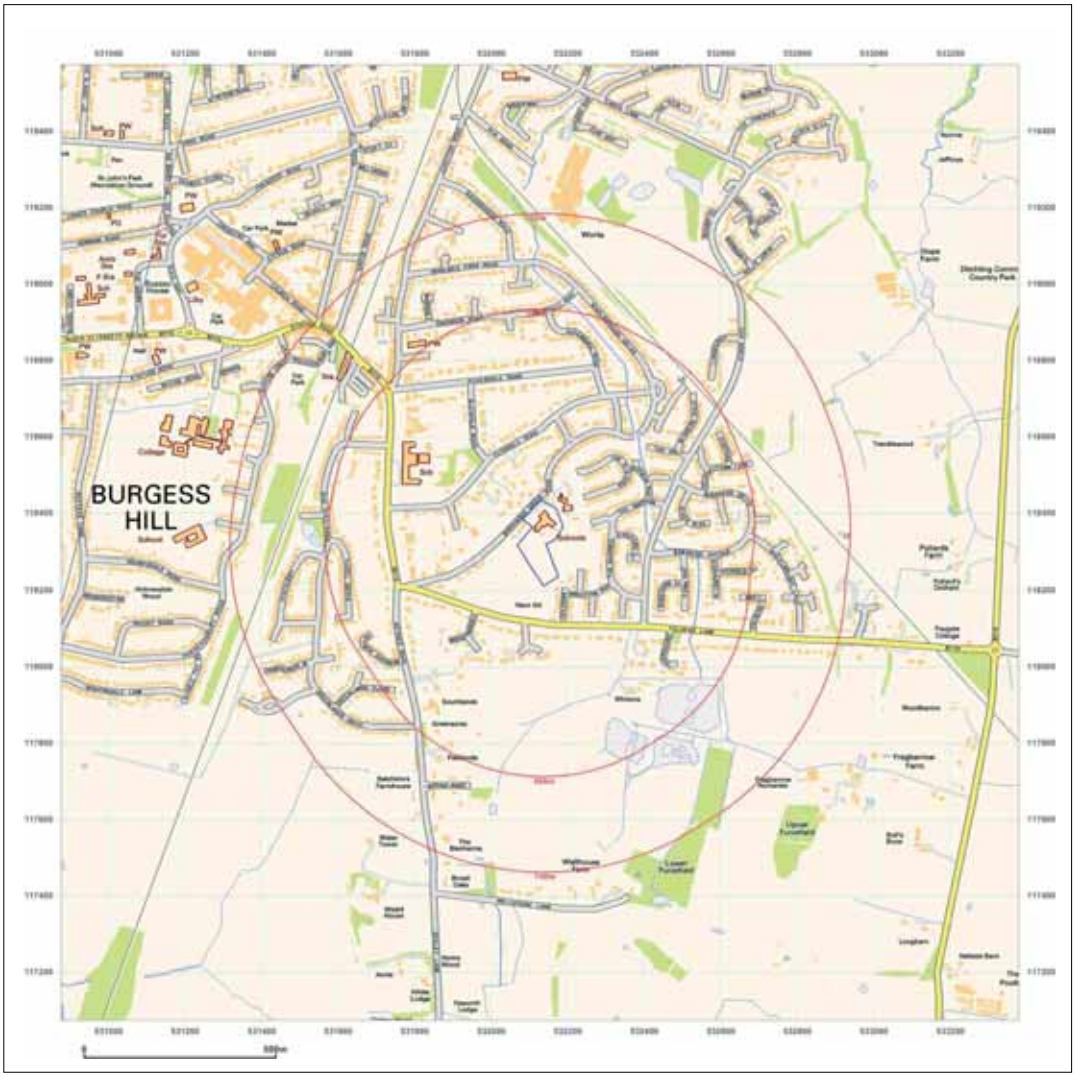
Production date: 03 October 2018

Map legend available at:
www.groundsure.com/sites/default/files/groundsure_legend.pdf



Groundsure INSIGHTS

Site Details:

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

Client Ref: 6225_
Report Ref: GS-5497954
Grid Ref: 532126, 118324

Map Name: National Grid
Map date: **2010**
Scale: 1:10,000
Printed at: 1:10,000

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2010

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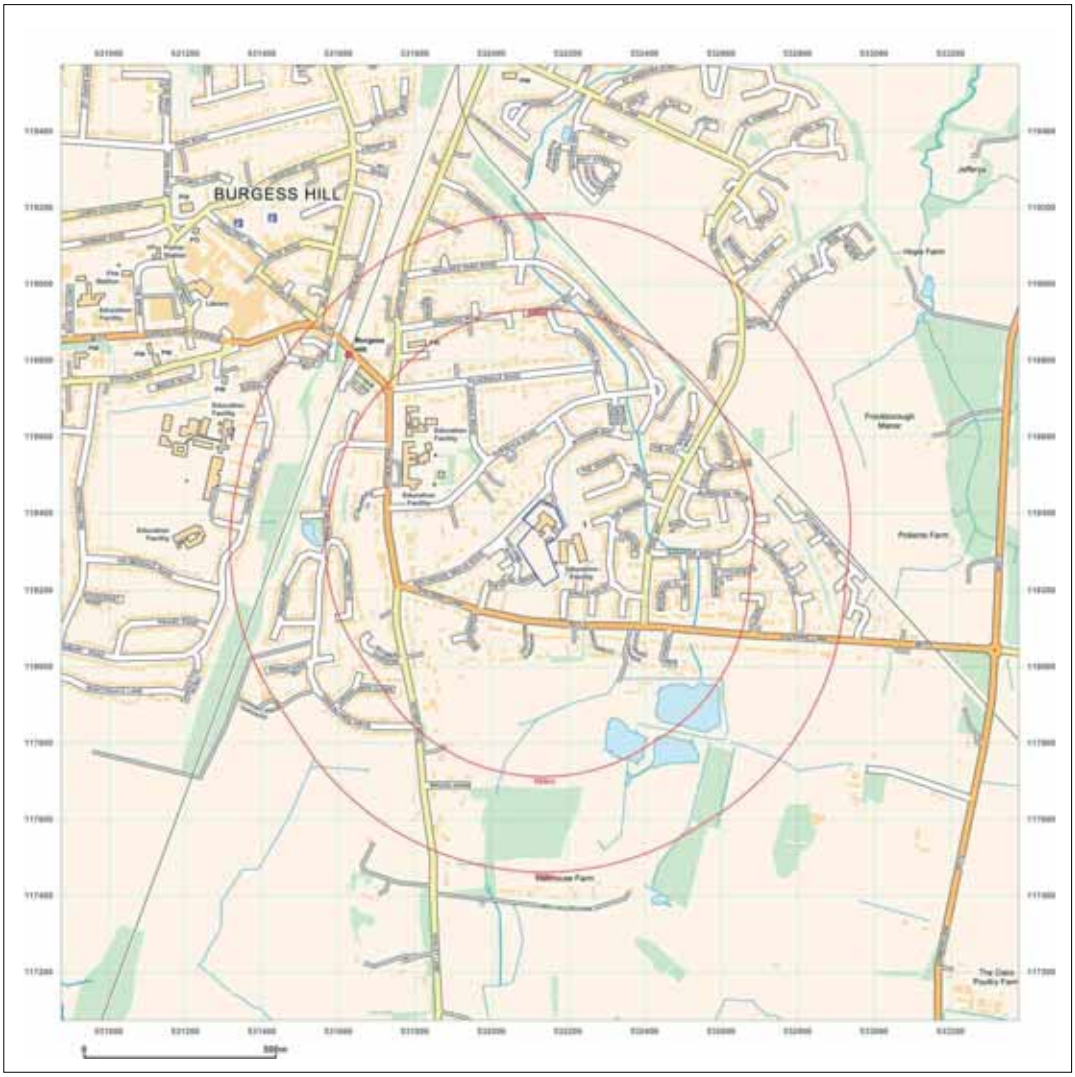
E: info@groundsure.com
W: www.groundsure.com

Production date: 03 October 2018

Map legend available at:
www.groundsure.com/sites/default/files/groundsure_legend.pdf



Groundsure INSIGHTS

Site Details:

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

Client Ref: 6225_
Report Ref: GS-5497954
Grid Ref: 532126, 118324

Map Name: National Grid
Map date: **2014**
Scale: 1:10,000
Printed at: 1:10,000

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2014

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Production date: 03 October 2018

Map legend available at:
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Annex B: Exploratory Hole Logs

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Borehole No.
BH01
Sheet 1 of 2

Project Name	Project No.	Date	Hole Type
Woodlands Meed Primary School	6225	23/08/2018 to 23/08/2018	CP

Client	Co-ords	Water Strike Details			Logged By
Hampshire County Council	E:	Depth Strike	Time Elapsed	Rose To	PS
		4.10	20	4.02	

Contractor	Plant Used		Approved By
Belfort Drilling Services	Dando 2500	N: L:	PS

Scale 1:50

Samples and Results					Depth, (Thickness)	Level	Stratum Description	Legend	Well
Results	Type	Depth	Casing	Water					
					(0.25)		TOPSOIL: Grass over soft dark brown sandy silty CLAY. Rare subrounded fine to medium flint gravel. Frequent rootlets.		
					0.25		Firm yellowish brown mottled light grey slightly sandy silty CLAY.		
	ES	0.50							
N=11 (1,0/2,3,3,3)	D	1.00	1.00	Dry	1				
	D	1.00 - 1.45							
	SPT(S)	1.00							
					(3.25)				
N=12 (1,2/3,3,3,3)	D	2.00	1.00	Dry	2				
	D	2.00 - 2.45							
	SPT(S)	2.00							
N=10 (1,2/3,2,3,2)	D	3.00	1.00	Dry	3				
	D	3.00 - 3.45							
	SPT(S)	3.00							
					3.50		Firm, becoming stiff brown mottled orange brown and light grey slightly sandy silty CLAY.		
N=26 (2,3/4,4,10,8)	D	4.00	1.00	4.00	4				
	D	4.00 - 4.45							
	SPT(S)	4.00							
					(2.70)				
50 (3,3/50 for 200mm)	D	5.00	1.00	4.10	5				
	D	5.00 - 5.45							
	SPT(S)	5.00							
	D	6.00			6				
					6.20		Very stiff very thinly laminated light grey and dark grey slightly sandy silty CLAY. Locally weakly cemented. Occasional thin bands of claystone/siltstone.		
N=39 (3,5/8,10,10,11)	D	6.50 - 6.95	1.00	6.30					
	SPT(S)	6.50							
	D	7.00			7				
N=32 (5,5/6,8,8,10)	D	8.00	1.00	7.80	8				
	D	8.00 - 8.45							
	SPT(S)	8.00							
	D	9.00			9				
blows=70	U	9.50 - 9.95							
~~N=53 (5,7/9,9,15,20)~~	~~D~~	~~10.00~~	~~1.00~~	~~9.80~~					

Chiselling Details		
Depth Top	To (m)	Duration
13.00	14.00	01:00

Remarks
No recovery from U100 at 9.50m to 9.95m

Borehole Diameter		
Base Depth	Diameter	Remarks
14.50	150	

Notes: For all symbols and abbreviations please see key sheet. All depths and measurements in metres. Stratum thicknesses given in brackets.

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Borehole No.
BH01
Sheet 2 of 2

Project Name	Project No.	Date	Hole Type
Woodlands Meed Primary School	6225	23/08/2018 to 23/08/2018	CP

Client	Co-ords	Water Strike Details			Logged By
Hampshire County Council	E:	Depth Strike	Time Elapsed	Rose To	PS
		4.10	20	4.02	
Contractor / **Plant Used**	N:				**Approved By**
Belfort Drilling Services / Dando 2500	L:				PS
					Scale 1:50

Samples and Results					Depth, (Thickness)	Level	Stratum Description	Legend	Well
Results	Type	Depth	Casing	Water					
	D SPT(S)	10.00 - 10.45 10.00			(8.30)		Very stiff very thinly laminated light grey and dark grey slightly sandy silty CLAY. Locally weakly cemented. Occasional thin bands of claystone/siltstone.		
55 (17,18/55 for 225mm)	B D SPT(S)	11.00 - 11.45 11.00 - 11.50 11.00	1.00	10.70	11				
	D D	12.00 12.00 - 12.45			12				
59 (7,11/59 for 200mm)	SPT(S)	12.50	1.00	12.30					
	D	13.00			13				
53 (11,26/53 for 225mm)	D D SPT(S)	14.00 14.00 - 14.45 14.00	1.00	13.90	14				
					14.50		End of Borehole at 14.50m		
					15				
					16				
					17				
					18				
					19				

Chiselling Details

Depth Top	To (m)	Duration
13.00	14.00	01:00

Remarks

No recovery from U100 at 9.50m to 9.95m

Notes: For all symbols and abbreviations please see key sheet. All depths and measurements in metres. Stratum thicknesses given in brackets.

Borehole Diameter

Base Depth	Diameter	Remarks
14.50	150	

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Borehole No.
BH02
Sheet 1 of 2

Project Name	Project No.	Date	Hole Type
Woodlands Meed Primary School	6225	24/08/2018 to 24/08/2018	CP

Client	Co-ords	Water Strike Details			Logged By
Hampshire County Council	E:	Depth Strike	Time Elapsed	Rose To	PS
		4.40	20	4.40	

Contractor	Plant Used		Approved By
Belfort Drilling Services	Dando 2500	N: L:	PS

Scale 1:50

Samples and Results					Depth, (Thickness)	Level	Stratum Description	Legend	Well
Results	Type	Depth	Casing	Water					
					(0.40)		TOPSOIL: Grass over soft dark brown sandy silty CLAY. Rare subrounded fine to medium flint gravel. Frequent rootlets.		
	ES	0.50			0.40		Soft, becoming firm to stiff with depth, yellowish brown mottled orange brown and pale grey slightly sandy silty CLAY. Locally laminated.		
N=5 (1,0/1,2,1,1)	D D SPT(S)	1.00 1.00 - 1.45 1.00	1.00	Dry	1				
N=9 (1,2/2,2,2,3)	D D SPT(S)	2.00 2.00 - 2.45 2.00	1.00	Dry	2				
N=12 (1,2/3,2,3,4)	D D SPT(S)	3.00 3.00 - 3.45 3.00	1.00	Dry	3				
					(6.70)				
N=12 (2,3/3,3,3,3)	D D SPT(S)	4.00 4.00 - 4.45 4.00	1.00	Dry	4				
N=14 (3,3/3,4,3,4)	D D SPT(S)	5.00 5.00 - 5.45 5.00	1.00	4.90	5				
	D	6.00			6				
50 (11,16/50 for 150mm)	D SPT(S)	6.50 - 6.95 6.50	1.00	6.20					
	D	7.00			7				
					7.10		Very stiff very thinly laminated light grey and dark grey slightly sandy silty CLAY. Locally weakly cemented. Occasional thin bands of claystone/siltstone.		
blows=90	D U	8.00 8.00 - 8.45			8				
	D	9.00			9				
N=46 (6,8/8,7,12,19)	D SPT(S)	9.50 - 9.95 9.50	1.00	9.30					
	D	10.00							

Chiselling Details			Remarks	Borehole Diameter		
Depth Top	To (m)	Duration		Base Depth	Diameter	Remarks
				15.00	150	

Notes: For all symbols and abbreviations please see key sheet. All depths and measurements in metres. Stratum thicknesses given in brackets.

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Borehole No.
BH02
Sheet 2 of 2

Project Name	Project No.	Date	Hole Type
Woodlands Meed Primary School	6225	24/08/2018 to 24/08/2018	CP

Client	Co-ords	Water Strike Details			Logged By
Hampshire County Council	E:	Depth Strike	Time Elapsed	Rose To	PS
		4.40	20	4.40	
Contractor / **Plant Used**	N:				**Approved By**
Belfort Drilling Services / Dando 2500	L:				PS
					Scale 1:50

Samples and Results					Depth, (Thickness)	Level	Stratum Description	Legend	Well
Results	Type	Depth	Casing	Water					
							Very stiff very thinly laminated light grey and dark grey slightly sandy silty CLAY. Locally weakly cemented. Occasional thin bands of claystone/siltstone.		
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)				
	D	12.00			12				
N=50 (9,13/50 for 220mm)	D SPT(S)	12.50 - 12.95 12.50	1.00	12.30					
	D	13.00			13				
	D	14.00			14				
53 (11,17/53 for 220mm)	D SPT(S)	14.50 - 14.95 14.50	1.00	14.40					
					15 15.00		End of Borehole at 15.00m		
					16				
					17				
					18				
					19				

Chiselling Details			Remarks	Borehole Diameter		
Depth Top	To (m)	Duration		Base Depth	Diameter	Remarks
				15.00	150	

Notes: For all symbols and abbreviations please see key sheet. All depths and measurements in metres. Stratum thicknesses given in brackets.

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Borehole No.
BH03
Sheet 1 of 2

Project Name	Project No.	Date	Hole Type
Woodlands Meed Primary School	6225	30/08/2018 to 30/08/2018	CP

Client	Co-ords	Water Strike Details			Logged By
Hampshire County Council	E:	Depth Strike	Time Elapsed	Rose To	PS
Contractor / **Plant Used**	N:				Approved By
Belfort Drilling Services / Dando 2501	L:				PS
					Scale 1:50

Samples and Results					Depth, (Thickness)	Level	Stratum Description	Legend	Well
Results	Type	Depth	Casing	Water					
					(0.40)		TOPSOIL: Grass over soft dark brown sandy silty CLAY. Rare subrounded fine to medium flint gravel. Frequent rootlets.		
	ES	0.50			0.40		Soft, locally very soft, becoming firm to stiff with depth, yellowish brown mottled orange brown and pale grey slightly sandy silty CLAY. Locally laminated.		
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 D SPT(S)	2.00 2.00 - 2.45 2.00	1.00	DRY	2				
					(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	3				
N=12 (2,3/3,3,3,3)	D D SPT(S)	4.00 4.00 - 4.45 4.00	1.00	DRY	4				
					4.20		Firm, becoming stiff brown mottled orange brown and light grey slightly sandy silty CLAY.		
N=13 (2,2/3,3,4,3)	D D SPT(S)	5.00 5.00 - 5.45 5.00	1.00	DRY	5				
					(3.00)				
	D	6.00			6				
blows=80	U	6.50 - 6.85							
	D	7.00			7				
					7.20		Very stiff very thinly laminated light grey and dark grey slightly sandy silty CLAY. Locally weakly cemented. Occasional thin bands of claystone/siltstone.		
N=25 (3,4/4,6,7,8)	D D SPT(S)	8.00 8.00 - 8.45 8.00	1.00	DRY	8				
	D	9.00			9				
N=28 (3,4/5,5,9,9)	D SPT(S)	9.50 - 9.95 9.50	1.00	DRY					
	D	~~10.00~~							

Chiselling Details			Remarks	Borehole Diameter		
Depth Top	To (m)	Duration		Base Depth	Diameter	Remarks
				15.00	150	

Notes: For all symbols and abbreviations please see key sheet. All depths and measurements in metres. Stratum thicknesses given in brackets.

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Borehole No.
BH03
Sheet 2 of 2

Project Name	**Project No.**	**Date**	**Hole Type**
Woodlands Meed Primary School	6225	30/08/2018 to 30/08/2018	CP

Client	**Co-ords**	**Water Strike Details**			**Logged By**
Hampshire County Council	E:	Depth Strike	Time Elapsed	Rose To	PS
Contractor / **Plant Used**	N:				**Approved By** PS
Belfort Drilling Services / Dando 2501	L:				Scale 1:50

Samples and Results					Depth, (Thickness)	Level	Stratum Description	Legend	Well
Results	Type	Depth	Casing	Water					
N=50 (6,8/12,12,20,6)	D D SPT(S)	11.00 11.00 - 11.45 11.00	1.00	DRY	11 (7.80)		Very stiff very thinly laminated light grey and dark grey slightly sandy silty CLAY. Locally weakly cemented. Occasional thin bands of claystone/siltstone.		
	D	12.00			12				
50 (25 for 95mm/50 for 145mm)	D SPT(S)	12.50 - 12.95 12.50	1.00	DRY					
	D	13.00			13				
50 (9,10/50 for 225mm)	D SPT(S)	14.00 14.00	1.00	DRY	14				
	D	14.50 - 14.95							
					15 15.00		End of Borehole at 15.00m		
					16				
					17				
					18				
					19				

Chiselling Details			**Remarks**	**Borehole Diameter**		
Depth Top	To (m)	Duration		Base Depth	Diameter	Remarks
				15.00	150	

Notes: For all symbols and abbreviations please see key sheet. All depths and measurements in metres. Stratum thicknesses given in brackets.

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Borehole No.
BH04
Sheet 1 of 2

Project Name	Project No.	Date	Hole Type
Woodlands Meed Primary School	6225	31/08/2018 to 31/08/2018	CP

Client	Co-ords	Water Strike Details			Logged By
Hampshire County Council		Depth Strike	Time Elapsed	Rose To	PS
	E:	4.00	20	4.00	Approved By
Contractor / Plant Used	N:	14.80	20	5.64	PS
Belfort Drilling Services / Dando 2502	L:				Scale 1:50

Samples and Results					Depth, (Thickness)	Level	Stratum Description	Legend	Well
Results	Type	Depth	Casing	Water					
					(0.35)		TOPSOIL: Grass over soft dark brown sandy silty CLAY. Rare subrounded fine to medium flint gravel. Frequent rootlets.		
					0.35				
	ES	0.50					Soft, becoming firm, yellowish brown mottled light grey slightly sandy silty CLAY.		
N=6 (1,0/1,2,2,1)	D	1.00	1.00	Dry	1				
	D	1.00 - 1.45							
	SPT(S)	1.00							
					(2.85)				
N=11 (1,2/2,2,2,5)	D	2.00	1.00	Dry	2				
	D	2.00 - 2.45							
	SPT(S)	2.00							
N=26 (2,3/4,7,8,7)	D	3.00	1.00	Dry	3				
	D	3.00 - 3.45							
	SPT(S)	3.00			3.20		Firm, becoming stiff brown mottled orange brown and light grey slightly sandy silty CLAY.		
N=51 (5,7/9,11,11,20)	D	4.00	1.00	3.90	4				
	D	4.00 - 4.45							
	SPT(S)	4.00			(2.20)				
N=25 (4,4/5,8,6,6)	D	5.00	1.00	4.90	5				
	D	5.00 - 5.45							
	SPT(S)	5.00			5.40		Very stiff very thinly laminated light grey and dark grey slightly sandy silty CLAY. Locally weakly cemented. Occasional thin bands of claystone/siltstone.		
	D	6.00			6				
N=27 (5,7/11,5,6,5)	D	6.50 - 6.95	1.00	Dry					
	SPT(S)	6.50							
	D	7.00			7				
blows=40	D	8.00			8				
	U	8.00 - 8.45							
blows=40	U	8.50 - 8.90							
					9				
N=54 (3,8/9,12,16,17)	D	9.50 - 9.95	1.00	Dry					
	SPT(S)	9.50							
	D	9.60							
	D	10.00							

Chiselling Details			Remarks	Borehole Diameter		
Depth Top	To (m)	Duration	No recovery from u100 at 8.00m. Successfully reattempted at 8.50m.	Base Depth	Diameter	Remarks
				15.00	150	

Notes: For all symbols and abbreviations please see key sheet. All depths and measurements in metres. Stratum thicknesses given in brackets.

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Borehole No.
BH04
Sheet 2 of 2

Project Name	Project No.	Date	Hole Type
Woodlands Meed Primary School	6225	31/08/2018 to 31/08/2018	CP

Client	Co-ords	Water Strike Details			Logged By
Hampshire County Council	E:	Depth Strike	Time Elapsed	Rose To	PS
		4.00	20	4.00	
Contractor / Plant Used	N:	14.80	20	5.64	Approved By
Belfort Drilling Services / Dando 2502	L:				PS
					Scale 1:50

Samples and Results					Depth, (Thickness)	Level	Stratum Description	Legend	Well
Results	Type	Depth	Casing	Water					
					(9.40)		Very stiff very thinly laminated light grey and dark grey slightly sandy silty CLAY. Locally weakly cemented. Occasional thin bands of claystone/siltstone.		
N=59 (5,9/9,13,13,24)	D D SPT(S)	11.00 11.00 - 11.45 11.00	1.00	Dry	11				
	B	12.00 - 12.50			12				
50 (7,18/50 for 100mm)	D SPT(S)	12.50 - 12.95 12.50	1.00	12.40					
	D	13.00			13				
	D	14.00			14				
50 (4,7/50 for 145mm)	D SPT(S)	14.50 - 14.95 14.50	1.00	8.10					
					14.80 (0.20) 15.00		Very dense light grey SAND. Sand is fine-medium End of Borehole at 15.00m		
					16				
					17				
					18				
					19				

Chiselling Details			Remarks	Borehole Diameter		
Depth Top	To (m)	Duration	No recovery from u100 at 8.00m. Successfully reattempted at 8.50m.	Base Depth	Diameter	Remarks
				15.00	150	

Notes: For all symbols and abbreviations please see key sheet. All depths and measurements in metres. Stratum thicknesses given in brackets.

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Site Investigation Contractors

The Slate Barn, Lower Lowley,
Dunsford, Exeter, EX6 7BP
01647 252414
www.terrafirmasouth.co.uk

Borehole No.
BH05
Sheet 1 of 2

Project Name	Project No.	Date	Hole Type
Woodlands Meed Primary School	6225	01/09/2018 to 01/09/2018	CP

Client	Co-ords	Water Strike Details			Logged By
Hampshire County Council	E:	Depth Strike	Time Elapsed	Rose To	PS
		4.30	20	4.30	
Contractor / Plant Used	N:	9.50	20	8.70	Approved By
Belfort Drilling Services / Dando 2502	L:				PS

Scale 1:50

Samples and Results					Depth, (Thickness)	Level	Stratum Description	Legend	Well
Results	Type	Depth	Casing	Water					
					(0.35)		TOPSOIL: Grass over soft dark brown sandy silty CLAY. Rare subrounded fine to medium flint gravel. Frequent rootlets.		
	ES	0.50			0.35		Soft, becoming firm to stiff with depth, yellowish brown mottled orange brown and pale grey slightly sandy silty CLAY. Locally laminated.		
N=4 (1,0/1,0,1,2)	D D SPT(S)	1.00 1.00 - 1.45 1.00	1.00	Dry	1				
N=6 (1,1/1,2,1,2)	D D SPT(S)	2.00 2.00 - 2.45 2.00	1.00	Dry	2				
N=17 (2,3/4,4,4,5)	D D SPT(S)	3.00 3.00 - 3.45 3.00	1.00	Dry	3 (5.25)				
N=17 (3,3/3,4,5,5)	D D SPT(S)	4.00 4.00 - 4.45 4.00	1.00	Dry	4				
N=43 (11,15/8,8,10,17)	D D SPT(S)	5.00 5.00 - 5.45 5.00	1.00	Dry	5				
					5.60		Very stiff very thinly laminated light grey and dark grey slightly sandy silty CLAY. Locally weakly cemented. Occasional thin bands of claystone/siltstone.		
	D	6.00			6				
blows=70	U	6.50 - 6.95							
	D	7.00			7				
N=39 (3,4/8,12,10,9)	D D SPT(S)	8.00 8.00 - 8.45 8.00	1.00	Dry	8				
	D	9.00			9				
N=38 (4,7/6,9,11,12)	D SPT(S)	9.50 - 9.95 9.50	1.00	Dry			9.50 to 9.60m - with gravel of mudstone. Possible thin band.		
	B	10.00 - 10.50							

Chiselling Details			Remarks	Borehole Diameter		
Depth Top	To (m)	Duration		Base Depth	Diameter	Remarks
				15.00	150	

Notes: For all symbols and abbreviations please see key sheet. All depths and measurements in metres. Stratum thicknesses given in brackets.

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Borehole No.
BH05
Sheet 2 of 2

Project Name	Project No.	Date	Hole Type
Woodlands Meed Primary School	6225	01/09/2018 to 01/09/2018	CP

Client	Co-ords	Water Strike Details			Logged By
Hampshire County Council	E:	Depth Strike	Time Elapsed	Rose To	PS
		4.30	20	4.30	
	N:	9.50	20	8.70	Approved By
	L:				PS

Contractor	Plant Used	Scale
Belfort Drilling Services	Dando 2502	1:50

Samples and Results					Depth, (Thickness)	Level	Stratum Description	Legend	Well
Results	Type	Depth	Casing	Water					
					(9.40)		Very stiff very thinly laminated light grey and dark grey slightly sandy silty CLAY. Locally weakly cemented. Occasional thin bands of claystone/siltstone.		
50 (50 for 100mm/50 for 90mm)	D SPT(S)	11.00 11.00	1.00	10.90	11				
	D	12.00			12				
50 (7,11/50 for 225mm)	D SPT(S)	12.50 - 12.95 12.50	1.00	12.30					
	D	13.00			13				
	D	14.00			14				
50 (8,12/50 for 175mm)	D SPT(S)	14.50 - 14.95 14.50	1.00	14.40					
					15	15.00	End of Borehole at 15.00m		
					16				
					17				
					18				
					19				

Chiselling Details			Remarks	Borehole Diameter		
Depth Top	To (m)	Duration		Base Depth	Diameter	Remarks
				15.00	150	

Notes: For all symbols and abbreviations please see key sheet. All depths and measurements in metres. Stratum thicknesses given in brackets.

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Exploratory Hole Key Sheet

Samples

ES	Environmental Chemistry Soil Sample (Mulitple containers where appropriate)
EW	Environmental Chemistry Water Sample (Mulitple containers where appropriate)
B	Bulk Disturbed Sample
D	Small Disturbed Sample
U	Driven Tube Sample
UT	Driven Thin Wall Tube Sample
P	Pushed Piston Sample
C	Core Sample (from rotary core)
G	Gas Sample

In-situ Tests

SPT(S) or (C)	Standard Penetration Test, Split Spoon (S) or Solid Cone (C)
HV	Hand Vane Shear Strength
PP	Pocket Penetrometer Test

Ground Water

Groundwater Strike

Groundwater Level after standing period

Drilling Records

TCR	Total Core Recovery (given as % of core run)
SCR	Solid Core Recovery (given as % of core run)
RQD	Rock Quality Designation (given as % of core run)
FI	Fracture Indices
NI	Non Intact core run

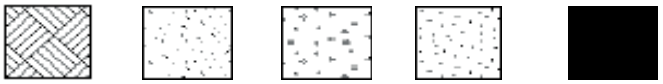
Installations

Plain Standpipe

Slotted Standpipe

Backfill Legends

Arisings Concrete Gravel Sand Bentonite/Grout



Notes

Soils and rocks are described in accordance with BS 5930:2015.

The assessment of TCR, SCR, RQD and FI excludes artificial fractures caused by drilling

Strata Legends in accordance with BS5930:2015.

Exploratory logs present the results of the Standard Pentration Test recorded in the field.

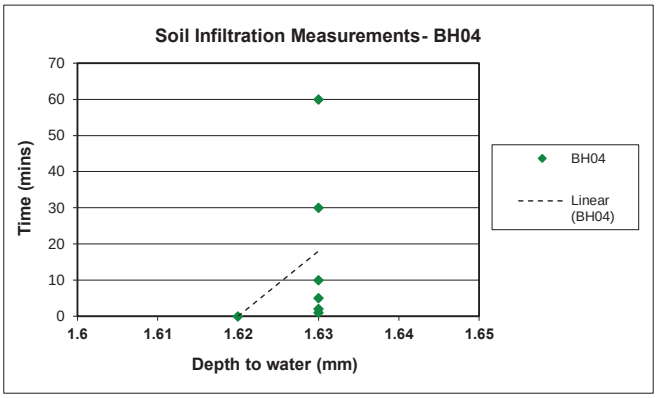
Annex C: In-situ Test Results

TERRA FIRMA (SOUTH)

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

	Depth to Water (mm)	Time (Mins)
(effective depth - 100%)	1.62	0
	1.63	1
	1.63	2
	1.63	5
	1.63	10
	1.63	30
(effective depth - 0%)	1.630	60

Diameter of Borehole (m)	0.150
Cross-sectional Area- **A** (m^2)	0.017671
Depth of Borehole (m)	5.00
Effective Storage Depth (m)	1E-05
75% Effective Depth (V_{p75})	0.0016225
25% Effective Depth (V_{p25})	0.0016275
Volume of Water Outflowing (m^3)	8.83573E-08
Assumed 50% effective depth (a_{p50})	4.998375
Mean Surface Area of outflow	2.373100
Time for 25% Outflow (t_{p25})	4.5
Time for 75% Outflow (t_{p75})	13.5
Soil Infiltration Rate (m/s)	**6.89497E-11**



NB. tp25 and tp75 were calculated through a linear trend by fitting a straight line using the least squares method to the known values

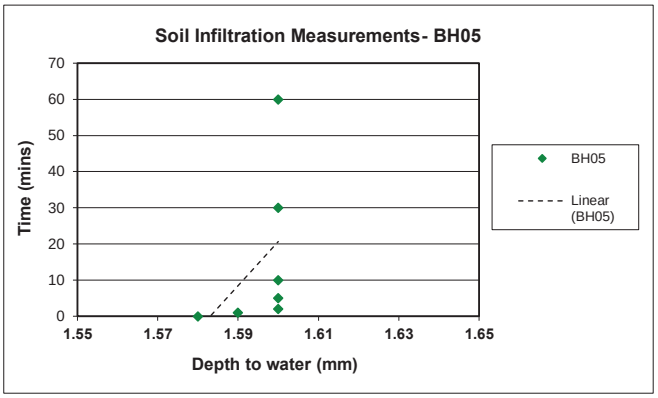
Soil Infiltration Worksheet: This worksheet has been produced in combination with the document 'BRE Digest 365- September 1991'
This worksheet can be used to determine soil infiltration rates from trial pit field measurements
Worksheet options are identified by a green background

TERRA FIRMA (SOUTH)

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

	Depth to Water (mm)	Time (Mins)
(effective depth - 100%)	1.58	0
	1.59	1
	1.6	2
	1.6	5
	1.6	10
	1.6	30
(effective depth - 0%)	1.600	60

Diameter of Borehole (m)	0.150
Cross-sectional Area- **A** (m^2)	0.017671
Depth of Borehole (m)	5.00
Effective Storage Depth (m)	0.00002
75% Effective Depth (V_{p75})	0.001585
25% Effective Depth (V_{p25})	0.001595
Volume of Water Outflowing (m^3)	1.76715E-07
Assumed 50% effective depth (a_{p50})	4.99841
Mean Surface Area of outflow	2.373117
Time for 25% Outflow (t_{p25})	2.365384615
Time for 75% Outflow (t_{p75})	14.55769231
Soil Infiltration Rate (m/s)	**1.01793E-10**



NB. tp25 and tp75 were calculated through a linear trend by fitting a straight line using the least squares method to the known values

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

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

Final Report

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

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:

Details: Martin Dyer, Laboratory Manager

Chemtest
The right chemistry to deliver results

Results - Soil

Project: 6225 Woodlands Meed Primary School

Client: Terra Firma							
Quotation No.:			**Chemtest Job No.:**		18-28352	18-28352	18-28352
			Chemtest Sample ID.:		690363	690365	690367
			Sample Location:		BH01	BH03	BH05
			Sample Type:		SOIL	SOIL	SOIL
			Top Depth (m):		0.50	0.50	0.50
			Bottom Depth (m):			1.00	1.00
			Date Sampled:		23-Aug-2018	30-Aug-2018	01-Sep-2018
			Asbestos Lab:		DURHAM	DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**			
ACM Type	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	U	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	U	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	2430	%	0.010	0.43	0.091	0.057
Arsenic	U	2450	mg/kg	1.0	28	19	5.2
Cadmium	U	2450	mg/kg	0.10	4.4	0.29	0.23
Chromium	U	2450	mg/kg	1.0	44	32	40
Copper	U	2450	mg/kg	0.50	130	29	38
Mercury	U	2450	mg/kg	0.10	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	mg/kg	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	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10

Chemtest
The right chemistry to deliver results

Results - Soil

Project: 6225 Woodlands Meed Primary School

Client: Terra Firma							
Quotation No.:	**Chemtest Job No.:**				18-28352	18-28352	18-28352
	Chemtest Sample ID.:				690363	690365	690367
	Sample Location:				BH01	BH03	BH05
	Sample Type:				SOIL	SOIL	SOIL
	Top Depth (m):				0.50	0.50	0.50
	Bottom Depth (m):					1.00	1.00
	Date Sampled:				23-Aug-2018	30-Aug-2018	01-Sep-2018
	Asbestos 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

Results - Single Stage WAC

Project: 6225 Woodlands Meed Primary School

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	18-28352						
Chemtest Sample ID:	690363						
Sample Ref:							
Sample ID:							
Sample Location:	BH01						
Top Depth(m):	0.50						
Bottom Depth(m):							
Sampling Date:	23-Aug-2018						
Determinand	**SOP**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625	U	%	0.33	3	5	6
Loss On Ignition	2610	U	%	5.3	--	--	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	--	--
pH	2010	U		7.8	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.042	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/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
Lead	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
Fluoride	1220	U	0.093	< 1.0	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	25	250	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	18	180	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	18

Waste Acceptance Criteria

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.

Results - Single Stage WAC

Project: 6225 Woodlands Meed Primary School

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	18-28352						
Chemtest Sample ID:	690364						
Sample Ref:							
Sample ID:							
Sample Location:	BH02						
Top Depth(m):	0.50						
Bottom Depth(m):							
Sampling Date:	24-Aug-2018						
Determinand	**SOP**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total 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	--	--
pH	2010	U		4.7	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	< 0.0020	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/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
Lead	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
Sulphate	1220	U	3.2	32	1000	20000	50000
Total Dissolved Solids	1020	N	20	190	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	19	190	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	20

Waste Acceptance Criteria

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.

Results - Single Stage WAC

Project: 6225 Woodlands Meed Primary School

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	18-28352						
Chemtest Sample ID:	690365						
Sample Ref:							
Sample ID:							
Sample Location:	BH03						
Top Depth(m):	0.50						
Bottom Depth(m):	1.00						
Sampling Date:	30-Aug-2018						
Determinand	**SOP**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total 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	--	--
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	--	--
pH	2010	U		7.0	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.013	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/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
Lead	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
Sulphate	1220	U	3.5	35	1000	20000	50000
Total Dissolved Solids	1020	N	16	160	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	19	190	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	18

Waste Acceptance Criteria

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.

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	B	Amber Glass 250ml
690363			BH01	23-Aug-2018	B	Amber Glass 60ml
690363			BH01	23-Aug-2018	B	Plastic Tub 500g
690364			BH02	24-Aug-2018	B	Amber Glass 250ml
690364			BH02	24-Aug-2018	B	Amber Glass 60ml
690364			BH02	24-Aug-2018	B	Plastic Tub 500g
690365			BH03	30-Aug-2018	B	Amber Glass 250ml
690365			BH03	30-Aug-2018	B	Amber Glass 60ml
690365			BH03	30-Aug-2018	B	Plastic Tub 500g
690367			BH05	01-Sep-2018	B	Amber Glass 250ml
690367			BH05	01-Sep-2018	B	Amber Glass 60ml
690367			BH05	01-Sep-2018	B	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	pH	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

TEST CERTIFICATE

Liquid and Plastic Limits

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

4041

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

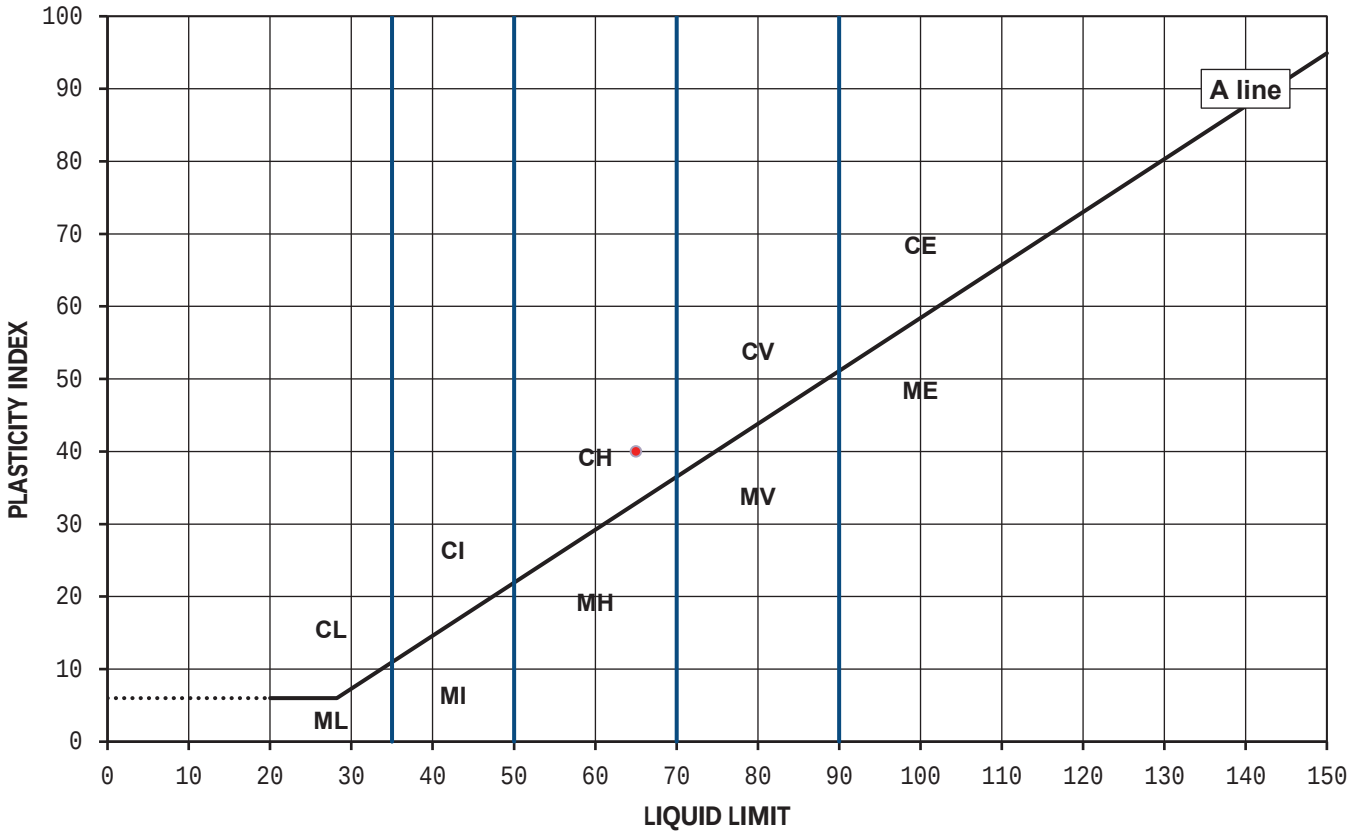
Client:	Terrafirma South	Client Reference:	6225
Client Address:	The Slate Barn Lower Lowley Dunsford, Devon, EX6 7BP	Job Number:	18-13298
		Date Sampled:	Not Given
		Date Received:	14/09/2018
Contact:	Kevin Scanlon	Date Tested:	12/10/2018
Site Name:	Woodland Meed Primary School	Sampled By:	Not Given
Site Address:	Not Given		

Test Results

Laboratory Reference:	1062501	Depth Top [m]:	1.00
Hole No.:	BH01	Depth Base [m]:	Not Given
Sample Reference:	2	Sample Type:	D
Soil Description:	Brown CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
29	65	25	40	100



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

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

Remarks:

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

Signed: Darren Berrill
Geotechnical General Manager

GF 236.3

for and on behalf of i2 Analytical Ltd

TEST CERTIFICATE

Liquid and Plastic Limits

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

4041

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

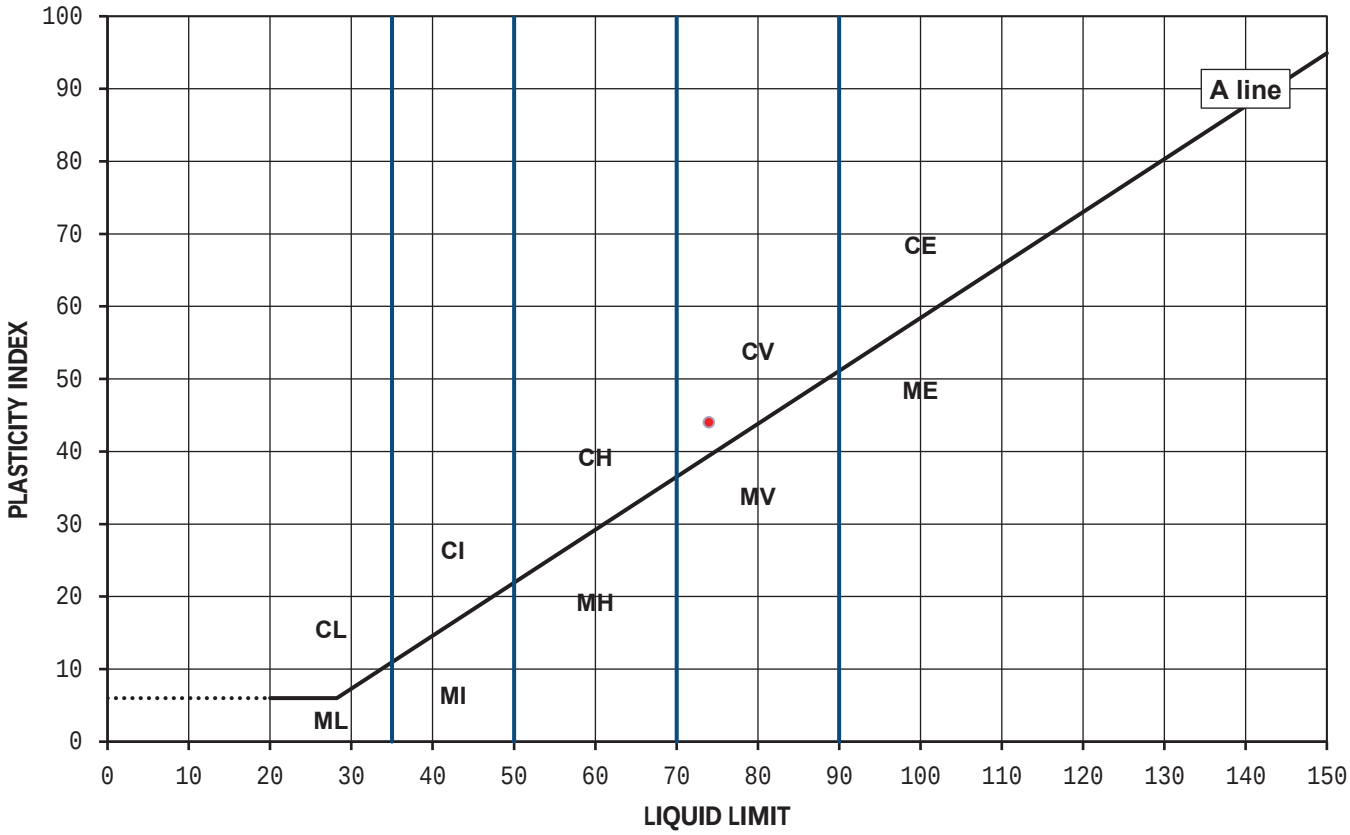
Client:	Terrafirma South	Client Reference:	6225
Client Address:	The Slate Barn Lower Lowley Dunsford, Devon, EX6 7BP	Job Number:	18-13298
		Date Sampled:	Not Given
		Date Received:	14/09/2018
Contact:	Kevin Scanlon	Date Tested:	12/10/2018
Site Name:	Woodland Meed Primary School	Sampled By:	Not Given
Site Address:	Not Given		

Test Results

Laboratory Reference:	1062503	Depth Top [m]:	2.00
Hole No.:	BH01	Depth Base [m]:	Not Given
Sample Reference:	4	Sample Type:	D
Soil Description:	Brown to grey CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
30	74	30	44	100



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

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

Remarks:

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

Signed: Darren Berrill
Geotechnical General Manager

GF 236.3

for and on behalf of i2 Analytical Ltd

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

4041

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

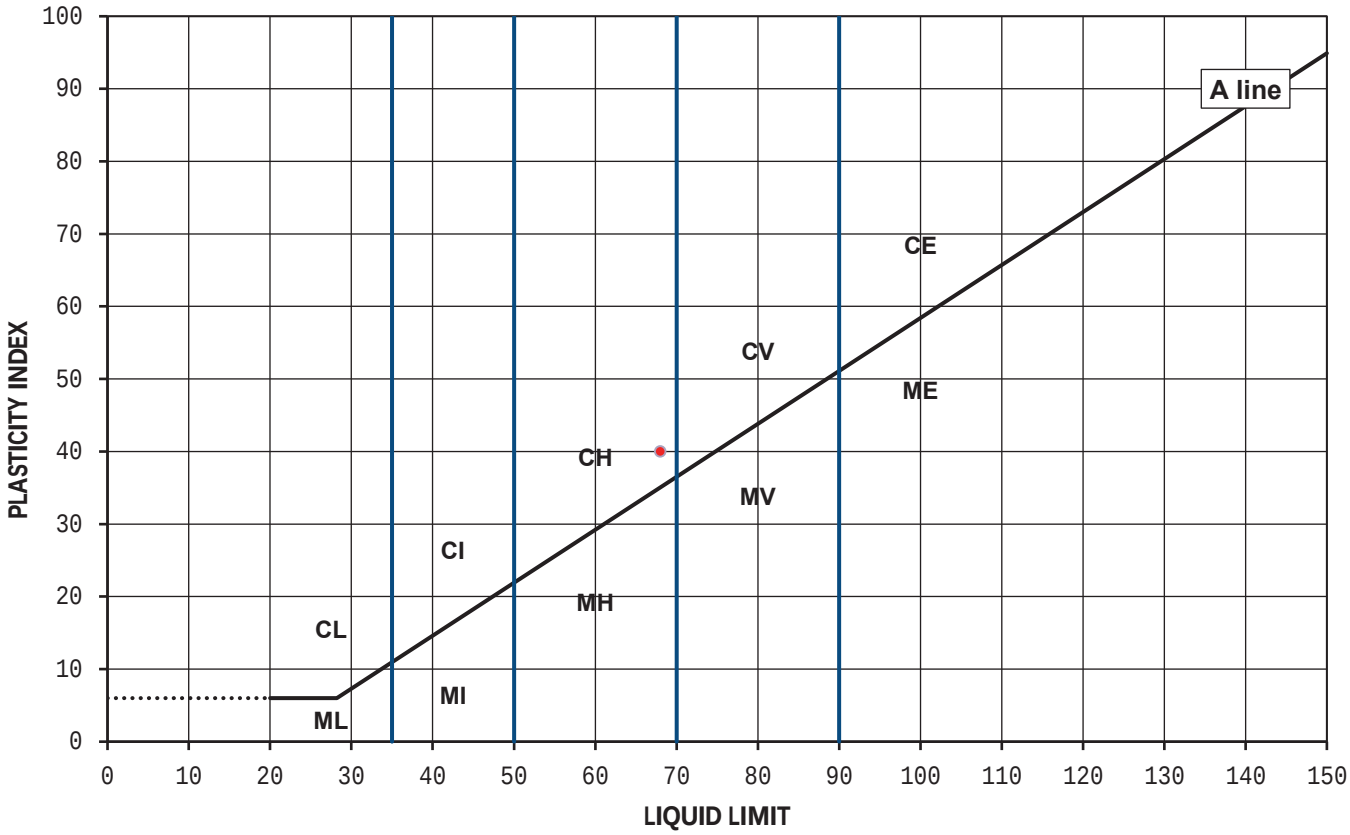
Client:	Terrafirma South	Client Reference:	6225
Client Address:	The Slate Barn Lower Lowley Dunsford, Devon, EX6 7BP	Job Number:	18-13298
		Date Sampled:	Not Given
		Date Received:	14/09/2018
Contact:	Kevin Scanlon	Date Tested:	12/10/2018
Site Name:	Woodland Meed Primary School	Sampled By:	Not Given
Site Address:	Not Given		

Test Results

Laboratory Reference:	1062504	Depth Top [m]:	3.00
Hole No.:	BH01	Depth Base [m]:	Not Given
Sample Reference:	6	Sample Type:	D
Soil Description:	Brown CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
29	68	28	40	100



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

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

Remarks:

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

Signed: Darren Berrill
Geotechnical General Manager

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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

4041

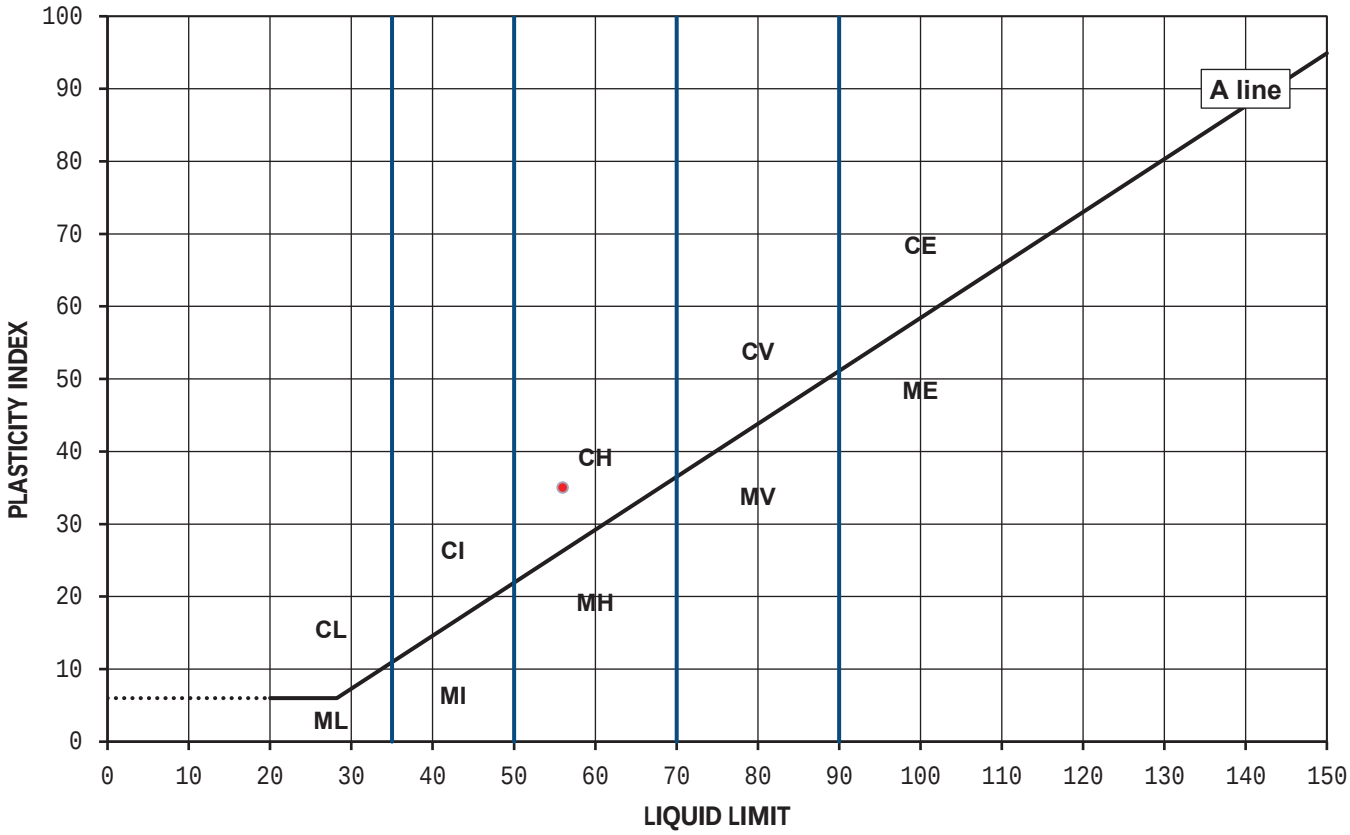
Tested in Accordance with: BS 1377-2: 1990: Clause 4.3 and 5

Client:	Terrafirma South	Client Reference:	6225
Client Address:	The Slate Barn Lower Lowley Dunsford, Devon, EX6 7BP	Job Number:	18-13298
		Date Sampled:	Not Given
		Date Received:	14/09/2018
Contact:	Kevin Scanlon	Date Tested:	12/10/2018
Site Name:	Woodland Meed Primary School	Sampled By:	Not Given
Site Address:	Not Given		

Test Results

Laboratory Reference:	1062505	Depth Top [m]:	5.00
Hole No.:	BH01	Depth Base [m]:	Not Given
Sample Reference:	10	Sample Type:	D
Soil Description:	Brown slightly sandy CLAY		
Sample Preparation:	Tested in natural condition		

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
19	56	21	35	100



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

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

Remarks:

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

Signed: Darren Berrill
Geotechnical General Manager

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

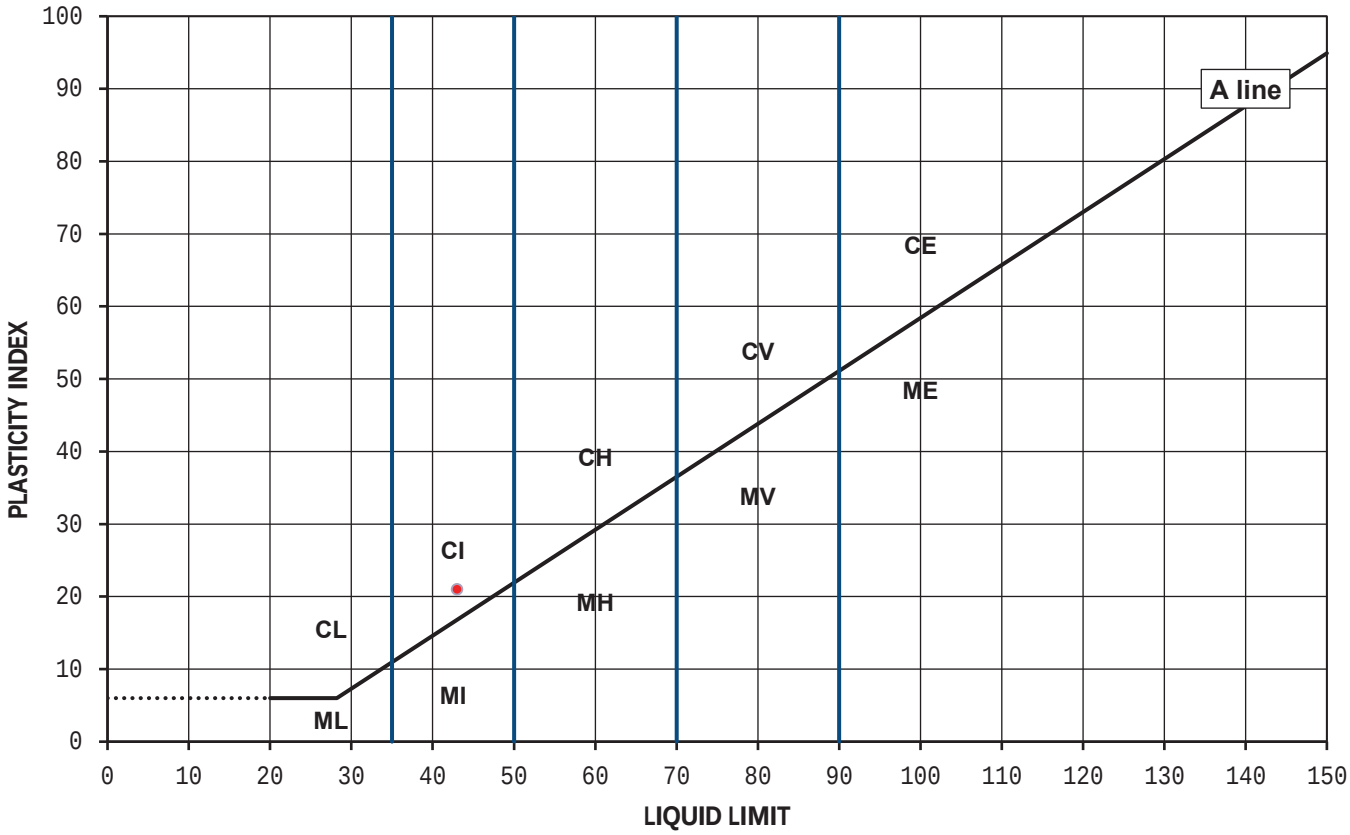
Client:	Terrafirma South	Client Reference:	6225
Client Address:	The Slate Barn Lower Lowley Dunsford, Devon, EX6 7BP	Job Number:	18-13298
		Date Sampled:	Not Given
		Date Received:	14/09/2018
Contact:	Kevin Scanlon	Date Tested:	12/10/2018
Site Name:	Woodland Meed Primary School	Sampled By:	Not Given
Site Address:	Not Given		

Test Results

Laboratory Reference:	1062507	Depth Top [m]:	7.00
Hole No.:	BH01	Depth Base [m]:	Not Given
Sample Reference:	14	Sample Type:	D
Soil Description:	Grey sandy CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
20	43	22	21	100



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

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

Remarks:

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

Signed: Darren Berrill
Geotechnical General Manager

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for and on behalf of i2 Analytical Ltd

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

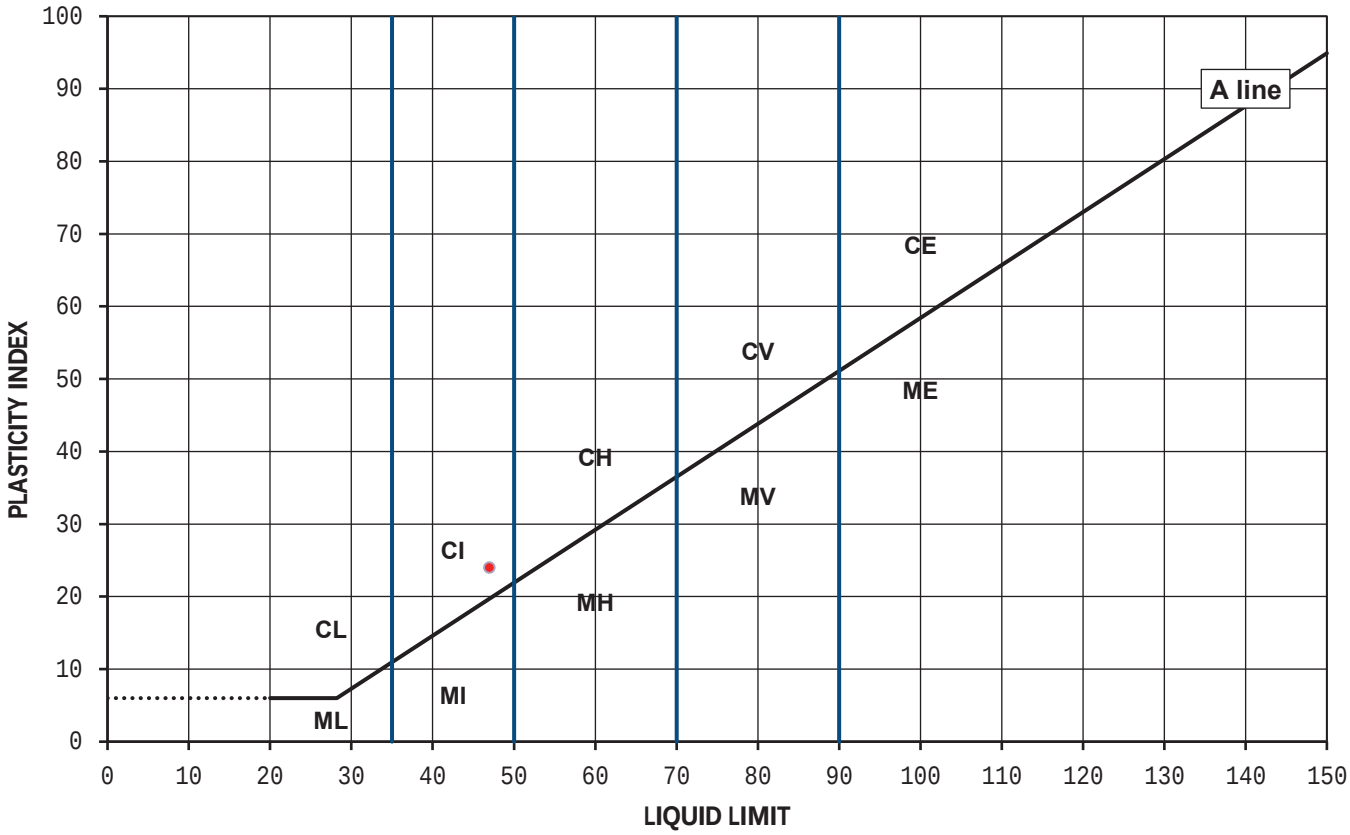
Client:	Terrafirma South	Client Reference:	6225
Client Address:	The Slate Barn Lower Lowley Dunsford, Devon, EX6 7BP	Job Number:	18-13298
		Date Sampled:	Not Given
		Date Received:	14/09/2018
Contact:	Kevin Scanlon	Date Tested:	12/10/2018
Site Name:	Woodland Meed Primary School	Sampled By:	Not Given
Site Address:	Not Given		

Test Results

Laboratory Reference:	1062508	Depth Top [m]:	10.00
Hole No.:	BH01	Depth Base [m]:	Not Given
Sample Reference:	19	Sample Type:	D
Soil Description:	Grey slightly sandy CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
15	47	23	24	100



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

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

Remarks:

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

Signed: Darren Berrill
Geotechnical General Manager

GF 236.3

for and on behalf of i2 Analytical Ltd

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Liquid and Plastic Limits

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

4041

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

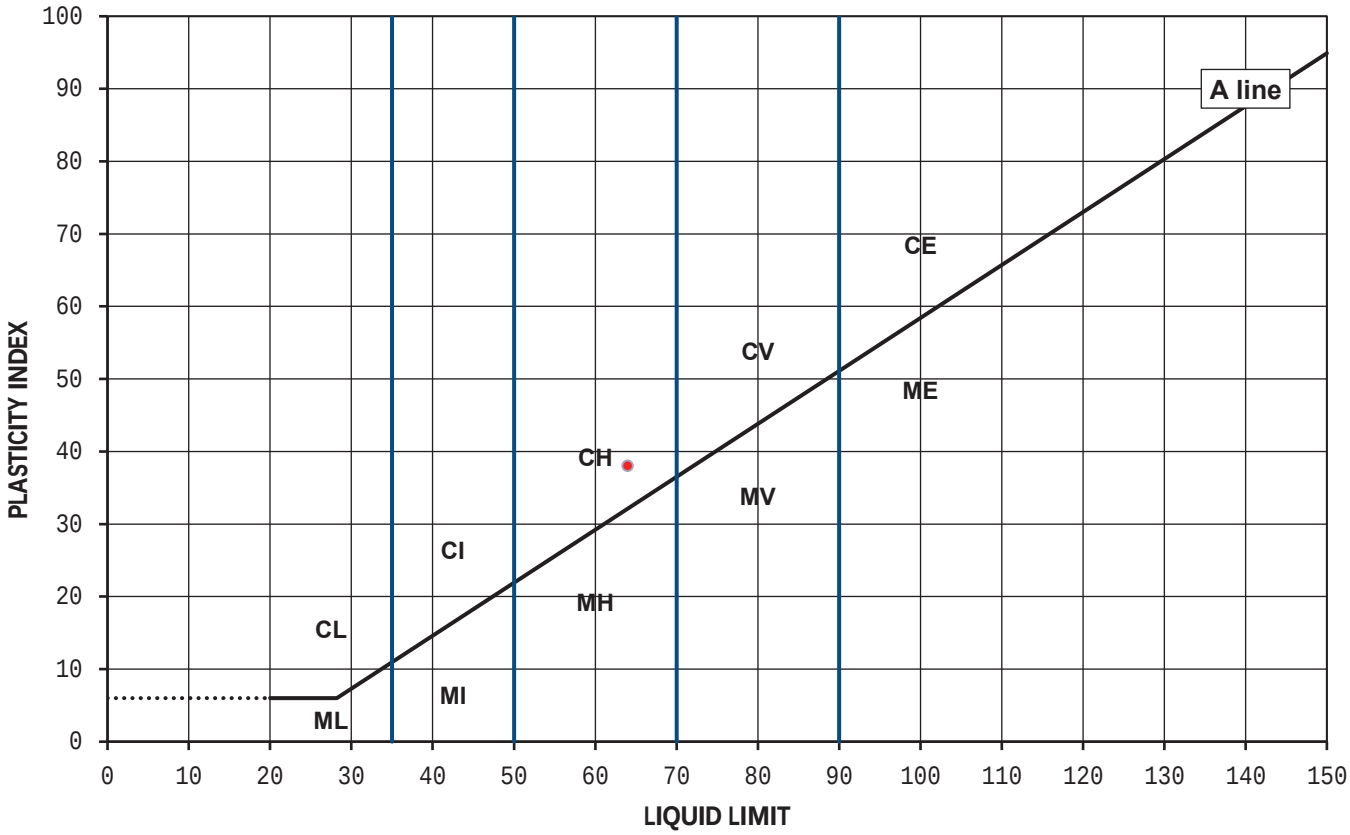
Client:	Terrafirma South	Client Reference:	6225
Client Address:	The Slate Barn Lower Lowley Dunsford, Devon, EX6 7BP	Job Number:	18-13298
		Date Sampled:	Not Given
		Date Received:	14/09/2018
Contact:	Kevin Scanlon	Date Tested:	12/10/2018
Site Name:	Woodland Meed Primary School	Sampled By:	Not Given
Site Address:	Not Given		

Test Results

Laboratory Reference:	1062510	Depth Top [m]:	12.00
Hole No.:	BH01	Depth Base [m]:	Not Given
Sample Reference:	23	Sample Type:	D
Soil Description:	Grey CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
19	64	26	38	100



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

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

Remarks:

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

Signed: Darren Berrill
Geotechnical General Manager

GF 236.3

for and on behalf of i2 Analytical Ltd

TEST CERTIFICATE

Liquid and Plastic Limits

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

4041

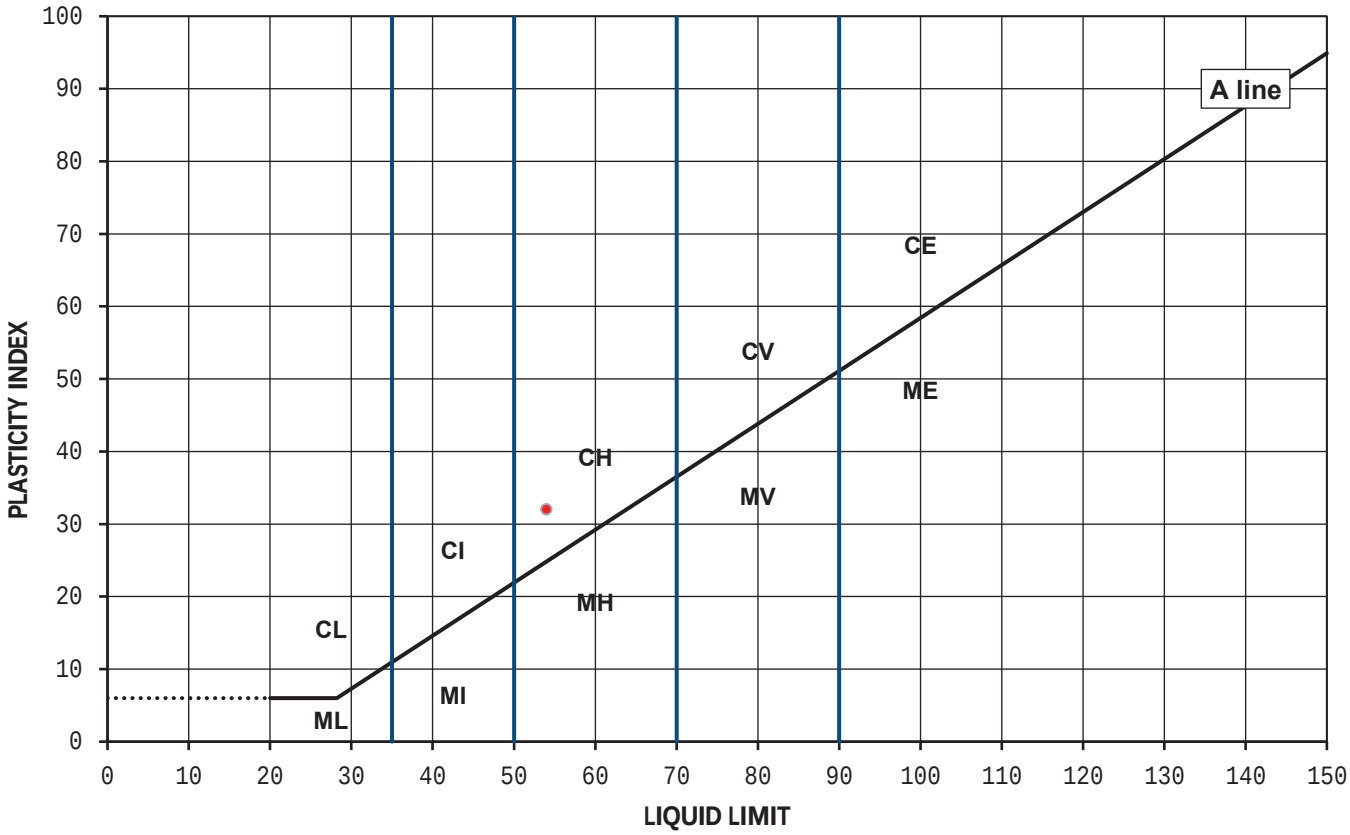
Tested in Accordance with: BS 1377-2: 1990: Clause 4.3 and 5

Client:	Terrafirma South	Client Reference:	6225
Client Address:	The Slate Barn Lower Lowley Dunsford, Devon, EX6 7BP	Job Number:	18-13298
		Date Sampled:	Not Given
		Date Received:	14/09/2018
Contact:	Kevin Scanlon	Date Tested:	12/10/2018
Site Name:	Woodland Meed Primary School	Sampled By:	Not Given
Site Address:	Not Given		

Test Results

Laboratory Reference:	1062511	Depth Top [m]:	14.00
Hole No.:	BH01	Depth Base [m]:	Not Given
Sample Reference:	26	Sample Type:	D
Soil Description:	Grey slightly sandy CLAY		
Sample Preparation:	Tested in natural condition		

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
33	54	22	32	100



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

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

Remarks:

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

Signed: Darren Berrill
Geotechnical General Manager

GF 236.3

for and on behalf of i2 Analytical Ltd

TEST CERTIFICATE

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

4041

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

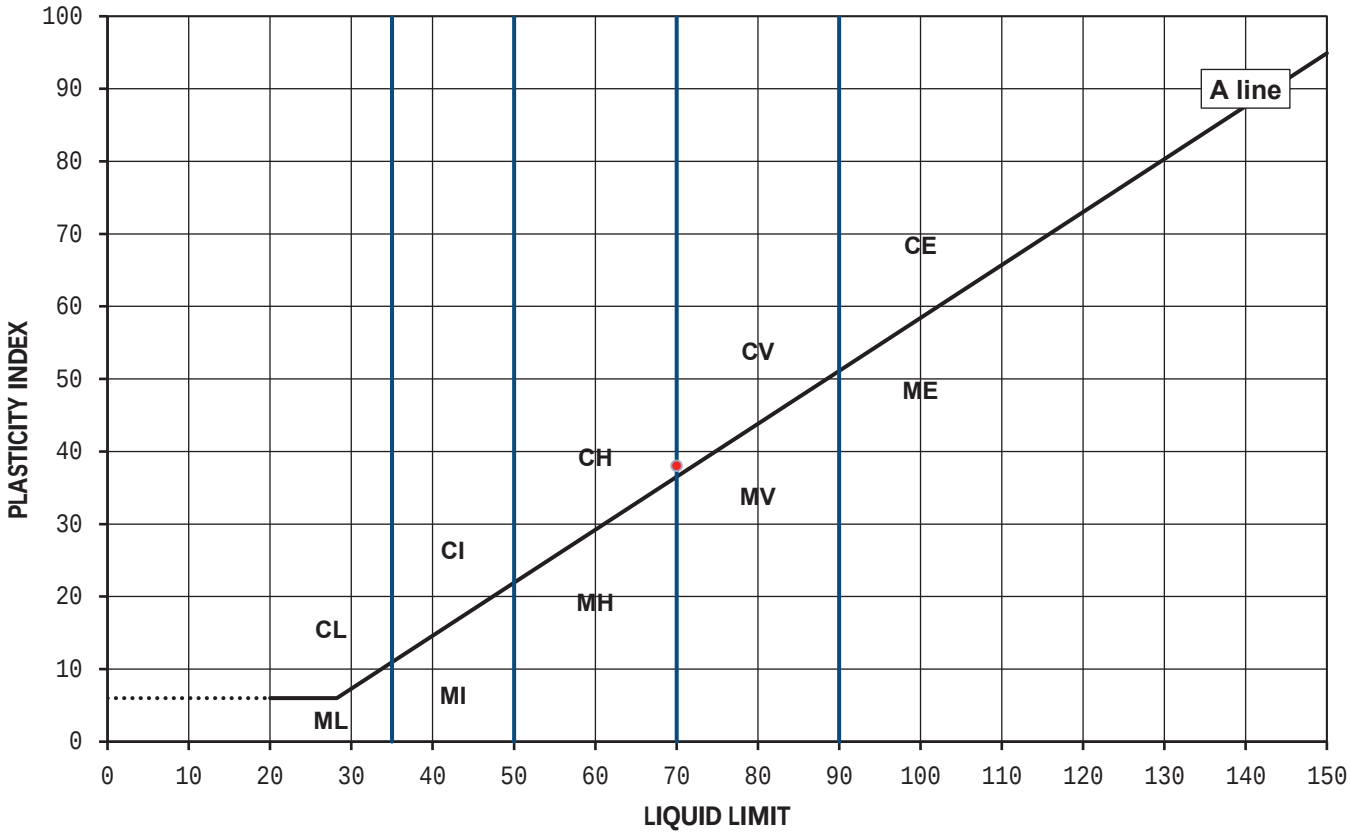
Client:	Terrafirma South	Client Reference:	6225
Client Address:	The Slate Barn Lower Lowley Dunsford, Devon, EX6 7BP	Job Number:	18-13298
		Date Sampled:	Not Given
		Date Received:	14/09/2018
Contact:	Kevin Scanlon	Date Tested:	10/10/2018
Site Name:	Woodland Meed Primary School	Sampled By:	Not Given
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		

Sample Preparation: Tested after washing to remove >425um

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
27	70	32	38	87



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

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

Remarks:

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

Signed: Darren Berrill
Geotechnical General Manager

GF 236.3

for and on behalf of i2 Analytical Ltd

TEST CERTIFICATE

Liquid and Plastic Limits

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

4041

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

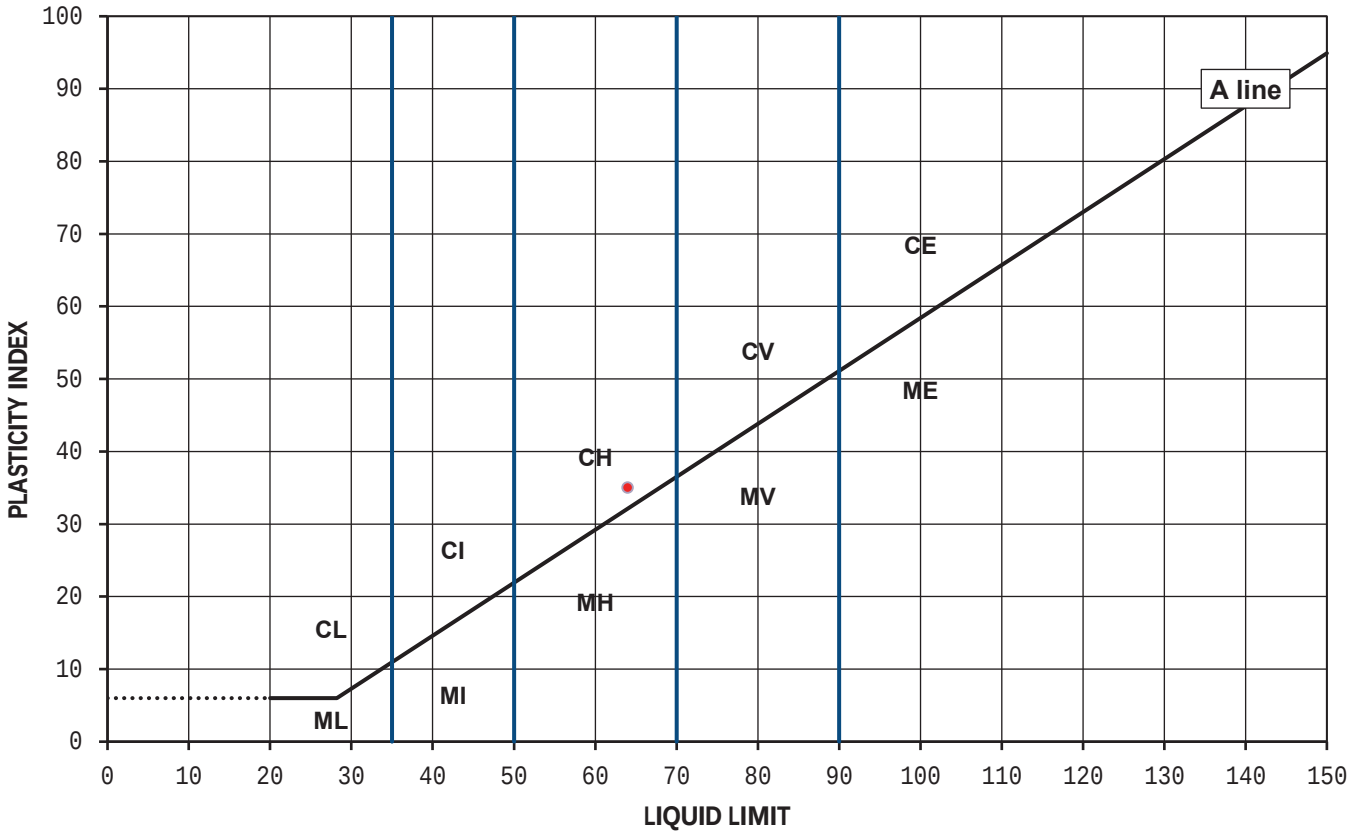
Client:	Terrafirma South	Client Reference:	6225
Client Address:	The Slate Barn Lower Lowley Dunsford, Devon, EX6 7BP	Job Number:	18-13298
		Date Sampled:	Not Given
		Date Received:	14/09/2018
Contact:	Kevin Scanlon	Date Tested:	12/10/2018
Site Name:	Woodland Meed Primary School	Sampled By:	Not Given
Site Address:	Not Given		

Test Results

Laboratory Reference:	1062514	Depth Top [m]:	2.00
Hole No.:	BH02	Depth Base [m]:	Not Given
Sample Reference:	4	Sample Type:	D
Soil Description:	Brown CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
24	64	29	35	100



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

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

Remarks:

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

Signed: Darren Berrill
Geotechnical General Manager

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for and on behalf of i2 Analytical Ltd

TEST CERTIFICATE

Liquid and Plastic Limits

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

4041

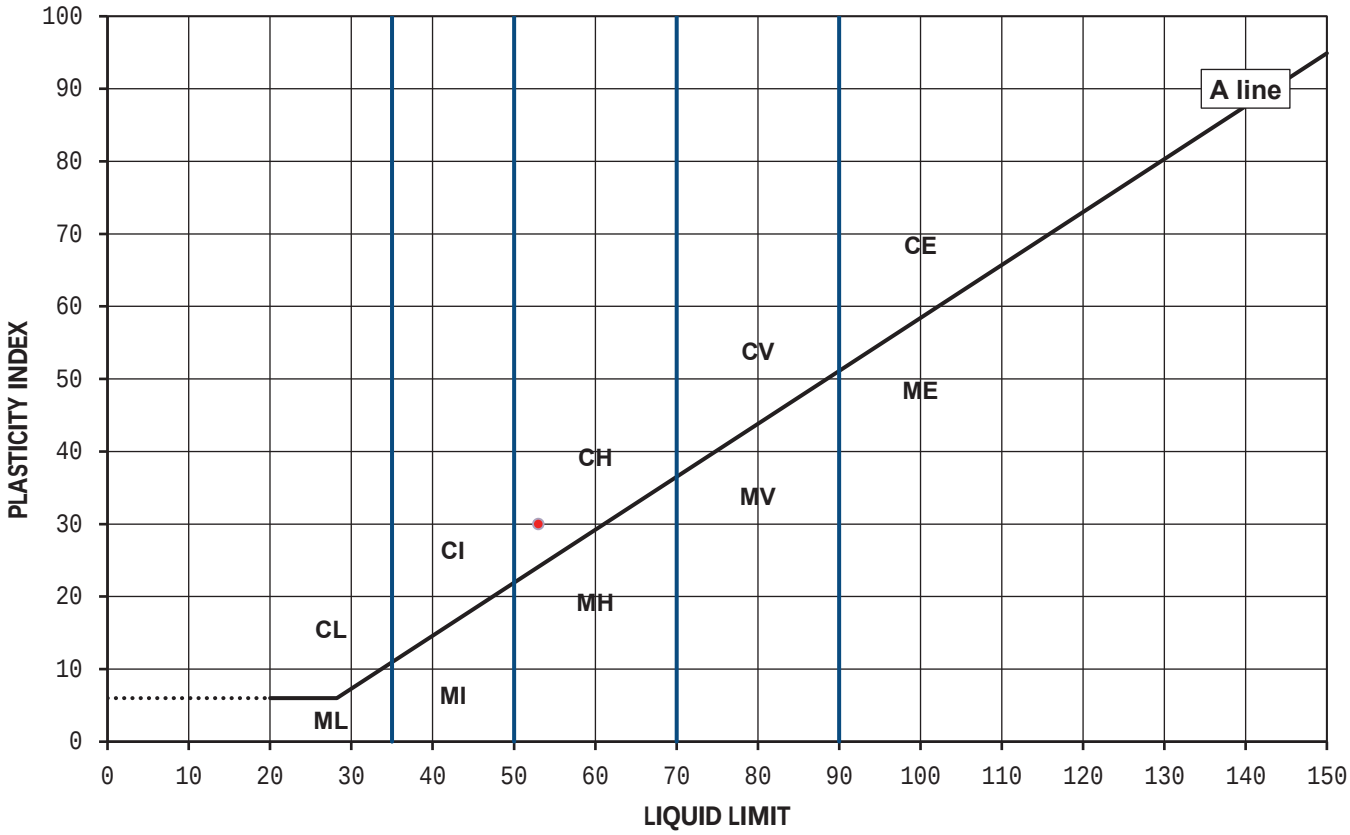
Tested in Accordance with: BS 1377-2: 1990: Clause 4.3 and 5

Client:	Terrafirma South	Client Reference:	6225
Client Address:	The Slate Barn Lower Lowley Dunsford, Devon, EX6 7BP	Job Number:	18-13298
		Date Sampled:	Not Given
		Date Received:	14/09/2018
Contact:	Kevin Scanlon	Date Tested:	12/10/2018
Site Name:	Woodland Meed Primary School	Sampled By:	Not Given
Site Address:	Not Given		

Test Results

Laboratory Reference:	1062515	Depth Top [m]:	4.00
Hole No.:	BH02	Depth Base [m]:	Not Given
Sample Reference:	8	Sample Type:	D
Soil Description:	Brown slightly sandy CLAY		
Sample Preparation:	Tested in natural condition		

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
21	53	23	30	100



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

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

Remarks:

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

Signed: Darren Berrill
Geotechnical General Manager

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

4041

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

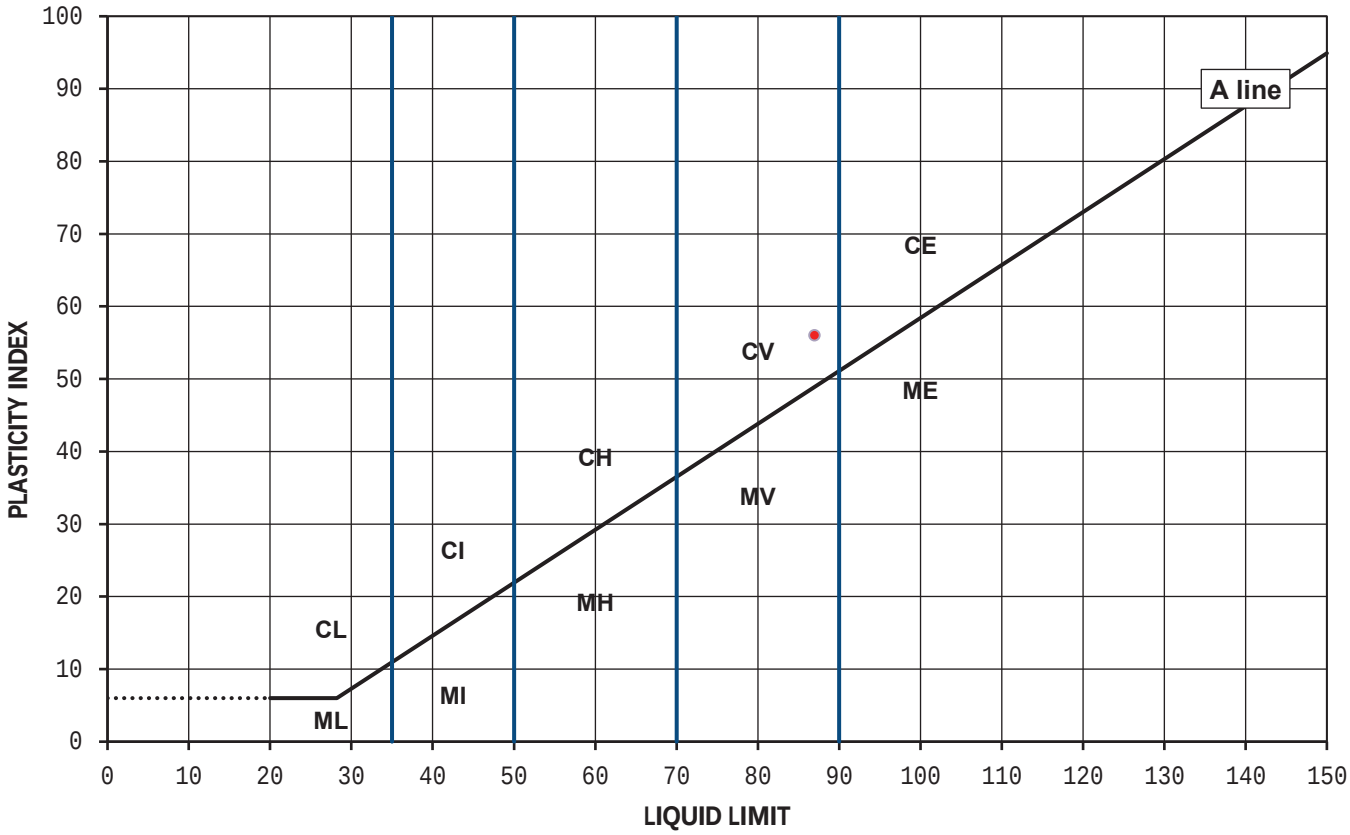
Client:	Terrafirma South	Client Reference:	6225
Client Address:	The Slate Barn Lower Lowley Dunsford, Devon, EX6 7BP	Job Number:	18-13298
		Date Sampled:	Not Given
		Date Received:	14/09/2018
Contact:	Kevin Scanlon	Date Tested:	12/10/2018
Site Name:	Woodland Meed Primary School	Sampled By:	Not Given
Site Address:	Not Given		

Test Results

Laboratory Reference:	1062516	Depth Top [m]:	5.00
Hole No.:	BH02	Depth Base [m]:	Not Given
Sample Reference:	10	Sample Type:	D
Soil Description:	Brown CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
28	87	31	56	100



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

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

Remarks:

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

Signed: Darren Berrill
Geotechnical General Manager

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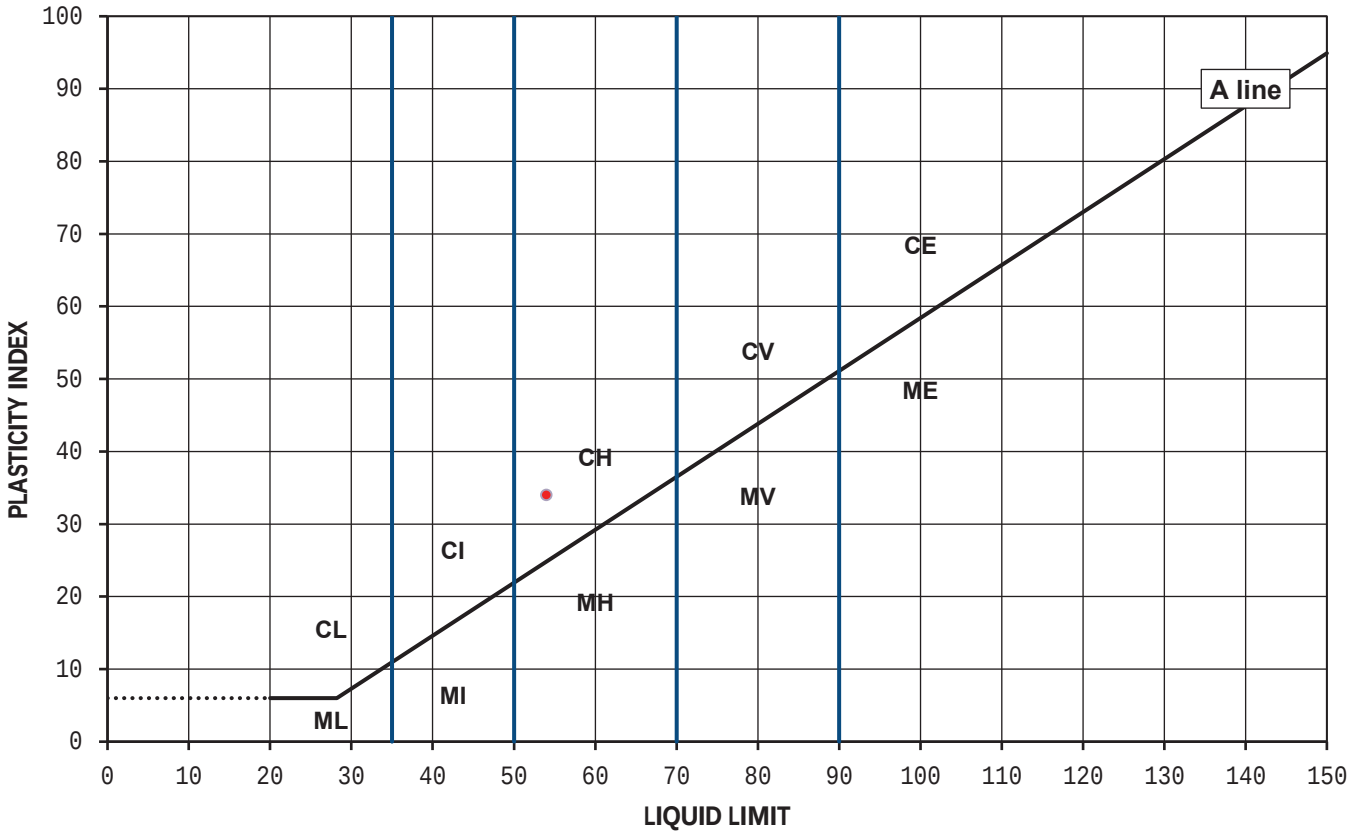
Tested in Accordance with: BS 1377-2: 1990: Clause 4.3 and 5

Client:	Terrafirma South	Client Reference:	6225
Client Address:	The Slate Barn Lower Lowley Dunsford, Devon, EX6 7BP	Job Number:	18-13298
		Date Sampled:	Not Given
		Date Received:	14/09/2018
Contact:	Kevin Scanlon	Date Tested:	12/10/2018
Site Name:	Woodland Meed Primary School	Sampled By:	Not Given
Site Address:	Not Given		

Test Results

Laboratory Reference:	1062519	Depth Top [m]:	10.00
Hole No.:	BH02	Depth Base [m]:	Not Given
Sample Reference:	19	Sample Type:	D
Soil Description:	Grey slightly sandy CLAY		
Sample Preparation:	Tested in natural condition		

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
18	54	20	34	100



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

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

Remarks:

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

Signed: Darren Berrill
Geotechnical General Manager

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

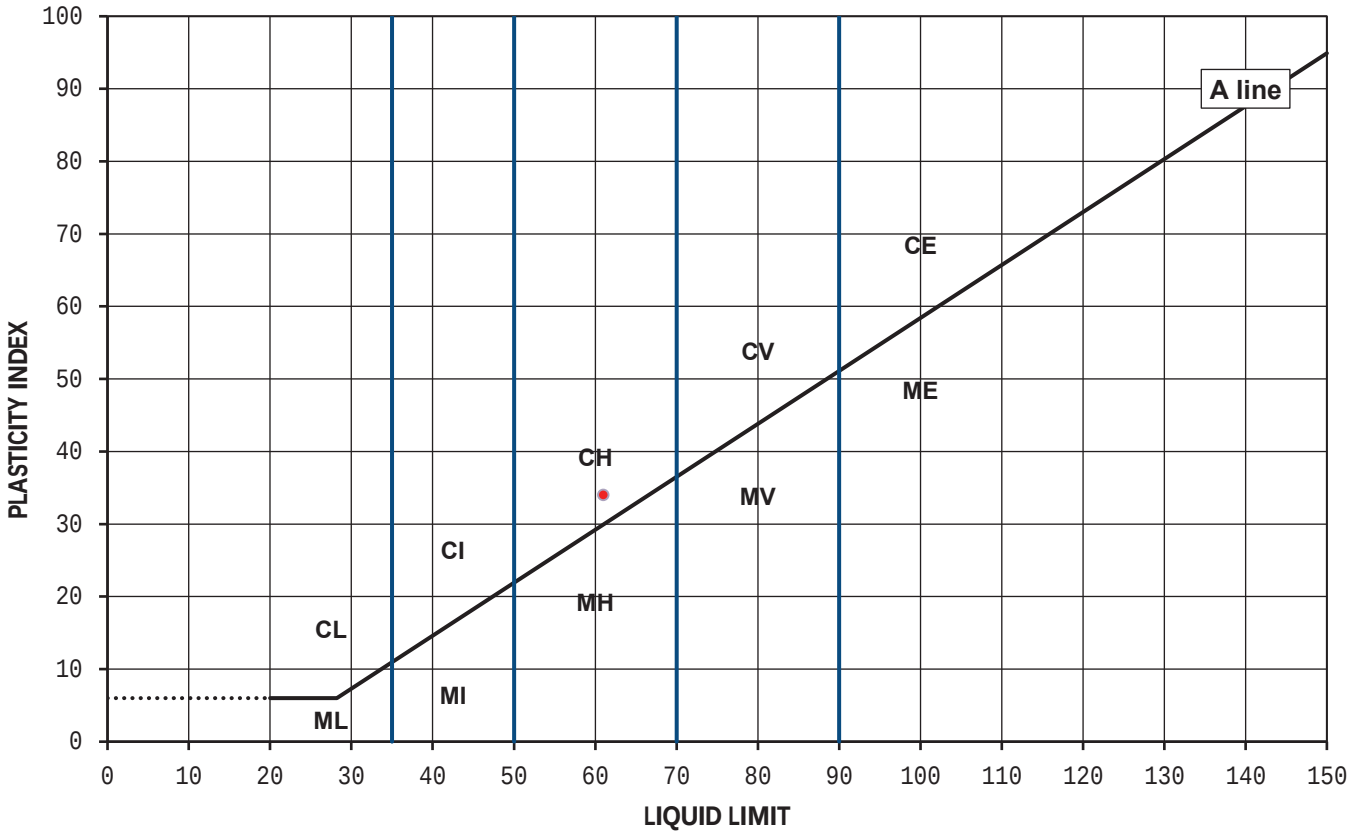
Client:	Terrafirma South	Client Reference:	6225
Client Address:	The Slate Barn Lower Lowley Dunsford, Devon, EX6 7BP	Job Number:	18-13298
		Date Sampled:	Not Given
		Date Received:	14/09/2018
Contact:	Kevin Scanlon	Date Tested:	12/10/2018
Site Name:	Woodland Meed Primary School	Sampled By:	Not Given
Site Address:	Not Given		

Test Results

Laboratory Reference:	1062520	Depth Top [m]:	12.00
Hole No.:	BH02	Depth Base [m]:	Not Given
Sample Reference:	22	Sample Type:	D
Soil Description:	Grey CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
23	61	27	34	100



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

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

Remarks:

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

Signed: Darren Berrill
Geotechnical General Manager

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

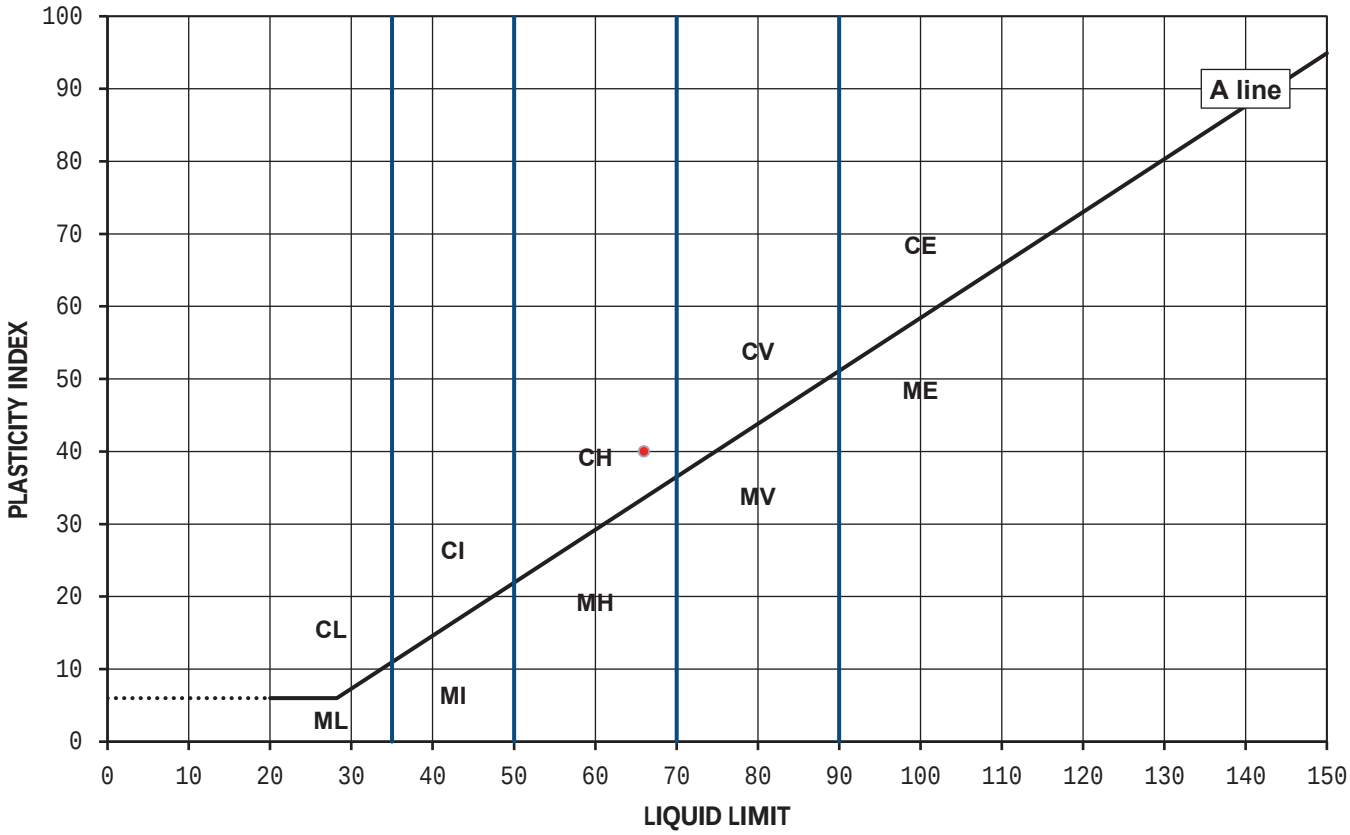
Client:	Terrafirma South	Client Reference:	6225
Client Address:	The Slate Barn Lower Lowley Dunsford, Devon, EX6 7BP	Job Number:	18-13298
		Date Sampled:	Not Given
		Date Received:	14/09/2018
Contact:	Kevin Scanlon	Date Tested:	12/10/2018
Site Name:	Woodland Meed Primary School	Sampled By:	Not Given
Site Address:	Not Given		

Test Results

Laboratory Reference:	1062521	Depth Top [m]:	1.00
Hole No.:	BH03	Depth Base [m]:	Not Given
Sample Reference:	2	Sample Type:	D
Soil Description:	Brown CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
26	66	26	40	100



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

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

Remarks:

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

Signed: Darren Berrill
Geotechnical General Manager

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7 Woodshots Meadow
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Watford Herts WD18 8YS

4041

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

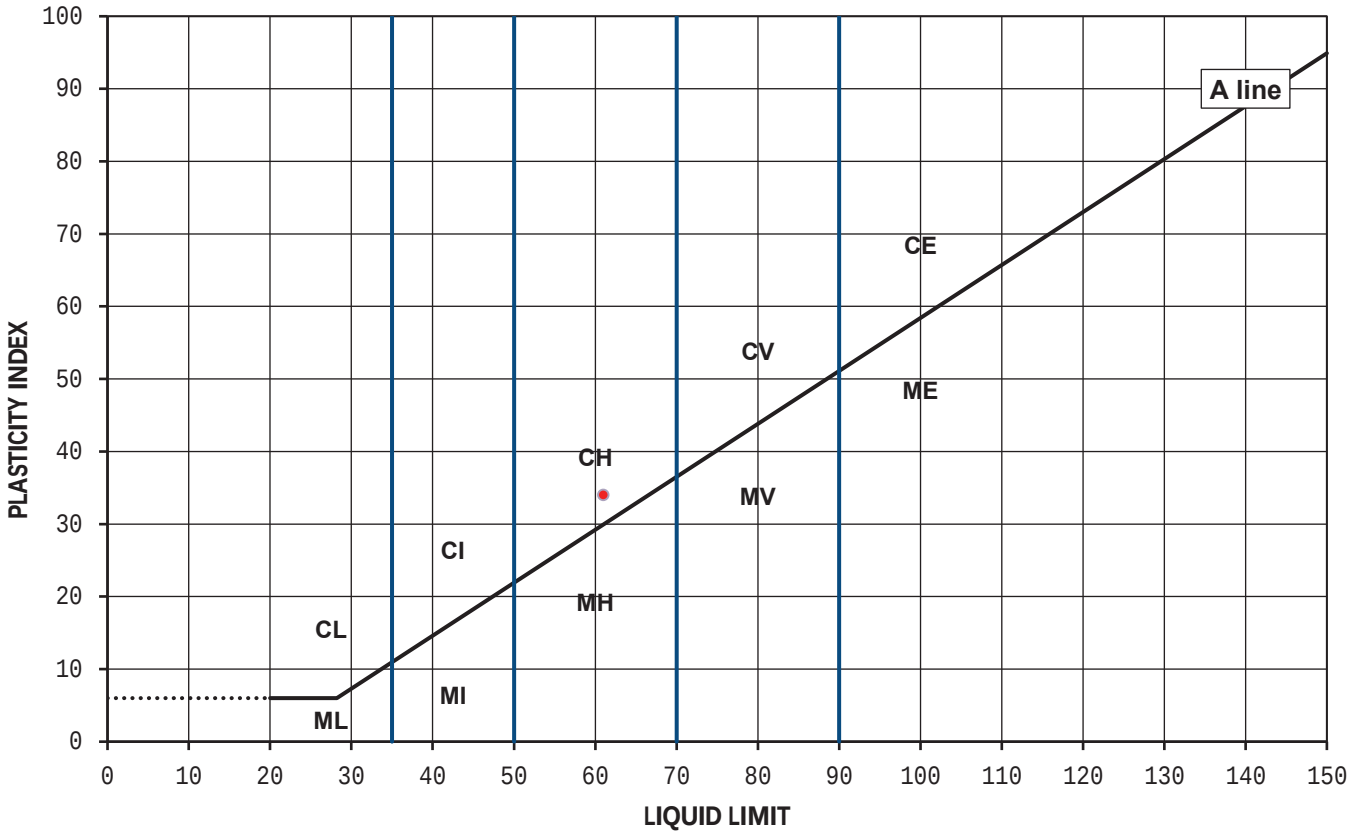
Client:	Terrafirma South	Client Reference:	6225
Client Address:	The Slate Barn Lower Lowley Dunsford, Devon, EX6 7BP	Job Number:	18-13298
		Date Sampled:	Not Given
		Date Received:	14/09/2018
Contact:	Kevin Scanlon	Date Tested:	12/10/2018
Site Name:	Woodland Meed Primary School	Sampled By:	Not Given
Site Address:	Not Given		

Test Results

Laboratory Reference:	1062522	Depth Top [m]:	2.00
Hole No.:	BH03	Depth Base [m]:	Not Given
Sample Reference:	3	Sample Type:	D
Soil Description:	Brown CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
26	61	27	34	100



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

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

Remarks:

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

Signed: Darren Berrill
Geotechnical General Manager

GF 236.3

for and on behalf of i2 Analytical Ltd

TEST CERTIFICATE

Liquid and Plastic Limits

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

4041

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

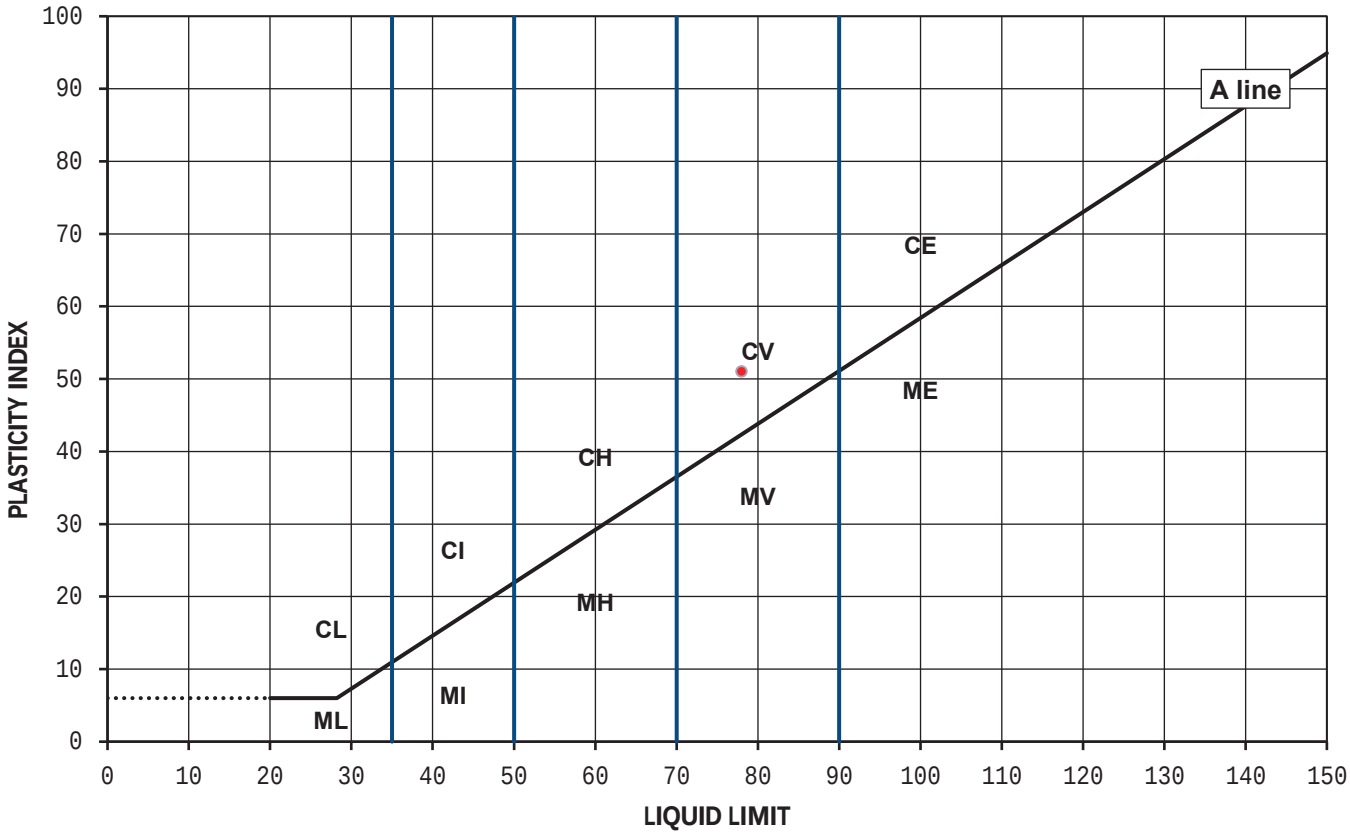
Client:	Terrafirma South	Client Reference:	6225
Client Address:	The Slate Barn Lower Lowley Dunsford, Devon, EX6 7BP	Job Number:	18-13298
		Date Sampled:	Not Given
		Date Received:	14/09/2018
Contact:	Kevin Scanlon	Date Tested:	12/10/2018
Site Name:	Woodland Meed Primary School	Sampled By:	Not Given
Site Address:	Not Given		

Test Results

Laboratory Reference:	1062523	Depth Top [m]:	3.00
Hole No.:	BH03	Depth Base [m]:	Not Given
Sample Reference:	4	Sample Type:	D
Soil Description:	Brown CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
26	78	27	51	100



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

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

Remarks:

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

Signed: Darren Berrill
Geotechnical General Manager

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for and on behalf of i2 Analytical Ltd

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7 Woodshots Meadow
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Watford Herts WD18 8YS

4041

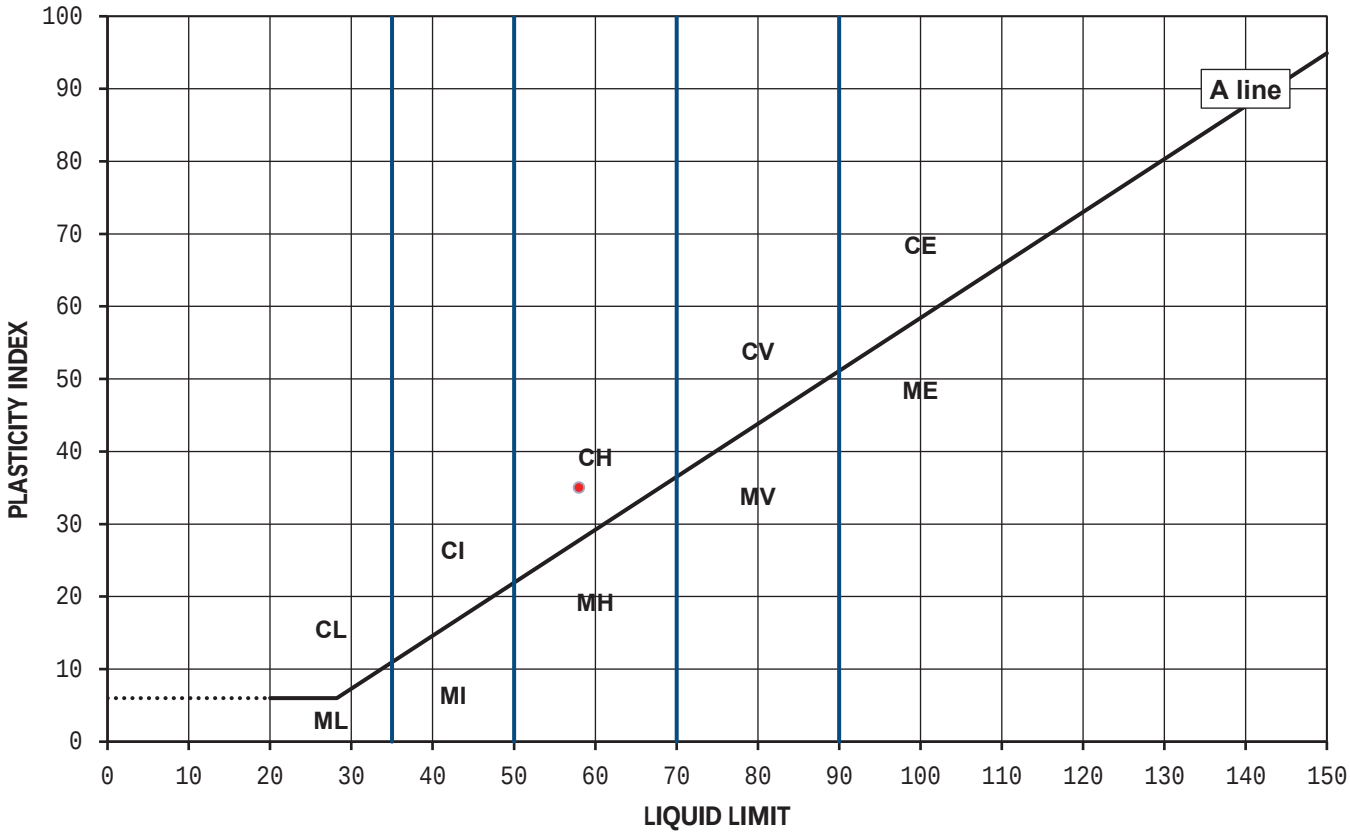
Tested in Accordance with: BS 1377-2: 1990: Clause 4.3 and 5

Client:	Terrafirma South	Client Reference:	6225
Client Address:	The Slate Barn Lower Lowley Dunsford, Devon, EX6 7BP	Job Number:	18-13298
		Date Sampled:	Not Given
		Date Received:	14/09/2018
Contact:	Kevin Scanlon	Date Tested:	12/10/2018
Site Name:	Woodland Meed Primary School	Sampled By:	Not Given
Site Address:	Not Given		

Test Results

Laboratory Reference:	1062524	Depth Top [m]:	4.00
Hole No.:	BH03	Depth Base [m]:	Not Given
Sample Reference:	5	Sample Type:	D
Soil Description:	Brown slightly sandy CLAY		
Sample Preparation:	Tested in natural condition		

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
26	58	23	35	100



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

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

Remarks:

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

Signed: Darren Berrill
Geotechnical General Manager

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

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

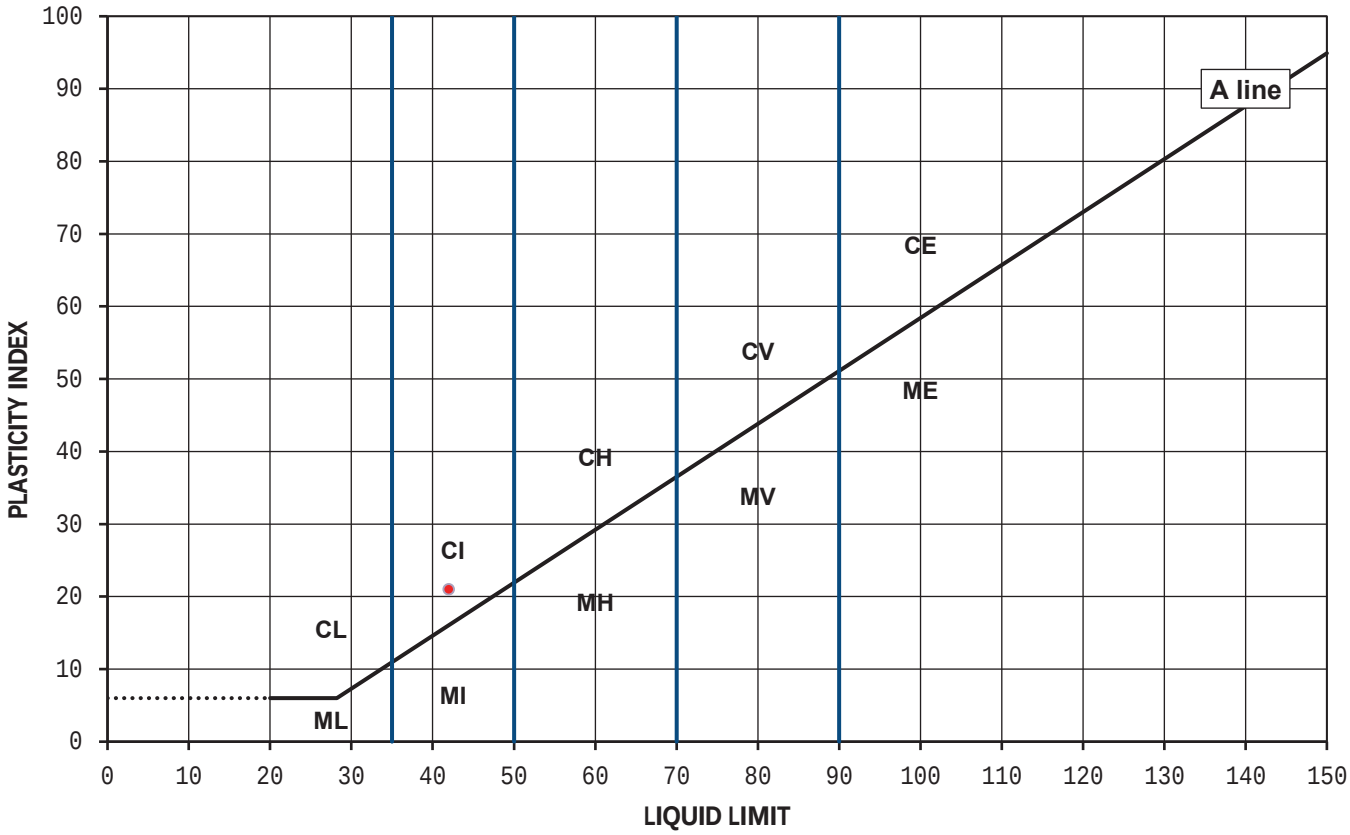
Client:	Terrafirma South	Client Reference:	6225
Client Address:	The Slate Barn Lower Lowley Dunsford, Devon, EX6 7BP	Job Number:	18-13298
		Date Sampled:	Not Given
		Date Received:	14/09/2018
Contact:	Kevin Scanlon	Date Tested:	10/10/2018
Site Name:	Woodland Meed Primary School	Sampled By:	Not Given
Site Address:	Not Given		

Test Results

Laboratory Reference:	1062526	Depth Top [m]:	7.00
Hole No.:	BH03	Depth Base [m]:	Not Given
Sample Reference:	9	Sample Type:	D
Soil Description:	Brown sandy CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
14	42	21	21	100



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

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

Remarks:

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

Signed: Darren Berrill
Geotechnical General Manager

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7 Woodshots Meadow
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Watford Herts WD18 8YS

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

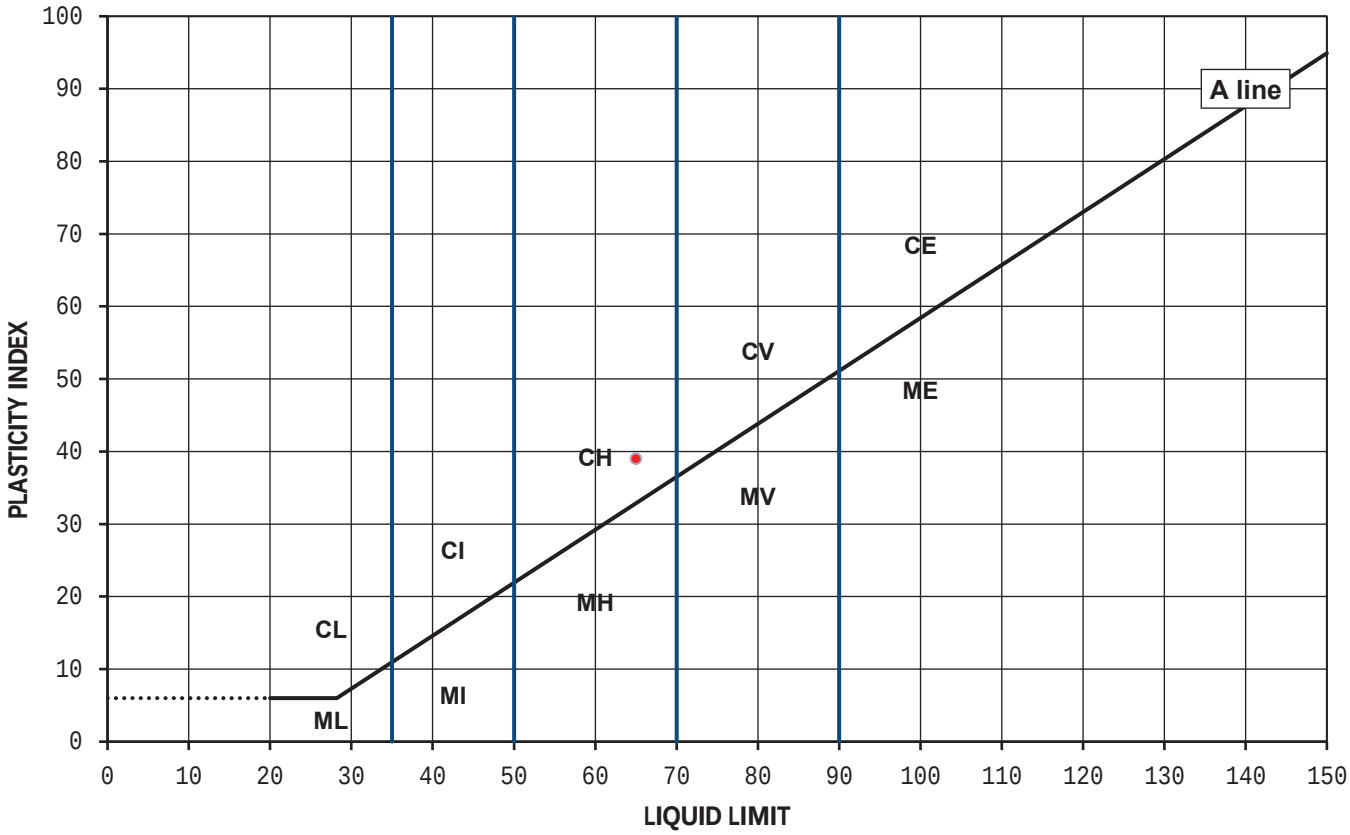
Client:	Terrafirma South	Client Reference:	6225
Client Address:	The Slate Barn Lower Lowley Dunsford, Devon, EX6 7BP	Job Number:	18-13298
		Date Sampled:	Not Given
		Date Received:	14/09/2018
Contact:	Kevin Scanlon	Date Tested:	12/10/2018
Site Name:	Woodland Meed Primary School	Sampled By:	Not Given
Site Address:	Not Given		

Test Results

Laboratory Reference:	1062527	Depth Top [m]:	9.00
Hole No.:	BH03	Depth Base [m]:	Not Given
Sample Reference:	11	Sample Type:	D
Soil Description:	Grey CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
20	65	26	39	100



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

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

Remarks:

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

Signed: Darren Berrill
Geotechnical General Manager

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Croxley Green Business Park
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Tested in Accordance with: BS 1377-2: 1990: Clause 4.3 and 5

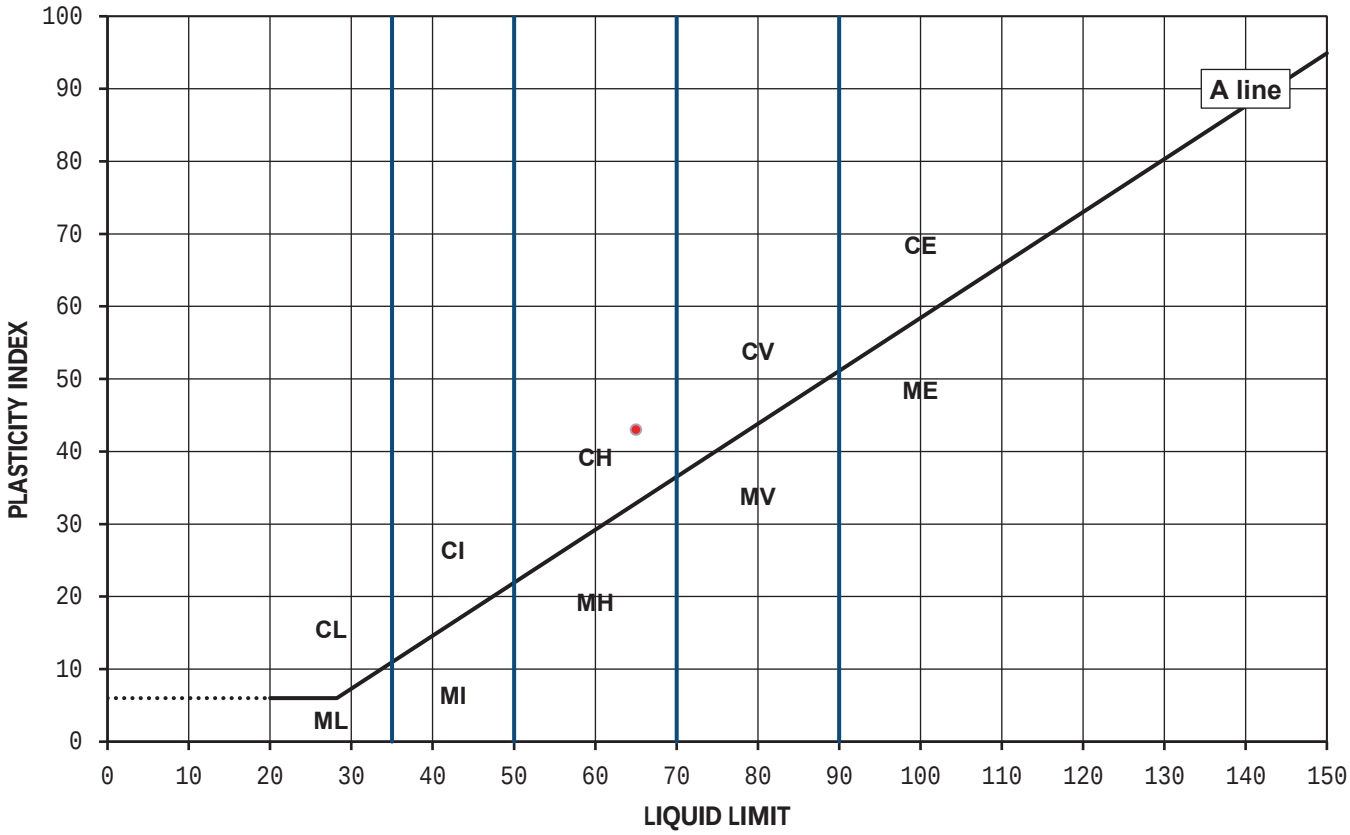
Client:	Terrafirma South	Client Reference:	6225
Client Address:	The Slate Barn Lower Lowley Dunsford, Devon, EX6 7BP	Job Number:	18-13298
		Date Sampled:	Not Given
		Date Received:	14/09/2018
Contact:	Kevin Scanlon	Date Tested:	12/10/2018
Site Name:	Woodland Meed Primary School	Sampled By:	Not Given
Site Address:	Not Given		

Test Results

Laboratory Reference:	1062528	Depth Top [m]:	11.00
Hole No.:	BH03	Depth Base [m]:	Not Given
Sample Reference:	13	Sample Type:	D
Soil Description:	Grey CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
18	65	22	43	100



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

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

Remarks:

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

Signed: Darren Berrill
Geotechnical General Manager

GF 236.3

for and on behalf of i2 Analytical Ltd

TEST CERTIFICATE

Liquid and Plastic Limits

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

4041

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

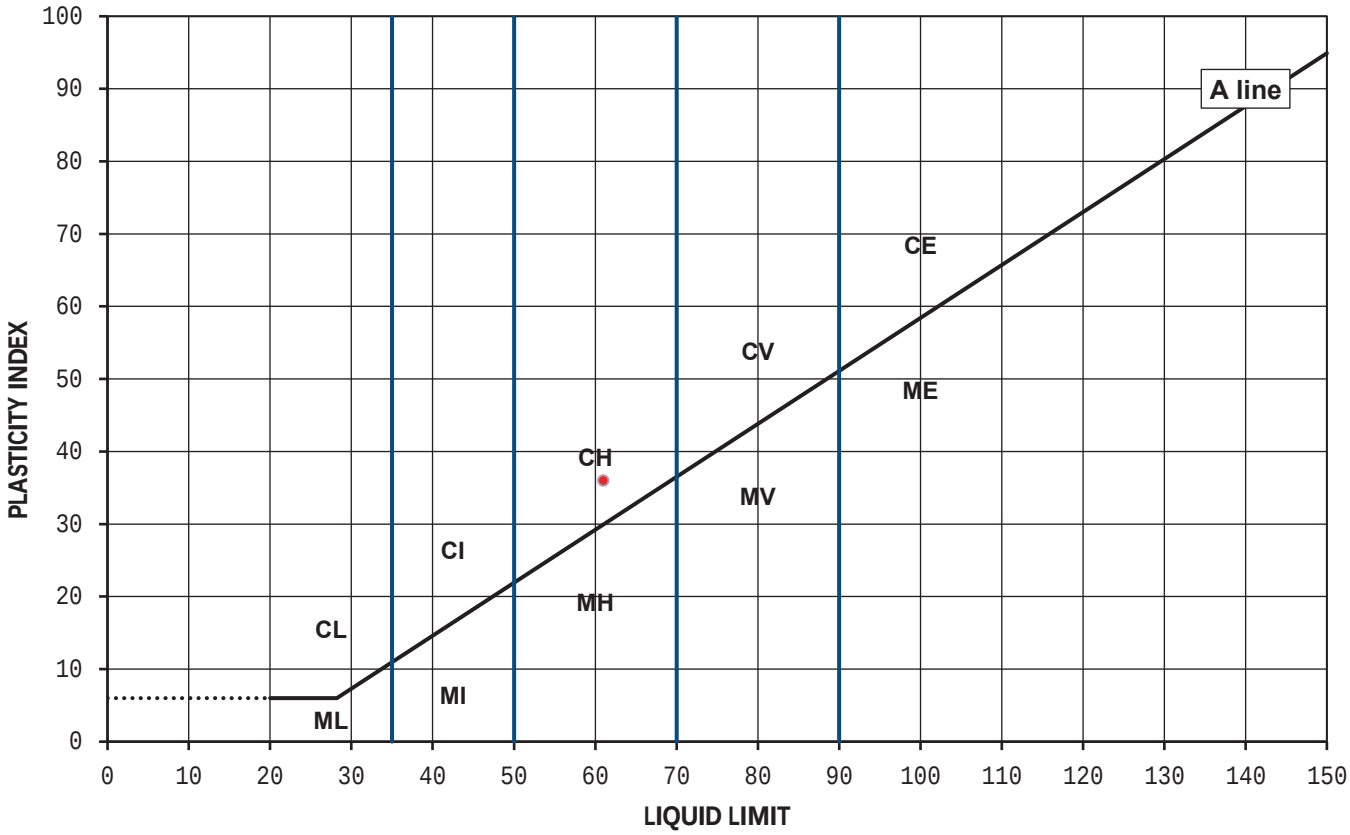
Client:	Terrafirma South	Client Reference:	6225
Client Address:	The Slate Barn Lower Lowley Dunsford, Devon, EX6 7BP	Job Number:	18-13298
		Date Sampled:	Not Given
		Date Received:	14/09/2018
Contact:	Kevin Scanlon	Date Tested:	12/10/2018
Site Name:	Woodland Meed Primary School	Sampled By:	Not Given
Site Address:	Not Given		

Test Results

Laboratory Reference:	1062529	Depth Top [m]:	13.00
Hole No.:	BH03	Depth Base [m]:	Not Given
Sample Reference:	15	Sample Type:	D
Soil Description:	Grey CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
19	61	25	36	100



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

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

Remarks:

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

Signed: Darren Berrill
Geotechnical General Manager

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4041

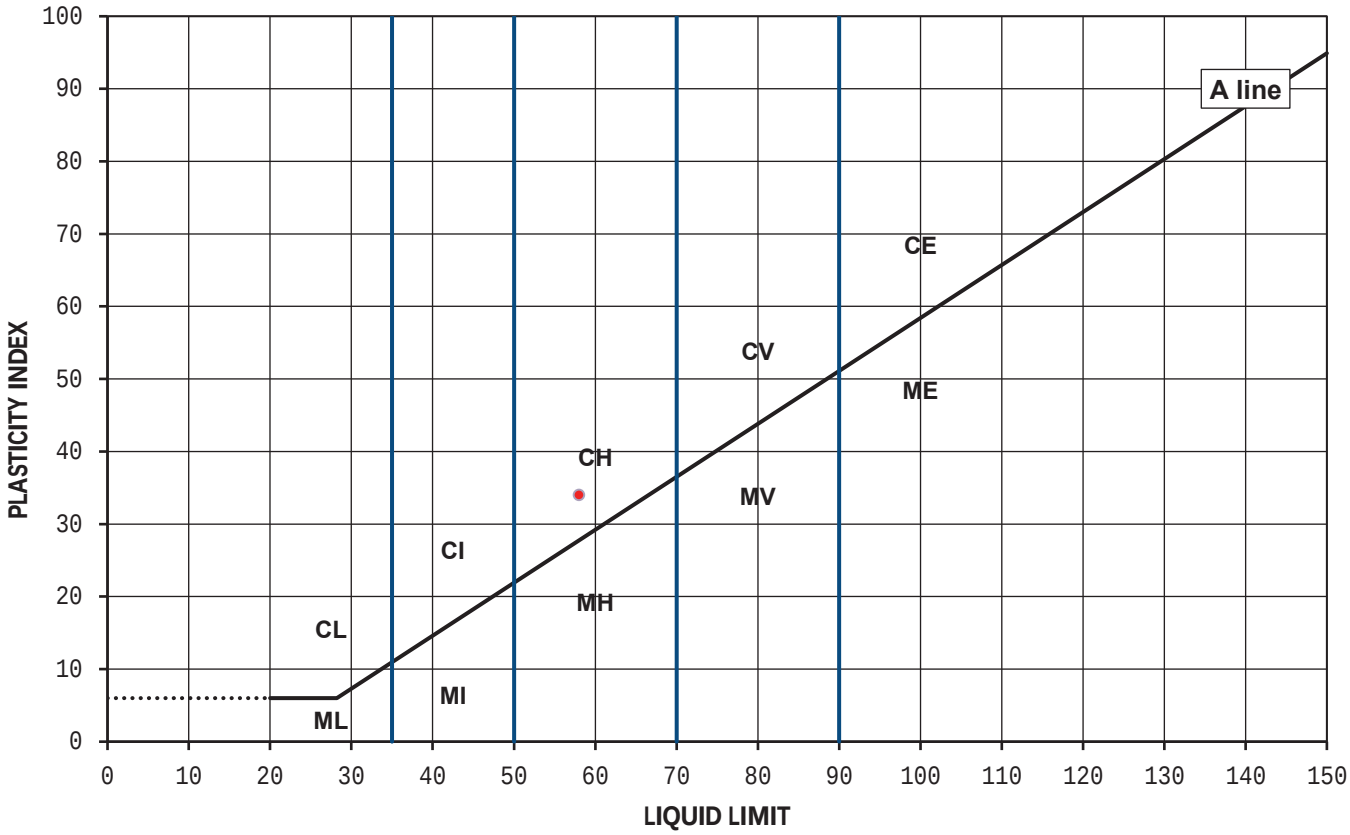
Tested in Accordance with: BS 1377-2: 1990: Clause 4.3 and 5

Client:	Terrafirma South	Client Reference:	6225
Client Address:	The Slate Barn Lower Lowley Dunsford, Devon, EX6 7BP	Job Number:	18-13298
		Date Sampled:	Not Given
		Date Received:	14/09/2018
Contact:	Kevin Scanlon	Date Tested:	12/10/2018
Site Name:	Woodland Meed Primary School	Sampled By:	Not Given
Site Address:	Not Given		

Test Results

Laboratory Reference:	1062533	Depth Top [m]:	1.00
Hole No.:	BH04	Depth Base [m]:	Not Given
Sample Reference:	2	Sample Type:	D
Soil Description:	Brown slightly sandy CLAY		
Sample Preparation:	Tested in natural condition		

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
29	58	24	34	100



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

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

Remarks:

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

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Geotechnical General Manager

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Watford Herts WD18 8YS

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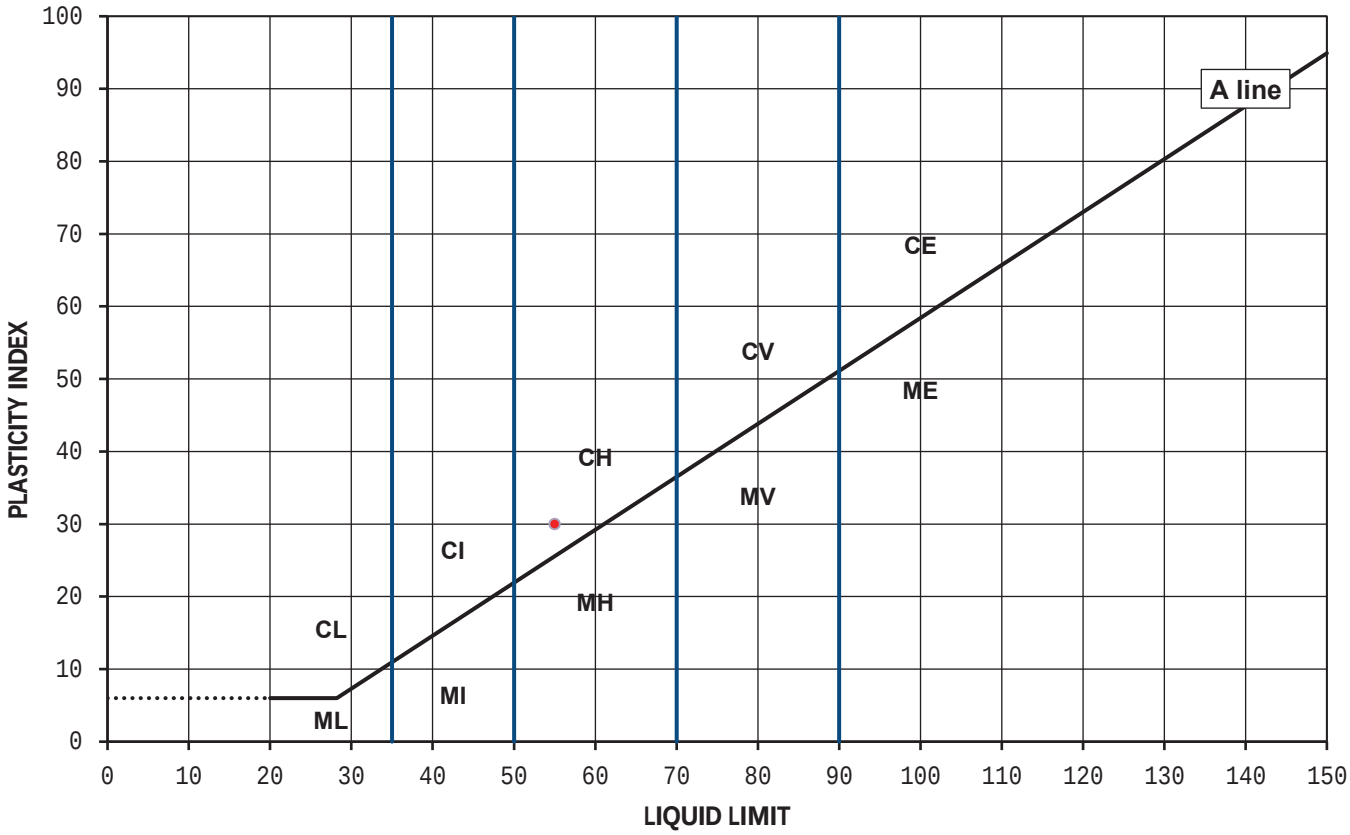
Tested in Accordance with: BS 1377-2: 1990: Clause 4.3 and 5

Client:	Terrafirma South	Client Reference:	6225
Client Address:	The Slate Barn Lower Lowley Dunsford, Devon, EX6 7BP	Job Number:	18-13298
		Date Sampled:	Not Given
		Date Received:	14/09/2018
Contact:	Kevin Scanlon	Date Tested:	12/10/2018
Site Name:	Woodland Meed Primary School	Sampled By:	Not Given
Site Address:	Not Given		

Test Results

Laboratory Reference:	1062534	Depth Top [m]:	2.00
Hole No.:	BH04	Depth Base [m]:	Not Given
Sample Reference:	3	Sample Type:	D
Soil Description:	Brown to grey slightly sandy CLAY		
Sample Preparation:	Tested in natural condition		

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
28	55	25	30	100



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

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

Remarks:

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PL Geotechnical Laboratory Manager
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4041

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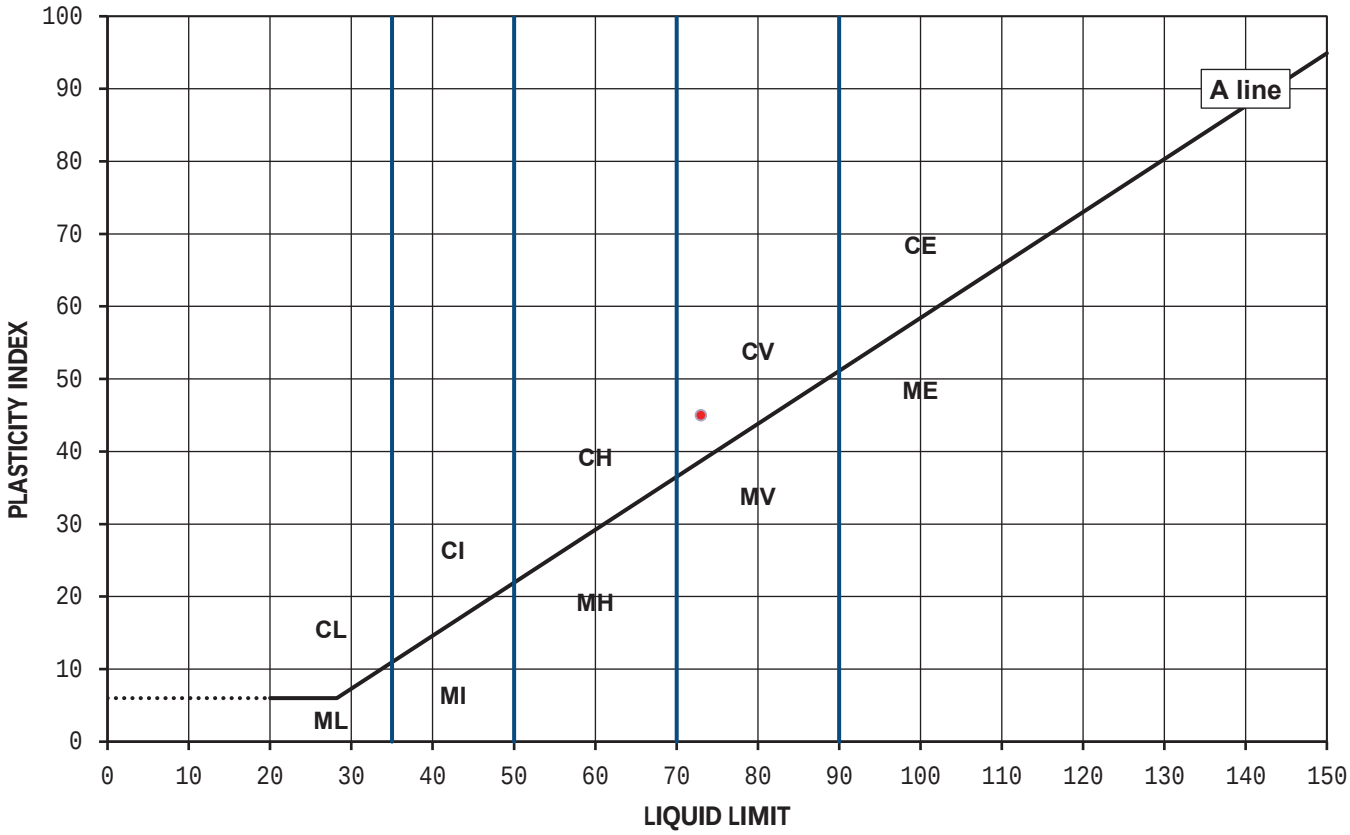
Client:	Terrafirma South	Client Reference:	6225
Client Address:	The Slate Barn Lower Lowley Dunsford, Devon, EX6 7BP	Job Number:	18-13298
		Date Sampled:	Not Given
		Date Received:	14/09/2018
Contact:	Kevin Scanlon	Date Tested:	12/10/2018
Site Name:	Woodland Meed Primary School	Sampled By:	Not Given
Site Address:	Not Given		

Test Results

Laboratory Reference:	1062535	Depth Top [m]:	3.00
Hole No.:	BH04	Depth Base [m]:	Not Given
Sample Reference:	4	Sample Type:	D
Soil Description:	Brown CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
28	73	28	45	100



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

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

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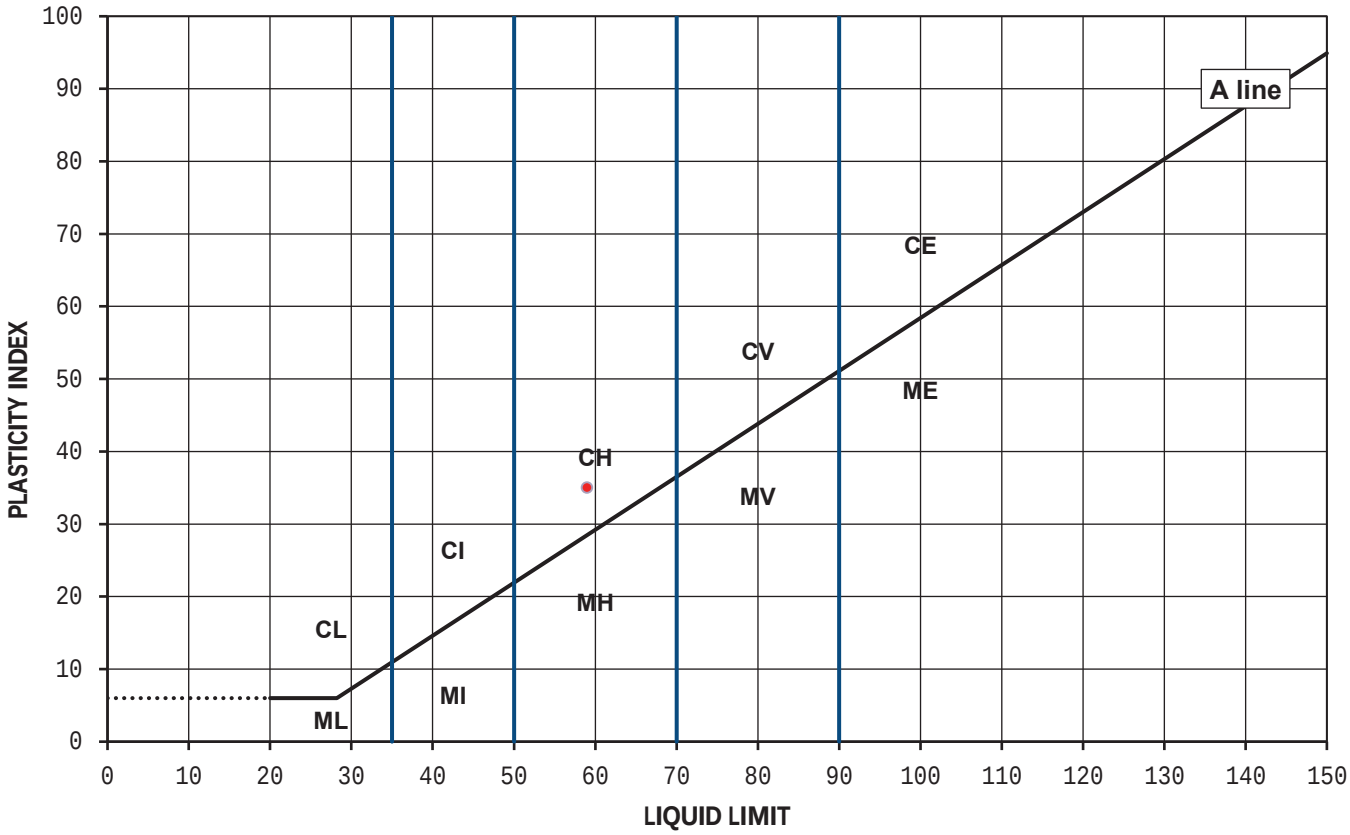
Client:	Terrafirma South	Client Reference:	6225
Client Address:	The Slate Barn Lower Lowley Dunsford, Devon, EX6 7BP	Job Number:	18-13298
		Date Sampled:	Not Given
		Date Received:	14/09/2018
Contact:	Kevin Scanlon	Date Tested:	12/10/2018
Site Name:	Woodland Meed Primary School	Sampled By:	Not Given
Site Address:	Not Given		

Test Results

Laboratory Reference:	1062536	Depth Top [m]:	4.00
Hole No.:	BH04	Depth Base [m]:	Not Given
Sample Reference:	5	Sample Type:	D
Soil Description:	Brown slightly sandy CLAY		
Sample Preparation:	Tested in natural condition		

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
22	59	24	35	100



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

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

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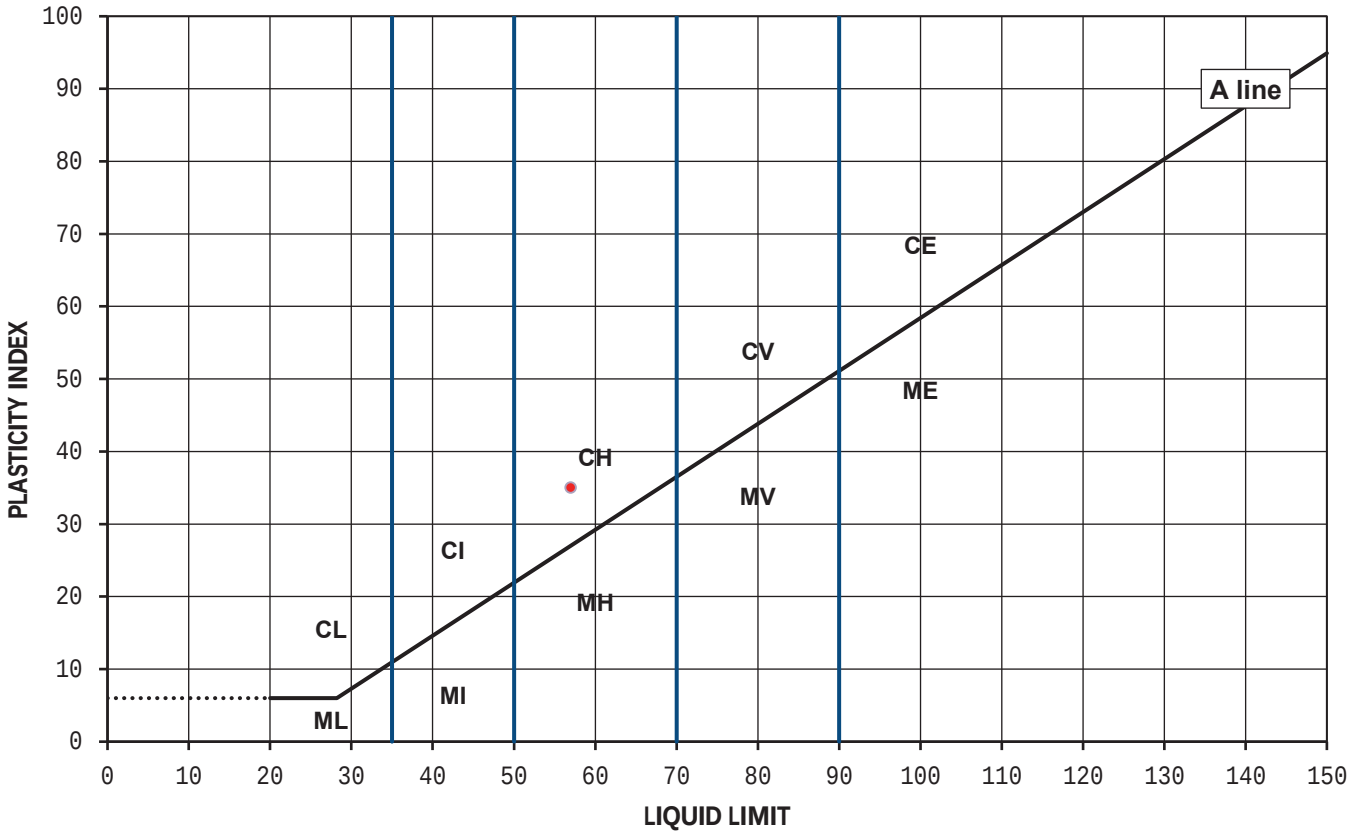
Client:	Terrafirma South	Client Reference:	6225
Client Address:	The Slate Barn Lower Lowley Dunsford, Devon, EX6 7BP	Job Number:	18-13298
		Date Sampled:	Not Given
		Date Received:	14/09/2018
Contact:	Kevin Scanlon	Date Tested:	12/10/2018
Site Name:	Woodland Meed Primary School	Sampled By:	Not Given
Site Address:	Not Given		

Test Results

Laboratory Reference:	1062537	Depth Top [m]:	6.00
Hole No.:	BH04	Depth Base [m]:	Not Given
Sample Reference:	7	Sample Type:	D
Soil Description:	Dark grey slightly sandy CLAY		
Sample Preparation:	Tested in natural condition		

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
22	57	22	35	100



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

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

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

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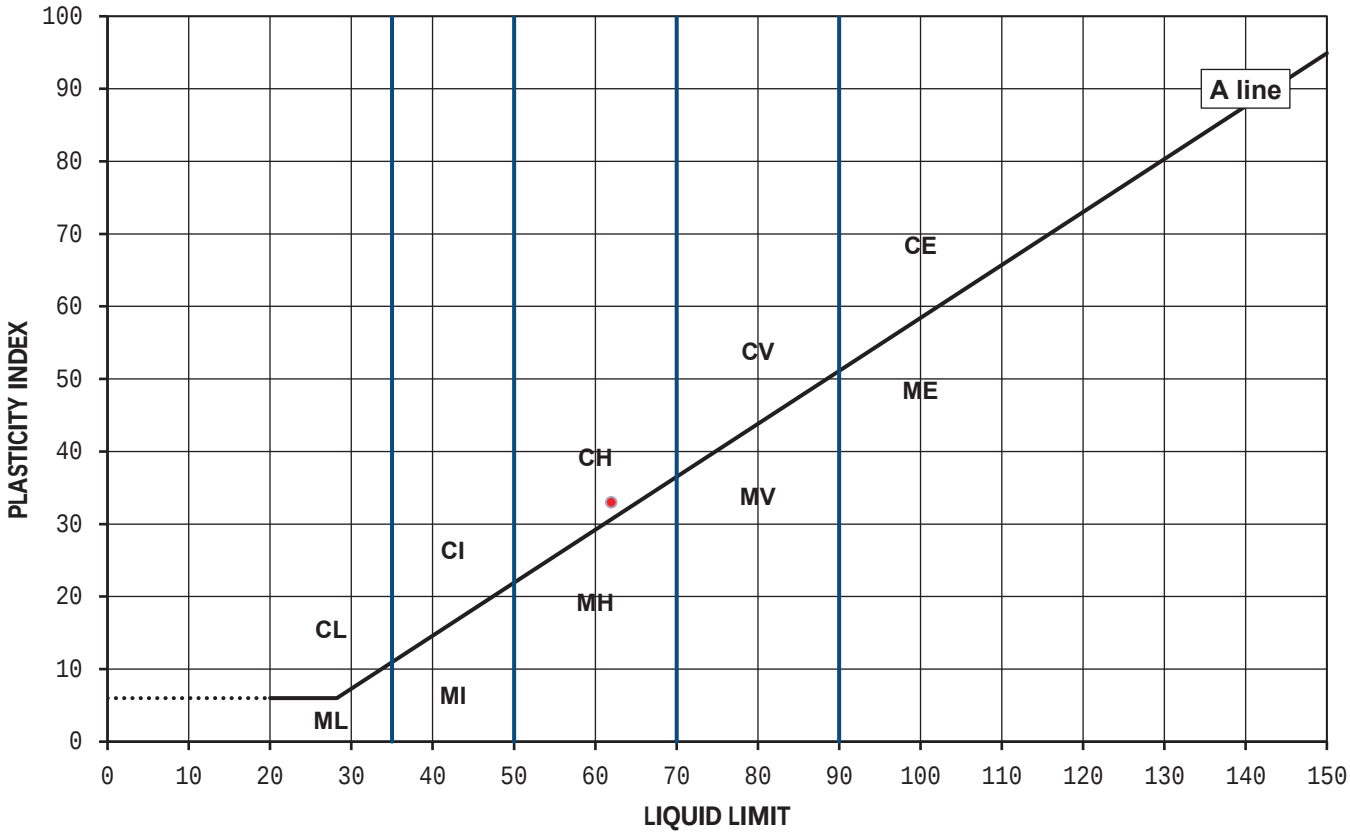
Client:	Terrafirma South	Client Reference:	6225
Client Address:	The Slate Barn Lower Lowley Dunsford, Devon, EX6 7BP	Job Number:	18-13298
		Date Sampled:	Not Given
		Date Received:	14/09/2018
Contact:	Kevin Scanlon	Date Tested:	12/10/2018
Site Name:	Woodland Meed Primary School	Sampled By:	Not Given
Site Address:	Not Given		

Test Results

Laboratory Reference:	1062538	Depth Top [m]:	8.00
Hole No.:	BH04	Depth Base [m]:	Not Given
Sample Reference:	9	Sample Type:	D
Soil Description:	Dark grey CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
19	62	29	33	100



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

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

Remarks:

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

Signed: Darren Berrill
Geotechnical General Manager

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Croxley Green Business Park
Watford Herts WD18 8YS

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

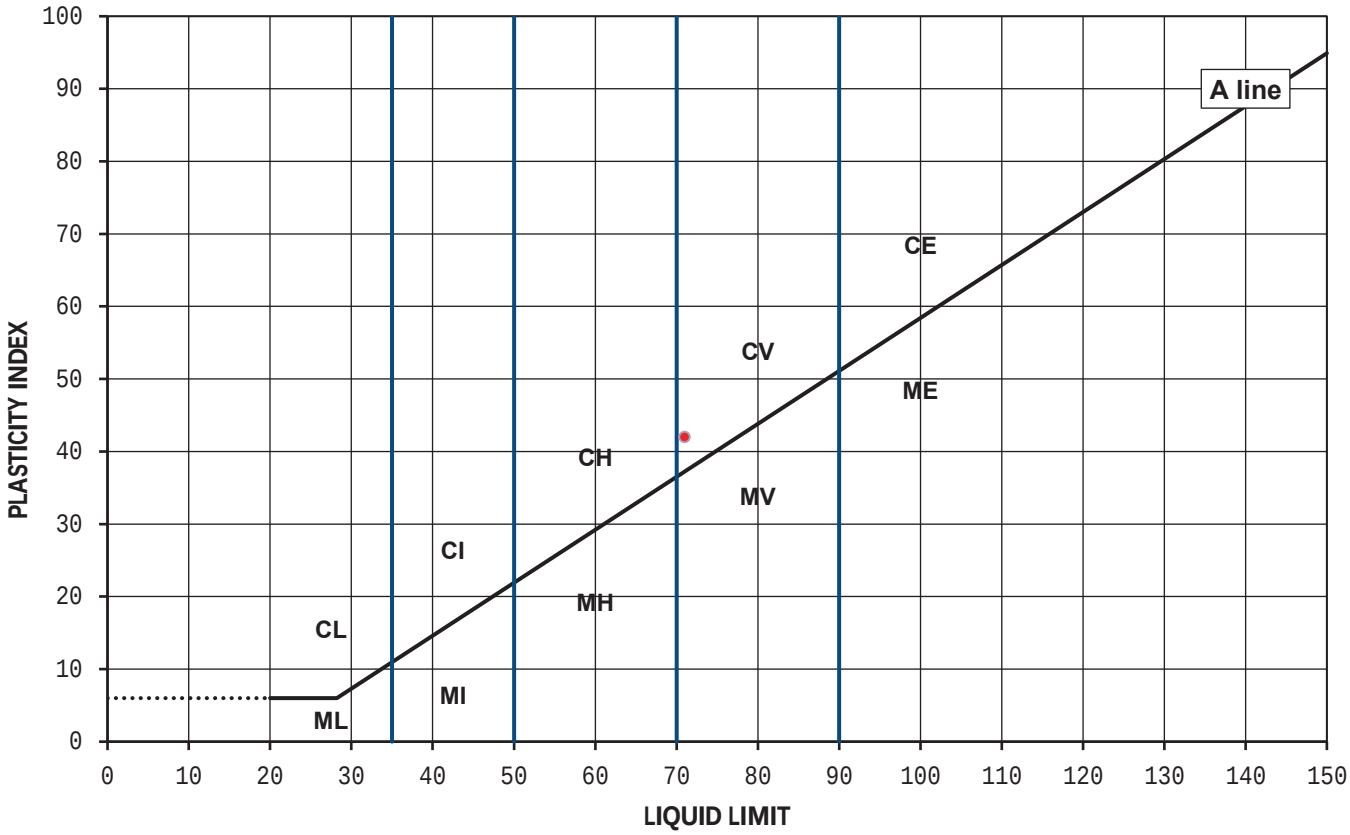
Client:	Terrafirma South	Client Reference:	6225
Client Address:	The Slate Barn Lower Lowley Dunsford, Devon, EX6 7BP	Job Number:	18-13298
		Date Sampled:	Not Given
		Date Received:	14/09/2018
Contact:	Kevin Scanlon	Date Tested:	12/10/2018
Site Name:	Woodland Meed Primary School	Sampled By:	Not Given
Site Address:	Not Given		

Test Results

Laboratory Reference:	1062539	Depth Top [m]:	10.00
Hole No.:	BH04	Depth Base [m]:	Not Given
Sample Reference:	13	Sample Type:	D
Soil Description:	Dark grey CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
24	71	29	42	100



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

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

Remarks:

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PL Geotechnical Laboratory Manager
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Geotechnical General Manager

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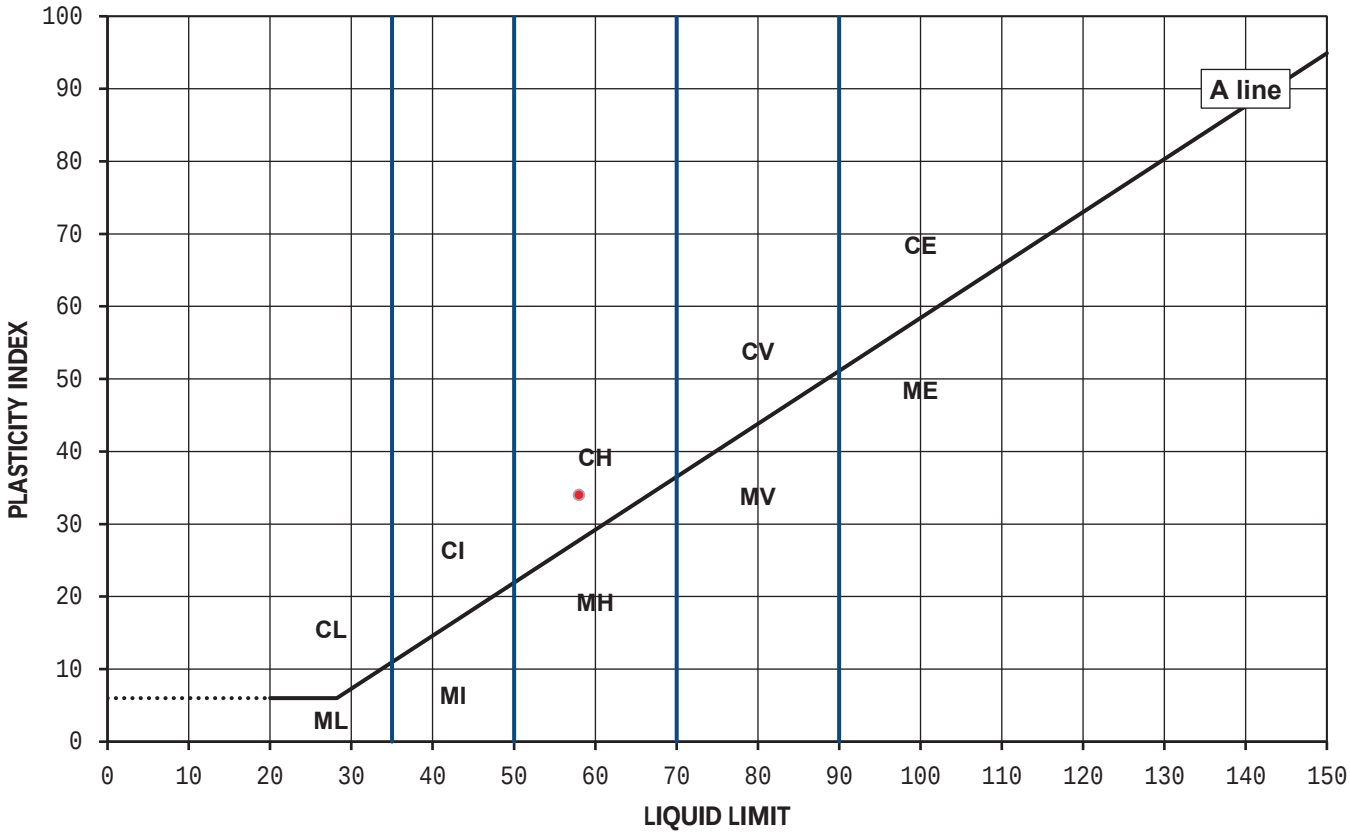
Client:	Terrafirma South	Client Reference:	6225
Client Address:	The Slate Barn Lower Lowley Dunsford, Devon, EX6 7BP	Job Number:	18-13298
		Date Sampled:	Not Given
		Date Received:	14/09/2018
Contact:	Kevin Scanlon	Date Tested:	12/10/2018
Site Name:	Woodland Meed Primary School	Sampled By:	Not Given
Site Address:	Not Given		

Test Results

Laboratory Reference:	1062540	Depth Top [m]:	12.00
Hole No.:	BH04	Depth Base [m]:	Not Given
Sample Reference:	15	Sample Type:	D
Soil Description:	Grey slightly sandy CLAY		
Sample Preparation:	Tested in natural condition		

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
20	58	24	34	100



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

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

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

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Geotechnical General Manager

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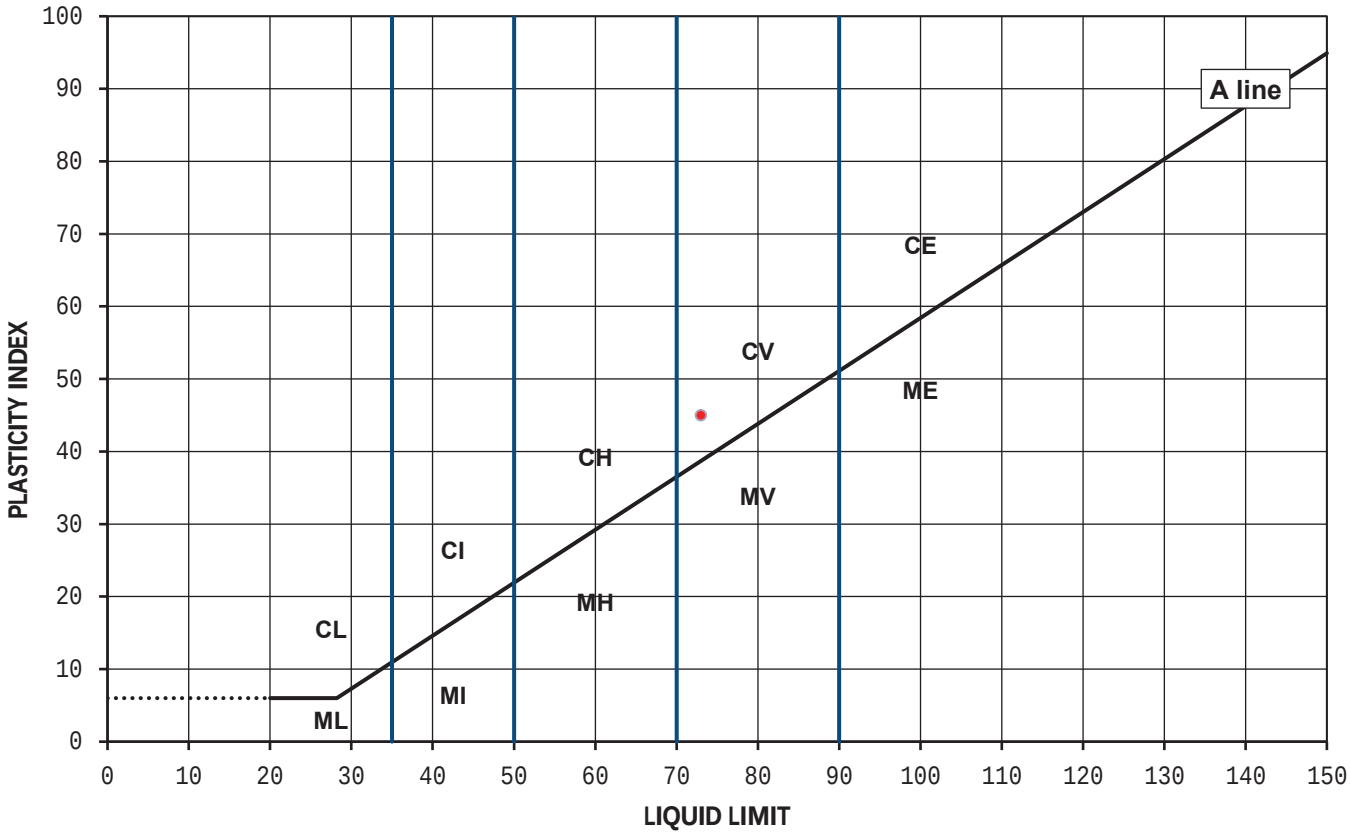
Client:	Terrafirma South	Client Reference:	6225
Client Address:	The Slate Barn Lower Lowley Dunsford, Devon, EX6 7BP	Job Number:	18-13298
		Date Sampled:	Not Given
		Date Received:	14/09/2018
Contact:	Kevin Scanlon	Date Tested:	12/10/2018
Site Name:	Woodland Meed Primary School	Sampled By:	Not Given
Site Address:	Not Given		

Test Results

Laboratory Reference:	1062544	Depth Top [m]:	1.00
Hole No.:	BH05	Depth Base [m]:	Not Given
Sample Reference:	2	Sample Type:	D
Soil Description:	Brown CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
31	73	28	45	100



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

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

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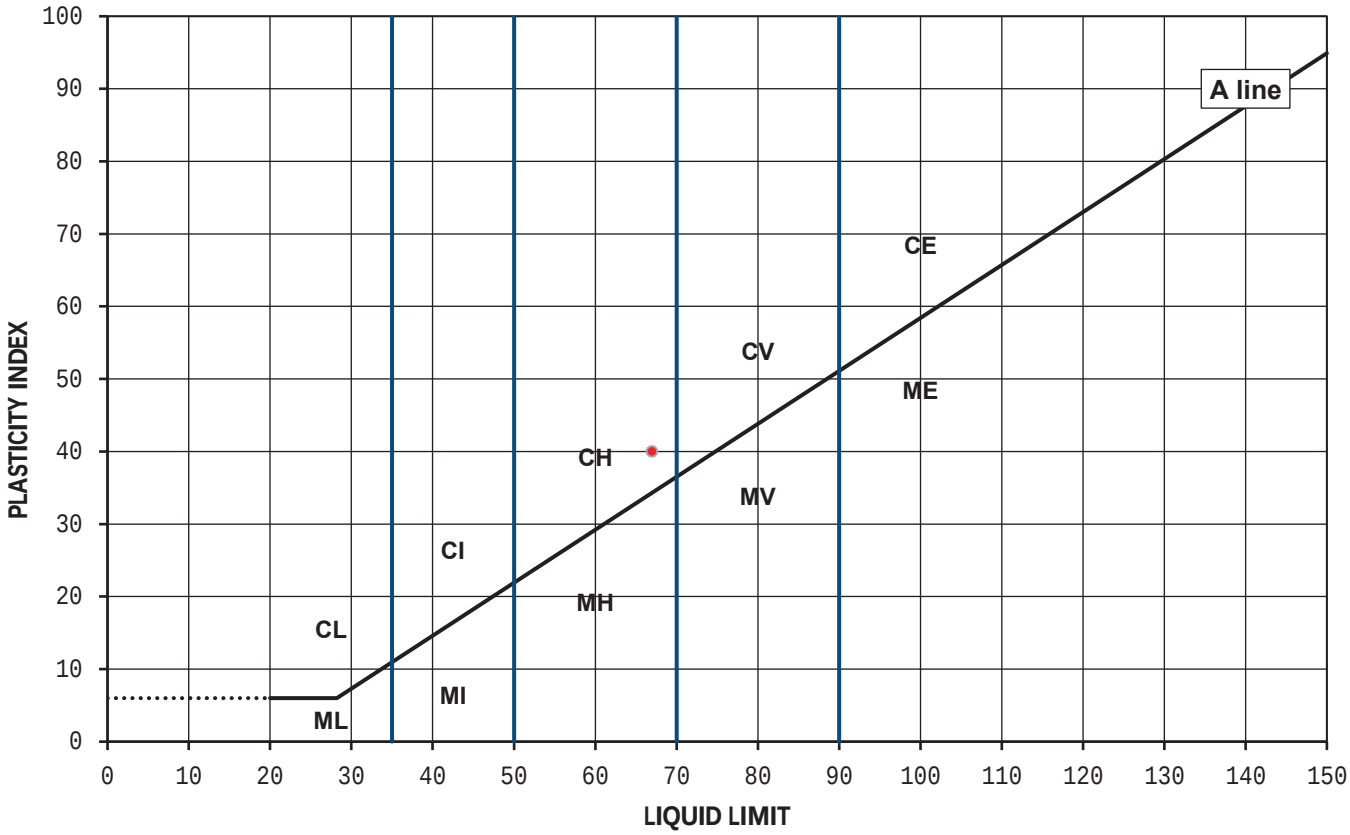
Client:	Terrafirma South	Client Reference:	6225
Client Address:	The Slate Barn Lower Lowley Dunsford, Devon, EX6 7BP	Job Number:	18-13298
		Date Sampled:	Not Given
		Date Received:	14/09/2018
Contact:	Kevin Scanlon	Date Tested:	12/10/2018
Site Name:	Woodland Meed Primary School	Sampled By:	Not Given
Site Address:	Not Given		

Test Results

Laboratory Reference:	1062546	Depth Top [m]:	2.00
Hole No.:	BH05	Depth Base [m]:	Not Given
Sample Reference:	4	Sample Type:	D
Soil Description:	Brown CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
30	67	27	40	100



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

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

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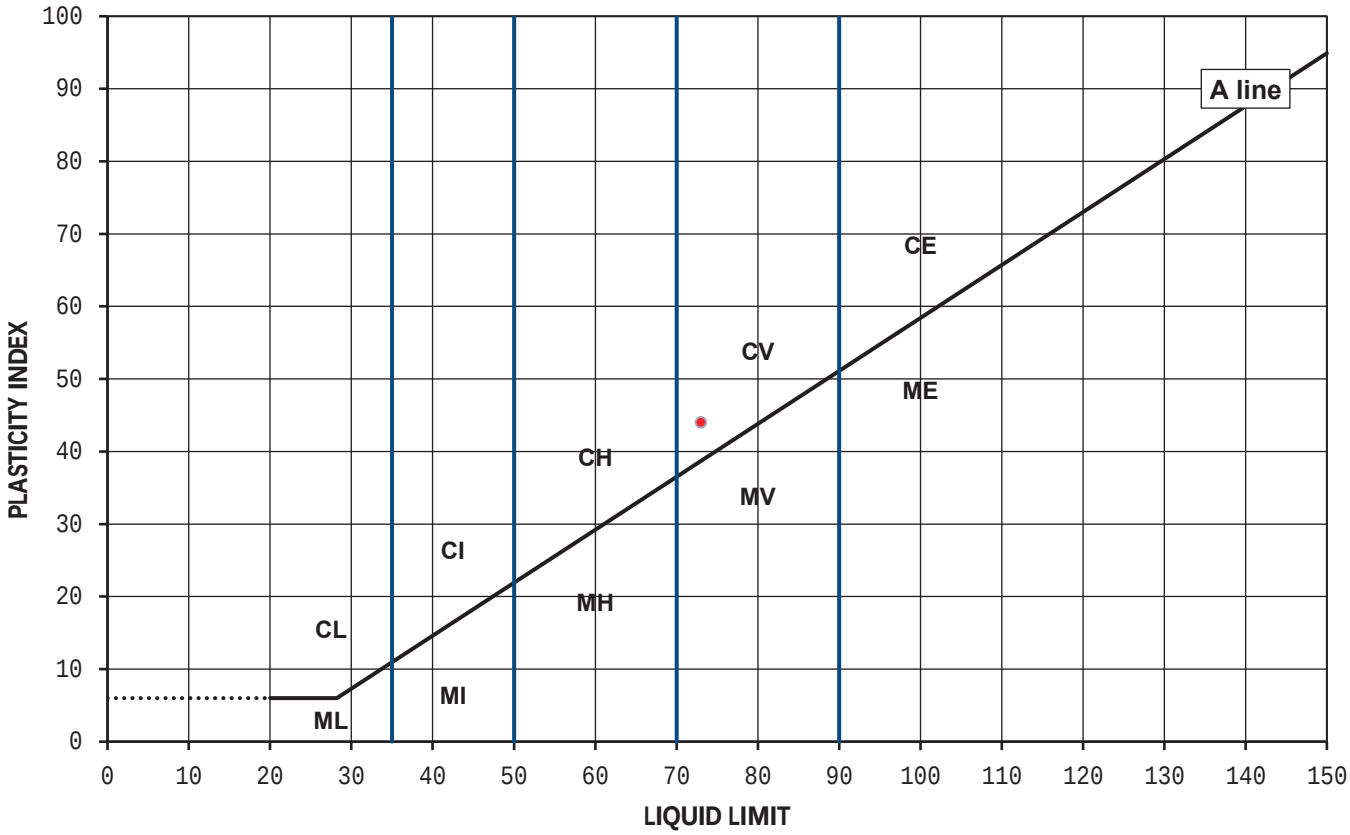
Client:	Terrafirma South	Client Reference:	6225
Client Address:	The Slate Barn Lower Lowley Dunsford, Devon, EX6 7BP	Job Number:	18-13298
		Date Sampled:	Not Given
		Date Received:	14/09/2018
Contact:	Kevin Scanlon	Date Tested:	12/10/2018
Site Name:	Woodland Meed Primary School	Sampled By:	Not Given
Site Address:	Not Given		

Test Results

Laboratory Reference:	1062547	Depth Top [m]:	3.00
Hole No.:	BH05	Depth Base [m]:	Not Given
Sample Reference:	6	Sample Type:	D
Soil Description:	Brown CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
21	73	29	44	100



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

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

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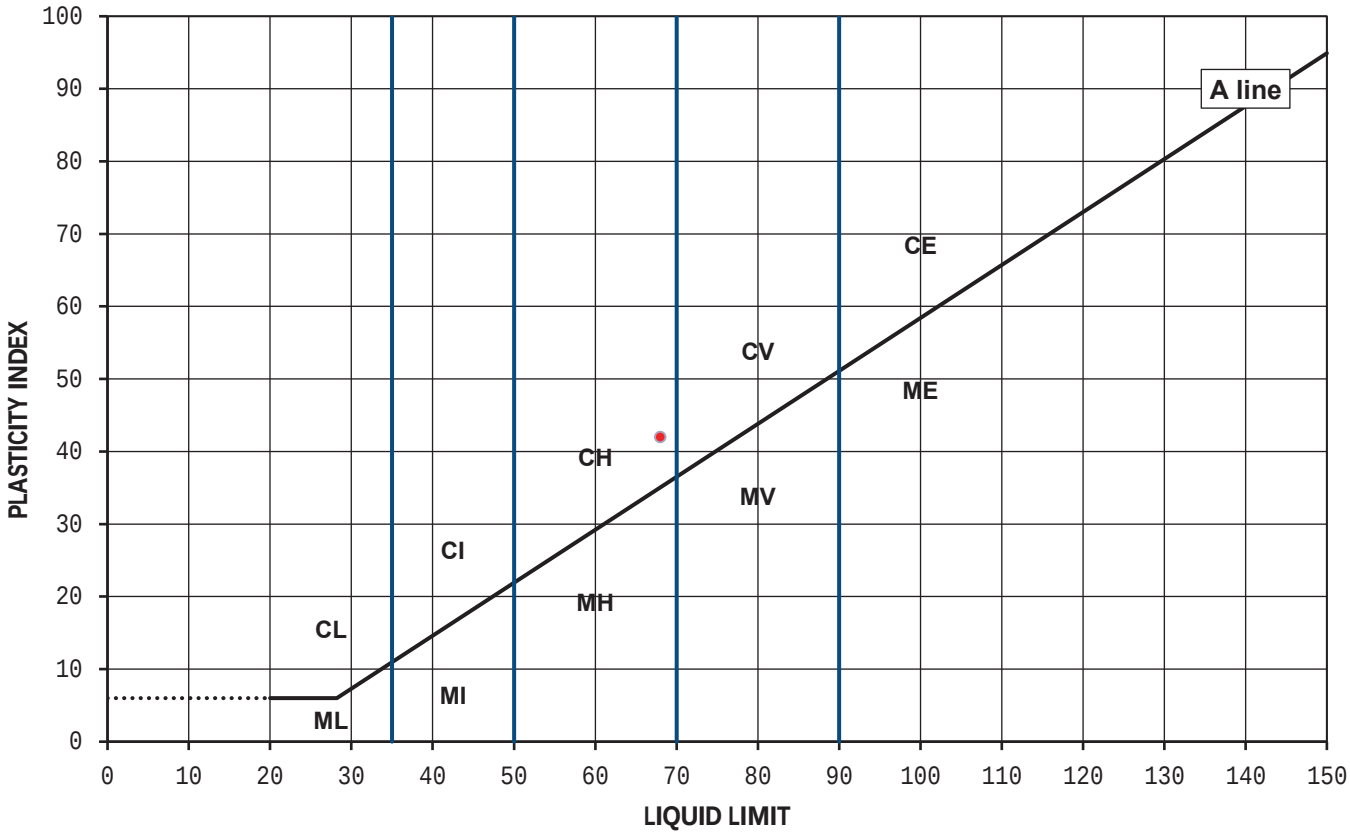
Client:	Terrafirma South	Client Reference:	6225
Client Address:	The Slate Barn Lower Lowley Dunsford, Devon, EX6 7BP	Job Number:	18-13298
		Date Sampled:	Not Given
		Date Received:	14/09/2018
Contact:	Kevin Scanlon	Date Tested:	12/10/2018
Site Name:	Woodland Meed Primary School	Sampled By:	Not Given
Site Address:	Not Given		

Test Results

Laboratory Reference:	1062548	Depth Top [m]:	4.00
Hole No.:	BH05	Depth Base [m]:	Not Given
Sample Reference:	8	Sample Type:	D
Soil Description:	Brown CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
26	68	26	42	100



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

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

Remarks:

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

Signed: Darren Berrill
Geotechnical General Manager

GF 236.3

for and on behalf of i2 Analytical Ltd

TEST CERTIFICATE

Liquid and Plastic Limits

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

4041

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

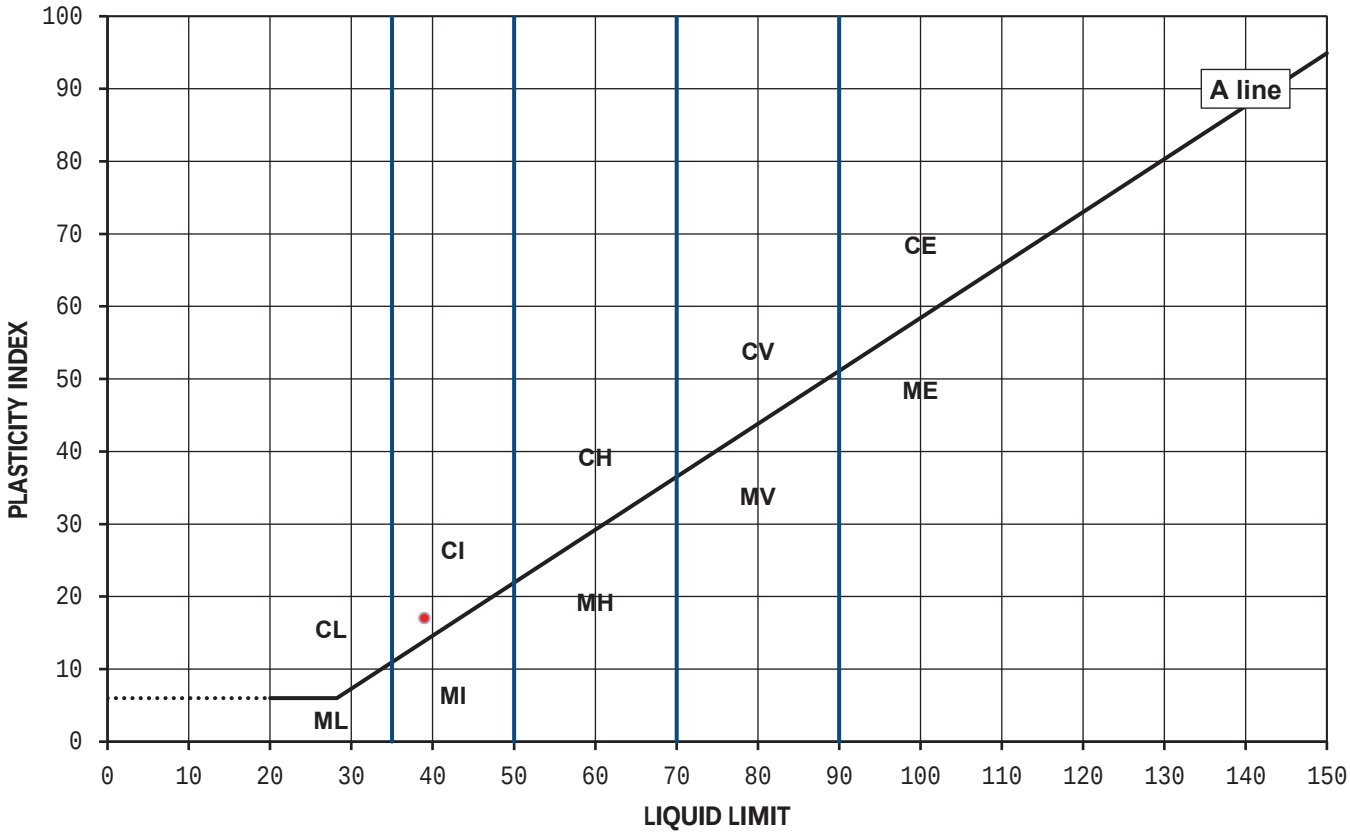
Client:	Terrafirma South	Client Reference:	6225
Client Address:	The Slate Barn Lower Lowley Dunsford, Devon, EX6 7BP	Job Number:	18-13298
		Date Sampled:	Not Given
		Date Received:	14/09/2018
Contact:	Kevin Scanlon	Date Tested:	12/10/2018
Site Name:	Woodland Meed Primary School	Sampled By:	Not Given
Site Address:	Not Given		

Test Results

Laboratory Reference:	1062550	Depth Top [m]:	5.00
Hole No.:	BH05	Depth Base [m]:	Not Given
Sample Reference:	10	Sample Type:	D
Soil Description:	Brown sandy CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
20	39	22	17	100



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

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

Remarks:

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

Signed: Darren Berrill
Geotechnical General Manager

GF 236.3

for and on behalf of i2 Analytical Ltd

TEST CERTIFICATE

Liquid and Plastic Limits

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

4041

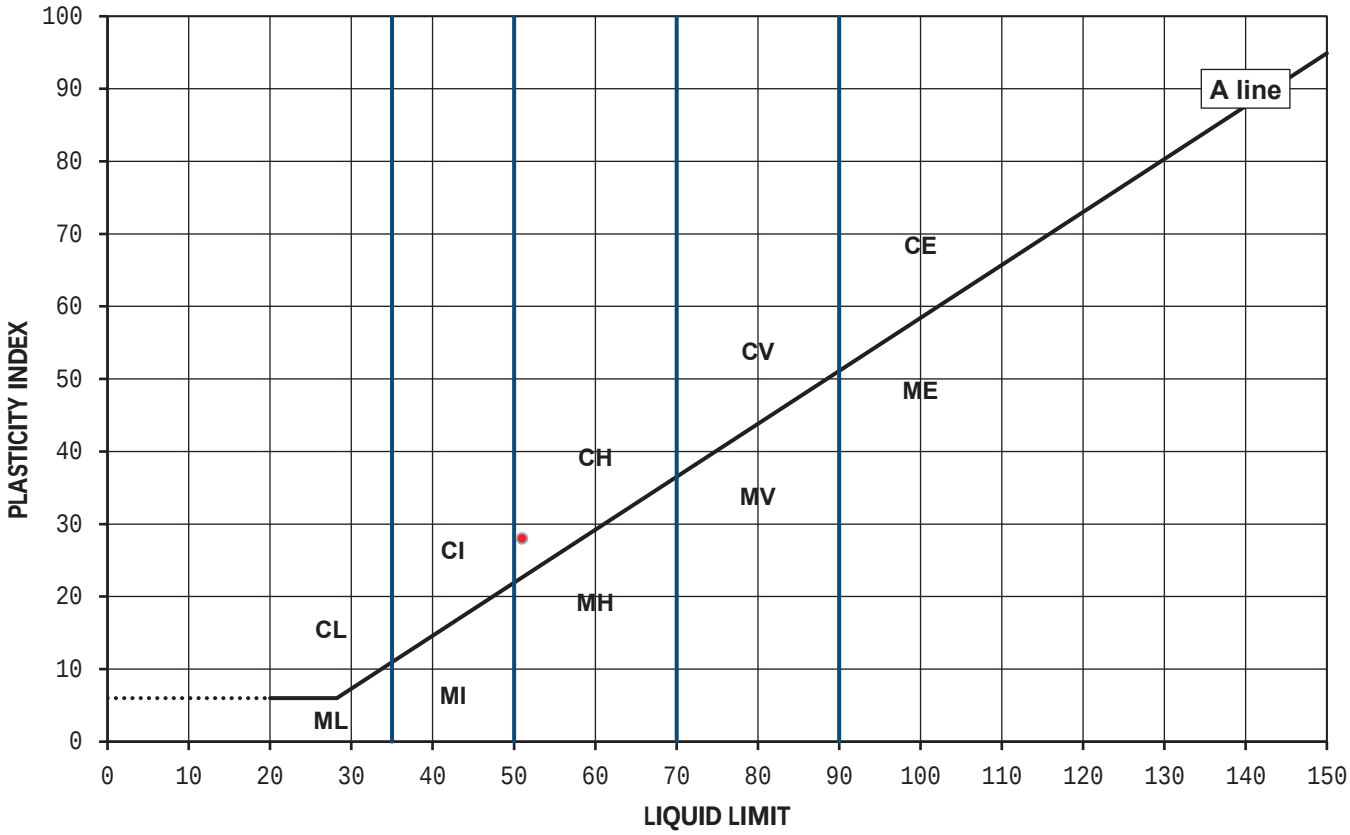
Tested in Accordance with: BS 1377-2: 1990: Clause 4.3 and 5

Client:	Terrafirma South	Client Reference:	6225
Client Address:	The Slate Barn Lower Lowley Dunsford, Devon, EX6 7BP	Job Number:	18-13298
		Date Sampled:	Not Given
		Date Received:	14/09/2018
Contact:	Kevin Scanlon	Date Tested:	12/10/2018
Site Name:	Woodland Meed Primary School	Sampled By:	Not Given
Site Address:	Not Given		

Test Results

Laboratory Reference:	1062551	Depth Top [m]:	6.00
Hole No.:	BH05	Depth Base [m]:	Not Given
Sample Reference:	12	Sample Type:	D
Soil Description:	Grey slightly sandy CLAY		
Sample Preparation:	Tested in natural condition		

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
20	51	23	28	100



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

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

Remarks:

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

Signed: Darren Berrill
Geotechnical General Manager

GF 236.3

for and on behalf of i2 Analytical Ltd

TEST CERTIFICATE

Liquid and Plastic Limits

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

4041

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

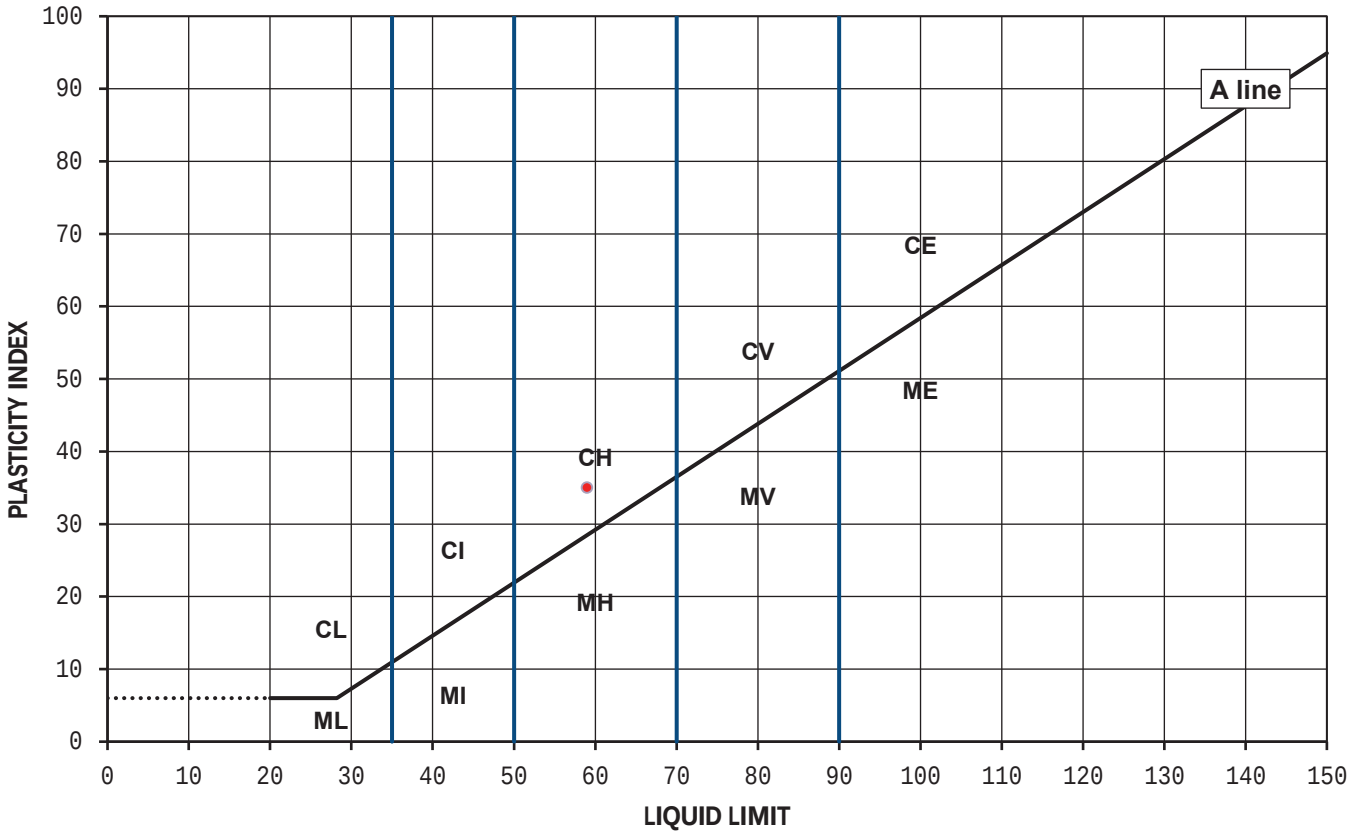
Client:	Terrafirma South	Client Reference:	6225
Client Address:	The Slate Barn Lower Lowley Dunsford, Devon, EX6 7BP	Job Number:	18-13298
		Date Sampled:	Not Given
		Date Received:	14/09/2018
Contact:	Kevin Scanlon	Date Tested:	12/10/2018
Site Name:	Woodland Meed Primary School	Sampled By:	Not Given
Site Address:	Not Given		

Test Results

Laboratory Reference:	1062552	Depth Top [m]:	7.00
Hole No.:	BH05	Depth Base [m]:	Not Given
Sample Reference:	14	Sample Type:	D
Soil Description:	Grey slightly sandy CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
19	59	24	35	100



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

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

Remarks:

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

Signed: Darren Berrill
Geotechnical General Manager

GF 236.3

for and on behalf of i2 Analytical Ltd

TEST CERTIFICATE

Liquid and Plastic Limits

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

4041

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

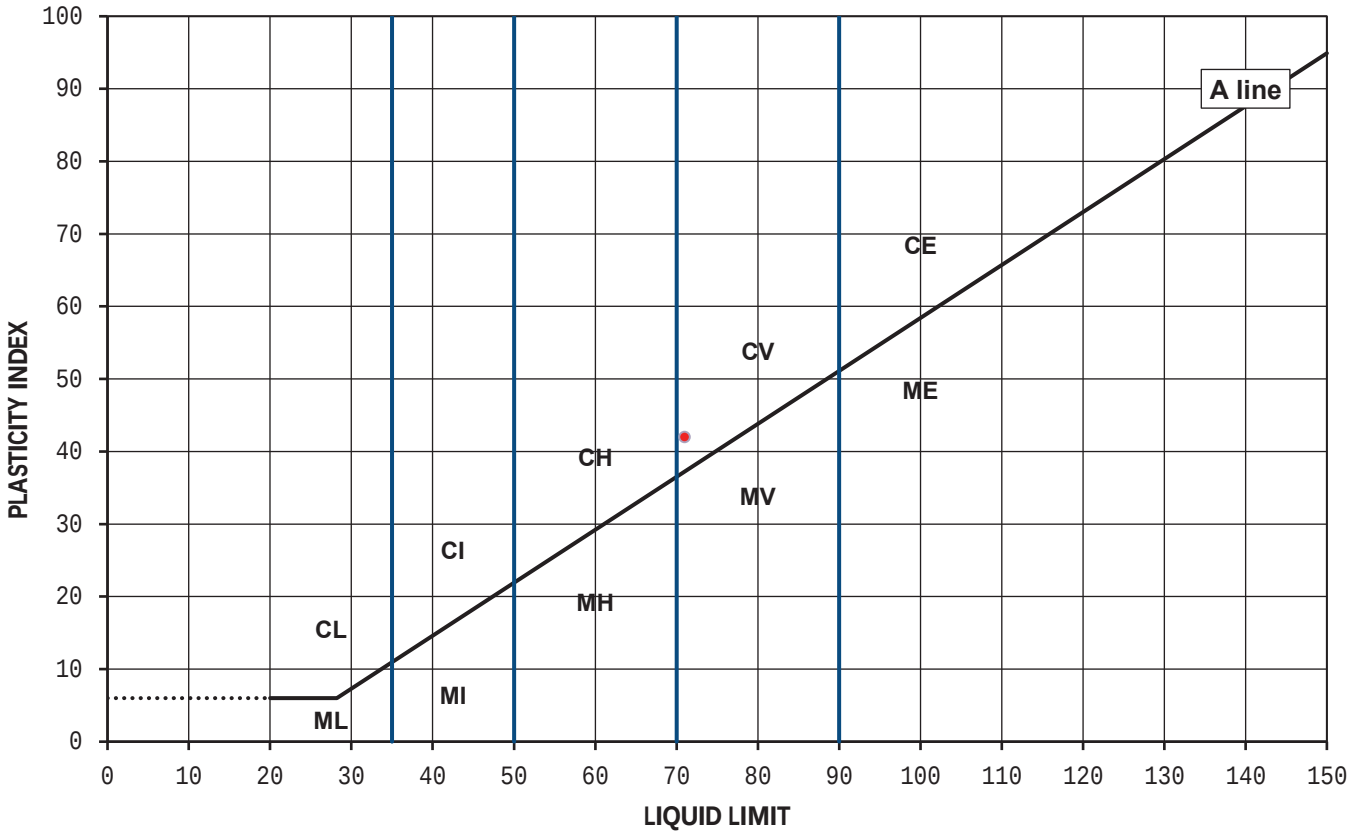
Client:	Terrafirma South	Client Reference:	6225
Client Address:	The Slate Barn Lower Lowley Dunsford, Devon, EX6 7BP	Job Number:	18-13298
		Date Sampled:	Not Given
		Date Received:	14/09/2018
Contact:	Kevin Scanlon	Date Tested:	12/10/2018
Site Name:	Woodland Meed Primary School	Sampled By:	Not Given
Site Address:	Not Given		

Test Results

Laboratory Reference:	1062553	Depth Top [m]:	9.00
Hole No.:	BH05	Depth Base [m]:	Not Given
Sample Reference:	17	Sample Type:	D
Soil Description:	Grey CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
21	71	29	42	100



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

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

Remarks:

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

Signed: Darren Berrill
Geotechnical General Manager

GF 236.3

for and on behalf of i2 Analytical Ltd

SUMMARY REPORT

Summary of Classification Test Results

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

4041

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

Site Address: 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				Description	Remarks	MC#	Atterberg#				Density		Total Porosity				
		Reference	Depth Top m	Depth Base m	Type			%	% Passing 425um %	LL %	PL %	PI %	bulk Mg/m3	PD Mg/m3	Mg/m3				
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
Date Reported: 31/10/2018

Signed: Darren Berrill
Geotechnical General Manager

GF 238.4

for and on behalf of i2 Analytical Ltd

SUMMARY REPORT

Summary of Classification Test Results

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

4041

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

Site Address: Not Given

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

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	MC#	Atterberg#				Density		Total Porosity				
		Reference	Depth Top m	Depth Base m	Type			%	% Passing 425um %	LL %	PL %	PI %	bulk Mg/m3	PD Mg/m3	Mg/m3				
1062511	BH01	26	14.00	Not Given	D	Grey slightly sandy CLAY	Atterberg 4 Point	33	100	54	22	32							
1062512	BH02	2	1.00	Not Given	D	Brown slightly gravelly CLAY	Atterberg 4 Point	27	87	70	32	38							
1062513	BH02	3	1.00	1.45	D	Brown CLAY		27											
1062514	BH02	4	2.00	Not Given	D	Brown CLAY	Atterberg 4 Point	24	100	64	29	35							
1062515	BH02	8	4.00	Not Given	D	Brown slightly sandy CLAY	Atterberg 4 Point	21	100	53	23	30							
1062516	BH02	10	5.00	Not Given	D	Brown CLAY	Atterberg 4 Point	28	100	87	31	56							
1062517	BH02	12	6.00	Not Given	D	Yellowish brown to grey CLAY		25											
1062518	BH02	15	8.00	Not Given	D	Grey CLAY		15											
1062519	BH02	19	10.00	Not Given	D	Grey slightly sandy CLAY	Atterberg 4 Point	18	100	54	20	34							
1062520	BH02	22	12.00	Not Given	D	Grey CLAY	Atterberg 4 Point	23	100	61	27	34							

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

for and on behalf of i2 Analytical Ltd

SUMMARY REPORT

Summary of Classification Test Results

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

4041

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

Site Address: 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				Description	Remarks	MC#	Atterberg#				Density		Total Porosity				
		Reference	Depth Top m	Depth Base m	Type			%	% Passing 425um %	LL %	PL %	PI %	bulk Mg/m3	PD Mg/m3	Mg/m3				
1062530	BH03	17	1.00	1.45	D	Brown CLAY		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											
1062528	BH03	13	11.00	Not Given	D	Grey CLAY	Atterberg 4 Point	18	100	65	22	43							

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

for and on behalf of i2 Analytical Ltd

SUMMARY REPORT

Summary of Classification Test Results

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

4041

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

Site Address: 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				Description	Remarks	MC#	Atterberg#				Density		Total Porosity				
		Reference	Depth Top m	Depth Base m	Type			%	% Passing 425um %	LL %	PL %	PI %	bulk Mg/m3	PD 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							
1062542	BH04	21	4.00	4.45	D	Brown CLAY		16											
1062536	BH04	5	4.00	Not Given	D	Brown slightly sandy CLAY	Atterberg 4 Point	22	100	59	24	35							
1062537	BH04	7	6.00	Not Given	D	Dark grey slightly sandy CLAY	Atterberg 4 Point	22	100	57	22	35							
1062538	BH04	9	8.00	Not Given	D	Dark grey CLAY	Atterberg 4 Point	19	100	62	29	33							
1062543	BH04	24	9.50	9.95	D	Grey silty CLAY		24											

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

for and on behalf of i2 Analytical Ltd

SUMMARY REPORT

Summary of Classification Test Results

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

4041

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

Site Address: 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				Description	Remarks	MC#	Atterberg#				Density		Total Porosity				
		Reference	Depth Top m	Depth Base m	Type			%	% Passing 425um %	LL %	PL %	PI %	bulk Mg/m3	PD 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
Date Reported: 31/10/2018

Signed: Darren Berrill
Geotechnical General Manager

GF 238.4

for and on behalf of i2 Analytical Ltd

SUMMARY REPORT

Summary of Classification Test Results

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

4041

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

Site Address: 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				Description	Remarks	MC#	Atterberg#				Density		Total Porosity				
		Reference	Depth Top	Depth Base	Type				% Passing 425um	LL	PL	PI	bulk	PD					
			m	m				%	%	%	%	%	Mg/m3	Mg/m3	Mg/m3				
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											

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

for and on behalf of i2 Analytical Ltd

TEST CERTIFICATE

Density Tests - Summary of Results

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

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

Client:	Terrafirma South	Client Reference:	6225
Client Address:	The Slate Barn Lower Lowley Dunsford Devon, EX6 7BP	Job Number:	18-13298
		Date Sampled:	Not Given
		Date Received:	14/09/2018
Contact:	Kevin Scanlon	Date Tested:	15/10/2018
Site Name:	Woodland Meed Primary School	Sampled By:	Not Given
Site Address:	Not Given		

Test results

Laboratory Reference	Hole No.	Sample				Description	Linear Measurement			Remarks
		Reference	Depth Top [m]	Depth Base [m]	Type		Bulk density Mg/m3	Dry density Mg/m3	WC %	
1062555	BH05	21	12.00	Not Given	D	Grey sandy CLAY	1.82	1.52	19.7	

Comments:

Approved:

Darren Berrill
Geotechnical General Manager

Signed:

Darren Berrill
Geotechnical General Manager

Date Reported: 31/10/2018

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

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

4041

Client:	Terrafirma South	Client Reference:	6225
Client Address:	The Slate Barn Lower Lowley Dunsford, Devon, EX6 7BP	Job Number:	18-13298
		Date Sampled:	Not Given
		Date Received:	14/09/2018
Contact:	Kevin Scanlon	Date Tested:	22/10/2018
Site Name:	Woodland Meed Primary School	Sampled By:	Not Given
Site Address:	Not Given		

Test results

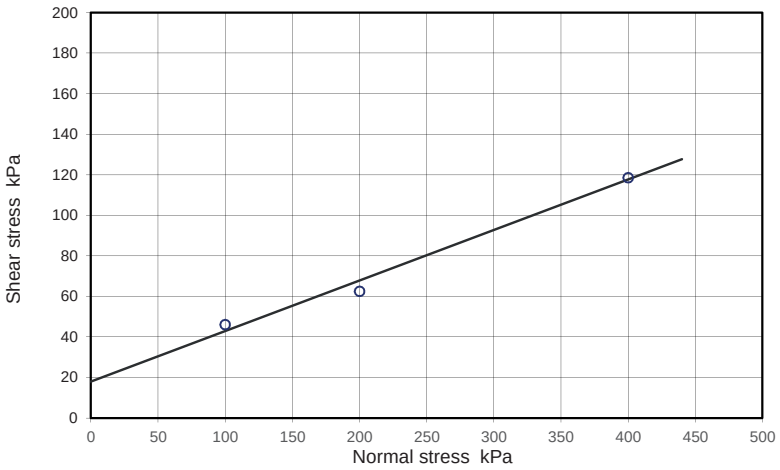
Laboratory Reference:	1062503	Depth Top [m]:	2.00
Hole No.:	BH01	Depth Base [m]:	Not Given
Sample Reference:	4	Sample Type:	D
Soil Description:	Brown to grey CLAY		

Preparation Details

Specimen Details		Test No.	1	2	3				
Initial	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/m³
	Bulk Density		1.88	1.88	1.89				Mg/m³
	Moisture Content		28.8	28.8	28.8				%
	Dry density		1.46	1.46	1.47				Mg/m³
	Voids ratio		0.815	0.815	0.803				
	Degree of Saturation		94	94	95				%
Consolidation	Consolidation / Normal Stress applied		**100**	**200**	**400**				kPa
	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
	Residual							mm/min
Peak values, (o)	Relative horizontal displacement	1.87	1.27	1.68				mm
	Shear stress	46.1	62.5	118.6				kPa
	Vertical Movement at peak shear stress	0.31	0.17	0.20				mm
Residual values, (x)	No. of traverses (including peak run)	1	1	1				
	Relative horizontal displacement							mm
	Shear stress							kPa
	Vertical movement at residual shear stress							mm



Shear Strength Parameters

Peak strength, (o)		Regression	Manual
c '	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
Date Reported: 31/10/2018

Signed:

Darren Berrill
Geotechnical General Manager

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

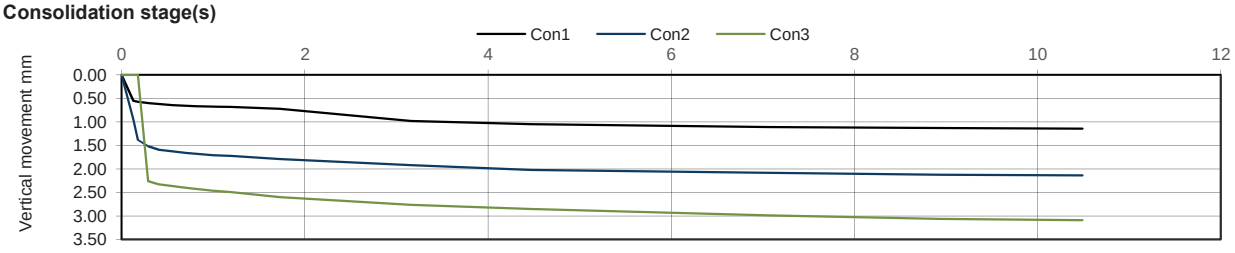
i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS

Client:	Terrafirma South	Client Reference:	6225
Client Address:	The Slate Barn Lower Lowley Dunsford, Devon, EX6 7BP	Job Number:	18-13298
		Date Sampled:	Not Given
		Date Received:	14/09/2018
Contact:	Kevin Scanlon	Date Tested:	22/10/2018
Site Name:	Woodland Meed Primary School	Sampled By:	Not Given
Site Address:	Not Given		

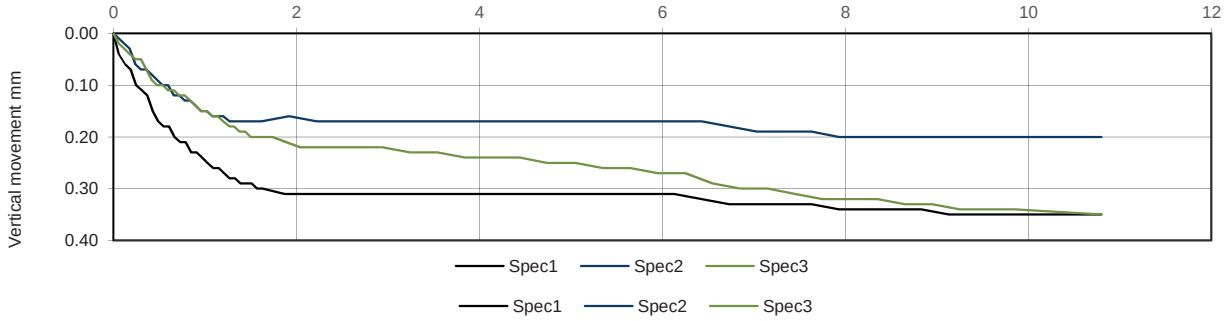
Test results

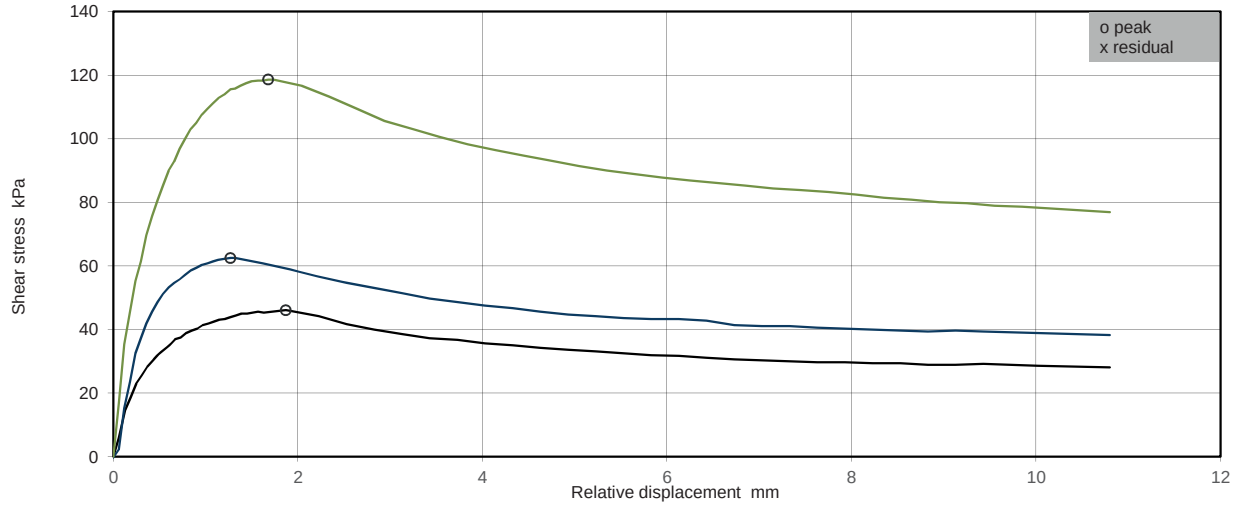
Laboratory Reference:	1062503	Depth Top [m]:	2.00
Hole No.:	BH01	Depth Base [m]:	Not Given
Sample Reference:	4	Sample Type:	D
Soil Description:	Brown to grey CLAY		

Consolidation stage(s)



Shearing stage(s)





Comments:

Approved:

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

Signed:

Darren Berrill
Geotechnical Ge
Manager

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

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

4041

Client:	Terrafirma South	Client Reference:	6225
Client Address:	The Slate Barn Lower Lowley Dunsford, Devon, EX6 7BP	Job Number:	18-13298
		Date Sampled:	Not Given
		Date Received:	14/09/2018
Contact:	Kevin Scanlon	Date Tested:	23/10/2018
Site Name:	Woodland Meed Primary School	Sampled By:	Not Given
Site Address:	Not Given		

Test results

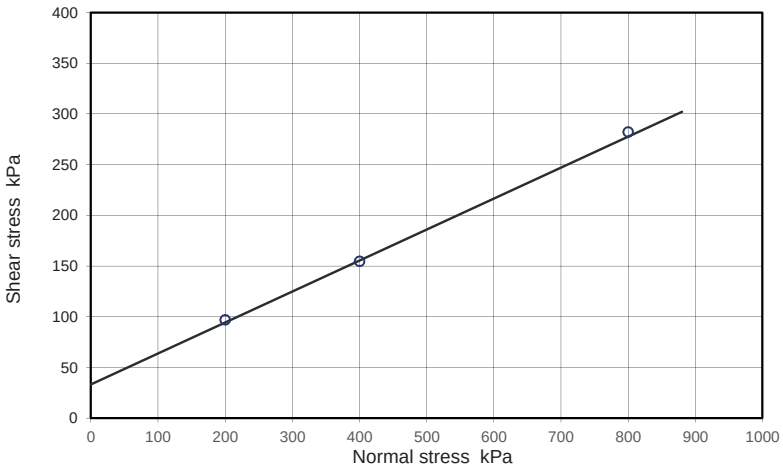
Laboratory Reference:	1062515	Depth Top [m]:	4.00
Hole No.:	BH02	Depth Base [m]:	Not Given
Sample Reference:	8	Sample Type:	D
Soil Description:	Brown slightly sandy CLAY		

Preparation Details

Specimen Details		Test No.	1	2	3				
Initial	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/m³
	Bulk Density		2.01	2.00	2.01				Mg/m³
	Moisture Content		18.8	18.8	18.8				%
	Dry density		1.69	1.68	1.69				Mg/m³
	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)

Rate of displacement	Peak	0.00969	0.00969	0.00969				mm/min
	Residual							mm/min
Peak values, (o)	Relative horizontal displacement	1.87	2.04	3.07				mm
	Shear stress	96.9	154.7	282.2				kPa
	Vertical Movement at peak shear stress	0.33	0.31	0.31				mm
Residual values, (x)	No. of traverses (including peak run)	1	1	1				
	Relative horizontal displacement							mm
	Shear stress							kPa
	Vertical movement at residual shear stress							mm



Shear Strength Parameters

Peak strength, (o)		Regression	Manual
c '	kPa	33.00	-
Ø '	degrees	17.0	-

Residual strength, (x)

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

Remarks :

Comments:

Approved:

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

Signed:

Darren Berrill
Geotechnical General Manager

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

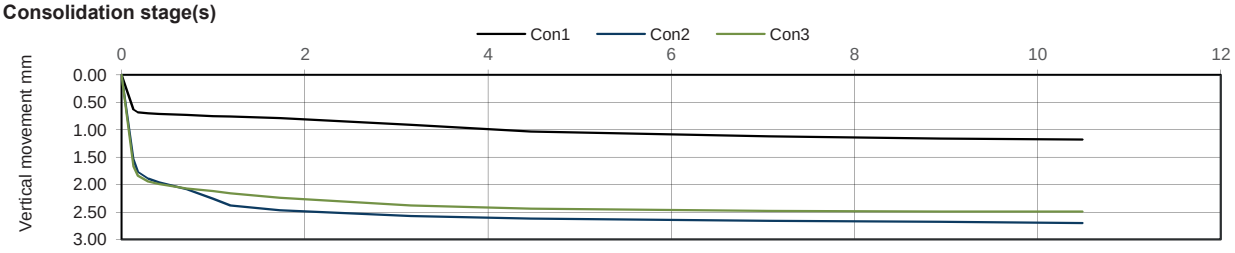
i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS

Client:	Terrafirma South	Client Reference:	6225
Client Address:	The Slate Barn Lower Lowley Dunsford, Devon, EX6 7BP	Job Number:	18-13298
		Date Sampled:	Not Given
		Date Received:	14/09/2018
Contact:	Kevin Scanlon	Date Tested:	23/10/2018
Site Name:	Woodland Meed Primary School	Sampled By:	Not Given
Site Address:	Not Given		

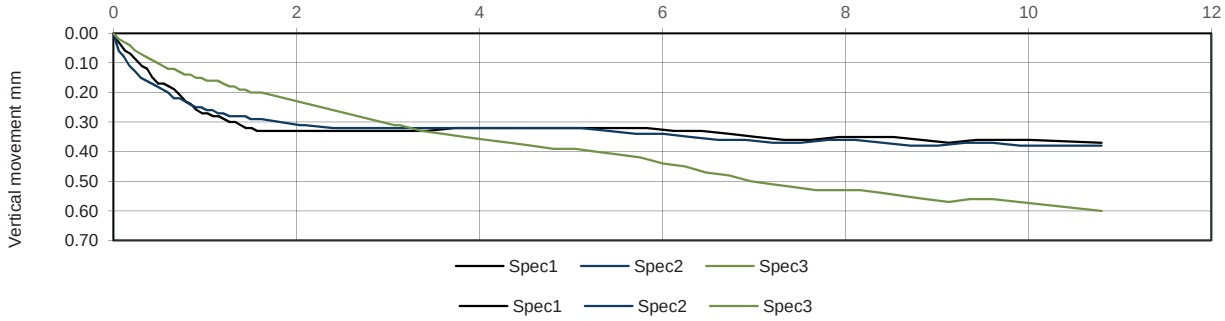
Test results

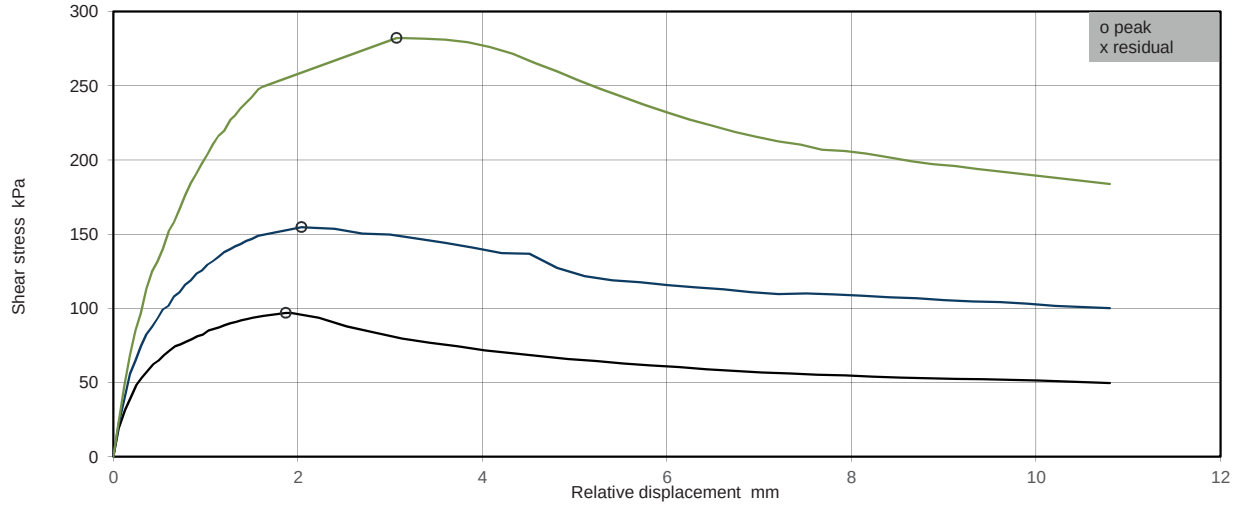
Laboratory Reference:	1062515	Depth Top [m]:	4.00
Hole No.:	BH02	Depth Base [m]:	Not Given
Sample Reference:	8	Sample Type:	D
Soil Description:	Brown slightly sandy CLAY		

Consolidation stage(s)



Shearing stage(s)





Comments:

Approved:

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

Signed:

Darren Berrill
Geotechnical Ge
Manager

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TEST CERTIFICATE

Determination of shear strength using the Small Shearbox Apparatus

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

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

4041

Client:	Terrafirma South	Client Reference:	6225
Client Address:	The Slate Barn Lower Lowley Dunsford, Devon, EX6 7BP	Job Number:	18-13298
		Date Sampled:	Not Given
		Date Received:	14/09/2018
Contact:	Kevin Scanlon	Date Tested:	24/10/2018
Site Name:	Woodland Meed Primary School	Sampled By:	Not Given
Site Address:	Not Given		

Test results

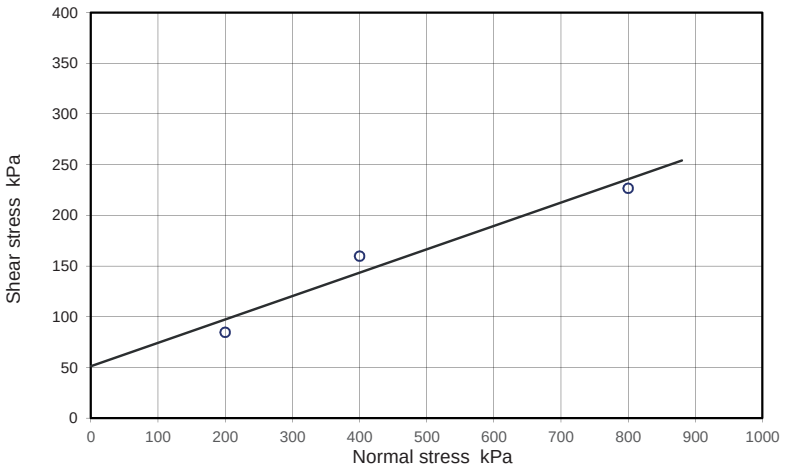
Laboratory Reference:	1062525	Depth Top [m]:	5.00
Hole No.:	BH03	Depth Base [m]:	Not Given
Sample Reference:	6	Sample Type:	D
Soil Description:	Mottled brown silty CLAY		

Preparation Details

Specimen Details		Test No.	1	2	3				
Initial	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/m³
	Bulk Density		1.94	1.95	1.94				Mg/m³
	Moisture Content		28.0	28.0	28.0				%
	Dry density		1.52	1.52	1.52				Mg/m³
	Voids ratio		0.743	0.743	0.743				
	Degree of Saturation		100	100	100				%
Consolidation	Consolidation / Normal Stress applied		**200**	**400**	**800**				kPa
	Change in height during consolidation		1.490	2.310	2.800				mm
	Voids ratio after consolidation		0.613	0.542	0.499				
After test	Final Moisture content		29.0	27.4	25.4				%

Shearing stage(s)

Rate of displacement	Peak	0.01575	0.01575	0.01575				mm/min
	Residual							mm/min
Peak values, (o)	Relative horizontal displacement	1.32	1.74	2.22				mm
	Shear stress	84.7	159.7	226.9				kPa
	Vertical Movement at peak shear stress	0.11	0.14	0.16				mm
Residual values, (x)	No. of traverses (including peak run)	1	1	1				
	Relative horizontal displacement							mm
	Shear stress							kPa
	Vertical movement at residual shear stress							mm



Shear Strength Parameters

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

Residual strength, (x)

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

Remarks :

Comments:

Approved:

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

Signed:

Darren Berrill
Geotechnical General Manager

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

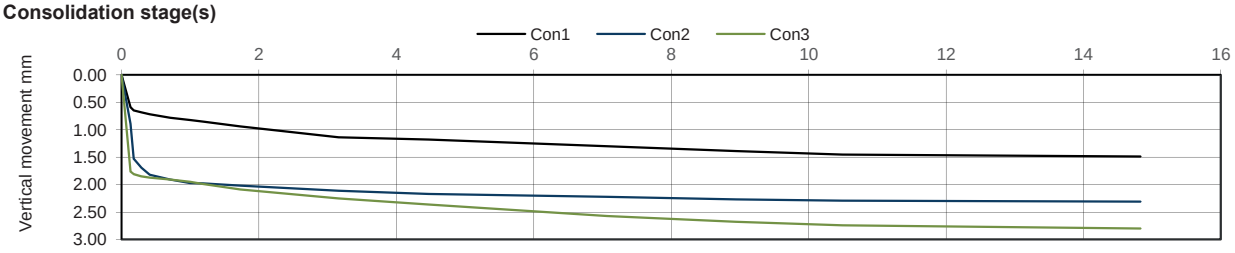
i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS

Client:	Terrafirma South	Client Reference:	6225
Client Address:	The Slate Barn Lower Lowley Dunsford, Devon, EX6 7BP	Job Number:	18-13298
		Date Sampled:	Not Given
		Date Received:	14/09/2018
Contact:	Kevin Scanlon	Date Tested:	24/10/2018
Site Name:	Woodland Meed Primary School	Sampled By:	Not Given
Site Address:	Not Given		

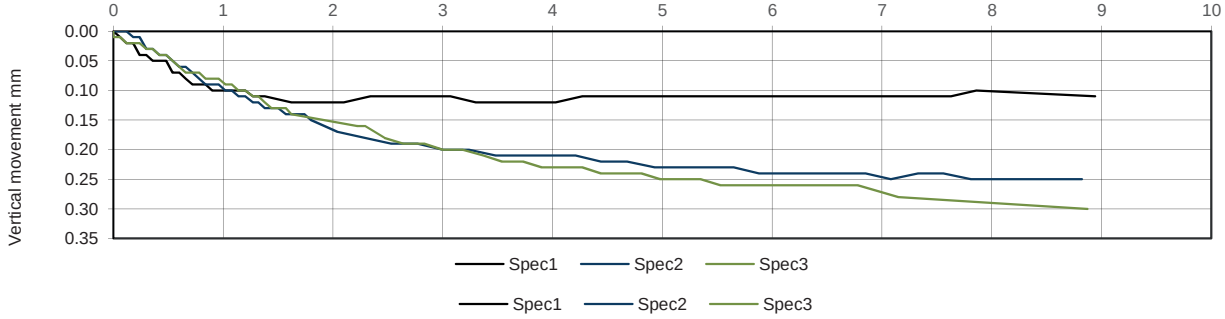
Test results

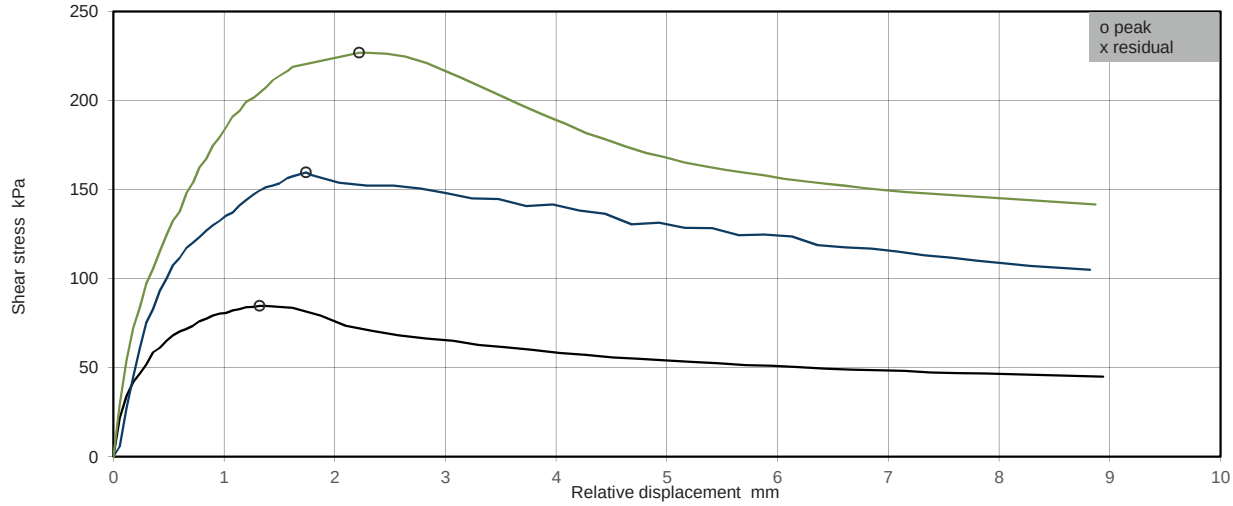
Laboratory Reference:	1062525	Depth Top [m]:	5.00
Hole No.:	BH03	Depth Base [m]:	Not Given
Sample Reference:	6	Sample Type:	D
Soil Description:	Mottled brown silty CLAY		

Consolidation stage(s)



Shearing stage(s)





Comments:

Approved:

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

Signed:

Darren Berrill
Geotechnical Ge
Manager

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

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

4041

Client:	Terrafirma South	Client Reference:	6225
Client Address:	The Slate Barn Lower Lowley Dunsford, Devon, EX6 7BP	Job Number:	18-13298
		Date Sampled:	Not Given
		Date Received:	14/09/2018
Contact:	Kevin Scanlon	Date Tested:	25/10/2018
Site Name:	Woodland Meed Primary School	Sampled By:	Not Given
Site Address:	Not Given		

Test results

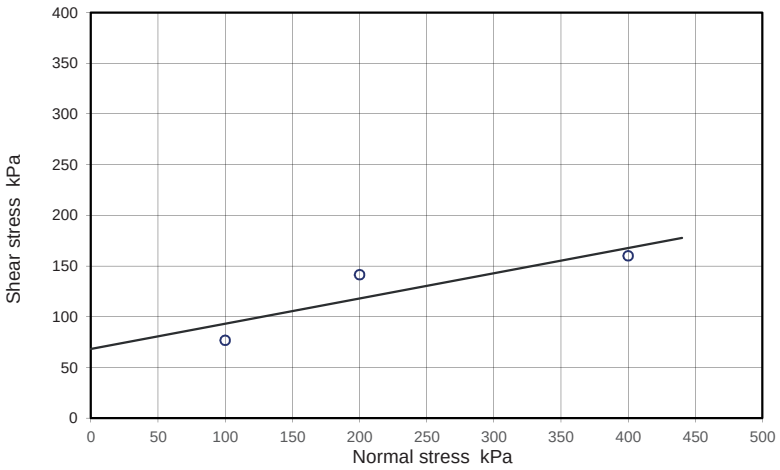
Laboratory Reference:	1062533	Depth Top [m]:	1.00
Hole No.:	BH04	Depth Base [m]:	Not Given
Sample Reference:	2	Sample Type:	D
Soil Description:	Brown slightly sandy CLAY		

Preparation Details

Specimen Details		Test No.	1	2	3				
Initial	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/m³
	Bulk Density		2.02	2.02	2.02				Mg/m³
	Moisture Content		20.1	20.1	20.1				%
	Dry density		1.68	1.68	1.68				Mg/m³
	Voids ratio		0.577	0.577	0.577				
	Degree of Saturation		92	92	92				%
Consolidation	Consolidation / Normal Stress applied		**100**	**200**	**400**				kPa
	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)

Rate of displacement	Peak	0.03315	0.03315	0.03315				mm/min
	Residual							mm/min
Peak values, (o)	Relative horizontal displacement	1.87	2.34	2.58				mm
	Shear stress	76.9	141.4	160.0				kPa
	Vertical Movement at peak shear stress	0.27	0.44	0.33				mm
Residual values, (x)	No. of traverses (including peak run)	1	1	1				
	Relative horizontal displacement							mm
	Shear stress							kPa
	Vertical movement at residual shear stress							mm



Shear Strength Parameters

Peak strength, (o)		Regression	Manual
c '	kPa	68.00	-
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
Date Reported: 31/10/2018

Signed:

Darren Berrill
Geotechnical General Manager

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

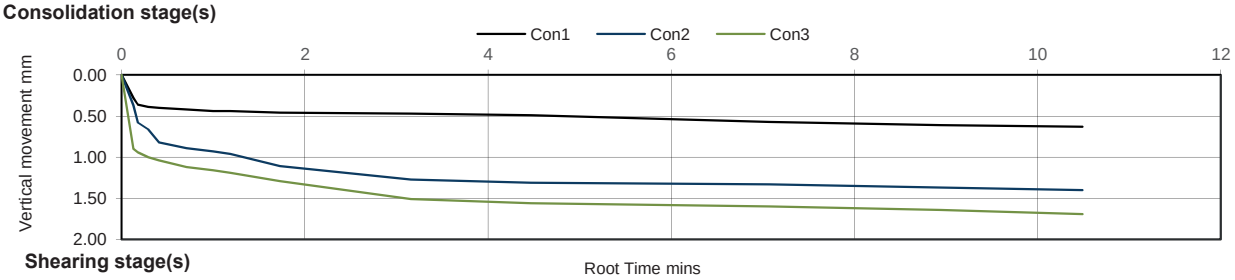
i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS

Client:	Terrafirma South	Client Reference:	6225
Client Address:	The Slate Barn Lower Lowley Dunsford, Devon, EX6 7BP	Job Number:	18-13298
		Date Sampled:	Not Given
		Date Received:	14/09/2018
Contact:	Kevin Scanlon	Date Tested:	25/10/2018
Site Name:	Woodland Meed Primary School	Sampled By:	Not Given
Site Address:	Not Given		

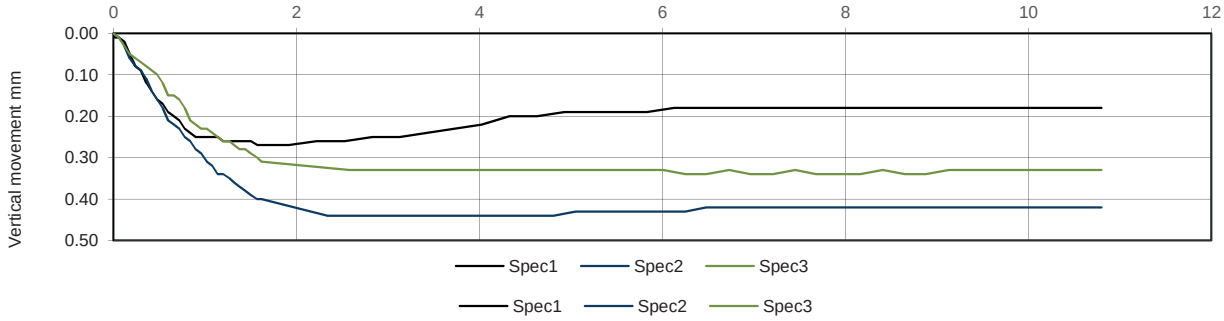
Test results

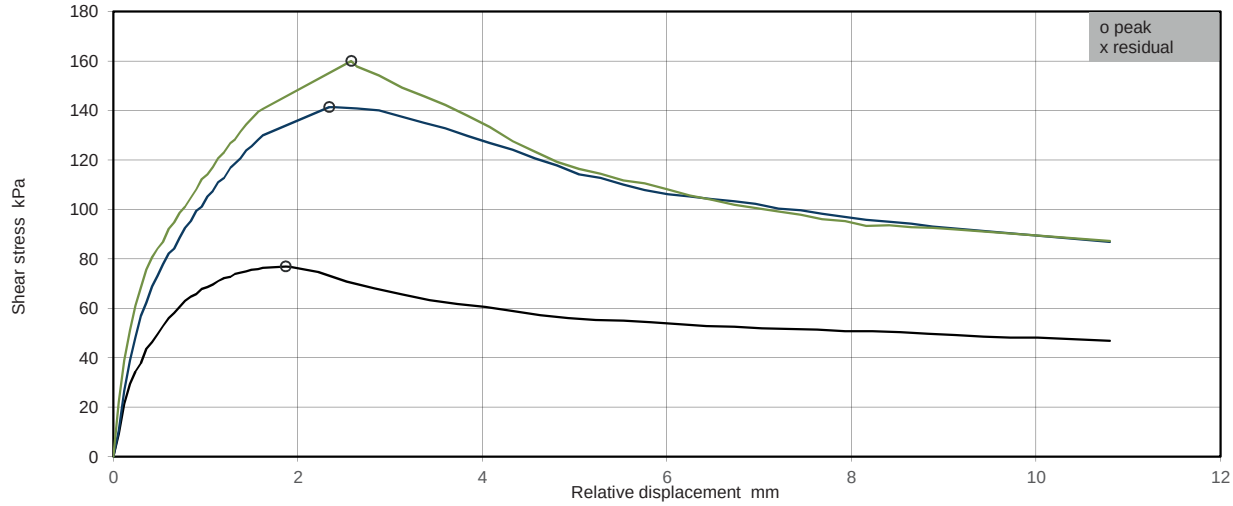
Laboratory Reference:	1062533	Depth Top [m]:	1.00
Hole No.:	BH04	Depth Base [m]:	Not Given
Sample Reference:	2	Sample Type:	D
Soil Description:	Brown slightly sandy CLAY		

Consolidation stage(s)



Shearing stage(s)





Comments:

Approved:

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

Signed:

Darren Berrill
Geotechnical Ge
Manager

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

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

4041

Client:	Terrafirma South	Client Reference:	6225
Client Address:	The Slate Barn Lower Lowley Dunsford, Devon, EX6 7BP	Job Number:	18-13298
		Date Sampled:	Not Given
		Date Received:	14/09/2018
Contact:	Kevin Scanlon	Date Tested:	26/10/2018
Site Name:	Woodland Meed Primary School	Sampled By:	Not Given
Site Address:	Not Given		

Test results

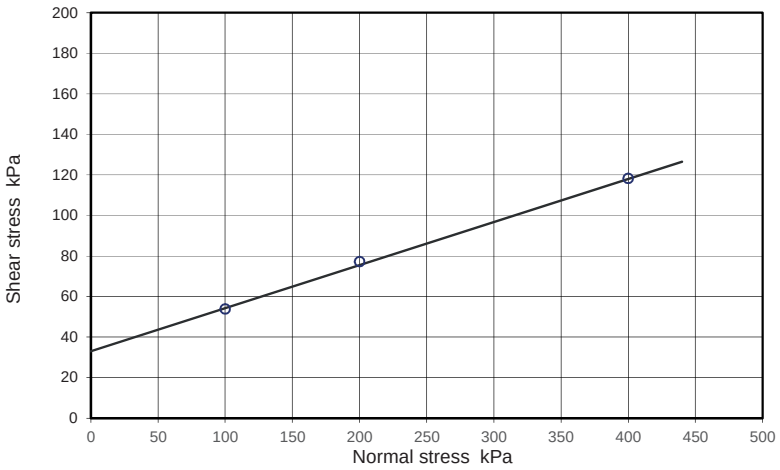
Laboratory Reference:	1062544	Depth Top [m]:	1.00
Hole No.:	BH05	Depth Base [m]:	Not Given
Sample Reference:	2	Sample Type:	D
Soil Description:	Brown CLAY		

Preparation Details

Specimen Details		Test No.	1	2	3				
Initial	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/m³
	Bulk Density		1.88	1.88	1.88				Mg/m³
	Moisture Content		30.9	30.9	30.9				%
	Dry density		1.44	1.44	1.44				Mg/m³
	Voids ratio		0.840	0.840	0.840				
	Degree of Saturation		97	97	97				%
Consolidation	Consolidation / Normal Stress applied		**100**	**200**	**400**				kPa
	Change in height during consolidation		0.800	1.730	2.650				mm
	Voids ratio after consolidation		0.766	0.681	0.596				
After test	Final Moisture content		34.8	32.9	31.9				%

Shearing stage(s)

Rate of displacement	Peak	0.00808	0.00808	0.00808				mm/min
	Residual							mm/min
Peak values, (o)	Relative horizontal displacement	2.29	1.51	1.80				mm
	Shear stress	53.9	77.2	118.3				kPa
	Vertical Movement at peak shear stress	0.42	0.15	0.21				mm
Residual values, (x)	No. of traverses (including peak run)	1	1	1				
	Relative horizontal displacement							mm
	Shear stress							kPa
	Vertical movement at residual shear stress							mm



Shear Strength Parameters

Peak strength, (o)		Regression	Manual
c '	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
Date Reported: 31/10/2018

Signed:

Darren Berrill
Geotechnical General Manager

for and on behalf of i2 Analytical Ltd

TEST CERTIFICATE

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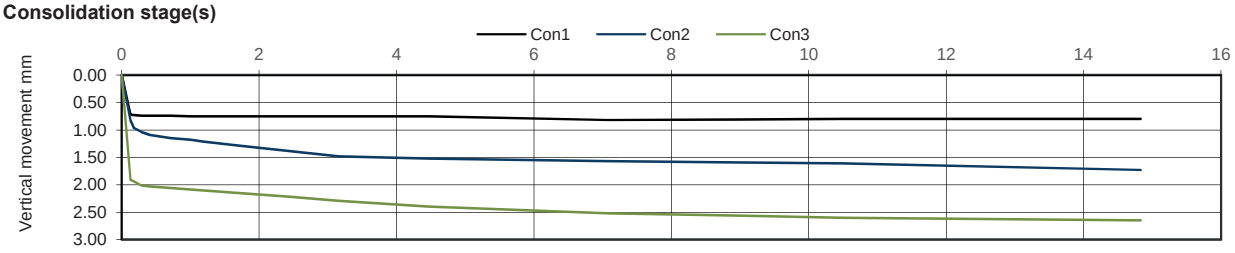
i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS

Client:	Terrafirma South	Client Reference:	6225
Client Address:	The Slate Barn Lower Lowley Dunsford, Devon, EX6 7BP	Job Number:	18-13298
		Date Sampled:	Not Given
		Date Received:	14/09/2018
Contact:	Kevin Scanlon	Date Tested:	26/10/2018
Site Name:	Woodland Meed Primary School	Sampled By:	Not Given
Site Address:	Not Given		

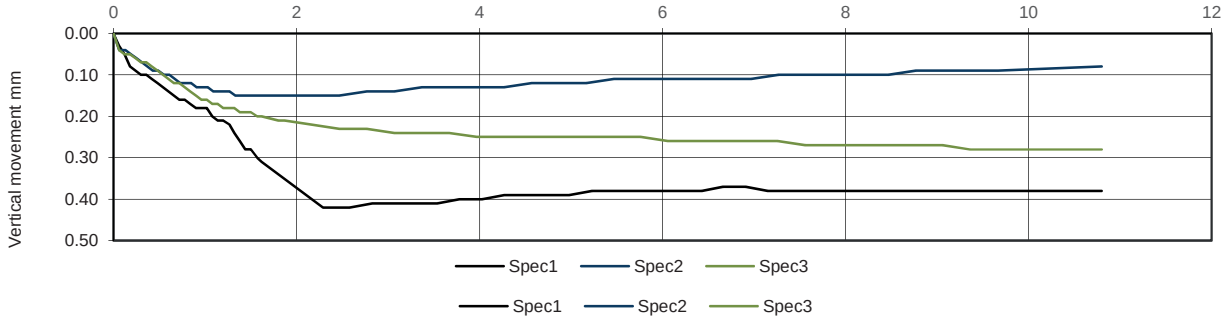
Test results

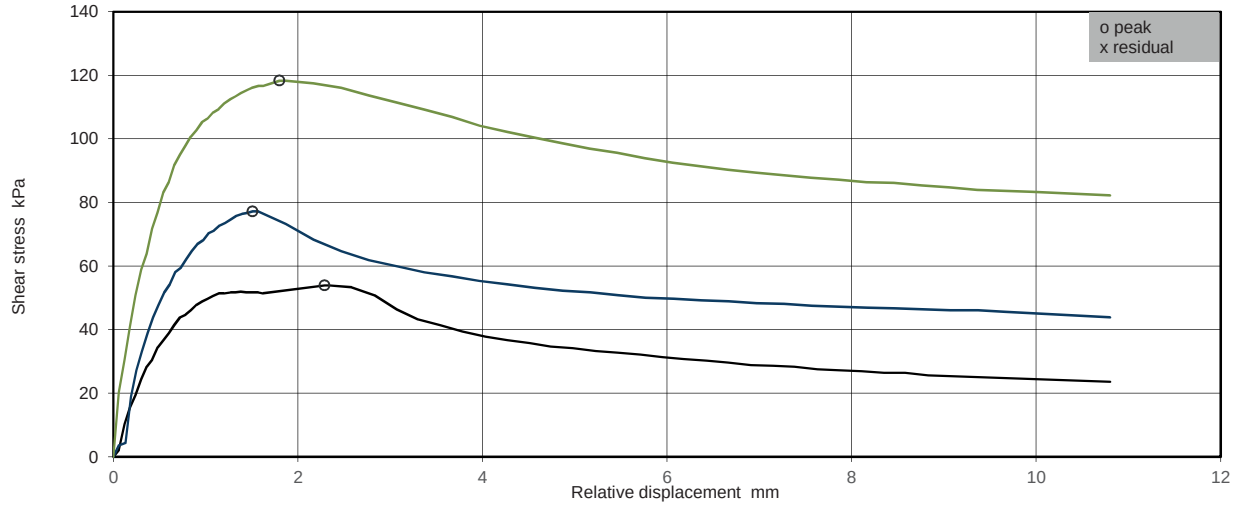
Laboratory Reference:	1062544	Depth Top [m]:	1.00
Hole No.:	BH05	Depth Base [m]:	Not Given
Sample Reference:	2	Sample Type:	D
Soil Description:	Brown CLAY		

Consolidation stage(s)



Shearing stage(s)





Comments:

Approved:

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

Signed:

Darren Berrill
Geotechnical Ge
Manager

for and on behalf of i2 Analytical Ltd

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

e: kevin@terrafirmasouth.co.uk

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

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

Analytical Report Number : 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

Excel copies of reports are only valid when accompanied by this PDF certificate.

Analytical Report Number: 18-13302

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

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.

The results included within the report are representative of the samples submitted for analysis.

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.

The results included within the report are representative of the samples submitted for analysis.

Laboratory Report

UKAS TESTING 2788

GSTL

GEO Site & Testing Services Ltd

Contract Number: 40835

Client Ref:

Client PO: **6225**

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	Qty
Moisture Content BS 1377:1990 - Part 2 : 3.2 - * UKAS	1
4 Point Liquid & Plastic Limit BS 1377:1990 - Part 2 : 4.3 & 5.3 - * UKAS	1
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	3
Disposal of samples for job	1

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

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)			Descriptions
BH2	16	u	8.00	-	8.45	Grey silty CLAY
				-		
				-		
				-		
				-		
				-		
				-		
				-		
				-		
				-		
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				-		
				-		

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

UKAS TESTING 2788

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

BH Borehole	Sample Number	Sample Type	Depth (m)			Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity index %	Passing .425mm %	Remarks
BH2	16	u	8.00	-	8.45	16	46	25	21	100	CI Intermediate Plasticity
				-							
				-							
				-							
				-							
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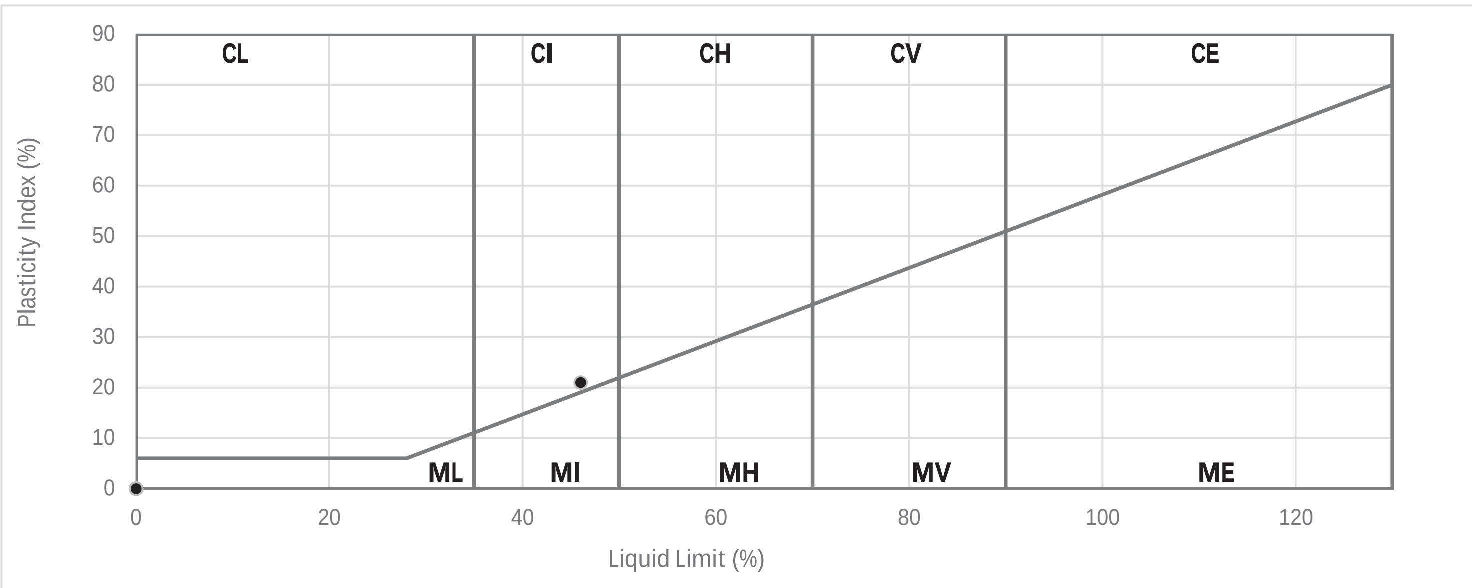
				-							

Symbols: NP : Non Plastic # : Liquid Limit and Plastic Limit Wet Sieved

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION
BS 5930:1999+A2:2010



Operators	Checked	16/10/2018	Richard John	
DB	Approved	17/10/2018	Ben Sharp	

UKAS TESTING 2788

Consolidated Undrained Triaxial Compression Test

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		Undisturbed

Description of Specimen

Brown sl silty 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	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
(assumed/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

D P Evans

Checked and Approved By

17/10/18
Date

Client Ref

6225

Contract No

40835

Woodlands Meed Primary School

GSTL
GEO SITE & TESTING SERVICES LTD

Consolidated Undrained Triaxial Compression Test

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

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	y	y	y
Base Drain Used	y	y	y
Side Drains Used	y	y	y
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	m^2/MN	0.12928	0.29778	0.28425
Consolidation Coef.	$m^2/yr.$	1.00102	0.47978	0.18386

D P Evans

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GEO SITE & TESTING SERVICES LTD

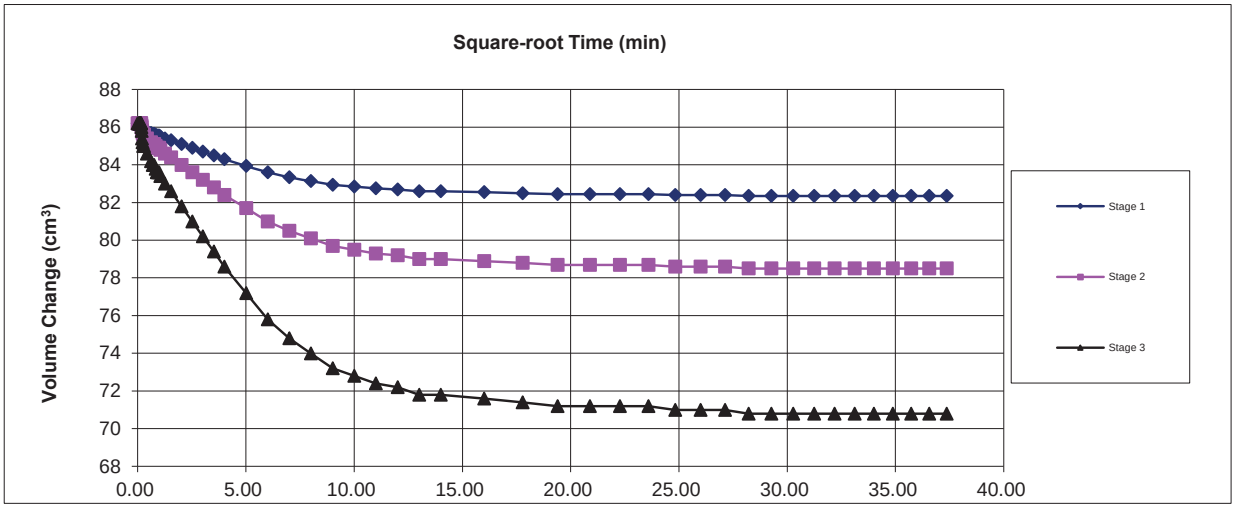
Consolidated Undrained Triaxial Compression Test

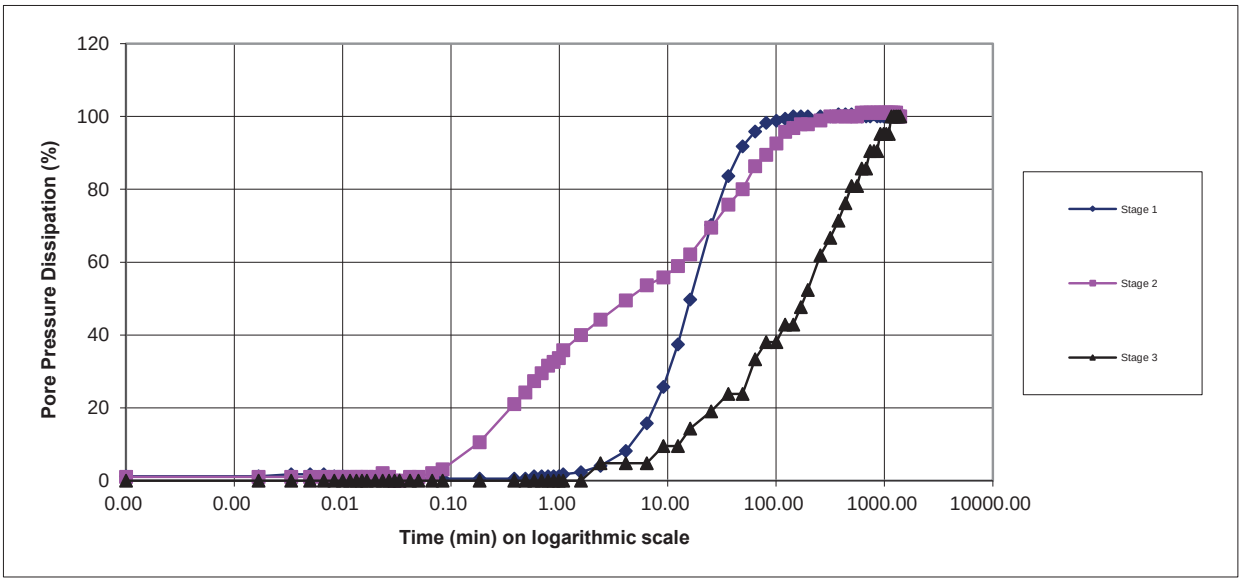
BS 1377 : Part 8 : 1990 : 38mm Set of Three

Specimen Details

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

Consolidation Stage





D P Gray

Checked and Approved By

17/10/18
Date

Client Ref

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Contract No

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Woodlands Meed Primary School

GSTL
GEO SITE & TESTING SERVICES LTD

Consolidated Undrained Triaxial Compression Test

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

Shearing

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 Stress Ratio				
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

D P Ward

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Consolidated Undrained Triaxial Compression Test

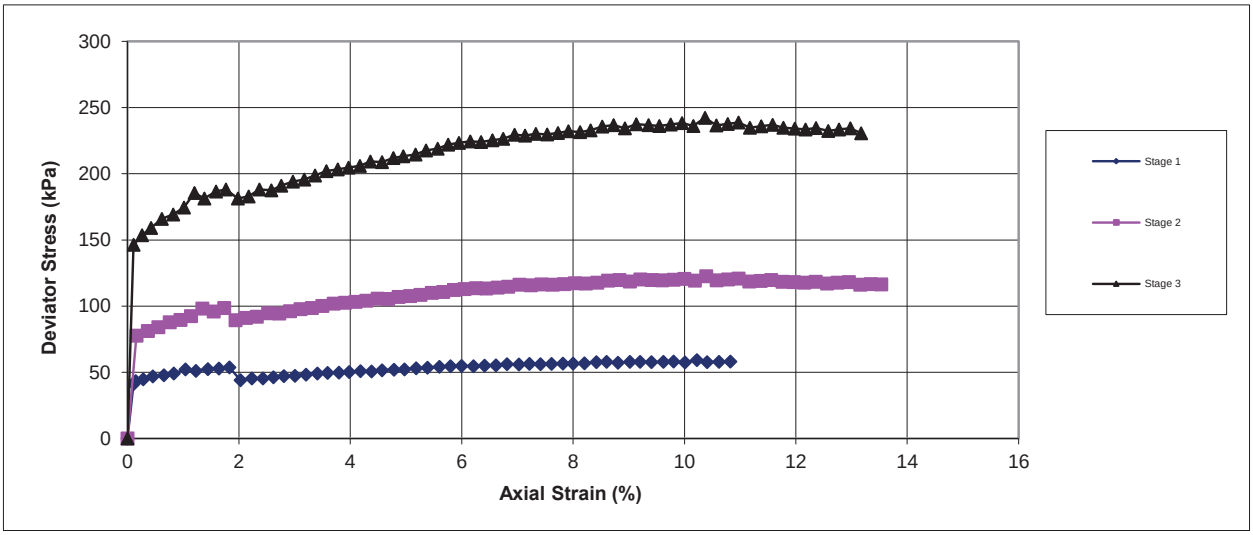
BS 1377 : Part 8 : 1990 : 38mm Set of Three

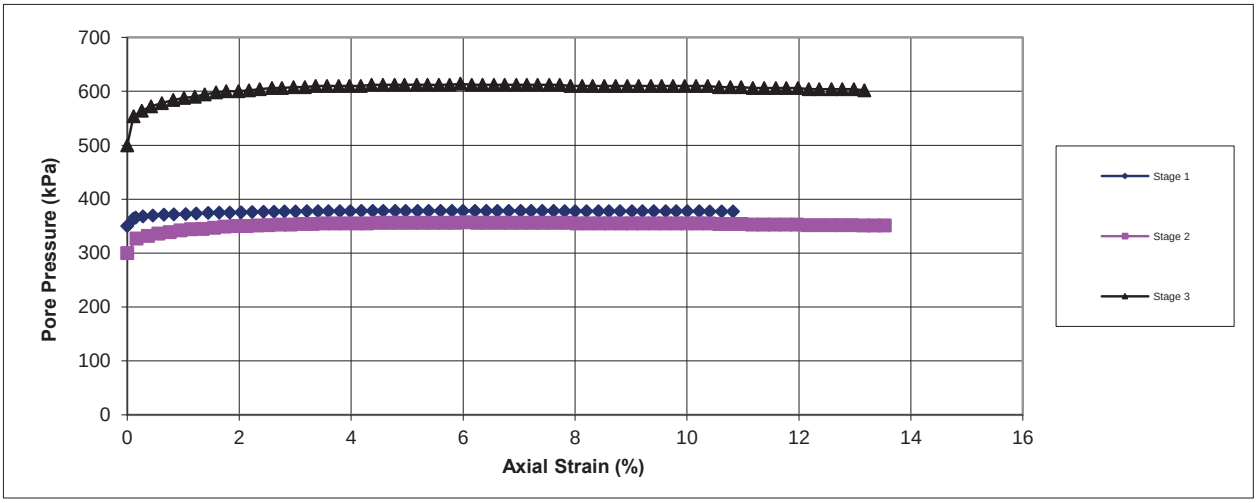
Stage 1

Specimen Details

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

Shearing Stage





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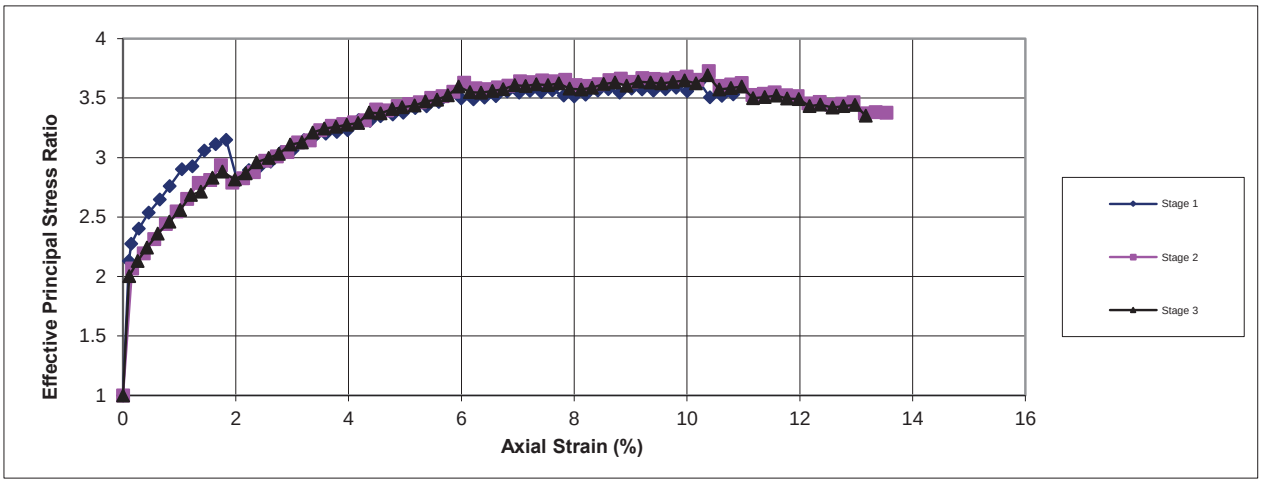
Consolidated Undrained Triaxial Compression Test

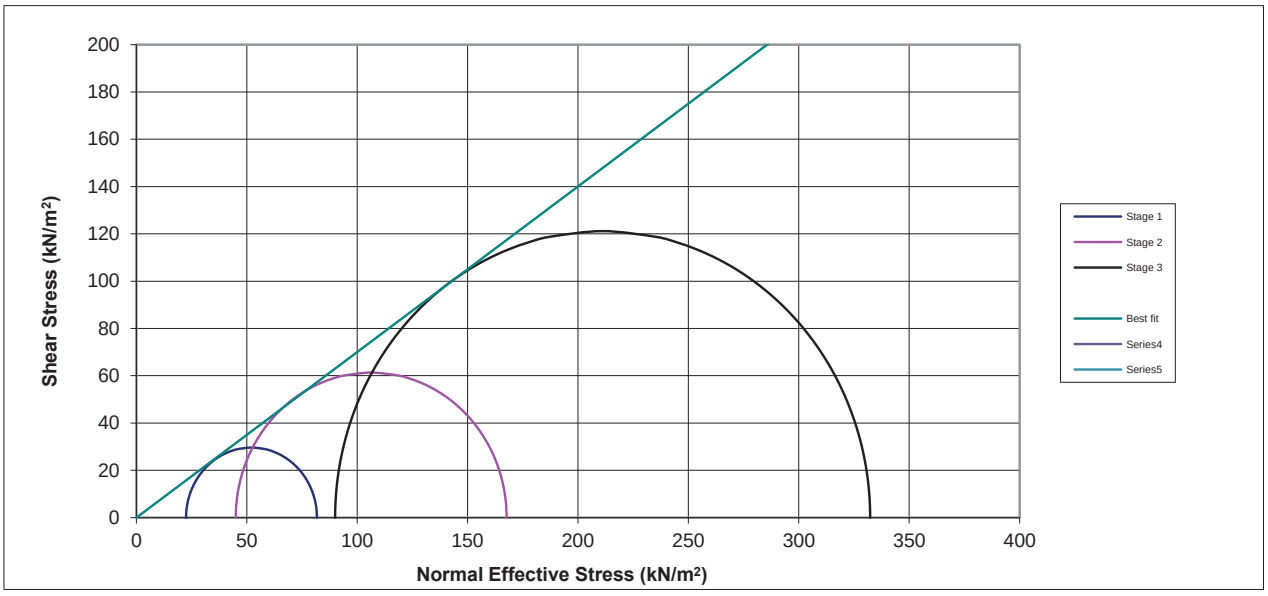
BS 1377 : Part 8 : 1990 : 38mm Set of Three

Specimen Details

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

Shearing Stage





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Consolidated Undrained Triaxial Compression Test

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

Shearing Stage

Checked and Approved By

17/10/18
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GEO SITE & TESTING SERVICES LTD

Consolidated Undrained Triaxial Compression Test

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

D P Evans

Checked and Approved By

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GEO SITE & TESTING SERVICES LTD

Woodlands Meed Primary School

Consolidated Undrained Triaxial Compression Test

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		Undisturbed

Description of Specimen

Brown sl silty 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	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
(assumed/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

D P Evans

Checked and Approved By

17/10/18
Date

Client Ref

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Contract No

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Woodlands Meed Primary School

GSTL
GEO SITE & TESTING SERVICES LTD

Consolidated Undrained Triaxial Compression Test

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

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	y	y	y
Base Drain Used	y	y	y
Side Drains Used	y	y	y
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.	m^2/yr.	1.00102	0.32686	0.18386

D P Evans

Checked and Approved By

17/10/18
Date

Client Ref

6225

Woodlands Meed Primary School

Contract No

40835

GSTL
GEO SITE & TESTING SERVICES LTD

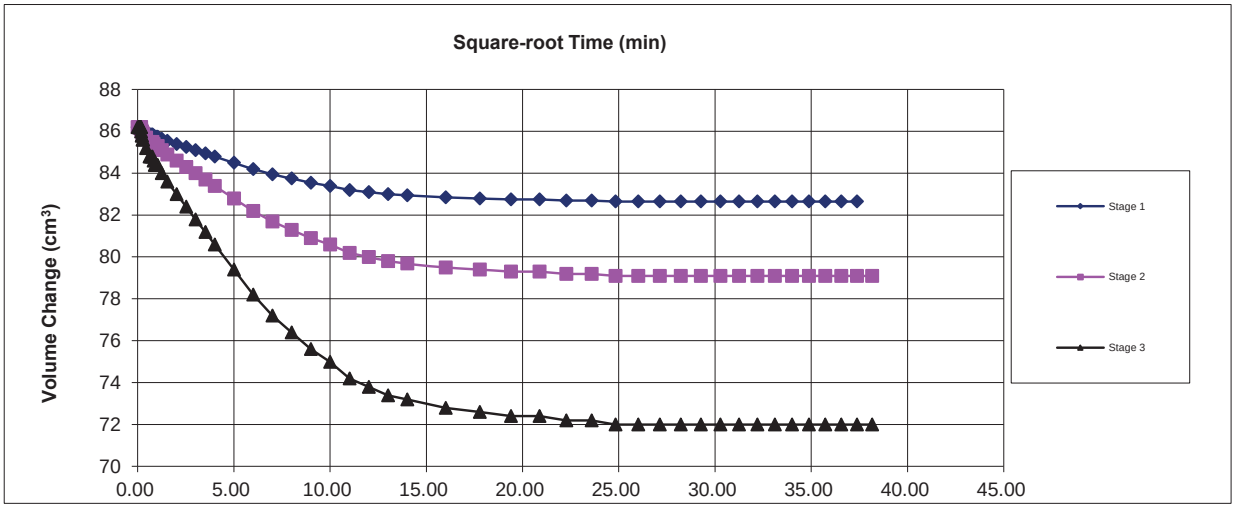
Consolidated Undrained Triaxial Compression Test

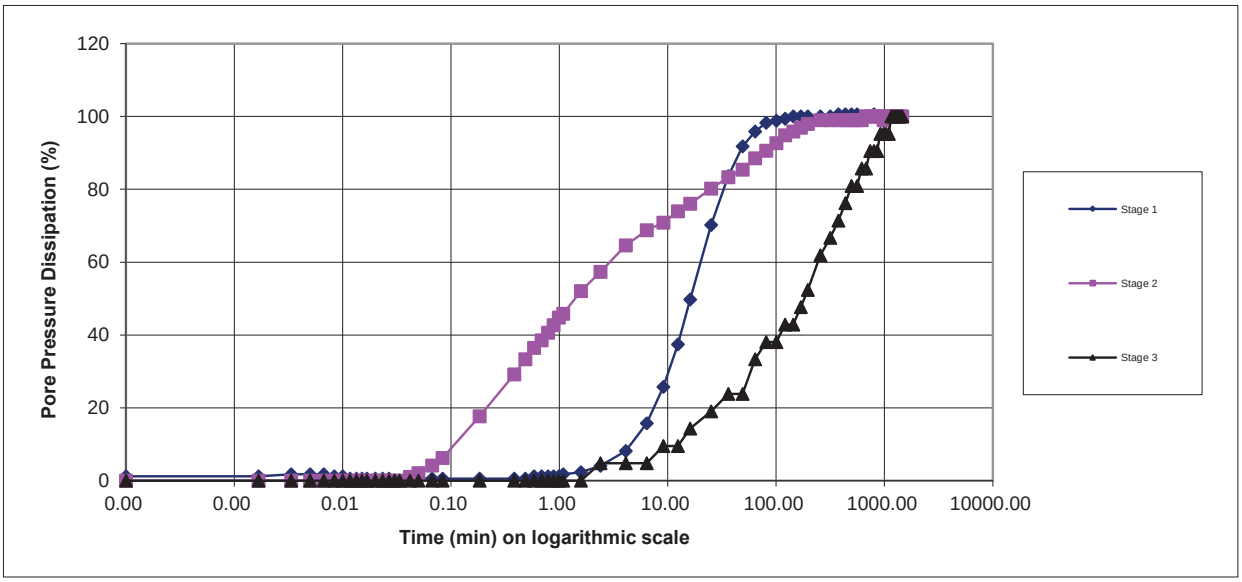
BS 1377 : Part 8 : 1990 : 38mm Set of Three

Specimen Details

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

Consolidation Stage





D P Gran

Checked and Approved By

17/10/18
Date

Client Ref

6225

Contract No

40835

Woodlands Meed Primary School

GSTL
GEO SITE & TESTING SERVICES LTD

Consolidated Undrained Triaxial Compression Test

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 Cell Pressure	kPa	400	300	700
Initial Pore Pressure	kPa	350	200	500
Rate of Strain	mm/min	0.0548	0.0176	0.0096
Max Deviator Stress				
Axial Strain		1.828	7.468	7.462
Axial Stress	kPa	67.850	140.55	271.32
Cor. Deviator stress	kPa	68.329	128.61	259.26
Effective Major Stress	kPa	94.829	183.61	369.26
Effective Minor Stress	kPa	27.500	55.00	110.00
Effective Stress Ratio		3.448	3.338	3.36
s'	kPa	61.164	119.31	239.63
t'	kPa	33.664	64.31	129.63
Max Effective Priciple Stress Ratio				
Axial Strain		7.206	4.126	7.462
Axial Stress	kPa	74.738	137.750	271.319
Cor. Deviator stress	kPa	62.860	126.503	259.255
Effective Major Stress	kPa	90.360	180.503	369.255
Effective Minor Stress	kPa	27.500	54.000	110.000
Effective Stress Ratio		3.286	3.343	3.357
s'	kPa	58.930	117.252	239.628
t'	kPa	31.430	63.252	129.628
Shear Resistance Angle	degs			32.5
Cohesion c'	kPa			0

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Consolidated Undrained Triaxial Compression Test

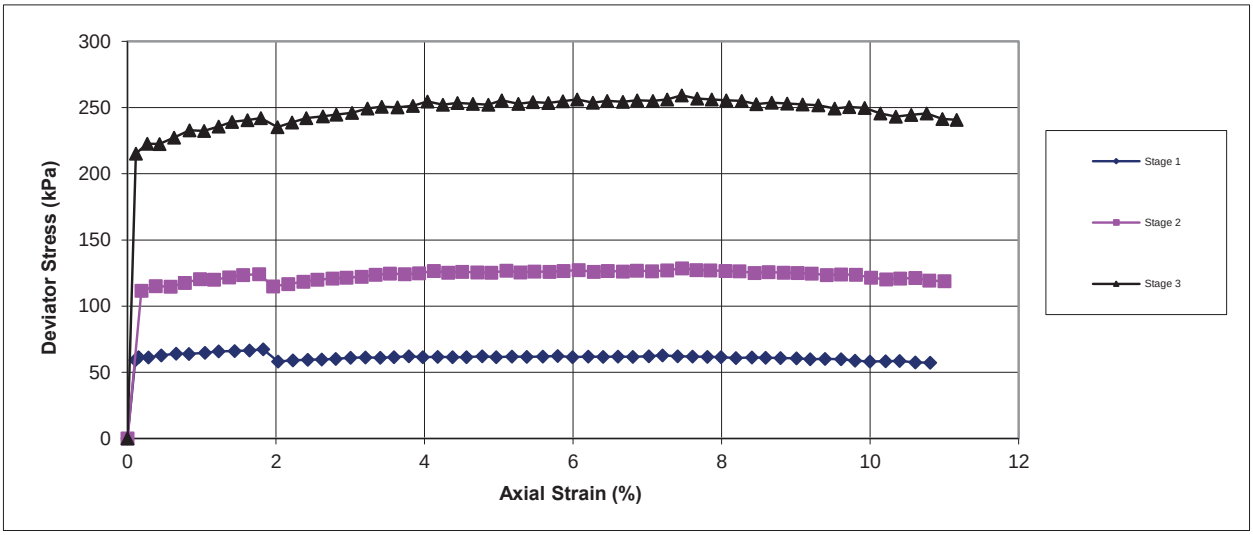
BS 1377 : Part 8 : 1990 : 38mm Set of Three

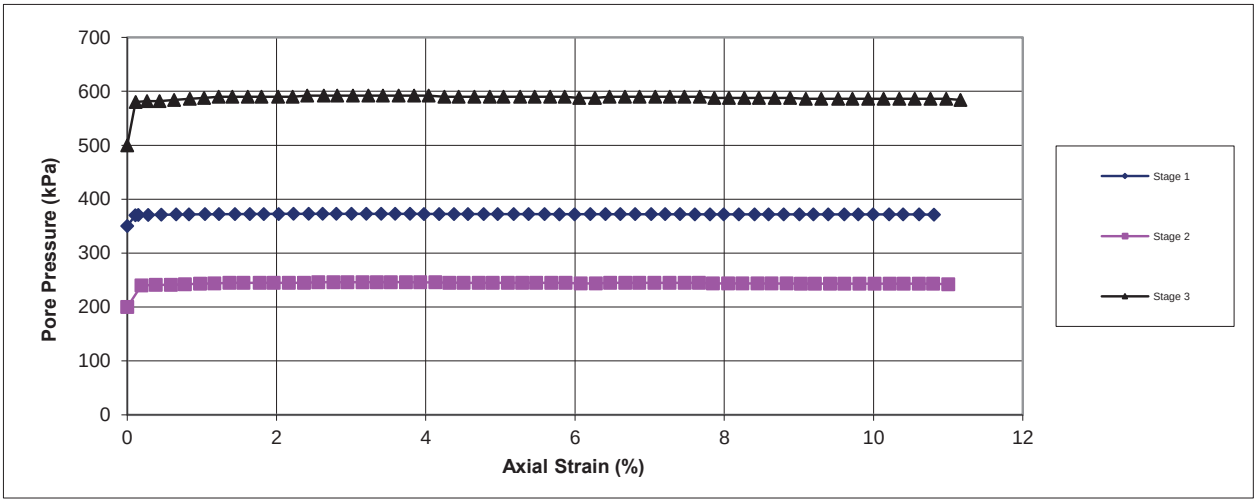
Stage 1

Specimen Details

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

Shearing Stage





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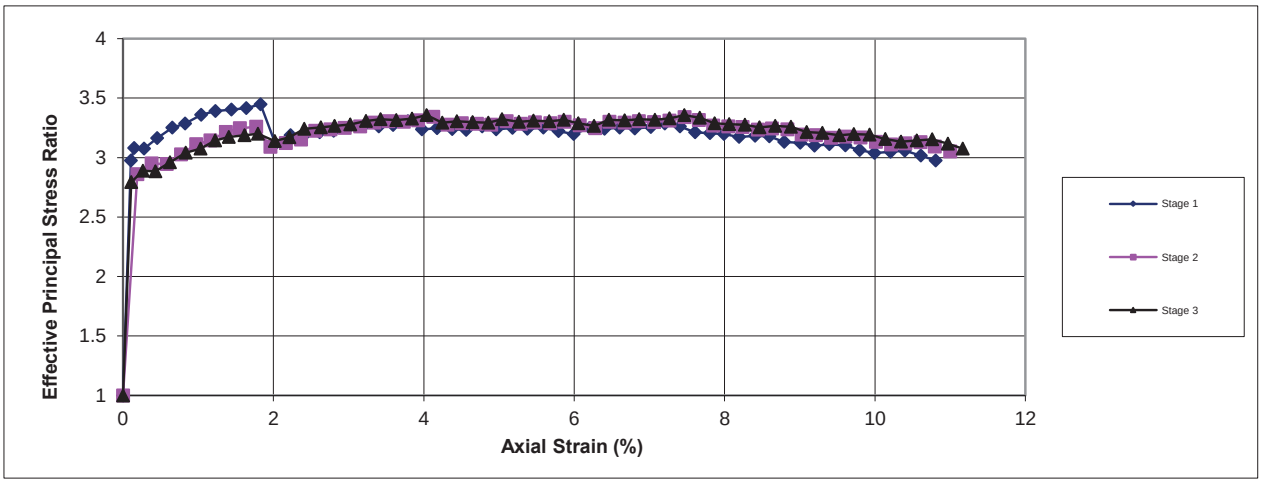

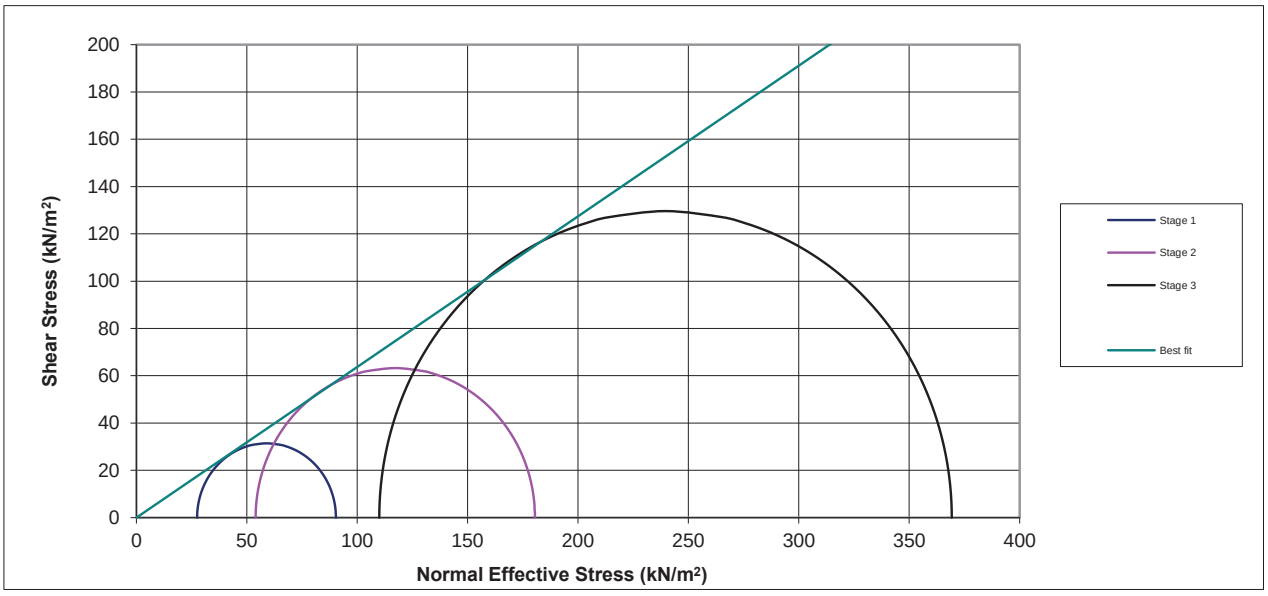

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Specimen Details

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

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
(assumed/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

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Specimen Details

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	y	y	y
Base Drain Used	y	y	y
Side Drains Used	y	y	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	m^2/MN	0.11602	0.22044	0.28425
Consolidation Coef.	$m^2/yr.$	1.00102	0.41369	0.18386

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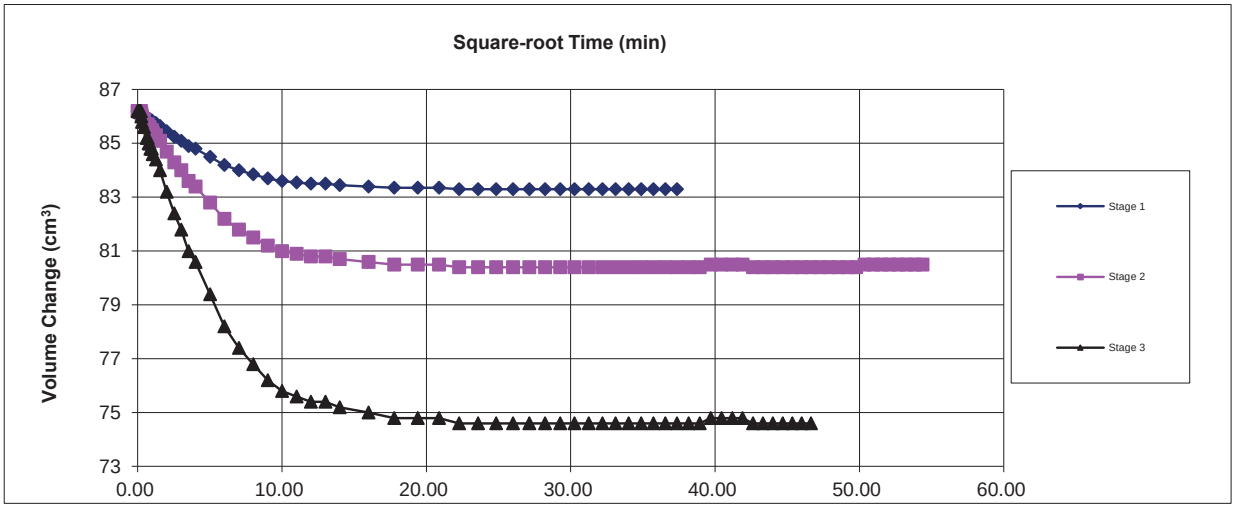
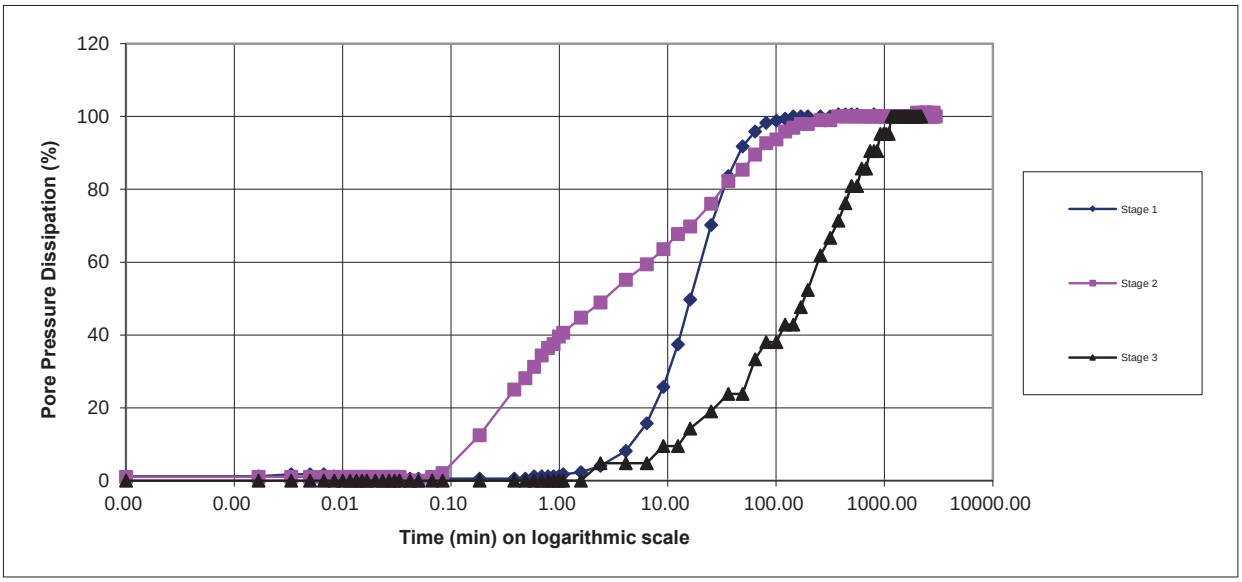
Consolidation Stage





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Specimen Details

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

Shearing

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 Stress Ratio				
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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Stage 1

Specimen Details

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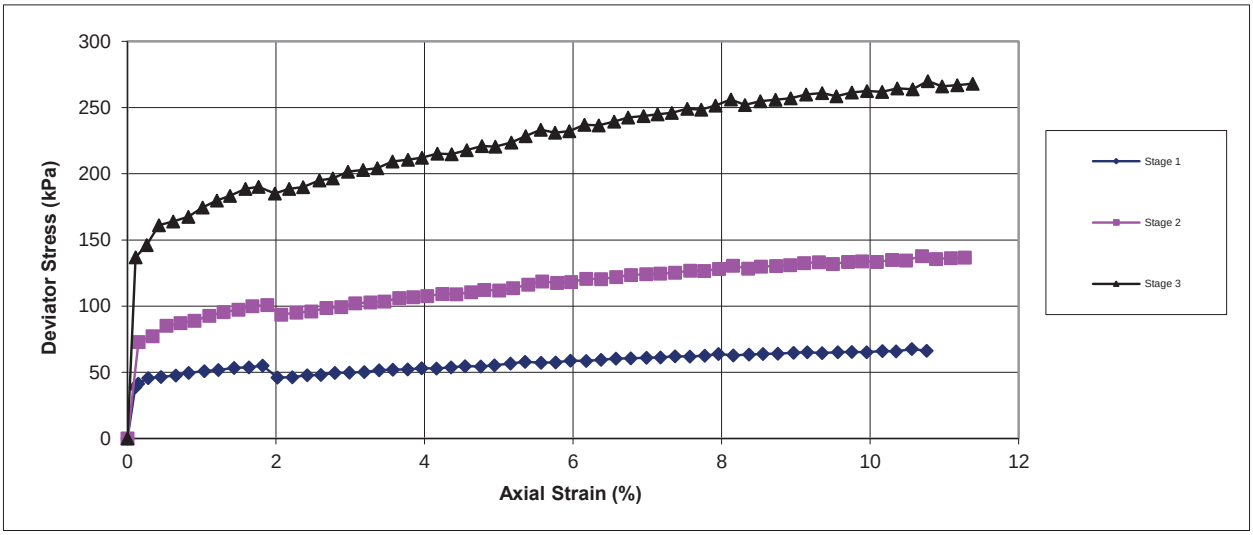

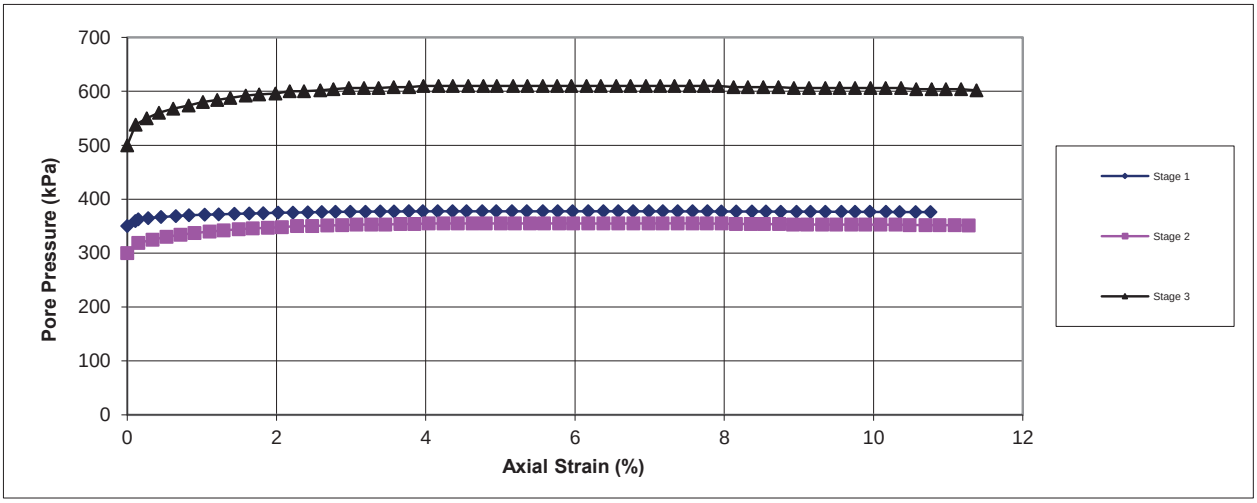

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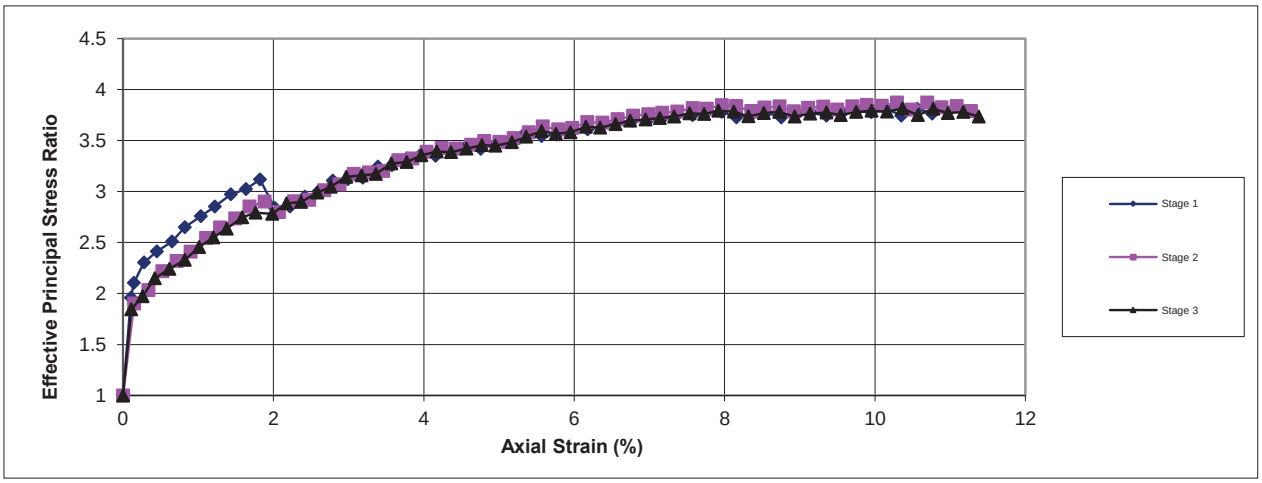

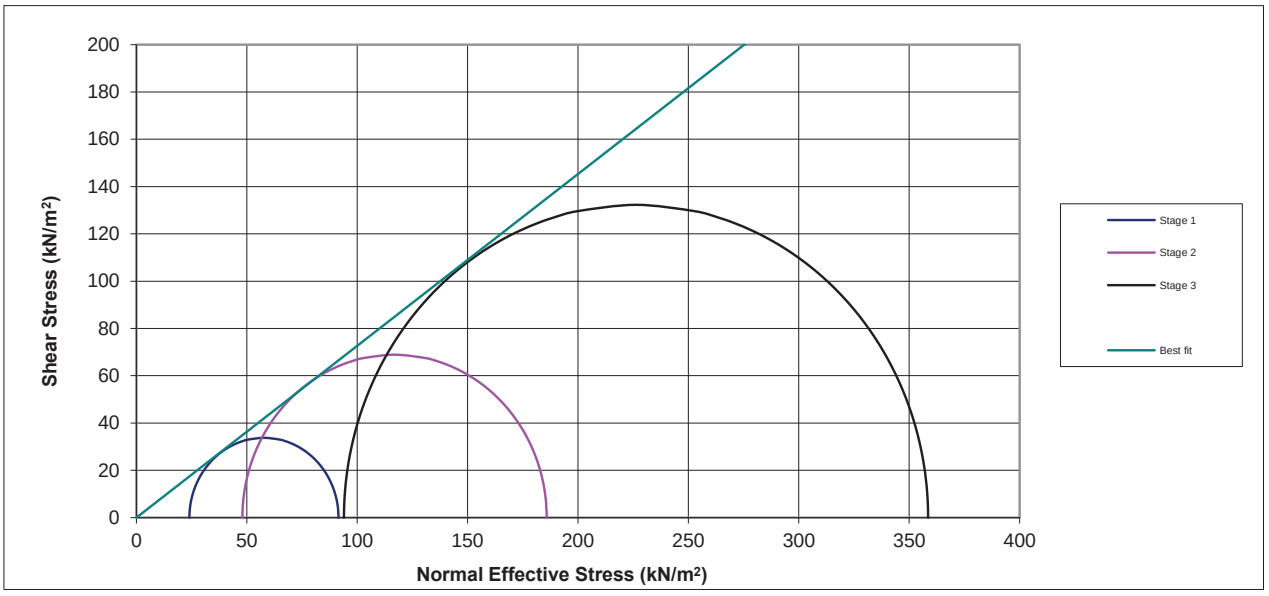

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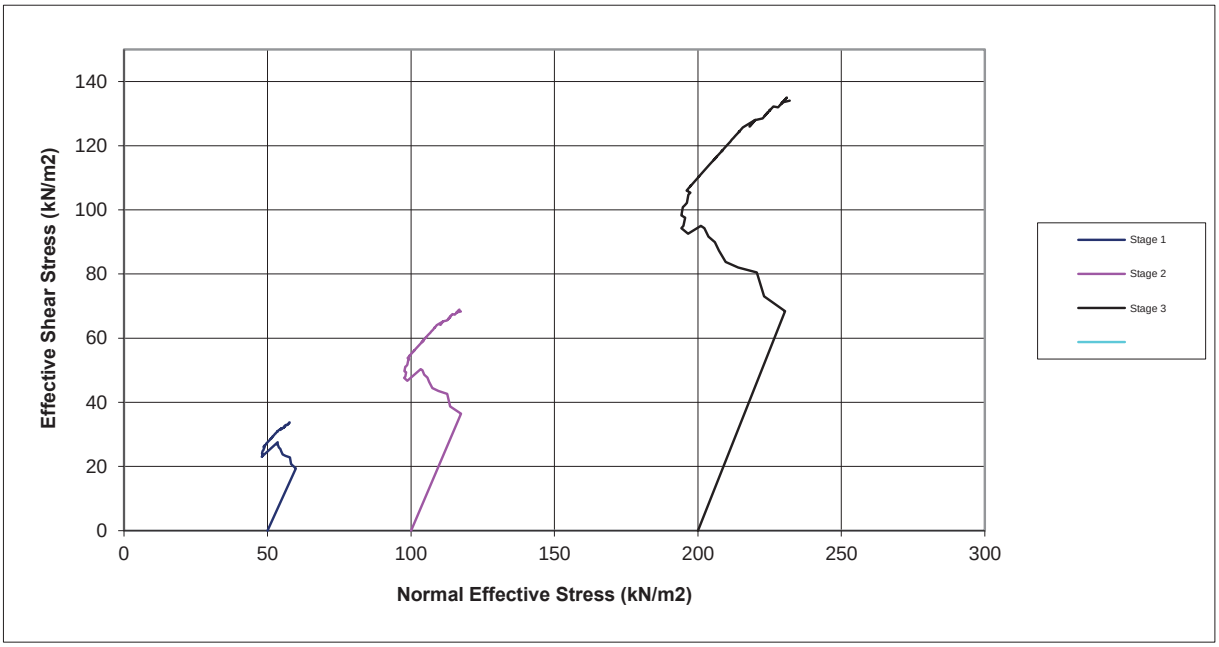

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