WYG Environment
part of the **WYG** group

Linden Homes

Hampshire Farm

A056755-1 – Minerals Evaluation

January 2010

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Document Control

Project:	Hampshire Farm
Client:	Linden Homes
Job Number:	A056755-1
File Origin:	

Document Checking:

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Issue	Date	Status
1	27-01-10	Final draft for client review
2	05-03-10	Final issue
3		
4		



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1.0 INSTRUCTION

1.1 WYG Environment (WYGE) was instructed by Linden Homes to undertake an intrusive minerals investigation of two fields located within Hampshire Farm at Emsworth, Hampshire. The site location is shown on Figure 1.

1.2 The purpose of the investigation was to determine the lateral extent, thickness and quality of any mineral deposits which might be identified on the study site.

1.3 The following sections of this report provide an account of the investigation undertaken, the associated geotechnical test results and the conclusions drawn.

2.0 SITE WORK

2.1 Site investigation works were undertaken in two phases from 4th November to 5th November 2009, and from 16th November to 24th November 2009. The investigation comprised the following three elements:-

- Twelve machine excavated trial pits to depths of between 3.0 to 4.5mbgl were undertaken during the first phase of site works in order to retrieve samples and to attempt to identify the base of any mineral layer encountered. These trial pit locations are shown on Figure 2.
- Five cable percussive boreholes to depths of between 9.6 to 15.0mbgl were driven to retrieve samples and to identify the base of the identified mineral layer. The locations of these boreholes are shown on Figure 2.
- Six particle size distribution tests (PSDs) were undertaken on selected bulk samples taken from the boreholes and trial pits during the investigation.

2.2 All factual information relating to the works is appended to this report.

3.0 ENCOUNTERED GROUND CONDITIONS

3.1 Ground conditions encountered during the two phases of the investigation were broadly consistent with those identified in the published literature and in summary comprised Topsoil overlying Brickearth over Head Deposits, in turn overlying London Clay.

Trial Pit Investigation

3.2 Topsoil was easily identifiable in all of the trial pits, and comprised slightly silty, sandy clay to the north of the site, with clayey, silty, fine sand to the south of the study site.

3.3 Brickearth was identified immediately beneath the Topsoil and generally comprised slightly sandy, silty clay in the north of the site, becoming sandy, clayey silt in the south of the site. Brickearth was encountered in all trial pits with the exception of TP6 in the northwest of the site. The Brickearth extended to a minimum depth of 0.9mbgl, and a maximum of 2.4mbgl.

3.4 Head Deposits were identified in all trial pits with the exception of TP3 and TP4 in the northeast corner of the site. Deposits comprised slightly silty, slightly sandy, gravelly clay, with pockets of clayey, gravelly sand across the centre of the site (west to east) in TP8, TP10 and TP11. The lower extent of the Head Deposits in all trial pits to the south of the study site and TP9 generally comprised slightly clayey, sandy angular to sub-angular fine to medium flint gravel. Trial pits were unable to identify the base of the mineral stratum due to a high water table and instability of the excavations. The gravel was notably absent from TP3, TP4, TP6 and TP8; all located on the gentle slope of the north of the site.

3.5 London Clay was only encountered to the north of the site in TP3 and TP4, at 1.3mbgl and 1.6mbgl respectively.

Cable Percussive Borehole Investigation

3.6 As trial pits proved unstable in the ground conditions encountered, cable percussive boreholes were driven to prove the base of the mineral layer. Ground conditions encountered were generally consistent with those identified in the trial pit investigation and comprised Topsoil overlying Brickearth, over Head Deposits with a gravel layer at the base reaching depths of 3.7 to 5.0mbgl in the south of the site. The basal unit in all boreholes comprised London Clay

3.7 Topsoil attained a thickness of 0.40m across the site and generally comprised brown, silty clay. Brickearth was encountered in BH3, BH4 and BH5 to depths in the range of 1.1mbgl to 2.0mbgl and comprised orange-brown mottled brown slightly silty clay.

3.8 Head Deposits were identified below the Topsoil and Brickearth comprising a slightly silty, gravelly clay layer over clayey angular to sub-angular, predominately fine to medium flint gravel. The clay was stiff orange-brown mottled brown gravelly clay with subordinate volumes of silt and sand. Gravel was angular to sub-rounded fine to coarse flint. The clay extended to depths in the range 2.75mbgl to 3.1mbgl. The average depth of overburden overlying the mineral was 2.87m. The underlying gravel horizon varied in thickness from 0.6 to 2.25m and comprised a slightly clayey sandy, predominately fine to medium angular to sub-angular flint gravel. The greater thicknesses of gravel were located in the south of site with a notable thinning of the gravel horizon in the centre and to the west. The average depth to the top of the mineral horizon, identified from the boreholes was 2.87m and the average thickness of the mineral horizon is 1.67m.

3.9 London Clay formed the basal unit in each of the boreholes and comprised very stiff dark grey silty clay with occasional bands of clayey silt.

3.10 Trial pit and borehole logs are attached as Appendix B.

4.0 PARTICLE SIZE DISTRIBUTION - Test Results

4.1 Six particle size distribution analyses were undertaken on selected bulk samples of the gravel within the Head Deposit recovered from both the trial pits and cable percussive boreholes. The results of these analyses are presented in Table 1, whilst the laboratory data sheets are located in Appendix B.

Table 1 Results of the Particle Size Distribution Analyses

Sample Location	Depth (m)	Sample Composition (% content)			
		Cobbles (> 60mm)	Gravel (2.00 – 60.00mm)	Sand (0.06 – 2.00mm)	Fines (0 - 0.06mm)
BH4	3.1-3.5	0	82	13	5
TP9	3.0	0	78	9	13
TP12	3.1	0	82	8	10
TP13	2.8	0	87	7	6
TP14	3.3	0	82	8	10
TP15	3.3	0	80	10	10

4.2 Careful inspection of the PSD results reveals no identifiable trends within the granulometric composition, either spatially or with depth.

4.3 It should be noted that the actual fines content may be higher than that presented in the laboratory analysis for BH4 due to the exploratory hole construction methodology. The use of a water flush to facilitate drilling may have washed out some of the fines during the percussive drilling.

4.4 The Results of the PSD testing of the gravel horizon within the Head Deposit, which lies in the southern half of the site, can be summarised as follows:-

Table 2 Average Particle Size Distribution Analyses for Encountered Mineral

Material	Max content	Min content	Average content
Cobbles	0.0%	0.0%	0.0%
Gravel	87.0%	78.0%	81.8%
Sand	13.0%	7.0%	9.2%
Fines	13.0%	5.0%	9.0%

4.5 These results are typical of a Head Gravel deposit, which would be suitable for the production of graded concreting aggregate and, with crushing, a coarse concreting sand.

5.0 MINERAL RESERVES

5.1 The minerals encountered on the site lie in a single distinct location. The lower lying, southern half of the site appears to be underlain by a mineral body defined here as the gravel horizon of the Head Deposits. The thickness of this horizon decreases towards the western site boundary, with a corresponding increase in the depth of overburden. The gravel horizon of the Head Deposits was notably absent in the northern part of the site.

5.2 The mineral deposit is overlain by between 1.4m and 3.1m of topsoil, Brickearth and clay Head Deposits, with an average thickness of 2.87m. The deposit itself varies in thickness between 0.6 and 2.25m, with an average thickness of 1.67m. The mineral comprises an angular to sub-rounded flint gravel which appears to contain no deleterious materials such as chalk. The gross plan area of the deposit within the boundary fences and the northern limit of the mineral, is 36,200m^2.

5.3 All the trial pits excavated in the south of the site were wet and the water table was encountered at between 2.3 and 3.7mbgl, with an average of 3.1mbgl. On this basis, the majority of the mineral horizon will be saturated over the most of its plan area.

5.4 The gravel within the Head Deposits represents part of a coherent mineral deposit, which is very likely to extend onto adjacent land to the east, as indicated in the Hampshire County Council Mineral Resource Area (MRA) Plan. The northern limit of the mineral body recorded on site accords very closely with that shown on the MRA Plan. In order to evaluate a nominal gross mineral reserve, we have considered the lateral extent of the deposit, the average depth of mineral, exclusion of stand-offs from the fenced boundaries of the site, losses from operational procedures and removal of fines, together with the anticipated bulk density of the mineral, as follows:-

A. Nominal plan area of the deposit: 36,200 sq m.
B. Proposed stand-off from fenced boundaries: 10m.
C. Net plan area after allowance for stand-offs: 30,000 sq m.
D. Average depth of mineral: 1.67m.
E. Gross volume: 50,100 cu m (C X D)
F. Volume after operating losses (assume 5%): 47,600 cu m.
G. Volume after loss of fines (9%): 43,300 cu m.
H. Gross mineral tonnage (@ assumed bulk density of 1.85 t/cu m): 80,100 tonnes

5.5 Note that this figure does not take account of any losses resulting from the presence of buried or overhead public utilities which may cross the site, albeit none have been identified to date. The net area of the mineral body is shown in Figure 3.

6.0 CONSTRAINTS & CONCLUSIONS

6.1 At around 80,000 tonnes, the identified mineral reserve is too small to be viable for extraction. It is also constrained by three further factors:-

a) The saturation of the lower level of the mineral horizon means that the full depth could not be accessed for excavation without installing a groundwater pumping system. This would present two practical environmental problems that could not easily be resolved. First, the pumping would be likely to lead to temporary de-watering of the established root zone of trees located around the immediate margin of the site, potentially harming their prospects for continued healthy growth. Second, the water collected from the pumping exercise would need to be continually discharged into the River Ems. Such a discharge would require approval from the Environment Agency who would be concerned that the different geochemical characteristics of the groundwater may harm the existing bio-chemical balance of the river waters. In addition, there is a risk that such discharge could lead to flow capacity issues in the river channel and potential downstream flooding.

b) In order to access the mineral horizon it would be necessary to excavate an average depth of 2.87m of overburden. This would comprise over 86,000 cu m. of clays and silts, giving an overburden to mineral ratio of around 2:1. Even with mineral deposits of several hundred thousand tonnes, overburden ratios of more than 1:1 are rarely viable, so this deposit will certainly be uneconomic.

c) The physical configuration of the site means that it would not be practicable to work the southern limb of the mineral body.

6.2 Hampshire Core Strategy Policy S15 states that, where economically viable deposits of minerals are found, it is preferable for these to be extracted prior to being sterilised by permanent development.

6.3 On the basis of the limited reserves and the constraints outlined above it is considered that this reserve is far too small to be of any commercial interest to either the minerals industry or as a borrow pit associated with any planned development of the site. There is therefore no risk of sterilisation of viable mineral deposits as a result of development of the identified land at Hampshire Farm, Emsworth.

Figures and Appendices

Figure 1 – Site location plan

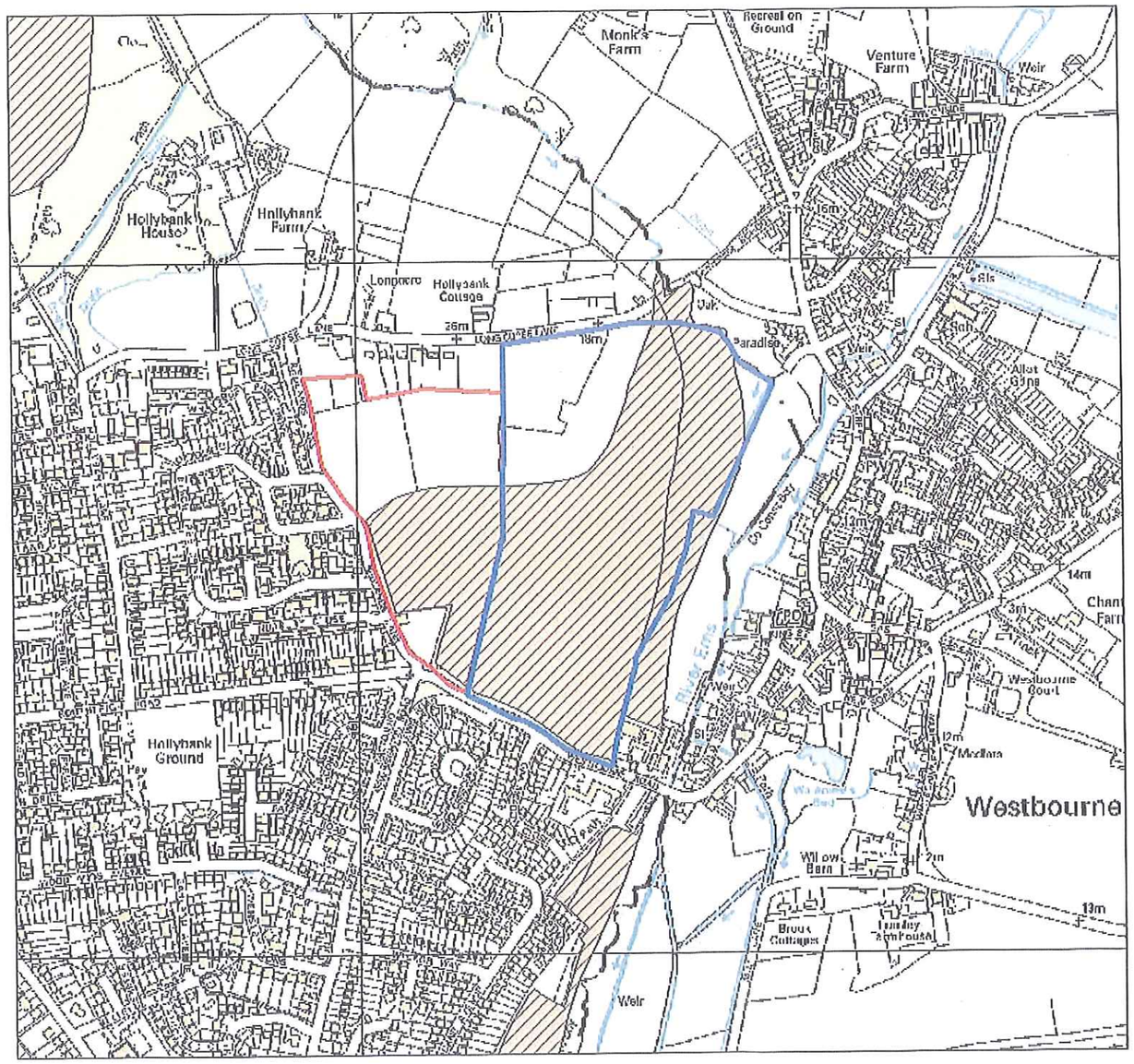

Recreation Ground
Monk's Farm
Venture Farm
Weir
Hollybank House
Hollybank Farm
Longacre
Hollybank Cottage
26m
18m
Oak
Paradise
Weir
Allot Gdns
16m
Els
St
14m
Chan Farm
Westbourne Court
Medina
Westbourne
Willow Barn
2m
13m
Brook Cottages
Ivy Lodge
Farmhouse
Weir
Hollybank Ground
Pav
Path
Path
Path

Figure 2 – Borehole and Trial Pit location plan



Redlands Lane

Hampshire farm



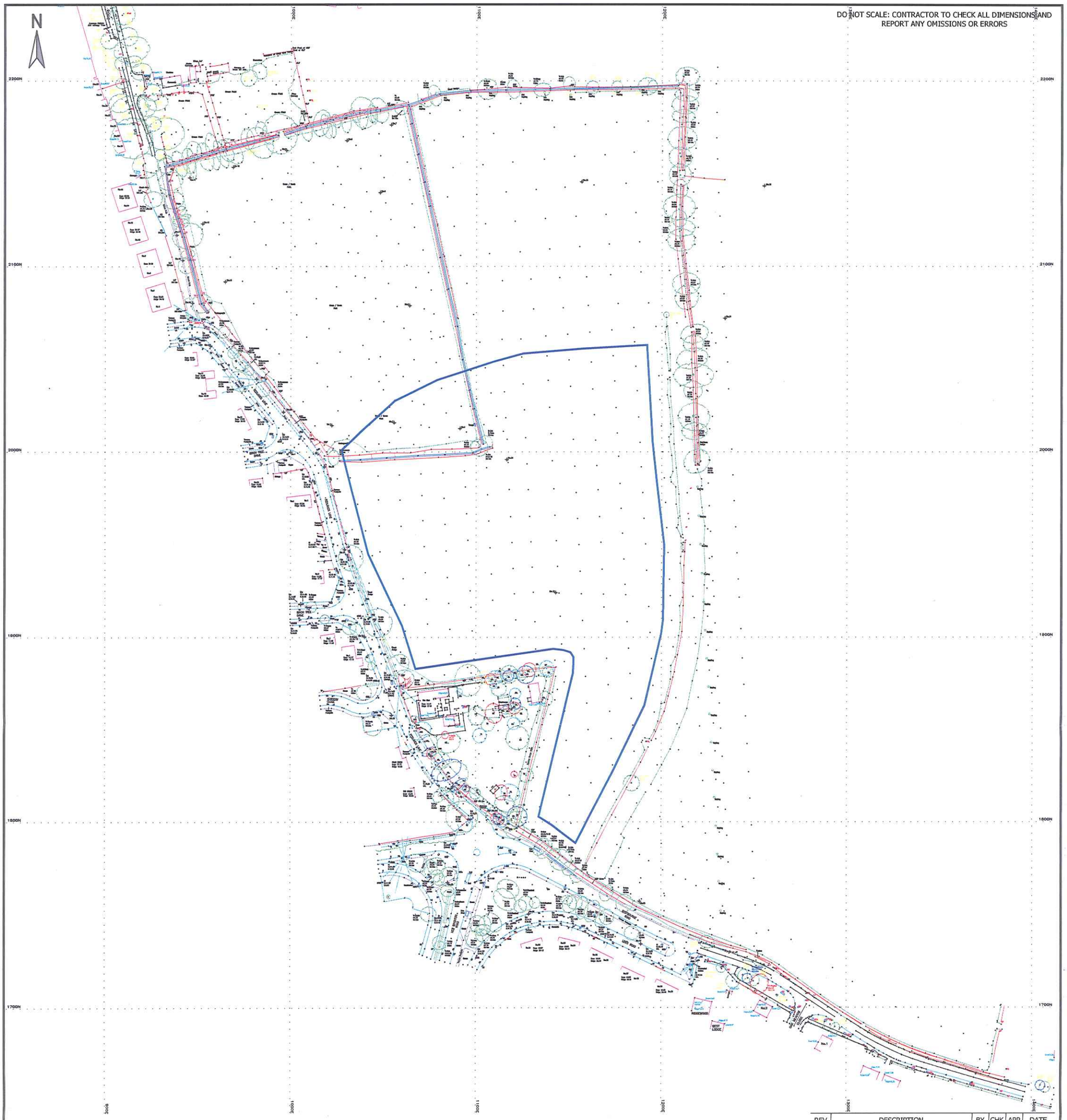
Blue - over burden
Red - Gravel

Location plan for Hampshire Farm, Emsworth DWG N°: HL98020/X001 Drawn: LA Checked: JCG	Scale: 1:5000 @ A4 Date: 20.03.2009	Notes:

Figure 3 – Net plan area of Mineral body

N

DO NOT SCALE: CONTRACTOR TO CHECK ALL DIMENSIONS AND REPORT ANY OMISSIONS OR ERRORS



KEY:

NET AREA OF MINERAL RESERVE.
(ALLOWING 10m STAND-OFF FROM BOUNDARIES)

REV	DESCRIPTION	BY	CHK	APP	DATE

LINDEN HOMES LTD

EMPRESS HOUSE
12 EMPRESS ROAD
LYNDHURST, HAMPSHIRE
SO43 7AE

TEL: +44 (0)23 8028 3226
FAX: +44 (0)23 8028 2623
e-mail: enviro.lyndhurst@wyg.com

Project:

HAMPSHIRE FARM EMSWORTH

Drawing Title:

MINERALS EXCAVATION - NET AREA

Scale @ A3	Drawn	Date	Checked	Date	Approved	Date
1:2000	CRM	27/01/10	MBA	27/01/10	MBA	27/01/10

Project No.	Office	Type	Drawing No.	Revision
A060549	3804	ENV	FIG 3	

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Appendix A – Report conditions

WYG ENVIRONMENT

APPENDIX A - REPORT CONDITIONS

GROUND CONTAMINATION DESK TOP REVIEW

This report is produced solely for the benefit of Sainsbury's Plc and no liability is accepted for any reliance placed on it by any other party unless specifically agreed in writing otherwise.

This report refers, within the limitations stated, to the condition of the site at the time of the inspections. No warranty is given as to the possibility of future changes in the condition of the site.

This report is based on a visual site inspection, study of readily accessible referenced historical records, information supplied by those parties noted in the text and preliminary discussions with local and Statutory Authorities. Some of the opinions are based on unconfirmed data and information and are presented in good faith without exhaustive clarification. Where ground contamination is suspected but no physical site test results are available to confirm this, the report must be regarded as initial advice only, and further assessment should be undertaken prior to detailed activities related to the site. Where test results undertaken by others have been made available these can only be regarded as a limited sample. The possibility of the presence of contaminants, not revealed by this research cannot be discounted.

Whilst confident in the findings detailed within this report because there are no exact UK definitions of these matters, being subject to risk analysis, we are unable to give categoric assurances that they will be accepted by Authorities or Funds etc. without question, as such bodies may have unpublished, often more stringent objectives. This report is prepared for the proposed uses stated in the report and should not be used in a different context without reference to WYG. In time improved practices or amended legislation may necessitate a re-assessment.

The report is necessarily limited to those aspects of land contamination specifically reported on and no liability is accepted for any other aspect especially concerning gradual or sudden pollution incidents that may occur. The opinions expressed cannot be absolute due to the limitations of time and resources within the context of the agreed brief and the possibility of unrecorded previous use and abuse of the site and adjacent sites. The report concentrates on the site as defined in the report and provides an opinion on surrounding sites. If migrating pollution or contamination (past or present) exists this can only practically be better assessed following extensive on and off site intrusive investigations and monitoring.

Appendix B – Trial Pit Logs

Trial Pit Records

Job Number: A056755-1

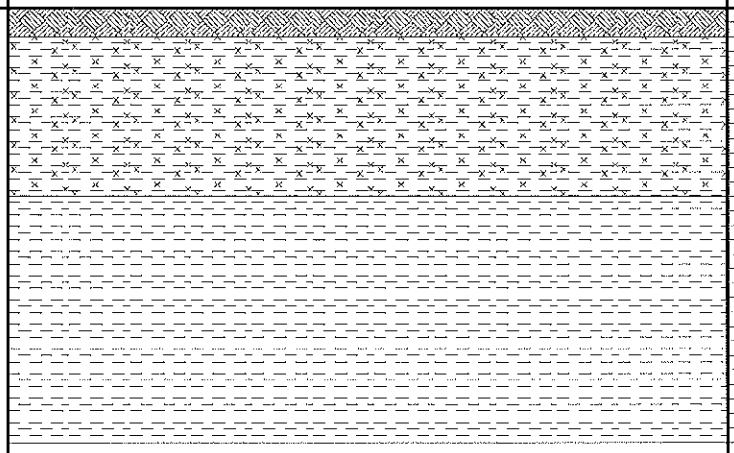
Sheet 1 of 1

TP3

Environmental

Site Location:	Client:
Hampshire Farm	Linden Homes

Equipment:	OD:	Co-ordinates:	Start Date:
JCB 3CX			04/11/2009

Stratum Code	Legend	Depth (m)	Reduced Level (mOD)	Sample Type	Sample Depth (m)	In Situ Test Results
A		0.20				
B		1.30				
C		3.00				

Stratum Description

Stratum Code	
A	Grass top over TOPSOIL (Brown slightly gravelly silty sandy CLAY. Gravel is rare angular fine flint.)
B	Stiff orange-brown with grey mottling slightly silty CLAY. BRICKEARTH
C	Very stiff grey-brown CLAY. LONDON CLAY

Key

D	Disturbed Sample
ES	Environmental Sample
B	Bulk Sample
U	Undisturbed Sample
V	Hand Vane
▽	Water Strike
▼	Standing Level

Remarks:

Logged By :	Checked By :
CJ	BA

Trial Pit Records

Job Number: A056755-1

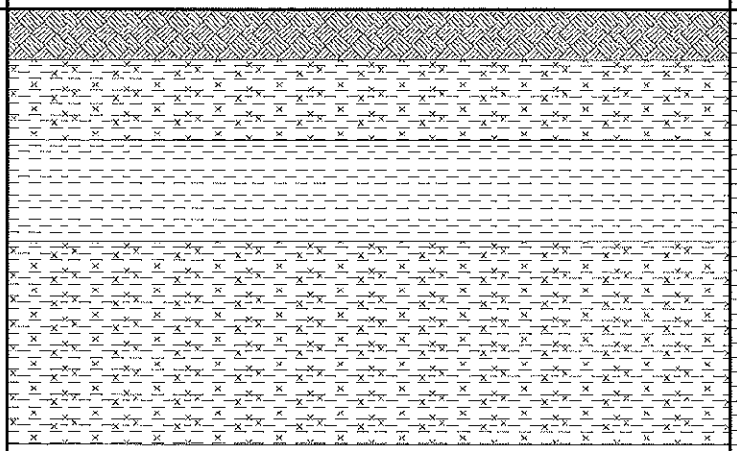
Sheet 1 of 1

TP4

Environmental

Site Location:	Client:
Hampshire Farm	Linden Homes

Equipment:	OD:	Co-ordinates:	Start Date:
JCB 3CX			04/11/2009

Stratum Code	Legend	Depth (m)	Reduced Level (mOD)	Sample Type	Sample Depth (m)	In Situ Test Results
A		0.35				
B		0.90				
C		1.60				
D		3.00				

Stratum Description

Stratum Code	
A	Grass top over TOPSOIL (Brown slightly gravelly silty sandy CLAY. Gravel is rare angular fine flint.)
B	Stiff brown with rare orange-brown and grey mottling slightly silty CLAY. BRICKEARTH
C	Very stiff grey-brown CLAY. LONDON CLAY
D	Very stiff friable occasionally fissured slightly silty CLAY. LONDON CLAY

Key

D	Disturbed Sample
ES	Environmental Sample
B	Bulk Sample
U	Undisturbed Sample
V	Hand Vane
▽	Water Strike
▼	Standing Level

Remarks:

Logged By :	Checked By :
CJ	BA

Trial Pit Records

Job Number: A056755-1

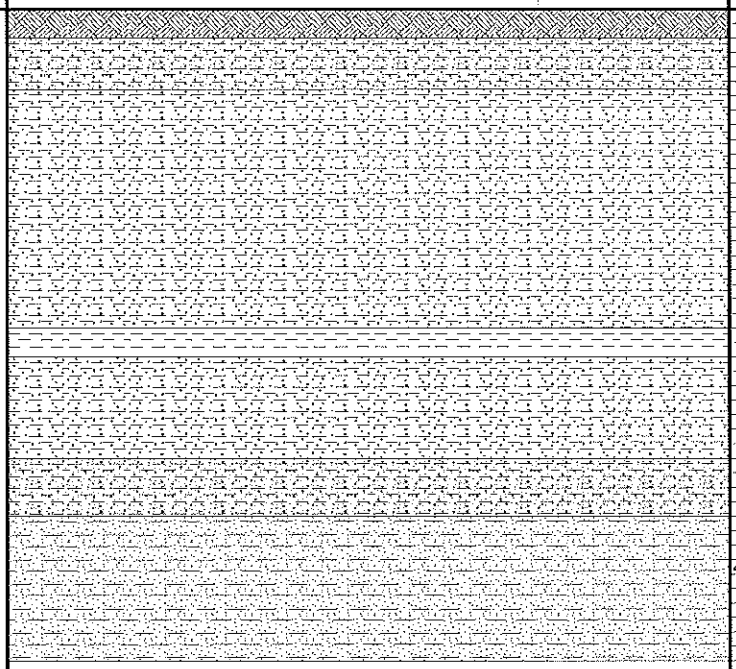
Sheet 1 of 1

TP6

wyg Environmental

Site Location:	Client:
Hampshire Farm	Linden Homes

Equipment:	OD:	Co-ordinates:	Start Date:
JCB 3CX			04/11/2009



Stratum Description

Stratum Code	
A	Grass top over TOPSOIL (Dark brown clayey gravelly fine SAND. Gravel is angular to sub-angular fine to coarse flint.)
B	Firm brown sandy gravelly CLAY. Gravel is angular to sub-rounded fine to coarse flint. HEAD DEPOSITS
C	Very stiff orange-brown mottled grey gravelly CLAY. Gravel is sub-angular to rounded fine to coarse flint. HEAD DEPOSITS
D	Very stiff grey CLAY. HEAD DEPOSITS
E	Stiff friable brown gravelly CLAY. Gravel is sub-angular to sub-rounded fine to coarse flint. HEAD DEPOSITS
F	Firm brown slightly sandy very gravelly CLAY. Gravel is angular to sub-rounded fine to coarse flint. HEAD DEPOSITS
G	Brown gravelly very clayey fine to medium SAND. Gravel is angular to sub-rounded fine to coarse flint. HEAD DEPOSITS

Key

D	Disturbed Sample
ES	Environmental Sample
B	Bulk Sample
U	Undisturbed Sample
V	Hand Vane
▽	Water Strike
▼	Standing Level

Remarks:

1. Trial Pit complete at 4.5mbgl due to capabilty limits of JCB.
2. Soils damp from 4.0mbgl.

Logged By :	Checked By :
CJ	BA

Trial Pit Records

Job Number: A056755-1

Sheet 1 of 1

TP8

Environmental

Site Location:	Client:
Hampshire Farm	Linden Homes

Equipment:	OD:	Co-ordinates:	Start Date:
JCB 3CX			04/11/2009

Stratum Code	Legend	Depth (m)	Reduced Level (mOD)	Sample Type	Sample Depth (m)	In Situ Test Results
A		0.30				
B		0.75		B1	0.50	
C		1.30				
D		2.40				
E		2.90				
F		3.20				
G		3.30				

Stratum Description

Stratum Code	
A	Grass top over TOPSOIL (Brown slightly gravelly silty sandy CLAY. Gravel is rare angular fine flint.)
B	Light orange-brown silty fine SAND.
C	Firm to stiff brown mottled orange-brown slightly sandy slightly silty CLAY. BRICKEARTH
D	Firm to stiff red-brown sandy silty CLAY. BRICKEARTH
E	Stiff orange-brown slightly sandy slightly gravelly CLAY. Gravel is angular to sub-angular fine to coarse flint. HEAD DEPOSITS
F	Red-brown clayey very gravelly fine SAND. Gravel is angular to sub-angular fine to coarse flint. HEAD DEPOSITS
G	Stiff orange-brown mottled grey slightly gravelly CLAY. Gravel is angular to sub-angular fine to medium flint. HEAD DEPOSITS

Key

D	Disturbed Sample
ES	Environmental Sample
B	Bulk Sample
U	Undisturbed Sample
V	Hand Vane
▽	Water Strike
▼	Standing Level

Remarks:

Logged By:	Checked By:
CJ	BA

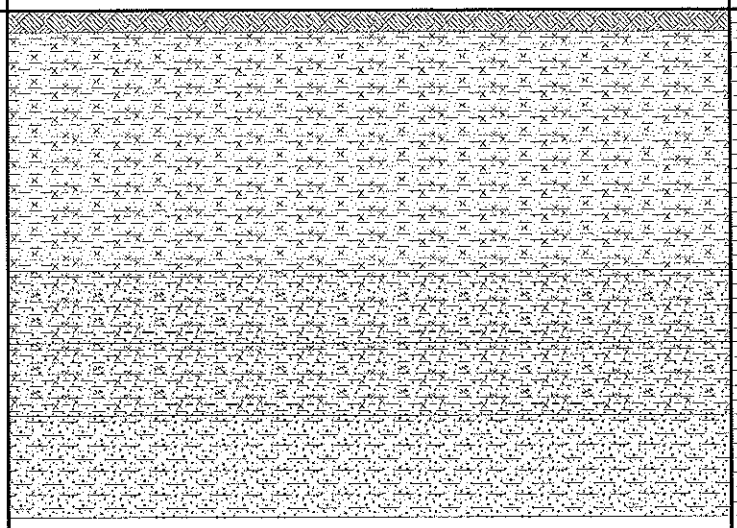
Trial Pit Records

Job Number: A056755-1 | Sheet 1 of 1 | TP9

Environmental

Site Location:	Client:
Hampshire Farm	Linden Homes

Equipment:	OD:	Co-ordinates:	Start Date:
JCB 3CX			04/11/2009



Stratum Code	Depth (m)	Reduced Level (mOD)	Sample Type	Sample Depth (m)	In Situ Test Results
A	0.15				
B	1.80				
C	2.30				
D	2.80				
E	3.50		B1	3.00	

Stratum Description

Stratum Code	
A	Grass top over TOPSOIL (Brown slightly gravelly silty sandy CLAY. Gravel is rare angular fine flint.)
B	Firm orange-brown with grey mottling slightly silty slightly sandy CLAY. BRICKEARTH
C	Stiff orange-brown with rare grey mottling slightly silty slightly sandy slightly gravelly CLAY. Gravel is angular fine flint. HEAD DEPOSITS
D	Stiff orange-brown slightly silty slightly sandy gravelly CLAY. Gravel is angular to sub-rounded fine to coarse flint. HEAD DEPOSITS
E	Orange-brown slightly sandy slightly clayey angular to sub-rounded fine to coarse flint GRAVEL. HEAD DEPOSITS

Key

D	Disturbed Sample
ES	Environmental Sample
B	Bulk Sample
U	Undisturbed Sample
V	Hand Vane
▽	Water Strike
▼	Standing Level

Remarks:

1.Trial pit collapsed to 3.3mbgl.

Logged By :	Checked By :
CJ	BA

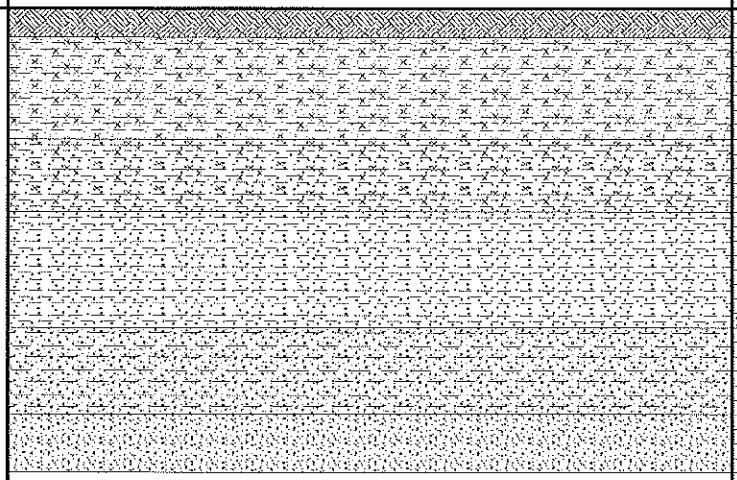
Trial Pit Records

Job Number: A056755-1 | Sheet 1 of 1 | TP10

Environmental

Site Location:	Client:
Hampshire Farm	Linden Homes

Equipment:	OD:	Co-ordinates:	Start Date:
JCB 3CX			05/11/2009

Stratum Code	Legend	Depth (m)	Reduced Level (mOD)	Sample Type	Sample Depth (m)	In Situ Test Results
A		0.20		B1	2.60	
B		0.90				
C		1.40				
D		2.30 2.20				
E		2.80				
F		3.20				

Stratum Description

Stratum Code	
A	Grass top over TOPSOIL (Brown slightly clayey silty fine SAND.)
B	Stiff orange-brown slightly sandy slightly silty CLAY. BRICKEARTH
C	Stiff orange-brown slightly silty gravelly CLAY. Gravel is angular to sub-angular fine to coarse flint. HEAD DEPOSITS
D	Stiff to very stiff orange-brown slightly gravelly CLAY. Gravel is angular to sub-angular fine to medium flint. HEAD DEPOSITS
E	Brown very clayey SAND AND GRAVEL. Sand is coarse, gravel is angular to sub-angular fine to coarse flint. HEAD DEPOSITS
F	Grey-brown silty gravelly fine to medium SAND. Gravel is angular to sub-angular fine to medium flint. Contains pockets of grey silt. HEAD DEPOSITS

Key

D	Disturbed Sample
ES	Environmental Sample
B	Bulk Sample
U	Undisturbed Sample
V	Hand Vane
▽	Water Strike
▼	Standing Level

Remarks:

1.Groundwater encountered at 2.3mbgl.

Logged By:	Checked By:
CJ	BA

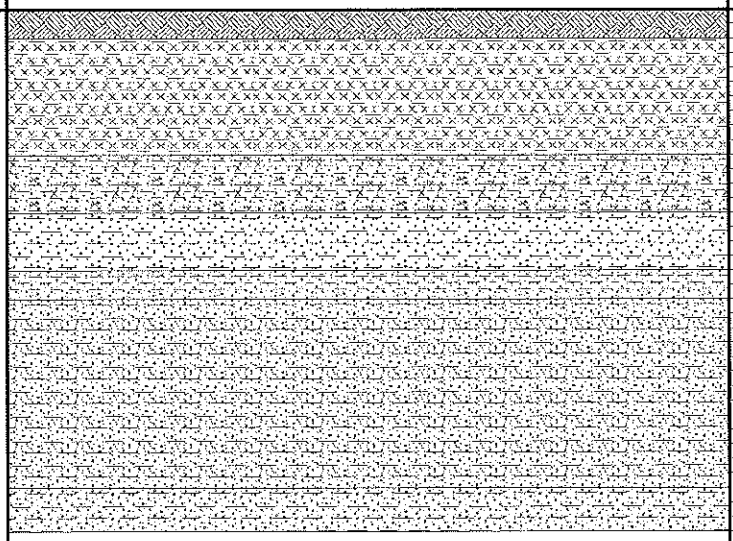
Trial Pit Records

Job Number: A056755-1 | Sheet 1 of 1 | TP11

wyg Environmental

Site Location:	Client:
Hampshire Farm	Linden Homes

Equipment:	OD:	Co-ordinates:	Start Date:
JCB 3CX			05/11/2009

Stratum Code	Legend	Depth (m)	Reduced Level (mOD)	Sample Type	Sample Depth (m)	In Situ Test Results
A		0.20				
B		1.00				
C		1.40				
D		1.80				
E		2.00				
F		3.30 ▽ 3.30				
G		3.60				

Stratum Description

Stratum Code	
A	Grass top over TOPSOIL (Brown slightly clayey silty fine SAND.)
B	Orange-brown clayey sandy SILT. BRICKEARTH
C	Firm slightly sandy silty slightly gravelly CLAY. Gravel is angular to sub-angular fine to medium flint. HEAD DEPOSITS
D	Orange-brown very clayey angular to rounded fine to coarse flint GRAVEL. HEAD DEPOSITS
E	Firm red-brown slightly gravelly slightly sandy CLAY. Gravel is angular to sub-angular fine to medium flint. HEAD DEPOSITS
F	Red-brown clayey gravelly fine SAND. Contains occasional silt pockets. Gravel is angular to sub-rounded fine to medium flint, becomes very gravelly from 2.5mbgl. HEAD DEPOSITS
G	Grey sandy clayey angular to sub-rounded fine to coarse flint GRAVEL. HEAD DEPOSITS

Key

D	Disturbed Sample
ES	Environmental Sample
B	Bulk Sample
U	Undisturbed Sample
V	Hand Vane
▽	Water Strike
▼	Standing Level

Remarks:

1. Groundwater encountered at 3.3mbgl.

Logged By:	Checked By:
CJ	BA

Trial Pit Records

Job Number: A056755-1

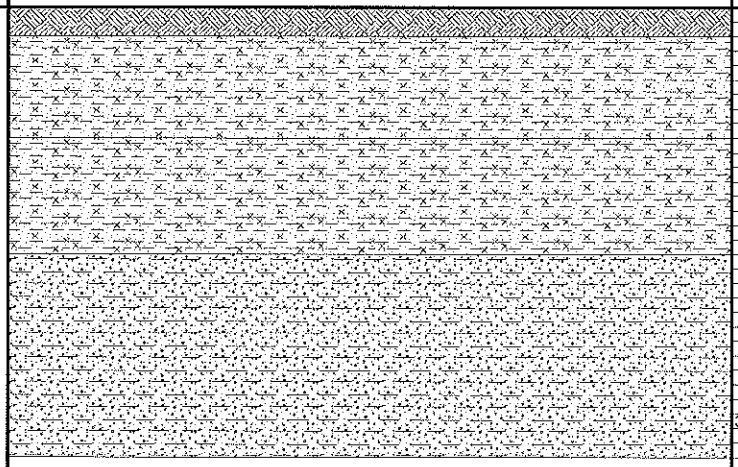
Sheet 1 of 1

TP12

Environmental

Site Location:	Client:
Hampshire Farm	Linden Homes

Equipment:	OD:	Co-ordinates:	Start Date:
JCB 3CX			04/11/2009



Stratum Code	Depth (m)	Reduced Level (mOD)	Sample Type	Sample Depth (m)	In Situ Test Results
A	0.20				
B	0.90				
C	1.70				
D	3.00				
	3.10		B1	3.10	

Stratum Description

Stratum Code	
A	Grass top over TOPSOIL (Brown slightly clayey silty fine SAND.)
B	Orange-brown mottled grey slightly sandy silty CLAY. BRICKEARTH
C	Stiff orange-brown mottled grey slightly sandy silty CLAY. BRICKEARTH
D	Orange-brown clayey very sandy angular to sub-angular fine to coarse flint GRAVEL. HEAD DEPOSITS

Key

D	Disturbed Sample
ES	Environmental Sample
B	Bulk Sample
U	Undisturbed Sample
V	Hand Vane
▽	Water Strike
▼	Standing Level

Remarks:

1. Trial Pit complete at 3.1mbgl due to groundwater inflow.
2. Groundwater was encountered at 3.0mbgl.

Logged By:	Checked By:
CJ	BA

Trial Pit Records

Job Number: A056755-1

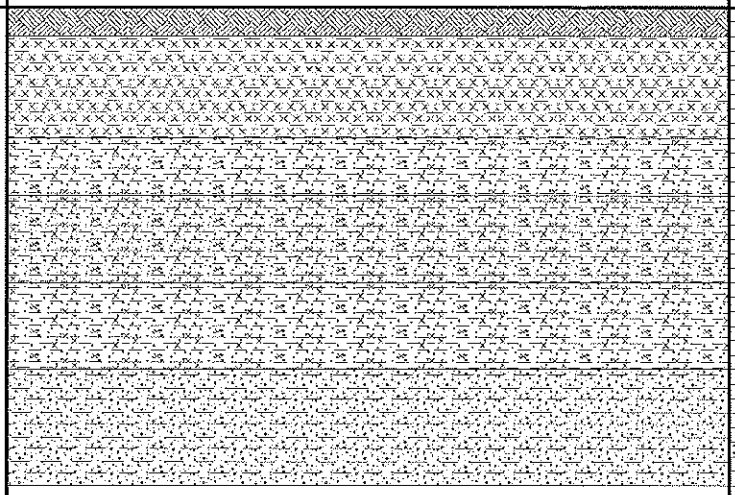
Sheet 1 of 1

TP13

wyg Environmental

Site Location:	Client:
Hampshire Farm	Linden Homes

Equipment:	OD:	Co-ordinates:	Start Date:
JCB 3CX			05/11/2009

Stratum Code	Legend	Depth (m)	Reduced Level (mOD)	Sample Type	Sample Depth (m)	In Situ Test Results
A		0.20		B1	2.80	
B		0.90				
C		1.30				
D		1.90				
E		2.50				
F		3.20 ▽				
		3.30				

Stratum Description

Stratum Code	
A	Grass top over TOPSOIL (Brown slightly clayey silty fine SAND.)
B	Orange-brown sandy clayey SILT. BRICKEARTH
C	Stiff orange-brown mottled grey slightly gravelly silty CLAY. Gravel is angular to sub-angular fine to coarse flint. HEAD DEPOSITS
D	Stiff brown slightly silty slightly sandy slightly gravelly CLAY. Gravel is angular to sub-angular fine to medium flint. HEAD DEPOSITS
E	Stiff grey slightly silty slightly gravelly CLAY. Gravel is sub-angular to sub-rounded fine to medium flint. HEAD DEPOSITS
F	Brown slightly clayey slightly sandy sub-angular to sub-rounded fine to coarse flint GRAVEL. HEAD DEPOSITS

Key

D	Disturbed Sample
ES	Environmental Sample
B	Bulk Sample
U	Undisturbed Sample
V	Hand Vane
▽	Water Strike
▼	Standing Level

Remarks:

1. Trial Pit complete at 3.3mbgl due to pit side collapse.
2. Groundwater encountered at 3.2mbgl.

Logged By:	Checked By:
CJ	BA

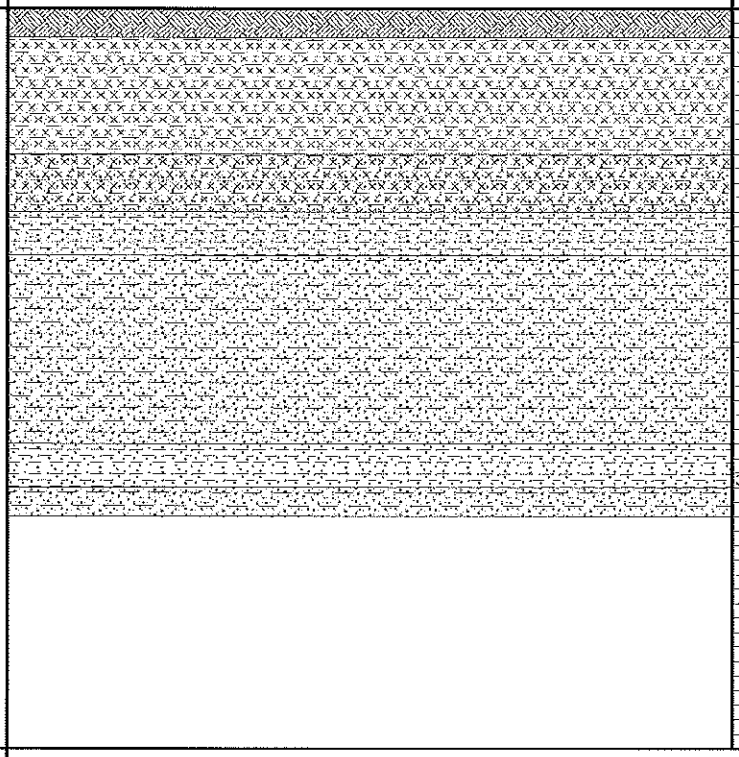
Trial Pit Records

Job Number: A056755-1 | Sheet 1 of 1 | TP14

Environmental

Site Location:	Client:
Hampshire Farm	Linden Homes

Equipment:	OD:	Co-ordinates:	Start Date:
JCB 3CX			05/11/2009



Stratum Code	Depth (m)	Reduced Level (mOD)	Sample Type	Sample Depth (m)	In Situ Test Results
			B1	2.20	
			B2	3.30	

Stratum Description

Stratum Code	
A	Grass top over TOPSOIL. (Brown slightly clayey silty fine SAND.)
B	Orange-brown mottled light brown slightly clayey sandy SILT. BRICKEARTH
C	Orange-brown mottled light brown sandy clayey gravelly SILT. Gravel is sub-angular to sub-rounded fine to medium flint. HEAD DEPOSITS
D	Stiff orange-brown slightly sandy gravelly CLAY. Gravel is angular to sub-angular fine to coarse flint. HEAD DEPOSITS
E	Grey-brown clayey sandy angular to rounded fine to coarse flint GRAVEL. HEAD DEPOSITS
F	Stiff brown gravelly CLAY. Gravel is angular to sub-angular fine to medium flint. HEAD DEPOSITS
G	Brown slightly sandy slightly clayey angular fine to coarse flint GRAVEL. HEAD DEPOSITS

Key

D	Disturbed Sample
ES	Environmental Sample
B	Bulk Sample
U	Undisturbed Sample
V	Hand Vane
▽	Water Strike
▼	Standing Level

Remarks:

1. Trial Pit complete at 3.5mbgl due to pit side collapse.
2. Groundwater encountered at 3.4mbgl.

Logged By:	Checked By:
CJ	BA

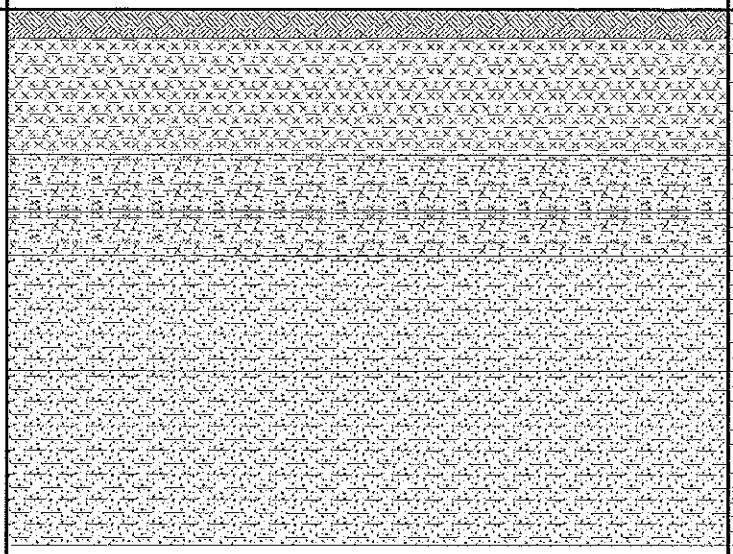
Trial Pit Records

Environmental

Job Number:	Sheet 1 of 1
A056755-1	TP15

Site Location:	Client:
Hampshire Farm	Linden Homes

Equipment:	OD:	Co-ordinates:	Start Date:
JCB 3CX			05/11/2009



Stratum Description

Stratum Code	
A	Grass top over TOPSOIL (Brown slightly clayey silty fine SAND.)
B	Orange-brown mottled light grey clayey sandy SILT. BRICKEARTH
C	Very stiff orange-brown slightly sandy slightly gravelly silty CLAY. Gravel is angular to sub-angular fine to medium flint. HEAD DEPOSITS
D	Very stiff orange-brown slightly sandy silty gravelly CLAY. Gravel is angular to sub-angular fine to medium flint. HEAD DEPOSITS
E	Orange-brown sandy very clayey angular to sub-rounded fine to coarse flint GRAVEL. HEAD DEPOSITS
F	Grey-brown slightly sandy clayey angular to sub-angular fine to coarse flint GRAVEL. Contains large pockets of clay in matrix. HEAD DEPOSITS

Key

D	Disturbed Sample
ES	Environmental Sample
B	Bulk Sample
U	Undisturbed Sample
V	Hand Vane
▽	Water Strike
▼	Standing Level

Remarks:

1.Groundwater encountered at 3.5mbgl.

Logged By:	Checked By:
CJ	BA

Trial Pit Records

Job Number: A056755-1

Sheet 1 of 1

TP16

wyg Environmental

Site Location:	Client:
Hampshire Farm	Linden Homes

Equipment:	OD:	Co-ordinates:	Start Date:
JCB 3CX			05/11/2009

Stratum Code	Legend	Depth (m)	Reduced Level (mOD)	Sample Type	Sample Depth (m)	In Situ Test Results
A		0.20				
B						
C		1.00				
		1.40				
D				B1	2.50	
		2.80 ▽				
		3.00				

Stratum Description

Stratum Code	
A	Grass top over TOPSOIL (Brown slightly clayey silty fine SAND.)
B	Orange-brown mottled light grey clayey sandy SILT. BRICKEARTH
C	Very stiff orange-brown slightly sandy slightly gravelly silty CLAY. Gravel is angular to sub-angular fine to medium flint. HEAD DEPOSITS
D	Orange-brown sandy very clayey angular to sub-rounded fine to coarse flint GRAVEL. HEAD DEPOSITS

Key

D	Disturbed Sample
ES	Environmental Sample
B	Bulk Sample
U	Undisturbed Sample
V	Hand Vane
▽	Water Strike
▼	Standing Level

Remarks:

1.Groundwater was encountered at 2.8mbgl.

Logged By :	Checked By :
CJ	BA

SAMPLING & TESTING		STRATA DESCRIPTION
0.50	D (1)	Grass over brown silty clay with roots (TOPSOIL)
		Firm light brown and orange brown mottled silty to very silty CLAY with occasional fine and medium flint gravel (HEAD DEPOSITS)
1.00	SPT N=13 (4,4/3,3,4,3)	
1.00-1.45	D (2)	
1.00	D (3)	
1.50	D (4)	
		Stiff light brown and grey brown silty sandy CLAY with occasional fine and medium flint gravel (HEAD DEPOSITS)
2.00	SPT N=15 (2,3/3,4,4,4)	
2.00-2.45	D (5)	
2.00	D (6)	
2.50	D (7)	
		Stiff greyish brown silty CLAY (LONDON CLAY)
3.00-3.45		
3.50	D (9)	
4.00	SPT N=13 (1,2/3,3,3,4)	
4.00-4.45	D (10)	
4.00	D (11)	
4.50	D (12)	
5.00-5.45		
5.50	D (14)	
6.00	D (15)	
6.50	SPT N=13 (3,3/2,3,4,4)	
6.50-6.95	D (16)	
6.50	D (17)	
7.00	D (18)	
7.50	D (19)	
8.00-8.45		
8.50	D (21)	
9.00	D (22)	
9.50	SPT N=24 (3,4/4,6,6,8)	
9.50-9.95	D (23)	
9.50	D (24)	

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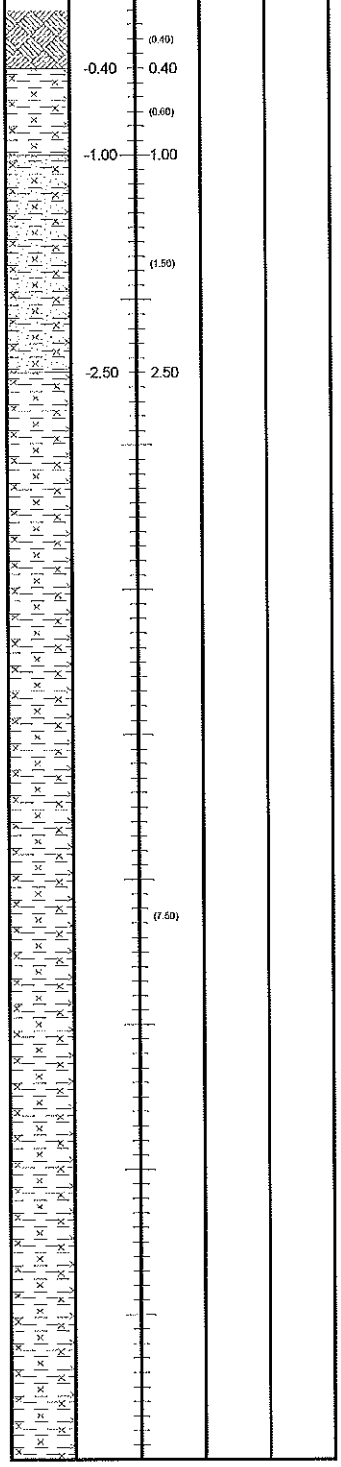
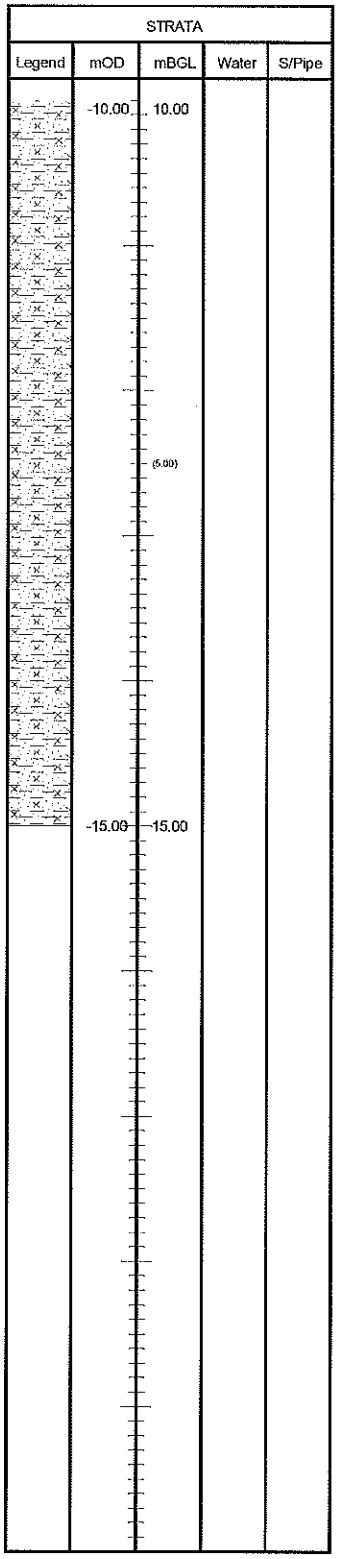


SAMPLES: D=disturbed B=bulk U=undisturbed TESTS: MAC=macintosh IVAN=vane HPEN=penetrometer SPT=split-spoon CPT=cone WATER: ▽=strike ▼=rest OTHERS: (2.00)=strata

Chiselling:	Type: Cable Percussive Borehole	Ref: GE7147	Position: BH1
Groundwater: No Groundwater Encountered	Method: Dando	Start: 15/11/2009	Scale: 1:50
		Finish: 15/11/2009	Size:
Casing:	Project: Hampshire Farm, Emsworth	Filled: 15/11/2009	Depth: 15.00mBGL
		Eng: GR	Level: 0.000mOD
Remarks:	Client: Linden Homes Southern Ltd	Drawn:	Figure: FIG
		Ckd: GR	Sheet: Sheet 1 of 2

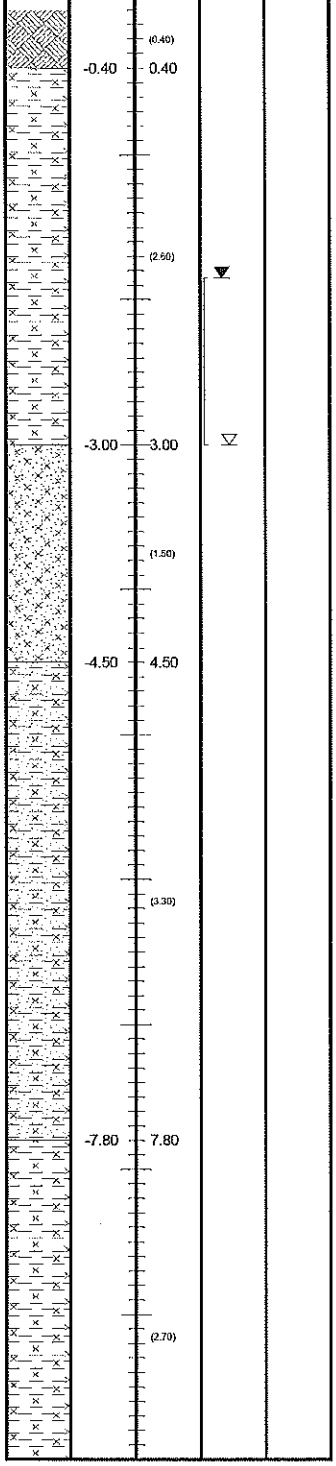
SAMPLING & TESTING		STRATA DESCRIPTION
10.00	D (25)	Very stiff brown and grey silty sandy CLAY (LONDON CLAY)
10.50	D (26)	
11.00-11.45		
11.50	D (28)	
12.00	D (29)	
12.50	SPT N=29 (3,6/7,7,8,7)	
12.50-12.95	D (30)	
13.00	D (31)	
13.50	D (32)	
14.00-14.45		
14.50	D (34)	
15.00	SPT N=45 (6,7/10,11,11,13)	
15.00-15.45	D (35)	End of Borehole at 15.00 m



SAMPLES: D=disturbed B=bulk U=undisturbed TESTS: MAC=macintosh IVAN=vane HPEN=penetrometer SPT=split-spoon CPT=cone WATER: ▽=strike ▼=rest OTHERS: (2.00)=strata

Chiselling:	Type: Cable Percussive Borehole	Ref: GE7147	Position: BH1
Groundwater: No Groundwater Encountered	Method: Dando	Start: 15/11/2009	Scale: 1:50
		Finish: 15/11/2009	Size:
Casing:	Project: Hampshire Farm, Emsworth	Filled: 15/11/2009	Depth: 15.00mBGL
		Eng: GR	Level: 0.000mOD
Remarks:	Client: Linden Homes Southern Ltd	Drawn:	Figure: FIG
		Ckd: GR	Sheet: Sheet 2 of 2

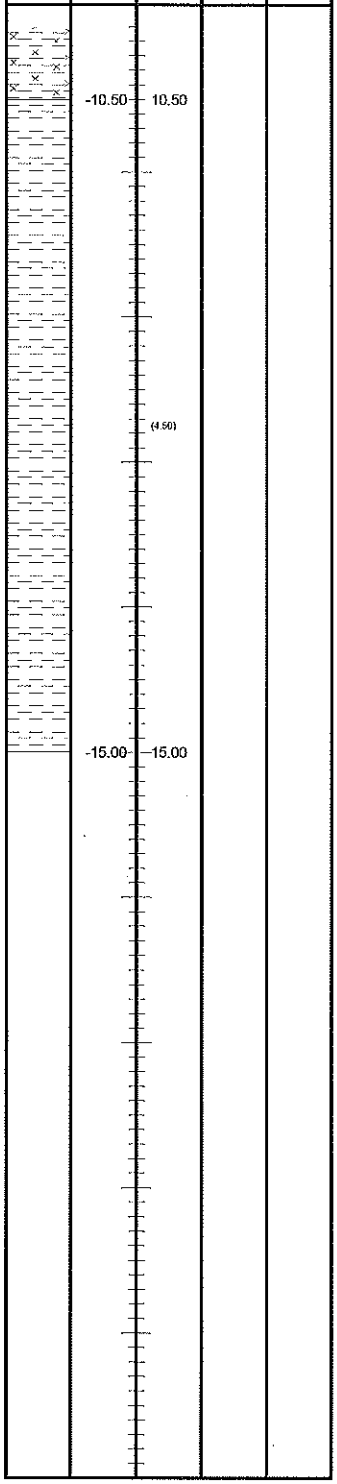
SAMPLING & TESTING		STRATA DESCRIPTION
		Grass over brown silty clay with roots (TOPSOIL)
0.50	D (1)	Stiff light brown silty to very silty CLAY with occasional fine and medium flint gravel (HEAD DEPOSITS)
1.00	SPT N=38 (4,7/9,11,10,8)	
1.00-1.45	D (2)	
1.00	D (3)	
1.50	D (4)	
2.00	SPT N=23 (5,5/5,5,6,7)	
2.00-2.45	D (5)	
2.00	D (6)	
2.50	D (7)	
3.00	SPT N=16 (3,4/3,6,4,3)	Medium dense orange brown becoming grey silty fine SAND with occasional fine rounded flint gravel (RAISED BEACH DEPOSITS)
3.00-3.45	D (8)	
3.00	D (9)	
4.00	SPT N=20 (3,3/3,5,4,8)	
4.00-4.45	D (10)	
4.00	D (11)	
4.50	D (12)	Stiff dark grey sandy silty CLAY with occasional black rounded gravel (LONDON CLAY)
5.00	SPT N=16 (1,2/3,4,4,5)	
5.00-5.45	D (13)	
5.00	D (14)	
5.50	D (15)	
6.00-6.95	D (16)	
6.50	SPT 55 (3,2/3,12,40)	
6.50	D (17)	
6.50	D (18)	
		â€¦ Grey SILTSTONE
7.00	D (19)	
7.50-8.45	D (20)	
8.00	SPT N=40 (4,5/12,12,9,7)	Stiff pale grey and reddish brown silty CLAY with occasional bands of clayey silt (LONDON CLAY)
8.00	D (21)	
8.00	D (22)	
8.50-9.95	D (23)	
9.00	D (24)	
9.50	SPT N=18 (1,3/3,4,4,7)	
9.50	D (25)	
9.50	D (26)	
		Continued next sheet



SAMPLES: D=disturbed B=bulk U=undisturbed TESTS: MAC=macintosh IVAN=vane HPEN=penetrometer SPT=split-spoon CPT=cone WATER: ▽=strike ▼=rest OTHERS: (2.00)=strata

Chiselling:	Type: Cable Percussive Borehole	Ref: GE7147	Position: BH2
Groundwater: Strike at 3.00m; 1.85 after 1440mins	Method: Dando	Start: 16/11/2009	Scale: 1:50
		Finish: 17/11/2009	Size:
Casing:	Project: Hampshire Farm, Emsworth	Filled: 16/11/2009	Depth: 15.00mBGL
		Eng: GR	Level: 0.000mOD
Remarks:	Client: Linden Homes Southern Ltd	Drawn:	Figure: FIG
		Ckd: GR	Sheet: Sheet 1 of 2

SAMPLING & TESTING		STRATA DESCRIPTION
10.00-11.45	D (27)	Stiff pale grey and reddish brown silty CLAY with occasional bands of clayey silt (LONDON CLAY)
10.50	D (28)	Very stiff grey CLAY (LONDON CLAY)
11.00	SPT N=27 (2,4/5,5,7,10)	
11.00	D (29)	
11.00-12.95	D (30)	
11.50	D (31)	
12.00	D (32)	
12.50	SPT N=36 (5,5/7,9,9,11)	
12.50	D (33)	
12.50-14.45	D (34)	
13.00	D (35)	
14.00-15.45	D (36)	
14.50	SPT 47 (4,8/12,16,19)	
14.50	D (37)	
14.50	D (38)	
15.00	D (39)	End of Borehole at 15.00 m



SAMPLES: D=disturbed B=bulk U=undisturbed TESTS: MAC=macintosh IVAN=vane HPEN=penetrometer SPT=split-spoon CPT=cone WATER: ▽=strike ▼=rest OTHERS: (2.00)=strata

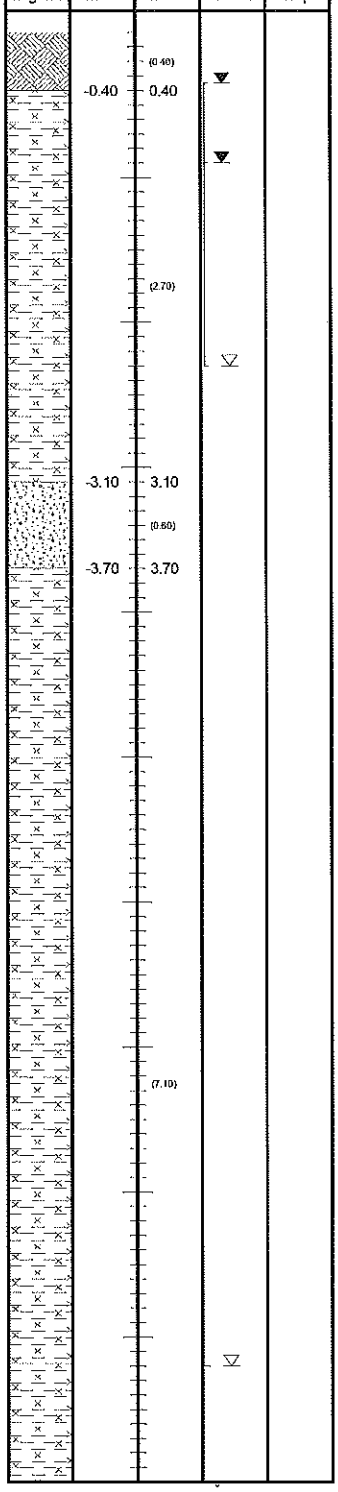
Chiselling:	Type: Cable Percussive Borehole	Ref: GE7147	Position: BH2
Groundwater:	Method: Dando	Start: 16/11/2009	Scale: 1:50
		Finish: 17/11/2009	Size:
Casing:	Project: Hampshire Farm, Emsworth	Filled: 16/11/2009	Depth: 15.00mBGL
		Eng: GR	Level: 0.000mOD
Remarks:	Client: Linden Homes Southern Ltd	Drawn:	Figure: FIG
		Ckd: GR	Sheet: Sheet 2 of 2

SAMPLING & TESTING		STRATA DESCRIPTION
0.50	D (1)	Grass over brown silty clay with roots (TOPSOIL)
1.00-1.45		Firm light brown and greyish brown mottled silty to very silty CLAY with occasional fine and medium flint gravel (HEAD DEPOSITS)
1.50	D (3)	
2.00	SPT N=8 (3,2/3,2,2,1)	
2.00-2.45	D (4)	
2.00	D (5)	
2.50	D (6)	
3.00	SPT N=6 (2,1/2,1,2,1)	
3.00-3.45	D (7)	
3.00	D (8)	
3.50	D (9)	Medium dense light brown fine to medium SAND and well graded subangular to subrounded flint GRAVEL (RIVER TERRACE DEPOSITS)
4.00	SPT N=13 (1,1/3,3,4,3)	
4.00-4.45	D (10)	
4.00	D (11)	
4.50	D (12)	Stiff dark bluish grey silty CLAY with occasional very clayey silt bands (LONDON CLAY)
5.00	SPT N=17 (2,2/3,4,5,5)	
5.00-5.45	D (13)	
5.00	D (14)	
5.50	D (15)	
6.00	D (16)	
6.50	SPT N=21 (2,4/3,5,6,7)	
6.50-6.95	D (17)	
6.50	D (18)	
7.00	D (19)	
7.50	D (20)	
8.00	SPT N=18 (2,2/3,4,4,7)	
8.00-8.45	D (21)	
8.00	D (22)	
8.50	D (23)	
9.00	D (24)	
9.50	SPT 51 (3,8/15,26,10)	
9.50-9.95	D (25)	
9.50	D (26)	

Continued next sheet

STRATA

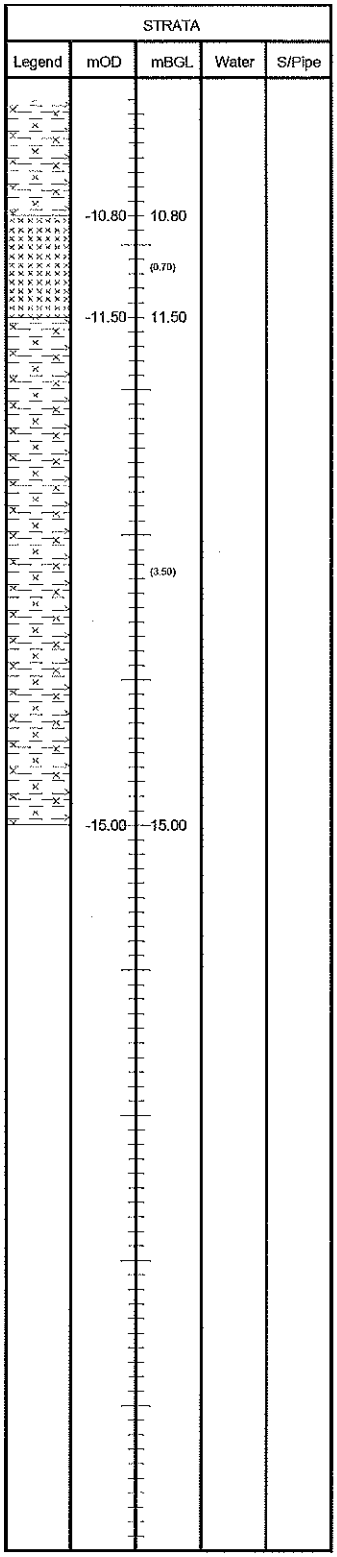
Legend	mOD	mBGL	Water	S/Pipe
		(0.40)		
	-0.40	0.40		
		(2.70)		
	-3.10	3.10		
		(0.60)		
	-3.70	3.70		
		(7.10)		



SAMPLES: D=disturbed B=bulk U=undisturbed TESTS: MAC=macIntosh VAN=vane HPEN=penetrometer SPT=split-spoon CPT=cone WATER: ▽=strike ▼=rest OTHERS: (2.00)=strata

Chiselling:	Type: Cable Percussive Borehole	Ref: GE7147	Position: BH3
Groundwater: Strike at 2.30m; 0.35 after 1440mins Strike at 9.20m; 0.90 after 20mins	Method: Dando	Start: 22/11/2009	Scale: 1:50
		Finish: 23/11/2009	Size:
Casing:	Project: Hampshire Farm, Emsworth	Filled: 22/11/2009	Depth: 15.00mBGL
		Eng: GR	Level: 0.000mOD
Remarks:	Client: Linden Homes Southern Ltd	Drawn:	Figure: FIG
		Ckd: GR	Sheet: Sheet 1 of 2

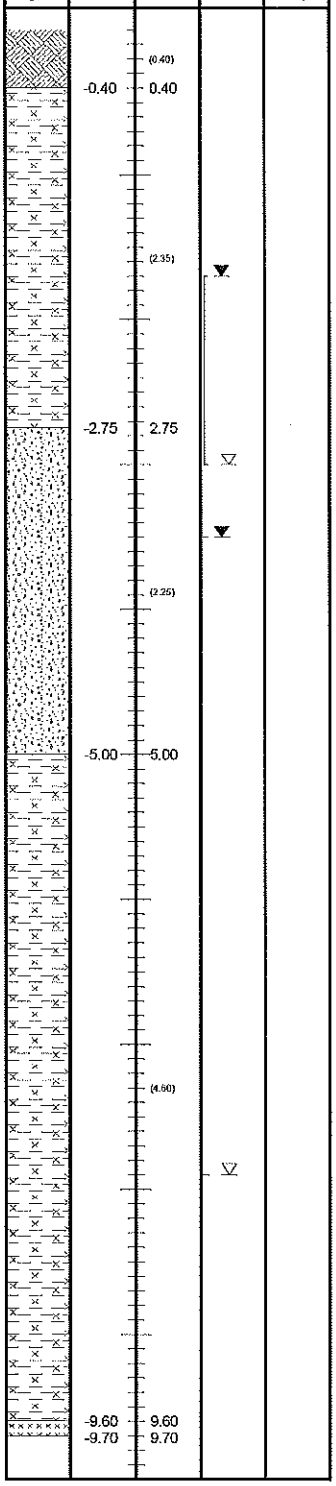
SAMPLING & TESTING		STRATA DESCRIPTION
10.00	D (27)	Stiff dark bluish grey silty CLAY with occasional very clayey silt bands (LONDON CLAY)
10.50	D (28)	
10.80	SPT ()	
10.80	D (29)	Grey weak SILTSTONE with occasional shell fragments (LONDON CLAY)
11.00	D (30)	
11.50	D (31)	Stiff light grey and reddish brown silty CLAY (LONDON CLAY)
12.00	D (32)	
12.50	SPT N=50 (8,11/15,15,14,6)	
12.50	D (33)	
12.50	D (34)	
13.00	D (35)	
13.50	D (36)	
14.00	D (37)	
14.50	SPT N=42 (7,7/9,10,10,13)	
14.50-14.95	D (38)	
14.50	D (39)	End of Borehole at 15.00 m



SAMPLES: D=disturbed B=bulk U=undisturbed TESTS: MAC=macintosh IVAN=vane HPEN=penetrometer SPT=split-spoon CPT=cone WATER: ▽=strike ▼=rest OTHERS: (2.00)=strata

Chiselling:	Type: Cable Percussive Borehole	Ref: GE7147	Position: BH3
Groundwater:	Method: Dando	Start: 22/11/2009	Scale: 1:50
		Finish: 23/11/2009	Size:
Casing:	Project: Hampshire Farm, Emsworth	Filled: 22/11/2009	Depth: 15.00mBGL
		Eng: GR	Level: 0.000mOD
Remarks:	Client: Linden Homes Southern Ltd	Drawn:	Figure: FIG
		Ckd: GR	Sheet: Sheet 2 of 2

SAMPLING & TESTING		STRATA DESCRIPTION
		Grass over brown silty clay with roots (TOPSOIL)
0.50	D (1)	Firm light brown mottled silty to very silty CLAY with occasional fine and medium flint gravel (HEAD DEPOSITS)
1.00	SPT N=17 (2,4/4,3,4,6)	
1.00-1.45	D (2)	
1.00	D (3)	
1.50	D (4)	
2.00	SPT N=32 (1,1/2,7,10,13)	
2.00-2.45	D (5)	
2.00	D (6)	
2.50	D (7)	
3.00	SPT N=15 (3,2/2,4,4,5)	Medium dense light brown clayey fine to medium SAND and well graded subangular to subrounded flint GRAVEL (RIVER TERRACE DEPOSITS)
3.00-3.45	D (8)	
3.00	D (9)	
4.50	D (10)	
5.00	SPT N=18 (2,2/3,3,5,7)	Stiff dark bluish grey silty CLAY with occasional very clayey silt bands (LONDON CLAY)
5.00-5.45	D (11)	
5.00	D (12)	
5.50	D (13)	
6.00	D (14)	
6.50-6.95		
7.00	D (16)	
7.50	D (17)	
8.00	SPT N=33 (2,4/4,4,12,13)	
8.00-8.45	D (18)	
8.00	D (19)	
8.50	D (20)	
9.00	D (21)	
9.50	SPT 25 (/25)	
9.50	D (22)	
9.65	SPT ()	
9.65	D (23)	
9.65	D (24)	Grey SILTSTONE (LONDON CLAY)
		End of Borehole at 9.60 m

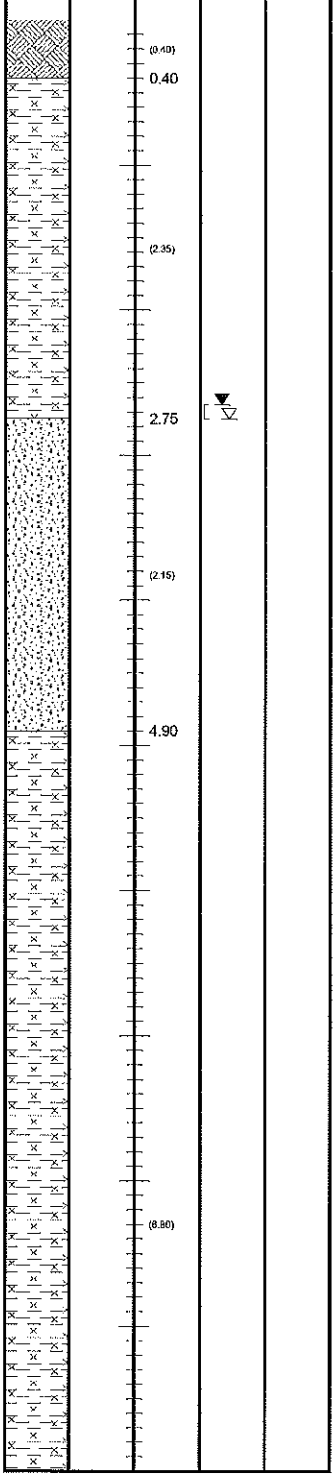


SAMPLES: D=disturbed B=bulk U=undisturbed TESTS: MAC=macintosh IVAN=vane HPEN=penetrometer SPT=split-spoon CPT=cone WATER: ▽=strike ▼=rest OTHERS: (2.00)=strata

Chiselling:	Type: Cable Percussive Borehole	Ref: GE7147	Position: BH4
Groundwater: Strike at 3.00m; 1.70 after 20mins Strike at 7.90m; 3.50 after 120mins	Method: Dando	Start: 19/11/2009	Scale: 1:50
		Finish: 22/11/2009	Size:
Casing:	Project: Hampshire Farm, Emsworth	Filled: 19/11/2009	Depth: 9.60mBGL
		Eng: GR	Level: 0.000mOD
Remarks:	Client: Linden Homes Southern Ltd	Drawn:	Figure: FIG
		Ckd: GR	Sheet: Sheet 1 of 1

SAMPLING & TESTING		STRATA DESCRIPTION
		Grass over brown silty clay with roots (TOPSOIL)
0.50	D (1)	Firm light brown mottled silty CLAY with occasional fine and medium flint gravel (HEAD DEPOSITS)
1.00	SPT N=13 (1,1/2,3,4,4)	
1.00-1.45	D (2)	
1.00	D (3)	
1.50	D (4)	
2.00	SPT N=18 (2,3/5,6,3,4)	
2.00-2.45	D (5)	
2.00	D (6)	
2.50	D (7)	
3.00	SPT N=31 (6,7/7,7,8,9)	Medium dense light brown fine to medium SAND and well graded subangular to subrounded flint GRAVEL (RIVER TERRACE DEPOSITS)
3.00-3.45	D (8)	
3.00	D (9)	
4.00	D (10)	
4.50	D (11)	
5.00	SPT N=19 (2,3/3,5,5,6)	Stiff dark bluish grey silty CLAY with occasional very clayey silt bands (LONDON CLAY)
5.00-5.45	D (12)	
5.00	D (13)	
5.50	D (14)	
6.00	D (15)	
6.50-6.95		
6.50		
7.00-7.45	D (16)	
7.00	D (19)	
7.45	SPT N=19 (2,3/4,4,6,5)	
7.50	D (20)	
8.00	D (21)	
8.50-8.95		
9.00	D (23)	
9.50	D (24)	

Continued next sheet



SAMPLES: D=disturbed B=bulk U=undisturbed TESTS: MAC=macintosh IVAN=vane HPEN=penetrometer SPT=split-spoon CPT=cone WATER: ▽=strike ▼=rest OTHERS: (2.00)=strata

Chiselling:	Type: Cable Percussive Borehole	Ref: GE7147	Position: BH5
Groundwater: Strike at 2.75m; 2.65 after 20mins	Method: Dando	Start: 18/11/2009	Scale: 1:50
		Finish: 18/11/2009	Size:
Casing:	Project: Hampshire Farm, Emsworth	Filled: 18/11/2009	Depth: 11.75mBGL
		Eng: GR	Level:
Remarks:	Client: Linden Homes Southern Ltd	Drawn:	Figure: FIG
		Ckd: GR	Sheet: Sheet 1 of 2

SAMPLING & TESTING		STRATA DESCRIPTION	STRATA				
			Legend	mOD	mBGL	Water	S/Pipe
10.00	SPT N=53 (5,5/13,14,11,15)	Stiff dark bluish grey silty CLAY with occasional very clayey silt bands (LONDON CLAY)					
10.00-10.45	D (25)						
10.00	D (26)						
10.50	D (27)						
11.00	D (28)						
11.50	SPT 50 (4,4/35,15)						
11.50-11.75	D (29)						
		Grey SILTSTONE			11.70		
		End of Borehole at 11.75 m			11.75		

SAMPLES: D=disturbed B=bulk U=undisturbed TESTS: MAC=macintosh IVAN=vane HPEN=penetrometer SPT=split-spoon CPT=cone WATER: ▽=strike ▼=rest OTHERS: (2.00)=strata

Chiselling:	Type: Cable Percussive Borehole	Ref: GE7147	Position: BH5
Groundwater:	Method: Dando	Start: 18/11/2009	Scale: 1:50
		Finish: 18/11/2009	Size:
Casing:	Project: Hampshire Farm, Emsworth	Filled: 18/11/2009	Depth: 11.75mBGL
		Eng: GR	Level: -
Remarks:	Client: Linden Homes Southern Ltd	Drawn:	Figure: FIG
		Ckd: GR	Sheet: Sheet 2 of 2

Appendix C – Particle Size Density Results

For the attention of : **Ms. C. Johnson**

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White Young Green
The Mill Yard
Nursling Street

Southampton
Hampshire
S016 0AJ

09/12/2009

White Young Green Southampton

No	Project No	File Ref
	11 DEC 2009	
ACTN		
INFO		
INITL		

Dear Ms. C. Johnson ,

Please find enclosed our certificates of test.

If you require further assistance, please do not hesitate to contact us at our Head Office address.

Yours sincerely

[ ] S J White *Head of Laboratories*
[ ] A Bates *Laboratory Manager*
[ ] K Tiller *Technical Manager*
[ ] D Faulkner *Quality Manager*
[ ] M Slater *Senior Technician*
Approved Signatories

C.C.

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Dorset, BH16 6LE
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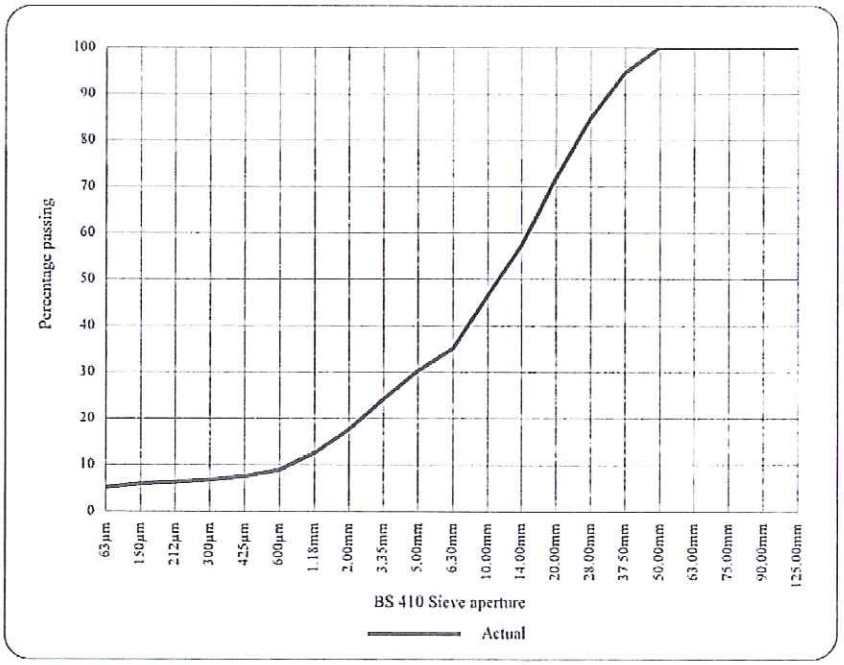
CERTIFICATE OF TEST - PARTICLE SIZE DISTRIBUTION BY WASHING & SIEVING METHOD TESTED IN ACCORDANCE WITH B.S. 1377 : PART 2 : 1990 : CLAUSE 9.2

Laboratory reference no(s) :	H / 31679 / 001 — Head Office Certificate No : S5/H / 31679 / 001
Client :	White Young Green
Certificate address :	The Mill Yard, Nursling Street Southampton, Hampshire, S016 0AJ
Contract :	A056755-1, Hampshire Farm
Source of material (as indicated by client) :	BH 4
Client reference/data :	Sample - B
Location of sample on site :	Depth 3.1m - 3.5m
Borehole/pit no / depth	N/A @ N/A m
Date sampled :	DNS
Sampled by :	DNS
Date received :	30/11/2009
Material description :	WET,Orange,brown Clayey Silty SAND/GRAVEL
Total mass received :	11.85 kg
Method of preparation :	BS 1377 : Part 1 & Part 2
Variation from test procedure :	None
Location & orientation of test specimen within original sample :	N/A
Sampling certificate :	No - None submitted
Client's indicated specification(s) :	DNS

BS 410 Sieve aperture	Percentage passing	Specification limits (Percentage passing)	
	Actual	Lower	Upper
125.00mm	100		
90.00mm	100		
75.00mm	100		
63.00mm	100		
50.00mm	100		
37.50mm	95		
28.00mm	85		
20.00mm	72		
14.00mm	57		
10.00mm	46		
6.30mm	35		
5.00mm	30		
3.35mm	24		
2.00mm	18		
1.18mm	13		
600µm	9		
425µm	8		
300µm	7		
212µm	6		
150µm	6		
63µm	5		



Remarks : None

Tested by : SDC Date tested : 04.12.09 Approved : Date : 08/12/2009

Approved Signatories : [ ] S J White *Head of Laboratories* [ ] A Bates *Laboratory Manager* [ ] K Tiller *Technical Manager* [ ] M Slater *Senior Technician*

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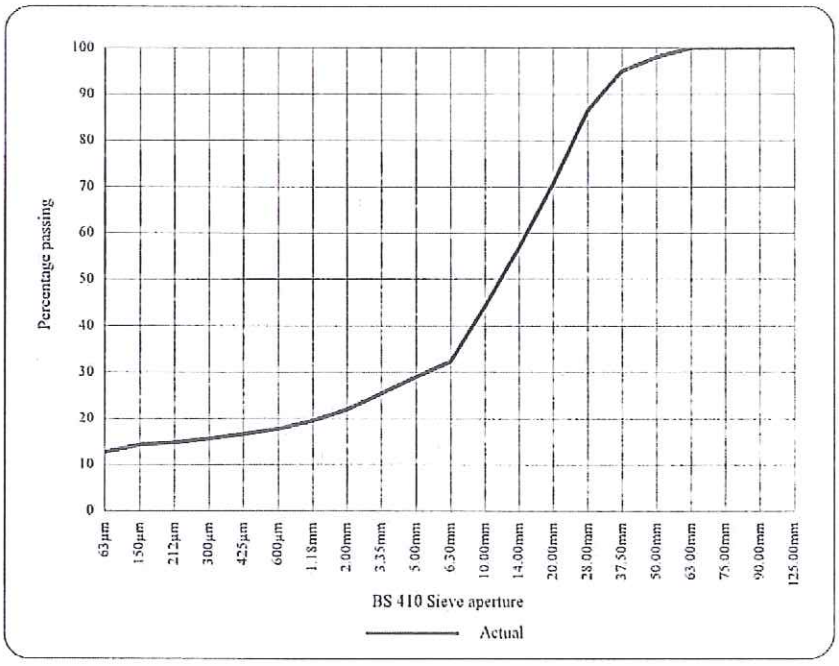
CERTIFICATE OF TEST - PARTICLE SIZE DISTRIBUTION BY WASHING & SIEVING METHOD
TESTED IN ACCORDANCE WITH B.S. 1377 : PART 2 : 1990 : CLAUSE 9.2

Laboratory reference no(s) :	H / 31679 / 002 — Head Office Certificate No : S5/H / 31679 / 002
Client :	White Young Green
Certificate address :	The Mill Yard, Nursling Street Southampton, Hampshire, S016 0AJ
Contract :	A056755-1, Hampshire Farm
Source of material (as indicated by client) :	TP 9
Client reference/data :	Sample - B
Location of sample on site :	Depth 3.0m
Borehole/pit no / depth	N/A @ N/A m
Date sampled :	DNS
Sampled by :	DNS
Date received :	30/11/2009
Material description :	WET,Orange,brown Clayey Silty SAND/GRAVEL
Total mass received :	22.20 kg
Method of preparation :	BS 1377 : Part 1 & Part 2
Variation from test procedure :	None
Location & orientation of test specimen within original sample :	N/A
Sampling certificate :	No - None Submitted
Client's indicated specification(s) :	DNS

BS 410 Sieve aperture	Percentage passing	Specification limits (Percentage passing)	
	Actual	Lower	Upper
125.00mm	100		
90.00mm	100		
75.00mm	100		
63.00mm	100		
50.00mm	98		
37.50mm	95		
28.00mm	86		
20.00mm	71		
14.00mm	57		
10.00mm	44		
6.30mm	32		
5.00mm	29		
3.35mm	25		
2.00mm	22		
1.18mm	20		
600µm	18		
425µm	17		
300µm	16		
212µm	15		
150µm	14		
63µm	13		



Remarks : None

Tested by : SDC Date tested : 04.12.09 Approved : Date : 08/12/2009

Approved Signatories : [ ] S J White *Head of Laboratories* [ ] A Bates *Laboratory Manager* [ ] K Tiller *Technical Manager* [ ] M Slater *Senior Technician*

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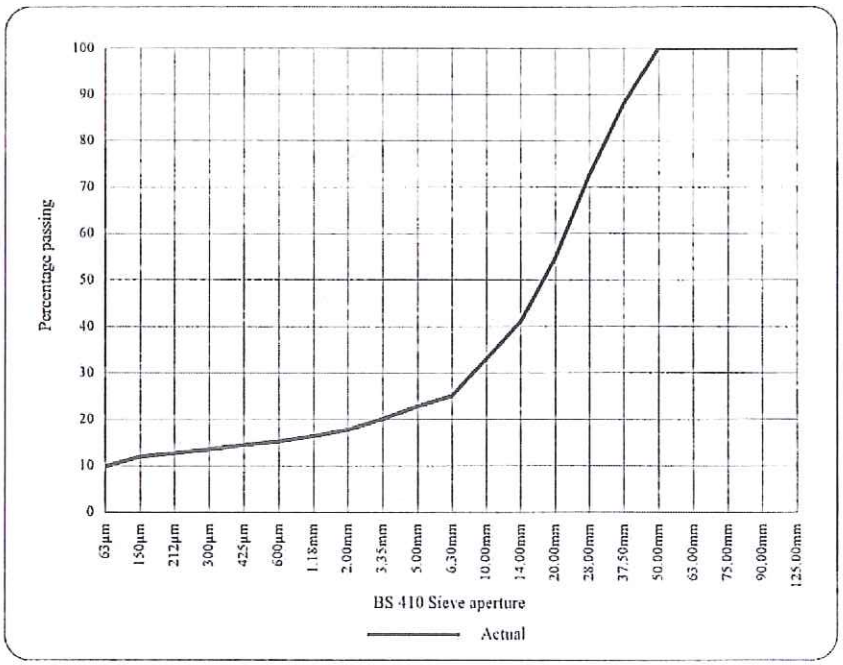
CERTIFICATE OF TEST - PARTICLE SIZE DISTRIBUTION BY WASHING & SIEVING METHOD
TESTED IN ACCORDANCE WITH B.S. 1377 : PART 2 : 1990 : CLAUSE 9.2

Laboratory reference no(s) :	H / 31679 / 003
Head Office Certificate No :	S5/H / 31679 / 003
Client :	White Young Green
Certificate address :	The Mill Yard, Nursling Street Southampton, Hampshire, S016 0AJ
Contract :	A056755-1, Hampshire Farm
Source of material (as indicated by client) :	TP 12
Client reference/data :	Sample - B
Location of sample on site :	Depth 3.1m
Borehole/pit no / depth	N/A @ N/A m
Date sampled :	DNS
Sampled by :	DNS
Date received :	30/11/2009
Material description :	WET,Orange,brown Clayey Silty SAND/GRAVEL
Total mass received :	17.80 kg
Method of preparation :	BS 1377 : Part 1 & Part 2
Variation from test procedure :	None
Location & orientation of test specimen within original sample :	N/A
Sampling certificate :	No - None Submitted
Client's indicated specification(s) :	DNS

BS 410 Sieve aperture	Percentage passing	Specification limits (Percentage passing)	
	Actual	Lower	Upper
125.00mm	100		
90.00mm	100		
75.00mm	100		
63.00mm	100		
50.00mm	100		
37.50mm	88		
28.00mm	73		
20.00mm	55		
14.00mm	41		
10.00mm	33		
6.30mm	25		
5.00mm	23		
3.35mm	20		
2.00mm	18		
1.18mm	16		
600µm	15		
425µm	14		
300µm	14		
212µm	13		
150µm	12		
63µm	10		



Remarks : None

Tested by : SDC Date tested : 04.12.09 Approved : Date : 08/12/2009

Approved Signatories : [ ] S J White *Head of Laboratories* [ ] A Bates *Laboratory Manager* [ ] K Tiller *Technical Manager* [ ] M Slater *Senior Technician*

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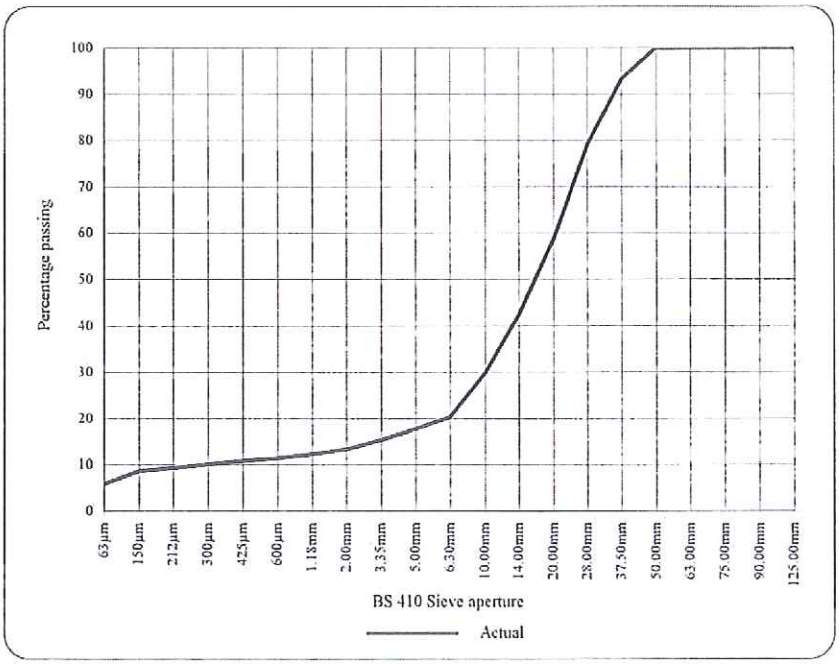
CERTIFICATE OF TEST - PARTICLE SIZE DISTRIBUTION BY WASHING & SIEVING METHOD
TESTED IN ACCORDANCE WITH B.S. 1377 : PART 2 : 1990 : CLAUSE 9.2

Laboratory reference no(s) :	H / 31679 / 004
Head Office Certificate No :	S5/H / 31679 / 004
Client :	White Young Green
Certificate address :	The Mill Yard, Nursling Street Southampton, Hampshire, S016 0AJ
Contract :	A056755-1, Hampshire Farm
Source of material (as indicated by client) :	TP 13
Client reference/data :	Sample - B
Location of sample on site :	Depth 2.8m
Borehole/pit no / depth	N/A @ N/A m
Date sampled :	DNS
Sampled by :	DNS
Date received :	30/11/2009
Material description :	WET,Orange,brown Clayey Silty SAND/GRAVEL
Total mass received :	20.40 kg
Method of preparation :	BS 1377 : Part 1 & Part 2
Variation from test procedure :	None
Location & orientation of test specimen within original sample :	N/A
Sampling certificate :	No - None Submitted
Client's indicated specification(s) :	DNS

BS 410 Sieve aperture	Percentage passing	Specification limits (Percentage passing)	
	Actual	Lower	Upper
125.00mm	100		
90.00mm	100		
75.00mm	100		
63.00mm	100		
50.00mm	100		
37.50mm	93		
28.00mm	79		
20.00mm	59		
14.00mm	42		
10.00mm	30		
6.30mm	20		
5.00mm	18		
3.35mm	15		
2.00mm	13		
1.18mm	12		
600µm	11		
425µm	11		
300µm	10		
212µm	9		
150µm	9		
63µm	6		



Remarks : None

Tested by : SDC Date tested : 04.12.09 Approved : Date : 08/12/2009

Approved Signatories : [ ] S J White *Head of Laboratories* [ ] A Bates *Laboratory Manager* [ ] K Tiller *Technical Manager* [ ] M Slater *Senior Technician*

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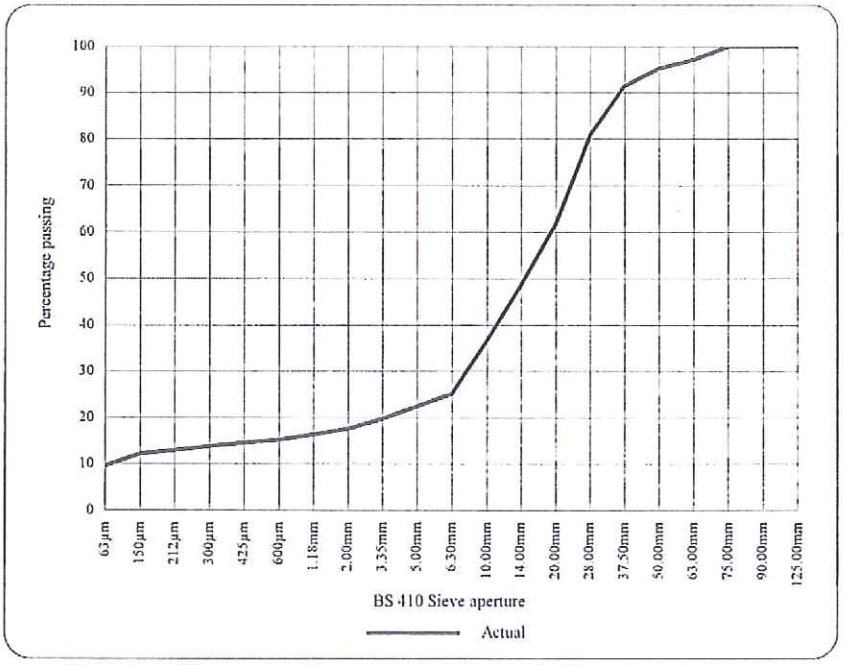
TESTED IN ACCORDANCE WITH B.S. 1377 : PART 2 : 1990 : CLAUSE 9.2

Laboratory reference no(s) :	H / 31679 / 005 — Head Office Certificate No : S5/H / 31679 / 005
Client :	White Young Green
Certificate address :	The Mill Yard, Nursling Street Southampton, Hampshire, SO16 0AJ
Contract :	A056755-1, Hampshire Farm
Source of material (as indicated by client) :	TP 14
Client reference/data :	Sample - B
Location of sample on site :	Depth 3.3m
Borehole/pit no / depth	N/A @ N/A m
Date sampled :	DNS
Sampled by :	DNS
Date received :	30/11/2009
Material description :	WET,Orange,brown Clayey Silty SAND/GRAVEL
Total mass received :	16.45 kg
Method of preparation :	BS 1377 : Part 1 & Part 2
Variation from test procedure :	None
Location & orientation of test specimen within original sample :	N/A
Sampling certificate :	No - None Submitted
Client's indicated specification(s) :	DNS

BS 410 Sieve aperture	Percentage passing	Specification limits (Percentage passing)	
	Actual	Lower	Upper
125.00mm	100		
90.00mm	100		
75.00mm	100		
63.00mm	97		
50.00mm	95		
37.50mm	91		
28.00mm	81		
20.00mm	62		
14.00mm	49		
10.00mm	37		
6.30mm	25		
5.00mm	22		
3.35mm	20		
2.00mm	18		
1.18mm	16		
600µm	15		
425µm	15		
300µm	14		
212µm	13		
150µm	12		
63µm	10		



Remarks : None

Tested by : SDC Date tested : 04.12.09 Approved : Date : 08/12/2009

Approved Signatories : [ ] S J White *Head of Laboratories* [ ] A Bates *Laboratory Manager* [ ] K Tiller *Technical Manager* [ ] M Slater *Senior Technician*

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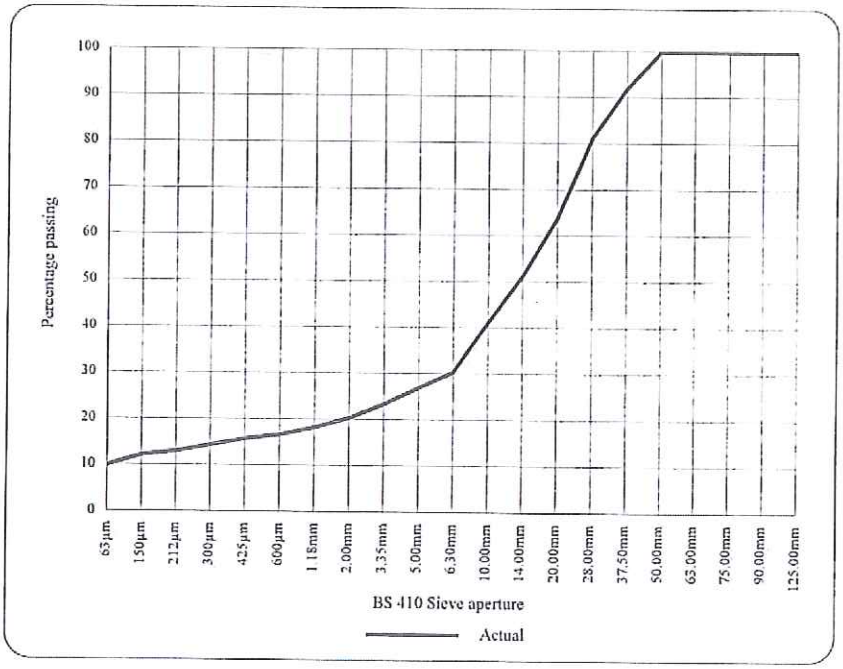
Laboratory reference no(s) :	H / 31679 / 006 — Head Office Certificate No : S5/H / 31679 / 006
Client :	White Young Green
Certificate address :	The Mill Yard, Nursling Street Southampton, Hampshire, S016 0AJ
Contract :	A056755-1, Hampshire Farm
Source of material (as indicated by client) :	TP 15
Client reference/data :	Sample - B
Location of sample on site :	Depth 3.3m
Borehole/pit no / depth	N/A @ N/A m
Date sampled :	DNS
Sampled by :	DNS
Date received :	30/11/2009
Material description :	WET,Orange,brown Clayey Silty SAND/GRAVEL
Total mass received :	24.95 kg
Method of preparation :	BS 1377 : Part 1 & Part 2
Variation from test procedure :	None
Location & orientation of test specimen within original sample :	N/A
Sampling certificate :	No - None Submitted
Client's indicated specification(s) :	DNS

BS 410 Sieve aperture	Percentage passing	Specification limits (Percentage passing)	
	Actual	Lower	Upper
125.00mm	100		
90.00mm	100		
75.00mm	100		
63.00mm	100		
50.00mm	100		
37.50mm	92		
28.00mm	81		
20.00mm	64		
14.00mm	51		
10.00mm	41		
6.30mm	30		
5.00mm	27		
3.35mm	23		
2.00mm	20		
1.18mm	18		
600µm	17		
425µm	16		
300µm	14		
212µm	13		
150µm	12		
63µm	10		



Remarks : None

Tested by : SDC Date tested : 04.12.09 Approved : Date : 08/12/2009

Approved Signatories : [ ] S J White *Head of Laboratories* [✓] A Bates *Laboratory Manager* [ ] K Tiller *Technical Manager* [ ] M Slater *Senior Technician*

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