

Aquatech Drainage Consultants

Via Email Only: solutions@drainageconsultants.uk.com

18th June 2013

Our ref: 13598/ST

Dear Chris,

Re: 33 Ferringham Lane, Ferring, BN12 5NB

An invitation to tender for soakaway testing was received from Aquatech Drainage Consultants and the scope of the works was outlined in Soils Limited subsequent quotation reference Q14303, dated 3rd April 2013.

This letter report incorporates the results of recent soakage tests undertaken on the above named site.

General

Site works were undertaken on the 11th June 2013 and comprised the excavation of two trial holes (TP1 & TP2) with the locations given by the client, using rubber tyred backacter JCB to depths between 3.90m – 4.20m below ground level (bgl).

Infiltration tests were carried out in the two trial pits (TP1 & TP2). The locations of the trial holes and infiltration tests carried out are presented at the end of this report.

Ground Conditions Encountered

The following ground conditions were encountered during the intrusive investigation.

Topsoil (TS) River Terrace Deposits (RT) Pit Chalk Formation (PCK)

Full field logs of the ground conditions encountered within each trial pit are presented within Appendix A.

In TP1 Topsoil was encountered from ground level (GL) overlying the River Terrace Deposits comprising, soft to firm light brown, brown sandy silty clay with occasional white chalk fragments becoming blue grey, dark grey mottled very silty clay at depth. The River Terrace Deposits in turn overlay the Pit Chalk Formation, to the base depth of 3.90m bgl. Groundwater was seeping into the base at 3.90m bgl, with 100mm standing noted prior to starting the soakage test. The trial pit remained stable through the duration of the test.

Topsoil was also encountered from the GL within TP2, overlying the River Terrace Deposits, which extended to the full depth of the trial pit of 4.20m bgl. Groundwater was seeping into the base at 4.20m bgl, with 100mm standing water prior to starting the soakage test. The side of the pit from 1.90m bgl was noted as collapsing prior to adding water and from 120 minutes into the test collapsing below the water line.

The ground conditions encountered in the trial holes are summarised in Table 1.1.

Table 1.1 Ground Conditions			
Strata	Depth Encountered (m bgl)		Description
	Top	Bottom	
TS	GL	0.40	Grass over light brown sandy silt with occasional fine gravel and fine to medium roots.
RT	0.40	3.40-4.20*	Soft to firm light brown, brown sandy silty clay with occasional white chalk fragments becoming blue grey, dark grey mottled very silty clay at depth.
PCK	3.40	3.90*	Off white silty chalk with fine to medium blocks.

Note - *Full depth of trial hole

Infiltration Tests

Infiltration tests were undertaken within the trial pits TP1 and TP2, within the River Terrace Deposits and Pit Chalk Formation following the principles of BRE Digest 365 Soakaway design: 1991. BRE 365 states that for an accurate soakage rate to be obtained a soakage pit needs to be filled three times in quick succession. Each test can only be ended once 75% of the water present has drained away. Due to relatively poor soakage rates the tests were not carried out three times and ended before the 75% of water present had drained. Consequently the tests did not meet BRE Digest 365 Soakaway design criteria and in-house soakage test spreadsheets were used to obtain **indicative** soakage rates.

Table 1.2 shows the indicative soakage rates for each location and the soakage test data is presented in Appendix B.

Table 1.2 Indicative Soakage Test Results	
Trial Hole	Soakage Rate (m/s)
TP1	8.070E-06
TP2	9.621E-06

Infiltration was likely to have been limited by the high fines content of the River Terrace Deposits and the high of the groundwater table, encountered at the base of each trial pit.

Should you have any questions then please do not hesitate to contact the undersigned.

The following figures and appendices complete this report:

Figure 1

Trial Hole Location Plan

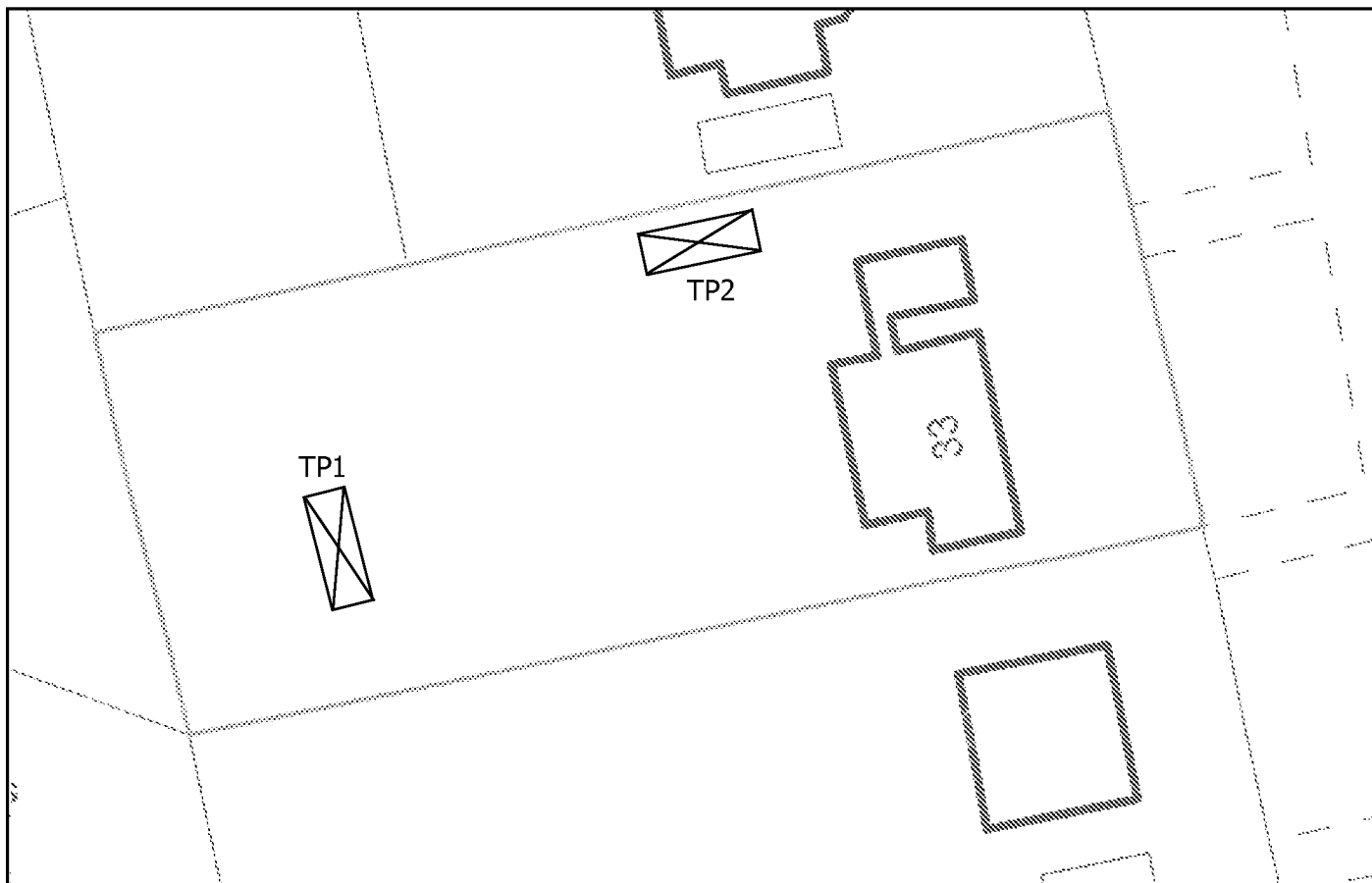
Appendix A
Appendix B

Field Work
Soakage Test Data

Yours sincerely



L. P. Wilkinson BEng. (Hons)., MSc., FGS.
Geo-Environmental Engineer



Project:

33 Ferringham Lane, Ferring, BN12 5NB

Client:

**Aquatech Drainage
Consultants**

Date:

June 2013

Title:

Trial Hole Location Plan

Ref:

13598

Fig No. 1

soils
L I M I T E D
Geotechnical & Environmental
Consultants

Appendix A

Field Work

Soils Limited
Newton House
Cross Road
Tadworth
Surrey KT20 5SR
Tel: 01737 814221
Fax: 01737 812557



Record of Borehole TP 1

Sheet 1 of 1

Start Date: 11/06/2013

End Date: 11/06/2013

Logged By:

Ground Level: -

Easting: -

Northing: -

Site: 33 Ferringham Lane, Ferring
Client: Aquatech Drainage Consultants Ltd
Project No: 13598

Boring Method: TP

Weather:

Driller:

Samples, In-situ Tests & Installations					Strata			
Depth	Type	Result	S/Pipe	Elev	Legend	Depth/(Thk)	Description	
						0.40	TOPSOIL Grass over light brown sandy silt with occasional fine gravel and fine to medium roots	
						0.50	RIVER TERRACE DEPOSITS Brown fine sandy very silty CLAY with fine to medium roots and becoming a very silty clay form 0.70m bgl	
						0.90	RIVER TERRACE DEPOSITS Soft brown silty CLAY with occasional fine roots and becoming firm with depth	
						1.10		
						2.00	RIVER TERRACE DEPOSITS Light brown sandy silty CLAY with fine white chalk fragments	
						2.30	RIVER TERRACE DEPOSITS light brown, light grey and orange brown mottled very silty CLAY with occasional pockets of light beige silt and fine chalk fragments	
						1.10		
						3.40	PIT CHALK FORMATION Off white silty CHALK with fine to medium blocks	
						0.50		
						3.90	End of Borehole at 3.90 m	

Daily Progress					Water Strikes							Chiselling			Hole Diameter		Casing Diameter	
Date	Time	Hole	Depth	Water Depth	Strike Depth	Casing Depth	Date	Time	Post Depth	Elapsed Minutes	Depth Sealed	Start Depth	End Depth	Hours	Depth	Diam. (mm)	Depth	Diam. (mm)

General Remarks:

Roots observed to 2.00m bgl

Soils Limited
Newton House
Cross Road
Tadworth
Surrey KT20 5SR
Tel: 01737 814221
Fax: 01737 812557



Record of Borehole TP 2

Sheet 1 of 1

Start Date: 11/06/2013

End Date: 11/06/2013

Logged By:

Ground Level: -

Easting: -

Northing: -

Site: 33 Ferringham Lane, Ferring
Client: Aquatech Drainage Consultants Ltd
Project No: 13598

Boring Method: TP

Weather:

Driller:

Samples, In-situ Tests & Installations					Strata	
Depth	Type	Result	S/Pipe	Elev	Legend	Description
						0.40 TOPSOIL Grass over light brown sandy silt with occasional fine gravel and fine roots
						0.60 RIVER TERRACE DEPOSITS Brown fine sandy very silty CLAY with fine to medium roots and becoming a very silty clay from 0.70m bgl
						1.00 RIVER TERRACE DEPOSITS Soft brown silty CLAY with occasional fine roots and becoming firm with depth
						1.10
						2.10 0.40 RIVER TERRACE DEPOSITS Light brown sandy silty CLAY with fine white chalk fragments
						2.50 RIVER TERRACE DEPOSITS Soft light brown and orange brown silty CLAY with very occasional white chalk fragments and light grey mottling from 2.80m bgl
						1.20
						3.70 0.50 RIVER TERRACE DEPOSITS Blue grey and dark grey mottled very silty CLAY
						4.20
						End of Borehole at 4.20 m

Daily Progress					Water Strikes							Chiselling			Hole Diameter		Casing Diameter	
Date	Time	Hole	Depth	Water Depth	Strike Depth	Casing Depth	Date	Time	Post Depth	Elapsed Minutes	Depth Sealed	Start Depth	End Depth	Hours	Depth	Diam. (mm)	Depth	Diam. (mm)

General Remarks:

Roots observed to 2.10m bgl

Appendix B

Soakage Test Data

Site	TP1
Test number	1
Date	11/06/2013
Depth	3.900
Avg. Length	1.95
Avg. Width	0.5

Time (mins)	Water Depth
0.00	0.920
2.00	0.930
10.00	0.950
21.00	0.960
41.00	0.980
68.00	1.000
101.00	1.025
131.00	1.040
161.00	1.055
191.00	1.070
221.00	1.080
251.00	1.090

Site	TP2
Test number	1
Date	11/06/2013
Depth	4.200
Avg. Length	1.95
Avg. Width	0.5

Time (mins)	Water Depth
0.00	0.885
2.00	0.890
5.00	0.900
10.00	0.915
20.00	0.940
30.00	0.960
60.00	0.990
90.00	1.025
120.00	1.045
150.00	1.070
180.00	1.090
210.00	1.115
240.00	1.135