APPENDIX 2

GENERAL NOTES ON SITE WORKS

A2.1 SITE WORK

A2.1.1 Light Cable Percussion Boring

For routine soil exploration to depths in excess of 3m, the light cable percussion rig is generally employed for boring through soils and weak rocks. It consists of a powered winch and tripod frame, with running wheels that are permanently attached so that the rig may be towed behind a suitable vehicle. The rig is towed into position and set up using its own winching system.

The locations of services are checked to make sure the borehole is not situated unacceptably near any services. Regardless of the proximity of services, a CAT scan is undertaken at the borehole location and a trial hole dug to 1.20m by hand.

Boreholes are advanced in soil by the percussive action of the cable tool. The force of the cylindrical tool as it is dropped a short distance cuts a plug of cohesive soil that is removed by the tool.

In non-cohesive soils, the borehole is advanced by a 'shell', otherwise known as a 'bailer' or 'sand pump', which incorporates a clack valve. Material is transferred into the shell and retained by the clack valve. The water level in a borehole is maintained above that in the surrounding granular soil to allow for temporary reductions in the head of water as the shell is withdrawn from the borehole. Water should flow from the borehole into the surrounding soil at all times to prevent 'piping' and loosening the soil at the base of the hole. The casing is always advanced with the borehole in granular soil so that material is drawn from the base rather than the borehole sides.

Obstructions to boring are overcome by fitting a serrated chiselling ring to the base of the percussion tool. For large obstructions, a heavy chisel with a hardened cutting edge may have to be used.

Disturbed samples are taken in polythene bags, jars or tubs that are sealed against air or water loss.

Undisturbed samples are generally taken in cohesive materials at changes in strata and at one metre intervals to 5 metres then at 1.5 metre intervals to the full depths of the borehole. The general purpose open-tube sampler is suitable for firm to stiff clays, but is often used to retrieve disturbed samples of weak rocks, soft or hard clay and also clayey sand or silts. This has been adopted for routine use, and usually consists of a 100mm internal diameter tube (U100), which is capable of taking soil samples up to 450mm in length. The undisturbed samples are sealed at each end using micro-crystalline wax to prevent drying.

Standard penetration tests are generally carried out in non-cohesive soils but also in stiff clays and soft rocks at frequencies similar to that of undisturbed sampling.

A2.1.2 Trial Pits

Shallow trial pits are usually dug using a hydraulic back-hoe excavator. This method of excavation is used in ground that can temporarily stand unsupported. For practical reasons the depth of excavation is limited to 4 – 5m. Where personnel are required to enter pits the sides must be made safe by sheet metal frames. Alternatively it may be possible to excavate the sides to a safe profile by means of a series of benches.

Entry by personnel into pits deeper that 1.20m with unsupported sides is not permitted for health and safety reasons.

Trial pits provide access for the taking samples, carrying out insitu tests (e.g. CBR, hand vane tests, soakaway tests) and allow for a more detailed examination of discontinuities within shallow ground conditions. The engineering field record can include diagrams of lateral variations and photographic evidence of the pit and spoil can be taken.

Pits can also be extended into trial trenches in order to trace particular underground features.

A2.1.3 Drive-in Window Sampler

The drive-in window sampler consists of a series of cylindrical sample tubes, generally varying in diameter from 80mm to 35mm. A cutting shoe is fitted to the bottom of each tube, while a window, representing about a quarter of the circumference, is cut along the length of the tube.

The largest diameter tube is driven into the ground using a small vibrating breaker. The sample tube is extracted by means of a ratchet or hydraulic extraction system.

The borehole is extended by using progressively smaller diameter tubes.

Soil samples are extracted through the window of the tube.

A2.2 IN-SITU TESTS

A2.2.1 Standard Penetration Test

The Standard Penetration Test is carried out in accordance with the proposals recommended by BS 1377, Part 9. 1990, ref 5.3.

The standard penetration test, **SPT**, covers the determination of the resistance of soils to the penetration of a split barrel sampler. A 50mm diameter split barrel sampler is driven 450mm into the soil using a 65kg hammer with a 760mm drop. The penetration resistance is expressed as the number of blows required to obtain 300mm penetration below an initial seating drive of 150mm through any disturbed ground at the bottom of the borehole. The number of blows to achieve the standard penetration of 300mm is reported as the 'N' value.

The test is generally carried out in fine soils, however, it may also be carried out in coarse granular soils, weak rocks and glacial tills using the same procedure as for the SPT but with a 50mm diameter, 60° apex solid cone replacing the split spoon sampler, **CPT.**

When attempting the standard penetration test in very dense material or weathered rocks it may be necessary to terminate the test before completion to prevent damage to the equipment. In these circumstances it is important to distinguish how the blow count relates to the penetration of the sampler. This may be achieved in the following manner:

- Where the seating drive has been completed, the test drive is terminated if 50 blows are reached before the full penetration of 300mm is achieved. The penetration for 50 blows is recorded and an approximate N value obtained by linear extrapolation of the number of blows for the partial test drive.

- If the seating drive of 150mm is not achieved within the first 25 blows, the penetration after 25 blows is recorded and the test drive then commenced.

- For tests in soft rocks, the test drive should be terminated after 100 blows where the penetration of 300mm has not been achieved.

The N-value obtained from the Standard Penetration Test may be used to assess the relative density of sands and gravels as follows:

Term	SPT N-Value : Blows/300mm Penetration
Very Loose	0 - 4
Loose	4 - 10
Medium Dense	10 - 30
Dense	30 - 50
Very Dense	Over 50

A2.3 SAMPLES

U(x) represents undisturbed 100mm diameter sample with (x) being the number of blows required to obtain sample.

U fail indicates undisturbed sample not recovered

HV represents Hand Vane test with equivalent undrained shear strength

PP represents Pocket Penetrometer test with equivalent undrained shear strength

CBR represents California Bearing Ratio test

B represents large bulk disturbed samples

D represents small disturbed sample

W represents water sample

$\underline{\nabla}$ respresents water strike

$\underline{\blacktriangledown}$ represents level to which water rose

A2.4 *DESCRIPTION OF SOILS*

A2.4.1 General

The procedures and principles given in *Section 6 of BS 5930, ref. 5.2 have been used in* the soil descriptions contained within this report.

A2.4.2 Predominantly Coarse Soils

A coarse soil (omitting any boulders or cobbles) contains about 65% or more coarse material and is described as a SAND or GRAVEL depending on which of the constituents predominates. The secondary constituents of *coarse soils should precede the main soil* type e.g. 'Medium dense brown very gravelly coarse SAND. Gravel is subangular fine and medium of sandstone and mudstone'.

A2.4.3 Deposits containing silt-sized and clay-sized particles

Most soils are mixtures of clay and silt sized particles. Fine soil should be described as either a clay or a silt, depending on the plastic properties. *If ambiguous, the term* CLAY/SILT should be used.

A2.4.4 Deposits containing mixtures of fine and coarse soil.

The appropriate quantified terms should be used before the principal soil type. It is recommended that the dominant secondary fraction come immediately before the principal soil term. 'Additional detail can be added *in a separate sentence thus*, 'Gravelly very clayey SAND. Gravel (10%) is fine of rounded quartz. Clay is firm'.

The terms 'silty' and 'clayey' are mutually exclusive as in a coarse soil and based on the plastic properties of the fine fraction.

Table 1 Deposits containing boulder-size and cobble-size particles

Term	Composition
BOULDERS (or COBBLES) with a little finer material	Up to 5% finer material
BOULDERS (or COBBLES) with some finer material	5 to 20% finer material
BOULDERS (or COBBLES) with much finer material	20 to 50% finer material
FINER MATERIAL with many boulders (or cobbles)	50 to 20% boulders (or cobbles)
FINER MATERIAL with some boulders (or Cobbles)	20 to 5% boulders (or cobbles)
FINER MATERIAL with occasional boulders (or cobbles)	up to 5% boulders (or cobbles)

Term	Principal Soil Type	Approximate proportion of secondary constituent
Slightly sandy or gravelly	SAND or	Up to 5%

Sandy or gravelly	GRAVEL	5 to 20%
Very sandy or gravelly		over 20%
	SAND and GRAVEL	about equal proportions

Table 2 Mixtures of coarse and fine fractions.

Term Before	Principal Term	Proportion of secondary Coarse soil	constituent Coarse and/or fine soil
Slightly clayey or silty and/or sandy gravelly	SAND and/or GRAVEL		< 5
Clayey or silty and/or sandy or gravelly			5 – 20 %
Very clayey or silty and/or sandy or gravelly			20 %
Very sandy or gravelly	SILT or CLAY	< 65%	
Sandy and/or gravelly		35 – 65 %	
Slightly sandy an/or gravelly		<35 %	

For clays the strength scale is used as follows:

Term	Field Identification	Undrained shear strength (KN/m^2)
Very Soft	Exudes between fingers when squeezed in hand	< 20
Soft	Moulded by light finger pressure	20 - 40
Firm	Can be moulded by strong finger pressure	40 - 75
Stiff	Cannot be moulded by finger. Can be indented by thumb.	75 - 150
Very Stiff	Can be indented by thumbnail.	150 - 300
Hard (or very weak mudstone)		> 300

A2.4.5 Man Made Soils

Man made soils (Made Ground or Fill) have been placed by man and can be divided into those composed of natural reworked soils and those composed of man-made materials. Fills are placed in the ground in a controlled manner and soils defined as Made Ground are placed without any engineering control. For example:

'MADE GROUND comprising plastic bags, window frames, garden refuse and newspapers'.

' MADE GROUND dense brown sandy GRAVEL with occasional tiles, wire and glass'.

'Firm yellow brown slightly sandy CLAY with clods (up to 200mm) of firm to stiff orange CLAY (EMBANKMENT FILL)'.

A2.4.6 Organic Soils

Small quantities of dispersed organic matter can have a marked effect on plasticity and hence the engineering properties of the soil. The following quantifying terms are appropriate:

Term	Organic Content	Typical Colour
Slightly organic clay or silt	2 - 5	Grey
Slightly organic sand	1 – 3	As mineral
Organic clay or silt	5 – 10	Dark grey
Organic sand	3 – 5	Dark grey
Very organic clay or silt	>10	Black
Very organic sand	>5	Black

A2.5 GEOLOGICAL LOGGING

A2.5.1 General

The procedures and principles given in Section 6 of BS 5930. ref. 5.2 have been used in the rock descriptions contained within this report.

Open hole drilling (OH) was achieved with a tricone rock bit.

A core run is the length of rock drilled from the base of the hole each time the core barrel is run into the hole.

A2.5.2 Fracture State

Various criteria may be used for quantitative description of the Fracture State of rock cores. The standard terms are as follows.

TCR (%) ratio of core recovered (solid and non intact) to length of core run.

SCR (%) ratio of solid core recovered to length of core run.

RQD (%) ratio of solid core pieces longer than 100mm to length of core run.

Fracture Index	a count of the number or spacing of fractures over an arbitrary length of core of similar intensity of fracturing. Commonly reported as either Fracture Index (*FI*, number of fractures per metre) or as Fracture Spacing (l_f mm).
NR	indicates no core recovery.
NI	indicates intensely fractured rock which is not of sufficient quality to allow an assessment of fracture spacing to be made.

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Site	Borehole Number
Bolton upon Dearne	BH3

Boring Method	Casing Diameter	Ground Level (mOD)	Client	Job Number
ble Percussion		24.05	Horizon Residential Developments Ltd.	3914
	Location	**Dates**	**Engineer**	**Sheet**
	116.07 E 499.75 N	06/03/2006	Halcrow	1/1

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.00-1.20	B4					(0.30)	MADE GROUND Tarmac (drillers description).		
					23.75	0.30	MADE GROUND Grey clayey GRAVEL. Gravel is angular fine to coarse of sandstone.		
0.50	D1					(0.50)			
					23.25	0.80			
					23.15	0.90	Stiff orange brown occasional mottled grey sandy SILT/CLAY.		
1.00	D2					(0.50)			
1.00	A3								
1.20-1.65	SPT 25*/135 50/315			9,16/29,21			Yellow brown mottled grey brown SANDSTONE: Recovered as clayey very weak and weak fine to coarse gravel.(Possible Bedrock).		
1.20-1.45	D5			06/03/2006	22.65	1.40			
							Complete at 1.40m		

Remarks
Inspection pit dug to 1.20m BGL.
...ed standpipe installed to 1.40m BGL.
Chiselling from 0.90m to 1.20m for 1.00 hour.

Scale (approx)	Logged By
1:50	SM

Figure No. 3914.BH3

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Site	Borehole Number
Bolton upon Dearne	BH4

Boring Method	Casing Diameter	Ground Level (mOD)	Client	Job Number
...le Percussion		24.14	Horizon Residential Developments Ltd.	3914
	Location	**Dates**	**Engineer**	**Sheet**
	219.89 E 501.73 N	08/03/2006	Halcrow	1/1

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.00-1.20	B7					(0.30)	MADE GROUND: TARMAC (drillers description).		
					23.84	0.30			
						(0.20)	MADE GROUND Hardcore. (drillers description).		
0.50	D1				23.64	0.50			
						(0.30)	MADE GROUND Soft orange brown and grey slightyl gravelly CLAY / SILT. Gravel is angular fine to coarse sandstone.		
					23.34	0.80			
1.00	D2						Soft brown sandy CLAY.		
1.00	A3								
1.00	A4					(1.00)			
1.20-1.65	SPT N=26			4,6/6,7,6,7					
1.00	A5								
1.00	A6								
1.20-1.70	B8				22.34	1.80			
1.70	D9						Soft yellow orange brown sandy CLAY with occasional angular fine gravel of sandstone		
						(0.50)			
2.30-2.50	D10			08/03/2006	21.84	2.30			
						(0.20)	Yellow and orange brown SANDSTONE: Recovered as very weak gravel with firm sandy friable clay (Possible Bedrock).		
...0-2.40	SPT 25*/80 50/15			19,6/50	21.64	2.50			
							Complete at 2.50m		

Remarks
...spection pit dug to 1.20m BGL.
...ted standpipe installed to 2.30m BGL.
...Silselling from 1.80m to 2.30m for 1.00 hour.

Scale (approx)	Logged By
1:50	SM

Figure No. 3914.BH4

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Site	Borehole Number
Bolton upon Dearne	BH5

Boring Method	Casing Diameter	Ground Level (mOD)	Client	Job Number
Cable Percussion		25 25	Horizon Residential Developments Ltd	3914
	Location	**Dates**	**Engineer**	**Sheet**
	207 15 E 304 54 N	06/03/2006	Halcrow	1/1

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0 00-1 20	B4				25 15	(0 10) 0 10	MADE GROUND Dark grey clayey sandy GRAVEL Gravel is angular fine to coarse sandstone		
0 50	D1					(0 70)	Soft light yellow-brown sandy gravelly CLAY Gravel is angular fine to coarse sandstone (Possibly made ground)		
1 00	A3				24 45	0 80	Light brown sandy gravelly SILT with occasional gravel size pockets of soft light brown sandy clay Gravel is subangular to angular fine to medium sandstone and siltstone Slight organic odour noted (Possibly Made Ground)		
1 00	D2								
1 20-1 65	SPT N=12			2 3/3 2 3 4		(1 00)			
1 20-1 65	S5								
1 20-1 70	B6								
1 70	D7				23 45	1 80	Firm brown/mottled grey brown slightly gravelly sandy friable CLAY with occasional subangular to angular medium gravel of sandstone (Possibly made ground)		
2 00	A8					(0 70)			
2 00-2 45	U9								
2 50	D10				22 75	2 50	Stiff yellow/orange brown sandy slightly gravelly friable CLAY/SILT Gravel is angular fine sandstone		
3 00-3 45	SPT N=17			3 3/4 4 4 5		(1 00)			
3 00	A11								
3 00-3 45	S12								
3 00-3 50	B13								
3 50	D14				21 75	3 50	Yellow brown SANDSTONE Recovered as weak gravel size fragments with sand		
4 00-4 50	D15					(0 50)			
					21 25	4 00	Very weak yellow brown and light grey brown SANDSTONE		
4 50 4 70	S16			06/03/2006		(0 70)			
4 50 4 61	SPT 25/185 50 25			20 5.50	20 55	4 70	Complete at 4 70m		

Remarks
Inspection pit dug to 1 20m BGL
Slotted standpipe installed to 4 50m BGL
Chiselling from 3 70m to 4 00m for 0 50 hours Chiselling from 4 20m to 4 50m for 1 00 hour

Scale (approx)	Logged By
1 50	SM

Figure No. 3914 BH5

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Site	Borehole Number
Bolton upon Dearne	BH6

Boring Method	Casing Diameter	Ground Level (mOD)	Client	Job Number
ble Percussion		22.78	Horizon Residential Developments Ltd.	3914
	Location	**Dates**	**Engineer**	**Sheet**
	304 04 E 339 01 N	08/03/2006	Halcrow	1/1

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
							Rough grass over soft light yellow brown gravelly CLAY. Gravel is angular fine to coarse sandstone.		
0 50	D1					(1 10)			
1 00	D2								
1 00	A6				21.68	1 10	Light orange brown very sandy very gravelly SILT Gravel is angular fine to medium sandstone		
1 00	A5								
1 00	A4								
1 00	A3								
1 20-1.65	U7								
1 70	D8								
2 00-2 45	SPT N=27			3,4/6,7,7 7		(1.80)			
2 00-2 45	D9								
2 00-2 50	B10								
0	D11								
					19 88	2 90	Very weak light yellow brown and light brown grey fine grained SANDSTONE		
3 00-3 10	D12					(0 50)			
3.40-3 56	D13			08/03/2006	19 38	3 40			
3 40-3 56	SPT 25*/80 50/80			20,5/42.8			Complete at 4 00m		

Remarks
Inspection pit dug to 1 20m BGL
ted standpipe installed to 3.40m BGL
selling from 3 10m to 3 40m for 1 00 hour

Scale (approx)	Logged By
1 50	SM

Figure No. 3914 BH6

IAN FARMER ASSOCIATES

Site	Borehole Number
Bolton upon Dearne	BH7

Boring Method	Casing Diameter	Ground Level (mOD)	Client	Job Number
ble Percussion		19 61	Horizon Residential Developments Ltd.	3914
	Location	**Dates**	**Engineer**	**Sheet**
	298 99 E 259.63 N	07/03/2006	Halcrow	1/1

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.00-1 20	B3						Rough grass over brown gravelly CLAY/SILT		
					19 51	0 10	Soft light brown sandy CLAY		
0.50	D1					(0 90)			
1 00	A7				18 61	1 00	Soft light brown mottled orange brown and light grey slightly sandy CLAY.		
1 00	A6								
1 00	A5					(0.70)			
1 00	A4								
1 00	D2								
1 20-1 65	U8				17.91	1 70	Soft indistinctly laminated grey brown and black CLAY with occasional laminate of yellow brown silt		∇_1
1 70	D9								
2 00-2 45	SPT N=21			4 6/5,5,6 5					
2 00-2 45	D10					(0 80)			
2 00-2 50	B11								
[illegible]0	D12				17 11	2 50	Firm indistinctly laminated blue grey mottled dark green brown CLAY		
2 60	D13				17 01	2 60			
2 60-3.00	B14						Very weak dark grey laminated MUDSTONE		
3 00-3 45	SPT N=23			3,4/6,6,5,6					
3 00-3 50	B15					(0 90)			
3 50	D16				16.11	3.50	Possibly inter-laminated soft blue grey CLAY and very weak dark grey MUDSTONE		
						(0 50)			∇_1
4 00-4 45	D17			Water strike(1) at 4 00m, rose to 1 90m in 20 mins	15 61	4 00	Weak grey silty MUDSTONE with laminae beds of weak bright black COAL		∇_2
4 00-4 35	SPT 44/200			6,5/5,13,26		(1 10)			
				Water strike(2) at 5 10m rose to 4 20m in 20 mins 07/03/2006	14 51	5 10	Complete at 5 10m		∇_2

Remarks
[illegible]pection pit dug to 1 20m BGL
[illegible]ted standpipe installed to 5 10m BGL.
Chiselling from 4 00m to 5 10m for 1 00 hour

Scale (approx)	Logged By
1 50	SM

Figure No. 3914 BH7

IAN FARMER ASSOCIATES

Site	Trial Pit Number
Bolton upon Dearne	TP1

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Pit	3.50 x 1.00 x 0.60m	24.04	Horizon Residential Developments Ltd.	3914
	Location	**Dates**	**Engineer**	**Sheet**
	137.23 E 498 76 N	09/03/2006	Halcrow	1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
				23.99	0.05 (0.25)	MADE GROUND: Tarmac.		
				23.74	0.30	MADE GROUND: Brown angular GRAVEL.		
0.35	A1			23.59	0.45 (0.15)	Orange brown slightly clayey gravelly fine SAND. Gravel is subangular fine to coarse of sandstone.		
0.50	B2		09/03/2006	23.44	0.60 (0.15)	Very weak yellow brown fine SANDSTONE, weathered to yellow brown fine sand and firm/stiff orange brown mottled grey sandy clay.		
						Complete at 0.60m		

Plan

Remarks

Trial pit stable and dry.

Scale (approx)	Logged By	Figure No.
1:50	FK	3914.TP1

IAN FARMER ASSOCIATES

Site	Trial Pit Number
Bolton upon Dearne	TP3

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
l Pit	3.50 x 1.00 x 2.50m	24 18	Horizon Residential Developments Ltd	3914
	Location	**Dates**	**Engineer**	**Sheet**
	201 54 E 473.27 N	09/03/2006	Halcrow	1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.30)	MADE GROUND. Tarmac.		
				23 88	0 30			
					(0.30)	MADE GROUND: Orange brown silty gravelly fine SAND.		
0 50	B1		0.50m PID = 0 61ppm					
0 50	A2			23 58	0.60	Orange brown slightly silty gravelly fine SAND Gravel is tabular subangular fine to coarse of sandstone		
1 00	B3							
					(1.60)			
2 00	B4							
				21.98	2 20			
					(0 30)	Very weak yellow brown SANDSTONE		
			09/03/2006	21 68	2 50			
						Complete at 2 50m		

Plan

Remarks

Trial pit stable and dry

Scale (approx)	Logged By	Figure No.
1 50	FK	3914 TP3

IAN FARMER ASSOCIATES

Site	Trial Pit Number
Bolton upon Dearne	TP4

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Pit	3.00 x 1.00 x 1.80m	24.17	Horizon Residential Developments Ltd.	3914
	Location	**Dates**	**Engineer**	**Sheet**
	211.46 E 433.17 N	09/03/2006	Halcrow	1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.25)	MADE GROUND: Tarmac		
				23.92	0.25			
					(0.25)	MADE GROUND: Orange-brown slightly silty gravelly fine SAND with some cobbles. Gravel is angular fine to coarse, sandstone.		
0.50	B1		0.50m PID = 0.92 ppm	23.67	0.50			
0.50	A2				(0.70)	Brown/grey sandy CLAY/SILT. (Possible Made Ground).		
1.00	B3							
1.00	A4			22.97	1.20			
					(0.60)	*Orange-brown silty gravelly fine SAND. Gravel is tabular, angular to subangular fine to coarse of weak laminated sandstone. Frequent cobbles. (Possible Bedrock).*		
1.50	B5							
			09/03/2006	22.37	1.80			
						Complete at 1.80m		

Plan

Remarks

Trial pit stable and dry
Terminated on possible bedrock

Scale (approx)	Logged By	Figure No.
1:50	FK	3914.TP4

IAN FARMER ASSOCIATES

Site	Trial Pit Number
Bolton upon Dearne	TP5

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
al Pit	3 00 x 1 00 x 2 10m	24 13	Horizon Residential Developments Ltd	3914
	Location	**Dates**	***Engineer***	**Sheet**
	225 63 E 421 55 N	09/03/2006	Halcrow	1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0 30)	MADE GROUND. Brown silty fine SAND Surface and near surface debris from burnt building in vicinity		
				23 83	0.30			
0 40	A1				(0.40)	MADE GROUND: Brown silty fine SAND Old clay drainpipe at 0.50.		
0 50	B2		0 50m PID = 0 81ppm	23 43	0.70			
1 00	B3					Orange-brown silty gravelly SAND with occasional cobbles. Gravel is tabular angular to subangular fine to coarse sandstone.		
					(1.40)			
1 80	B4							
			09/03/2006	*22.03*	*2 10*			
						Complete at 2 10m		

Plan

Remarks

Trial pit stable and dry
Terminated on competent rock

Scale (approx)	Logged By	Figure No.
1 50	FK	3914 TP5

IAN FARMER ASSOCIATES

Site	Trial Pit Number
Bolton upon Dearne	TP6

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Trial Pit	4 00 x 1 00 x 3 70m	25 39	Horizon Residential Developments Ltd	3914
	Location	**Dates**	**Engineer**	**Sheet**
	252 44 E 410 25 N	09/03/2006	Halcrow	1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0 30	A1			24 99	(0.40) 0.40	MADE GROUND: Dark brown/ black sandy SILT		
1 00	B2					MADE GROUND. Orange-brown silty gravelly SAND with some cobbles. Gravel is tabular angular to subangular fine to coarse, of sandstone. Large block of concrete at 0 60		
1 00	A3				(1 50)			
2.00	B4			23 49	1 90	Dark brown/black silty fine to coarse SAND (Relic Topsoil)		
2.00	A5				(0 40)			
				23 09	2 30	Orange-brown silty gravelly SAND with some cobbles *Gravel* is tabular angular to subangular, fine to coarse, of sandstone		
3 00	B6				(1 20)			
				21 89	3 50	Orange brown very gravelly SAND with some cobbles Gravel is angular fine to coarse sandstone (Possible Bedrock)		
3 70	B7		09/03/2006	21 69	3 70	Complete at 3 70m		

Plan

Remarks

Trial pit stable and dry
Terminated on possible bedrock at 3 70mBGL

Scale (approx)	Logged By	Figure No.
1:50	FK	3914.TP6

IAN FARMER ASSOCIATES

Site	Trial Pit Number
Bolton upon Dearne	TP7

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Trial Pit	3 00 x 1 00 x 1 80m	22 54	Horizon Residential Developments Ltd	3914
	Location	**Dates**	**Engineer**	**Sheet**
	308 89 E 416 28 N	09/03/2006	Halcrow	1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0 30)	MADE GROUND Dark brown silty SAND		
0.20	A1			22 24	0 30	Orange-brown silty gravelly SAND Gravel is tabular angular to subangular, fine to coarse, of sandstone, with frequent cobbles.		
0.50	B2		0 50m PID = 0 78ppm		(0 50)			
				21 74	0 80	Orange brown SANDSTONE: Recovered as very gravelly cobbly sand.		
1 00	B3							
					(1 00)			
1 50	B4							
			09/03/2006	20 74	1.80	Complete at 1.80m		

Plan

Remarks

Trial pit stable and dry
Terminated on possible bedrock

Scale (approx)	Logged By	Figure No.
1:50	FK	3914.TP7

IAN FARMER ASSOCIATES

Site	Trial Pit Number
Bolton upon Dearne	TP8

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Trial Pit	4 00 x 1 00 x 3 70m	25 39	Horizon Residential Developments Ltd	3914
	Location	**Dates**	**Engineer**	**Sheet**
	269 35 E 406 27 N	09/03/2006	Halcrow	1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0 50)	MADE GROUND Rough grass and saplings over dark brown and black silty fine SAND		
0 40	A1		0 50m PID = 0.64ppm	24 89	0 50	MADE GROUND. Orange-brown silty gravelly SAND Gravel is angular to rounded, fine to coarse, of sandstone and brick Occasional large blocks of concrete with occasional plastic debris		
1 00	B2							
1.00	A3				(1 80)			
2 00	B4							
2 00	A5							
				23 09	2.30 (0 30)	Dark brown/black sandy SILT (Relic Topsoil)		
				22 79	2 60	Orange brown silty fine SAND		
3.00	B6		09/03/2006	22 39	(0 40) 3.00	Complete at 3 00m		

Plan

Remarks

Scale (approx)	Logged By	Figure No.
1:50	FK	3914 TP8

IAN FARMER ASSOCIATES

Site	Trial Pit Number
Bolton upon Dearne	TP9

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Trial Pit	4 00 x 1 00 x 4 10m	23 88	Horizon Residential Developments Ltd	3914
	Location	**Dates**	**Engineer**	**Sheet**
	300 94 E 395 52 N	10/03/2006	Halcrow	1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0 30	A1		0.50m PID = 0.51ppm		(0 60)	MADE GROUND Dark brown and black silty SAND.		
				23.28	0 60	MADE GROUND Orange-brown silty gravelly SAND Gravel is angular to rounded, fine to coarse, of concrete, brick, metal, plastic and sandstone. Frequent rootlets		
1 00	B2							
1 00	A3				(0 90)			
				22 38	1 50	MADE GROUND Brown grey silty gravelly SAND Gravel is angular to rounded, fine to coarse, of concrete, brick, metal, plastic debris and sandstone. Cobbles and boulders		
2 00	B4							
2 00	A5				(1 00)			
				21 38	2 50	MADE GROUND Orange brown silty gravelly SAND. Gravel is angular fine to coarse sandstone		
3 00	B6				(1 20)			
				20 18	3 70	Orange-brown SANDSTONE. Recovered as weak angular fine to coarse gravel and cobbles		
4 00	B7				(0 40)			
			10/03/2006	19 78	4 10	Complete at 4 10m		

Plan

Remarks

Trial pit stable and dry.
Terminated on hard layer of rock. 4.00 x 1 00 x 4 10

Scale (approx)	Logged By	Figure No.
1:50	FK	3914.TP9

IAN FARMER ASSOCIATES

Excavation Method	Dimensions	Ground Level (mOD)	Client	Trial Pit Number
Hand Dug	0.50 x 0.50 x 1.20m	24.06	Horizon Residential Developments Ltd	TPA
Location	**Dates**	**Engineer**	**Site**	**Job Number**
226 59 E 503 15 N	14/03/2006	Halcrow	Bolton upon Dearne	3914
				Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
				24.01	(0.05) 0.05	MADE GROUND Tarmac		
				23.66	(0.35) 0.40	MADE GROUND Off white sandy GRAVEL Gravel is angular fine to coarse limestone		
				23.61	(0.05) 0.45	Firm dark grey sandy CLAY/SILT		
					(0.75)	Orange brown very clayey slightly gravelly SAND Gravel is angular fine to medium of sandstone		
			14/03/2006	22.86	1.20	Complete at 1.20m		

Plan

Remarks

Scale (approx)	Logged By	Figure No.
1:50	SM	3914 TPA

IAN FARMER ASSOCIATES

Site	Trial Pit Number
Bolton upon Dearne	TPB

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
d Dug.	0.40 x 2.50 x 0.25m	24.15	Horizon Residential Developments Ltd.	3914
	Location	**Dates**	**Engineer**	**Sheet**
	231.27 E 414.71 N	14/03/2006	Halcrow	1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
				24.10	0.05	*Dark grey SAND and GRAVEL.*		
				23.95	0.20	Red brown sandy GRAVEL. Gravel is angular fine to coarse sandstone.		
				23.90	(0.15)			
					0.25	Firm yellow brown and grey sandy slightly gravelly friable *CLAY. Gravel is angular fine to medium of sandstone.*		
					(0.05)			
						Complete at 0.25m		

Plan

Remarks

Chased trench to discover differential in gravel (ie backfill) none found.

Scale (approx)	Logged By	Figure No.
1:50	SM	3914.TPB

IAN FARMER ASSOCIATES

Site	Trial Pit Number
Bolton upon Dearne	TPC

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
nd Dug.		23.55	Horizon Residential Developments Ltd.	3914
	Location	**Dates**	**Engineer**	**Sheet**
	210.49 E 387.76 N	14/03/2006	Halcrow	1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
				23.35	0.20 (0.30)	MADE GROUND: Reinforced concrete.		
						Yellow brown sandy GRAVEL. Gravel is angular fine to coarse limestone. (Possible Made Ground).		
				23.05	0.50	Complete at 0.50m		

Plan

Remarks

Scale (approx)	Logged By	Figure No.
1:50	SM	3914.TPC

IAN FARMER ASSOCIATES

Site	Trial Pit Number
Bolton upon Dearne	TPD

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
nd Dug.	0.60 x 0.60 x 1.20m	25.53	Horizon Residential Developments Ltd.	3914
	Location	**Dates**	**Engineer**	**Sheet**
	212.91 E 275.53 N	14/03/2006	Halcrow	1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(1.20)	MADE GROUND: Dark brown grey brown sandy gravelly SILT. Gravel is angular fine to coarse mudstone, siltstone, sandstone and occasional concrete.		
				24.33	1.20	Complete at 1.20m		

Plan

Remarks

Scale (approx)	Logged By	Figure No.
1:50	SM	3914.TPD

IAN FARMER ASSOCIATES

Site	Trial Pit Number
Bolton upon Dearne	TPE

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
nd Dug.	0.60 x 0.60 x 1.00m	21.14	Horizon Residential Developments Ltd.	3914
	Location	**Dates**	**Engineer**	**Sheet**
	234.3 E 259.91 N	14/03/2006	Halcrow	1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.40)	Rough grass over dark brown sandy gravelly SILT. Gravel is angular fine to medium sandstone.		
				20.74	0.40			
					(0.60)	Firm orange brown mottled grey CLAY.		
				20.14	1.00			
						Complete at 1.00m		

Plan

Remarks

Scale (approx)	Logged By	Figure No.
1:50	SM	3914.TPE

IAN FARMER ASSOCIATES

Site	Trial Pit Number
Bolton upon Dearne	TPF

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
nd Dug.		19.67	Horizon Residential Developments Ltd.	3914
	Location	**Dates**	**Engineer**	**Sheet**
	235.83 E 233.17 N	14/03/2006	Halcrow	1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
				19.47	0.20	MADE GROUND: Rough grass over dark grey brown *sandy gravelly SILT. Gravel is angular fine to medium* sandstone, brick, glass and timber.		
					(1.00)	MADE GROUND: Firm brown sandy slightly gravelly friable *CLAY. Gravel is angular of sandstone and occasional* concrete.		
				18.47	1.20			
						Complete at 1.20m		

Plan

Remarks

Scale (approx)	Logged By	Figure No.
1:50	SM	3914.TPF

IAN FARMER ASSOCIATES

Site	Trial Pit Number
Bolton upon Dearne	TP10

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
al Pit	3 50 x 1 00 x 2 70m	23 19	Horizon Residential Developments Ltd.	3914
	Location	**Dates**	**Engineer**	**Sheet**
	267 14 E 391 69 N	09/03/2006	Halcrow	1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
				23 09	0 10	MADE GROUND Dark brown silty gravelly SAND Gravel is angular to rounded, fine to coarse, of brick mudstone and sandstone		
				22 89	0 30 (0 20)			
0 50	B2		0 50m PID = 0 64ppm	22 69	0 50 (0 20)	MADE GROUND Orange sandy GRAVEL Gravel is angular to subrounded, medium to coarse, brick and concrete		
0 50	A1							
1 00	B4					MADE GROUND Brown silty SAND		
1 00	A3				(1 60)	Orange-brown silty gravelly SAND Gravel is tabular angular to subangular, fine to coarse, of sandstone		
2 00	B5			21 09	2 10	Very weak laminated yellow-brown SANDSTONE		
					(0 60)			
			09/03/2006	20 49	2 70			
						Complete at 2 70m		

Plan

Remarks

Trial pit stable and dry
Terminated on competent rock

Scale (approx)	Logged By	Figure No.
1 50	FK	3914 TP10

IAN FARMER ASSOCIATES

Site	Trial Pit Number
Bolton upon Dearne	TP11

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
al Pit	3 50 x 1 00 x 3 50m	24 96	Horizon Residential Developments Ltd	3914
	Location	**Dates**	**Engineer**	**Sheet**
	216 94 E 340 98 N	09/03/2006	Halcrow	1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
						MADE GROUND: Orange-brown silty gravelly SAND with some cobbles. Gravel is angular, fine to coarse, of sandstone, plastic and metal		
0 50	B2		0 50m PID = 0 53ppm		(1 00)			
0 50	A1							
1 00	B4			23 96	1 00	Dark brown and black fine silty SAND (relic of topsoil)		
1 00	A3				(0 30)			
				23 66	1 30	Orange brown mottled grey silty gravelly SAND. Gravel is angular to subangular fine to coarse of sandstone		
2 00	B5							
					(2 10)			
3 00	B6							
				21 56	3 40	Orange-brown/mottled grey silty SAND		
			09/03/2006	21 46	3 50			
						Complete at 3 50m		

Plan

Remarks

Trial pit stable and dry
Terminated on hard rock

Scale (approx)	Logged By	Figure No.
1 50	FK	3914 TP11

IAN FARMER ASSOCIATES

Site	Trial Pit Number
Bolton upon Dearne	TP13

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Pit	2 50 x 1 00 x 2 60m	22 65	Horizon Residential Developments Ltd	3914
	Location	**Dates**	**Engineer**	**Sheet**
	261 29 E 333 87 N	10/03/2006	Halcrow	1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
				22 35	(0 30) 0 30	MADE GROUND: Rough grass over dark brown and black silty SAND		
0 50	A1		0 50m PID = 0 72ppm		(0 80)	Orange-brown silty slightly gravelly SAND. Gravel is tabular angular to subangular, fine to coarse sandstone		
1 00	B2			21 55	1 10	Orange-grey SANDSTONE with siltstone laminations Recovered as sand and gravel		
2 00	B3				(1 50)			
			10/03/2006	20 05	2 60	Complete at 2 60m		

Plan

Remarks

Stable, dry, terminated on hard layer

Scale (approx)	Logged By	Figure No.
1 50	FK	3914 TP13

IAN FARMER ASSOCIATES

Site	Trial Pit Number
Bolton upon Dearne	TP14

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
l Pit	4 00 x 1 00 x 3 40m	23 00	Horizon Residential Developments Ltd	3914
	Location	**Dates**	**Engineer**	**Sheet**
	262 99 E 304 96 N	10/03/2006	Halcrow	1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
						MADE GROUND: Orange brown silty gravelly cobbly fine SAND. Gravel is angular to subangular fine to coarse of brick, sandstone and tarmac. Cobbles are whole bricks		
0 50	A1		0 50m PID = 0 34ppm		(1 30)			
1 00	A2							
				21 70	1 30			
				21 55	1 45	Dark brown/black silty fine SAND (Relic Topsoil)		
1 50	B3					Orange brown silty gravelly fine SAND. Gravel is tabular angular to subangular fine to coarse of sandstone. Cobbles noted		
					(1 05)			
	B4			20 50	2 50	Orange brown SANDSTONE, inter-bedded with siltstone		
					(0 90)			
			10/03/2006	19 60	3 40			
						Complete at 3 40m		

Plan

Remarks

Trial pit stable and dry
Terminated on hard layer

Scale (approx)	Logged By	Figure No.
1 50	FK	3914 TP14

IAN FARMER ASSOCIATES

Site	Trial Pit Number
Bolton upon Dearne	TP15

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
l Pit	3 50 x 1 00 x 3.90m	21 41	Horizon Residential Developments Ltd	3914
	Location	**Dates**	**Engineer**	**Sheet**
	296 9 E 308 53 N	10/03/2006	Halcrow	1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
						MADE GROUND: Rough grass over orange brown silty gravelly fine SAND. Gravel is angular to subangular fine to coarse of fine sandstone Cobbles noted		
			0 50m PID = 0 34ppm		(1 10)			
0 70	A1							
				20 31	1 10	Dark brown/black silty fine SAND (Relic Topsoil)		
				20 11	1 30	Orange brown silty gravelly fine SAND Gravel is angular to subangular fine to coarse of fine sandstone Cobbles noted		
2 00	B2				(1 30)			
				18 81	2 60	Orange brown SANDSTONE Recovered as tabular cobbles,		
					(1 30)			
			10/03/2006	17 5'	3 90			
						Complete at 3 90m		

Plan

Remarks

Trial pit stable and dry

Scale (approx)	Logged By	Figure No.
1 50	FK	3914 TP15

IAN FARMER ASSOCIATES

Site	Trial Pit Number
Bolton upon Dearne	TP17

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Pit	4 00 x 1 00 x 3 50m	25 21	Horizon Residential Developments Ltd	3914
	Location	**Dates**	**Engineer**	**Sheet**
	180 25 E 329 82 N	10/03/2006	Halcrow	1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
				25 11	0 10	MADE GROUND. Red grey very sandy angular to subangular, fine to coarse GRAVEL of brick, concrete sandstone		
				24 91	0 30 (0 20)	MADE GROUND. Pale orange grey very sandy angular to subangular fine to coarse GRAVEL of concrete and limestone.		
					(0 80)			
1 00	A1		1 00m PID = 0 38ppm	24 11	1 10	MADE GROUND Firm friable orange brown sandy gravelly CLAY Gravel is angular to subangular fine to coarse of brick, concrete, sandstone		
1 20	B2				(0 30)			
				23 81	1 40	Stiff friable dark brown sandy slightly gravelly CLAY Gravel is subangular to subrounded of sandstone and occasional coal.		
					(0 70)			
				23 11	2 10	Orange brown clayey slightly gravelly fine SAND Gravel is tabular subangular to subrounded fine to coarse of sandstone		
						Orange brown SANDSTONE Recovered as weak and very weak tabular angular fine to coarse gravel and cobbles		
3 00	B3				(1 40)			
			10/03/2006	21 71	3 50	Complete at 3 50m		

Plan

Remarks

Trial pit stable and dry

Scale (approx)	Logged By	Figure No.
1 50	FK	3914 TP17

IAN FARMER ASSOCIATES

Site	Trial Pit Number
Bolton upon Dearne	TP18

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
l Pit	5.00 x 1.00 x 5.50m	25.38	Horizon Residential Developments Ltd.	3914
	Location	**Dates**	**Engineer**	**Sheet**
	169.6 E 256.48 N	13/03/2006	Halcrow	1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(1.00)	MADE GROUND: Rough grass over firm friable orange brown, grey and black sandy gravelly CLAY. Gravel is angular to rounded fine to coarse of brick, sandstone and mudstone.		
1.00	A1		1.00m PID 0.54ppm	24.38	1.00	MADE GROUND: Dark brown and black sandy TOPSOIL.		
				24.18	1.20	MADE GROUND: Orange brown grey clayey slightly gravelly SAND. Gravel is tabular angular to subangular fine to coarse of fine sandstone.		
2.00	B2							
3.00	B3				(4 10)			
4.00	B4							
5.30	A5			20.08	5.30			
			13/03/2006	19.88	(0 20) 5.50	MADE GROUND: Soft and firm friable grey black sandy gravelly CLAY. Gravel is angular to subangular fine to coarse of concrete, brick, bitumen.		
						Complete at 5.50m		

Plan

Remarks

Trial pit stable and dry.

Scale (approx)	Logged By	Figure No.
1:50	FK	3914.TP18

IAN FARMER ASSOCIATES

Site	Trial Pit Number
Bolton upon Dearne	TP19

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Pit	4.00 x 1.00 x 5.50m	26.51	Horizon Residential Developments Ltd.	3914
	Location	**Dates**	**Engineer**	**Sheet**
	167.96 E 269.92 N	13/03/2006	Halcrow	1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(1.20)	MADE GROUND: Rough grass over brown grey fine to coarse SAND and angular to subrounded fine to coarse GRAVEL of tarmac and concrete. Frequent cobbles and boulders of concrete.		
1.00	A1		1.00m PID = 0.49ppm	25.31	1.20	MADE GROUND: Orange brown clayey gravelly fine SAND. Gravel is angular to subangular fine to coarse of sandstone and occasional cobbles. (Possible natural at base of pit)		
2.00	B2							
2.00	A3							
3.00	B4							
3.00	A5				(4.30)			
4.00	B6							
			13/03/2006	21.01	5.50	*Complete at 5.50m*		

Plan

Remarks

Trial pit stable and dry.

Scale (approx)	Logged By	Figure No.
1:50	FK	3914.TP19

IAN FARMER ASSOCIATES

Site	Trial Pit Number
Bolton upon Dearne	TP20

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
al Pit	4 00 x 1 00 x 5 30m		Horizon Residential Developments Ltd	3914
	Location	**Dates** 13/03/2006	**Engineer** Halcrow	**Sheet** 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(1 00)	*MADE GROUND: Rough grass over firm friable brown grey* sandy gravelly CLAY Gravel is angular to subrounded fine to coarse of sandstone with occasional tarmac and concrete Occasional cobbles of tarmac		
1 00	A1		1 00m PID = 0 43ppm		1 00	MADE GROUND Dark brown black slightly clayey fine SAND.		
					1.20 (0 50)			
1 50	B2					MADE GROUND Brown clayey gravelly fine SAND Gravel is angular to subangular fine to coarse of fine sandstone		
					1 70			
2 00	B3					MADE GROUND Brown clayey gravelly fine SAND		
2 00	A4							
					(2 10)			
3 00	B5							
3 00	A6							
					3 80			
4 00	B7					Possible Relic Topsoil over orange brown clayey slightly *gravelly fine SAND Gravel is tabular angular to subangular* fine sandstone		
					(1 50)			
			13/03/2006		5 30			
						Complete at 5 30m		

Plan

Remarks

Trial pit stable and dry

Scale (approx)	Logged By	Figure No.
1:50	FK	3914 TP20

IAN FARMER ASSOCIATES

Site	Trial Pit Number
Bolton upon Dearne	TP21

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Pit	5.00 x 1.00 x 4.50m	26.90	Horizon Residential Developments Ltd.	3914
	Location	**Dates**	**Engineer**	**Sheet**
	200.31 E 278.06 N	13/03/2006	Halcrow	1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
						MADE GROUND: Rough grass over firm friable orange brown and dark brown sandy gravelly CLAY. Gravel is angular to rounded fine to coarse of sandstone and clay pipe.		
1.00	A1				(1.90)			
				25.00	1.90	MADE GROUND: Pale orange brown grey clayey gravelly SAND. Gravel is angular to subrounded fine to coarse of brick, tarmac, limestone, plastic. Frequent cobbles.		
2.00	A2				(0.70)			
				24.30	2.60	MADE GROUND: Firm and stiff orange brown sandy *gravelly CLAY. Gravel is angular to subrounded fine to* coarse of concrete, sandstone, plastic and burnt shale.		
3.00	A3				(1.90)			
4.00	W5							
4.00	A4							
			13/03/2006	22.40	4.50	Complete at 4.50m		

Plan

Remarks

Trial pit stable. Water at about 4.00m.

Scale (approx)	Logged By	Figure No.
1:50	FK	3914.TP21

IAN FARMER ASSOCIATES

Site	Trial Pit Number
Bolton upon Dearne	TP22

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
al Pit	5.00 x 1.00 x 5.00m	20.80	Horizon Residential Developments Ltd.	3914
	Location	**Dates**	**Engineer**	**Sheet**
	260.36 E 279.33 N	10/03/2006	Halcrow	1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.60)	Rough grass over dark brown and black sandy SILT. Frequent rootlets.		
0.50	A1			20.20	0.60	Firm friable orange brown sandy CLAY/SILT.		
1.00	B2				(0.60)			
				19.60	1.20	Grey mottled orange CLAY/SILT.		
2.00	B3				(1.20)			
				18.40	2.40	Very weak blue grey MUDSTONE. Recovered as tabular gravel and cobbles.		
3.00	B4				(2.60)			
			10/03/2006	15.80	5.00	Complete at 5.00m		

Plan

Remarks

Trial pit slightly unstable and saturated/wet.

Scale (approx)	Logged By	Figure No.
1:50	FK	3914.TP22

IAN FARMER ASSOCIATES

Site	Trial Pit Number
Bolton upon Dearne	TP23

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
l Pit	5 00 x 1 00 x 5 20m	19 33	Horizon Residential Developments Ltd	3914
	Location	**Dates**	**Engineer**	**Sheet**
	271 91 E 256 34 N	10/03/2006	Halcrow	1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0 60)	Rough grass over dark brown/black sandy SILT Frequent rootlets.		
0 50	A1			18 73	0 60	Firm friable orange brown and grey sandy CLAY		
1 00	B2		1 00m PID 0 61ppm		(0 90)			
				17 83	1 50	Orange fine SAND		
					(0 50)			
				17 33	2 00	Very weak green grey fine SANDSTONE		
					(0 50)			
				16 83	2 50	Very weak laminated blue grey SILTSTONE		
3 00	B3				(0 80)			
				16 03	3 30	Very weak blue grey MUDSTONE Recovered as tabular clayey gravel and cobbles		
					(1 70)			
				14 33	5 00	Very weak blue grey MUDSTONE Recovered as tabular		
			10/03/2006	14 13	5 20	clayey gravel and cobbles		
						Complete at 5 20m		

Plan

Remarks

Trial pit unstable in mudstone Saturated from 2 00m
Groundwater encountered at 2 00MBGL

Scale (approx)	Logged By	Figure No.
1 50	FK	3914 TP23

IAN FARMER ASSOCIATES

Site	Trial Pit Number
Bolton upon Dearne	TP24

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
al Pit	3 50 x 1 00 x 4 00m	19 89	Horizon Residential Developments Ltd.	3914
	Location	**Dates**	**Engineer**	**Sheet**
	303 42 E 276 78 N	10/03/2006	Halcrow	1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0 40)	MADE GROUND Rough grass dark brown and black sandy SILT		
0 30	A1			19 49	0 40			
0 50	B2		0 50m PID 0 39ppm			Firm orange brown mottled grey sandy CLAY		
					(0 80)			
				18 69	1 20			
						Stiff friable grey mottled orange sandy CLAY/SILT		
1 50	B3				(1 00)			
				17 69	2 20			
	B4					Grey laminated SANDSTONE Recovered as tabular angular and subangular fine to coarse gravel and cobbles		
					(1 80)			
			10/03/2006	15 89	4 00			
						Complete at 4 00m		

Plan

Remarks

Trial pit stable and dry

Scale (approx)	Logged By	Figure No.
1 50	FK	3914 TP24

IAN FARMER ASSOCIATES

Site	Trial Pit Number
Bolton upon Dearne	TP25

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Trial Pit	5 00 x 2 00 x 4 50m	25 05	Horizon Residential Developments Ltd	3914
	Location	**Dates**	**Engineer**	**Sheet**
	220 4 E 250 82 N	13/03/2006	Halcrow	1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
						MADE GROUND Rough grass over firm friable dark brown sandy gravelly CLAY Gravel is angular to rounded fine to coarse of brick, glass, sandstone and mudstone Large pieces of metal and wood		
1 00	A1		1 00m PID 0 61ppm					
					(4 00)			
3 00	A2							
4 00	A3			21 05	4 00	Orange brown clayey fine SAND		
					(0 50)			
				20 55	4 50			
						Complete at 4 50m		

Plan

Remarks

Trial pit unstable, collapse in made ground dry
Layers undulating natural much shallower at north end

Scale (approx)	Logged By	Figure No.
1 50	FK	3914 TP25

IAN FARMER ASSOCIATES

Site	Trial Pit Number
Bolton upon Dearne	TP27

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
al Pit	5 00 x 1 00 x 4 50m	25 22	Honzon Residential Developments Ltd	3914
	Location	**Dates**	**Engineer**	**Sheet**
	198 94 E 250 72 N	13/03/2006	Halcrow	1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(1 00)	MADE GROUND Rough grass over dark brown clayey gravelly fine to medium SAND Gravel is angular to rounded fine to coarse of brick, concrete mudstone plastic Frequent cobbles of brick		
1 00	A1		1 00m PID 0 88ppm	24 22	1 00	MADE GROUND Stiff friable grey and black sandy gravelly CLAY Gravel is angular to rounded fine to coarse of brick, coal, limestone plastic and metal Frequent cobbles, becoming soft and moist		
2 00	A2				(1 90)			
3 00	B3			22 32	2 90	Orange brown clayey fine SAND Becoming orange grey and silty		
4 00	B4				(1 60)			
			13/03/2006	20 72	4 50	Complete at 4 50m		

Plan

Remarks

Trial pit unstable and moist
Clay, collapse between 1 00 and 3 00m otherwise dry

Scale (approx)	Logged By	Figure No
1 50	FK	3914 TP27

IAN FARMER ASSOCIATES

Site	Trial Pit Number
Bolton upon Dearne	TP29

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
al Pit	4 50 x 1 00 x 3 60m	19 56	Horizon Residential Developments Ltd	3914
	Location	**Dates**	**Engineer**	**Sheet**
	258 05 E 241 19 N	10/03/2006	Halcrow	1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0 30)	Rough grass over dark brown/black sandy SILT Frequent rootlets		
				19 26	0 30	Dark brown sandy SILT		
0 50	A1							
1 00	B2		1 00m PID = 0 58ppm		(1 20)			
				18 06	1 50	Firm orange brown mottled grey sandy CLAY SILT Becoming stiff and friable with depth		
2 00	B3				(1 30)			
				16 76	2.80	Grey brown SANDSTONE Recovered as very weak tabular angular fine to coarse gravel and cobbles		
3 00	B4				(0 80)			
			10 03 2006	15 96	3 60	Complete at 3 60m		

Plan

Remarks

Trial pit stable and dry

Scale (approx)	Logged By	Figure No
1 50	FK	3914 TP29

IAN FARMER ASSOCIATES

Site: Bolton upon Dearne			Number: WS1
Excavation Method: Drive-in Window Sampler	Dimensions: 80mm to 1 00m	Ground Level (mOD): 25 03	Client: Horizon Residential Developments Ltd
	Location: 150 44 E 349 27 N	Dates: 07/03/2006	Engineer: Halcrow
			Job Number: 3914
			Sheet: 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0 17)	MADE GROUND Concrete Clear polythene sheet at 0 17m		
				24 86	0 17			
0 20	D1		PID at 0 20 is 0 6 ppm		(0 23)	Light grey, slightly clayey very sandy GRAVEL Gravel is angular fine to coarse limestone with some brown sandy clay at 0 35		
				24 63	0 40			
0 50	D2				(0 30)	Light orange-brown occasionally mottled grey clayey slightly gravelly SAND Gravel is angular fine to medium sandstone		
0 50	A3 1							
0 50	A3 2							
0 50	A3 3							
0 50	A3 4			24 33	0 70			
					(0 20)	Yellow brown gravelly SAND Gravel is angular to subangular sandstone		
				24 13	0 90			
0 90	D4				(0 10)	Weak light yellow/orange-brown fine-grained SANDSTONE with some fine sand		
				24 03	1 00			
						Complete at 1 00m		

Remarks: Inspection pit dug

Scale (approx)	Logged By
1 20	SM

Figure No. 3914 WS1

IAN FARMER ASSOCIATES

Site	Number
Bolton upon Dearne	WS2

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Drive-in Window Sampler		25.02	Horizon Residential Developments Ltd.	3914
	Location	**Dates**	**Engineer**	**Sheet**
	126.21 E 383.6 N	08/03/2006	Halcrow	1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.13)	MADE GROUND: Concrete		
				24.89	0.13			
					(0.12)	Light yellow-brown, clayey, sandy GRAVEL. Gravel is fine to coarse limestone and sandstone.		
				24.77	0.25			
					(0.15)	Inter laminated very weak light yellow-brown SANDSTONE and fine SAND.		
0.40-0.55 0.40	SPT D1		20,30/	24.62	0.40			
						Complete at 0.40m		

Remarks
Inspection pit dug.
PID at 0.2: 0.2 ppm
SPT at 0.4: 20/30/NR

Scale (approx)	Logged By
1:20	SM

Figure No. 3914.WS2

IAN FARMER ASSOCIATES

Site	Number
Bolton upon Dearne	WS3

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Drive-in Window Sampler		25 05	Horizon Residential Developments Ltd	3914
	Location	**Dates**	**Engineer**	**Sheet**
	177 51 E 380 82 N	07/03/2006	Halcrow	1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0 17)	MADE GROUND Concrete		
				24 88	0 17			
					(0 13)	Light yellow grey sandy GRAVEL Gravel is angular fine to coarse Limestone		
0 30	A1 4			24 75	0 30			
0 30	A1 3					Firm friable brown occasional mottled orange brown sandy CLAY		
0 30	A1 2							
0 30	A1 1				(0 45)			
0 75	D2			24 30	0 75	Grey sandy angular fine to medium GRAVEL of sandstone (Possible Bedrock)		
					(0 15)			
0 90	D3			24 15	0 90	Orange brown sandy angular fine to medium GRAVEL of sandstone (Possible Bedrock)		
			07/03/2006	24 05	(0 10) 1 00			
						Complete at 1 00m		

Remarks
Inspection pit dug

Scale (approx)	Logged By
1 20	SM

Figure No.
3914 WS3

IAN FARMER ASSOCIATES

Site	Number
Bolton upon Dearne	WS4

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
ve-in Window Sampler		25 04	Horizon Residential Developments Ltd	3914
	Location	Dates	Engineer	Sheet
	151 01 E 414 26 N	07/03/2006	Halcrow	1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0 25)	MADE GROUND Concrete		
				24 79	0 25	Light grey slightly clayey sandy GRAVEL Gravel is angular fine to coarse limestone		
0 30	D1				(0 15)			
0 40	A2 4			24 64	0 40	Light grey to grey SAND and GRAVEL Gravel is angular fine sandstone		
0 40	A2 3				(0 10)			
0 40	A2 2			24 54	0 50	Very weak orange brown and grey thinly laminated fine grained SANDSTONE with some to much fine sand		
0 40	A2 1				(0 20)			
0 70	D3			24 34	0 70	Complete at 0 70m		

Remarks

Scale (approx)	Logged By
1 20	SM

Figure No
3914 WS4

IAN FARMER ASSOCIATES

Site	Number
Bolton upon Dearne	WS5

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
ve-in Window Sampler		25 02	Horizon Residential Developments Ltd	3914
	Location	**Dates**	**Engineer**	**Sheet**
	127 8 E 451 7 N	08/03/2006	Halcrow	1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0 17)	MADE GROUND Concrete		
				24 85	0 17			
					(0 08)	Light yellow brown COBBLE of sandstone		
				24 77	0 25			
					(0 25)	Very weak inter-laminated orange brown and grey SANDSTONE and orange brown silty fine SAND (Possible Bedrock)		
0 40	D1		PID reading at 0 40m = 0 38ppm 08/03/2006					
				24 52	0 50	Complete at 0 50m		

Remarks
Inspection pit dug.

Scale (approx)	Logged By
1 20	SM

Figure No. 3914 WS5

IAN FARMER ASSOCIATES

Site	Number
Bolton upon Dearne	WS6

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Drive-in Window Sampler		24 96	Horizon Residential Developments Ltd	3914
	Location	Dates	Engineer	Sheet
	178 55 E 446 54 N	07/03/2006-08/03/2006	Halcrow	1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0 20)	MADE GROUND Concrete		
0 20	A1 4			24 76	0 20			
0 20	A1 3				(0 20)	Dark grey coarse SAND and fine GRAVEL of ash and clinker		
0 20	A1 2		PID reading at 0 30m = 0 36ppm	24 56	0 40			
0 20	A1 1				(0 20)	Light yellow brown sandy GRAVEL Gravel is angular fine to coarse sandstone		
0 50	D2			24 36	0 60			
0 70	D3				(0 40)	Stiff orange brown mottled light grey sandy friable CLAY		
			07/03/2006	23 96	1 00			
						Complete at 1 00m		

Remarks
Inspection pit dug
Refusal at 1 00m

Scale (approx)	Logged By
1 20	SM

Figure No.
3914 WS6

IAN FARMER ASSOCIATES

Site	Number
Bolton upon Dearne	WS7

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
e-in Window Sampler		25 03	Horizon Residential Developments Ltd	3914
	Location	**Dates**	**Engineer**	**Sheet**
	117 07 E 478 9 N	08/03/2006	Halcrow	1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0 18)	MADE GROUND Concrete		
				24 85	0 18	Stiff friable orange brown and yellow brown sandy gravelly CLAY/SILT Gravel is angular fine to coarse sandstone limestone and chalk (Possible Made Ground)		
0 30	A1 1							
0 30	A1 2							
0 30	A1 3							
0 30	A1 4				(0 72)			
0 90	D2		PID reading at 0 90m = 0 30ppm	24 13	0 90	Very weak poorly inter laminated orange brown and grey SANDSTONE and soft orange/yellow brown sandy friable CLAY		
-1 30	SPT 70/150		8,20/20 50					
1 00	D3				(0 40)			
			08/03/2006	23 73	1 30	Complete at 1 30m		

Remarks
Inspection pit dug to 1 20m BGL.

Scale (approx)	Logged By
1 20	SM

Figure No. 3914 WS7

IAN FARMER ASSOCIATES

Site	Number
Bolton upon Dearne	WS8

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Hydro-in Window Sampler		27 94	Honzon Residential Developments Ltd	3914
	Location	**Dates**	**Engineer**	**Sheet**
	156 42 E 466 61 N	07/03/2006	Halcrow	1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0 18)	MADE GROUND Concrete		
				27 76	0 18			
0 20	D1				(0 17)	Yellow brown/orange brown clayey sandy GRAVEL Gravel is angular fine to coarse sandstone		
				27 59	0 35	Firm yellow brown to orange brown mottled grey sandy friable CLAY		
0 40	A2 3							
0 40	A2 2							
0 40	A2 1							
0 50	D3				(0 45)			
				27 14	0 80	Stiff thinly laminated brown and grey very fine sandy SILT with some horizontally aligned flat angular fine gravel of very weak silty sandstone		
					(0 20)			
1 00	D4		07/03/2006	26 94	1 00			
						Complete at 1 00m		

Remarks
Inspection pit dug

Scale (approx)	Logged By
1 20	SM

Figure No. 3914 WS8

IAN FARMER ASSOCIATES

Site: Bolton upon Dearne			Number: WS9
Excavation Method: Drive-in Window Sampler	Dimensions:	Ground Level (mOD): 26 01	Client: Horizon Residential Developments Ltd	Job Number: 3914
	Location: 85 33 E 492 44 N	Dates: 10/03/2006	Engineer: Halcrow	Sheet: 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0 40)	Soft brown sandy gravelly CLAY and dark grey sandy gravelly SILT Gravel is angular fine to medium sandstone (possible made ground)		
0 50	A1		PID reading at 0 50m = 0 99ppm	25 61	0 40	Orange brown silty gravelly fine SAND Gravel is angular fine to medium sandstone		
					(0 50)			
				25 11	0 90	Weak grey SANDSTONE		
			10/03/2006	25 01	(0 10) 1 00	Complete at 1 00m		

Remarks
Inspection pit dug

Scale (approx)	Logged By
1 20	SM

Figure No. 3914 WS9

IAN FARMER ASSOCIATES

Site	Number
Bolton upon Dearne	WS10

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
ve-in Window Sampler		28 03	Horizon Residential Developments Ltd	3914
	Location	**Dates**	**Engineer**	**Sheet**
	139 59 E 51 1 N	10/03/2006	Halcrow	1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0 20)	Rough grass over orange brown gravelly CLAY Gravel is angular fine mudstone		
0 20	D1			27 83	0 20	Grey brown sandy silty GRAVEL Gravel is angular fine to coarse mudstone		
0	A2 1							
1 00	A2 2				(1 80)			
1 00	A2 3							
1 00	A2 4							
2 00	D3		10 03/2006	26 03	2 00	-		
						Complete at 2 00m		

Remarks
Inspection pit dug to 1 20m BGL
usal at 2 00m

Scale (approx)	Logged By
1 20	SM

Figure No. 3914 WS10

IAN FARMER ASSOCIATES

Site	Number
Bolton upon Dearne	WS11

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Dve-in Window Sampler		24 31	Horizon Residential Developments Ltd	3914
	Location	**Dates**	**Engineer**	**Sheet**
	217 33 E 485 97 N	07/03/2006	Halcrow	1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0 10)	MADE GROUND Concrete reinforced.		
				24 21	0 10	Light yellow brown very sandy GRAVEL Gravel s angular fine to coarse limestone		
0 20	D1		PID reading at 0 20m = 4 5ppm		(0 60)			
				23 61	0 70	Soft to firm dark orange brown sandy CLAY		
					(0 30)			
1 00	A2 1			23 31	1 00	Orange brown silty fine SAND		
1 00	A2 2							
1 00	A2 3							
1 00	A2 4							
					(0 50)			
1 50	D4			22 81	1 50	Light green brown silty fine SAND Weakly cemented		
					(0 70)			
2 00	D3							
				22 11	2 20	Light green brown mottled orange brown and light grey very fine sandy SILT with some fine gravel sized lithorics		
2 30	D5				(0 30)			
2 50	D6			21 81	2 50	Very weak light green grey stained, orange orange brown thinly laminated <2mm fine grained SANDSTONE		
			07/03/2006	21 71	(0 10) 2 60			
						Complete at 2 60m		

Remarks
Inspection pit dug to 1 20m BGL

Scale (approx)	Logged By
1 20	SM

Figure No. 3914 WS11

IAN FARMER ASSOCIATES

Site	Number
Bolton upon Dearne	WS12

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
ve-in Window Sampler		24 36	Horizon Residential Developments Ltd	3914
	Location	**Dates**	**Engineer**	**Sheet**
	217 18 E 455 33 N	07/03/2006	Halcrow	1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0 10)	MADE GROUND Concrete reinforced		
				24 26	0 10	Light yellow grey very sandy GRAVEL Gravel is angular coarse sandstone		
0 20	D1				(0 50)			
				23 76	0 60	Orange brown silty fine SAND with some fine angular gravel of weak sandstone		
					(0 50)			
	A2 1							
	A2 4							
1 00	A2 3			23 26	1 10	Light brown silty fine SAND with occas ona angular fine to medium gravel of weak sandstone		
1 00	A2 2							
1 20	D3		PID reading at 1 20m = 0 5ppm					
					(0 70)			
1 50	D4							
				22 56	1 80	Orange brown silty fine SAND with occasional to some angular fine to medium gravel of weak sandstone.		
					(0 10)			
				22 46	1 90	Very weak orange brown, fine grained SANDSTONE		
					(0 10)			
2 00	D5		07/03/2006	22 36	2 00			
						Complete at 2 00m		

Remarks
Inspection pit dug to 1 20m BGL

Scale (approx)	Logged By
1 20	SM

Figure No.
3914 WS12

IAN FARMER ASSOCIATES

Site	Number
Bolton upon Dearne	WS13

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Drive-in Window Sampler		25.05	Horizon Residential Developments Ltd.	3914
	Location	**Dates**	**Engineer**	**Sheet**
	105 61 E 410.46 N	07/03/2006	Halcrow	1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.10)	Moss over brown gravelly sandy CLAY/SILT.		
				24.95	0.10	Stiff friable poorly inter laminated orange brown CLAY and orange/yellow brown sand. Below 0.30m with some flat angular gravel		
					(0.40)			
0.40	A1.4		PID reading at 0.40m = 1.11ppm 10/03/2006					
0.40	A1.3							
0.40	A1.2			24.55	0.50			
0.40	A1.1					Complete at 0.50m		

Remarks
Inspection pit dug
Refusal at 0.50m

Scale (approx)	Logged By
1:20	SM

Figure No.
3914 WS13

IAN FARMER ASSOCIATES

Site	Number
Bolton upon Dearne	WS14

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Drive-in Window Sampler		25 04	Horizon Residential Developments Ltd	3914
	Location	**Dates**	**Engineer**	**Sheet**
	133 05 E 330 83 N	07/03/2006	Halcrow	1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0 13)	MADE GROUND Concrete		
				24 91	0 13			
0 20	A1				(0 17)	Firm brown sandy slightly gravelly CLAY Gravel is angular fine to medium sandstone and occasional coal		
0 20	A2							
0 20	A3			24 74	0 30	Light orange brown occasionally mottled grey and light yellow brown silty very gravelly fine SAND Gravel is aligned flat angular fine to medium very weak sandstone		
0 20	A4							
					(0 50)			
0 60	D5		PID at 0 60m = 0 34ppm					
				24 24	0 80	Very weak light yellow/orange brown fine grained SANDSTONE with a little to some gravel		
					(0 20)			
			07/03/2006	24 04	1 00			
						Complete at 1 00m		

Remarks
Inspection pit dug

Scale (approx)	Logged By
1 20	SM

Figure No.
3914 WS14

IAN FARMER ASSOCIATES

Site	Number
Bolton upon Dearne	WS15

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
ive-in Window Sampler		24.49	Horizon Residential Developments Ltd.	3914
	Location	**Dates**	**Engineer**	**Sheet**
	199.95 E 370.23 N	07/03/2006	Halcrow	1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
						Grass over brown slightly sandy CLAY/SILT.		
					(0.15)			
				24.34	0.15	Light yellow brown occasionally light orange brown mottled light grey clayey silty fine SAND with some angular medium gravel of weak sandstone.		
0.20	A1.4							
0.20	A1.3							
0.20	A1.2							
0.20	A1.1							
0.50	D2		PID at 0.50m = 0.23ppm					
					(0.75)			
				23.59	0.90	Weak light yellow orange fine grained SANDSTONE, with some fine sand.		
00	D3				(0.10)			
				23.49	1.00			
						Complete at 1.00m		

Remarks
Inspection pit dug.

Scale (approx)	Logged By
1:20	SM

Figure No. 3914.WS15

IAN FARMER ASSOCIATES

Site	Number
Bolton upon Dearne	WS16

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Drive-in Window Sampler		22 54	Horizon Residential Developments Ltd	3914
	Location	**Dates**	**Engineer**	**Sheet**
	240 45 E 360 01 N	08/03/2006	Halcrow	1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0 19)	MADE GROUND Concrete At 0 19m black visqueen - thick polythene sheet.		
				22 35	0 19			
					(0 11)	Light yellow brown to off white sandy GRAVEL Gravel is a fine to coarse limestone		
				22 24	0 30			
0 40	D1		PID at 0 40m = 28ppm		(0 20)	Poorly inter-laminated weak yellow brown SANDSTONE and yellow brown fine SAND.		
				22 04	0 50			
						Complete at 0 50m		

Remarks
Inspection pit dug

Scale (approx)	Logged By
1 20	SM

Figure No.
3914 WS16

IAN FARMER ASSOCIATES

Site	Number
Bolton upon Dearne	WS17

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Drive-in Window Sampler		22.53	Horizon Residential Developments Ltd.	3914
	Location	**Dates**	**Engineer**	**Sheet**
	272.01 E 376.32 N	08/03/2006	Halcrow	1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.17)	MADE GROUND: Concrete. At 0.17m blue visqueen thick polythene sheet.		
				22.36	0.17			
					(0.23)	Light yellow brown to off white slightly clayey sandy GRAVEL. Gravel is angular fine to coarse limestone.		
0.40	D1		PID at 0.40m = 0.5ppm	22.13	0.40	Stiff friable brown SILT/CLAY with occasional angular fine to medium grained sandstone.		
					(0.40)			
			08/03/2006	21.73	0.80			
						Complete at 0.80m		

Remarks
Inspection pit dug.

Scale (approx)	Logged By
1:20	SM

Figure No. 3914.WS17

IAN FARMER ASSOCIATES

Site	Number
Bolton upon Dearne	WS18

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Drive-in Window Sampler		22 51	Horizon Residential Developments Ltd	3914
	Location	**Dates**	**Engineer**	**Sheet**
	303 16 E 360 17 N	08/03/2006	Halcrow	1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0 17)	MADE GROUND Concrete At 0 17m blue visqueen - polythene sheet.		
				22 34	0 17	Light yellow brown to off white slightly clayey sandy GRAVEL Gravel is angular fine to coarse limestone (possible made ground)		
					(0 18)			
				22 16	0 35	Firm friable brown sandy gravelly SILT/CLAY Gravel is angular fine to coarse sandstone (Possible Made Ground) At 0 90m becoming orange brown		
0 50	A1 4							
0 50	A1 3							
0 50	A1 2							
0 50	A1 1							
					(0 85)			
0	D2		PID at 1 00m = 0 18ppm					
				21 31	1 20	Stiff friable light orange brown mottled light grey and orange brown sandy CLAY/SILT with occasional angular fine grained sandstone		
1 30	D3							
					(0 60)			
1 80	D4			20 71	1 80	Light yellow brown occasional mottled orange brown very silty fine SAND with some angular fine to coarse gravel of weak sandstone At 2 30m becoming orange brown and grey		
					(0 60)			
2 40	D5			20 11	2 40			
			08/03/2006		(0 10)	Poorly inter-laminated very weak orange/yellow brown fine grained SANDSTONE and stiff orange brown sandy friable CLAY		
				20 01	2 50			
						Complete at 2 50m		

Remarks
Inspection pit dug to 1 20m BGL

Scale (approx)	Logged By
1 20	SM

Figure No. 3914 WS18

IAN FARMER ASSOCIATES

Site	Number
Bolton upon Dearne	WS9A

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Drive-in Window Sampler		25.14	Horizon Residential Developments Ltd.	3914
	Location	**Dates**	**Engineer**	**Sheet**
	86.84 E 491.06 N	10/03/2006	Halcrow	1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.30	A1				(0.50)	Orange brown silty gravelly fine SAND. Gravel is angular fine to medium weak sandstone.		
			10/03/2006	24.64	0.50	Complete at 0.50m		

Remarks
Inspection pit dug
Window sample terminated as no contamination was encountered.

Scale (approx)	Logged By
1:20	SM

Figure No.
3914 WS9A

IAN FARMER ASSOCIATES

Site	Borehole Number
Bolton upon Dearne	BH3

Installation Type	Dimensions	Client	Job Number
Single Installation		Horizon Residential Developments Ltd.	3914

Location	Ground Level (mOD)	Engineer	Sheet
116 07 E 499 75 N	24 05	Halcrow	1/1

Legend	Water	Instr (A)	Level (mOD)	Depth (m)	Description
					Concrete
			23 85	0 20	Bentonite Seal
			23 75	0 30	Gravel Filter
			23 65	0 40	
					Slotted Standpipe
			22 65	1 40	

Groundwater Strikes During Drilling

Date	Time	Depth Struck (m)	Casing Depth (m)	Inflow Rate	Readings 5 min	Readings 10 min	Readings 15 min	Readings 20 min	Depth Sealed (m)

Groundwater Observations During Drilling

Date	Start of Shift Time	Start of Shift Depth Hole (m)	Start of Shift Casing Depth (m)	Start of Shift Water Depth (m)	Start of Shift Water Level (mOD)	End of Shift Time	End of Shift Depth Hole (m)	End of Shift Casing Depth (m)	End of Shift Water Depth (m)	End of Shift Water Level (mOD)
06/03/06							1 45			

Instrument Groundwater Observations

Inst. [A] Type : Slotted Standpipe

Date	Instrument [A] Time	Instrument [A] Depth (m)	Instrument [A] Level (mOD)	Remarks

Remarks

IAN FARMER ASSOCIATES

Site	Borehole Number
Bolton upon Dearne	BH4

Installation Type	Dimensions	Client	Job Number
Single Installation		Horizon Residential Developments Ltd	3914

Location	Ground Level (mOD)	Engineer	Sheet
219.89 E 501 73 N	24 14	Halcrow	1/1

Legend	Water	Instr (A)	Level (mOD)	Depth (m)	Description
			23 84	0 30	Concrete
			23 44	0 70	Bentonite Seal
			23 14	1 00	Slotted Standpipe
			21 84	2 30	Gravel Filter

Groundwater Strikes During Drilling

Date	Time	Depth Struck (m)	Casing Depth (m)	Inflow Rate	Readings 5 min	10 min	15 min	20 min	Depth Sealed (m)

Groundwater Observations During Drilling

Date	Start of Shift Time	Depth Hole (m)	Casing Depth (m)	Water Depth (m)	Water Level (mOD)	End of Shift Time	Depth Hole (m)	Casing Depth (m)	Water Depth (m)	Water Level (mOD)
08/03/06							2 30			

Instrument Groundwater Observations

Inst. [A] Type : Slotted Standpipe

Date	Instrument [A] Time	Depth (m)	Level (mOD)	Remarks

Remarks

IAN FARMER ASSOCIATES

Site	Borehole Number
Bolton upon Dearne	BH5

Installation Type	Dimensions	Client	Job Number
Single Installation		Horizon Residential Developments Ltd	3914

Location	Ground Level (mOD)	Engineer	Sheet
207 15 E 304 54 N	25 25	Halcrow	1/1

Legend	Water	Instr (A)	Level (mOD)	Depth (m)	Description
					Concrete
			24 85	0 40	
					Bentonite Seal
			24 55	0 70	
					Slotted Standpipe
			24 25	1 00	
					Gravel Filter
			20 75	4 50	

Groundwater Strikes During Drilling

Date	Time	Depth Struck (m)	Casing Depth (m)	Inflow Rate	Readings 5 min	Readings 10 min	Readings 15 min	Readings 20 min	Depth Sealed (m)

Groundwater Observations During Drilling

Date	Start of Shift Time	Start of Shift Depth Hole (m)	Start of Shift Casing Depth (m)	Start of Shift Water Depth (m)	Start of Shift Water Level (mOD)	End of Shift Time	End of Shift Depth Hole (m)	End of Shift Casing Depth (m)	End of Shift Water Depth (m)	End of Shift Water Level (mOD)
06/03/06							4 50			

Instrument Groundwater Observations

Inst [A] Type : Slotted Standpipe

Date	Instrument [A] Time	Instrument [A] Depth (m)	Instrument [A] Level (mOD)	Remarks

Remarks

IAN FARMER ASSOCIATES

Site	Borehole Number
Bolton upon Dearne	BH6

Installation Type	Dimensions	Client	Job Number
Single Installation		Horizon Residential Developments Ltd	3914

Location	Ground Level (mOD)	Engineer	Sheet
304 04 E 339 01 N	22 78	Halcrow	1/1

Legend	Water	Instr (A)	Level (mOD)	Depth (m)	Description
					Concrete
			22 41	0 37	Bentonite Seal
			22 08	0 70	Slotted Standpipe
			21 78	1 00	Gravel Filter
			19 38	3 40	

Groundwater Strikes During Drilling

Date	Time	Depth Struck (m)	Casing Depth (m)	Inflow Rate	Readings 5 min	Readings 10 min	Readings 15 min	Readings 20 min	Depth Sealed (m)

Groundwater Observations During Drilling

Date	Start of Shift Time	Depth Hole (m)	Casing Depth (m)	Water Depth (m)	Water Level (mOD)	End of Shift Time	Depth Hole (m)	Casing Depth (m)	Water Depth (m)	Water Level (mOD)
08/03/06							3 40			

Instrument Groundwater Observations

Inst [A] Type : Slotted Standp pe

Instrument [A] Date	Time	Depth (m)	Level (mOD)	Remarks

Remarks

IAN FARMER ASSOCIATES

Site	Borehole Number
Bolton upon Dearne	BH7

Installation Type	Dimensions	Client	Job Number
Single Installation		Horizon Residential Developments Ltd	3914

Location	Ground Level (mOD)	Engineer	Sheet
298 99 E 259 63 N	19 61	Halcrow	1/1

Legend	Water	Instr (A)	Level (mOD)	Depth (m)	Description
					Concrete
			19 21	0 40	
					Bentonite Seal
			18 31	1 30	Slotted Standpipe
			18 11	1 50	
	▼1				
					Gravel Filter
	▽1				
	▼2				
			15 11	4 50	
					Bentonite Seal
			14 51	5 10	

Groundwater Strikes During Drilling

Date	Time	Depth Struck (m)	Casing Depth (m)	Inflow Rate	Readings 5 min	10 min	15 min	20 min	Depth Sealed (m)
07/03/06		4 00			3 40	2 60	2 20	1 90	
07/03/06		5 10						4 20	

Groundwater Observations During Drilling

Date	Start of Shift Time	Depth Hole (m)	Casing Depth (m)	Water Depth (m)	Water Level (mOD)	End of Shift Time	Depth Hole (m)	Casing Depth (m)	Water Depth (m)	Water Level (mOD)
07/03/06							5 10			

Instrument Groundwater Observations

Inst. [A] Type : Slotted Standpipe

Instrument [A] Date	Time	Depth (m)	Level (mOD)	Remarks

Remarks

IAN FARMER ASSOCIATES

Standard Penetration Test Results

Site : Bolton upon Dearne

Client : Horizon Residential Developments Ltd.

Engineer : Halcrow

Job Number 3914

Sheet 1 / 1

Borehole Number	Base of Borehole (m)	End of Seating Drive (m)	End of Test Drive (m)	Test Type	Seating Blows per 75mm		Blows for each 75mm penetration				Result	Comments
					1	2	1	2	3	4		
BH3	1.20	1.34	1.65	SPT	9	16	29	21			25*/135mm 50/315mm	
BH4	1.20	1.35	1.65	SPT	4	6	6	7	6	7	N=26	
BH4	2.30	2.38	2.40	SPT	19	6	50				25*/80mm 50/15mm	
BH5	1.20	1.35	1.65	SPT	2	3	3	2	3	4	N=12	
BH5	3.00	3.15	3.45	SPT	3	3	4	4	4	5	N=17	
BH5	4.50	4.59	4.61	SPT	20	5	50				25*/85mm 50/25mm	
BH6	2.00	2.15	2.45	SPT	3	4	6	7	7	7	N=27	
BH6	3.40	3.48	3.56	SPT	20	5	42	8			25*/80mm 50/80mm	
BH7	2.00	2.15	2.45	SPT	4	6	5	5	6	5	N=21	
BH7	3.00	3.15	3.45	SPT	3	4	6	6	5	6	N=23	
BH7	4.00	4.15	4.35	SPT	6	5	5	13	26		44/200mm	
WS2	0.40	0.55		SPT	20	30						
WS7	1.00	1.15	1.30	SPT	8	20	20	50			70/150mm	