

APPENDIX B: COAL AUTHORITY PERMIT





# Granted Permit Boundary

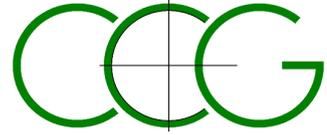
Permit Ref: 29203

Permit Boundary:



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APPENDIX C: SAMPLING METHOLOGIES



## ***SAMPLING, SAMPLE TRANSPORTATION, AND FIELD MONITORING PROTOCOLS***

Soil, water and gas sampling and monitoring methodologies employed by **CC GEOTECHNICAL LTD** are presented hereunder.

### **SAMPLING OF SOIL FOR CHEMICAL ANALYSIS**

Soil samples may be recovered from a variety of intrusive investigation methods including *inter alia* dynamic sampling boreholes, cable percussion boreholes, machine or manual excavation of trial pits.

All equipment which has the potential to introduce extraneous materials into soils – borehole casings, sampling drilling rods, borehole sampling tools, hand tools such as trowels and spades etc. – must be cleaned by jet washing before initial use and between sampling positions.

#### **Cable Percussion Boreholes**

In this method of investigation disturbed bulk and small disturbed samples are recovered at regular depth increments throughout the length of the borehole. Each bulk/small disturbed sample is uniquely labelled with the Project Name / Project No / Borehole No / Depth / Date. Where possible, samples are immediately scanned by PID.

#### **Light Dynamic Sampling Boreholes**

In this method of investigation samples are recovered in relatively undisturbed 1m long Perspex liners. Each liner is uniquely labelled with the Project Name / Project No / Borehole No / Depth / Date. The liner tubes are sealed by air tight caps fitted at each end, and are temporarily stored out of sunlight. Where possible, samples are immediately split, scanned by PID, logged and subsampled. In the event that splitting and logging on site is not practicable, then the liners are immediately transported to the laboratory where they are immediately split, scanned by PID, logged and subsampled

#### **Trial Pits**

Samples are to be taken from the bucket of an excavator and placed in appropriate airtight containers. Each container is uniquely labelled with the Project No / Trial Pit No / Depth / Date. The samples are then immediately placed in a cool box chilled by ice packs, and the boxes are sealed for transportation to the chemical laboratory.

#### **Sampling Containers**

Containers used to store soil samples are selected dependant on the required analysis. The testing laboratory will be consulted should there be any doubt as to the correct sampling container. Typically, a minimum of 1nr 1kg plastic tub, 1nr 500g plastic tub, 1nr 250g amber glass jar and 2nr glass vials are taken at each sample depth. Samples held on site awaiting same day courier collection are stored at 4°C in a cool box. Only in circumstances where same day collection cannot be arranged are samples held overnight, and in this event all samples are refrigerated at 4 °C either on site (if a refrigerator is available) or at CC GEOTECHNICAL soil laboratory. Courier collection is then arranged for immediate pick up the following day.

#### **Chain of Custody records**

A Chain of Custody Record (CoC) is to be sent with each batch of samples submitted to the testing laboratory. A copy of the CoC will be made available for inspection by the client, their agents, or any requesting regulatory authority.

### **HEADSPACE ANALYSES**

Duplicate subsamples of all soil samples selected for laboratory analysis may be taken for headspace analyses.

Headspace analysis is undertaken using a MiniRae 2000 Photo Ionisation Detector (PID). In the test method, an amber glass jar is half filled with soil, and the lid is sealed with aluminium foil secured by an elastic band. The jar and contents are agitated for 30 seconds and left for a minimum of 30 minutes out of direct sunlight for the headspace to achieve equilibrium. The PID then pierces the seal and the maximum reading is recorded. Prevailing weather conditions and ambient air temperature are also recorded.

The PID headspace results are recorded on the exploratory borehole or trial pit logs.

PID headspace data is then used to inform the chemical testing schedule for volatile organic compounds analyses.

### **SAMPLING OF GROUNDWATER FOR CHEMICAL ANALYSIS**

Groundwater is sampled from standpipes or piezometers installed during borehole drilling. On completion of the construction of the standpipe, the installation is initially developed by removing up to 10 x the internal volume of the

installation. The volume of water purged is recorded. The installation is then typically left for a week for hydraulic equilibrium to be restored.

Prior to sampling the standpipe, the depth to the water table, and the depth to the base of the installation are monitored using an electronic dipmeter. In circumstances where free phase product is suspected to be present, then an 'Interface Meter' is used to determine the free phase film thickness.

A minimum of 3 x the installation volume is then removed. The pH of the water is then monitored and the sample is taken when the change in pH between any two consecutive extracts is less than 10%. The volume of water removed is recorded.

A sample comprises of a minimum of 3 litres. Two litres are taken in amber glass bottles, and one litre in a plastic bottle.

To avoid cross-contamination one bailer is used per position.

The samples are uniquely labelled with Project Name / Project No / Borehole No / Depth / Date Sampled. They are placed in a cool box chilled by ice packs, and the containers are sealed for transportation to the laboratory.

Once the samples are received in the **CC GEOTECHNICAL LTD** laboratory, the samples are stored in a refrigerator and returned to the cool boxes once collected.

Water taken from the installations are taken back to the **CC GEOTECHNICAL LTD** laboratory and disposed.

Other data recorded in the sampling comprises:

- Volume of water removed during development of well
- Volume of water removed during purging of the well
- Results of on-site pH analyses
- Sample appearance – colour, suspended solids

## **MONITORING OF GAS**

Prior to embarking on a gas-monitoring round, all equipment is checked for functionality and the calibration status is confirmed.

At the commencement of the monitoring round, the prevailing weather conditions, air temperature, barometric pressure and direction of movement of barometric pressure are recorded.

The flow meter is first attached to the standpipe valve, and the flow rate is measured (peak and steady flow) for 1 minute. The results are recorded in  $\text{l.hr}^{-1}$ . The flow meter tube is protected from the effects of wind by aligning the exhaust downwind.

Following measurement of borehole flow rate, the installation is left for a minimum of 10 minutes for the headspace to restore equilibrium.

Once the gas in the installation has regained equilibrium, the gas analyser is connected and monitoring commences. The peak and steady state readings for  $\text{CH}_4$ ,  $\text{CO}_2$ ,  $\text{CO}$ ,  $\text{H}_2\text{S}$  and  $\text{CO}$  are recorded. The steady state is monitored for a minimum of one minute, and possibly up to a maximum of 10 minutes where fluctuations continue.

When the monitoring is complete, the depth to the water table, and the depth to the base of the well are monitored using an electronic dipmeter. In circumstances where free phase product is suspected to be present, then an 'Interface Meter' is used to determine the free phase film thickness.

APPENDIX D: BOREHOLE LOGS



Contract Name: Huddersfield Market		Client: Kirklees Borough Council			Borehole ID: <b>BH01</b>	
Contract Number: CCG-C-24-15006	Date Started: 21/02/2025	Logged By: DK	Checked By: CB	Status: FINAL		Sheet 1 of 2
Dynamic Sampling Borehole Log	Easting: 414503.0	Northing: 417002.3	Ground Level: 80.65mAOD	Plant Used: Dando Terrier Rig	Rig Crew: LN/RB	Scale: 1:25

Weather: Termination: SPT Hammer: N/R, Energy Ratio: N/R

Samples & In Situ Testing			Strata Details				Groundwater	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/Installation
0.00 - 0.12	C		80.58	0.07		TARMAC		
0.12 - 1.00	U		80.53	0.12		CONCRETE		
			80.45	0.20		CONCRETE (poorly constructed / weak)		
0.25	B	PID 0.25m, 0.0ppm				Dark brown slightly silty gravelly SAND with occasional tabular marble cobbles. Gravel is fine to coarse angular to subround of sandstone coal (MADE GROUND)		
0.25	ES							
0.40	B		80.25	0.40		Medium dense brown silty fine to medium grained SAND		
0.50	ES	PID 0.50m, 0.0ppm						
0.75	B	PID 0.75m, 0.0ppm						
0.75	ES			(0.75)				
1.00 - 2.00	U						1	
		SPT(S)N=19 (4,6/7,5,4,3)	79.50	1.15		Stiff brown slightly sandy silty friable CLAY		
			79.30	1.35		Dark brown slightly sandy slightly gravelly silty friable CLAY. Gravel is fine to medium sub-angular coal and mudstone		
			79.05	1.60		Stiff brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to coarse angular to sub-angular sandstone		
		HVP=60						
2.00 - 3.00	U						2	
		SPT(S)N=18 (1,2/4,4,5,5)						
		HVP=70						
		HVP=80						
3.00 - 4.00	U						3	
		SPT(S)N=36 (4,8/6,10,11,9)						
		HVP=110						
		HVP=110						
4.00 - 5.00	U						4	
		SPT(S)N=31 (3,4/7,8,7,9)						
		HVP=110						
		HVP=110						
				(3.85)				
							5	

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Start & End of Shift Observations					Borehole Diameter		Casing Diameter		Remarks:				
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	1 hour hand excavating 1.20mbgl service avoidance pit				
Chiselling					Installation				Water Strikes				
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
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Contract Name: Huddersfield Market		Client: Kirklees Borough Council			Borehole ID: <b>BH01</b>	
Contract Number: CCG-C-24-15006	Date Started: 21/02/2025	Logged By: DK	Checked By: CB	Status: FINAL		Sheet 2 of 2
Dynamic Sampling Borehole Log	Easting: 414503.0	Northing: 417002.3	Ground Level: 80.65mAOD	Plant Used: Dando Terrier Rig	Rig Crew: LN/RB	Scale: 1:25

Weather: Termination: SPT Hammer: N/R, Energy Ratio: N/R

Samples & In Situ Testing			Strata Details				Groundwater	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/Installation
			75.20	5.45		Stiff brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to coarse angular to sub-angular sandstone		
						End of Borehole at 5.45m		
							6	
							7	
							8	
							9	
							10	

Start & End of Shift Observations					Borehole Diameter		Casing Diameter		Remarks:				
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	1 hour hand excavating 1.20mbgl service avoidance pit				
Chiselling					Installation				Water Strikes				
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
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Contract Name: Huddersfield Market		Client: Kirklees Borough Council			Borehole ID: <b>BH02</b>	
Contract Number: CCG-C-24-15006	Date Started: 09/03/2025	Logged By:	Checked By:	Status: FINAL		Sheet 1 of 2
Dynamic Sampling Borehole Log	Easting: 414531.8	Northing: 416995.4	Ground Level: 79.76mAOD	Plant Used: Dando Terrier	Rig Crew: LN/RM	Scale: 1:25

Weather: Termination: SPT Hammer: N/R, Energy Ratio: N/R

Samples & In Situ Testing			Strata Details				Groundwater	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation
0.00 - 0.20	C		79.71	0.05		TARMAC pavement		
0.00 - 1.00	U					Brown slightly silty very sandy GRAVEL (sub-base). Gravel is fine to coarse angular to subround of sandstone and cinders (MADE GROUND)		
0.20	ES	PID 0.20m, 0.0ppm	79.51	0.25		Loose / medium dense dark grey becoming dark brown slightly silty sandy GRAVEL. Gravel is fine to coarse angular to subround of brick cinders and sandstone (MADE GROUND)		
0.50	B			(0.95)				
0.60	ES	PID 0.60m, 0.0ppm						
0.90	ES	PID 0.90m, 0.0ppm						
1.00	B						1	
1.00 - 2.00	U							
		SPT(S)N=12 (2,2/3,3,3,3)	78.56	1.20		Stiff grey varying to brown slightly gravelly slightly sandy silty CLAY. Gravel is fine to coarse of various angularities and lithologies		
		HVP=50						
		HVP=90						
-2.00 - 3.00	U	SPT(S)N=20 (2,4/3,6,6,5)						
		HVP=100						
		HVP=100						
-3.00 - 4.00	U	SPT(S)N=27 (5,7/5,7,6,9)		(4.25)				
		HVP=100						
		HVP=100						
-4.00 - 5.00	U	SPT(S)N=34 (5,5/8,8,8,10)						
		HVP=100						
		HVP=100						
Continued next sheet								
5								

Start & End of Shift Observations					Borehole Diameter		Casing Diameter		Remarks:	
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	1 hour hand excavating 1.20m bgl service avoidance pit	
Water Strikes										
Chiselling		Installation			Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose (m)	Remarks
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)			
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Contract Name: Huddersfield Market		Client: Kirklees Borough Council			Borehole ID: <b>BH02</b>	
Contract Number: CCG-C-24-15006	Date Started: 09/03/2025	Logged By:	Checked By:	Status: FINAL		Sheet 2 of 2
Dynamic Sampling Borehole Log	Easting: 414531.8	Northing: 416995.4	Ground Level: 79.76mAOD	Plant Used: Dando Terrier	Rig Crew: LN/RM	Scale: 1:25

Weather: Termination: SPT Hammer: N/R, Energy Ratio: N/R

Samples & In Situ Testing			Strata Details				Groundwater	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/Installation
			74.31	5.45		Stiff grey varying to brown slightly gravelly slightly sandy silty CLAY. Gravel is fine to coarse of various angularities and lithologies		
						End of Borehole at 5.45m		
							6	
							7	
							8	
							9	
							10	

Start & End of Shift Observations					Borehole Diameter		Casing Diameter		Remarks:				
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	1 hour hand excavating 1.20mbgl service avoidance pit				
Chiselling					Installation				Water Strikes				
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
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Contract Name: Huddersfield Market		Client: Kirklees Borough Council			Borehole ID: <b>BH03</b>	
Contract Number: CCG-C-24-15006	Date Started: 28/02/2025	Logged By: DK	Checked By: CB	Status: FINAL		Sheet 1 of 2
Dynamic Sampling Borehole Log	Easting: 414535.0	Northing: 417019.6	Ground Level: 78.82mAOD	Plant Used: Dando Terrier	Rig Crew: JG/JG	Scale: 1:25

Weather: Dry Termination: SPT Hammer: N/R, Energy Ratio: N/R

Samples & In Situ Testing			Strata Details				Groundwater	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/Installation
0.00 - 0.20	C					TARMAC		
0.00 - 1.00	U		78.72	0.10		Dark brown gravelly SAND with an occasional thin pocket of clay. Gravel is fine to coarse angular to subround of brick ceramic cinders limestone and sandstone (MADE GROUND)		
0.30	ES	PID 0.30m, 0.0ppm						
0.50	B	PID 0.50m, 0.0ppm		(0.90)				
0.50	ES							
0.90	ES	PID 0.90m, 0.0ppm						
1.00 - 2.00	U		77.82	1.00		Dark brown slightly silty gravelly SAND. Gravel is fine to coarse angular to subround of slate sandstone ceramic and brick (MADE GROUND)	1	
		SPT(S)N=6 (1,1/1,1,2,2)		(0.30)				
			77.52	1.30		Brown slightly gravelly slightly sandy silty CLAY. Gravel is fine to coarse angular to subround of cinders sandstone and mudstone (MADE GROUND)		
			77.32	1.50				
		HVP=50				Firm, locally soft, becoming stiff brown slightly gravelly slightly sandy silty CLAY. Occasional thin gravel horizon at 3.5m - 3.7mbgl. Gravel is fine to coarse angular to subround of sandstone and mudstone		
2.00 - 3.00	U							2
		SPT(S)N=10 (2,2/3,2,3,2)						
		HVP=30						
		HVP=50						
3.00 - 4.00	U			(3.95)			3	
		SPT(S)N=20 (2,3/4,4,5,7)						
		HVP=100						
4.00 - 5.00	U						4	
		SPT(S)N=20 (3,3/3,5,6,6)						
		HVP=90						
		HVP=90						
		SPT(S)N=23 (6,8/5,6,6,6)					5	

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Start & End of Shift Observations					Borehole Diameter		Casing Diameter		Remarks:
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	
									1 hour hand excavating 1.20mbgl service avoidance pit
Borehole further extended using Dynamic Probe Super Heavy (DPSH) Test Methods									
Water Strikes									
		Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks		
Chiselling				Installation					
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)		



Contract Name: Huddersfield Market		Client: Kirklees Borough Council			Borehole ID: <b>BH03</b>	
Contract Number: CCG-C-24-15006	Date Started: 28/02/2025	Logged By: DK	Checked By: CB	Status: FINAL		Sheet 2 of 2
Dynamic Sampling Borehole Log	Easting: 414535.0	Northing: 417019.6	Ground Level: 78.82mAOD	Plant Used: Dando Terrier	Rig Crew: JG/JG	Scale: 1:25

Weather: Dry Termination: SPT Hammer: N/R, Energy Ratio: N/R

Samples & In Situ Testing			Strata Details				Groundwater	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/Installation
			73.37	5.45		Firm, locally soft, becoming stiff brown slightly gravelly slightly sandy silty CLAY. Occasional thin gravel horizon at 3.5m - 3.7mbgl. Gravel is fine to coarse angular to subround of sandstone and mudstone		
						End of Borehole at 5.45m		
							6	
							7	
							8	
							9	
							10	

Start & End of Shift Observations					Borehole Diameter		Casing Diameter		Remarks:				
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	1 hour hand excavating 1.20mbgl service avoidance pit				
									Borehole further extended using Dynamic Probe Super Heavy (DPSH) Test Methods				
Chiselling					Installation		Water Strikes						
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
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Contract Name: Huddersfield Market		Client: Kirklees Borough Council			Borehole ID: <b>BH04</b>	
Contract Number: CCG-C-24-15006	Date Started: 11/04/2025	Logged By: DK	Checked By: CB	Status: FINAL		Sheet 2 of 2
Dynamic Sampling Borehole Log		Easting: 414515.1	Northing: 417042.1	Ground Level: 78.70mAOD	Plant Used: Dando Terrier Rig	Rig Crew: Scale: 1:25

Weather: Termination: SPT Hammer: N/R, Energy Ratio: N/R

Samples & In Situ Testing			Strata Details				Groundwater	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/Installation
			73.25	5.45		Brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to coarse sub-angular sandstone		
						End of Borehole at 5.45m		
							6	
							7	
							8	
							9	
							10	

Start & End of Shift Observations					Borehole Diameter		Casing Diameter		Remarks:				
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	1 hour hand excavating 1.20mbgl service avoidance pit				
Chiselling					Installation				Water Strikes				
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
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Contract Name: Huddersfield Market		Client: Kirklees Borough Council			Borehole ID: <b>BH05</b>	
Contract Number: CCG-C-24-15006	Date Started: 01/04/2025	Logged By: DK	Checked By: CB	Status: FINAL		Sheet 1 of 2
Dynamic Sampling Borehole Log		Easting: 4714511.0	Northing: 417056.1	Ground Level: 78.17mAOD	Plant Used: Dando Terrier Rig	Rig Crew: Scale: 1:25

Weather: Termination: SPT Hammer: N/R, Energy Ratio: N/R

Samples & In Situ Testing			Strata Details				Groundwater	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation
			78.12	0.05		TARMAC pavement		
0.20	B			(0.35)		Grey sandy slightly silty GRAVEL. Gravel is fine to coarse angular to sub-angular limestone (MADE GROUND)		
0.30	ES	PID 0.30m, 0.0ppm	77.77	0.40		Dark brown very gravelly slightly silty SAND. Gravel is fine to coarse angular to sub-angular brick, limestone and cinders (MADE GROUND)		
0.50	ES	PID 0.50m, 0.0ppm		(0.35)		Dark brown very silty very sandy GRAVEL. Gravel is fine to coarse angular to sub-angular cinders, brick and concrete (MADE GROUND)		
0.60	B		77.42	0.75		Dark brown very silty very sandy GRAVEL. Gravel is fine to coarse angular to sub-angular cinders, brick and concrete (MADE GROUND)		
0.90	B		77.17	1.00		Light brown/grey slightly sandy slightly gravelly silty CLAY. gravel is fine to coarse sub-angular sandstone	1	
1.00	ES	PID 1.00m, 0.0ppm		(0.40)				
1.00 - 2.00	U	SPT(S)N=3 (0,0/0,0,1,2)	76.77	1.40		Brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to coarse sub-rounded sandstone		
		HVP=70						
2.00 - 3.00	U	SPT(S)N=24 (2,6/5,6,6,7)					2	
		HVP=110						
		HVP=110						
3.00 - 4.00	U	SPT(S)N=25 (3,4/6,6,6,7)		(4.05)			3	
		HVP=110						
		HVP=110						
4.00 - 5.00	U	SPT(S)N=22 (2,4/5,5,6,6)					4	
		HVP=110						
		HVP=110						
		SPT(S)N=27 (3,3/6,6,7,8)					5	
Continued next sheet								

Start & End of Shift Observations					Borehole Diameter		Casing Diameter		Remarks:				
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	1 hour hand excavating 1.20m bgl service avoidance pit				
Chiselling					Installation		Water Strikes						
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
				0.00	0.50	PLAIN	50						
				0.50	5.00	SLOTTED	50						
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Contract Name: Huddersfield Market		Client: Kirklees Borough Council			Borehole ID: <b>BH05</b>	
Contract Number: CCG-C-24-15006	Date Started: 01/04/2025	Logged By: DK	Checked By: CB	Status: FINAL		Sheet 2 of 2
Dynamic Sampling Borehole Log		Easting: 4714511.0	Northing: 417056.1	Ground Level: 78.17mAOD	Plant Used: Dando Terrier Rig	Rig Crew: Scale: 1:25

Weather: Termination: SPT Hammer: N/R, Energy Ratio: N/R

Samples & In Situ Testing			Strata Details				Groundwater	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/Installation
			72.72	5.45		Brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to coarse sub-rounded sandstone		
						End of Borehole at 5.45m		
							6	
							7	
							8	
							9	
							10	

Start & End of Shift Observations					Borehole Diameter		Casing Diameter		Remarks:				
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	1 hour hand excavating 1.20mbgl service avoidance pit				
Chiselling					Installation				Water Strikes				
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
				0.00	0.50	PLAIN	50						
				0.50	5.00	SLOTTED	50						
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Contract Name: Huddersfield Market		Client: Kirklees Borough Council			Borehole ID: <b>BH06</b>	
Contract Number: CCG-C-24-15006	Date Started: 09/03/2025	Logged By: DK	Checked By: CB	Status: FINAL	Sheet 1 of 2	
Dynamic Sampling Borehole Log	Easting: 414533.5	Northing: 417058.0	Ground Level: 77.93mAOD	Plant Used: Dando Terrier Rig	Rig Crew: LN	Scale: 1:25

Weather: Termination: SPT Hammer: N/R, Energy Ratio: N/R

Samples & In Situ Testing			Strata Details				Groundwater	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/Installation
0.20 0.25	B ES	PID 0.25m, 0.0ppm	77.83	0.10 (0.35)		TARMAC		
0.50 0.60	ES B	PID 0.50m, 0.0ppm	77.48	0.45 (0.30)		Greyish brown very sandy slightly silty GRAVEL. Gravel is fine to coarse angular to sub-angular sandstone and cinders (MADE GROUND)		
0.90 0.90 1.00 - 2.00	B ES U	PID 0.90m, 0.0ppm	77.18	0.75 (0.45)		Black very sandy silty GRAVEL. Gravel is fine to coarse angular to sub-angular brick, sandstone, cinders and coal (MADE GROUND)	1	
		SPT(S)N=12 (2,2/3,3,3,3)	76.73	1.20 (0.40)		Dark brown sandy slightly gravelly silty friable CLAY. Gravel is fine to coarse angular to sub-angular brick, sandstone, cinders and coal (MADE GROUND)		
		HVP=90	76.33	1.60		Firm greyish brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to coarse sub-angular to sub-rounded sandstone and mudstone		
-2.00 - 3.00	U	SPT(S)N=20 (2,4/3,6,6,5)				Firm becoming stiff brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to coarse sub-angular to sub-rounded sandstone	2	
		HVP=110						
		HVP=110						
-3.00 - 4.00	U	SPT(S)N=27 (5,7/5,7,6,9)		(3.85)			3	
		HVP=110						
		HVP=110						
-4.00 - 5.00	U	SPT(S)N=34 (5,5/8,8,8,10)					4	
		HVP=110						
		HVP=110						
Continued next sheet								
5								

Start & End of Shift Observations					Borehole Diameter		Casing Diameter		Remarks:
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	1 hour hand excavating 1.20m <sup>3</sup> service avoidance pit Borehole advanced by dynamic probing methods
Chiselling					Installation				Water Strikes
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	Casing (m)
								0	
									Remarks
									Dry
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Contract Name: Huddersfield Market		Client: Kirklees Borough Council			Borehole ID: <b>BH06</b>	
Contract Number: CCG-C-24-15006	Date Started: 09/03/2025	Logged By: DK	Checked By: CB	Status: FINAL		Sheet 2 of 2
Dynamic Sampling Borehole Log	Easting: 414533.5	Northing: 417058.0	Ground Level: 77.93mAOD	Plant Used: Dando Terrier Rig	Rig Crew: LN	Scale: 1:25

Weather: Termination: SPT Hammer: N/R, Energy Ratio: N/R

Samples & In Situ Testing			Strata Details				Groundwater	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/Installation
			72.48	5.45		Firm becoming stiff brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to coarse sub-angular to sub-rounded sandstone		
						End of Borehole at 5.45m		
							6	
							7	
							8	
							9	
							10	

Start & End of Shift Observations					Borehole Diameter		Casing Diameter		Remarks:				
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	1 hour hand excavating 1.20mbgl service avoidance pit Borehole advanced by dynamic probing methods				
Chiselling					Installation				Water Strikes				
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
											0		Dry
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Contract Name: Huddersfield Market		Client: Kirklees Borough Council			Borehole ID: <b>BH07</b>	
Contract Number: CCG-C-24-15006	Date Started: 11/04/2025	Logged By: DK	Checked By: CB	Status: FINAL	Sheet 1 of 2	
Dynamic Sampling Borehole Log		Easting: 414547.5	Northing: 417045.9	Ground Level: 78.05mAOD	Plant Used: Dando Terrier Rig	Rig Crew: Scale: 1:25

Weather: Termination: SPT Hammer: N/R, Energy Ratio: N/R

Samples & In Situ Testing			Strata Details				Groundwater	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation
0.00 - 1.00	U		78.00	0.05		TARMAC pavement		
0.20	B	PID 0.20m, 0.0ppm		(0.35)		Light brown very sandy slightly silty GRAVEL. Gravel is fine to coarse angular to sub-angular limestone (MADE GROUND)		
0.20	ES		77.65	0.40		Soft dark brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to coarse sub-angular sandstone		
0.50	ES	PID 0.50m, 0.0ppm		(1.00)				
0.60	B							
1.00	B	PID 1.00m, 0.0ppm					1	
1.00 - 2.00	ES							
1.00 - 2.00	U	SPT(S)N=6 (1,2/1,2,2,1)	76.65	1.40		Stiff light brown/grey slightly sandy slightly gravelly silty CLAY. Gravel is fine to coarse sub-angular sandstone		
		HVP=70		(0.70)				
2.00 - 3.00	B	SPT(S)N=13 (2,3/2,3,3,5)					2	
2.00 - 3.00	U		75.95	2.10		Stiff brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to coarse sub-angular sandstone		
		HVP=110						
		HVP=110						
3.00 - 4.00	B	SPT(S)N=15 (3,4/3,3,4,5)					3	
3.00 - 4.00	U			(3.35)				
4.00 - 5.00	B	SPT(S)N=25 (2,4/5,7,7,6)					4	
4.00 - 5.00	U							
		SPT(S)N=27 (6,4/5,8,7,7)					5	

Continued next sheet

Start & End of Shift Observations					Borehole Diameter		Casing Diameter		Remarks:					
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	1 hour hand excavating 1.20mbgl service avoidance pit					
									Water Strikes					
									Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
Chiselling				Installation										
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)							
				0.00	0.50	PLAIN	50							
				0.50	5.00	SLOTTED	50							
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Contract Name: Huddersfield Market		Client: Kirklees Borough Council			Borehole ID: <b>BH07</b>	
Contract Number: CCG-C-24-15006	Date Started: 11/04/2025	Logged By: DK	Checked By: CB	Status: FINAL		Sheet 2 of 2
Dynamic Sampling Borehole Log		Easting: 414547.5	Northing: 417045.9	Ground Level: 78.05mAOD	Plant Used: Dando Terrier Rig	Rig Crew: Scale: 1:25

Weather: Termination: SPT Hammer: N/R, Energy Ratio: N/R

Samples & In Situ Testing			Strata Details				Groundwater	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/Installation
			72.60	5.45		Stiff brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to coarse sub-angular sandstone		
						End of Borehole at 5.45m		
							6	
							7	
							8	
							9	
							10	

Start & End of Shift Observations					Borehole Diameter		Casing Diameter		Remarks:				
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	1 hour hand excavating 1.20mbgl service avoidance pit				
Chiselling					Installation				Water Strikes				
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
				0.00	0.50	PLAIN	50						
				0.50	5.00	SLOTTED	50						
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Contract Name: Huddersfield Market		Client: Kirklees Borough Council			Borehole ID: <b>BH08</b>	
Contract Number: CCG-C-24-15006	Date Started: 14/05/2025	Logged By: TG/PC	Checked By:	Status: FINAL	Sheet 1 of 5	
Cable Percussion Borehole Log	Easting: 414524.4	Northing: 417061.5	Ground Level: 78.50mAOD	Plant Used: Dando 150	Rig Crew: PC/AS	Scale: 1:50

Weather: Dry Termination:

Samples & In Situ Testing			Strata Details				Groundwater	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation
			78.45	0.05 (0.30)		TARMAC pavement		
			78.15	0.35 (0.85)		Brown / grey slightly silty sandy GRAVEL (sub-base). Gravel is fine to coarse angular to subangular of sandstone and limestone (MADE GROUND) Brown / red slightly silty sandy GRAVEL. Low cobble content. Gravel is fine to coarse angular to subround of cinders brick and sandstone (MADE GROUND)		
			77.30	1.20		Firm dark brown sandy slightly gravelly silty friable CLAY.		
			77.10	1.40		Gravel is fine to coarse angular to sub-angular brick, sandstone, cinders and coal (MADE GROUND) Firm / stiff brown sandy gravelly CLAY. High cobble content. Gravel is fine to coarse subangular to round of various lithologies		
				(6.60)				
			70.50	8.00		Stiff brown locally grey gravelly CLAY with occasional thin sand / silt horizons. Medium cobble content. Gravel is fine to coarse of various angularities and lithologies		

Continued next sheet

Start & End of Shift Observations					Borehole Diameter		Casing Diameter		Remarks:	
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)		
									1 hour hand excavating 1.20mbgl service avoidance pit	
									Cable percussive boring GL-13.9mbgl	
									Rotary open hole drilling 13.9-40mbgl	
Chiselling					Water Strikes					
From (m)	To (m)	Duration	Remarks	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks	
14.90	15.20	01:30								



Contract Name: Huddersfield Market		Client: Kirklees Borough Council			Borehole ID: <b>BH08</b>	
Contract Number: CCG-C-24-15006	Date Started: 14/05/2025	Logged By: TG/PC	Checked By:	Status: FINAL	Sheet 2 of 5	
Cable Percussion Borehole Log	Easting: 414524.4	Northing: 417061.5	Ground Level: 78.50mAOD	Plant Used: Dando 150	Rig Crew: PC/AS	Scale: 1:50

Weather: Dry Termination:

Samples & In Situ Testing						Strata Details				Groundwater	
Depth	Sample ID	Test Result				Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation
							(6.90)		Stiff brown locally grey gravelly CLAY with occasional thin sand / silt horizons. Medium cobble content. Gravel is fine to coarse of various angularities and lithologies	10	
										11	
										12	
										13	
						63.60	14.90			14	
									Grey weathered MUDSTONE with occasional thin siltstone horizons	15	
									No loss of flush and/or returns	16	
										17	
										18	
										19	

Continued next sheet

Start & End of Shift Observations					Borehole Diameter		Casing Diameter		Remarks:		
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	1 hour hand excavating 1.20mbgl service avoidance pit		
									Cable percussive boring GL-13.9mbgl		
									Rotary open hole drilling 13.9-40mbgl		
Chiselling					Water Strikes						
From (m)	To (m)	Duration	Remarks		Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks	
14.90	15.20	01:30									



Contract Name: Huddersfield Market		Client: Kirklees Borough Council			Borehole ID: BH08	
Contract Number: CCG-C-24-15006	Date Started: 14/05/2025	Logged By: TG/PC	Checked By:	Status: FINAL	Sheet 3 of 5	
Rotary Open Drilling Log	Easting: 414524.4	Northing: 417061.5	Ground Level: 78.50mAOD	Plant Used: Dando 150	Rig Crew: PC/AS	Scale: 1:50

Weather: Dry Termination:

Samples & In Situ Testing						Strata Details				Groundwater	
Depth	TCR	SCR	RQD	Fracture Spacing	Water Added	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/Installation
							(25.10)		Grey weathered MUDSTONE with occasional thin siltstone horizons No loss of flush and/or returns	20	
										21	
										22	
										23	
										24	
										25	
										26	
										27	
										28	
										29	

Continued next sheet

Start & End of Shift Observations					Borehole Diameter		Casing Diameter		Remarks:			
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	1 hour hand excavating 1.20mbgl service avoidance pit			
									Cable percussive boring GL-13.9mbgl			
Flush Information					Borehole Diameter		Casing Diameter		Water Strikes			
Top (m)	Base (m)	Flush Type	Return	Flush Colour	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Remarks
Fracture spacing reported in mm as min, Average and Max values. TCR, SCR and RQD reported in %												
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Contract Name:  
Huddersfield Market

Client:  
Kirklees Borough Council

Borehole ID:  
BH08

Contract Number:  
CCG-C-24-15006

Date Started:  
14/05/2025

Logged By:  
TG/PC

Checked By:

Status:  
FINAL

Sheet 4 of 5

Rotary Open  
Drilling Log

Easting:  
414524.4

Northing:  
417061.5

Ground Level:  
78.50mAOD

Plant Used:  
Dando 150

Rig Crew:  
PC/AS

Scale:  
1:50

Weather: Dry

Termination:

Samples & In Situ Testing

Strata Details

Groundwater

Depth	TCR	SCR	RQD	Fracture Spacing	Water Added	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/Installation
									Grey weathered MUDSTONE with occasional thin siltstone horizons No loss of flush and/or returns	30	
										31	
										32	
										33	
										34	
										35	
										36	
										37	
										38	
										39	

Continued next sheet

Start & End of Shift Observations					Borehole Diameter		Casing Diameter		Remarks:					
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)						
									1 hour hand excavating 1.20mbgl service avoidance pit					
									Cable percussive boring GL-13.9mbgl					
									Rotary open hole drilling 13.9-40mbgl					
									Water Strikes					
									Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
Flush Information					Fracture Spacing		Type							
Top (m)	Base (m)	Flush Type	Return	Flush Colour	Top (mm)	Base (mm)	Type	Dia (mm)						
									Fracture spacing reported in mm as min, Average and Max values. TCR, SCR and RQD reported in %					



Contract Name: Huddersfield Market		Client: Kirklees Borough Council			Borehole ID: BH08	
Contract Number: CCG-C-24-15006	Date Started: 14/05/2025	Logged By: TG/PC	Checked By:	Status: FINAL	Sheet 5 of 5	
Rotary Open Drilling Log	Easting: 414524.4	Northing: 417061.5	Ground Level: 78.50mAOD	Plant Used: Dando 150	Rig Crew: PC/AS	Scale: 1:50

Weather: Dry Termination:

Samples & In Situ Testing						Strata Details					Groundwater	
Depth	TCR	SCR	RQD	Fracture Spacing	Water Added	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation	
						38.50	40.00		Grey weathered MUDSTONE with occasional thin siltstone horizons No loss of flush and/or returns End of Borehole at 40.00m	40		
										41		
										42		
										43		
										44		
										45		
										46		
										47		
										48		
										49		

Start & End of Shift Observations					Borehole Diameter		Casing Diameter		Remarks:		
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	1 hour hand excavating 1.20mbgl service avoidance pit		
									Cable percussive boring GL-13.9mbgl		
Flush Information					Water Strikes		Rotary open hole drilling 13.9-40mbgl				
Top (m)	Base (m)	Flush Type	Return	Flush Colour	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks	
										Fracture spacing reported in mm as min, Average and Max values. TCR, SCR and RQD reported in %	
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Contract Name: Huddersfield Market		Client: Kirklees Borough Council			Borehole ID: <b>BH09</b>	
Contract Number: CCG-C-24-15006	Date Started: 11/04/2025	Logged By: DK	Checked By: CB	Status: FINAL		Sheet 1 of 1
Dynamic Sampling Borehole Log		Easting: 414575.2	Northing: 417076.5	Ground Level: 76.78mAOD	Plant Used: Dando Terrier Rig	Rig Crew: LN/RB
Weather:		Termination:		SPT Hammer: N/R, Energy Ratio: N/R		

Samples & In Situ Testing			Strata Details				Groundwater	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/Installation
0.00 - 1.00	U		76.73	0.05		TARMAC paving		
0.20	ES	PID 0.20m, 0.0ppm		(0.35)		Grey slightly sandy slightly silty GRAVEL. Gravel is fine to coarse angular to sub-angular limestone and tarmac (MADE GROUND)		
0.50 - 0.50	B ES	PID 0.50m, 0.0ppm	76.38	0.40		Greyish brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to coarse angular to sub-rounded concrete, brick and sandstone (MADE GROUND)		
1.00 - 1.00	B ES	PID 1.00m, 0.0ppm	75.78	1.00		Dark brown very sandy slightly sandy GRAVEL. Gravel is fine to coarse angular to sub-angular brick, sandstone and cinders (MADE GROUND)	1	
1.00 - 2.00	U	SPT(S)N=16 (2,4/5,7,2,2)		(0.40)				
		HVP=60						
			75.38	1.40		Light brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to coarse sub-rounded sandstone		
				(0.60)				
2.00 - 3.00	U	SPT(S)N=12 (2,3/3,3,3,3)	74.78	2.00		Brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to coarse sub-rounded sandstone	2	
		HVP=110						
		HVP=110						
3.00 - 4.00	U	SPT(S)N=18 (2,3/4,4,5,5)		(2.45)				
		HVP=110						
		HVP=110						
		SPT(S)N=25 (3,3/6,5,7,7)						
			72.33	4.45		End of Borehole at 4.45m		

Start & End of Shift Observations					Borehole Diameter		Casing Diameter		Remarks:				
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	1 hour hand excavating 1.20m <sup>3</sup> service avoidance pit				
Chiselling					Installation				Water Strikes				
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
				0.00	0.50	PLAIN	50						
				0.50	4.00	SLOTTED	50						
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Contract Name: Huddersfield Market		Client: Kirklees Borough Council			Borehole ID: <b>BH10</b>	
Contract Number: CCG-C-24-15006	Date Started: 11/04/2025	Logged By:	Checked By:	Status: FINAL		Sheet 1 of 1
Dynamic Sampling Borehole Log	Easting: 414591.1	Northing: 417063.4	Ground Level: 76.53mAOD	Plant Used: Dando Terrier	Rig Crew: LN/RB	Scale: 1:25

Weather: \_\_\_\_\_ Termination: \_\_\_\_\_

Samples & In Situ Testing			Strata Details				Groundwater	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/Installation
			76.48	0.05		TARMAC paving		
			76.29	0.24		Brown silty sandy GRAVEL. Gravel is fine to coarse angular to subround of sandstone and brick (MADE GROUND)		
			76.28				CONCRETE paving	
						End of Borehole at 0.25m		
							1	
							2	
							3	
							4	
							5	

Start & End of Shift Observations					Borehole Diameter		Casing Diameter		Remarks:				
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)					
Chiselling					Installation				Water Strikes				
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
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Contract Name: Huddersfield Market		Client: Kirklees Borough Council			Borehole ID: <b>BH10-B</b>	
Contract Number: CCG-C-24-15006	Date Started: 11/04/2025	Logged By:	Checked By:	Status: FINAL		
Dynamic Sampling Borehole Log		Easting: 414577.3	Northing: 417061.9	Ground Level: 76.97mAOD	Plant Used: Dando Terrier	Rig Crew: LN/RB
Weather:				Termination:		Scale: 1:25

Sheet 1 of 1

Samples & In Situ Testing			Strata Details				Groundwater	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/Installation
			76.87	0.10		TARMAC paving		
				(0.55)		Grey brown slightly silty sandy GRAVEL. Gravel is fine to coarse angular to subround of sandstone and brick (MADE GROUND)		
			76.32	0.65		End of Borehole at 0.65m		
							1	
							2	
							3	
							4	
							5	

Start & End of Shift Observations					Borehole Diameter		Casing Diameter		Remarks:				
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)					
Chiselling					Installation				Water Strikes				
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
CC GEOTECHNICAL LTD 0151 545 2750 www.ccgeotechnical.com													



Contract Name: Huddersfield Market		Client: Kirklees Borough Council			Borehole ID: <b>BH11</b>	
Contract Number: CCG-C-24-15006	Date Started: 21/06/2025	Logged By:	Checked By:	Status: FINAL		Sheet 1 of 5
Cable Percussion Borehole Log	Easting: 414536.6	Northing: 417010.1	Ground Level: 78.84mAOD	Plant Used: Dando 150 S&A	Rig Crew: AR/CMcG CB/AS	Scale: 1:50

Weather: \_\_\_\_\_ Termination: \_\_\_\_\_

Samples & In Situ Testing			Strata Details				Groundwater	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/Installation
			78.77	0.07		TARMAC paving		
			78.54	0.30		CONCRETE paving		
				(1.50)		Brown varying to dark brown slightly silty gravelly SAND. Gravel is fine to coarse angular to subround of brick sandstone and mudstone (MADE GROUND)	1	
			77.04	1.80		Firm becoming stiff brown slightly gravelly slightly sandy silty CLAY. Gravel is fine to coarse subround to round of mudstone sandstone and quartz	2	
				(9.50)			3	
							4	
							5	
							6	
							7	
							8	
							9	

Continued next sheet

Start & End of Shift Observations					Borehole Diameter		Casing Diameter		Remarks:		
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	1 hour hand excavating 1.20mbgl service avoidance pit		
									Cable percussive boring GL-13mbgl		
									Rotary open hole drilling 13m-40mbgl		
Chiselling					Water Strikes						
From (m)	To (m)	Duration	Remarks	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks		
12.50	13.00	01:00									









Contract Name: Huddersfield Market		Client: Kirklees Borough Council			Borehole ID: BH11	
Contract Number: CCG-C-24-15006	Date Started: 21/06/2025	Logged By:	Checked By:	Status: FINAL		Sheet 5 of 5
Rotary Open Drilling Log	Easting: 414536.6	Northing: 417010.1	Ground Level: 78.84mAOD	Plant Used: Dando 150 S&A	Rig Crew: AR/CMcG CB/AS	Scale: 1:50

Weather: \_\_\_\_\_ Termination: \_\_\_\_\_

Samples & In Situ Testing						Strata Details					Groundwater	
Depth	TCR	SCR	RQD	Fracture Spacing	Water Added	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation	
						38.84	40.00		End of Borehole at 40.00m	40		
										41		
										42		
										43		
										44		
										45		
										46		
										47		
										48		
										49		

Start & End of Shift Observations					Borehole Diameter		Casing Diameter		Remarks:			
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	1 hour hand excavating 1.20mbgl service avoidance pit			
									Cable percussive boring GL-13mbgl			
Flush Information					Borehole Diameter		Casing Diameter		Water Strikes			
Top (m)	Base (m)	Flush Type	Return	Flush Colour	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Remarks
Fracture spacing reported in mm as min, Average and Max values. TCR, SCR and RQD reported in %												
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Contract Name: Huddersfield Market		Client: Kirklees Borough Council			Borehole ID: <b>BH12</b>	
Contract Number: CCG-C-24-15006	Date Started: 04/06/2025	Logged By:	Checked By:	Status: FINAL		Sheet 1 of 5
Cable Percussion Borehole Log	Easting: 414503.4	Northing: 417000.4	Ground Level: 80.64mAOD	Plant Used: Dando 150 S&A	Rig Crew: AR/CMcG PC/AS	Scale: 1:50

Weather: \_\_\_\_\_ Termination: \_\_\_\_\_

Samples & In Situ Testing			Strata Details				Groundwater	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/Installation
			80.55	0.09		TARMAC paving		
			80.34	0.30		CONCRETE paving		
				(1.30)		Brown locally dark brown slightly silty gravelly SAND. Low cobble content. Gravel is fine to coarse angular to subround of brick sandstone and mudstone (MADE GROUND)		
			79.04	1.60		Firm becoming stiff brown slightly gravelly slightly sandy silty CLAY. Gravel is fine to coarse subangular to subround of mudstone sandstone and quartz		
				(9.90)				
Continued next sheet								

Start & End of Shift Observations					Borehole Diameter		Casing Diameter		Remarks:					
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)						
									1 hour hand excavating 1.20mbgl service avoidance pit					
									Cable percussive boring GL-13mbgl					
									Rotary open hole drilling 13m-40mbgl					
									Water Strikes					
									Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
From (m)	To (m)	Duration	Remarks											
13.00	13.60	01:00												



Contract Name: Huddersfield Market		Client: Kirklees Borough Council			Borehole ID: <b>BH12</b>	
Contract Number: CCG-C-24-15006	Date Started: 04/06/2025	Logged By:	Checked By:	Status: FINAL		Sheet 2 of 5
Cable Percussion Borehole Log	Easting: 414503.4	Northing: 417000.4	Ground Level: 80.64mAOD	Plant Used: Dando 150 S&A	Rig Crew: AR/CMcG PC/AS	Scale: 1:50

Weather: \_\_\_\_\_ Termination: \_\_\_\_\_

Samples & In Situ Testing			Strata Details					Groundwater	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation	
			69.14	11.50		Firm becoming stiff brown slightly gravelly slightly sandy silty CLAY. Gravel is fine to coarse subangular to subround of mudstone sandstone and quartz	10		
						Grey weathered becoming competent MUDSTONE with occasional silt horizons	11		
						No loss of flush and/or returns	12		
							13		
							14		
							15		
							16		
							17		
							18		
							19		
Continued next sheet									

Start & End of Shift Observations					Borehole Diameter		Casing Diameter		Remarks:	
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	1 hour hand excavating 1.20mbgl service avoidance pit	
									Cable percussive boring GL-13mbgl	
									Rotary open hole drilling 13m-40mbgl	
Chiselling					Water Strikes					
From (m)	To (m)	Duration	Remarks		Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
13.00	13.60	01:00								
CC GEOTECHNICAL LTD 0151 545 2750 www.ccgeotechnical.com										



Contract Name:  
Huddersfield Market

Client:  
Kirklees Borough Council

Borehole ID:  
**BH12**

Contract Number:  
CCG-C-24-15006

Date Started:  
04/06/2025

Logged By:

Checked By:

Status:  
FINAL

Sheet 3 of 5

Cable Percussion  
Borehole Log

Easting:  
414503.4

Northing:  
417000.4

Ground Level:  
80.64mAOD

Plant Used:  
Dando 150 S&A

Rig Crew:  
AR/CMcG PC/AS

Scale:  
1:50

Weather:

Termination:

Samples & In Situ Testing			Strata Details				Groundwater	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/Installation
						Grey weathered becoming competent MUDSTONE with occasional silt horizons	20	
						No loss of flush and/or returns	21	
							22	
							23	
							24	
				(29.50)			25	
							26	
							27	
							28	
							29	
						Continued next sheet		

Start & End of Shift Observations					Borehole Diameter		Casing Diameter		Remarks:					
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)						
									1 hour hand excavating 1.20mbgl service avoidance pit					
									Cable percussive boring GL-13mbgl					
									Rotary open hole drilling 13m-40mbgl					
										Water Strikes				
Chiselling					Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks				
From (m)	To (m)	Duration	Remarks											
13.00	13.60	01:00												



Contract Name: Huddersfield Market		Client: Kirklees Borough Council			Borehole ID: <b>BH12</b>	
Contract Number: CCG-C-24-15006	Date Started: 04/06/2025	Logged By:	Checked By:	Status: FINAL		Sheet 4 of 5
Cable Percussion Borehole Log	Easting: 414503.4	Northing: 417000.4	Ground Level: 80.64mAOD	Plant Used: Dando 150 S&A	Rig Crew: AR/CMcG PC/AS	Scale: 1:50

Weather: \_\_\_\_\_ Termination: \_\_\_\_\_

Samples & In Situ Testing			Strata Details				Groundwater	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/Installation
						Grey weathered becoming competent MUDSTONE with occasional silt horizons  No loss of flush and/or returns	30	
							31	
							32	
							33	
							34	
							35	
							36	
							37	
							38	
							39	
						Continued next sheet		

Start & End of Shift Observations					Borehole Diameter		Casing Diameter		Remarks:		
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	1 hour hand excavating 1.20mbgl service avoidance pit		
									Cable percussive boring GL-13mbgl		
									Rotary open hole drilling 13m-40mbgl		
Chiselling					Water Strikes						
From (m)	To (m)	Duration	Remarks	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks		
13.00	13.60	01:00									
CC GEOTECHNICAL LTD 0151 545 2750 www.ccgeotechnical.com											



APPENDIX E: GAS – GROUNDWATER MONITORING RESULTS



TEST DATE AND CONDITIONS			
Date	07/02/2025		
Atmospheric Pressure	1011	mB	
Ambient Temperature	21.3	°C	
EnviroNics Serial No.	5089		

**GFM436 Final Inspection & Calibration  
Check Certificate**

**GAS DATA LTD**

Unit D  
Earlplace Business Park  
Fletchamstead Highway  
Coventry  
CV4 9XL  
Tel 02476303311 Fax 02476307711



Customer	C C Geotechnical
Certificate Number	125962
Order Number	341091

Serial Number	12667
Software Version	G436-00.0027/0010

Recalibration DUE Date
07/02/26

Instrument Checks					
Keyboard	✓		Display Contrast	✓	
Pump Flow In	400	Accept > 200 cc/min	Pump Flow @ -200mB	300	Accept > 200 cc/min
Clock Set / Running	✓		Labels Fitted	✓	

Gas Checks						
Sensor	CH <sub>4</sub>		CO <sub>2</sub>		O <sub>2</sub>	
	Instrument Gas	True Gas Value %	Instrument Gas	True Gas Value %	Instrument Gas	True Gas Value %
	Readings %		Readings %		Readings %	
		60.0	60	39.9	40	20.9
	Accept ±3.0		Accept ±3.0		Accept ±0.5	
	4.9	5	5.0	5	6.0	6
	Accept ±0.3		Accept ±0.3		Accept ±0.3	
Zero Reading 100% N <sub>2</sub>	0.0	0	0.0	0	0.0	0
	Accept ±0.0		Accept ±0.0		Accept ±0.1	

Optional Gas Checks						
Applied Gas & Range		Concentration Tested @ (ppm)	Instrument Readings (ppm)			
Gas Type	Range (ppm)		Zero Reading		Instrument Gas Reading	
H <sub>2</sub> S	5000	1500	0	Accept ±0.0	1500	Accept ±5.0%
CO	2000	1000	0	Accept ±0.0	998	Accept ±5.0%
Hexane	2.0%	2.0%	0	Accept ±0.0	1.99	Accept ±10.0%

Cross Gas Effects									
Applied Gas (ppm)		Instrument Readings (ppm)							
Gas Type	Concentration	Toxic 1:	H2S	Toxic 2:	CO	Toxic 3:	HEX		
H2S	1500	1500		0		0			
CO	1000	70		998		0			
Hexane	2.0%	0		0		1.99			

Pressure Checks			
Atmospheric Pressure [AP] (mB)			
Current Atmospheric Pressure (mB)		Instrument Atmospheric Pressure Reading (mB)	
AP Open Ports		1011	Accept ±2.0
AP Port (Internal)	+800 mB	800	Accept ±5.0
	+1200mb	1200	Accept ±5.0

Flow Checks					
Borehole Flow			Differential Pressure		
Applied Reading (l/h)	Instrument Reading (l/h)		Applied Pressure (Pa)	Instrument Reading (Pa)	
-30	-30.0	Accept ±3.0	-435	-436	Accept ±50
-3	-3.1	Accept ±1.0	-17	-17	Accept ±6.0
0	0.0	Accept ±0.0	0	0	Accept ±0.5
3	3.1	Accept ±0.5	14	14	Accept ±3.0
30	29.8	Accept ±3.0	316	311	Accept ±50
60	59.3	Accept ±6.0	968	943	Accept ±130
90	89.5	Accept ±9.0	1920	1927	Accept ±250

Temperature Checks		
Calibration Temperature	Instrument Temperature Reading °C	
Applied Temperature °C		
-10	-10.0	Accept ±2.0
0	0.0	Accept ±1.0
30	30.0	Accept ±1.0
60	60.0	Accept ±1.0
100	100.0	Accept ±1.0

Technician:  
Redacted

Date Tested:  
07/02/2025

The instrument identified by the serial number stated above has been tested by Gas Data personnel for calibration accuracy on the date and under the ambient conditions stated. Gas Data Ltd internal BS EN ISO9001:2015, BS EN ISO14001:2015, BS EN ISO45001:2018 compliant workshop procedures were followed to apply known calibration test gases, gas flow rates, pressures and temperatures of the values stated. The results displayed on the instrument at each stage are recorded above.





Life-saving solutions

## CERTIFICATE OF CALIBRATION

**CALIBRATION CERTIFICATE NO:** 81795

ISSUED BY: SHAWCITY LIMITED  
DATE: 09/01/2025

APPROVED SIGNATORY: **Redacted**

NAME: Paul Whiting

CUSTOMER: CC GEOTECHNICAL LTD  
INSTRUMENT: PhoCheck Tiger - W-2B  
SERIAL NUMBER: T-106231

CALIBRATION METHOD: CM03  
AMBIENT CONDITIONS: 20°C ± 2°C and 50% (± 20%) RH

---

Prior to calibration the instrument was allowed to stabilise in the laboratory for at least 30 minutes.  
The instrument was calibrated by exposing the sensor to known values of gas concentrations.  
All gases were sampled through the complete probe and in line filter, where applicable.  
The reference value is that generated by the certified source and the indicated value is that measured by the instrument.

---

### CALIBRATION RESULTS

GAS	LOT No	REF. VALUE	INDICATED VALUE
Isobutylene	WO480708-2	100 ppm	100 ppm
Isobutylene	WO459183-2	1000 ppm	1000 ppm

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#### COMMENTS:

The reported uncertainty is based on a standard uncertainty multiplied by a coverage factor of  $k=2$ .  
This provides a level of confidence of uncertainty of approximately 95%.  
The uncertainty of measurement is ±2 %  
The results indicate that the instrument conforms to the applicable parts of the published specification.

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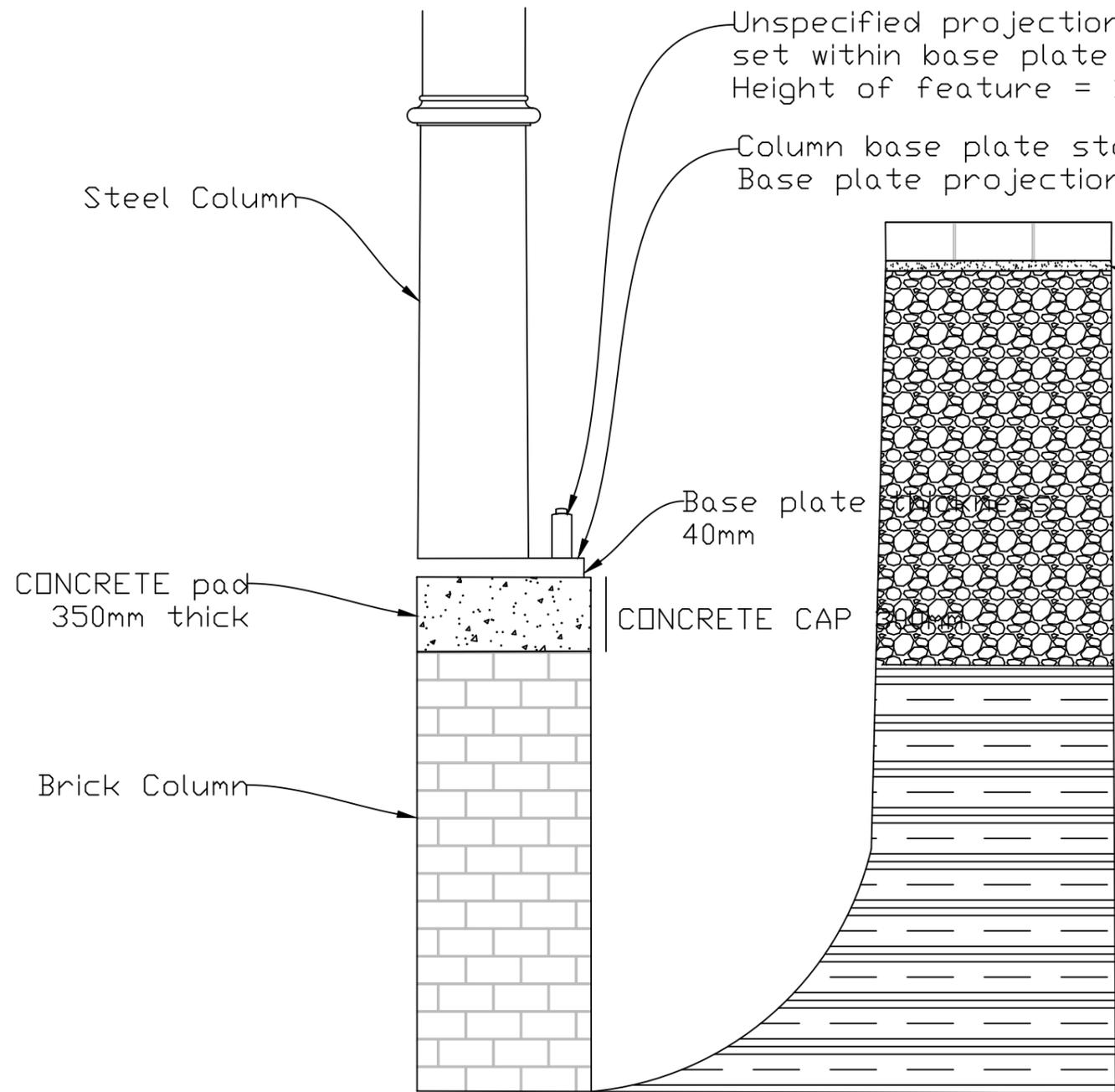
### HEALTH & SAFETY, OCCUPATIONAL HYGIENE AND ENVIRONMENTAL MONITORING INSTRUMENTS

---

Tel: 01793 780622  
[www.shawcity.co.uk](http://www.shawcity.co.uk)

Instrument House, 91-92 Shrivenham Hundred Business Park  
Watchfield, Oxfordshire, SN6 8TY

APPENDIX F: FOUNDATION INSPECTION PIT LOGS



SANDSTONE paving - 0.07mbgl  
 Brown fine - coarse grained SAND layer - 0.09m

Dark brown clayey gravelly SAND. Low cobble content.  
 Gravel is fine to coarse angular to subround of brick  
 coal & sandstone (MADE GROUND) - 1.1mbgl

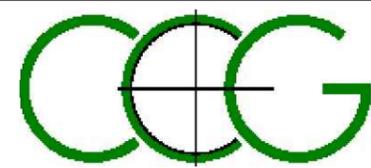
Firm then stiff brown locally grey slightly  
 gravelly slightly sandy silty CLAY - 1.9mbgl

Trial pit dry on completion

Base of brick column not proven at 1.9mbgl

TP01

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 L33 7BA  
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 enquiries@ccgeotechnical.co.uk  
 www.ccgeotechnical.co.uk

<b>Client</b>	Kirklees Borough Council			
<b>Site</b>	Huddersfield Open Market, Huddersfield, HD1			
<b>Drawing</b>	Trial Pit Log			
<b>Job No.</b>	<b>Dwg. No.</b>	<b>Rev. No.</b>	<b>Scale@A3</b>	<b>Date</b>
25-15006	TP01	0	NTS	-



TP01: Showing soil profile

TP01: Confirming depth of hand excavation





TP01: Showing unspecified feature set within concrete foundation

TP01: Showing trial pit arisings

