### Appendix B: Site Investigation Information

Brislington Meadows. Factual Report on Ground Investigation (report Ref: 36142)



## **BRISLINGTON MEADOWS**

# FACTUAL REPORT ON GROUND INVESTIGATION

Prepared for CAMPBELLREITH

Report Ref: 36142

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## **BRISLINGTON MEADOWS**

# FACTUAL REPORT ON GROUND INVESTIGATION

## Prepared for CAMPBELLREITH

## Report Ref: 36142

# PROJECT: Housing development with associated access, public open space and ecological corridors.

CONSULTANT: CampbellReith

VOLUME - VERSION	STATUS	ORIGINATOR	CHECKER	APPROVED	DATE			
1 of 1 – A	DRAFT	JE	JΗ	-				
ORIGINATOR			APPROVER					
Joss Evans			John Hanson					
Senior Engineering Ge	ologist		Director	Director				

The report is not to be used for contractual or engineering purposes unless this sheet is signed and the report designated "Final".

The report has been prepared for the sole use and reliance by CampbellReith. GEL accepts no liability as a result of the use or reliance of this report by any other parties.





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EXPLORATORY HOLE LOCATION PLAN 1

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### 1. INTRODUCTION

It is proposed to develop a site for housing with associated access, public open space and ecological corridors at Brislington Meadows, Bristol. Geotechnical Engineering Limited (GEL) was instructed by CampbellReith to carry out an investigation to determine the ground conditions.

The scope of works and terms and conditions of appointment were specified by the Client and GEL correspondence reference T31666, dated 20<sup>th</sup> October 2020. The investigation was carried out under direction and supervision of the Client.

This report describes the investigation and presents the findings.

### 2. SITE LOCATION AND GEOLOGY

The site is situated at Brislington Meadows, Bonville Road, Bristol, BS4 4NZ, Bristol and may be located by its National Grid co-ordinates ST 626 711.

The British Geological Survey (BGS) England and Wales (ST67SW, 1:10,560, 1961) indicate the site is underlain by Pennant Sandstone Formation of Carboniferous age. No superficial deposits are indicated.

### 3. GROUND INVESTIGATION

### 3.1 Fieldwork

The fieldwork was carried out in general accordance with BS5930:2015+A1:2020 during the period 2<sup>nd</sup> November to 20<sup>th</sup> November 2020 and comprised six rotary boreholes, twenty trial pits, four soakaways test and three dynamic cone penetrometer tests.



The exploratory hole locations were selected by the Consultant and set out by this Company and are shown on Figure 1. The ground level and co-ordinates at each exploratory hole were established by this Company using GPS techniques.

The boreholes, referenced BH01 to BH06 (Appendix A), were formed using a track-mounted Geotechnical Pioneer Rig. Initially, an inspection pit was hand excavated at each borehole location to a maximum depth of 1.20m to check for buried services. Disturbed samples were taken and retained in a combination of plastic tubs, bags and glass jars. Heavy duty dynamic sampling techniques were then employed to produce a continuous disturbed sample of 112mm nominal diameter. The samples were recovered in semi-rigid plastic liner.

On refusal to dynamic sampling the boreholes were continued by rotary core drilling techniques utilising a water flush. A double-tube swivel core barrel with semi-rigid plastic liner was utilised to recover a continuous sample of 90mm diameter.

The dynamic samples and rotary core were extracted horizontally from the sampler and core barrel respectively, the semi-rigid liner was cut to length and caps placed at each end to retain moisture content. All samples and core were retained in sequence in labelled, wooden coreboxes.

In BH01, BH02, BH04, BH05 and BH06, the boreholes were advanced from 14.70m using rotary open hole drilling techniques with a 70mm diameter tri-cone bit utilising water as the flushing medium. This technique was utilised in BH05 from 19.20m depth.

The penetration rate, the amount of flush and type of drill cuttings were continuously monitored by an Engineering Geologist as the probeholes were drilled.

On completion, slotted standpipes were installed in BH01 to BH06. Each standpipe consisted of a 50mm ID PVC slotted tube set in a granular filter medium and sealed above and below



with a bentonite plug. The installations in BH01 to BH05 were protected at the surface by a lockable stopcock cover set in concrete, while BH06 was protected by a steel borehole helmet. Installation details are given on the relevant borehole log.

During the first monitoring visit on 30<sup>th</sup> November 2020, it was noted that the installation in BH05 required repair. This resulted in groundwater dip data for 30<sup>th</sup> November and groundwater and gas data for 17<sup>th</sup> December 2020 being unavailable for BH05.

The installations were monitored for gas flow and then tested for methane, carbon dioxide, oxygen, hydrogen sulphide, and carbon monoxide using a Gas Data GFM 435 gas analyser. Subsequent readings, along with water level records, are tabulated in Appendix A.

The installations were monitored for Volatile Organic Compounds (VOC's) using a MiniRAE 2000 Portable Photo-Ionisation Detector (PID) with a 10.6eV gas discharge lamp. The detector uses an ultra violet light source to break down the chemicals into positive and negative ions (ionisation). The detector measures the charge of the ionised gas and converts the signal into current. The current is then amplified and displayed as "ppm"; after measurement the ions reform the original gas or vapour allowing it to be sampled. The readings are presented in Appendix A.

The trial pits, referenced TP01 to TP16 and SA01 to SA04 (Appendix A), were formed by a wheeled excavator with a 0.60m wide backactor bucket. Representative disturbed samples were taken and retained in sealed plastic bags and airtight containers to retain moisture content.

Soakaway tests were carried out in trial pits SA01 to SA04, in general accordance with BRE DG 365 (2016). The excavation sides were squared using the excavator bucket and the dimensions recorded within the test section. The trial pits were partially filled with clean water using a



dedicated bowser with a 75mm diameter outlet and the fall in level recorded against time. The results are presented in Appendix A.

Dynamic Cone Penetrometer tests (DCP), referenced TP14 DCP to TP16 DCP (Appendix A), were carried out adjacent to TP14 to TP16 using a CNS Farnell A2465 dynamic cone penetrometer. Probe depths were measured with respect to ground level and the number of blows for the penetration of the probe was recorded. Equivalent CBR values have been calculated and presented with the results in Appendix A.

On completion, all trial pits were backfilled with arisings compacted in suitable layers by the excavator bucket. The ground surface was left slightly proud to accommodate the future inevitable settlement of the backfill.

Samples for chemical analyses were dispatched from site directly to i2 Laboratories under a Chain of Custody. On completion of fieldwork all other samples were brought to this Company's laboratory for logging, testing and storage.

### 3.2 Logging

The logging of soils and rocks was carried out by an Engineering Geologist in general accordance with BS5930:2015+A1:2020. A key to the exploratory hole logs is presented in Appendix A.

Detailed descriptions of the samples are given in the borehole logs, Appendix A, along with details of sampling, groundwater ingress, installations and relevant comments on drilling techniques.

The hand excavated inspection pits and trial pit were logged in situ to a depth of approximately 1.20m and thereafter from the surface. Detailed descriptions are given on

FRT01 v13 09/06/17 JH



the pit logs, Appendix A, along with details of sampling and in situ testing, groundwater ingress and relevant comments on stability and excavatability.

### 3.3 Laboratory Testing

A schedule of laboratory tests was prepared by the Consultant, the following tests being carried out in accordance with BS1377:1990, unless stated otherwise. The number in brackets refers to the test number given in that standard. The results are presented in Appendix B.

The natural water content was determined on thirteen selected samples in accordance with BS EN ISO 17892-1:2014.

Liquid limit, plastic limit and plasticity index tests [Part 2:4.3, 5.3 and 5.4] were carried out on thirteen selected samples. An Atterberg line plot has also been presented.

Particle size distributions were determined in accordance with BS EN ISO 17892-4:2016 for fourteen samples by wet sieving [5.2]. The fine fractions of one of these samples was further analysed by sedimentation using the pipette method [5.4]. The results are presented as grading curves.

The compaction characteristics of five selected soil samples were investigated using a 2.5kg rammer [Part 4:3.2 and 3.3/3.4]. The results are presented as a plot of dry density against moisture content.

The natural moisture content of rock was determined on seven selected cores and point load index tests were carried out on ten selected lengths of core in accordance with ISRM (2007).



The BRE SD1 (2005) suite of tests was carried out on six samples by Chemtest using in-house methods.

The organic matter content was determined for five selected samples using in-house methods by Chemtest.

Selected samples were despatched to i2 Analytical Ltd., where chemical analyses were carried out to in-house methods for a suite of contaminants. The results are presented in Appendix C.

### **GEOTECHNICAL ENGINEERING LIMITED**



### 4. **REFERENCES**

British Standards Institution (2015): Code of practice for ground investigations. BS 5930:2015+A1:2020.

British Standards Institution (2016): Methods of test for soils for civil engineering purposes – Part 1: General requirements and sample preparation. BS1377-1:2016.

British Standards Institution (1990): Methods of tests for soils for civil engineering purposes. BS 1377 Parts 2-9.

British Standards Institution (2014): Geotechnical investigation and testing – Laboratory testing of soil. Part 1: Determination of water content. BS EN ISO 17892-1:2014.

British Standards Institution (2016): Geotechnical investigation and testing – Laboratory testing of soil. Part 4: Determination of particle size distribution. BS EN ISO 17892-4:2016.

Building Research Establishment (2005): Concrete in aggressive ground. BRE Special Digest 1. Third Edition.

Building Research Establishment (2016): Soakaway Design. Digest DG 365.

International Society for Rock Mechanics (2007). The complete ISRM suggested methods for rock characterization, testing and monitoring: 1974-2006, edited by R Ulusay & J A Hudson. Ankara, Turkey: Turkish National Group of the International Society for Rock Mechanics.





## **APPENDIX A** FIELDWORK DATA

## **BOREHOLE LOG**

BH01

1 of 4

1:50

30.00 m

#### CLIENT CAMPBELLREITH

SITE **BRISLINGTON MEADOWS** 

Start Date 16 November 2020

End Date 17 November 2020 Easting 362559.9

Northing

171237.2 Ground Level 61.40mOD

Depth

Sheet

Scale

sample no & type	sample depth (m) from to	casing depth (m)	samp. /core range	lf	water record depth (m)	instru -ment	test type & value	description	depth (m)	reduced level (m)	legend
1B 1ES 2D	0.05 - 0.15 0.05 - 0.15 0.05 - 0.15	-						Grass over brown partially organic silty gravelly fine to coarse SAND. Gravel is subangular and subrounded fine to	0.25 -	61.15	× × × × ×
2ES 3B	0.40 - 0.60	E						coarse sandstone. Frequent rootlets and roots (up to 4mm	-	-	
4D	0.40 - 0.60	E						Reddish brown silty sandy subangular and subrounded fine to coarse sandstone GRAVEL.	1 00 -	60.40	
3ES 5B	1.00 - 1.20 1.00 - 1.20	E					-	Medium strong grey fine to medium SANDSTONE recovered		00.10	
6D 7L	1.00 - 1.20 1.20 - 1.30	- 1.30	100	NI				subrounded tabular fine to coarse GRAVEL.	1.40 _	60.00	
8C	1.30 - 2.70	E	43 0	22 30			-	Medium strong thickly laminated to very thinly bedded		-	
		F						reddish brown line to coarse SANDSTONE. Bedding	-	-	
		F					-	spaced planar rough rarely infilled with reddish brown silt.	2.20 -	59.20	
		E		NI 50				<ul> <li>1.80 - 2.20m: Becoming grey.</li> <li>1.85 - 2.20m: Subvertical fracture stepped rough.</li> </ul>		-	
		F		140			-	Weak to moderately weak very thinly to thinly bedded light	-	-	
9C	2.70 - 4.20	- 1.30	100					grey fine to coarse SANDSTONE with frequent	-	-	
		<b>F</b>	54 7				-	are stained reddish brown 10° to 20° very closely to closely		-	
		F						spaced planar rough with frequently infilled reddish brown	-	-	
		E						sandy silty clay. Fractures (2) are stained reddish brown 40°	-		
		F						spaced planar and stepped rough with rare red staining and	-	-	
		F				$\square$		reddish brown sandy infill.	-	-	
		F					-	2.70 - 3.00m: Recovered non intact.	4.10	57.30	
10C	4.20 - 5.70	- 1.30	100					coarse SANDSTONE with rare carbonaceous laminae (up to	-	-	
		E	87					1mm). Fractures are 5° to 15° very closely to closely spaced	-	-	
		E						planar rough rarely infilled with red sandy silty clay.	-		
		F					-		5.00_	56.40	
		F		NI 60				- Moderately weak medium bedded grey fine to medium	-	-	
		F		160				medium spaced planar and stepped rough. Fractures (2) are		-	
110	5 70 7 00	F						55 to 65° closely to medium spaced stepped rough.	-	-	
110	5.70 - 7.20	- 1.30	100			$\exists$		5.50 - 6.35m: Becoming reddish brown.	-	-	
		E	68				-		-	_	
		F				E.		-	6.35 -	55.05	
		F		70				Weak locally very weak reddish brown medium to thickly		-	
		F		240				bedded fine to coarse SANDSTONE. Bedding fractures (1)	-	-	
		F.						rarely infilled with reddish brown clavey silty sand. Fractures	-	-	
100	7 00 0 70	F 1 20		20		-	-	(2) are 70° closely to medium spaced stepped rough	-	-	
120	7.20 - 0.70	E 1.30	100	150				frequently stained red.		_	
		F	100	400					-	-	
		F						-		-	
		F				H	-	Continued Next Page	_	-	
HOLE	CONSTRUCTI	ON	1					WATER STRIKE Groundwater not encountered prior to us	e of flus	h	<u>I</u>
TOP (m	i) BASE (m	) TYP	E notion F	);+	P	LANT (	JSED	DEPTH (m) CASING (m) ROSE TO (m) AFTER (min)	REMA	<b>\RKS</b>	
1.20	1.30	Wind	lowless	Sample	r G	ieotech	nical Pion	eer Rig.			
1.30	14.70	Rota	ry Core	•	G	eotech	nical Pion				
DIAM (r	mm) BAS	E (m)			TOF	orrill (m) B	ASE (m)	MATERIAL DEPTH (m) TYPE			
140 `	1.30	. ,			0.00	0	.30	Concrete 13.00 Standpipe			
					0.30	2	.90	Bentonite			AGS
					2.90	1	3.00	Gravel	(	CONT	RACT
DIAM		E (m)		HOLE F	PROGR	ESS				<b>n</b> n4	40
128	2.70	) )		16-11-20	020 09:1	10	0.00	Nil Dry		361	42
116	14.7	0		16-11-20	20 15:	30	14.70	1.30 1.42		CHEC	KED
10	30.0	i U		17-11-20	020 00.0	30 80	30.00	1.30 1.60		5	

## **BOREHOLE LOG**



2 of 4

1:50

#### CLIENT CAMPBELLREITH

SITE **BRISLINGTON MEADOWS** 

Start Date 16 November 2020

End Date 17 November 2020 Northing

Easting

171237.2

362559.9

Ground Level 61.40mOD

Depth 30.00 m

Sheet

Scale

sample no & type	sample depth (m) from to	casing depth (m)	samp. /core range	lf	water record depth (m)	instru -ment	test type & value		descriptio	'n	depth (m)	reduced level (m)	legend
13C	8.70 - 10.20	- - - - - - - - - - - - - - - - - - -	100 73 73					Weak locally very weak bedded fine to coarse are 10 to 25° closely to rarely infilled with reddi (2) are 70° closely to m frequently stained red. 9.00m: 30° fracture step	reddish bi SANDSTO medium s sh brown c iedium spa	rown medium to thickly DNE. Bedding fractures (1) paced stepped rough clayey silty sand. Fractures aced stepped rough			
14C	10.20 - 11.70	- - - - - - - - - - - - - - - - - - -	100 90 73	NI 100 200				Extremely weak friable tending to very stiff san 9.85 - 9.95m: Extremely Very weak reddish brow thick laminae of mediun Fractures are randomly closely spaced undulat and black	reddish bru dy silty cla <u>weak black</u> wn MUDST n strong re v orientatect ing smooth	own MUDSTONE locally y. k coal. ONE with closely spaced eddish grey fine sandstone. d extremely closely to n rarely stained yellow, red	9.80	51.60 51.20 50.85	
15C	11.70 - 13.20	- - - - - - - - - - - - - - - - - - -	93 30 30	NI				Very weak reddish brow randomly orientated ex undulating smooth rare	vn MUDST tremely clo ly stained y	ONE. Fractures are sely to closely spaced yellow, red and black.	   	49.10	
16C	13.20 - 14.70	- 1.30 - 1.30 	100 97 97	NI 150 250 NI 200 450				Moderately Weak reddi recovered as sandy su medium sandstone GR Medium strong reddish Fractures are randomly spaced stepped rough sandy silty clay. Medium strong medium SANDSTONE. Bedding planar and stepped rou 13.40 - 13.45m: 10° fra brown sandy silt.	sh prown fi pangular al AVEL. brown fine orientated rarely infille to thickly g fractures igh. cture planar	to coarse SANDSTONE and subrounded fine to to coarse SANDSTONE. to very closely to medium ed with reddish brown bedded grey fine to coarse are 25° medium spaced rough infilled with reddish	12.50	48.90	
								Grey SANDSTONE (D	iller's desc	ription). Open hole drilled.	14.70	46.70	
HOLE TOP (m 14.70	CONSTRUCTION BASE (m) 30.00	ON TYP Rota	E ıry Oper	n Hole	F	PLANT L Geotechi	JSED nical Pione	eer Rig.	E Groundwa \SING (m)	ater not encountered prior to us ROSE TO (m) AFTER (min)	∍ of flusł REMA	ו RKS	
CASIN DIAM (r	<b>G DEPTH</b> nm) BAS	E (m)			<b>BA</b> TOI 13.0	CKFILL P (m) B 00 30	ASE (m) 0.00	I MATERIAL Bentonite	INSTRUMI DEPTH (m)	ENTATION ) TYPE			AGS
BARRE DIAM (r	<b>EL DIAMETER</b> nm) BAS	E (m)		HOLE DATE	PROGR	RESS	DEPTH	I (m) CASING (m) WA	LTER (m)	REMARKS	(	<b>361</b>	<b>42</b> KED

## **BOREHOLE LOG**

Sheet

Scale

Depth

## **BH01**

3 of 4

1:50

30.00 m

CLIENT	CAMPBELLREITH
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SITE **BRISLINGTON MEADOWS** 

Start Date 16 November 2020

End Date 17 November 2020 Northing 171237.2

Easting

Ground Level 61.40mOD

362559.9

sample no & type	sample depth (m) from to	casing depth (m)	samp. /core range	١f	water record depth	instru -ment	test type & value			descript	ion	depth (m)	reduced level (m)	legend
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		F				-								
HOLE	CONSTRUCTI	ON							WATER STR	IKE Groundy	water not encountered prior to u	se of flus <sup>i</sup>	l h	
TOP (m	) BASE (m)	) TYP	E		F	PLANT	JSED		DEPTH (m)	CASING (m)	ROSE TO (m) AFTER (min)	REMA	RKS	
CASIN DIAM (r	<b>G DEPTH</b> nm) BAS	E (m)			BA TO	CKFILL P (m) B	- ASE (m)	MATERIAL	_	INSTRUM DEPTH (n	<b>IENTATION</b> n) TYPE			
												C		AGS RACT
BARRE DIAM (r	nm) BAS	E (m)		HOLE DATE	PROGR	ESS	DEPTH	(m) CAS	SING (m) W	/ATER (m)	REMARKS		361	42
Ì		. ,								. ,		F		
													CHEC	KED

## **BOREHOLE LOG**

Sheet

Scale

Depth

Ground Level 61.40mOD

## **BH01**

4 of 4

1:50

30.00 m

CLIENT CAMPBELLREITH

SITE **BRISLINGTON MEADOWS** 

Start Date 16 November 2020 End Date 17 November 2020 Easting 362559.9

Northing 171237.2



## **BOREHOLE LOG**



#### CLIENT CAMPBELLREITH

SITE **BRISLINGTON MEADOWS** 

Start Date 10 November 2020

End Date 11 November 2020

Northing

Easting

171129.6 Ground Level 51.80mOD

362523.2

Scale Depth

Sheet

30.00 m

**BH02** 

1 of 4

1:50

sample no & type	sample depth (m) from to	casing depth (m)	samp. /core range	lf	water record depth (m)	instru -ment	test type & value	description depth (m)	reduced level (m)	legend
1B 1ES 2D 2ES	0.05 - 0.15 0.05 - 0.15 0.05 - 0.15 0.40 - 0.60	-			(,		-	Grass over soft to firm brown gravelly sandy silty CLAY with frequent rootlets. Gravel is subangular and subrounded fine to medium sandstone.	51.50	×
3B 4D	0.40 - 0.60 0.40 - 0.60	-						Brown slightly silty sandy subangular fine to coarse sandstone GRAVEL.	50.90	
3ES 5B 6D 7L	1.00 - 1.20 1.00 - 1.20 1.00 - 1.20 1.20 - 2.70							Brown slightly silty sandy subangular fine to coarse sandstone GRAVEL with low subangular sandstone cobble content.		
10D	1.70 - 1.80						-	1.80	50.00	
4ES	2.20 - 2.30	- - -						Stiff reddish brown slightly gravelly silty CLAY. Gravel is subangular fine to coarse mudstone lithorelicts.	49.70	· · · · · ·
11D	2.30 - 2.40							Very weak locally weak thinly laminated reddish brown and grey MUDSTONE with rare beds (up to 50mm) of weak	49.10	
120	2.70 - 4.20	- 2.70 - 	86 56 20	NI			-	sandy subangular fine to coarse gravel with a high		· · · · · · · · · · · · · · · · · · ·
130	3.10 - 3.20			NI 50			-	Weak grey fine to coarse SANDSTONE recovered as slightly sandy subangular fine to coarse GRAVEL.	48.60	· · · · · ·
		_		60				SANDSTONE with rare carbonaceous laminae (up to 2mm). Bedding fractures are 10° to 25° very closely spaced	48.00	· · · · · · ·
14C	4.20 - 5.70	 2.70	100	60 180 40				Stepped rough rarely infilled with red silty sand.	47.60	· · · · · · · · · · · · · · · · · · ·
		-  -	93 80	200 430				stepped rough rarely infilled with soft red silty sand. Fractures (2) are 70° very closely to medium spaced		· · · · · ·
								Medium strong grey fine to coarse SANDSTONE. Bedding fractures (1) are 20 to 30° closely and medium spaced		· · · · · · · · · · · · · · · · · · ·
		-						stepped rough rarely infilled with soft red clayey silty sand. Fractures (2) are 65 to 75° closely and medium spaced		· · · · · ·
15C	5.70 - 7.20	- 2.70 - -	100 97 97							
		-								
		-								· · · · · · ·
16C	7.20 - 8.70	 2.70	100							· · · · · · · · · · · · · · · · · · ·
		- - -	57 50					7 80 - 8 30m; Heavily fractured Eractures are 70 to 90°		· · · · · ·
	CONSTRUCT					E		stepped rough stained red rarely infilled with white quartz.		· · · · · ·
TOP (m	) BASE (m) 1.20	TYPI Inspe	E ection F	Pit	F	PLANT Hand to	USED ols	DEPTH (m) CASING (m) ROSE TO (m) AFTER (min) REMAN	RKS	
1.20 2.70	2.70 14.70	Rota	ry Core	s Sampl	er (	Seotech Seotech	nical Pione			
DIAM (r 140	nm) BAS 2.70	E (m)			TO 0.0	P (m) E	BASE (m)	MATERIAL DEPTH (m) TYPE Concrete 11.00 Standpipe		
					0.3 0.9 11.0	0 0 D 1 DO 3	0.90 1.00 80.00	Bentonite Gravel Bentonite		
BARRE DIAM (r	EL DIAMETER nm) BAS	E (m)		HOLE	PROGF	ESS	DEPTH	T (m) CASING (m) WATER (m)	364	<b>12</b>
128 116	, 2.70 2.70 14.7	0		10-11- 10-11-	2020 08: 2020 15:	45 30	0.00 14.70	Nil Dry 2.70 1.42		<b>4</b> 2
70	30.0	D		11-11-2 11-11-2	2020 08: 2020 14:	20 00	14.70 30.00	2.70 2.30 2.70 2.34	HEC	KED

Geotechnical Engineering Ltd, Tel. 01452 527743 36142 BRISLINGTON MEADOWS 2/22/2021 6:48:42 PM Logged by: DH Checked by: JH

## **BOREHOLE LOG**

**BH02** 

#### CLIENT CAMPBELLREITH

SITE **BRISLINGTON MEADOWS** 

Start Date 10 November 2020 End Date

11 November 2020

Northing 171129.6

Easting

362523.2

Ground Level 51.80mOD

Depth

Sheet

Scale

30.00 m

2 of 4

1:50

sample no & type	sample depth (m) from to	casing depth (m)	samp. /core range	lf	water record depth (m)	instru -ment	test type & value	description	depth (m)	reduced level (m)	legend
17C	8.70 - 10.20	 2.70	100 90 83					Medium strong grey fine to coarse SANDSTONE. Bedding fractures (1) are 20 to 30° closely and medium spaced stepped rough rarely infilled with soft red clayey silty sand. Fractures (2) are 65 to 75° closely and medium spaced stepped rough stained red.			
18C	10.20 - 11.70	  2.70 	100 73 67					9.30m: 10° fracture undulating rough.			
19C	11.70 - 13.20	  2.70 	100 85 75	. 30 80 170				Medium strong dark grey MUDSTONE. Bedding fractures (1) are are 0 to 10° degrees closely spaced stepped smooth. Fractures (2) are 50 to 60° closely spaced stepped smooth.	 11.60   	40.20	
20C	13.20 - 14.70	       	100 67 63	90 150 360				Medium strong thinly bedded grey fine to coarse SANDSTONE with frequent black carbonaceous laminae (up to 2m). Bedding fractures (1) are 10° to 20° closely and medium spaced stepped rough rarely infilled with red clayey silty sandy. Fractures (2) are 70° closely and medium spaced stepped rough.	12.55 	39.25	
								Grey SANDSTONE. No voids detected. (Driller's description). Open-hole drilled.	  	37.10	
								Continued Next Page			
TOP (m 14.70	) BASE (m) 30.00	) TYP Rota	E iry Oper	n Hole	F	PLANT L Geotechi	JSED nical Pione	DEPTH (m) CASING (m) ROSE TO (m) AFTER (min)	REMA	n ARKS	
CASIN DIAM (r	<b>G DEPTH</b> nm) BAS	E (m)			<b>BA</b> TOI	CKFILL P (m) B	ASE (m)	MATERIAL INSTRUMENTATION DEPTH (m) TYPE			AGS
BARRE				HOLE	PROGR	RESS		REMARKS	(	CONT	RACT
DIAM (r	nm) BAS	iE (m)		DATE	TIME		DEPTH	(m) CASING (m) WATER (m)		361 CHEC	<b>42</b> KED

Geotechnical Engineering Ltd, Tel. 01452 527743 36142 BRISLINGTON MEADOWS 2/22/2021 6:48:42 PM Logged by: DH Checked by: JH

## **BOREHOLE LOG**

## **BH02**

3 of 4

1:50

CLIENT (	CAMPBELLREITH
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SITE **BRISLINGTON MEADOWS** 

Start Date 10 November 2020 End Date

sample sample depth casing samp.

11 November 2020

Northing 171129.6

Easting

water instru test

362523.2

Ground Level 51.80mOD

Scale Depth

Sheet

30.00 m

depth reduced legend

no & type	(m) from to	depth (m)	/core range	١f	depth	-ment	type & value			descripti	on		(m)	level (m)	
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HOLE		ÓN		1				1		IKE Groundw	vater not encountered	l prior to use	of flush		
10P (m	I) BASE (M)	η τγρ	E		ŀ		JOED	L	JEPTH (M)	CASING (M)	RUSE IU (M) AF		кема	KKS	
CASIN	G DEPTH mm) RAS	E (m)			BA TO	CKFILL (m) B	ASF (m)	MATERIAI		INSTRUM					
2.7 001 (1		- ()				(, D				22(	.,				
													_		AGS
BARRI	EL DIAMETER			HOLF	PROGR	ESS					REMARKS		C	ONT	RACT
DIAM (I	mm) BAS	E (m)		DATE	TIME		DEPTH	(m) CASI	ING (m) W	/ATER (m)				361	42
														CHEC	KED

## **BOREHOLE LOG**

Sheet

Scale

Depth

### **BH02**

4 of 4

30.00 m

1:50

CLIENT CAMPBELLREITH	
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SITE **BRISLINGTON MEADOWS** 

Start Date 10 November 2020 End Date

11 November 2020 Northing

171129.6

Easting

362523.2

Ground Level 51.80mOD

sample no & type	sample depth (m) from to	casing depth (m)	samp. /core range	lf	water record depth (m)	instru -ment	test type & value	description	depth (m)	reduced level (m)	legend
								Borehole Completed at 30.00m	30.00	21.80	
HOLE TOP (m	CONSTRUCTION BASE (m)	N TYP	E		F	LANT U	JSED	WATER STRIKE Groundwater not encountered prior to use DEPTH (m) CASING (m) ROSE TO (m) AFTER (min)	of flus REMA	h ARKS	
CASIN DIAM (r	<b>G DEPTH</b> nm) BASI	E (m)			BA TOF	CKFILL <sup>o</sup> (m) B	ASE (m)	MATERIAL DEPTH (m) TYPE	[		AGS
BARRE DIAM (r	EL DIAMETER nm) BAS	E (m)		HOLE	PROGR	ESS	DEPTH	(m) CASING (m) WATER (m)	(	361 CHEC	≺аст <b>42</b> кер

## **BOREHOLE LOG**

#### CLIENT CAMPBELLREITH

SITE **BRISLINGTON MEADOWS** 

Start Date 12 November 2020

End Date 13 November 2020 Northing 171070 7

Easting

362520.5

10 0EmOD

Sheet

Scale

End [	Date 13	8 Nove	ember	2020	North	ing	171079.7	Ground Level	48.85mOD I	Depth	30	.00 m
sample no & type	sample depth (m) from to	casing depth (m)	samp. /core range	lf d	vater instru ecord -ment t lepth (m)	test type & value		description		depth (m)	reduced level (m)	legend
1B 1ES 2D 2ES 4B 5D	0.05 - 0.15 0.05 - 0.15 0.05 - 0.15 0.40 - 0.60 0.40 - 0.60 0.40 - 0.60						Grass over so clayey SILT w medium sands Soft orangish silty CLAY. Gra	ft to firm brown slightly ith rare rootlets. Grave stone rarely quartzite. brown slightly gravelly avel is subangular and	y gravelly slightly sandy el is subangular fine an slightly organic sandy d subrounded fine to	d 0.30	48.55 48.25	
3ES 7B 8D 10L	1.00 - 1.20 1.00 - 1.20 1.00 - 1.20 1.20 - 2.30				<sup>2</sup> 1.10	-	coarse sandst Firm orangish Gravel is suba	tone. brown slightly sandy g angular fine to coarse	gravelly silty CLAY. mudstone lithorelicts .		47.20	
4ES 11D	1.70 - 1.80 1.80 - 1.90					-	Reddish brow sandstone GR	n slightly sandy silty s RAVEL with a high sub	ubangular fine to coars angular sandstone	e 1.55 -	47.30	
12D 5ES 13C	2.10 - 2.20 2.10 - 2.20 2.30 - 2.70	2.30	100	NA			Cobble conten Stiff light grey Gravel is suba	it. mottled orange slightl angular fine and mediu	y gravelly silty CLAY . Im mudstone lithorelicts	s. 2.00_	46.85	
14C	2.70 - 4.20	2.30	87 20			-	Reddish brow sandstone GR	n slightly sandy silty s RAVEL with a high sub	ubangular fine to coars angular sandstone	e 2.50 2.90	46.35	
15D	3.00 - 3.10		0	NI 30 80			Firm light grey Gravel is suba Very weak thir fractures are ( stepped rough	w mottled orange slight angular fine to coarse i hly bedded grey MUDS to 15° very closely an narely infilled with sof	ly gravelly silty CLAY. mudstone lithorelicts. STONE. Bedding nd closely spaced ft grey and orange sand	3.30 -	45.55	
16C	4.20 - 5.70	 2.30 	100 50 40							4.60	44.25	
				60 70 190			Weak thinly be are 0 to 10° cl infilled with gr 5.15 - 5.25m:	edded grey MUDSTO osely spaced stepped ey sandy silty clay. Subvertical fracture und	NE. Bedding fractures and planar rough rare lulating smooth.	y		
17C	5.70 - 7.20	2.30	100 90 90	40 160 250			Medium stron carbonaceous 10 to 20° clos	g grey fine to coarse S s laminae (up to 2mm) ely and medium space	ANDSTONE with rare . Bedding fractures are ed planar rough.	5.70	43.15	· · · · · · · · · · · · · · · · · · ·
18C	7.20 - 8.70	- 2.30	100				Extremely wea	ak thinly laminated dar 0 ro 20° very closely a	k grey MUDSTONE. and closely spaced			
			100 100 67	45 80 <u>100</u> 30			Medium strong fractures are fractures are fr	ly sandy silty clay. g grey fine to coarse S 10 to 20° very closely 1 Continued Next Pa	ANDSTONE. Bedding	7.45	41.40 41.05	
HOLE	CONSTRUCT	ION	-				WAT				DI/C	
TOP (m	) BASE (n	n) TYP	E ection P	it	PLANT USE	ΞĎ	DEP1	TH (m) CASING (m) R	OSE TO (m) AFTER (m	in) REMA	ARKS	
1.20	2.30	Wind	dowless	Sampler	Geotechnic	al Pione	eer Rig		.00 2			
2.30	14.70	Rota	ry Core	•	Geotechnic	al Pione	eer Rig					
CASIN	G DEPTH				BACKFILL			INSTRUMEN	TATION			

DIAM (mm) BASE (m) TOP (m) BASE (m) MATERIAL DEPTH (m) TYPE 140 2.30 0.00 0.30 Concrete 11.10 Standpipe 0.30 0.40 Gravel 0.40 0.90 Bentonite 0.90 11.10 Gravel CONTRAC BARREL DIAMETER HOLE PROGRESS REMARKS DIAM (mm) BASE (m) DEPTH (m) DATE TIME CASING (m) WATER (m) 36142 Dry 1.26 128 2.30 12-11-2020 08:10 0.00 Nil 116 14.70 12-11-2020 15:30 19.20 2.30 CHECKED 70 19.20 13-11-2020 08:40 19.20 2.30 1.80 13-11-2020 12:00 30.00 2.30 1.44

Geotechnical Engineering Ltd, Tel. 01452 527743 36142 BRISLINGTON MEADOWS 2/22/2021 6:48:42 PM Logged by: DH Checked by: JH



1 of 4

1:50

## **BOREHOLE LOG**



#### CLIENT CAMPBELLREITH

SITE **BRISLINGTON MEADOWS** 

Start Date 12 November 2020

End Date 13 November 2020 Northing

Easting

171079.7

362520.5

Ground Level 48.85mOD

Depth

Sheet

Scale

30.00 m

2 of 4

1:50

sample no & type	sample depth (m) from to	casing depth (m)	samp. /core range	١f	water record depth (m)	instru -ment	test type & value	description	depth (m)	reduced level (m)	legend
19C	8.70 - 10.20	  2.30	100 97 77	120 220				Medium strong grey fine to coarse SANDSTONE. Bedding fractures are 10 to 20° very closely to medium spaced planar rough. 8.35 - 8.45m: 35° fracture stepped rough. 8.45 - 8.80m: Frequent carbonaceous laminations (up to 5mm).	9,25 -	39.60	
20C	10.20 - 11.70	- - - - - - - 2.30	100 97 93	25 70 120 100 170 230				Moderately weak thinly bedded grey MUDSTONE. Bedding fractures are 0 to 10° very closely to closely spaced planar smooth rarely infilled with soft dark grey silty clay. 9.45 - 9.65m: Thin bed of medium strong fine to coarse sandstone. Fractures are 0 to 15° closely spaced undulating rough. Moderately weak grey fine MUDSTONE. Bedding fractures are 0 to 10° closely to medium spaced undulating rough. 9.95 - 10.20m: Medium bed of medium strong grey SILTSTONE. Fractures 10 to 20° medium spaced undulating smooth	9.95 -	38.90	
21C	11.70 - 13.20	      	100 100 100	100 280 900				Medium strong grey fine and medium SANDSTONE. Fractures are 0 to 10° medium and widely rarely closely spaced planar rough. 11.70m: Fractures becoming closely to widely spaced. 11.70 - 12.00m: Subvertical fracture planar rough infilled with quartzite.			
22C	13.20 - 14.70	- 2.30 - 2.30 	100 100 80	NI 60 <del>90</del> 300 700 700				Medium strong thinly bedded grey and dark grey fine and medium SANDSTONE with frequent carbonaceous laminae (up to 5mm) . Bedding fractures are subhorizontal very closely to closely spaced undulating rough. 13.60 - 14.00m: 80° fracture undulating rough stained black. Medium strong thinly bedded grey fine and medium SANDSTONE. Bedding fractures are subhorizontal medium	_ 13.40	35.45 35.15	
								and widely spaced planar rough. Grey SANDSTONE. No voids detected. (Driller's description). Open-hole drilled.	14.70	34.15	
HOLE ( TOP (m 14.70	CONSTRUCTI ) BASE (m) 19.20	ON TYP Rota	E Iry Oper	n Hole	F	PLANT U Geotechi	ISED nical Pione	WATER STRIKE DEPTH (m) CASING (m) ROSE TO (m) AFTER (min) eer Rig	REMA	ARKS	
CASIN DIAM (r	<b>G DEPTH</b> nm) BAS	E (m)			<b>BA</b> TOI 11.7	CKFILL P (m) B 10 30	ASE (m) ).00	MATERIAL DEPTH (m) TYPE Bentonite	 г.		AGS
BARRE DIAM (r	EL DIAMETER nm) BAS	E (m)		HOLE DATE	PROGR	RESS	DEPTH	(m) CASING (m) WATER (m)	0	361 CHEC	RACT <b>42</b> RKED

## **BOREHOLE LOG**

Sheet

Scale

Depth

## **BH03**

3 of 4

1:50

30.00 m

CLIENT CAM	PBELLREITH
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SITE **BRISLINGTON MEADOWS** 

Start Date 12 November 2020 End Date

13 November 2020

Northing 171079.7

Easting

Ground Level 48.85mOD water instru test Τ

362520.5

sample no & type	sample depth (m) from to	casing depth (m)	samp. /core range	lf	water record depth (m)	instru -ment	test type & value		descriptic	n	depth (m)	reduced level (m)	legend
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HOLE													
TOP (m	) BASE (m)	I I I I I	E		F	'LANT (	JSED	DEPTH (M) CA	ASING (M)	ROSE TO (m) AFTER (min)	REMA	ARKS	
CASIN	G DEPTH				BA	CKFILL		I	INSTRUM	ENTATION			
DIAM (r	nm) BAS	E (m)			TOF	Р(m) В	ASE (m)	MATERIAL	DEPTH (m	) TYPE			
											-		AGS
BAPP					PROCP	FSS				REMARKS	C	CONTI	RACT
DIAM (r	nm) BAS	E (m)		DATE	TIME	200	DEPTH	l (m) CASING (m) WA	TER (m)			361	42
												CHEC	KED

## **BOREHOLE LOG**

Sheet

Scale

Depth

## **BH03**

4 of 4

1:50

30.00 m

CLIENT CAMPBELLREITH

SITE **BRISLINGTON MEADOWS** 

Start Date 12 November 2020 End Date 13 November 2020

Northing 171079.7 Ground Level 48.85mOD

Easting

362520.5

sample no & type	sample depth (m) from to	casing depth (m)	samp. /core range	lf	water record depth (m)	instru -ment	test type & value		descriptio	on	depth (m)	reduced level (m)	legend
								Bore	-hole Complete	d at 30.00m	30.00	18.85	
HOLE ( TOP (m	CONSTRUCTION BASE (m)	DN TYP	E		F	LANT U	JSED	WATER STRIK DEPTH (m) C	<b>(E</b> Asing (m)	ROSE TO (m) AFTER (min)	REMA	ARKS	
CASIN DIAM (r	<b>G DEPTH</b> nm) BASI	E (m)			BA TOI	CKFILL <sup>D</sup> (m) B	ASE (m)	MATERIAL	INSTRUM DEPTH (m	IENTATION ) TYPE			AGS
BARRE DIAM (r	<b>EL DIAMETER</b> nm) BAS	E (m)		HOLE	PROGR	ESS	DEPTH	(m) CASING (m) WA	TER (m)	REMARKS	(	CONTI 361	RACT
												CHEC	KED

## **BOREHOLE LOG**



#### CLIENT CAMPBELLREITH

SITE **BRISLINGTON MEADOWS** 

Start Date 05 November 2020

End Date 06 November 2020

Easting

Northing

171047.4

362645.7

Ground Level 58.75mOD

Depth

Sheet

Scale

30.00 m

1 of 4

1:50

sample no & type	sample depth (m) from to	casing depth (m)	samp. /core range	lf	water record depth (m)	instru -ment	test type & value		description	depth (m)	reduced level (m)	legend
1B 1ES 2D 2ES	0.00 - 0.15 0.00 - 0.15 0.00 - 0.15 0.40 - 0.60				()		-	Grass over brown sligh with frequent rootlets. C sandstone.	tly gravelly silty fine to coarse SAND Gravel is subangular fine to medium	0.30	58.45	× × × × ×
3B 4D	0.40 - 0.60 0.40 - 0.60	-					-	Light reddish brown ver is subangular fine to me Grovich brown sandy s	y gravelly very clayey SAND. Gravel edium sandstone.	0.80	57.95	· · · · · ·
3ES 5B 6D	1.00 - 1.20 1.00 - 1.20 1.00 - 1.20	0.00	)				-	and medium sandstone sandstone cobble conte	e GRAVEL with medium subangular	1.10	57.65	ו•••••
7L	1.20 - 2.70	- - -					-	silty fine to medium GR	a as readish brown and grey sandy AVEL.			
4ES	2 20 - 2 30	-			2.10		-	Extremely to very weak	grev MUDSTONF recovered as	2.10	56.65	· · · · · · · · · · · · · · · · · · ·
420	2.20 - 2.30						- - -	angular fine to coarse ( orientated planar smoo	GRAVEL. Fractures are randomly th rarely stained reddish brown and			
10B 9L	2.70 - 3.20 2.70 - 3.50	- 0.00 					-	yellow and infilled with	grey slity sand.			
11D 12C	3.30 - 3.40 3 50 - 4 20	350					-					
		-	100 42 28	NI 50 140					make woold think to minated group	3.90	54.85	
13C	4.20 - 5.70	3.50	100					MUDSTONE. Fractures and closely spaced plan	are randomly orientated very closely nar rough rarely stained red.			
		 _ _ _	0									
		- - -										
14C	5.70 - 7.20	- - - 3.50	100									
		- - - -	53 13	NI 90			-	Moderately weak thinly Bedding fractures (1) a	laminated grey MUDSTONE. re 10 to 30° very closely and closely	5.90	52.85	
		- - -		100				spaced planar smooth 5mm either side of fractivery closely and closely	rarely stained reddish brown (up to tures). Fractures (2) are 65 to 75 ° / spaced rough rarely stained red and			
							-	yellow. Extremely to very weak	grey MUDSTONE recovered as			
15C	7.20 - 8.70	- 3.50 	100 63 40	NI			-	on fracture surfaces. Moderately weak thinly	laminated grey MUDSTONE.	7.45	51.30	
		-		40 80			-	closely spaced planar s reddish brown (up to 5r	smooth and rough rarely stained nm either side of fracture).	7.70	51.05	
HOLE	CONSTRUCTION BASE (m)	DN TYP	E	);+	l F	PLANT U	ISED	WATER STRIK DEPTH (m) CA	E E ASING (m) ROSE TO (m) AFTER (min)	REMA	RKS	
1.20 3.50	3.50 14.70	Wind Rota	dowless ary Core	s Sampl	er (	Geotechi	nical Pione nical Pione	eer Rig eer Rig				
DIAM (r 140	nm) BASI 3.50	E (m)			TO 0.0	P (m) B 0 0. 0 0.	ASE (m) 30 50	MATERIAL Concrete Gravel	DEPTH (m) TYPE 11.00 Standpipe			
					0.5 0.9	0 0. 0 11	90 1.00	Bentonite Gravel		C	ONT	AGS RACT
DIAM (r 128	nm) BAS	E (m)		DATE 05-11-	: PROGR TIME 2020 12:	00	DEPTH	I (m) CASING (m) WA Nil Dry	TER (m)		361	42
116 70	14.7 30.0	0		05-11- 06-11- 06-11-	2020 16: 2020 08: 2020 15:	30 00 00	11.70 11.70 30.00	3.50       1.14         3.50       1.30         3.50       1.46	\$ ) }	(	CHEC	KED
Geotechni	cal Engineering Ltd.	Tel. 0145	52 527743	36142	BRISLING		DOWS 2/22	/2021 6:48:43 PM Logged by: DH	Checked by: JH			

## **BOREHOLE LOG**



CLIENT CAMPBELLREITH

SITE **BRISLINGTON MEADOWS** 

Start Date 05 November 2020

End Date 06 November 2020 Northing

Easting

171047.4

362645.7

Ground Level

58.75mOD

water reduced legend sample sample depth samp /core instru test depth casina no & '(m) depth record type & value (m) -ment level ١f description depth from type to (m) range (m) (m) 140 Moderately weak thinly laminated grey MUDSTONE. Fractures are 10 to 30° and 65° to 75° very closely and closely spaced planar smooth and rough rarely stained reddish brown (up to 5mm either side of fracture). 16C 8.70 - 10.20 3.50 100 80 73 9.70 - 9.75m: Thin laminae of extremely weak black coal. 9.95 - 10.00m: Thin laminae of extremely weak black coal. 10.20 48.55 10.20 - 11.70 17C 3.50 100 80 Medium strong grey fine and medium SANDSTONE with 87 120 rare carbonaceous laminae (up to 2mm). Fractures are 10 to 80 460 20° and 65° to 75° closely to medium spaced planar smooth and rough rarely stained reddish yellow (up to 3mm either side of fractures) rarely infilled with soft grey silty clay. 11.70 - 13.20 18C 3.50 93 11.80 - 13.35m: Light grey. 83 80 19C 13 20 - 14 70 3 50 100 77 73 14.70 44.05 Grey SANDSTONE. No voids detected. (Driller's description). Open-hole drilled. Continued Next Page WATER STRIKE HOLE CONSTRUCTION TOP (m) BASE (m) TYPE PLANT USED DEPTH (m) CASING (m) ROSE TO (m) AFTER (min) REMARKS 14.70 30.00 Rotary Open Hole Geotechnical Pioneer Rig CASING DEPTH BACKFILL INSTRUMENTATION DIAM (mm) BASE (m) TOP (m) BASE (m) MATERIAL DEPTH (m) TYPE 11.00 30.00 Bentonite CONTRAC BARREL DIAMETER HOLE PROGRESS REMARKS DIAM (mm) BASE (m) DATE TIME DEPTH (m) CASING (m) WATER (m) 36142 CHECKED

Geotechnical Engineering Ltd, Tel. 01452 527743 36142 BRISLINGTON MEADOWS 2/22/2021 6:48:43 PM Logged by: DH Checked by: JH

**BH04** 

2 of 4 Sheet Scale 1:50

Depth

30.00 m

## **BOREHOLE LOG**

Sheet

Scale

Depth

58.75mOD

## **BH04**

3 of 4

1:50

30.00 m

CLIENT CAMPBELLREITH	
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SITE BRISLINGTON MEADOWS

Start Date 05 November 2020

Easting

Northing

362645.7

171047.4

Ground Level

End Date 06 November 2020

reduced legend water depth (m) sample depth casing depth samp. /core instru sample test no & (m) from record -ment type & value level description ١f depth to type (m) range (m) (m) Continued Next Page HOLE CONSTRUCTION WATER STRIKE TOP (m) BASE (m) TYPE PLANT USED DEPTH (m) CASING (m) ROSE TO (m) AFTER (min) REMARKS CASING DEPTH BACKFILL INSTRUMENTATION DIAM (mm) BASE (m) TOP (m) BASE (m) MATERIAL DEPTH (m) TYPE CONTRAC BARREL DIAMETER HOLE PROGRESS REMARKS DIAM (mm) BASE (m) DATE TIME DEPTH (m) CASING (m) WATER (m) 36142 CHECKED

## **BOREHOLE LOG**

and the start

Sheet

Scale

Depth

58.75mOD

## **BH04**

4 of 4

1:50

30.00 m

CLIENT CAMPBELLREITH

SITE BRISLINGTON MEADOWS

Start Date 05 November 2020

Easting

Northing

362645.7

171047.4

Ground Level

End Date 06 November 2020

reduced legend water depth (m) sample depth casing samp. /core instru sample test no & (m) from depth record -ment type & value level description ١f depth to type (m) range (m) (m) 30.00 28.75 Borehole Completed at 30.00m HOLE CONSTRUCTION WATER STRIKE TOP (m) BASE (m) TYPE PLANT USED DEPTH (m) CASING (m) ROSE TO (m) AFTER (min) REMARKS CASING DEPTH BACKFILL INSTRUMENTATION DIAM (mm) BASE (m) TOP (m) BASE (m) MATERIAL DEPTH (m) TYPE CONTRAC BARREL DIAMETER HOLE PROGRESS REMARKS BASE (m) DATE TIME DEPTH (m) CASING (m) WATER (m) DIAM (mm) 36142 CHECKED

## **BOREHOLE LOG**



#### CLIENT CAMPBELLREITH

SITE **BRISLINGTON MEADOWS** 

Start Date 18 November 2020

End Date 19 November 2020 Northing

Easting

362721.4

171095.2 Ground Level 65.70mOD

Depth

Sheet

Scale

30.00 m depth reduced legend

**BH05** 

1 of 4

1:50

sample no & type	sample depth (m) from to	casing depth (m)	samp. /core range	lf	water record depth	instru -ment	test type & value		description	ı	depth (m)	reduced level (m)	legend
1D 1ES 2B 2ES 3D	0.05 - 0.15 0.05 - 0.15 0.05 - 0.15 0.40 - 0.60 0.40 - 0.60	- - - -			(m)			Grass over reddis gravelly fine to co subangular and s Reddish brown cl	h brown and bro arse SAND with ubrounded fine to ayey very gravell	wn slightly clayey slightly frequent rootlets. Gravel is o coarse sandstone. y fine to coarse SAND.	0.25 -	65.45	× × ×
4B	0.40 - 0.60						-	Gravel is subangu	ular fine and med	lium sandstone.	-		
3ES 5D	1.00 - 1.20 1.00 - 1.20	0.00											
6B 7L	1.00 - 1.20 1.20 - 2.00	_					-						
8D	1.70 - 1.80	-		- NII			-				1.80	63.90	
9C	2.00 - 2.70	2.00	71	INI			-	as slightly sandy	wh fine to coarse subangular and s	subrounded fine to coarse	-		· · · · · · · · · · · · · · · · · · ·
		-	0				-	GRAVEL.			-		· · · · · · · · · · · · · · · · · · ·
10C	2.70 - 4.20	2.00	100	NI			-	Wook roddish bro	wn fino to coorse	SANDSTONE Fractures	2.70	63.00	· · · · · ·
		_	19 7	110			-	are randomly orie	ntated extremely	closely to closely spaced	_		· · · · · ·
		E					-	sandy silty clay.	rough rarely inili	ied with reddish brown			· · · · · · · · · · · · · · · · · · ·
							-						
		_					-				-		· · · · · ·
11C	4.20 - 5.70	2.00	100	NI				Verv weak thinly I	oedded reddish b	prown fine to coarse	4.20	61.50	· · · · · ·
		_	46 39	170 200				SANDSTONE. Fr	actures are subh	orizontal closely spaced	-   -		
								gravelly clay.		inginaly canaly enginely			· · · · · · · · · · · · · · · · · · ·
		-											· · · · · · · · · · · · · · · · · · ·
		_											· · · · · · · · · · · · · · · · · · ·
12C	5.70 - 7.20	2.00	100										· · · · · · · · · · · · · · · · · · ·
			53				-				-		· · · · · · · ·
		-									6.50	59.20	· · · · · · · · · · · · · · · · · · ·
		Ē		NI 150				Moderately weak SANDSTONE. Fr	locally weak red actures are 10 to	dish brown fine to coarse 20° rarely subvertical			
		E		300			-	very closely to me rarely infilled with	edium spaced pla red sandv siltv c	anar and stepped rough lav .	-		· · · · · · ·
13C	7.20 - 8.70	2.00	100 97				-	,	, ,	,	-		
		_	73				-						
		E_					- -		Const. Int.	Deer	-		· · · · · · · · · · · · · · · · · · ·
HOLE	CONSTRUCTIO	DN						WATER	STRIKE Groundwa	Page ater not encountered prior to use	e of flus	<u> </u> ר	
TOP (m 0.00	) BASE (m) 1.20	TYP	E ection F	lit	F	PLANT U Hand too	JSED Is	DEPTH (I	m) CASING (m)	ROSE TO (m) AFTER (min)	REMA	RKS	
1.20 2.00	2.00 14.70	Winc Rota	lowless ry Core	Sampl	er (	Geotechr Geotechr	nical Pione nical Pione	er Rig er Rig					
DIAM (r	<b>G DEPTH</b> nm) BASI	E (m)			BA TO	CKFILL P (m) B	ASE (m)	MATERIAL	DEPTH (m)	ENTATION TYPE			
140	2.00	. ,			0.0 0.3	0 0. 0 0.	30 50	Concrete Gravel	12.00	Standpipe			
					0.5 1.9	0 1. 0 12	90 2.00	Bentonite Gravel			ſ		
BARRE	EL DIAMETER	F (m)		HOLE		RESS	DEPTH	(m) CASING (m)	WATER (m)	REMARKS		<b>364</b>	10
128 116	2.00 14 7	- \''') 0		18-11-	2020 07: 2020 15:	45 30	0.00	Nil 2.00	Dry 1.68			301	42
70	30.0	0		19-11- 19-11-	2020 08: 2020 12:	20 00	14.70 30.00	2.00 2.00	2.36 1.62			CHEC	KED
						-			-				
Geotechni	cal Engineering Ltd,	Tel. 0145	2 527743	36142	BRISLING	TON MEAD	DOWS 2/22	2021 6:48:43 PM Logged	by: DH Checked by: J	н			

## **BOREHOLE LOG**



#### CLIENT CAMPBELLREITH

SITE **BRISLINGTON MEADOWS** 

Start Date 18 November 2020 End Date

19 November 2020

Northing

Easting

171095.2

362721.4

Ground Level

65.70mOD

Depth

Sheet

Scale

30.00 m

2 of 4

1:50

sample no & type	sample depth (m) from to	casing depth (m)	samp. /core range	lf	water record depth (m)	instru -ment	test type & value	description	depth (m)	reduced level (m)	legend
14C	8.70 - 10.20	  2.00	100 83 73	30 200				Moderately weak locally weak reddish brown fine to coarse		56.80	
		- - - - - -		260 NI				closely to medium spaced planar rough rarely infilled with sandy silty clay.	9.95 -	55.75	
15C	10.20 - 10.90	2.00	100 21 8	90 180				SANDSTONE. Fractures are randomly orientated extremely closely to closely space stepped rough rarely stained red and brown.		54.80	
170	11 70 - 13 20	2.00	100 91 88	70 160 270				Moderately weak reddish brown fine to coarse SANDSTONE. Fractures are 10 to 20° closely to medium spaced stepped rough rarely infilled with reddish brown sandy clay.		54.00	
170	11.70 - 13.20	   	93 50 50	NI 200				Extremely weak locally very weak reddish brown fine to coarse SANDSTONE locally disintegrating to stiff sandy gravelly clay. Fractures are extremely closely to closely spaced undulating rough.	 	53.20	
18C	13.20 - 14.70	  2.00	100	40 100 290				Weak locally moderately weak reddish brown fine to coarse SANDSTONE. Fractures very closely to medium spaced 0° to 20° and 40° to 50° undulating and planar rough rarely stained brown.		-	
			69 53							- - - - - - -	
								14.35 - 14.45m: Locally disintegrated to firm reddish brown sandy gravelly clay. Grey SANDSTONE. No voids detected. (Driller's description). Open hole drilled.	 14.70   	51.00	
								Continued Next Page		- - - - -	
HOLE TOP (m 14.70	CONSTRUCTION BASE (m) 30.00	ON TYP Rota	E iry Oper	n Hole	F	PLANT ( Geotech	JSED nical Pione	WATER STRIKE Groundwater not encountered prior to us DEPTH (m) CASING (m) ROSE TO (m) AFTER (min) eer Rig	e of flusl REMA	h \RKS	
CASIN DIAM (r	<b>G DEPTH</b> nm) BAS	E (m)			<b>BA</b> TOI 12.0	CKFILI P (m) B 00 3	- ASE (m) 0.00	MATERIAL DEPTH (m) TYPE Bentonite			AGS
BARRE DIAM (r	<b>EL DIAMETER</b> mm) BAS	E (m)		HOLE	PROGR	ESS	DEPTH	(m) CASING (m) WATER (m)	C	солті <b>361</b>	RACT <b>42</b>
										CHEC	KED

## **BOREHOLE LOG**

Sheet

Scale

## **BH05**

3 of 4

1:50

CLIENT CAMPB	ELLREITH
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SITE **BRISLINGTON MEADOWS** 

Start Date 18 November 2020 End Date

Easting 362721.4 Northing 171095.2 Ground Level 65.70mOD

End I	Date ´	19 Nove	embe	r 202	0	Nor	thing	171095	5.2	Grour	nd Leve	əl	65.70mOD	De	pth	30.	00 m
sample no & type	sample de (m) from t	pth casing depth to (m)	samp. /core range	lf	water record depth (m)	instru -ment	test type & value				descripti	tion			depth (m)	reduced level (m)	legend
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TOP (m	CONSTRU	(m) TYP	ΡF		F	ΊΑΝΤΙ	ISED		DEPTH	к STRIK 1 (m) С4	E Groundv	water	r not encountered pric	or to use (min)	e ot tlush RFM4	n RKS	
	I) DAGE	(11) 115	L		F		JSLD			r (iii) ' C <i>P</i>		) ((		((((((((			
CASIN DIAM (1	<b>G DEPTH</b> mm) E	BASE (m)			BA TOF	CKFILL P (m) B	ASE (m)	MATERIAL	L		INSTRUN DEPTH (n	MEN1 m)	TATION TYPE				
															<b>-</b>		AGS
BADD		ED			PROCE	Fee						P			C	ONT	≺ACT
DIAM (1	mm) E	BASE (m)		DATE	TIME	200	DEPTH	H (m) CAS	SING (n	n) WA	TER (m)	RE	LIVIARNO			361	42
															(	CHEC	KED

Geotechnical Engineering Ltd, Tel. 01452 527743 36142 BRISLINGTON MEADOWS 2/22/2021 6:48:43 PM Logged by: DH Checked by: JH

## **BOREHOLE LOG**

Sheet

Scale

Depth

65.70mOD

### **BH05**

4 of 4

1:50

30.00 m

CLIENT	CAMPBELLREITH
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SITE **BRISLINGTON MEADOWS** 

Start Date 18 November 2020 End Date

19 November 2020

Easting

Northing

362721.4

171095.2 Ground Level

sample no & type	sample depth (m) from to	casing depth (m)	samp. /core range	lf	water record depth	instru -ment	test type & value		descriptic	on	depth (m)	reduced level (m)	legend
	from to		range	y	depth (m)			Bore	hole Completed	t at 30.00m		35.70	
HOLE	CONSTRUCTIO							WATER STRIK	E Groundw	ater not encountered prior to us	e of flus	h	
TOP (m	n) BASE (m)	TYPI	E		F	PLANT U	JSED	DEPTH (m) CA	ASING (m)	ROSE TO (m) AFTER (min)	REMA	ARKS	
CASIN DIAM (1	<b>G DEPTH</b> mm) BASI	E (m)			BA Tof	CKFILL P (m) B	ASE (m)	MATERIAL	<b>INSTRUM</b> DEPTH (m	ENTATION ) TYPE			AGS
BARRI	EL DIAMETER			HOLE	PROGR	ESS				REMARKS	(m) level (m) 		RACT
DIAM (I	mm) BAS	E (m)		DATE 1	IME		DEPTH	(m) CASING (m) WA	IER (m)			361	42
												CHEC	KED

## **BOREHOLE LOG**



#### CLIENT CAMPBELLREITH

SITE **BRISLINGTON MEADOWS** 

Start Date 03 November 2020

End Date 04 November 2020

sample sample depth casing samp.

Northing

Easting

test 

water instru

170924.7

362693.1

Ground Level

56.85mOD

Depth

Sheet

Scale

30.00 m depth reduced legend

1 of 4

1:50

no & type	(m) from to	depth (m)	/core range	١f	depth	-ment	type & value		description		(m)	level (m)	
1B 1ES 2D 2ES	0.10 - 0.20 0.10 - 0.20 0.10 - 0.20 0.20 - 0.40				(m) •		-	Grass over brown slig with frequent rootlets. and chert.	htly gravelly silty Gravel is suban	fine to coarse SAND gular fine sandstone	0.20	56.65	× × × × × × × × × × × × × × × × × × ×
3B 4D 3ES	0.20 - 0.40 0.20 - 0.40 1.00 - 1.20	- - - -			☑ 0.80			Firm light grey and ora - - - - - -	ange slightly san	dy silty CLAY.			× ×
5B 6D 7B 8L	1.00 - 1.20 1.00 - 1.20 1.20 - 1.70 1.20 - 2.70	0.00						Stiff light grey mottled Gravel is subangular	orange and red fine mudstone lith	gravelly silty CLAY. norelicts.	1.20	55.65	×
9D	1.80 - 1.90						· · ·				2.00	54.85	×_^
10D	2.30 - 2.40	- - - -						Stiff thinly and thickly gravelly silty CLAY ter with rare carbonaceou subangular fine to coa	laminated grey n nding to extreme us laminae (up to arse mudstone lit	nottled orange slightly y weak MUDSTONE 22mm). Gravel is horelicts.			
11C 12B	2.70 - 4.20 2.70 - 2.90	- 2.70 - -	93 0 0	NA NI	-			Extremely to very wea	ak grey MUDSTC GRAVEL, Frequ	ONE recovered as	2.90 _	53.95	×
		-						staining on fracture su	urfaces.	,, ,, ,, ,, ,, ,, , ,, , ,, , ,, , ,, , ,, , ,,	-		
13D	3.70 - 3.80			NI	-			- Very weak grey fine S	ANDSTONE. Fra	actures are randomly	3.80	53.05	
14C	4.20 - 5.70	2.70	93 0 0	70				orientated very closely yellowish brown.	y spaced planar i	rough rarely stained	-		
15D	4.70 - 4.80	- - - -											
16C	5.70 - 7.20	  2.70	400					Extremely weak to ve	ry weak thinly an	d thickly laminated		51.35	
17D	6.10 - 6.20		100 27 7					coarse GRAVEL.	overed as sity si	ubangular nne to			
		-						- - - - -			6.90	49.95	
18C	7.20 - 8.70	 2.70	93 70	NI 130 200				Moderately weak loca Fractures are 0 to 30° stepped and planar ro	Ily weak grey find and 70° to 80° cough rarely infilled	e SANDSTONE. closely spaced d with slightly gravelly			
			70										
HOLE	CONSTRUCTI	DN			1		<u> </u>	WATER STRI	Continued Next Page				1
TOP (m 0.00 1.20 2.70	<ul> <li>BASE (m)</li> <li>1.20</li> <li>2.70</li> <li>14.70</li> </ul>	TYPI Inspe Wind Rota	E ection F lowless ry Core	Pit Sample	F Ier ( (	PLANT I Hand too Geotech Geotech	USED ols nnical Pione nnical Pione	DEPTH (m) ( 0.80 N eer Rig eer Rig	CASING (m) ROS Nil 0.30	SE TO (m) AFTER (min) 20	REMA	RKS	
CASIN DIAM (r 140	<b>G DEPTH</b> mm) BASI 2.70	E (m)	-		BA TO 0.0 0.2	CKFILI P (m) E 0 0 0 0	L 3ASE (m) ).20 ).30	MATERIAL Concrete Gravel	INSTRUMENTA DEPTH (m) 9.00	<b>TION</b> TYPE Standpipe			
					0.3 0.9	0 0 0 9	).90 ).00	Bentonite Gravel				CONT	ACC RACT
BARRE DIAM (r 128	EL DIAMETER mm) BAS 2.70	E (m)		HOLE DATE 03-11-	E PROGE TIME 2020 09:	<b>RESS</b>	DEPTH 0.00	H (m) CASING (m) W. Nil Dr	ATER (m) y	IARKS		361	42
116 70	14.7 30.0	0 0		03-11- 04-11- 04-11-	2020 16: 2020 08: 2020 16:	00 00 30	7.20 7.20 30.00	2.701.2.701.2.701.2.701.	17 32 49			CHEC	KED
Geotechni	cal Engineering Ltd,	Tel. 0145	2 527743	36142	BRISLING	TON MEA	DOWS 2/22	2/2021 6:48:44 PM Logged by: D	H Checked by: JH				

## **BOREHOLE LOG**

## **BH06**

2 of 4

1:50

CLIENT CAMPBELLREITH

SITE **BRISLINGTON MEADOWS** 

> Easting 362693.1

End Date 04 November 2020

Start Date 03 November 2020

Northing 170924.7

Ground Level

56.85mOD

Depth

Sheet

Scale

30.00 m

sample no & type	sample depth (m) from to	casing depth (m)	samp. /core range	lf	water record depth (m)	instru -ment	test type & value	description	depth (m)	reduced level (m)	legend
19C	8.70 - 10.20	 2.70 	100 100 100	130 400 860				Moderately weak and weak grey fine SANDSTONE. Fractures are 0 to 25° and 70° to 80° closely to widely spaced planar rough.	8.20	48.65	
20C	10.20 - 11.70	  2.70 	100 97 97								
21C	11.70 - 13.20	       	100 97 93								
22C	13.20 - 14.70	   2.70 	100 100 70								
								Grey SANDSTONE. No voids detected. (Driller's description). Open hole drilled.	 	42.15	
HOLE O	CONSTRUCTI	ON Data	E		F	PLANT U		Continued Next Page WATER STRIKE DEPTH (m) CASING (m) ROSE TO (m) AFTER (min)		ARKS	
CASIN DIAM (r	G DEPTH nm) BAS	E (m)			<b>BA</b> TOI 9.00	CKFILL P (m) B 0 3	ASE (m) 0.00	MATERIAL DEPTH (m) TYPE			
									ſ		AGS
<b>BARRE</b> DIAM (r	EL DIAMETER nm) BAS	E (m)		HOLE DATE	PROGR TIME	ESS	DEPTH	(m) CASING (m) WATER (m)		361	<b>42</b>
										CHEC	KED

## **BOREHOLE LOG**

Sheet

Scale

Depth

56.85mOD

### **BH06**

3 of 4

1:50

30.00 m

SITE **BRISLINGTON MEADOWS** 

Start Date 03 November 2020 Easting

End Date 04 November 2020 Northing 170924.7

362693.1

Ground Level

sample no & type	sample depth (m) from to	casing depth (m)	samp. /core range	lf	water record depth (m)	instru -ment	test type & value		descriptio	n	depth (m)	reduced level (m)	legend
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HOLE	CONSTRUCT								Continued Nex	t Page			
TOP (m	) BASE (m)	) TYP	E		F	PLANT (	JSED	DEPTH (m) CA	SING (m)	ROSE TO (m) AFTER (min)	REMA	RKS	
DIAM (r	<b>G DEPTH</b> nm) BAS	E (m)			BA TO	CKFILL P(m) B	ASE (m)	MATERIAL	DEPTH (m)	ENTATION ) TYPE			
	, 2.10	)				(, 2	- ()	_					
											C	ONT	RACT
BARRE DIAM (r	EL DIAMETER nm) BAS	6E (m)		HOLE	PROGR	ESS	DEPTH	(m) CASING (m) WAT	ſER (m)	REMARKS		361	42
												CHEC	KED
# **BOREHOLE LOG**

Sheet

Scale

### **BH06**

4 of 4

1:50

CLIENT	CAMPBELLREITH
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SITE **BRISLINGTON MEADOWS** 

Easting Start Date 03 November 2020

End Date 04 November 2020 Northing 170924.7

362693.1



# **TRIAL PIT LOG**

Sheet

Scale

depth

(m)

0.50

1.10

**TP01** 

1 of 1

1:25

1.10 m

legend

reduced

level (m)

61.10

60.50

#### CLIENT CAMPBELLREITH

SITE **BRISLINGTON MEADOWS** 

test type

& value

Start Date 06 November 2020 End Date

sample depth

(m) from to

0.00 - 0.15

0.00 - 0.15

0.00 - 0.15

0.50 - 0.60

0.50 - 0.60

0.90 - 1.00

0.90 - 1.00

0.90 - 1.00

sample

no &

type

1B

2D

3B

4D

2ES

5D

6LB

1ES

06 November 2020

water

record

Northing 171290.5

362502.7

Easting

and subrounded fine to coarse sandstone.

Soft dark brown slightly gravelly sandy CLAY with a low subangular and

Moderately weak light greenish grey locally reddish brown fine to coarse

sandy clayey angular to subrounded fine to coarse gravel.

SANDSTONE. Fractures are subvertical planar smooth and tight. Recovered as

Trial pit Completed at 1.10m

Ground Level

description

subrounded sandstone cobble content and frequent rootlets. Gravel is subangular

61.60mOD

Depth

Equipment:	JCB 3CX.				
Pit width x length	n: 0.70m x 4.	00m	Sidewall stability: Stable.		
Remarks:	Trial pit ter	minated at 1.10m	due to hard ground preventing progress.		
Groundwater:	Groundwa	ter not encountere	ed		
Depth Strike (m)	Rose to (m)	Time to rise (min)	Remarks		
					AGS
				CONT	RACT
Backfill details:	I	<b>.</b>		361	142
Depth Top (m)	Depth Base (m)	Material	Remarks		-76
5.00	1.10			CHEC	CKED
	   OGS SHOULD BE RE				
Seotechnical Engineering Ltd, Te	I. 01452 527743 36142 BRISLI	NGTON MEADOWS 2/22/2021 6	::48:44 PM Logged by: CD Checked by: JH		

# **TRIAL PIT LOG**

Sheet

Scale

depth

(m)

0.20

1.20

### **TP02**

1 of 1

1:25

3.70 m

legend

reduced

level (m)

60.50

59.50

CLIENT CAMPBELLREITH

SITE **BRISLINGTON MEADOWS** 

test type

& value

Start Date 06 November 2020 End Date 06 November 2020

sample sample depth

no &

type

1D 1ES

2B

2ES

3D

4B

3ES 5D 6LB

7D

8D

(m) from to

0.00 - 0.15

0.00 - 0.15

0.00 - 0.15

0.90 - 1.00

0.90 - 1.00

0.90 - 1.00

1.90 - 2.00 1.90 - 2.00

1.90 - 2.00

2.50 - 2.60

3.40 - 3.50

water

record

Northing 171209.3

Easting

and subrounded fine to coarse sandstone.

fine to coarse sandstone GRAVEL.

subrounded sandstone cobble content.

362567.5

Soft dark brown slightly gravelly sandy CLAY with a low subangular and

Ground Level

description

subrounded sandstone cobble content and frequent rootlets. Gravel is subangular

Reddish brown and grey clayey fine to coarse SAND and angular and subangular

Moderately weak locally weak light greenish grey locally reddish brown fine to coarse SANDSTONE. Fractures are subvertical planar smooth tight and rare red matrix infill (up to 1mm). Recovered as fine to medium sand and angular and subrounded fine to coarse sandstone gravel with a high subangualr and

60.70mOD

Depth

57.00

3.70

					-	-
Equipment:	JCB 3CX				L	- <b>I</b>
Pit width x leng	th: 0.70m x 4	l.00m	Sidewall stability:	Stable.		
Remarks:	Trial pit te	erminated at 3.70m	n due to hard ground preventi	ng progress.		
Groundwater:	Groundwa	ater not encounter	ed			
Depth Strike (m)	Rose to (m)	Time to rise (min)	Remarks			7
						AG
						CONTRAC
Backfill details:						00440
Depth Top (m)	Depth Base (m)	Material	Remarks			36142
0.00	3.70	Arisings				CHECKED
EXPLORATORY HOL	.E LOGS SHOULD BE R	EAD IN CONJUNCTION V				-
	T					

Trial pit Completed at 3.70m

chnical Engineering Ltd, Tel. 01452 527743 36142 BRISLINGTON MEADOWS 2/22/2021 6:48:44 PM Logged by: CD Checked by: JH

# **TRIAL PIT LOG**

CLIENT CAMPBELLREITH

SITE **BRISLINGTON MEADOWS** 

Start Date 05 November 2020 End Date 05 November 2020

Northing 171170.0 Ground Level 62.30mOD

362617.2

Easting

sample no & type	sample depth (m) from to	test type & value	water record	description	depth (m)	reduced level (m)	legend
1D 1ES 2B	0.00 - 0.15 0.00 - 0.15 0.00 - 0.15			Soft dark brown slightly gravelly slightly sandy CLAY with frequent rootlets. Gravel is subangular and subrounded fine to coarse sandstone.	-	()	
				Moderately weak light greenish grey locally reddish brown fine to coarse SANDSTONE. Fractures are subvertical planar smooth tight and rare red matrix infill (up to 1mm). Recovered as subangular to subrounded fine to coarse gravel with a high subangular and subrounded sandstone cobble content.	- 0.40 - - - -	61.90	
2ES 3D 4B	0.90 - 1.00 0.90 - 1.00 0.90 - 1.00						
5D	1.50 - 1.60						
6LB	1.90 - 2.00						
3ES 7D 8B 9D	2.30 - 2.40 2.30 - 2.40 2.30 - 2.40 2.50 - 2.60						
10D	3.50 - 3.60			Trial pit Completed at 3.70m		58.60	
				inal pit completed at 5.70m	-		
Equip	ment:	JCB	3CX.				
Pit wic Rema	dth x length: rks:	: 0.70r Trial	m x 4.0 pit teri	00m Sidewall stability: Stable. ninated at 3.70m due to hard ground preventing progress.			
Groun Depth	dwater: Strike (m)	Grou Rose to (m)	indwat	er not encountered Time to rise (min) Remarks			
			·			CONT	AGS
Backfil	l details:						RAUI
Depth	Top (m)	Depth Base	e (m)	Material Remarks		36	142
0.00		3.70		Ansings		CHE	CKED



nnical Engineering Ltd, Tel. 01452 527743 36142 BRISLINGTON MEADOWS 2/22/2021 6:48:44 PM Logged by: CD Checked by: JH



Sheet

Scale

Depth

### **TP03**

1 of 1

3.70 m

1:25

# **TRIAL PIT LOG**

#### CLIENT CAMPBELLREITH

SITE **BRISLINGTON MEADOWS** 

Start Date 06 November 2020 End Date

06 November 2020

Northing 171128.6

362558.1

Easting

Ground Level 55.70mOD

Sheet

Scale 1:25

**TP04** 

1 of 1

Depth 2.60 m

sample no & type	sample depth (m) from to	test type & value	water record		description	depth (m)	reduced level (m)	legend
1D 1ES 2B	0.00 - 0.15 0.00 - 0.15 0.00 - 0.15			Soft dark brown sl subrounded sands and subrounded fi	ightly gravelly sandy CLAY with a low subangular and stone cobble content and frequent rootlets. Gravel is subangular ne to coarse sandstone.		-	
255	0.00 1.00			Moderately weak I SANDSTONE. Fra sandy angular to s subangular sands	ight greenish grey locally reddish brown fine and medium actures are subvertical planar smooth and tight. Recovered as subrounded fine to coarse sandstone gravel with a medium tone cobble content.	- 0.50 – - -	55.20	
3D 4LB	0.90 - 1.00 0.90 - 1.00 0.90 - 1.00						-	
						-	-	
5D	1.90 - 2.00					- - - -	-	
6B	2.50 - 2.60				Trial pit Completed at 2.60m	- - 2.60 -	53.10	
							-	
						-	-	
Equipr	ment:	JCE	3CX.					
Pit wid	Ith x length:	: 0.70	)m x 4.(	00m	Sidewall stability: Stable.			
Remai	IKS:	i ria	i pit teri	minated at 2.60m	aue to nara grouna preventing progress.			
Groun Depth	owater: Strike (m)	Gro Rose to (m	unawat 1)	Time to rise (min)	a Remarks		]	
			,				-	AGS
							СОИТ	RACT
Backfill	details:			1			26	112
Depth	Top (m)	Depth Bas	e (m)	Material Arisings	Remarks		30	142
0.00	1	2.00					CHE	CKED
EXPLOR	ATORY HOLE L	OGS SHOUL	.D BE REA	L AD IN CONJUNCTION W	I ITH KEY SHEETS		1	

ng Ltd, Tel. 01452 527743 36142 BRISLINGTON MEADOWS 2/22/2021 6:48:45 PM Logged by: CD Checked by: JH

# **TRIAL PIT LOG**

CLIENT CAMPBELLREITH

SITE **BRISLINGTON MEADOWS** 

Start Date 05 November 2020 End

9D

10LB

Equipment:

Remarks:

Groundwater:

Backfill details:

Depth Top (m)

0.00

Depth Strike (m)

Pit width x length:

2.90 - 3.00

362601.0

Easting

End [	Date 05	Novem	ber 20	020 Northing 171103.2 Ground Level 58.15mOD	Depth	n 3	8.00 m
sample no & type	sample depth (m) from to	test type & value	water record	description	depth (m)	reduced level (m)	legend
1D 1ES 2B	0.00 - 0.15 0.00 - 0.15 0.00 - 0.15			Soft dark brown slightly gravelly slightly sandy CLAY with frequent rootlets. Gravel is subangular and subrounded fine to coarse sandstone. Reddish brown and grey clayey SAND and subangular fine to coarse sandstone GRAVEL.	- 0.20 - -	57.95	
2ES 3D 4B 3ES 5B	0.70 - 0.80 0.70 - 0.80 0.70 - 0.80 0.90 - 1.00 0.90 - 1.00			Moderately weak reddish brown locally light greenish grey fine to coarse SANDSTONE. Fractures are subvertical planar smooth tight and rare red matrix infill (up to 1mm). Recovered as sandy angular to subrounded fine to coarse	- - - 0.80 - -	57.35	
6D 7D	0.90 - 1.00			GRAVEL with a high angular to subrounded sandstone cobble content.			
	1.50 - 1.60				-	-	·       ·
8B	1.90 - 2.00				-		
9D	2.50 - 2.60				-		

Trial pit Completed at 3.00m

Sidewall stability:

Trial pit terminated at 3.00m due to hard ground preventing progress.

Remarks

Stable.

# **TP05**

Sheet

Scale

3.00-

55.15

AGS

CONTRACT

36142

CHECKED

1 of 1

1:25

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

JCB 3CX.

Rose to (m)

Depth Base (m)

3.00

0.70m x 4.00m

hnical Engineering Ltd, Tel. 01452 527743 36142 BRISLINGTON MEADOWS 2/22/2021 6:48:45 PM Logged by: CD Checked by: JH

Material

Arisings

Groundwater not encountered

Time to rise (min) Remarks

# **TRIAL PIT LOG**

### **TP06**

1 of 1

1:25

3.00 m

legend

reduced

level

CLIENT CAMPBELLREITH

SITE **BRISLINGTON MEADOWS** 

Start Date 05 November 2020

End Date

no &

sample sample depth

(m)

05 November 2020

water

record

test type

& value

Northing 171108.5

362664.7

Easting

Ground Level

description

62.85mOD

Depth

Sheet

Scale

depth

(m)

type	from to	& value	record		(m)	(m)	
1D 1ES 2B	0.00 - 0.15 0.00 - 0.15 0.00 - 0.15			Soft dark brown slightly gravelly slightly sandy CLAY with frequent rootlets. Gravel is subangular and subrounded fine to coarse sandstone. Soft to firm reddish brown gravelly sandy silty CLAY. Gravel is angular to	0.15	62.70	
				subrounded fine to coarse sandstone.	-		
					_		
255	0.70 - 0.80				-		
3D 4B	0.70 - 0.80				-		
40	0.70 - 0.00				-		
					-		
3ES 5D	1.20 - 1.30 1.20 - 1.30				- 130 -	61 55	
6B 7D	1.20 - 1.30 1.50 - 1.60			Moderately weak reddish brown locally light greenish grey fine to coarse SANDSTONE. Fractures are subvertical planar smooth tight and rare red matrix infill (up to 1mm). Recovered as sandy angular to subrounded fine to coarse	-		
				GRAVEL with a high angular to subrounded sandstone cobble content.	=		
					-		
					-		
					-		
					-		
8D	2.50 - 2.60				_		
					-		
	0.00.0.00				-		
9LB	2.90 - 3.00			Trial pit Completed at 3.00m	3.00	59.85	
					-		
					-		
					-		
					-		
					-		
					-		
	ment:	JCE	3CX.	00m Sidewall stability: Stable			
Rema	irks:	. 0.70 Tria	l pit ter	minated at 3.00m due to hard ground preventing progress.			
Grour	ndwater:	Gro	undwat	ter not encountered			
Depth	Strike (m)	Rose to (m	1)	Time to rise (min) Remarks			
							AGS
Backfi	ll details:					CONT	RACT
Depth	Top (m)	Depth Bas	e (m)	Material Remarks		36′	142
0.00		3.00		Arisings		CHE	CKED
EXPLO	RATORY HOLE	LOGS SHOUL	.D BE RE/	AD IN CONJUNCTION WITH KEY SHEETS			

Geotechnical Engineering Ltd, Tel. 01452 527743 36142 BRISLINGTON MEADOWS 2/22/2021 6:48:45 PM Logged by: CD Checked by: JH

# TRIAL PIT LOG

Sheet

Scale

Depth

67.85mOD

CLIENT CAMPBELLREITH

SITE **BRISLINGTON MEADOWS** 

Start Date 05 November 2020 End Date 05 November 2020

Ground Level Northing 171140.7

362747.1

Easting

sample depth sample reduced test type depth water (m) from to level (m) description no & legend & value record (m) type 0.00 - 0.15 Soft dark brown slightly gravelly sandy CLAY with a low subangular and 1D 1ES 0.00 - 0.15 subrounded sandstone cobble content and frequent rootlets. Gravel is subangular 2B 0.00 - 0.15 and subrounded fine to coarse sandstone. 0.20 67.65 Soft to firm dark brown slightly gravelly slightly sandy CLAY. Gravel is subangular and subrounded fine to coarse sandstone. 0.70 67.15 Moderately weak reddish brown locally light greenish grey fine to coarse SANDSTONE. Fractures are subvertical planar smooth tight and rare red matrix 2ES 0.90 - 1.00 infill (up to 1mm). Recovered as sandy angular to subrounded fine to coarse 3D 0.90 - 1.00 GRAVEL with a high angular to subrounded sandstone cobble content. 4B 0.90 - 1.00 1.70 66.15 Trial pit Completed at 1.70m JCB 3CX. Equipment: Pit width x length: 0.70m x 4.00m Sidewall stability: Stable. Remarks: Trial pit terminated at 1.70m due to hard ground preventing progress. Groundwater not encountered Groundwater: Depth Strike (m) Rose to (m) Time to rise (min) Remarks AGS CONTRACT Backfill details: 36142 Depth Top (m) Depth Base (m) Material Remarks 0.00 1.70 Arisings CHECKED EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

ering Ltd, Tel. 01452 527743 36142 BRISLINGTON MEADOWS 2/22/2021 6:48:45 PM Logged by: CD Checked by: JH

**TP07** 

1 of 1

1.70 m

1:25

# **TRIAL PIT LOG**

### **TP08**

1 of 1

1:25

1.00 m

legend

CLIENT CAMPBELLREITH

SITE **BRISLINGTON MEADOWS** 

test type

& value

Start Date 05 November 2020 End Date 05 November 2020

sample sample depth

no &

type

1D

2B

2ES 3D 4B

1ES

(m) from to

0.00 - 0.15

0.00 - 0.15 0.00 - 0.15

0.90 - 1.00 0.90 - 1.00 0.90 - 1.00

water

record

Northing 171109.0 Ground Level

362807.5

Easting

description

67.30mOD

Depth

Scale

depth

(m)

Sheet

reduced

level

(m)

Soft dark brown slightly gravelly slightly sandy CLAY with frequent rootlets. Gravel is subangular and subrounded fine to coarse sandstone. Moderately weak reddish brown locally light greenish grey fine to coarse SANDSTONE. Fractures are subvertical planar smooth tight and rare red matrix infill (up to 1mm). Recovered as sandy angular to subrounded fine to coarse	- - - 0.40 - -	66.90	
GRAVEL with a high angular to suborunded sandstone cobble content.	- - 1.00	66.30	•         •
	-		

Equipment:	JCB 3CX.				
Pit width x lenath	n: 0.70m x 4.	00m	Sidewall stability:	Stable.	
Remarks:	Trial pit ter	minated at 1.00m	due to hard ground preventir	ig progress.	
Groundwater:	Groundwa	ter not encountere	ed		
Depth Strike (m)	Rose to (m)	Time to rise (min)	Remarks		
					AGS
					CONTRACT
Backfill details:	1		1		00440
Depth Top (m)	Depth Base (m)	Material	Remarks		36142
0.00	1.00	Arisings			CHECKED
EXPLORATORY HOLE	LOGS SHOULD BE RE	AD IN CONJUNCTION V	/ /ITH KEY SHEETS		

Geotechnical Engineering Ltd, Tel. 01452 527743 36142 BRISLINGTON MEADOWS 2/22/2021 6:48:45 PM Logged by: CD Checked by: JH

# **TRIAL PIT LOG**

CLIENT CAMPBELLREITH

SITE BRISLINGTON MEADOWS

Easting

362751.2

Start Date 04 November 2020 End Date 04 November 2020

sample no & type	sample depth (m) from to	test type & value	water record	description	depth (m)	reduced level (m)	legen
1D 1ES 2B	0.00 - 0.15 0.00 - 0.15 0.00 - 0.15			Soft dark brown slightly gravelly slightly sandy CLAY with frequent rootlets. Gravel is subangular and subrounded fine to coarse sandstone.	-	05.40	
2ES 3D 4LB	0.30 - 0.50 0.30 - 0.50 0.30 - 0.50			Moderately weak reddish brown and light greenish grey fine and medium SANDSTONE. Recovered as gravelly fine to medium SAND with a medium subangualr sandstone cobble content. Gravel is subangular fine to coarse sandstone.	- 0.25	65.10	
3ES 5D 6B	0.80 - 1.00 0.80 - 1.00 0.80 - 1.00				-		
					-		
					-		
7D	1.90 - 2.00						
8B	2.50 - 2.70						
9D	2.90 - 3.00						·       ·       ·       ·         ·       ·       ·       ·         ·       ·       ·       ·         ·       ·       ·       ·         ·       ·       ·       ·         ·       ·       ·       ·         ·       ·       ·       ·         ·       ·       ·       ·         ·       ·       ·       ·         ·       ·       ·       ·         ·       ·       ·       ·         ·       ·       ·       ·         ·       ·       ·       ·         ·       ·       ·       ·         ·       ·       ·       ·         ·       ·       ·       ·         ·       ·       ·       ·         ·       ·       ·       ·         ·       ·       ·       ·
10B	3.50 - 3.60						
11D	3.90 - 4.00			Trial nit Completed at 4.00m	- - 4.00-	61.35	
Equip	ment:	JCE	3CX.				1
Pit wic	ith x length:	0.70	)m x 4.(	00m Sidewall stability: Stable.			
Rema	rks:	Tria	I pit teri	minated at 4.00m due to hard ground preventing progress.			
Groun	dwater:	Gro	undwat	ter not encountered		1	

 Backfill details:
 CONTRACT

 Depth Top (m)
 Depth Base (m)
 Material
 Remarks
 36142

 0.00
 4.00
 Arisings
 CHECKED

 EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS
 CHECKED

Geotechnical Engineering Ltd, Tel. 01452 527743 36142 BRISLINGTON MEADOWS 2/22/2021 6:48:45 PM Logged by: CD Checked by: JH



Sheet

Scale

**TP09** 

1 of 1

1:25

# **TRIAL PIT LOG**

CLIENT CAMPBELLREITH

SITE **BRISLINGTON MEADOWS** 

Start Date 04 November 2020 End Date 04 November 2020

362694.2

Ground Level 61.40mOD

Northing	171024.0
----------	----------

Easting

sample no & type	sample depth (m) from to	test type & value	water record	description	depth (m)	reduced level (m)	legend
1D 1ES 2B	0.00 - 0.20 0.00 - 0.20 0.00 - 0.20			Soft dark brown slightly gravelly slightly sandy CLAY with frequent rootlets. Gravel is subangular and subrounded fine to coarse sandstone.	-		
28 2ES 3D 4B	0.00 - 0.20 0.30 - 0.50 0.30 - 0.50 0.30 - 0.50			Reddish brown very sandy very clayey subangular and subrounded fine to coarse sandstone GRAVEL.	0.20 - - - - - - - - - - - - - - - - - - -	61.20	
3ES 5B 6D	1.90 - 2.10 1.90 - 2.10 1.90 - 2.10				- - - - - - - - - - - - - - - 		
4ES	2.80 - 3.00			Moderately weak thinly bedded reddish brown and light greenish grey fine to coarse SANDSTONE. Recovered as angular and subangular fine to coarse sandstone GRAVEL.	- 2.80 - - - - - - - - - - - - - - - - - - -	58.60	
Equip: Pit wic	ment: Ith x length:	JCB 3	3CX. n x 4.(	00m Sidewall stability: Stable			
Groun	dwater: Strike (m)	Groui	ndwat	er not encountered Time to rise (min) Remarks		]	
F	(, .	- ()					AGS
Backfil	details:					CONT	RACT
Depth	Top (m)	Depth Base	(m)	Material Remarks		36'	142
			DE 55				CKED
EXPLOR	ATORY HOLE LO	DGS SHOULD	BE REA	D IN CONJUNCTION WITH KEY SHEETS			

Geotechnical Engineering Ltd, Tel. 01452 527743 36142 BRISLINGTON MEADOWS 2/22/2021 6:48:46 PM Logged by: CD Checked by: JH



Sheet

Scale

Depth

### **TP10**

1 of 2

1:25

4.80 m

# **TRIAL PIT LOG**

Sheet

Scale

depth

(m)

4.80

### **TP10**

2 of 2

1:25

4.80 m

legend

AGS

CONTRACT

36142

CHECKED

reduced

level (m)

56.60

CLIENT CAMPBELLREITH

SITE **BRISLINGTON MEADOWS** 

test type

& value

water

record

JCB 3CX.

Rose to (m)

Depth Base (m)

4.80

0.70m x 4.00m

Groundwater not encountered

Material

Arisings

ering Ltd, Tel. 01452 527743 36142 BRISLINGTON MEADOWS 2/22/2021 6:48:46 PM Logged by: CD Checked by: JH

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

Time to rise (min) Remarks

Remarks

Equipment: Pit width x length:

Groundwater:

Backfill details:

Depth Top (m)

0.00

Depth Strike (m)

Start Date 04 November 2020 End Date 04 November 2020

sample depth

to

(m) from

sample

no &

type

Northing

Easting

171024.0

362694.2

Ground Level

description

Moderately weak thinly bedded reddish brown and light greenish grey fine to coarse SANDSTONE. Recovered as angular and subangular fine to coarse sandstone GRAVEL.

Trial pit Completed at 4.80m

Sidewall stability:

Stable.

61.40mOD

Depth

# **TRIAL PIT LOG**

CLIENT CAMPBELLREITH

SITE **BRISLINGTON MEADOWS** 

Start Date 03 November 2020

362749.9

Easting

End I	Date 0	3 Novem	ber 20	020 North	ing	170997.7	Ground Lev	el 61.95mOD	Depth	n 5	5.00 m
sample no & type	sample dep (m) from to	th test type & value	water record			d	escription		depth (m)	reduced level (m)	legend
1B 1ES 2D 2ES 2ES 3B 4D	0.00 - 0.15 0.00 - 0.15 0.00 - 0.15 0.00 - 0.15 0.30 - 0.40 0.30 - 0.40 0.30 - 0.40 0.30 - 0.40			Soft dark brown sl is subangular and Reddish brown cla GRAVEL with a low	ightly g subrou ayey sa w suba	gravelly slight unded fine to andy subangu angular sands	y sandy CLAY with coarse sandstone. lar and subrounder tone cobble conter	frequent rootlets. Grave d fine to coarse sandston t.	I 0.20 -	61.75	
3ES 3ES 5D 6B	0.80 - 1.00 0.80 - 1.00 0.80 - 1.00 0.80 - 1.00								-	-	
7LB	2.00 - 2.20								-		
8B	3.00 - 3.20			Moderately weak t SANDSTONE. Re Gravel is angular a	thinly b covere and sul	bedded reddis ad as slightly s bangular fine	h brown and green andy very gravelly to coarse sandstor	ish grey medium to coars sandstone COBBLES. ie.	3.00- se 3.00-	58.95	
Equip Pit wic	ment:	JCE	3 3CX.	20m		Cont	inued Next Page	hle		-	
	an viendu	n. 0.70	JII X J.	5011		Sidewa	i stability. Stal	лс.			
Groun	idwater:	Gro	undwat	er not encountere	ed					_	
Depth	Strike (m)	Rose to (m	ו)	Time to rise (min)	Rema	rks				-	
1		1		1	1						ICAUL

Remarks



Material

Arisings

Depth Base (m)

5.00

Backfill details:

Depth Top (m)

0.00



Sheet

Scale

### **TP11**

36142

CHECKED

1 of 2

1:25

# **TRIAL PIT LOG**

Sheet

Scale

Depth

depth

(m)

5.00-

### TP11

2 of 2

1:25

5.00 m

legend

AGS

CONTRACT

36142

CHECKED

reduced

level (m)

56.95

CLIENT CAMPBELLREITH

SITE **BRISLINGTON MEADOWS** 

test type

& value

water

record

JCB 3CX.

Rose to (m)

Depth Base (m)

5.00

0.70m x 3.00m

Groundwater not encountered

Material

Arisings

ering Ltd, Tel. 01452 527743 36142 BRISLINGTON MEADOWS 2/22/2021 6:48:46 PM Logged by: CD Checked by: JH

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

Time to rise (min) Remarks

Remarks

Equipment: Pit width x length:

Groundwater:

Backfill details:

Depth Top (m)

0.00

Depth Strike (m)

Start Date 03 November 2020 End Date 03 November 2020

sample depth

to

(m) from

4.50 - 4.60

sample

no &

type

9B

Northing

Easting

170997.7

Gravel is angular and subangular fine to coarse sandstone.

362749.9

Ground Level

description

Moderately weak thinly bedded reddish brown and greenish grey medium to coarse SANDSTONE. Recovered as slightly sandy very gravelly sandstone COBBLES.

Trial pit Completed at 5.00m

Sidewall stability:

Stable.

61.95mOD

# TRIAL PIT LOG

CLIENT CAMPBELLREITH

SITE **BRISLINGTON MEADOWS** 

test type

& value

water

record

Start Date 03 November 2020 End Date 03 November 2020

sample depth

(m) from to

0.00 - 0.15

0.00 - 0.15

0.00 - 0.15

0.30 - 0.50

0.30 - 0.50

0.30 - 0.50

0.90 - 1.10

0.90 - 1.10

0.90 - 1.10

sample

no &

type

1B 1ES

2D

2ES

3B

4D

3ES

5LB

6D

Equipment: Pit width x length:

Remarks:

Groundwater: Depth Strike (m)

Backfill details:

Depth Top (m)

3.60

0.00

Easting

Northing	170947.2	G
Northing	170947.2	Ģ

is subangular and subrounded fine to coarse sandstone.

ning	170947.2	G
5		-

ng	170947.2	G
		<u> </u>

na	170947.2	Gr
.9		<u> </u>

ng	170947.2	G
<u> </u>		

362699.0

|--|

description

Soft dark brown slightly gravelly slightly sandy CLAY with frequent rootlets. Gravel

Soft light brown mottled light grey slightly sandy CLAY with rare rootlet traces.

Firm locally stiff orangish brown mottled light grey slightly sandy silty CLAY.

57.80mOD

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	-	-	11	_	
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_	~				

Sheet

Scale

depth

(m)

0.20

0.70

all's	2)		
-12	14		2 11
Z	$\mathcal{D}\mathcal{I}$	) >	<u>SU</u>

KCP

### 1.30 56.50 Reddish brown and grey slightly clayey very gravelly SAND. Gravel is subangular fine to coarse sandstone. 3.60 54.20 Trial pit Completed at 3.60m JCB 3CX 0.70m x 4.00m Sidewall stability: Stable. Trial pit terminated at 3.60m due to hard ground preventing progress. Groundwater not encountered Rose to (m) Time to rise (min) Remarks AGS CONTRACT 36142 Remarks Depth Base (m) Material Arisings CHECKED EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS ering Ltd, Tel. 01452 527743 36142 BRISLINGTON MEADOWS 2/22/2021 6:48:46 PM Logged by: CD Checked by: JH

TP12

reduced

level (m)

57.60

57.10

1 of 1

3.60 m

legend

1:25

Р

# **TRIAL PIT LOG**

CLIENT CAMPBELLREITH

SITE **BRISLINGTON MEADOWS** 

Start Date 06 November 2020 End Date 06 November 2020

Easting

171276.0 Ground Level 56.60mOD Northing

362460.3

type from to from to from to from to	(m)	legend
1D       0.00 - 0.15       Soft dark brown slightly gravelly sandy CLAY with a low subangular and subrounded sandstone cobble content and frequent rootlets. Gravel is subangular and subrounded fine to coarse sandstone.       0.15         2LB       0.00 - 0.15       Reddish brown slightly clavey gravelly fine and medium SAND with medium cobble       0.15	56.45	
content. Gravel is subangular and subrounded fine to coarse sandstone. Cobbles are subangular to subrounded sandstone.	- 56.00	
2ES       0.70 - 0.80         3D       0.70 - 0.80         4B       0.70 - 0.80    Moderately weak light greenish grey locally reddish brown fine and medium SANDSTONE. Fractures are subvertical planar smooth and tight. Recovered as sandy clayey angular to subrounded fine to coarse sandstone GRAVEL with a high subangular sandstone cobble content. Triplet Completed at 0.85m	55.75	
	-	
	-	
	-	
	-	
	-	
	-	
	-	
	-	
	-	
	-	
Pit width x length: 0.70m x 4.00m Sidewall stability: Stable.		
Remarks: Trial pit terminated at 0.85m due to hard ground preventing progress.		
Groundwater: Groundwater not encountered	_	
Depth Strike (m)     Rose to (m)     Time to rise (min)     Remarks	-	AGS
	CONT	RACT
Backfill details:	36	142
Depth Top (m)         Depth Base (m)         Material         Remarks           0.00         0.85         Arisings         Image: Comparison of the second sec		

Geotechnical Engineering Ltd, Tel. 01452 527743 36142 BRISLINGTON MEADOWS 2/22/2021 6:48:46 PM Logged by: CD Checked by: JH



Sheet

Scale

Depth

### **TP13**

1 of 1

1:25

0.85 m

# **TRIAL PIT LOG**

CLIENT CAMPBELLREITH

**BRISLINGTON MEADOWS** SITE

Start Date 20 November 2020 End Date 20 November 2020

362967.5 Northing

Easting

171150.5	Groun
----------	-------

nd	l evel	61	00

)mOD

Depth 2.00 m

Sheet

Scale

sample no & type	sample depth (m) from to	test type & value	water record		description	depth (m)	reduced level (m)	legend
1B 1ES	0.20 - 0.30 0.20 - 0.30			Yellowish brown s GRAVEL. (MADE Grey slightly sand with a high suban	lightly sandy subangular and subrounded fine and medium flint GROUND) y subangular and subrounded fine to coarse limestone GRAVEL gular limestone cobble content. (MADE GROUND)	0.15	60.85	
2D	0.20 - 0.30					0.40 -	60.60	
2ES 3B 4D	0.50 - 0.60 0.50 - 0.60 0.50 - 0.60			Yellowish brown s medium flint.	lightly gravelly fine to coarse SAND. Gravel is subangular fine to	-	60.20	
3ES 5B 6D	0.90 - 1.00 0.90 - 1.00 0.90 - 1.00			Reddish brown ve cobble content. G	ry gravelly fine to coarse SAND with low subangular sandstone ravel is subangular fine to coarse sandstone.	- 0.70	00.30	
				Reddish brown cla with a medium su	ayey very sandy subangular fine to coarse sandstone GRAVEL bangular grey and reddish brown sandstone cobble content.	1.10 - - -	59.90	
4ES 7B 8D	1.70 - 1.80 1.70 - 1.80 1.70 - 1.80					-		
02				Moderately weak recovered as sand content.	fractured grey and reddish brown fine to coarse SANDSTONE dy subangular fine to coarse gravel with a high subangular cobble	1.90 - 2.00— -	59.10 59.00	· · · · · · · · · · · · · · · · · · ·
					Trial pit Completed at 2.00m	-	-	
						-		
						_	-	
						_		
						-	-	
						-	-	
						-		
						-	-	
						_	-	
						-	-	
						-	-	
						_		
Equip	ment:	JCB	3CX	L		l	1	I
Pit wie	dth x length:	0.70	)m x 1.7	70m	Sidewall stability: Stable.			
Rema	rks:	DCF	<sup>o</sup> under	taken at 0.30m. ⊺	Frial pit terminated at 2.00m due to hard ground preventing p	rogress	6.	
Groun	dwater:	)		Time to rise (min)	Demotio		1	
1.90	<u>за ке (m)</u> Р	.95	)	20	Seepage. Water pooling in base of pit.			
							CONT	RACT
Backfil	l details:				1			
Depth	Top (m)	Depth Base	e (m)	Material Arisings	Remarks		36'	142
0.00	2			Ansings			CHE	CKED
EXPLOF		DGS SHOUL	D BE REA		I VITH KEY SHEETS			



## **TP14**

1 of 1

1:25

# **TRIAL PIT LOG**

CLIENT CAMPBELLREITH

SITE **BRISLINGTON MEADOWS** 

test type

& value

water

record

Start Date 20 November 2020 End Date 20 November 2020

sample depth

(m)

to

from

sample

no &

type

0.00

Northing 171124.9

Easting

362953.6

Ground Level

description

61.30mOD

Depth

Sheet

depth

(m)

Scale 1:25 2.00 m

educed

level

(m)

TP15

1 of 1

legend

MADE GROUND comprising dark grey TARMACADAM. 0.10 61 20 Grey and pinkish brown slightly sandy subangular fine to coarse limestone GRAVEL 1B 0.20 - 0.30 with a high subangular limestone cobble content. (MADE GROUND) 1ES 0.20 - 0.30 0.30 61.00 Firm orangish brown slightly sandy slightly gravelly silty CLAY. Gravel is subangular 0 20 - 0 30 2D 2FS 040 - 050and subrounded fine and medium flint. 3B 0.40 - 0.50 4D 0.40 - 0.50 0.60m: Becoming sandy. 1.10 60.20 Reddish brown silty gravelly fine to coarse SAND. Gravel is subangular fine to 3ES 1.20 - 1.30 coarse sandstone. 1.20 - 1.30 5B 6D 1.20 - 1.30 1.40 59.90 Reddish brown sandy subangular fine to coarse sandstone GRAVEL with a high subangular grey and reddish brown sandstone cobble content. 4ES 1.60 - 1.70 1.60 - 1.70 7B 8D 1.60 - 1.70 1.80 59.50 Moderately weak fractured grey and reddish brown fine to coarse SANDSTONE recovered as sandy subangular fine to coarse gravel with a high subangular cobble 2.00-59.30 content. Trial pit Completed at 2.00m Equipment: JCB 3CX Pit width x length: 0.70m x 1.80m Sidewall stability: Stable. Remarks: DCP undertaken at 0.30m. Trial pit terminated at 2.00m due to hard ground preventing progress. Groundwater: Depth Strike (m) Time to rise (min) Rose to (m) Remarks 0.50 0.50 20 Seepage. Water pooling in base of pit. 1.60 1 60 20 Seepage. Water pooling in base of pit. Backfill details: 36142 Depth Top (m) Remarks Depth Base (m) Material



2.00

ering Ltd, Tel. 01452 527743 36142 BRISLINGTON MEADOWS 2/22/2021 6:48:47 PM Logged by: DMH / EC Checked by: JH

Arisings



### AGS CONTRAC<sup>-</sup>

CHECKED

# **TRIAL PIT LOG**

Sheet

Scale

### **TP16**

1 of 1

1:25

CLIENT CAMPBELLREITH

SITE **BRISLINGTON MEADOWS** 

Easting

362909.0

Start Date 20 November 2020

End [	Date 20	) Nove	ember 20	020 Northing 171118.0 Ground Level 61.35mOD	Depth	י 2	2.90 m
sample no & type	sample dept (m) from to	th test ty & val	ype water lue record	description	depth (m)	reduced level (m)	legend
1B 1ES 2D	0.10 - 0.20 0.10 - 0.20 0.10 - 0.20			Grass over brown slightly gravelly slightly sandy clayey SILT with frequent black carbonaceous traces (up to 10mm) and frequent rootlets. Gravel is subangular and subrounded fine to coarse chert, brick, concrete and rare plastic fragments.	-		
2ES 3B 4D	0.40 - 0.50 0.40 - 0.50 0.40 - 0.50			Firm reddish brown slightly sandy slightly gravelly silty CLAY. Gravel is subangular to subrounded fine to medium flint.	-	01.00	
3ES 5B 6D	0.90 - 1.00 0.90 - 1.00 0.90 - 1.00			Stiff reddish brown slightly sandy CLAY.	0.80 -	60.55	
						59.65	
4ES 7B 8D	1.90 - 2.00 1.90 - 2.00 1.90 - 2.00			Stiff orangish brown slightly sandy CLAY.			
				2.60m: Tending orangish brown and grey.	-		
10D 9B	2.80 - 2.90 2.80 - 2.90			Moderately weak fractured grey and reddish brown fine to coarse SANDSTONE recovered as sandy subangular fine to coarse gravel with a high subangular cobble content.	2.80 -	- 58.55 - 58.45 - - - - -	
					-	-	

Pit width x length: DCP undertaken at 0.30m. Trial pit terminated at 2.90m due to hard ground preventing progress.

Sidewall stability:

Stable.

Remarks: Groundwater:

Equipment:

Depth Strike (m)	Rose to (m)	Time to rise (min)	Remarks	]				
1.80	1.80         20         Seepage. Water pooling in base of pit.		Seepage. Water pooling in base of pit.	AGS				
				CONTRACT				
Backfill details:								
Depth Top (m)	Depth Base (m)	Material	Remarks	36142				
0.00	2.90	Arisings		CHECKED				
EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS								

Geotechnical Engineering Ltd, Tel. 01452 527743 36142 BRISLINGTON MEADOWS 2/22/2021 6:48:47 PM Logged by: DMH Checked by: JH

JCB 3CX

0.70m x 2.10m

# **TRIAL PIT LOG**

CLIENT CAMPBELLREITH

SITE **BRISLINGTON MEADOWS** 

Start Date 06 November 2020

Depth Top (m)

Depth Base (m)

Material

Easting

362503.9

End	Date 06	Novem	ber 20	20 Northing 171086.4 Ground Level 47.45mOD	Depth	2	2.50 r
sample no & type	sample depti (m) from to	h test type & value	water record	description	depth (m)	reduced level (m)	legen
1D 1ES 2B	0.00 - 0.15 0.00 - 0.15 0.00 - 0.15			Soft dark brown slightly gravelly sandy CLAY with frequent rootlets. Gravel is subangular and subrounded fine to coarse sandstone.	-		
				Reddish brown slightly clayey gravelly fine and medium SAND. Gravel is subangular and subrounded fine to coarse sandstone.	0.50	46.95	
2ES 3D 4B	0.90 - 1.00 0.90 - 1.00 0.90 - 1.00				-		
					-		
3ES 1.90 5D 1.90 6B 1.90	1.90 - 2.00 1.90 - 2.00 1.90 - 2.00						
					2 50 -	44.05	
				Trial pit Completed at 2.50m			
					-		
					-		
Equip	ment: hth x length	JCB	3CX.	00m Sidewall stability. Stable			
Rema	irks:	BRE	E 365 S	Soakaway test undertaken in trial pit.			
Grour	ndwater:			· · · · ·			
Depth 2.50	Strike (m)	Rose to (m 2.50	1)	Time to rise (min) Remarks			A
Backfi	ll details <sup>.</sup>					CONT	RAC

Remarks

Sheet

Scale

## **SA01**

1 of 1

1:25

36142

CHECKED

# **TRIAL PIT LOG**

### **SA02**

1 of 1

1:25

CLIENT CAMPBELLREITH

**BRISLINGTON MEADOWS** SITE

Start Date 05 November 2020 End Date 05 November 2020

362588.5 Northing 171075.7 Ground Level 55.25mOD

Easting

Depth

Sheet

Scale 3.10 m

no & type	(m) from to	test type & value	water record	description	depth (m)	reduced level (m)	legend
1D 1ES 2B	0.00 - 0.15 0.00 - 0.15 0.00 - 0.15			Soft dark reddish brown slightly gravelly slightly sandy CLAY with frequent rootlets. Gravel is subangular and subrounded fine to coarse sandstone.	-	-	
2ES 3D 4B	0.90 - 1.00 0.90 - 1.00 0.90 - 1.00			Reddish brown slightly clayey gravelly fine and medium SAND with a high subangular and subrounded sandstone cobble content. Gravel is subangular and subrounded fine to coarse sandstone.	- 0.70 -	54.55	
5LB	1.30 - 1.40				-	-	
3ES	1.90 - 2.00				-	-	
6D 7B	1.90 - 2.00 1.90 - 2.00				-	-	
					-	-	
			-	Medium strong locally weak light greenish grey locally reddish brown fine to coarse SANDSTONE. Fractures are subvertical planar smooth tight with rare dark red infill (up to 1mm).	- 2.80 - - 	52.45	
			•	Trial pit Completed at 3.10m	- 3.10	52.15	
Equipr	nent:	JCB 3	3CX.				
Pit wid	th x length:	0.70n	n x 2.8	35m Sidewall stability: Stable.			
Remar	ks:	BRE	365 S	oakaway test undertaken in trial pit.			
Ground	dwater:					-	
Depth S	Strike (m) F	Rose to (m)		Time to rise (min) Remarks		-	
D. IU	3	. 10		20			AGS
Backfill	details						RACT
Denth "	uetalls: Top (m)	enth Rase	(m)	Material Remarks		36	142
0.00	<u>3</u> 37 (11)	.10	(111)	Arisings		CHE	CKED

# **TRIAL PIT LOG**

CLIENT CAMPBELLREITH

SITE **BRISLINGTON MEADOWS** 

Start	Date 04	Novem	ber 20	20 Easting 362627.0	Scale		1:25
End [	Date 04	Novem	ber 20	Northing 171047.9 Ground Level 57.00mOD	Depth	า 1	.80 m
ample no & type	sample depth (m) from to	test type & value	water record	description	depth (m)	reduced level (m)	legend
1B 1ES 2D 2ES 3D 4B	0.00 - 0.15 0.00 - 0.15 0.00 - 0.15 0.30 - 0.40 0.30 - 0.40 0.30 - 0.40			Soft dark brown slightly gravelly slightly sandy CLAY with frequent rootlets. Gravel is subangular and subrounded fine to coarse sandstone. Reddish brown slightly clayey gravelly fine and medium SAND. Gravel is subangular and subrounded fine to coarse sandstone.	- 0.20 - 	56.80	
				Reddish brown gravelly fine to coarse SAND. Gravel is angular to subrounded fine to coarse sandstone.	- 0.60 - - - - -	56.40	
ES B D	1.10 - 1.20 1.10 - 1.20 1.10 - 1.20					-	
			▼	Trial pit Completed at 1.80m	- 1.80 -	55.20	
						-	

Stable.

Equipme	nt:
Pit width	x length:
Remarks	:

0.70m x 4.00m Sidewall stability: BRE 365 Soakaway test undertaken in trial pit.

Groundwater:

Depth Strike (m)	Rose to (m)	Time to rise (min)	Remarks	7				
1.80	1.80	20		AGS				
				CONTRACT				
Backfill details:								
Depth Top (m)	Depth Base (m)	Material	Remarks	36142				
0.00	1.80	Arisings		CHECKED				
EXPLORATORY HOLE	LOGS SHOULD BE RE	AD IN CONJUNCTION V	VITH KEY SHEETS	1				

LORATORY HOL

JCB 3CX.

Geotechnical Engineering Ltd, Tel. 01452 527743 36142 BRISLINGTON MEADOWS 2/22/2021 6:50:35 PM Logged by: CD Checked by: JH



Sheet Scale

### **SA03** 1 of 1

# **TRIAL PIT LOG**

CLIENT CAMPBELLREITH

SITE **BRISLINGTON MEADOWS** 

Start Date 03 November 2020 End Date 03 November 2020 362728.3

thing	170971.0	Gro
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Easting

simple depth from to the type what means the type of the type what means the type of type of the type of type of the type of t	End [	Date 03	Novembe	r 20	20 North	ing	170971.0	Ground Level	60.10mOD	Depth	2	2.30 m
18 15 20       0.10 - 0.30 10 - 0.30       Soft dark brown slighty gravelly slighty sandy CLAV with frequent rootets. Gravel is subangular and subrounded fine to coarse sandstone.       0.30       59.80         220       0.10 - 0.30 10 - 0.30       Reddish brown slightly clayey gravelly fine and medium SAND. Gravel is subangular and subrounded fine to coarse sandstone.       0.30       59.80         255       0.30 - 1.10 4D       Reddish brown slightly clayey gravelly fine and medium SAND. Gravel is subangular and subrounded fine to coarse sandstone.       0.30       59.80         255       2.10 - 2.30 50       Reddish brown slightly clayey sandy GRAVEL. Gravel is subangular fine to coarse sandstone.       2.10       57.80         256       2.10 - 2.30 50       Reddish brown slightly clayey sandy GRAVEL. Gravel is subangular fine to coarse sandstone.       2.30       57.80         210 - 2.30 51       Reddish brown slightly clayey sandy GRAVEL. Gravel is subangular fine to coarse sandstone.       2.30       57.80         Equipment:       JCB 3CX.       Note that the substruct of the substruc	sample no & type	sample depth (m) from to	test type w & value re	/ater cord			de	scription		depth (m)	reduced level (m)	legend
2ES 4D       0.80 - 1.10 0.80 - 1.10       Image: complete d a 2.00       2.10       2.00       58.00         3ES 6D       2.10 - 2.30 0D       Image: complete d a 2.00       2.10       58.00       2.10       57.80         Equipment:       JCB 3CX.       Image: complete d a 2.00       57.80       1       1       1         Equipment:       JCB 3CX.       Image: complete d a 2.00       Stability:	1B 1ES 2D	0.10 - 0.30 0.10 - 0.30 0.10 - 0.30			Soft dark brown sli is subangular and Reddish brown slig subangular and su	ightly subro ghtly o ibrour	gravelly slightly bunded fine to co clayey gravelly f nded fine to coa	sandy CLAY with frec parse sandstone. ine and medium SAN rse sandstone.	quent rootlets. Gravel D. Gravel is	- 0.30	59.80	
3ES SLB       2.10 - 2.30 2.10 - 2.30       Image: completed at 2.30m       2.10         Freddish brown slightly clayey sandy GRAVEL. Gravel is subangular fine to coarse andstone.       2.10         Image: completed at 2.30m       2.30         Freddish brown slightly clayey sandy GRAVEL. Gravel is subangular fine to coarse       2.30         Freddish brown slightly clayey sandy GRAVEL. Gravel is subangular fine to coarse       2.30         Freddish brown slightly clayey sandy GRAVEL. Gravel is subangular fine to coarse       2.30         Freddish brown slightly clayey sandy GRAVEL. Gravel is subangular fine to coarse       57.80         Equipment:       JCB 3CX.         Pit width x length:       0.70m x 4.00m         Sidewall stability:       Stable.         Remarks:       BRE 365 Soakaway test undertaken in trial pit.         Groundwater:       2.00         Depth Strike (m)       Rose to (m)         Zime to rise (min)       Remarks         Backfill details:       20	2ES 3LB 4D	0.90 - 1.10 0.90 - 1.10 0.90 - 1.10										
Equipment:       JCB 3CX.         Pit width x length:       0.70m x 4.00m         Sidewall stability:       Stable.         Remarks:       BRE 365 Soakaway test undertaken in trial pit.         Groundwater:       Depth Strike (m)         Depth Strike (m)       Rose to (m)         2.30       20         Backfill details:       361.422	3ES 5LB 6D	2.10 - 2.30 2.10 - 2.30 2.10 - 2.30			Reddish brown slig sandstone.	ghtly o	clayey sandy GF	RAVEL. Gravel is suba	angular fine to coarse	- - 2.10 -	58.00	
Equipment:       JCB 3CX.         Pit width x length:       0.70m x 4.00m         Sidewall stability:       Stable.         Remarks:       BRE 365 Soakaway test undertaken in trial pit.         Groundwater:							Trial pit Co	mpleted at 2.30m		- 2.30 - - - - - - - - - - - - - - - - - - -	57.60	
Pit width x length:       0.70m x 4.00m       Sidewall stability:       Stable.         Remarks:       BRE 365 Soakaway test undertaken in trial pit.         Groundwater:	Equipr	ment:	JCB 30	CX.						-		
Groundwater:       Depth Strike (m)       Rose to (m)       Time to rise (min)       Remarks         2.30       2.00       20       CONTRACT         Backfill details:       36142	Pit wic Remai	lth x length: rks:	0.70m BRE 3	x 4.0 65 S	00m oakaway test und	lertał	Sidewall (en in trial pit.	stability: Stable.				
2.30     2.00     20     AG       Backfill details:     36142	Groun Depth	dwater: Strike (m)	Rose to (m)		Time to rise (min)	Rem	arks					
Backfill details:	2.30	2	2.00		20							AGS
Backfill details: 361/12											CONT	RACT
Donth Ton (m) Donth Boos (m) Material Demonstra	Backfill	l details:	Donth Daga (		Matarial	Derr					36	142
Deput top (iii)     Deput base (iii)     Material     Remarks       0.00     2.30     Arisings     CHECKED	0.00		2.30	<u>11)</u>	Arisings	rema	6715				CHE	CKED



nnical Engineering Ltd, Tel. 01452 527743 36142 BRISLINGTON MEADOWS 2/22/2021 6:50:35 PM Logged by: CD Checked by: JH



Sheet

Scale

### **SA04**

1 of 1

1:25



CLIENT CAMPBELLREITH SITE BRISLINGTON MEADOWS DATE 06/11/2020

TRIAL PIT

TEOT			<u> </u>								
	2.00 m						Tir	ne (minu	ites)		
	2.90 m			(	h	20	40	60	00	100	120
	0.70 m			1.80	) 	20	40	•••		100	
	2.50 m					•••••	••				
	2.30 m		2	1.90 -	-					75% full	
	1.00 m		1	2.00 -	- · -	· · — · —	· — · —	· — · —	· — · — · -	_ · _ · _	•• -
V 75 05	n/a m <sup>3</sup>		ate								
•p75-25	n/a []]		>	2.10 -	-						
a <sub>p50</sub>	n/a m²		th t	2.20 -	_						
t <sub>p75-25</sub>	n/a min		Dep	0.00						25% full	
				2.30 -	- - ·	· · <u> </u>	· — · —	· — · —	· — · — · -		•• -
		* 4		2.40 -	-						
soil infiltration ra	nte, f * x 10	) <sup>-</sup> ms <sup>-</sup> '		2.50							
Insufficient fall in I	evel to calculate infil	tration rate.		2.50 -							
TEST 2											
LENGTH	2.90 m						Tim	ne (minu	tes)		
BREADTH	0.70 m				0	20	40	60	80	100	120
DEPTH	2.50 m			1.20	-	***	** •	• •	+ +		<b>→</b>
WATER LEVEL	2.50 m			1 40							
FILL LEVEL	1.22 m		-	1.40	Ť					75% full	
			<u>ٿ</u>	1.60	<u></u> -∙-	- · — · —	·· — · —	·· — · —	· — · — · -	_ · _ · _	
V <sub>n75-25</sub>	n/a m³		atei								
<b>a</b> _50	n/a m²		≥ 0	1.80	t						
•p50	n/a min		t	2.00	ļ						
<b>L</b> p75-25	11/a 11111		Dep	•						25% full	
				2.20	<u>- · -</u>	- · — · —	·· <b>—</b> · <b>—</b>	·· <b>—</b> · <b>—</b>	· — · — · -	_ · _ · _	
soil infiltration ra	nte, f * x 10	) <sup>-*</sup> ms <sup>-1</sup>		2.40	-						
TEST 3							Tin	ne (minu	ites)		
LENGTH	m			0	1	50	100	) 1	150	200	250
BREADTH	m			1.00					+	+	1
DEPTH	m										
	m			1.20 +	-						
FILL LEVEL	m		Ē							75% ful	
	3		er (	1.40							
<b>v</b> p75-25	m		wat								
a <sub>p50</sub>	m²		t t	1.60 -							
t <sub>p75-25</sub>	min			5						0.501 -	
				1.80 -	-					25% full	
	4- 6 ± 40-*										
soli inflitration ra	ite, <i>t</i> * X 10	ms <sup>-</sup>		2.00							
<b></b>								- <u>r</u>		T	
Remarks Tes	t carried out in accor	dance with	BRE [	DG 365	5 (20	16).		CO	NTRACT	CHE	CKED
								3	6142		T:



CLIENT	CAMPBELLREITH
SITE	BRISLINGTON MEADOWS
DATE	05/11/2020





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CLIENT	CAMPBELLREITH
SITE	BRISLINGTON MEADOWS
DATE	04/11/2020





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and the	U

CLIENT CAMPBELLREITH SITE BRISLINGTON MEADOWS DATE 03/11/2020

TRIAL PIT



# **DYNAMIC CONE PENETROMETER TESTING**

CLIENT CAMPBELLREITH

- SITE BRISLINGTON MEADOWS
- DATE 20/11/2020

Initial Scale reading (mm) 0 Datum bgl (mm) 25

no. of blows	Scale reading	Penetration	Depth bgl	DCP (mm/blow)	CBR (%)	
1	() 65		0.00	65	(,0)	CBR (%)
1	00		0.09	00	4	
1	140		0.17	80 40	3	
1	200		0.21	40	17	
1	200		0.23	15	5	
1	240		0.27	40	12	
1	200		0.29	20	10	0.1
1	205		0.31	20	15	
5	290		0.32	10	20	
5	300		0.30	12	22	-
4	400		0.42	9	50	0.2
2	400		0.43	5	55	
4	420		0.45	о О	20	
3	400		0.49	0 10	26	-
3	490 540		0.52	10	20	
4	570		0.57	10	21	
2	600		0.00	10	20	
3	640		0.03	10	20	
3	640		0.07	13	20	-
4	690		0.72	13	21	0.4
4	730		0.76	10	26	- · · · · · · · · · · · · · · · · · · ·
4	760		0.79	8	30	
3	780		0.81	10	41	
1	790		0.82	10	20	
1	800		0.83	10	26	
1	810		0.84	10	26	
	820		0.85	10	20	
1	830		0.86	10	26	
1	840		0.87	10	26	0.6
1	850		0.88	10	20	
	800		0.89	10	20	
	870		0.90	10	20	
1	880		0.91	10	20	0.7
1	890		0.92	10	20	
- 1	900		0.93	10	20	
						0.8
						0.9
Domor						
rteman	NS.					
Test carr	ied out in acco	rdance with ope	erating instruct	tions for the dy	namic cone pe	benetrometer Model A2465 by CNS Farnell Ltd. CBR CONTRACT CHECKE
correlatio	n pased on the nterim Advice	e relationship Lo Note 73/06 - De	sign Guidance	∠.4ŏ - 1.057 * L e for Road Pave	.og10 (mm/blo ement Founda	Hations (2009)
· · ·			-			36142



**TP14 DCP** 

## DYNAMIC CONE PENETROMETER TESTING

Cart Frank

TP15 DCP

CLIENT CAMPBELLREITH

- SITE BRISLINGTON MEADOWS
- DATE 20/11/2020

Initial Scale reading (mm) 0 Datum bgl (mm) 15



## DYNAMIC CONE PENETROMETER TESTING

and the start

**TP16 DCP** 

CLIENT CAMPBELLREITH

- SITE BRISLINGTON MEADOWS
- DATE 20/11/2020

Initial Scale reading (mm) 0 Datum bgl (mm) 20





CLIENT: CAMPBELLREITH

Borehole /trial pit no.	date and time	barometric pressure (mb)	pressure differentiation (mm H2O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	carbon monoxide (ppm)	VOC (ppm)	gas flow (Itr/hr)	termperature (°C)	water level (m - bgl)	r	emarks
BH01	30/11/2020 09:50	1020	0								0.0	7			
BH01	30/11/2020 09:51	1020	0								0.0	7			
BH01	30/11/2020 09:52	1020	0								0.0	7			
BH01	30/11/2020 09:53			0.3	0.0	18.7	0.0	0	0	0.0					
BH01	30/11/2020 09:53			0.1	0.0	19.0	0.0	0	0	0.0					
BH01	30/11/2020 09:53			0.1	0.0	19.1	0.0	0	0	0.0					
BH01	30/11/2020 09:53			0.1	0.0	18.6	0.0	0	0	0.0					
BH01	30/11/2020 09:54			0.1	0.0	19.1	0.0	0	0	0.0					
BH01	30/11/2020 09:54			0.1	0.0	19.0	0.0	0	0	0.0					
BH01	30/11/2020 09:54			0.0	0.0	18.9	0.0	0	0	0.0					
BH01	30/11/2020 09:54			0.0	0.0	19.2	0.0	0	0	0.0					
BH01	30/11/2020 09:55			0.0	0.0	19.0	0.0	0	0	0.0					
BH01	30/11/2020 09:56			0.0	0.0	19.1	0.0	0	0	0.0					
BH01	30/11/2020 09:57			0.0	0.0	19.0	0.0	0	0	0.0					
BH01	30/11/2020 09:58												2.30		
BH01	17/12/2020 10:05	1009	-3								-0.4				
BH01	17/12/2020 10:06	1009	-2								-0.3				
remarks													С	ONTRACT	CHECKED
# denotes results exc	ceeding capacity	of gas monito	oring equipmen	t										36142	JH
VOC - Photoionisatio	on Detector Mini F	RAE 2000 me	easures VOC v	apours with 1	0.6eV lamp	calibrated ag	ainst isobuty	lene							•



CLIENT: CAMPBELLREITH

Borehole /trial pit no.	date and time	barometric pressure (mb)	pressure differentiation (mm H2O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	carbon monoxide (ppm)	VOC (ppm)	gas flow (ltr/hr)	termperature (°C)	water leve (m - bgl)	1	remarks
BH01	17/12/2020 10:07	1009	-1								-0.2				
BH01	17/12/2020 10:08			1.6	0.0	17.0	0.0	0	10						
BH01	17/12/2020 10:08			0.9	0.0	16.6	0.0	0	0						
BH01	17/12/2020 10:08			0.6	0.0	18.1	0.0	0	0						
BH01	17/12/2020 10:09			0.5	0.0	18.1	0.0	0							
BH01	17/12/2020 10:09			0.4	0.0	19.1	0.0	0	0						
BH01	17/12/2020 10:09			0.4	0.0	119.3	0.0	0	0						
BH01	17/12/2020 10:09			0.3	0.0	19.4	0.0	0	0						
BH01	17/12/2020 10:10			0.3	0.0	16.5	0.0	0	0						
BH01	17/12/2020 10:11			0.3	0.0	19.6	0.0	0	0						
BH01	17/12/2020 10:12			0.3	0.0	19.7	0.0	0	0						
BH01	17/12/2020 10:13			0.2	0.0	19.7	0.0	0	0						
BH01	17/12/2020 10:15									3.0					
BH01	17/12/2020 10:16									3.3					
BH01	17/12/2020 10:17									3.3					
BH01	17/12/2020 10:18												2.23		
BH01	11/01/2021 10:15	1014	-1								-0.1				
remarks														CONTRACT	CHECKED
# denotes results exc	ceeding capacity	of gas monito	oring equipmen	t										36142	JH
VOC - Photoionisatio	on Detector Mini F	RAE 2000 me	easures VOC va	apours with 1	0.6eV lamp of	calibrated ag	ainst isobuty	lene							



CLIENT: CAMPBELLREITH

Borehole /trial pit no.	date and time	barometric pressure (mb)	pressure differentiation (mm H2O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	carbon monoxide (ppm)	VOC (ppm)	gas flow (ltr/hr)	termperature (°C)	water level (m - bgl)	r	emarks
BH01	11/01/2021 10:16	1014	-2								-0.3				
BH01	11/01/2021 10:17	1014	-2								-0.3				
BH01	11/01/2021 10:18	1014	-2								-0.3				
BH01	11/01/2021 10:19	1014	-2								-0.2				
BH01	11/01/2021 10:20			4.9	0.0	7.4	0.0	0	0	0.1					
BH01	11/01/2021 10:21			4.9	0.0	7.2	0.0	0	0	0.0					
BH01	11/01/2021 10:22			4.9	0.0	6.8	0.0	0	0	0.0					
BH01	11/01/2021 10:23			5.0	0.0	6.1	0.0	0	0	0.0					
BH01	11/01/2021 10:24			4.9	0.0	5.7	0.0	0	0	0.0					
BH01	11/01/2021 10:27												1.93		
remarks	н н												C	UNTRACT	CHECKED
# denotes results exc	Detector Mini C	of gas monito	oring equipmen	t	0.60\/ loma	colibrated as	ainat ia ahutu	lono						36142	JH
VOC - Priotoionisatio			asules VUC Va	apours with T	0.0ev lamp	calibrated ag	amst isoduty	lene							



CLIENT: CAMPBELLREITH

Borehole /trial pit no.	date and time	barometric pressure (mb)	pressure differentiation (mm H2O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	carbon monoxide (ppm)	VOC (ppm)	gas flow (Itr/hr)	termperature (°C)	water leve (m - bgl)	r	emarks
BH02	30/11/2020 10:25	1021	0								0.0	7			
BH02	30/11/2020 10:26	1021	0								0.0	7			
BH02	30/11/2020 10:27	1021	0								0.0	7			
BH02	30/11/2020 10:28			0.0	0.0	18.8	0.0	0	0	0.0					
BH02	30/11/2020 10:28			0.0	0.0	19.1	0.0	0	0	0.0					
BH02	30/11/2020 10:28			0.0	0.0	19.2	0.0	0	0	0.0					
BH02	30/11/2020 10:28			0.0	0.0	19.4	0.0	0	0	0.0					
BH02	30/11/2020 10:29			0.0	0.0	18.9	0.0	0	0	0.0					
BH02	30/11/2020 10:29			0.0	0.0	19.0	0.0	0	0	0.0					
BH02	30/11/2020 10:29			0.0	0.0	18.7	0.0	0	0	0.0					
BH02	30/11/2020 10:29			0.0	0.0	19.2	0.0	0	0	0.0					
BH02	30/11/2020 10:30			0.0	0.0	19.3	0.0	0	0	0.0					
BH02	30/11/2020 10:31			0.0	0.0	19.2	0.0	0	0	0.0					
BH02	30/11/2020 10:32			0.0	0.0	19.3	0.0	0	0	0.0					
BH02	30/11/2020 10:33												4.25		
BH02	17/12/2020 10:30	1019	0								0.0				
BH02	17/12/2020 10:31	1019	-1								-0.1				
remarks													C	CONTRACT	CHECKED
# denotes results exe	denotes results exceeding capacity of gas monitoring equipment													36142	JH
VOC - Photoionisatio	on Detector Mini F	RAE 2000 me	asures VOC va	apours with 1	0.6eV lamp of	calibrated ag	ainst isobuty	lene							•••



CLIENT: CAMPBELLREITH

Borehole /trial pit no.	date and time	barometric pressure (mb)	pressure differentiation (mm H2O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	carbon monoxide (ppm)	VOC (ppm)	gas flow (ltr/hr)	termperature (°C)	water leve (m - bgl)	l r	remarks
BH02	17/12/2020 10:32	1019	0								0.0				
BH02	17/12/2020 10:33			0.9	0.0	6.6	0.0	0	10						
BH02	17/12/2020 10:33			0.9	0.0	3.4	0.0	0	0						
BH02	17/12/2020 10:33			0.8	0.0	5.2	0.0	0	0						
BH02	17/12/2020 10:34			0.8	0.0	7.2	0.0	0	0						
BH02	17/12/2020 10:34			0.8	0.0	7.5	0.0	0	0						
BH02	17/12/2020 10:34			0.7	0.0	7.0	0.0	0	0						
BH02	17/12/2020 10:34			0.7	0.0	7.6	0.0	0	0						
BH02	17/12/2020 10:35			0.7	0.0	9.1	0.0	0	0						
BH02	17/12/2020 10:36			0.7	0.0	9.6	0.0	0	0						
BH02	17/12/2020 10:37			0.6	0.0	10.9	0.0	0	0						
BH02	17/12/2020 10:38			0.6	0.0	11.4	0.0	0	0						
BH02	17/12/2020 10:40									4.1					
BH02	17/12/2020 10:41									2.7					
BH02	17/12/2020 10:42									1.6					
BH02	17/12/2020 10:43												3.31		
BH02	11/01/2021 09:55	1014	-2								-0.3				
remarks													e e e e e e e e e e e e e e e e e e e	CONTRACT	CHECKED
# denotes results exc	ceeding capacity of	of gas monito	oring equipmen	t										36142	JH
VOC - Photoionisatio	on Detector Mini R	RAE 2000 me	easures VOC va	apours with 1	0.6eV lamp of	calibrated ag	ainst isobuty	lene							



CLIENT: CAMPBELLREITH

Borehole /trial pit no.	date and time	barometric pressure (mb)	pressure differentiation (mm H2O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	carbon monoxide (ppm)	VOC (ppm)	gas flow (ltr/hr)	termperature (°C)	water level (m - bgl)	r	emarks
BH02	11/01/2021 09:56	1015	-1								-0.1				
BH02	11/01/2021 09:57	1015	0								0.0				
BH02	11/01/2021 09:58	1015	0								-0.1				
BH02	11/01/2021 09:59	1014	0								0.0				
BH02	11/01/2021 10:00			0.7	0.0	13.8	0.0	0	0	0.0					
BH02	11/01/2021 10:01			0.5	0.0	15.8	0.0	0	0	0.0					
BH02	11/01/2021 10:02			0.5	0.0	16.3	0.0	0	0	0.0					
BH02	11/01/2021 10:03			0.4	0.0	16.5	0.0	0	0	0.0					
BH02	11/01/2021 10:04			0.4	0.0	16.8	0.0	0	0	0.0					
BH02	11/01/2021 10:08												4.02		
remarks		<b>.</b> .											С	UNTRACT	CHECKED
# denotes results exc	ceeding capacity o	of gas monito	oring equipmen	t	0.0-1/1-#	a a libua ta al a su	alaat laab st	1						36142	JH
VUC - Photoionisatio	Detector Mini F	KAE 2000 me	easures VOC Va	apours with 1	0.6eV lamp	calibrated ag	ainst isobuty	iene							


CLIENT: CAMPBELLREITH

Borehole /trial pit no.	date and time	barometric pressure (mb)	pressure differentiation (mm H2O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	carbon monoxide (ppm)	VOC (ppm)	gas flow (Itr/hr)	termperature (°C)	water level (m - bgl)	r	emarks
ВН03	30/11/2020 10:58	1020	0								0.0	7			
BH03	30/11/2020 10:59	1020	0								0.0	7			
BH03	30/11/2020 11:00	1020	0								0.0	7			
BH03	30/11/2020 11:01			0.0	0.0	19.0	0.0	0	0	0.0					
BH03	30/11/2020 11:01			0.0	0.0	18.7	0.0	0	0	0.0					
BH03	30/11/2020 11:01			0.0	0.0	18.6	0.0	0	0	0.0					
BH03	30/11/2020 11:01			0.0	0.0	18.8	0.0	0	0	0.0					
BH03	30/11/2020 11:02			0.0	0.0	19.1	0.0	0	0	0.0					
BH03	30/11/2020 11:02			0.0	0.0	19.0	0.0	0	0	0.0					
BH03	30/11/2020 11:02			0.0	0.0	19.1	0.0	0	0	0.0					
BH03	30/11/2020 11:02			0.0	0.0	18.9	0.0	0	0	0.0					
BH03	30/11/2020 11:03			0.0	0.0	19.0	0.0	0	0	0.0					
BH03	30/11/2020 11:04			0.0	0.0	19.1	0.0	0	0	0.0					
BH03	30/11/2020 11:05												2.86		
BH03	17/12/2020 09:30	1010	142								15.3				
BH03	17/12/2020 09:31	1010	51								6.4				
BH03	17/12/2020 09:32	1010	50								6.5				
remarks													C	ONTRACT	CHECKED
# denotes results exe	ceeding capacity	of gas monito	oring equipmen	t										36142	JH
VOC - Photoionisatio	on Detector Mini F	RAE 2000 me	easures VOC v	apours with 1	0.6eV lamp	calibrated ag	ainst isobuty	lene							•



CLIENT: CAMPBELLREITH

Borehole /trial pit no.	date and time	barometric pressure (mb)	pressure differentiation (mm H2O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	carbon monoxide (ppm)	VOC (ppm)	gas flow (Itr/hr)	termperature (°C)	water leve (m - bgl)	l ,	emarks
ВН03	17/12/2020 09:35			4.5	0.0	9.1	0.0	0	10						
BH03	17/12/2020 09:35			4.2	0.0	8.2	0.0	0	0						
BH03	17/12/2020 09:35			37.0	0.0	9.5	0.0	0	0						
BH03	17/12/2020 09:36			3.3	0.0	10.3	0.0	0	0						
BH03	17/12/2020 09:36			3.1	0.0	10.7	0.0	0	0						
BH03	17/12/2020 09:36			3.0	0.0	11.1	0.0	0	0						
BH03	17/12/2020 09:36			2.9	0.0	11.4	0.0	0	0						
BH03	17/12/2020 09:37			2.7	0.0	11.8	0.0	0	0						
BH03	17/12/2020 09:38			2.4	0.0	12.5	0.0	0	0						
BH03	17/12/2020 09:39			2.3	0.0	12.6	0.0	0	0						
ВН03	17/12/2020 09:40			2.4	0.0	12.7	0.0	0	0						
ВН03	17/12/2020 09:42									0.0					
BH03	17/12/2020 09:43									0.0					
BH03	17/12/2020 09:45												2.06		
BH03	11/01/2021 09:38	1014	128								14.2				
BH03	11/01/2021 09:39	1014	106								11.7				
BH03	11/01/2021 09:40	1014	95								10.7				
remarks													C	CONTRACT	CHECKED
# denotes results exc	ceeding capacity	of gas monito	oring equipmen	t										36142	JH
VOC - Photoionisatio	on Detector Mini F	RAE 2000 me	easures VOC v	apours with 1	0.6eV lamp	calibrated ag	ainst isobuty	lene							•••



CLIENT: CAMPBELLREITH

Borehole /trial pit no.	date and time	barometric pressure (mb)	pressure differentiation (mm H2O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	carbon monoxide (ppm)	VOC (ppm)	gas flow (Itr/hr)	termperature (°C)	water level (m - bgl)	r	emarks
ВН03	11/01/2021 09:41	1014	86								9.7				
BH03	11/01/2021 09:42	1014	81								9.4				
BH03	11/01/2021 09:43			3.9	0.0	9.7	0.0	0	0	0.0					
BH03	11/01/2021 09:44			3.9	0.0	9.6	0.0	0	0	0.0					
BH03	11/01/2021 09:45			3.9	0.0	9.6	0.0	0	0	0.0					
BH03	11/01/2021 09:46			3.9	0.0	9.6	0.0	0	0	0.0					
ВН03	11/01/2021 09:47			3.9	0.0	9.5	0.0	0	0	0.0					
ВН03	11/01/2021 09:49												1.85		
remarks													С	UNTRACT	CHECKED
# denotes results exe	Detector Mini F	DI gas monito	oring equipment	L anours with 1	0.6e\/ lamp	calibrated an	ainst isobutv	lene						36142	JH



CLIENT: CAMPBELLREITH

Borehole /trial pit no.	date and time	barometric pressure (mb)	pressure differentiation (mm H2O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	carbon monoxide (ppm)	VOC (ppm)	gas flow (Itr/hr)	termperature (°C)	water level (m - bgl)	r	emarks
BH04	30/11/2020 11:35	1021	0								0.0	7			
BH04	30/11/2020 11:36	1021	0								0.0	7			
BH04	30/11/2020 11:37	1021	0								0.0	7			
BH04	30/11/2020 11:38			1.1	0.3	19.3	6.0	0	0	0.0					
BH04	30/11/2020 11:38			1.6	0.6	16.5	12.0	0	0	0.0					
BH04	30/11/2020 11:38			2.1	0.1	9.1	2.0	0	0	0.0					
BH04	30/11/2020 11:38			2.2	0.1	4.2	2.0	0	0	0.0					
BH04	30/11/2020 11:39			2.2	0.0	2.4	0.0	0	0	0.0					
BH04	30/11/2020 11:39			2.2	0.0	1.6	0.0	0	0	0.0					
BH04	30/11/2020 11:39			2.2	0.0	1.4	0.0	0	0	0.0					
BH04	30/11/2020 11:39			2.2	0.0	1.6	0.0	0	0	0.0					
BH04	30/11/2020 11:40			2.2	0.0	1.4	0.0	0	0	0.0					
BH04	30/11/2020 11:41			2.2	0.0	1.5	0.0	0	0	0.0					
BH04	30/11/2020 11:42			2.2	0.0	1.4	0.0	0	0	0.0					
BH04	30/11/2020 11:43												5.58		
BH04	17/12/2020 11:05	1010	6								2.4				
BH04	17/12/2020 11:06	1010	3								0.6				
remarks													C	ONTRACT	CHECKED
# denotes results exe	ceeding capacity	of gas monito	oring equipmen	t										36142	JH
VOC - Photoionisatio	on Detector Mini F	RAE 2000 me	easures VOC va	apours with 1	0.6eV lamp	calibrated ag	ainst isobuty	lene							



CLIENT: CAMPBELLREITH

Borehole /trial pit no.	date and time	barometric pressure (mb)	pressure differentiation (mm H2O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	carbon monoxide (ppm)	VOC (ppm)	gas flow (Itr/hr)	termperature (°C)	water leve (m - bgl)	l r	emarks
BH04	17/12/2020 11:07	1010	3								0.5				
BH04	17/12/2020 11:08			1.5	0.0	4.1	0.0	0	10						
BH04	17/12/2020 11:08			2.0	0.0	1.8	0.0	0	0						
BH04	17/12/2020 11:08			2.0	0.0	2.3	0.0	0	0						
BH04	17/12/2020 11:09			1.9	0.0	2.6	0.0	0	0						
BH04	17/12/2020 11:09			1.9	0.0	3.3	0.0	0	0						
BH04	17/12/2020 11:09			1.8	0.0	3.7	0.0	0	0						
BH04	17/12/2020 11:09			1.7	0.0	4.1	0.0	0	0						
BH04	17/12/2020 11:10			1.7	0.0	4.5	0.0	0	0						
BH04	17/12/2020 11:11			1.6	0.0	5.0	0.0	0	0						
BH04	17/12/2020 11:12			1.6	0.0	5.4	0.0	0	0						
BH04	17/12/2020 11:13			1.6	0.0	5.6	0.0	0	0						
BH04	17/12/2020 11:15									1.0					
BH04	17/12/2020 11:16									0.9					
BH04	17/12/2020 11:17									1.0					
BH04	17/12/2020 11:18												4.39		
BH04	11/01/2021 09:16			2.5	0.0	6.8	0.0	0	0	0.2					
remarks													C	CONTRACT	CHECKED
# denotes results exc	ceeding capacity	of gas monito	oring equipmen	t										36142	JH
VOC - Photoionisatio	n Detector Mini F	RAE 2000 me	easures VOC va	apours with 1	0.6eV lamp o	calibrated ag	ainst isobuty	lene							•••



CLIENT: CAMPBELLREITH

Borehole /trial pit no.	date and time	barometric pressure (mb)	pressure differentiation (mm H2O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	carbon monoxide (ppm)	VOC (ppm)	gas flow (ltr/hr)	termperature (°C)	water level (m - bgl)	r	emarks
BH04	11/01/2021 09:20	1012	0								-0.1				
BH04	11/01/2021 09:21	1012	0								0.0				
BH04	11/01/2021 09:22	1012	0								0.0				
BH04	11/01/2021 09:23	1012	0								0.0				
BH04	11/01/2021 09:24	1012	0								0.0				
BH04	11/01/2021 09:25			3.1	0.0	5.3	0.0	0	0	0.3					
BH04	11/01/2021 09:27			2.5	0.0	6.9	0.0	0	0	0.2					
BH04	11/01/2021 09:28			2.5	0.0	6.9	0.0	0	0	0.2					
BH04	11/01/2021 09:29			2.4	0.0	7.1	0.0	0	0	0.2					
BH04	11/01/2021 09:32												2.62		
remarks													C	UNTRACT	CHECKED
# denotes results exc	ceeding capacity	of gas monito	oring equipmen	t	0.0-1/1	121	- to a firm to a firm							36142	JH
VOC - Photoionisatio	on Detector Mini F	KAE 2000 me	easures VOC va	apours with 1	0.6eV lamp	calibrated ag	ainst isobuty	lene							



CLIENT: CAMPBELLREITH

Borehole /trial pit no.	date and time	barometric pressure (mb)	pressure differentiation (mm H2O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	carbon monoxide (ppm)	VOC (ppm)	gas flow (ltr/hr)	termperature (°C)	water level (m - bgl)	r	emarks
BH05	30/11/2020 09:26	1021	-7								-1.2	7			
BH05	30/11/2020 09:27	1021	-7								-1.2	7			
BH05	30/11/2020 09:28	1021	-7								-1.2	7			
BH05	30/11/2020 09:29			0.0	0.0	19.0	0.0	0	0	0.0					
BH05	30/11/2020 09:29			0.5	0.0	18.8	0.0	0	0	0.0					
BH05	30/11/2020 09:29			0.6	0.0	18.1	0.0	0	0	0.0					
BH05	30/11/2020 09:29			0.6	0.0	17.8	0.0	0	0	0.0					
BH05	30/11/2020 09:30			0.6	0.0	17.6	0.0	0	0	0.0					
BH05	30/11/2020 09:30			0.6	0.0	17.4	0.0	0	0	0.0					
BH05	30/11/2020 09:30			0.6	0.0	17.5	0.0	0	0	0.0					
BH05	30/11/2020 09:30			0.6	0.0	17.2	0.0	0	0	0.0					
BH05	30/11/2020 09:31			0.6	0.0	17.2	0.0	0	0	0.0					
BH05	30/11/2020 09:32			0.6	0.0	17.2	0.0	0	0	0.0					
BH05	30/11/2020 09:33			0.6	0.0	17.2	0.0	0	0	0.0					
BH05	11/01/2021 10:33	1014	0								0.1				
BH05	11/01/2021 10:34	1014	0								0.0				
BH05	11/01/2021 10:35	1014	2								0.4				
remarks													С	ONTRACT	CHECKED
# denotes results exc	ceeding capacity	of gas monito	oring equipmen	t										36142	JH
VOC - Photoionisatio	on Detector Mini F	RAE 2000 me	easures VOC v	apours with 1	0.6eV lamp	calibrated ag	ainst isobuty	lene							



CLIENT: CAMPBELLREITH

Borehole /trial pit no.	date and time	barometric pressure (mb)	pressure differentiation (mm H2O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	carbon monoxide (ppm)	VOC (ppm)	gas flow (Itr/hr)	termperature (°C)	water level (m - bgl)	r	emarks
BH05	11/01/2021 10:36	1014	0								0.0				
BH05	11/01/2021 10:37	1014	3								0.8				
BH05	11/01/2021 10:38			4.2	0.0	6.7	0.0	0	0	0.0					
BH05	11/01/2021 10:39			2.4	0.0	11.3	0.0	0	0	0.0					
BH05	11/01/2021 10:40			2.0	0.0	13.4	0.0	0	0	0.0					
BH05	11/01/2021 10:41			1.7	0.0	14.3	0.0	0	0	0.0					
BH05	11/01/2021 10:42			1.6	0.0	14.8	0.0	0	0	0.0					
BH05	11/01/2021 10:45												7.41		
romarka															CHECKED
# denotes results ev	ceeding canacity	of das monit	orina equinmen	t											
VOC - Photoionisatio	on Detector Mini F	RAE 2000 me	easures VOC va	apours with 1	0.6eV lamp	calibrated ag	ainst isobuty	lene						36142	JH



CLIENT: CAMPBELLREITH

Borehole /trial pit no.	date and time	barometric pressure (mb)	pressure differentiation (mm H2O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	carbon monoxide (ppm)	VOC (ppm)	gas flow (ltr/hr)	termperature (°C)	water level (m - bgl)	r	emarks
BH06	30/11/2020 12:10	1021	2								0.7	7			
BH06	30/11/2020 12:11	1021	2								0.7	7			
BH06	30/11/2020 12:12	1021	2								0.7	7			
BH06	30/11/2020 12:13			0.0	0.0	18.8	0.0	0	0	0.0					
BH06	30/11/2020 12:14			1.3	0.0	18.2	0.0	0	0	0.0					
BH06	30/11/2020 12:15			1.2	0.0	18.4	0.0	0	10	0.0					
BH06	30/11/2020 12:16			1.1	0.0	18.5	0.0	0	24	0.0					
BH06	30/11/2020 12:17			0.9	0.0	18.6	0.0	0	26	0.0					
BH06	30/11/2020 12:18			0.8	0.0	18.5	0.0	0	31	0.0					
BH06	30/11/2020 12:19			0.7	0.0	18.2	0.0	0	31	0.0					
BH06	30/11/2020 12:20			0.7	0.0	18.7	0.0	0	29	0.0					
BH06	30/11/2020 12:21			0.6	0.0	19.1	0.0	0	27	0.0					
BH06	30/11/2020 12:22			0.5	0.0	18.8	0.0	0	23	0.0					
BH06	30/11/2020 12:23			0.3	0.0	19.0	0.0	0	15	0.0					
BH06	30/11/2020 12:24												1.01		
BH06	17/12/2020 08:40	1010	-5								-0.9				
BH06	17/12/2020 08:41	1009	-4								-0.6				
remarks													С	ONTRACT	CHECKED
# denotes results exc	ceeding capacity	of gas monito	oring equipmen	t										36142	JH
VOC - Photoionisatio	on Detector Mini F	RAE 2000 me	easures VOC va	apours with 1	0.6eV lamp of	calibrated ag	ainst isobuty	lene							•••



CLIENT: CAMPBELLREITH

Borehole /trial pit no.	date and time	barometric pressure (mb)	pressure differentiation (mm H2O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	carbon monoxide (ppm)	VOC (ppm)	gas flow (Itr/hr)	termperature (°C)	water leve (m - bgl)	1	emarks
BH06	17/12/2020 08:42	1009	-4								-0.7				
BH06	17/12/2020 08:45			2.3	0.0	16.1	0.0	0	10						
BH06	17/12/2020 08:45			2.2	0.0	16.0	0.0	0	0						
BH06	17/12/2020 08:45			1.9	0.0	16.5	0.0	0	0						
BH06	17/12/2020 08:46			1.4	0.0	17.3	0.0	0	0						
BH06	17/12/2020 08:46			1.2	0.0	17.7	0.0	0	0						
BH06	17/12/2020 08:46			1.1	0.0	17.9	0.0	0	0						
BH06	17/12/2020 08:46			1.0	0.0	18.1	0.0	0	0						
BH06	17/12/2020 08:47			0.9	0.0	18.4	0.0	0	0						
BH06	17/12/2020 08:48			7.0	0.0	19.0	0.0	0	0						
BH06	17/12/2020 08:49			0.5	0.0	19.3	0.0	0	0						
BH06	17/12/2020 08:50			0.5	0.0	19.4	0.0	0	0						
BH06	17/12/2020 08:51									0.1					
BH06	17/12/2020 08:52									0.0					
BH06	17/12/2020 08:53									0.0					
BH06	17/12/2020 08:55												1.04		
BH06	11/01/2021 09:00	1014	0								0.0		<u> </u>		
remarks													C	CONTRACT	CHECKED
# denotes results exc	ceeding capacity	of gas monito	oring equipmen	t										36142	JH
VOC - Photoionisatio	on Detector Mini F	RAE 2000 me	easures VOC va	apours with 1	0.6eV lamp	calibrated ag	ainst isobuty	lene							



CLIENT: CAMPBELLREITH

Borehole /trial pit no.	date and time	barometric pressure (mb)	pressure differentiation (mm H2O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	carbon monoxide (ppm)	VOC (ppm)	gas flow (ltr/hr)	termperature (°C)	water level (m - bgl)	r	emarks
BH06	11/01/2021 09:01	1014	0								0.0				
BH06	11/01/2021 09:02	1014	0								0.0				
BH06	11/01/2021 09:03	1014	0								0.0				
BH06	11/01/2021 09:04	1014	0								0.0				
BH06	11/01/2021 09:05			1.3	0.0	19.3	0.0	0	0	0.0					
BH06	11/01/2021 09:06			0.9	0.0	19.0	0.0	0	0	0.0					
BH06	11/01/2021 09:07			0.5	0.0	19.5	0.0	0	0	0.0					
BH06	11/01/2021 09:08			0.4	0.0	20.1	0.0	0	0	0.0					
BH06	11/01/2021 09:09			0.3	0.0	20.2	0.0	0	0	0.0					
BH06	11/01/2021 09:12												1.03		
<u> </u>															
remarks		of ano marth											C	UNTRACT	CHECKED
# denotes results exc	Detector Mini C			l Dours with 1	0.601/ 10000	colibrated ca	ainet is abutu	lono						36142	JH
VUC - Photoionisatio	In Delector Mini F	AE 2000 ME	asules VUC Va	apours with 1	u.oev lamp	calibrated ag	amst isobuty	iene							



## **APPENDIX B** LABORATORY TESTING





GEOTECHNICAL ENGINEERING LIMITED

			V	ersion No.	1
For the attention of	Joss Evans / Richard Heath			Page No.	1 of 30
			Da	te of Issue	03/02/2021
	TE	ST REPORT			
PROJECT/SITE	Brislington Meadows		Sampl	es received	17/12/2020
GEL REPORT NUMBER	36142		Schedu	le received	17/12/2020
Your ref/PO:			Testing c	ommenced	23/01/2021
Test report refers to	Schedule 1		-	Status	Final
	SUMMARY O	F RESULTS ATTACH	IED		
TEST METHOD & DESCR	RIPTION			QUANTITY	ACCREDITED
					TEST
BS EN ISO 17892-1: 201	14:5. Water Content			13	YES
BS1377: Part 2: 1990:4	.2-4.4&5.2-5.4, Liquid & Plastic Limi	ts		13	YES
BS EN ISO 17892-4: 201	16: 5.2, Particle Size Distribution - W	'et Sieve		14	YES
BS EN ISO 17892-4: 201	16: 5.4, Particle Size Distribution - Pi	pette		1	YES
BS1377: Part 4: 1990:3	, Dry Density/Moisture Content Rela	ationship		5	YES
ISRM: 2007: Water Cor	itent of Rock			7	NO
ISRM: 2007: Point Load	I Strength Test			10	YES
BRE SD1 Suite (Subcont	tracted)			6	YES/NO
Organic Matter Conten	it (subcontracted)			5	YES
Remarks		Approved Signatories:			
This report may not be pa	artially reproduced without written	T Best (Deputy Laboratory Ma	nager) E Crimp	(Senior Engine	er)
permission from this labo	ratory.	J Hanson (Director) N Parry (D	irector)		
The results reported relat	e to samples received in the laboratory	-H	-		
Doc TR01 Rev No. 22	Revision date 02/01/20 DC:JH	+			

#### **Geotechnical Engineering Ltd**

Centurion House Olympus Park, Quedgeley Gloucester GL2 4NF www.geoeng.co.uk geotech@geoeng.co.uk TEL: 01452 527743 Fax: 01452 729314

**Registered number:** 00700739 **VAT Number:** 682 5857 89 Payments: Geotechnical Engineering Limited Sort code: 16-22-11 Bank account: 11125135

# Geotechnical Engineering Limited LIQUID AND PLASTIC LIMITS



BS.1377 : PART 2 : 1990 : 4 and 5

CLIENT CAMPBELLREITH

borehole	san	nple	specimen	natural	specimen	fraction	liquid	plastic	plasticity				
/trial pit	no./type	depth	depth	water	preparation	>0.425	limit	limit	index		dependention and some	e el ve	
no.		(m)	(m)	Contoni	method		(%)	(%)	(%)		description and rem	ains	
				(%)		(%)							
BH02	10D	1.70	1.70	12.1	BXE	63	31	20	11	Brown sar	ndy very clayey GRA	AVEL	
BH03	2D	0.05	0.05	32.8	BXE	30	48	28	20	Brown slig	htly sandy slightly g	ravelly clayey	
										SILT with	rare rootlets		
BH03	8D	1.00	1.00	30.5	BXE	25	37	22	15	Orangish	brown slightly sandy	/ slightly gravelly	
										silty CLAY	/		
BH03	12D	2.10	2.10	15.2	BXE	32	44	22	22	Brown mo	ttled orange and gr	ev slightly sandy	
2.100					2712	02				slightly gra	avelly silty CLAY		
РИЛС	40	0.20	0.20	27.0	DVE	2	40	22	26	Orangish	brown mottled grov	clightly condy	
БПОО	40	0.20	0.20	57.9	DVE	2	49	23	20	silty CLAY	,	siightiy sahuy	
BH06	10D	2.30	2.30	9.6	BXE	60	42	23	19	Greyish b	rown sandy very cla	yey GRAVEL	
TP06	3D	0.70	0.70	15.4	BXE#	46	38	19	19	Reddsih b	rown slightly sandy	slightly gravelly	
										silty CLAY	, ,		
TP06	5D	1.20	1.20	23.2	BXE	8	57	23	34	Multi color	ured slightly gravelly	slightly sandy	
						-				silty CLAY	, ,		
	6D	0.00	0.00	20	DVE	2	45	10	20	Orangiah		oliaibth a condu	
1912	00	0.90	0.90	20	BAE	2	45	19	20	silty CLAY	,	slignuy sandy	
											Sity OLAT		
TP15	4D	0.40	0.40	26.7	BXE	2	59	22	37	Orangish brown slightly sandy CLAY			
TP16	2D	0.10	0.10	31.1	BXE	20	54	30	24	Brown slightly gravelly slightly sandy clayey			
										SILT with	SILT with rare rootlets		
TP16	6D	0.90	0.90	29.4	BXE	3	51	21	30	Orangish	brown slightly sandy	/ CLAY	
										°,	0, ,		
TP16	80	1 90	1 90	25.6	BXE	4	64	23	41	Light brow	n mottled arev sliah	ntly gravelly	
11.10	0D	1.00	1.00	20.0	DAL	-	04	20		slightly sa	ndy CLAY	ity graveny	
										0,1			
general rema	irks	1	1	1	1	1	1		1	1			
natural water	content d	eterminec	l in accorda	nce with I	BS EN ISO 1	7892 - 1 :	2014 (u	nless spe	ecified)				
NP denotes r	non plastic	;											
# denotes sa	mple teste	ed is smal	ler than tha	t which is	recommende	ed in acco	ordance v	with BS1	377 or BS	EN ISO 178	392	1	
specimen pre	eparation						test met	thod			CONTRACT	CHECKED	
A - as receive	ed			D - oven	dried (60oC)	)	X - cone	e penetro	ometer (tes	st 4.3)	00440		
B - washed o	n 0.425mr	m sieve		E - oven	dried (105oC	C)	Y - cone	e penetro	ometer (tes	st 4.4)	36142	I I B	
C - air dried				F - not kr	nown		Z - casa	agrande a	apparatus	(test 4.5)			

## Geotechnical Engineering Limited ATTERBERG LINE PLOT



CLIENT CAMPBELLREITH



	BH/TP No.	depth (m)	LL	PL	PI	remarks
	BH02	1.70	31	20	11	
$\diamond$	BH03	0.05	48	28	20	
Δ	BH03	1.00	37	22	15	
×	BH03	2.10	44	22	22	
+	BH06	0.20	49	23	26	
0	BH06	2.30	42	23	19	
	TP06	0.70	38	19	19	
•	TP06	1.20	57	23	34	
	TP12	0.90	45	19	26	
•	TP15	0.40	59	22	37	
	TP16	0.10	54	30	24	
-	TP16	0.90	51	21	30	

CONTRACT	CHECKED
36142	ТВ

## Geotechnical Engineering Limited ATTERBERG LINE PLOT



CLIENT CAMPBELLREITH



BH/TP No.	depth (m)	LL	PL	PI	remarks
TP16	1.90	64	23	41	

CONTRACT	CHECKED
36142	ТВ

CLIENT CAMPBELLREITH

SITE BRISLINGTON MEADOWS

DESCRIPTION Brown clayey very sandy GRAVEL



BH/TP No. BH01

SAMPLE No./TYPE 5B SAMPLE DEPTH (m) 1.00

SAMPLE DEPTH (m) 1.00 SPECIMEN TOP (m) 1.00

SPECIMEN BASE (m) 1.20



soil type	% fraction	BS test sieve (mm)	% passing	BS test sieve (mm)	% passing	g BS test sieve (µm)	% finer
CLAY							
SILT		150		5	45	20	
SILT & CLAY	11						
SAND	28	75		2	39	6	
GRAVEL	61						
COBBLE & BOULDER	0	63		1.18	37	2	
to at mosth ad (a)	5.0						
test method(s)	5.2	50	100	0.63	35		
test method		1					
		37.5	90	0.425	32		
5.2 - sieving							
		20	66	0.2	23		
5.3 - sedimentation by hy	drometer						
		10	55	0.15	18		
5.4 - sedimentation by pip	pette						
		6.3	48	0.063	11		
remarks		•	•	•		CONTRACT	CHECKED
# denotes sample tested is smaller than that which is recommended in accordance with BS EN 17892							
Particle density assigned an	assumed value of 2	2.70 Mg/m3				36142	NP

CLIENT CAMPBELLREITH

SITE BRISLINGTON MEADOWS

#### DESCRIPTION Brown very gravelly very clayey SAND



BH/TP No. BH04 SAMPLE No./TYPE 3B

SAMPLE DEPTH (m) 0.40

SPECIMEN TOP (m) 0.40

SPECIMEN BASE (m) 0.60



soil type	% fraction	BS test sieve (mm)	% passing	BS test sieve (mm)	% passin	g BS test sieve (µm)	% finer
CLAY							
SILT		150		5	78	20	
SILT & CLAY	32						
SAND	42	75		2	74	6	
GRAVEL	26						
COBBLE & BOULDER	0	63		1.18	72	2	
test method(s)	52						
	0.2	50		0.63	69		
test method							
		37.5	100	0.425	66		
5.2 - sieving							
		20	89	0.2	52		
5.3 - sedimentation by hy	drometer						
		10	82	0.15	45		
5.4 - sedimentation by pip	pette						
		6.3	79	0.063	32		
remarks						CONTRACT	CHECKED
# denotes sample tested is s	# denotes sample tested is smaller than that which is recommended in accordance with BS EN 17892						
Particle density assigned an	assumed value of 2	2.70 Mg/m3				36142	NP

CLIENT CAMPBELLREITH

SITE BRISLINGTON MEADOWS

#### DESCRIPTION Reddish brown very clayey very gravelly SAND



BH/TP No. BH05 SAMPLE No./TYPE 6B

SAMPLE DEPTH (m) 1.00

SPECIMEN TOP (m) 1.00

SPECIMEN BASE (m) 1.20



soil type	% fraction	BS test sieve (mm)	% passing	BS test sieve (mm)	% passing	BS test sieve (μm)	% finer
CLAY							
SILT		150		5	75	20	
SILT & CLAY	22						
SAND	45	75		2	67	6	
GRAVEL	33						
COBBLE & BOULDER	0	63	100	1.18	64	2	
test method(s)	52						
	0.2	50	97	0.63	58		
test method							
		37.5	95	0.425	51		
5.2 - sieving							
		20	92	0.2	35		
5.3 - sedimentation by hy	drometer						
		10	86	0.15	29		
5.4 - sedimentation by pip	pette						
		6.3	79	0.063	22		
remarks						CONTRACT	CHECKED
# denotes sample tested is s							
Particle density assigned an	assumed value of 2	2.70 Mg/m3				36142	NP
1							

and the same

CLIENT CAMPBELLREITH

SITE BRISLINGTON MEADOWS

DESCRIPTION Reddish brown clayey SAND and GRAVEL



SAMPLE No./TYPE 4B

SAMPLE DEPTH (m) 0.90

SPECIMEN TOP (m) 0.90

SPECIMEN BASE (m) 1.00



soil type	% fraction	BS test sieve (mm)	% passing	BS test sieve (mm)	% passinę	BS test sieve (μm)	% finer
CLAY							
SILT		150		5	64	20	
SILT & CLAY	18						
SAND	40	75		2	58	6	
GRAVEL	42						
COBBLE & BOULDER	0	63	100	1.18	56	2	
test method(s)	5.2	]					
	0.=	50	96	0.63	52		
test method							
		37.5	94	0.425	47		
5.2 - sieving							
		20	84	0.2	34		
5.3 - sedimentation by hy	/drometer						
		10	75	0.15	26		
5.4 - sedimentation by pip	pette						
		6.3	68	0.063	18		
							·
remarks						CONTRACT	CHECKED
# denotes sample tested is s	smaller than that wh	nich is recommende	ed in accordance w	ith BS EN 17892		20110	
Particle density assigned an	assumed value of	2.70 Mg/m³				36142	NP



**TP03** 

2.30

CLIENT	CAMPBELLREITH	BH/T	「P No.
SITE	BRISLINGTON MEADOWS	SAM	



SPECIMEN TOP (m)

### DESCRIPTION Purplish brown clayey sandy GRAVEL with medium cobble content



soil type	% fraction	BS test sieve (mm)	% passing	BS test sieve (mm)	% passir	ng	BS test sieve (µm)	% finer
CLAY								
SILT		150	100	5	22		20	
SILT & CLAY	6							
SAND	12	75	88	2	18		6	
GRAVEL	70							
COBBLE & BOULDER	12	63	88	1.18	17		2	
test method(s)	5.0	1						
lest method(s)	5.2	50	79	0.63	16			
test method								
		37.5	59	0.425	15			
5.2 - sieving								
		20	37	0.2	12			
5.3 - sedimentation by hyd	drometer							
		10	28	0.15	10			
5.4 - sedimentation by pip	pette							
		6.3	24	0.063	6			
remarks						CC	ONTRACT	CHECKED
# denotes sample tested is s	maller than that whi	ch is recommende	d in accordance wit	h BS EN 17892				
Particle density assigned an	assumed value of 2	2.70 Mg/m3					36142	TB

DESCRIPTION Brown silty sandy GRAVEL with medium cobble content



CLIENT CAMPBELLREITH

SITE BRISLINGTON MEADOWS

BH/TP No. TP04 SAMPLE No./TYPE 4LB

SAMPLE DEPTH (m) 0.90

SPECIMEN TOP (m) 0.90

SPECIMEN BASE (m) 1.10



soil type	% fraction	BS test sieve (mm)	% passing	BS test sieve (mm)	% passing	BS test sieve (µm)	% finer
CLAY							
SILT		150	97	5	23	20	
SILT & CLAY	9						
SAND	10	75	91	2	19	6	
GRAVEL	64						
COBBLE & BOULDER	17	63	83	1.18	18	2	
	5.04						
test method(s)	5.2#	50	78	0.63	17		
test method							
		37.5	64	0.425	16		
5.2 - sieving							
		20	43	0.2	14		
5.3 - sedimentation by hy	drometer						
		10	32	0.15	13		
5.4 - sedimentation by pip	oette						
		6.3	26	0.063	9		
remarks		1	I	1		CONTRACT	CHECKED
# denotes sample tested is s	maller than that whi	ich is recommende	d in accordance wit	th BS EN 17892			
Particle density assigned an	assumed value of 2	2.70 Mg/m3				36142	TB

CLIENT CAMPBELLREITH

SITE BRISLINGTON MEADOWS

DESCRIPTION Reddish brown clayey SAND and GRAVEL



BH/TP No. TP05 SAMPLE No./TYPE 4B

SAMPLE DEPTH (m) 0.70

SPECIMEN TOP (m) 0.70

SPECIMEN BASE (m) 0.80



soil type	% fraction	BS test sieve (mm)	% passing	BS test sieve (mm)	% passinę	BS test sieve (µm)	% finer
CLAY							
SILT		150		5	62	20	
SILT & CLAY	14						
SAND	44	75		2	57	6	
GRAVEL	43						
COBBLE & BOULDER	0	63		1.18	54	2	
test method(s)	5.2						
lest method(s)	5.2	50	100	0.63	45		
test method							
		37.5	93	0.425	38		
5.2 - sieving							
		20	77	0.2	23		
5.3 - sedimentation by hy	drometer						
		10	67	0.15	18		
5.4 - sedimentation by pip	pette						
		6.3	63	0.063	14		
remarks						CONTRACT	CHECKED
# denotes sample tested is s	smaller than that whi	ch is recommended	d in accordance wit	h BS EN 17892			
Particle density assigned an	assumed value of 2	2.70 Mg/m3				36142	TB

CLIENT CAMPBELLREITH

SITE BRISLINGTON MEADOWS

Fine

Medium

Coarse

Fine

Medium

Coarse

Fine

Medium

Coarse

DESCRIPTION Brown mottled grey very sandy very clayey GRAVEL

**TP10** 

SPECIMEN BASE (m) 2.10 50 75 0.15 0.425 2 5 10 BS test sieve (mm) 0.063 20 37.5 63 0.212 0.6 1.18 6.3 100 90 80 70 60 50 % passing 40 30 20 10 0 mm 0.002 0.0063 0.02 0.063 0.2 0.63 2 6.3 20 63 200 SILT SAND GRAVEL CLAY COBBLES BOULDERS

soil type	% fraction	BS test sieve (mm)	% passing	BS test sieve (mm)	% passing	BS test sieve (μm)	% finer
CLAY							
SILT		150		5	73	20	
SILT & CLAY	34						
SAND	29	75		2	63	6	
GRAVEL	37						
COBBLE & BOULDER	0	63		1.18	57	2	
test method(s)	5.2						
test method(s)	5.2	50	100	0.63	51		
test method							
		37.5	97	0.425	47		
5.2 - sieving							
		20	89	0.2	40		
5.3 - sedimentation by hy	drometer						
		10	78	0.15	38		
5.4 - sedimentation by pip	pette						
		6.3	74	0.063	34		
remarks						CONTRACT	CHECKED
# denotes sample tested is s	maller than that wh	ich is recommended	d in accordance wit	th BS EN 17892			
Particle density assigned an	assumed value of 2	2.70 Mg/m3				36142	NP



SAMPLE DEPTH (m) 1.90

BH/TP No.

SPECIMEN TOP (m) 1.90

and the same

0.30

CLIENT CAMPBELLREITH

SITE BRISLINGTON MEADOWS



DESCRIPTION Brown clayey sandy GRAVEL with low cobble content

SAMPLE DEPTH (m)

SPECIMEN BASE (m) 0.40



soil type	% fraction	BS test sieve (mm)	% passing	BS test sieve (mm)	% passing	BS test sieve (µm)	% finer
CLAY							
SILT		150		5	36	20	
SILT & CLAY	14						
SAND	17	75	100	2	32	6	
GRAVEL	64						
COBBLE & BOULDER	4	63	96	1.18	30	2	
	5.0						
test method(s)	5.2	50	78	0.63	28		
test method							
		37.5	68	0.425	26		
5.2 - sieving							
-		20	53	0.2	20		
5.3 - sedimentation by hy	drometer						
		10	42	0.15	18		
5.4 - sedimentation by pip	bette						
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		6.3	38	0.063	14		
remarks		CONTRACT	CHECKED				
# denotes sample tested is s	maller than that whi	ich is recommende	d in accordance wit	h BS EN 17892			
Particle density assigned an	assumed value of 2	2.70 Mg/m3				36142	TB
						JVI 12	. –

SPECIMEN TOP (m) 0.30

CLIENT CAMPBELLREITH

SITE BRISLINGTON MEADOWS

DESCRIPTION Brown sandy clayey GRAVEL



BH/TP No. TP11

SAMPLE No./TYPE 7LB

SAMPLE DEPTH (m) 2.00

SPECIMEN TOP (m) 2.00

SPECIMEN BASE (m)2.20



soil type	soil type % fraction		% passing	BS test sieve (mm)	% passing	BS test sieve (µm)	% finer
CLAY							
SILT		150		5	42	20	
SILT & CLAY	18						
SAND	14	75		2	32	6	
GRAVEL	68						
COBBLE & BOULDER	0	63		1.18	29	2	
to at moth ad (a)	5.0	1					
test method(s)	5.2	50	100	0.63	26		
test method		1					
		37.5	93	0.425	25		
5.2 - sieving							
		20	79	0.2	22		
5.3 - sedimentation by hy-	drometer						
		10	56	0.15	21		
5.4 - sedimentation by pip	pette						
		6.3	45	0.063	18		
remarks	remarks						
# denotes sample tested is smaller than that which is recommended in accordance with BS EN 17892							
Particle density assigned an	36142	TB					

CLIENT CAMPBELLREITH

SITE BRISLINGTON MEADOWS

#### DESCRIPTION Brown slightly sandy very gravelly COBBLES



BH/TP No. TP11

SAMPLE No./TYPE 8B

SAMPLE DEPTH (m) 3.00

SPECIMEN TOP (m) 3.00

SPECIMEN BASE (m) 3.20



soil type	% fraction	BS test sieve (mm)	% passing	BS test sieve (mm)	% passing	BS test sieve (μm)	% finer
CLAY							
SILT		150	100	5	3	20	
SILT & CLAY	1						
SAND	1	75	42	2	3	6	
GRAVEL	29						
COBBLE & BOULDER	68	63	32	1.18	3	2	
test method(s)	E 0#	1					
lest method(s)	5.2#	50	16	0.63	2		
test method	•	1					
		37.5	8	0.425	2		
5.2 - sieving							
		20	5	0.2	2		
5.3 - sedimentation by hy	drometer						
		10	4	0.15	2		
5.4 - sedimentation by pip	pette						
		6.3	4	0.063	1		
remarks		-	·	-	·	CONTRACT	CHECKED
# denotes sample tested is smaller than that which is recommended in accordance with BS EN 17892							
Particle density assigned an	assumed value of 2	2.70 Mg/m3				36142	NP



0.80

CLIENT CAMPBELLREITH

SITE **BRISLINGTON MEADOWS**  BH/TP No. TP13

SAMPLE No./TYPE 4B

0.70 SAMPLE DEPTH (m)

SPECIMEN TOP (m) 0.70

DESCRIPTION Greyish brown sandy clayey GRAVEL with high cobble content SPECIMEN BASE (m)



soil type	soil type % fraction		% passing	BS test sieve (mm)	% passing	g BS test sieve (μm)	% finer
CLAY							
SILT		150	85	5	27	20	
SILT & CLAY	13						
SAND	11	75	81	2	24	6	
GRAVEL	51						
COBBLE & BOULDER	25	63	75	1.18	23	2	
	5.0						
test method(s)	5.2	50	60	0.63	21		
test method							
		37.5	47	0.425	20		
5.2 - sieving							
		20	37	0.2	17		
5.3 - sedimentation by hy	drometer						
		10	30	0.15	15		
5.4 - sedimentation by pip	pette						
		6.3	28	0.063	13		
remarks					·	CONTRACT	CHECKED
# denotes sample tested is s							
Particle density assigned an	36142	TB					
						••••	



1.80

CLIENT CAMPBELLREITH

DESCRIPTION Reddish brown clayey very sandy GRAVEL with medium cobble

SITE **BRISLINGTON MEADOWS**  BH/TP No. TP14

SAMPLE No./TYPE 7B

1.70 SAMPLE DEPTH (m)

SPECIMEN TOP (m) 1.70



soil type	% fraction	BS test sieve (mm)	% passing	BS test sieve (mm)	% passin	g BS test sieve (µm)	% finer
CLAY							
SILT		150	100	5	50	20	
SILT & CLAY	11						
SAND	34	75	95	2	44	6	
GRAVEL	51						
COBBLE & BOULDER	5	63	95	1.18	40	2	
to at moth ad (a)	5.0						
test method(s)	5.2	50	87	0.63	32		
test method	•						
		37.5	84	0.425	27		
5.2 - sieving							
		20	73	0.2	16		
5.3 - sedimentation by hy	drometer						
		10	59	0.15	13		
5.4 - sedimentation by pip	pette						
		6.3	53	0.063	11		
remarks		•		•		CONTRACT	CHECKED
# denotes sample tested is smaller than that which is recommended in accordance with BS EN 17892							
Particle density assigned an assumed value of 2.70 Mg/m3						36142	TB

CLIENT CAMPBELLREITH

SITE BRISLINGTON MEADOWS

#### DESCRIPTION Orangish brown slightly sandy silty CLAY



BH/TP No.	TP15

SAMPLE No./TYPE 3B

SAMPLE DEPTH (m) 0.40

SPECIMEN TOP (m) 0.40

SPECIMEN BASE (m) 0.50



soil type	% fraction	BS test sieve (mm)	% passing	BS test sieve (mm)	% passing	BS test sieve (µm)	% finer
CLAY	45						
SILT	33	150		5	100	20	62
SILT & CLAY	78						
SAND	22	75		2	100	6	54
GRAVEL	0						
COBBLE & BOULDER	0	63		1.18	99	2	44
test method(s)	5.2 & 5.4	50		0.63	99		
test method	I						
		37.5		0.425	98		
5.2 - sieving							
ů		20		0.2	92		
5.3 - sedimentation by hy	drometer						
		10		0.15	87		
5.4 - sedimentation by pip	oette						
		6.3		0.063	78		
remarks			I			CONTRACT	CHECKED
# denotes sample tested is s	maller than that wh	ich is recommende	d in accordance wit	th BS EN 17892			
Particle density assigned an	assumed value of 2	2.70 Mg/m3				36142	NP

### Geotechnical Engineering Limited DRY DENSITY/MOISTURE CONTENT RELATIONSHIP



BS. 1377 : Part 4 : 1990 : 3

CLIENT	CAM	PBELLREITH	BH/TP No.	TP06
SITE	BRIS	SLINGTON MEADOWS	SAMPLE No./TYPE	4B
DESCRIPT	TION	Reddish brown slightly gravelly slightly sandy CLAY	SAMPLE DEPTH (m)	0.70
			SPECIMEN DEPTH (m)	0.70



Moisture Content (%)

test method	3.3.4.2 2.	5kg dynamic compaction - 1L mo	buld		
preparation procedure	3.2.6.1 (g	grading zone 1, crushable)			
sample preparation	С				
proportion retained on 37.5mm sieve %	0	initial moisture content	%	16	
proportion retained on 20mm sieve %	0	maximum dry density	(Mg/m3)	1.91	
particle density (Mg/m3)	#2.76	optimum moisture content	%	15	
remarks					
# denotes particle density has been assigned a	an assumed	value			
C denotes sample has been chopped to pass	20mm sieve				
S denotes sample has been shredded to pass	20mm sieve				
R denotes sample material has been recycled	between/for	points			
				CONTRACT	CHECKED
				36142	NP

# Geotechnical Engineering Limited DRY DENSITY/MOISTURE CONTENT RELATIONSHIP DS 1277 - Dott 4 - 1000 - 2



BS. 1377 : Part 4 : 1990 : 3

CLIENT	CAM	PBELLREITH	BH/TP No.	TP12
SITE	BRIS	LINGTON MEADOWS	SAMPLE No./TYPE	3B
DESCRIPT	ION	Orangish brown mottled grey slightly sandy CLAY	SAMPLE DEPTH (m)	0.30
				0.00



test method	3.3.4.1 2.5	3.3.4.1 2.5kg dynamic compaction - 1L mould			
preparation procedure	3.2.4.1 (gr	rading zone 1)			
sample preparation	CR				
proportion retained on 37.5mm sieve % proportion retained on 20mm sieve % particle density (Mg/m3)	0 0 #2.70	initial moisture content%maximum dry density(Mg/m3)optimum moisture content%	21 1.84 14		
remarks # denotes particle density has been assigned a C denotes sample has been chopped to pass S denotes sample has been shredded to pass R denotes sample material has been recycled	an assumed v 20mm sieve 20mm sieve between/for p	points			
			CONTRACT	CHECKED	
			36142	NP	

### Geotechnical Engineering Limited DRY DENSITY/MOISTURE CONTENT RELATIONSHIP



BS. 1377 : Part 4 : 1990 : 3

CLIENT	CAM	PBELLREITH	BH/TP No.	TP12
SITE	BRIS	LINGTON MEADOWS	SAMPLE No./TYPE	5LB
DESCRIPT	TION	Greyish brown motted orangish brown slightly sandy CLAY	SAMPLE DEPTH (m)	0.90
			SPECIMEN DEPTH (m)	0.90



test method	3.3.4.1 2.5kg dynamic compaction - 1L mould				
preparation procedure	3.2.4.1 (grading zone 1)				
sample preparation	C R				
proportion retained on 37.5mm sieve %	0 initial moisture content	%	24		
proportion retained on 20mm sieve %	0 maximum dry density (M	g/m3)	1.82		
particle density (Mg/m3)	#2.70 optimum moisture content	%	16		
remarks					
# denotes particle density has been assigned an assumed value					
C denotes sample has been chopped to pass 20mm sieve					
S denotes sample has been shredded to pass 20mm sieve					
R denotes sample material has been recycled	petween/for points				
			CONTRACT	CHECKED	
			36142	NP	

# Geotechnical Engineering Limited DRY DENSITY/MOISTURE CONTENT RELATIONSHIP DS 1277 - Dott 4 - 1000 - 2



BS. 1377 : Part 4 : 1990 : 3

CLIENT	CAM	PBELLREITH	BH/TP No.	TP15
SITE	BRIS	LINGTON MEADOWS	SAMPLE No./TYPE	3B
DESCRIPT	ION	Orangish brown slightly gravelly slightly sandy CLAY	SAMPLE DEPTH (m)	0.40
			SPECIMEN DEPTH (m)	0.40



test method	3.3.4.1 2.5kg dynamic compaction - 1L mould				
preparation procedure	3.2.4.1 (	grading zone 1)			
sample preparation	CR				
proportion retained on 37.5mm sieve %	0	initial moisture content	%	28	
proportion retained on 20mm sieve %	0	maximum dry density	(Mg/m3)	1.56	
particle density (Mg/m3)	#2.70	optimum moisture content	%	21	
remarks # denotes particle density has been assigned a C denotes sample has been chopped to pass S denotes sample has been shredded to pass R denotes sample material has been recycled	an assumed 20mm sieve 20mm sieve between/for	value e points			
				CONTRACT	CHECKED
				36142	NP

## Geotechnical Engineering Limited DRY DENSITY/MOISTURE CONTENT RELATIONSHIP DS 1377 - Dent 4 - 1000 - 2



BS. 1377 : Part 4 : 1990 : 3

CLIENT	CAM	PBELLREITH	BH/TP No.	TP16
SITE	BRIS	LINGTON MEADOWS	SAMPLE No./TYPE	7B
DESCRIPT	ΓΙΟΝ	Orangish brown slightly gravelly slightly sandy CLAY	SAMPLE DEPTH (m)	1.90
			SPECIMEN DEPTH (m)	1.90



3.3.4.1 2.5kg dynamic compaction - 1L mould test method preparation procedure 3.2.4.1 (grading zone 1) CR sample preparation % 0 proportion retained on 37.5mm sieve initial moisture content % 25 % proportion retained on 20mm sieve 0 maximum dry density 1.58 (Mg/m3) (Mg/m3) #2.70 particle density optimum moisture content % 23 remarks # denotes particle density has been assigned an assumed value C denotes sample has been chopped to pass 20mm sieve S denotes sample has been shredded to pass 20mm sieve R denotes sample material has been recycled between/for points CONTRACT CHECKED 36142 ТΒ

### **ROCK WATER CONTENT**

I.S.R.M. Suggested Methods : 2007 Edition

#### CLIENT CAMPBELLREITH



borehole	san	nple	specimen	natural	
/trial pit	no./type	depth	depth	water	description and remarks
no.		(m)	(m)	content	
				(%)	
BH01	8C	1.30	1.84	2.2	Orangish brown SANDSTONE
BH04	12C	3.50	4.10	3.5	Orangish brown MUDSTONE
BH05	100	2 70	3.60	18	Reddish brown SANDSTONE
Dilloo	100	2.70	0.00	4.0	
DUIDE	400	7.00	0.00		
BH05	13C	7.20	8.00	2.2	Light brown SANDSTONE
BH05	16C	10.90	11.03	5.4	Reddish brown SANDSTONE
BH06	14C	4.20	4.40	1.8	Grey SANDSTONE
BH06	19C	8.70	8.90	5.4	Grev SANDSTONE
				-	
general rema	irks		1		1
natural water	content d	etermined	d unless oth	erwise sp	pecified
test method					
samples over	n dried at	105°C			
					36142 NP
# Geotechnical Engineering Limited POINT LOAD STRENGTH TEST

I.S.R.M. Suggested Methods : 2007 Edition

## CLIENT CAMPBELLREITH

## SITE BRISLINGTON MEADOWS

borehole	sample	test	test	moisture	width	length	platen	failure	equiv.	ls	size	ls(50)			
/trial pit	depth	type	orien- tation	condition			sep.	load	diam.		factor				
no.	(m)		tation		W	L	D	Р	De	(MPa)		(MPa)	description ar	id remarks	
					(mm)	(mm)	(mm)	(kN)	(mm)						
BH01	3.40	Α	Х	Р	90		50	0.17	75.69	0.03	1.21	0.04	Orangish brown SA	ANDSTONE	
BH03	2.70	Α	Х	Р	80		40	0.12	63.83	0.03	1.12	0.03	Reddish brown and	d grey	
													SANDSTONE		
BH04	5.17	А	х	Р	75		45	0.14	65.55	0.03	1.13	0.04	Grey and brown SI	LTSTONE	
BH05	5 30	Δ	x	Р	90		45	0.28	71 81	0.05	1 18	0.06	Reddish brown SA	NDSTONE	
DI 105	0.00	~		'	50			0.20	71.01	0.00	1.10	0.00	recould be brown on		
DUIDE	44.00		V				05	0.1.1		0.00	4.00	0.00	Deddieb brewe CA		
BH05	11.03	A	X	P	90		65	0.14	86.30	0.02	1.28	0.02	Reduish brown SA	NDSTONE	
BH05	11.03	D	Y	Р		60	90	0.27	90.00	0.03	1.30	0.04	Reddish brown SA	NDSTONE	
BH06	6.60	Α	Х	Р	70		60	1.27	73.13	0.24	1.19	0.28	Light grey MUDST	ONE	
BH06	8.90	А	Х	Р	90		50	1.35	75.69	0.24	1.21	0.28	Light grey SANDS	TONE	
BH06	8.90	D	Y	Р		40	90	0.40	90.00	0.05	1.30	0.06	Light grev SANDSTONE		
Dilloo	0.00	2				10	00	0.10	00.00	0.00	1.00	0.00			
TDOO	0.00		v		110		25	2.02	70.01	0.44	1.10	0.40	Poddich grov SAN	DSTONE	
1103	0.90	A	^	F	110		35	2.03	70.01	0.41	1.10	0.40	Reduisit grey SAN	DOTONE	
aprend	morke														
general re	marks	accorda	anco with		2002). 8	unneste	d Metho	de for Det	ermining	Point Lo	ad Stron	ath			
test machi	ne PI M0	2		11.3.1.101.(	2007). 3	uyyeste			emining			gui			
		-													
test type			test orie	entation re	lative to	discontir	nuities		moisture	conditio	n		CONTRACT	CHECKED	
A - axial			X - perp	endicular		U - unkı	nown		N - natur	al moistu	ire conte	ent			
D - diamet	ral		Y - para	allel					P - partia	ally air dri	ed		36142	NP	
I - irregula	r lump		Z - oblic	que					S - soake	ed			1		



# 😵 eurofins



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

Report No.:	21-00374-1		
Initial Date of Issue:	14-Jan-2021		
Client	Geotechnical Engineering Ltd		
Client Address:	Centurion House Olympus Park Quedgeley Gloucester Gloucestershire GL2 4NF		
Contact(s):	GEL Tom Best		
Project	36142 Brislington Meadows		
Quotation No.:		Date Received:	11-Jan-2021
Order No.:	36142/TB	Date Instructed:	11-Jan-2021
No. of Samples:	11		
Turnaround (Wkdays):	5	Results Due:	15-Jan-2021
Date Approved:	14-Jan-2021		
Approved By:			
Manney			
Details:	Glynn Harvey, Technical Manager		

# <u> Results - Soil</u>

### Project: 36142 Brislington Meadows

Client: Geotechnical Engineering Ltd		Che	mtest J	ob No.:	21-00374	21-00374	21-00374	21-00374	21-00374	21-00374	21-00374	21-00374	21-00374
Quotation No.:	(	Chemte	est Sam	ple ID.:	1122085	1122086	1122087	1122088	1122089	1122090	1122091	1122092	1122093
Order No.: 36142/TB		Clie	nt Samp	le Ref.:	5	12	5	6	9	3	4	4	6
		Sa	ample Lo	ocation:	BH03	BH03	BH05	BH06	BH06	TP02	TP06	TP11	TP12
			Sampl	e Type:	SOIL								
			Top De	pth (m):	0.40	2.10	1.00	1.00	1.80	0.90	0.70	0.30	0.90
		Bot	ttom De	pth (m):	0.60	2.20	1.20	1.20	1.90	1.00	0.80	0.40	1.10
			Date Sa	ampled:	05-Jan-2021								
Determinand	Accred.	SOP	Units	LOD									
Moisture	N	2030	%	0.020	14	13	13	17	15	11	13	8.6	17
pH (2.5:1)	N	2010		4.0			6.8		6.8	7.5		6.8	6.7
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010			< 0.010		< 0.010	< 0.010		< 0.010	< 0.010
Total Sulphur	U	2175	%	0.010			< 0.010		0.029	< 0.010		0.059	0.018
Sulphate (Acid Soluble)	U	2430	%	0.010			0.012		0.036	< 0.010		0.015	0.032
Organic Matter	U	2625	%	0.40	0.88	1.0		1.9			< 0.40		

### Project: 36142 Brislington Meadows

Client: Geotechnical Engineering Ltd	Chemtest Job No.:				21-00374	21-00374
Quotation No.:	(	Chemte	st Sam	ple ID.:	1122094	1122095
Order No.: 36142/TB		Clier	nt Samp	le Ref.:	3	4
		Sa	mple Lo	ocation:	TP16	TP16
			Sample	e Type:	SOIL	SOIL
			Тор Dep	oth (m):	0.40	0.40
		Bot	tom Dep	0.50	0.50	
		Date Sampled:			05-Jan-2021	05-Jan-2021
Determinand	Accred.	SOP	Units	LOD		
Moisture	Ν	2030	%	0.020	17	18
pH (2.5:1)	Ν	2010		4.0	7.7	
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	< 0.010	
Total Sulphur	U	2175	%	0.010	0.012	
Sulphate (Acid Soluble)	U	2430	%	0.010	0.034	
Organic Matter	U	2625	%	0.40		< 0.40

# Test Methods

SOP	Title	Parameters included	Method summary			
2010	pH Value of Soils	рН	pH Meter			
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.			
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930			
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES			
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.			
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.			
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.			

# **Report Information**

Key

U	UKAS accredited
Μ	MCERTS and UKAS accredited
Ν	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
Т	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
	Comments or interpretations are beyond the scope of UKAS accreditation
	The results relate only to the items tested
	Uncertainty of measurement for the determinands tested are available upon request
	None of the results in this report have been recovery corrected
	All results are expressed on a dry weight basis
	The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis All Asbestos testing is performed at the indicated laboratory Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

## Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

# Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt All water samples will be retained for 14 days from the date of receipt Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: <u>customerservices@chemtest.com</u>



# **APPENDIX C** CHEMICAL ANALYSES

Joss Evans Geotechnical Engineering Ltd Centurion House Olympus Park Quedgeley Gloucester GL2 4NF

t: 01452 527 743 f: 01452 729 314 e: joss.evans@geoeng.co.uk



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

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

# Analytical Report Number : 20-40620

Project / Site name:	Brislington Meadows	Samples received on:	06/11/2020
Your job number:	36142	Samples instructed on/ Analysis started on:	11/11/2020
Your order number:	36142 WF	Analysis completed by:	17/11/2020
Report Issue Number:	1	Report issued on:	17/11/2020
Samples Analysed:	2 soil samples		

Signed: Kevoline Harel

Karolina Marek PL Head of Reporting Team For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils- 4 weeks from reportingleachates- 2 weeks from reportingwaters- 2 weeks from reportingasbestos- 6 months from reporting

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

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement. Application of uncertainty of measurement would provide a range within which the true result lies. An estimate of measurement uncertainty can be provided on request.





Lab Sample Number	1679356	1679357			
Sample Reference	TP10	TP09			
Sample Number	None Supplied	None Supplied			
Depth (m)	0.30-0.50	0.30-0.50			
Date Sampled	04/11/2020	04/11/2020			
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Stone Content	%	0.1	NONE	< 0.1	53
Moisture Content	%	0.01	NONE	13	6.1
Total mass of sample received	kg	0.001	NONE	1.5	1.5
Asbestos in Soil	Туре	N/A	ISO 17025	Not-detected	Not-detected
General Inorganics					
pH - Automated	pH Units	N/A	MCERTS	5.8	6.1
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1
Total Organic Carbon (TOC)	%	0.1	MCERTS	1	-
Total Phenols					
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0
Speciated PAHs					
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Anthracene		0.05	MCERTS	< 0.05	< 0.05
Flueranthana	mg/kg	0.05			
riuoranunene	mg/kg mg/kg	0.05	MCERTS	< 0.05	< 0.05
Pyrene	mg/kg mg/kg mg/kg	0.05	MCERTS MCERTS	< 0.05 < 0.05	< 0.05 < 0.05
Pyrene Benzo(a)anthracene	mg/kg mg/kg mg/kg mg/kg	0.05 0.05 0.05	MCERTS MCERTS MCERTS	< 0.05 < 0.05 < 0.05	< 0.05 < 0.05 < 0.05
Professional Profe	mg/kg mg/kg mg/kg mg/kg mg/kg	0.05 0.05 0.05 0.05 0.05	MCERTS MCERTS MCERTS MCERTS	< 0.05 < 0.05 < 0.05 < 0.05	< 0.05 < 0.05 < 0.05 < 0.05
Puorantinene Pyrene Benzo(a)anthracene Chrysene Benzo(b)fluoranthene	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	0.05 0.05 0.05 0.05 0.05 0.05	MCERTS MCERTS MCERTS MCERTS MCERTS	< 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05	< 0.05 < 0.05 < 0.05 < 0.05 < 0.05
Puorantinene Pyrene Benzo(a)anthracene Chrysene Benzo(b)fluoranthene Benzo(k)fluoranthene	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	0.05 0.05 0.05 0.05 0.05 0.05 0.05	MCERTS MCERTS MCERTS MCERTS MCERTS MCERTS	< 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05	< 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05
Provide and the provided and the provide	mg/kg	0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05	MCERTS MCERTS MCERTS MCERTS MCERTS MCERTS MCERTS	< 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05	< 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05
Provide and the provided and the provide	mg/kg	0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05	MCERTS MCERTS MCERTS MCERTS MCERTS MCERTS MCERTS MCERTS	< 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05	< 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05
Provide and the provided and the provide	mg/kg           mg/kg	0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05	MCERTS MCERTS MCERTS MCERTS MCERTS MCERTS MCERTS MCERTS	< 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05	< 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	< 0.80





Lab Sample Number

Sample Reference	TP10	TP09			
Sample Number	None Supplied	None Supplied			
Depth (m)	0.30-0.50	0.30-0.50			
Date Sampled	04/11/2020	04/11/2020			
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Heavy Metals / Metalloids	-	-	-		
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	8.1	4.9
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.75	1.5
Boron (water soluble)	mg/kg	0.2	MCERTS	0.6	0.3
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	13	18
Copper (aqua regia extractable)	mg/kg	1	MCERTS	23	5.4
Lead (aqua regia extractable)	mg/kg	1	MCERTS	100	7.6
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	13	19
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	18	19
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	65	42
Petroleum Hydrocarbons TPH C10 - C40	mg/kg	10	MCERTS	< 10	< 10
TPH2 (C6 - C10)	mg/kg	0.1	MCERTS	< 0.1	< 0.1
ТРН С6 - С40	mg/kg	10	NONE	< 10	< 10

1679356

1679357

U/S = Unsuitable Sample I/S = Insufficient Sample





#### Analytical Report Number : 20-40620 Project / Site name: Brislington Meadows

\* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
1679356	TP10	None Supplied	0.30-0.50	Brown loam and clay with gravel and vegetation.
1679357	TP09	None Supplied	0.30-0.50	Brown loam and clay with gravel and stones.





#### Analytical Report Number : 20-40620 Project / Site name: Brislington Meadows

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	w	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	w	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
TPH2 (Soil)	Determination of hydrocarbons C6-C10 by headspace GC MS.	In-house method based on USEPA8260	L088-PL	W	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS
TPH Banding in Soil by FID	Determination of hexane extractable hydrocarbons in soil by GC-FID.	In-house method, TPH with carbon banding and silica gel split/cleanup.	L076-PL	W	MCERTS
TPH C6 - C40 (soil)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method.	L076-PL	W	NONE

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland. Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Sample Deviation Report



Analytical Report Number : 20-40620 Project / Site name: Brislington Meadows

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
TP09	None Supplied	S	1679357	с	Total cyanide in soil	L080-PL	с
TP10	None Supplied	S	1679356	с	Total cyanide in soil	L080-PL	с



This certificate should not be reproduced, except in full, without the express permission of the laboratory. The results included within the report are representative of the samples submitted for analysis.

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

11/11/2020

i2 Analytical Ltd.

Croxley Green

Business Park,

Watford,

Herts, WD18 8YS

7 Woodshots Meadow,

# Analytical Report Number : 20-40626

Your job number:	36142	Samples instructed on/ Analysis started on:	11/11/2020
Your order number:	35403-DO	Analysis completed by:	17/11/2020
Report Issue Number:	1	Report issued on:	17/11/2020
Samples Analysed:	7 soil samples		

Signed: Kevoline Harel

soils

Samples received on:

Karolina Marek PL Head of Reporting Team For & on behalf of i2 Analytical Ltd.

- 4 weeks from reporting

leachates - 2 weeks from reporting waters - 2 weeks from reporting asbestos - 6 months from reporting

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

**Brislington Meadows** 

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement. Application of uncertainty of measurement would provide a range within which the true result lies. An estimate of measurement uncertainty can be provided on request.



Joss Evans Geotechnical Engineering Ltd Centurion House Olympus Park Quedgeley Gloucester GL2 4NF

t: 01452 527 743 f: 01452 729 314 e: joss.evans@geoeng.co.uk

**Project / Site name:** 







Lab Sample Number	1679408	1679409	1679410	1679411			
Sample Reference			_	TP6	TP6	TP3	TP8
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.00-0.15	0.70-0.80	0.00-0.15	0.00-0.15
Date Sampled				05/11/2020	05/11/2020	05/11/2020	05/11/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
Stone Content	%	0.1	NONE	-	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	-	13	15	15
Total mass of sample received	kg	0.001	NONE	-	1.5	1.5	1.5
		-					
Asbestos in Soil	Туре	N/A	ISO 17025	Not-detected	-	Not-detected	Not-detected
General Inorganics							
pH - Automated	pH Units	N/A	MCERTS	-	8.8	7.9	7.7
Total Cyanide	mg/kg	1	MCERTS	-	< 1	< 1	< 1
Total Organic Carbon (TOC)	%	0.1	MCERTS	-	-	2.2	-
Total Phenois							
Total Phenols (monohydric)	mg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0
Speciated PAHs							
Naphthalene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05
Total PAH							

IGGIFAI							
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	-	< 0.80	< 0.80	< 0.80





Lab Sample Number	1679408	1679409	1679410	1679411			
Sample Reference				TP6	TP6	TP3	TP8
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.00-0.15	0.70-0.80	0.00-0.15	0.00-0.15			
Date Sampled				05/11/2020	05/11/2020	05/11/2020	05/11/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
Heavy Metals / Metalloids		-	-				-
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	24	12	17
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	-	4.7	0.93	1.3
Boron (water soluble)	mg/kg	0.2	MCERTS	-	< 0.2	0.8	0.5
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	< 0.2	0.4	0.6
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	31	14	23
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	3.4	21	28
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	17	99	96
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	24	11	17
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	-	63	23	32
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	43	80	120
Petroleum Hydrocarbons TPH C10 - C40	mg/kg	10	MCERTS	-	< 10	< 10	< 10
	2, 0						
TPH2 (C6 - C10)	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	< 0.1
ТРН С6 - С40	ma/ka	10	NONE	-	< 10	< 10	< 10
	5, 5						

U/S = Unsuitable Sample I/S = Insufficient Sample





Lab Sample Number	1679412	1679413	1679414			
Sample Reference				TP7	TP7	TP5
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)	0.00-0.15	0.90-1.00	0.70-0.80			
Date Sampled				05/11/2020	05/11/2020	05/11/2020
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	15	8.7	8.6
Total mass of sample received	kg	0.001	NONE	1.5	1.5	1.5
Asbestos in Soil	Туре	N/A	ISO 17025	Not-detected	-	Not-detected
General Inorganics						
pH - Automated	pH Units	N/A	MCERTS	7.4	-	7.2
Total Cyanide	mg/kg	1	MCERTS	< 1	-	< 1
Total Organic Carbon (TOC)	%	0.1	MCERTS	-	1.5	-
Total Phenols						
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	-	< 1.0
Speciated PAHs						
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05
Total PAH						

Total I All						
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	-	< 0.80





Lab Sample Number	1679412	1679413	1679414			
Sample Reference				TP7	TP7	TP5
Sample Number	None Supplied	None Supplied	None Supplied			
Depth (m)				0.00-0.15	0.90-1.00	0.70-0.80
Date Sampled				05/11/2020	05/11/2020	05/11/2020
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			
Heavy Metals / Metalloids						
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	17	-	4
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1.3	-	0.98
Boron (water soluble)	mg/kg	0.2	MCERTS	0.6	-	< 0.2
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	-	< 0.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	20	-	16
Copper (aqua regia extractable)	mg/kg	1	MCERTS	27	-	6.1
Lead (aqua regia extractable)	mg/kg	1	MCERTS	94	-	15
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	-	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	15	-	17
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	-	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	30	-	19
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	100	-	36
Petroleum Hydrocarbons TPH C10 - C40	mg/kg	10	MCERTS	< 10	-	< 10
TPH2 (C6 - C10)	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1
TPH C6 - C40	mg/kg	10	NONE	< 10		< 10

U/S = Unsuitable Sample I/S = Insufficient Sample





#### Analytical Report Number : 20-40626 Project / Site name: Brislington Meadows

\* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
1679409	TP6	None Supplied	0.70-0.80	Brown clay and loam with gravel and vegetation.
1679410	TP3	None Supplied	0.00-0.15	Brown loam and clay with gravel and vegetation.
1679411	TP8	None Supplied	0.00-0.15	Brown loam and clay with gravel and vegetation.
1679412	TP7	None Supplied	0.00-0.15	Brown loam and clay with gravel and vegetation.
1679413	TP7	None Supplied	0.90-1.00	Brown loam and clay with gravel and vegetation.
1679414	TP5	None Supplied	0.70-0.80	Brown loam and clay with gravel and vegetation.





#### Analytical Report Number : 20-40626 Project / Site name: Brislington Meadows

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
TPH2 (Soil)	Determination of hydrocarbons C6-C10 by headspace GC MS.	In-house method based on USEPA8260	L088-PL	W	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	w	MCERTS
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS
TPH Banding in Soil by FID	Determination of hexane extractable hydrocarbons in soil by GC-FID.	In-house method, TPH with carbon banding and silica gel split/cleanup.	L076-PL	W	MCERTS
TPH C6 - C40 (soil)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method.	L076-PL	W	NONE

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland. Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Analytical Report Number : 20-40846

Project / Site name:	Brislington Meadows	Samples received on:	05/11/2020
Your job number:	36142	Samples instructed on/ Analysis started on:	12/11/2020
Your order number:	36025 MH	Analysis completed by:	18/11/2020
Report Issue Number:	1	Report issued on:	18/11/2020
Samples Analysed:	1 soil sample		

Signed: Keroline Harel

soils

Karolina Marek PL Head of Reporting Team For & on behalf of i2 Analytical Ltd.

- 4 weeks from reporting leachates - 2 weeks from reporting waters - 2 weeks from reporting asbestos - 6 months from reporting

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

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

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement. Application of uncertainty of measurement would provide a range within which the true result lies. An estimate of measurement uncertainty can be provided on request.

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Lab Sample Number				1680652
Sample Reference				BH6
Sample Number				None Supplied
Depth (m)				0.40-0.60
Date Sampled				05/11/2020
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status	
Stone Content	%	0.1	NONE	< 0.1
Moisture Content	%	0.01	NONE	24
Total mass of sample received	kg	0.001	NONE	2
General Inorganics				
pH - Automated	pH Units	N/A	MCERTS	7.5
Total Cyanide	mg/kg	1	MCERTS	< 1
Total Phenols				

#### Total Phenols (monohydric)

Speciated PAHs				
Naphthalene	mg/kg	0.05	MCERTS	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05

mg/kg

MCERTS

1

< 1.0

#### Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80

#### Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	12
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1.7
Boron (water soluble)	mg/kg	0.2	MCERTS	< 0.2
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	20
Copper (aqua regia extractable)	mg/kg	1	MCERTS	11
Lead (aqua regia extractable)	mg/kg	1	MCERTS	21
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	13
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	2.5
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	31
Zinc (aqua regia extractable)	ma/ka	1	MCERTS	57





Lab Sample Number	1680652			
Sample Reference	BH6			
Sample Number				None Supplied
Depth (m)				0.40-0.60
Date Sampled				05/11/2020
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status	
Petroleum Hydrocarbons	-		-	-
TPH C10 - C40	mg/kg	10	MCERTS	57
TPH2 (C6 - C10)	mg/kg	0.1	MCERTS	< 0.1
TPH C6 - C40	mg/kg	10	NONE	57

U/S = Unsuitable Sample I/S = Insufficient Sample





#### Analytical Report Number : 20-40846 Project / Site name: Brislington Meadows

\* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
1680652	BH6	None Supplied	0.40-0.60	Brown clay and sand with gravel.





#### Analytical Report Number : 20-40846 Project / Site name: Brislington Meadows

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	w	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	w	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Stones content of soil         Standard preparation for all samples unless otherwise         In-house me           detailed.         Gravimetric determination of stone > 10 mm         Methods and           as % dry weight.         Methods         Methods		In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
TPH2 (Soil) Determination of hydrocarbons C6-C10 by headspace GC- In-house method base MS.		In-house method based on USEPA8260	L088-PL	W	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
TPH Banding in Soil by FID	Determination of hexane extractable hydrocarbons in soil by GC-FID.	In-house method, TPH with carbon banding and silica gel split/cleanup.	L076-PL	W	MCERTS
TPH C6 - C40 (soil)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method.	L076-PL	w	NONE

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.



Analytical Report Number : 20-40846 Project / Site name: Brislington Meadows

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
BH6	None Supplied	S	1680652	С	Total cyanide in soil	L080-PL	с





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## Analytical Report Number : 20-41125

Project / Site name:	Brislington Meadows	Samples received on:	11/11/2020
Your job number:	36142	Samples instructed on/ Analysis started on:	12/11/2020
Your order number:	36025MH	Analysis completed by:	18/11/2020
Report Issue Number:	1	Report issued on:	18/11/2020
Samples Analysed:	1 soil sample		

Signed: A. Cherwinska

Agnieszka Czerwińska Technical Reviewer (Reporting Team) For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

- 4 weeks from reporting
- 2 weeks from reporting
- 2 weeks from reporting
- 6 months from reporting

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

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement. Application of uncertainty of measurement would provide a range within which the true result lies. An estimate of measurement uncertainty can be provided on request.





#### Analytical Report Number: 20-41125 Project / Site name: Brislington Meadows

Your Order No: 36025--MH

Lab Sample Number				1682177
Sample Reference				BH4
Sample Number				None Supplied
Depth (m)				0.40-0.60
Date Sampled				05/11/2020
Time Taken	None Supplied			
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status	
Stone Content	%	0.1	NONE	< 0.1
Moisture Content	%	0.01	NONE	11
Total mass of sample received	kg	0.001	NONE	2

General	Inorganics

pH - Automated	pH Units	N/A	MCERTS	6.9
Total Cyanide	mg/kg	1	MCERTS	< 1

#### **Total Phenols**

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0

#### Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05

#### Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80

#### Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	6.4
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.75
Boron (water soluble)	mg/kg	0.2	MCERTS	< 0.2
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	15
Copper (aqua regia extractable)	mg/kg	1	MCERTS	100
Lead (aqua regia extractable)	mg/kg	1	MCERTS	470
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	15
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	20
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	44





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Lab Sample Number		1682177		
Sample Reference	BH4			
Sample Number				None Supplied
Depth (m)				0.40-0.60
Date Sampled				05/11/2020
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status	
Petroleum Hydrocarbons				
TPH C10 - C40	mg/kg	10	MCERTS	68
TPH2 (C6 - C10)	mg/kg	0.1	MCERTS	< 0.1
TPH C6 - C40	mg/kg	10	NONE	68

U/S = Unsuitable Sample I/S = Insufficient Sample





#### Analytical Report Number : 20-41125 Project / Site name: Brislington Meadows

\* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
1682177	BH4	None Supplied	0.40-0.60	Brown loam and clay with gravel and vegetation.





#### Analytical Report Number : 20-41125 Project / Site name: Brislington Meadows

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	w	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	w	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
TPH2 (Soil)	Determination of hydrocarbons C6-C10 by headspace GC- MS.	In-house method based on USEPA8260	L088-PL	w	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	w	MCERTS
TPH Banding in Soil by FID	Determination of hexane extractable hydrocarbons in soil by GC-FID.	In-house method, TPH with carbon banding and silica gel split/cleanup.	L076-PL	w	MCERTS
TPH C6 - C40 (soil)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method.	L076-PL	W	NONE

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland. Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Sample Deviation Report



#### Analytical Report Number : 20-41125 Project / Site name: Brislington Meadows

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
BH4	None Supplied	S	1682177	с	Total cyanide in soil	L080-PL	с





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# Analytical Report Number : 20-41939

Project / Site name:	Brislington Meadows	Samples received on:	17/11/2020
Your job number:	36142	Samples instructed on/ Analysis started on:	17/11/2020
Your order number:	36025-МН	Analysis completed by:	24/11/2020
Report Issue Number:	1	Report issued on:	24/11/2020
Samples Analysed:	1 soil sample		

Roccorry Signed:

Rachel Bradley Deputy Quality Manager For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

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

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement. Application of uncertainty of measurement would provide a range within which the true result lies. An estimate of measurement uncertainty can be provided on request.





#### Analytical Report Number: 20-41939 Project / Site name: Brislington Meadows

Your Order No: 36025-MH

Lab Sample Number	1687322			
Sample Reference				BH2
Sample Number				None Supplied
Depth (m)				0.40-0.60
Date Sampled				10/11/2020
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status	
Stone Content	%	0.1	NONE	< 0.1
Moisture Content	%	0.01	NONE	12
Total mass of sample received	kg	0.001	NONE	1.2
General Inorganics				
pH - Automated	pH Units	N/A	MCERTS	7.5

deneral inorganico	
pH - Automated	

	p			
Total Cyanide	mg/kg	1	MCERTS	< 1
Total Phenols				

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0

#### Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05

#### Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80

#### Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	12
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.85
Boron (water soluble)	mg/kg	0.2	MCERTS	< 0.2
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	23
Copper (aqua regia extractable)	mg/kg	1	MCERTS	49
Lead (aqua regia extractable)	mg/kg	1	MCERTS	28
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	34
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	24
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	150





#### Analytical Report Number: 20-41939 Project / Site name: Brislington Meadows

Your Order No: 36025-MH

Lab Sample Number				1687322
Sample Reference	BH2			
Sample Number				None Supplied
Depth (m)				0.40-0.60
Date Sampled				10/11/2020
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status	
Petroleum Hydrocarbons	-		-	
TPH C10 - C40	mg/kg	10	MCERTS	21
TPH2 (C6 - C10)	mg/kg	0.1	MCERTS	< 0.1
TPH C6 - C40	mg/kg	10	NONE	21

U/S = Unsuitable Sample I/S = Insufficient Sample





#### Analytical Report Number : 20-41939 Project / Site name: Brislington Meadows

\* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, day and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
1687322	BH2	None Supplied	0.40-0.60	Brown clay and loam with gravel.




#### Analytical Report Number : 20-41939 Project / Site name: Brislington Meadows

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
TPH2 (Soil)	Determination of hydrocarbons C6-C10 by headspace GC- MS.	In-house method based on USEPA8260	L088-PL	w	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
TPH Banding in Soil by FID	Determination of hexane extractable hydrocarbons in soil by GC-FID.	In-house method, TPH with carbon banding and silica gel split/cleanup.	L076-PL	w	MCERTS
TPH C6 - C40 (soil)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method.	L076-PL	W	NONE

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland. Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Sample Deviation Report



#### Analytical Report Number : 20-41939 Project / Site name: Brislington Meadows

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
BH2	None Supplied	S	1687322	с	Total cyanide in soil	L080-PL	с

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# Analytical Report Number : 20-42118

Project / Site name:	Brislington Meadows	Samples received on:	11/11/2020
Your job number:	36142	Samples instructed on/ Analysis started on:	19/11/2020
Your order number:	36142-WF	Analysis completed by:	26/11/2020
Report Issue Number:	1	Report issued on:	26/11/2020
Samples Analysed:	4 soil samples		

Signed: A. Cherwinsica

Agnieszka Czerwińska Technical Reviewer (Reporting Team) For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils- 4 weeks from reportingleachates- 2 weeks from reportingwaters- 2 weeks from reportingasbestos- 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement. Application of uncertainty of measurement would provide a range within which the true result lies. An estimate of measurement uncertainty can be provided on request.





Analytical Report Number: 20-42118 Project / Site name: Brislington Meadows Your Order No: 36142-WF

Lab Sample Number	1688357	1688358	1688359	1688360			
Sample Reference	TP13	TP4	TP2	TP1			
Sample Number	1	1	2	1			
Depth (m)	0.00-0.15	0.00-0.15	0.90-1.00	0.00-0.15			
Date Sampled	Deviating	Deviating	Deviating	Deviating			
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	11	8.6	8	11
Total mass of sample received	kg	0.001	NONE	1.2	1.2	1.2	1.2
	1	-					
Asbestos in Soil	Туре	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected
General Inorganics							
pH - Automated	pH Units	N/A	MCERTS	7	6.7	6.7	5.2
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1
Total Phenois			MOEDTO	. 1.0	. 1.0	. 1.0	. 1.0
Total Phenois (mononydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs							
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	2.6
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.31
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	2.5
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	4.2
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	1.8
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	1.4
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.89
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.64
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	1.2
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.35
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.47
Total PAH							
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	< 0.80	< 0.80	16.3





1688359

1688358

#### Analytical Report Number: 20-42118 Project / Site name: Brislington Meadows Your Order No: 36142-WF

Lab Sample Number

Sample Reference	TP13	TP4	TP2	TP1			
Sample Number	1	1	2	1			
Depth (m)		0.00-0.15	0.00-0.15	0.90-1.00	0.00-0.15		
Date Sampled		Deviating	Deviating	Deviating	Deviating		
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
Heavy Metals / Metalloids	-	-	-				-
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	15	12	5.6	19
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.67	0.62	1.1	0.83
Boron (water soluble)	mg/kg	0.2	MCERTS	0.5	0.5	0.2	0.4
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	0.7
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	15	14	11	17
Copper (aqua regia extractable)	mg/kg	1	MCERTS	26	30	5.8	40
Lead (aqua regia extractable)	mg/kg	1	MCERTS	69	110	6	100
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	21	21	15	18
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	22	18	15	24
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	110	76	25	100
Petroleum Hydrocarbons							
TPH C10 - C40	mg/kg	10	MCERTS	< 10	< 10	< 10	42
TPH2 (C6 - C10)	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
TPH C6 - C40	mg/kg	10	NONE	< 10	< 10	< 10	42

1688357

U/S = Unsuitable Sample I/S = Insufficient Sample





### Analytical Report Number : 20-42118 Project / Site name: Brislington Meadows

\* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
1688357	TP13	1	0.00-0.15	Brown loam with vegetation.
1688358	TP4	1	0.00-0.15	Brown loam with vegetation.
1688359	TP2	2	0.90-1.00	Brown loam with gravel.
1688360	TP1	1	0.00-0.15	Brown loam with vegetation.





#### Analytical Report Number : 20-42118 Project / Site name: Brislington Meadows

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	w	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
TPH2 (Soil)	Determination of hydrocarbons C6-C10 by headspace GC MS.	In-house method based on USEPA8260	L088-PL	W	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
TPH Banding in Soil by FID	Determination of hexane extractable hydrocarbons in soil by GC-FID.	In-house method, TPH with carbon banding and silica gel split/cleanup.	L076-PL	W	MCERTS
TPH C6 - C40 (soil)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method.	L076-PL	w	NONE

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.



Analytical Report Number : 20-42118 Project / Site name: Brislington Meadows

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
TP1	1	S	1688360	а	None Supplied	None Supplied	None Supplied
TP13	1	S	1688357	а	None Supplied	None Supplied	None Supplied
TP2	2	S	1688359	а	None Supplied	None Supplied	None Supplied
TP4	1	S	1688358	а	None Supplied	None Supplied	None Supplied





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# Analytical Report Number : 20-42284

Project / Site name:	Brislington Meadows	Samples received on:	12/11/2020
Your job number:	36142	Samples instructed on/ Analysis started on:	19/11/2020
Your order number:	36025 MH	Analysis completed by:	25/11/2020
Report Issue Number:	1	Report issued on:	25/11/2020
Samples Analysed:	1 soil sample		

Rocary Signed:

Rachel Bradley Deputy Quality Manager For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement. Application of uncertainty of measurement would provide a range within which the true result lies. An estimate of measurement uncertainty can be provided on request.





#### Analytical Report Number: 20-42284 Project / Site name: Brislington Meadows

Your Order No: 36025 MH

Lab Sample Number						
Sample Reference					BH3	
Sample Number					None Supplied	
Depth (m)					0.40-0.60	
Date Sampled						
Time Taken						
Analytical Parameter (Soil Analysis)		Units	Limit of detection	Accreditation Status		
Stone Content		%	0.1	NONE	< 0.1	
Moisture Content		%	0.01	NONE	9.7	
Total mass of sample received		kg	0.001	NONE	2	

#### General Inorganics

pH - Automated	pH Units	N/A	MCERTS	6.3
Total Cyanide	mg/kg	1	MCERTS	< 1

Total Phenois				
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0

### Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05

### Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80

#### Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	13
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1.9
Boron (water soluble)	mg/kg	0.2	MCERTS	< 0.2
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	21
Copper (aqua regia extractable)	mg/kg	1	MCERTS	71
Lead (aqua regia extractable)	mg/kg	1	MCERTS	190
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	23
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	23
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	110





#### Analytical Report Number: 20-42284 Project / Site name: Brislington Meadows

Your Order No: 36025 MH

Lab Sample Number		1689212		
Sample Reference				BH3
Sample Number				None Supplied
Depth (m)				0.40-0.60
Date Sampled				12/11/2020
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status	
Petroleum Hydrocarbons	_	-	-	
TPH C10 - C40	mg/kg	10	MCERTS	< 10
TPH2 (C6 - C10)	mg/kg	0.1	MCERTS	< 0.1
TPH C6 - C40	mg/kg	10	NONE	< 10

U/S = Unsuitable Sample I/S = Insufficient Sample





#### Analytical Report Number : 20-42284 Project / Site name: Brislington Meadows

\* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
1689212	BH3	None Supplied	0.40-0.60	Light brown sandy clay with gravel.





#### Analytical Report Number : 20-42284 Project / Site name: Brislington Meadows

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	Moisture content, determined gravimetrically. (30 oC) In house method. L01		w	NONE
Monohydric phenols in soil	in soil Determination of phenols in soil by extraction with sodium In-house method based on Examination of Water hydroxide followed by distillation followed by colorimetry. and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)		L080-PL	w	MCERTS
Speciated EPA-16 PAHs in soil	EPA-16 PAHs in soil Determination of PAH compounds in soil by extraction in In-house method based on USEPA 8270 dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.		L064-PL	D	MCERTS
pH in soil (automated)	soil (automated) Determination of pH in soil by addition of water followed In house method. by automated electrometric measurement.		L099-PL	D	MCERTS
Stones content of soil	ones content of soil Standard preparation for all samples unless otherwise In-house method based on Brit detailed. Gravimetric determination of stone > 10 mm as % dry weight.		L019-UK/PL	D	NONE
TPH2 (Soil)	(Soil) Determination of hydrocarbons C6-C10 by headspace GC- In-house method based on USEPA8260 MS.		L088-PL	W	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
TPH Banding in Soil by FID	Determination of hexane extractable hydrocarbons in soil by GC-FID.	In-house method, TPH with carbon banding and silica gel split/cleanup.	L076-PL	w	MCERTS
TPH C6 - C40 (soil)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method.	L076-PL	W	NONE

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland. Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Sample Deviation Report



#### Analytical Report Number : 20-42284 Project / Site name: Brislington Meadows

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
BH3	None Supplied	S	1689212	с	Total cyanide in soil	L080-PL	с

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement. Application of uncertainty of measurement would provide a range within which the true result lies. An estimate of measurement uncertainty can be provided on request.

Project / Site name:	Brislington Meadows	Samples received on:	25/11/2020
Your job number:	36142	Samples instructed on/ Analysis started on:	03/12/2020
Your order number:	36025-MH	Analysis completed by:	09/12/2020
Report Issue Number:	1	Report issued on:	09/12/2020
Samples Analysed:	3 soil samples		

Analytical Report Number : 20-44651

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mcerts **Joss Evans** Geotechnical Engineering Ltd **Centurion House** 

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Record Signed:

Rachel Bradley Deputy Quality Manager For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting leachates - 2 weeks from reporting waters - 2 weeks from reporting asbestos - 6 months from reporting





Analytical Report Number: 20-44651 Project / Site name: Brislington Meadows Your Order No: 36025-MH

Lab Sample Number	1702198	1702199	1702200			
Sample Reference	TP14	TP15	TP16			
Sample Number	None Supplied	None Supplied	None Supplied			
Sample Number						
Depth (iii)	20/11/2020	20/11/2020	20/11/2020			
				20/11/2020	20/11/2020	20/11/2020
lime laken		_		None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	imit of detection	Accreditation Status			
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	0.6	2.4	20
Total mass of sample received	kg	0.001	NONE	2	2	2
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected
	Type	14/14	150 17 025	Hot detected	Hot detected	Hot detected
General Inorganics						
	nH Unite	NI/A	MCEDTC	0.1	0	7.6
Tatal Granida	pri offics	IN/A	MCERTS	9.1	9	7.0
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1
Total Phenois		-	-			
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Speciated PAHs						
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	ma/ka	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	ma/ka	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	ma/ka	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	ma/ka	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Benzo(ahi)nervlene	ma/ka	0.05	MCERTS	< 0.05	< 0.05	< 0.05
(j)p).						
Total PAH						
Speciated Total EPA-16 PAHs	ma/ka	0.8	MCERTS	< 0.80	< 0.80	< 0.80
Heavy Metals / Metalloids						
Arsenic (aqua regia extractable)	ma/ka	1	MCERTS	2.1	16	19
Beryllium (agua regia extractable)	ma/ka	0.06	MCERTS	0.08	0.22	1.5
Boron (water soluble)	ma/ka	0.2	MCERTS	0.2	< 0.2	< 0.2
Cadmium (aqua regia extractable)	ma/ka	0.2	MCERTS	1	12	0.9
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	9.9	9.1	26
Copper (aqua regia extractable)	ma/ka	1	MCERTS	3.1	7.3	31
Lead (aqua regia extractable)	ma/ka	1	MCERTS	6.6	41	100
Mercuny (aqua regia extractable)	ma/ka	0.3	MCEDTC	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCEDIC	<u> </u>	<ul><li>&lt; 0.5</li><li>&lt; 6.7</li></ul>	10
Selenium (aqua regia extractable)	mg/kg	1	MCEDIC	1.2	- 10	10
Vanadium (aqua regia extractable)	mg/kg	1	MCEDIC	4.0	10	< 1.0 44
Zinc (aqua rogia extractable)	mg/kg	1	MCEDIC	т.9 17	100	170
בוווב נמקטם ובטום בגנו מנומטוב)	шу/ку	1	PICERIS	1/	100	1/0





Analytical Report Number: 20-44651 Project / Site name: Brislington Meadows Your Order No: 36025-MH

Lab Sample Number	1702198	1702199	1702200			
Sample Reference	TP14	TP15	TP16			
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				0.20-0.30	0.20-0.30	0.10-0.20
Date Sampled				20/11/2020	20/11/2020	20/11/2020
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			
Petroleum Hydrocarbons	-					
TPH C10 - C40	mg/kg	10	MCERTS	24	98	< 10
-						
TPH2 (C6 - C10)	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1
TPH C6 - C40	mg/kg	10	NONE	24	98	< 10

U/S = Unsuitable Sample I/S = Insufficient Sample





### Analytical Report Number : 20-44651 Project / Site name: Brislington Meadows

\* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *	
1702198	TP14	None Supplied	0.20-0.30	Light brown gravel.**	
1702199	TP15	None Supplied	0.20-0.30	Light brown clay and sand with gravel.	
1702200	TP16	None Supplied	0.10-0.20	Brown loam and clay with gravel and vegetation.	

\*\*Non MCERTS matrix.





### Analytical Report Number : 20-44651 Project / Site name: Brislington Meadows

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name Analytical Method Description		Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	w	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
TPH2 (Soil)	Determination of hydrocarbons C6-C10 by headspace GC MS.	In-house method based on USEPA8260	L088-PL	W	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
TPH Banding in Soil by FID	Determination of hexane extractable hydrocarbons in soil by GC-FID.	In-house method, TPH with carbon banding and silica gel split/cleanup.	L076-PL	W	MCERTS
TPH C6 - C40 (soil)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method.	L076-PL	w	NONE

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.



Analytical Report Number : 20-44651 Project / Site name: Brislington Meadows

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
TP14	None Supplied	S	1702198	с	Total cyanide in soil	L080-PL	с
TP15	None Supplied	S	1702199	с	Total cyanide in soil	L080-PL	с
TP16	None Supplied	S	1702200	С	Total cyanide in soil	L080-PL	с



Joss Evans Geotechnical Engineering Ltd Centurion House Olympus Park Quedgeley Gloucester GL2 4NF

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# Analytical Report Number : 20-45732

Project / Site name:	Brislington Meadow	Samples received on:	30/11/2020
Your job number:	36142	Samples instructed on/ Analysis started on:	07/12/2020
Your order number:		Analysis completed by:	15/12/2020
Report Issue Number:	1	Report issued on:	15/12/2020
Samples Analysed:	5 water samples		

Signed: R. Cherwinska

Agnieszka Czerwińska Technical Reviewer (Reporting Team) For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
eachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement. Application of uncertainty of measurement would provide a range within which the true result lies. An estimate of measurement uncertainty can be provided on request.





Analytical Report Number: 20-45732

Project / Site name: Brislington Meadow

I ah Sample Number				1708108	1708109	1708110	1708111
Sample Reference			BH01	BH02	BH03	BH04	
Sample Number			None Supplied	None Supplied	None Supplied	None Supplied	
Depth (m)			None Supplied	None Supplied	None Supplied	None Supplied	
Date Sampled				30/11/2020	30/11/2020	30/11/2020	30/11/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status				

#### **General Inorganics**

рН	pH Units	N/A	ISO 17025	7.6	8	7	7.3
Total Cyanide (Low Level 1 µg/l)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Free Cyanide (Low Level 1 µg/I)	µg/l	1	ISO 17025	< 1	< 1	< 1	< 1
Thiocyanate as SCN	µg/l	200	ISO 17025	< 200	< 200	< 200	< 200
Sulphate as SO4	µg/l	45	ISO 17025	101000	182000	16000	106000
Total Sulphur	µg/l	15	NONE	34000	61000	5300	35000
Sulphide	µg/l	5	NONE	170	37	90	68

#### Phenols by HPLC

Catechol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5
Resorcinol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5
Ethylphenol & Dimethylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5
Cresols	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5
Naphthols	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5
Isopropylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5
Phenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5
Trimethylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5

### **Total Phenols** Total Phenols (HPLC)

Total Phenols (HPLC)	µg/l	3.5	NONE	< 3.5	< 3.5	< 3.5	< 3.5
Speciated PAHs							

Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µq/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01

#### Total PAH

Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	< 0.16	< 0.16	< 0.16

#### Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	0.15	ISO 17025	0.65	1.13	0.15	1.86
Boron (dissolved)	µg/l	10	ISO 17025	52	42	39	100
Cadmium (dissolved)	µg/l	0.02	ISO 17025	0.02	0.02	0.22	< 0.02
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0
Chromium (dissolved)	µg/l	0.2	ISO 17025	2.7	2	1.7	2.1
Copper (dissolved)	µg/l	0.5	ISO 17025	3.7	1.3	5.7	1.4
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2	< 0.2	< 0.2

This certificate should not be reproduced, except in full, without the express permission of the laboratory. The results included within the report relate only to the sample(s) submitted for testing.





Analytical Report Number: 20-45732 Project / Site name: Brislington Meadow

Lab Sample Number				1708108	1708109	1708110	1708111
Sample Reference				BH01	BH02	BH03	BH04
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				30/11/2020	30/11/2020	30/11/2020	30/11/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status				
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	0.07	< 0.05	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	4.8	2.1	15	4.4
Selenium (dissolved)	µg/l	0.6	ISO 17025	15	< 0.6	2.5	< 0.6
Zinc (dissolved)	µg/l	0.5	ISO 17025	5.1	2.3	4.6	5
Petroleum Hydrocarbons	-						

Petroleum Hydrocarbons							
TPH1 (C10 - C40)	µg/l	10	NONE	< 10	< 10	< 10	< 10

U/S = Unsuitable Sample I/S = Insufficient Sample





Analytical Report Number: 20-45732 Project / Site name: Brislington Meadow

Lab Sample Number				1708112
Sample Reference				BH06
Sample Number				None Supplied
Depth (m)				None Supplied
Date Sampled	30/11/2020			
Time Taken	None Supplied			
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status	

## General Inorganics

рН	pH Units	N/A	ISO 17025	6.6
Total Cyanide (Low Level 1 µg/l)	µg/l	1	ISO 17025	< 1.0
Free Cyanide (Low Level 1 µg/l)	µg/l	1	ISO 17025	< 1
Thiocyanate as SCN	µg/l	200	ISO 17025	< 200
Sulphate as SO4	µg/l	45	ISO 17025	28600
Total Sulphur	µg/l	15	NONE	9500
Sulphide	µg/l	5	NONE	52

#### Phenols by HPLC

Catechol	µg/l	0.5	NONE	< 0.5
Resorcinol	µg/l	0.5	NONE	< 0.5
Ethylphenol & Dimethylphenol	µg/l	0.5	NONE	< 0.5
Cresols	µg/l	0.5	NONE	< 0.5
Naphthols	µg/l	0.5	NONE	< 0.5
Isopropylphenol	µg/l	0.5	NONE	< 0.5
Phenol	µg/l	0.5	NONE	< 0.5
Trimethylphenol	µg/l	0.5	NONE	< 0.5

#### **Total Phenols**

Total Phenols (HPLC)	µg/l	3.5	NONE	< 3.5

# Speciated PAHs

Naphthalene	µg/l	0.01	ISO 17025	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01

#### Total PAH

Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16

#### Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	0.15	ISO 17025	1.78
Boron (dissolved)	µg/l	10	ISO 17025	210
Cadmium (dissolved)	µg/I	0.02	ISO 17025	0.04
Chromium (hexavalent)	µg/I	5	ISO 17025	< 5.0
Chromium (dissolved)	µg/I	0.2	ISO 17025	2.5
Copper (dissolved)	µg/I	0.5	ISO 17025	6.5
Lead (dissolved)	µg/l	0.2	ISO 17025	1.7





Analytical Report Number: 20-45732 Project / Site name: Brislington Meadow

Lab Sample Number				1708112
Sample Reference				BH06
Sample Number				None Supplied
Depth (m)				None Supplied
Date Sampled				30/11/2020
Time Taken				None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status	
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	16
Selenium (dissolved)	μg/l	0.6	ISO 17025	0.8
Zinc (dissolved)	µg/l	0.5	ISO 17025	7.7

Petroleum Hydrocarbons				
TPH1 (C10 - C40)	µg/l	10	NONE	84

U/S = Unsuitable Sample I/S = Insufficient Sample





Analytical Report Number : 20-45732 Project / Site name: Brislington Meadow

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in water by ICP-MS (dissolved)	Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, AI=SW,PW.	In-house method based on USEPA Method 6020 & 200.8 "for the determination of trace elements in water by ICP-MS.	L012-PL	W	ISO 17025
Boron in water	Determination of boron in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW	In-house method based on MEWAM	L039-PL	W	ISO 17025
Phenols, speciated, in water, by HPLC	Determination of speciated phenols by HPLC.	In house method based on Blue Book Method.	L030-PL	W	NONE
Hexavalent chromium in water	Determination of hexavalent chromium in water by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method by continuous flow analyser. Accredited Matrices SW, GW, PW.	L080-PL	W	ISO 17025
Speciated EPA-16 PAHs in water	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards. Accredited matrices: SW PW GW	In-house method based on USEPA 8270	L102B-PL	w	ISO 17025
Sulphide in water	Determination of sulphide in water by ion selective electrode.	In-house method	L029-PL	w	NONE
Thiocyanate in water	Determination of thiocyanate in water by discreet analyser (colorimetry). Accredited matrices SW, GW, PW.	In house method based on SMWW 4500-CN-M. Accredited matrices: SW, PW, GW.	L082-PL	w	ISO 17025
Sulphate in water	Determination of sulphate in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW, PrW.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Total Sulphur in water	Determination of total sulphur in water by acidification followed by ICP-OES.	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil <sup>III</sup>	L039-PL	w	NONE
TPH1 (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS.	In-house method	L070-PL	W	NONE
Low level total cyanide in water	Determination of total cyanide by distillation followed by colorimetry. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	w	ISO 17025
pH at 20oC in water (automated)	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In house method.	L099-PL	W	ISO 17025
Free cyanide (low level) in water	Determination of free cyanide by distillation followed by colorimetry.Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom. For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland. Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.



Analytical Report Number : 20-45732 Project / Site name: Brislington Meadow

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
BH01	None Supplied	W	1708108	с	Hexavalent chromium in water	L080-PL	с
BH01	None Supplied	W	1708108	с	Boron in water	L039-PL	с
BH01	None Supplied	W	1708108	с	Free cyanide (low level) in water	L080-PL	С
BH01	None Supplied	W	1708108	С	Low level total cyanide in water	L080-PL	С
BH01	None Supplied	W	1708108	С	Metals in water by ICP-MS (dissolved)	L012-PL	С
BH01	None Supplied	W	1708108	с	Sulphate in water	L039-PL	с
BH01	None Supplied	W	1708108	с	Sulphide in water	L029-PL	с
BH01	None Supplied	W	1708108	с	pH at 20oC in water (automated)	L099-PL	с
BH02	None Supplied	W	1708109	С	Hexavalent chromium in water	L080-PL	С
BH02	None Supplied	W	1708109	С	Boron in water	L039-PL	С
BH02	None Supplied	W	1708109	с	Free cyanide (low level) in water	L080-PL	с
BH02	None Supplied	W	1708109	с	Low level total cyanide in water	L080-PL	с
BH02	None Supplied	W	1708109	с	Metals in water by ICP-MS (dissolved)	L012-PL	с
BH02	None Supplied	W	1708109	с	Sulphate in water	L039-PL	с
BH02	None Supplied	W	1708109	с	Sulphide in water	L029-PL	с
BH02	None Supplied	W	1708109	с	pH at 20oC in water (automated)	L099-PL	с
BH03	None Supplied	W	1708110	С	Hexavalent chromium in water	L080-PL	С
BH03	None Supplied	W	1708110	С	Boron in water	L039-PL	С
BH03	None Supplied	W	1708110	С	Free cyanide (low level) in water	L080-PL	С
BH03	None Supplied	W	1708110	С	Low level total cyanide in water	L080-PL	С
BH03	None Supplied	W	1708110	с	Metals in water by ICP-MS (dissolved)	L012-PL	с
BH03	None Supplied	W	1708110	С	Sulphate in water	L039-PL	С
BH03	None Supplied	W	1708110	С	Sulphide in water	L029-PL	С
BH03	None Supplied	W	1708110	С	pH at 20oC in water (automated)	L099-PL	С
BH04	None Supplied	W	1708111	с	Hexavalent chromium in water	L080-PL	с
BH04	None Supplied	W	1708111	с	Boron in water	L039-PL	с
BH04	None Supplied	W	1708111	с	Free cyanide (low level) in water	L080-PL	с
BH04	None Supplied	W	1708111	с	Low level total cyanide in water	L080-PL	с
BH04	None Supplied	W	1708111	с	Metals in water by ICP-MS (dissolved)	L012-PL	с
BH04	None Supplied	W	1708111	с	Sulphate in water	L039-PL	с
BH04	None Supplied	W	1708111	с	Sulphide in water	L029-PL	с
BH04	None Supplied	W	1708111	с	pH at 20oC in water (automated)	L099-PL	с
BH06	None Supplied	W	1708112	с	Hexavalent chromium in water	L080-PL	с
BH06	None Supplied	W	1708112	с	Boron in water	L039-PL	с
BH06	None Supplied	W	1708112	с	Free cyanide (low level) in water	L080-PL	с
BH06	None Supplied	W	1708112	с	Low level total cyanide in water	L080-PL	с
BH06	None Supplied	W	1708112	с	Metals in water by ICP-MS (dissolved)	L012-PL	с
BH06	None Supplied	W	1708112	с	Sulphate in water	L039-PL	с
BH06	None Supplied	W	1708112	с	Sulphide in water	L029-PL	с
BH06	None Supplied	w	1708112	с	pH at 20oC in water (automated)	L099-PL	с



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# Analytical Report Number : 20-48600

Project / Site name:	Brislington Meadows	Samples received on:	18/12/2020
Your job number:	36142	Samples instructed on/ Analysis started on:	18/12/2020
Your order number:	1620037217	Analysis completed by:	30/12/2020
Report Issue Number:	1	Report issued on:	30/12/2020
Samples Analysed:	1 water sample		

Signed: R. Crerwinski

Agnieszka Czerwińska Technical Reviewer (Reporting Team) For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
eachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement. Application of uncertainty of measurement would provide a range within which the true result lies. An estimate of measurement uncertainty can be provided on request.





# Analytical Report Number: 20-48600

Project / Site name: Brislington Meadows

# Your Order No: 1620037217

Lab Sample Number		1725098		
Sample Reference	BH05			
Sample Number	None Supplied			
Depth (m)		9.70		
Date Sampled	17/12/2020			
Time Taken	None Supplied			
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status	

#### **General Inorganics**

рН	pH Units	N/A	ISO 17025	6.9
Total Cyanide (Low Level 1 µg/l)	µg/l	1	ISO 17025	< 1.0
Free Cyanide (Low Level 1 µg/l)	µg/l	1	ISO 17025	< 1
Thiocyanate as SCN	µg/l	200	ISO 17025	< 200
Sulphate as SO4	mg/l	0.045	ISO 17025	26.5
Total Sulphur	µg/l	15	NONE	8800
Sulphide	µg/l	5	NONE	< 5.0

# Phenols by HPLC

Catechol	µg/l	0.5	NONE	< 0.5
Resorcinol	µg/l	0.5	NONE	< 0.5
Ethylphenol & Dimethylphenol	µg/l	0.5	NONE	< 0.5
Cresols	µg/l	0.5	NONE	< 0.5
Naphthols	µg/l	0.5	NONE	< 0.5
Isopropylphenol	µg/l	0.5	NONE	< 0.5
Phenol	µg/l	0.5	NONE	< 0.5
Trimethylphenol	µg/l	0.5	NONE	< 0.5

### **Total Phenols**

Total Phenols (HPLC)	µg/l	3.5	NONE	< 3.5

## Speciated PAHs

Naphthalene	µg/l	0.01	ISO 17025	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01

# Total PAH

Total EPA-16 PAHs	µg/I	0.16	ISO 17025	< 0.16





### Analytical Report Number: 20-48600 Project / Site name: Brislington Meadows

Your Order No: 1620037217				
Lab Sample Number				1725098
Sample Reference		BH05		
Sample Number	None Supplied			
Depth (m)	9.70			
Date Sampled	17/12/2020			
Time Taken	None Supplied			
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status	
Heavy Metals / Metalloids				
Boron (dissolved)	µg/I	10	ISO 17025	37
Chromium (hexavalent)	µg/I	5	ISO 17025	< 5.0
Arcenic (discolved)	ua/l	0.15	ISO 17025	0.52
Cadmium (dissolved)	μg/l	0.02	ISO 17025	0.05
Chromium (dissolved)	µg/l	0.2	ISO 17025	2
Copper (dissolved)	µg/I	0.5	ISO 17025	2.2
Lead (dissolved)	μg/I	0.2	ISO 17025	< 0.2
Mercury (dissolved)	µg/I	0.05	ISO 17025	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	7.4
Selenium (dissolved)	µg/I	0.6	ISO 17025	< 0.6
Zinc (dissolved)	µg/l	0.5	ISO 17025	11

#### Petroleum Hydrocarbons

TPH1 (C10 - C40)	µg/l	10	NONE	< 10

U/S = Unsuitable Sample I/S = Insufficient Sample





### Analytical Report Number : 20-48600 Project / Site name: Brislington Meadows

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in water by ICP-MS (dissolved)	Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW.	In-house method based on USEPA Method 6020 & 200.8 "for the determination of trace elements in water by ICP-MS.	L012-PL	W	ISO 17025
Boron in water	Determination of boron in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW	In-house method based on MEWAM	L039-PL	W	ISO 17025
Phenols, speciated, in water, by HPLC	Determination of speciated phenols by HPLC.	In house method based on Blue Book Method.	L030-PL	W	NONE
Hexavalent chromium in water	Determination of hexavalent chromium in water by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method by continuous flow analyser. Accredited Matrices SW, GW, PW.	L080-PL	W	ISO 17025
Speciated EPA-16 PAHs in water	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards. Accredited matrices: SW PW GW	In-house method based on USEPA 8270	L102B-PL	w	ISO 17025
Sulphide in water	Determination of sulphide in water by ion selective electrode.	In-house method	L029-PL	W	NONE
Thiocyanate in water	Determination of thiocyanate in water by discreet analyser (colorimetry). Accredited matrices SW, GW, PW.	In house method based on SMWW 4500-CN-M. Accredited matrices: SW, PW, GW.	L082-PL	w	ISO 17025
Sulphate in water	Determination of sulphate in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW, PrW.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Total Sulphur in water	Determination of total sulphur in water by acidification followed by ICP-OES.	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil""	L039-PL	W	NONE
TPH1 (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS.	In-house method	L070-PL	W	NONE
Low level total cyanide in water	Determination of total cyanide by distillation followed by colorimetry. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
pH at 20oC in water (automated)	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In house method.	L099-PL	w	ISO 17025
Free cyanide (low level) in water	Determination of free cyanide by distillation followed by colorimetry.Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom. For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland. Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.



Analytical Report Number : 20-48600 Project / Site name: Brislington Meadows

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
BH05	None Supplied	W	1725098	с	pH at 20oC in water (automated)	L099-PL	C