# SITE INVESTIGATION REPORT

Torridon House Car Park, Westminster

C. JOEPT

**ISSUE 01** 

## SITE INVESTIGATION REPORT

Torridon House Car Park, Westminster

Prepared for: City of Westminster

Concept: 19/3312 - FR 01

21/01/2020

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Notes:

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#### 1. PROJECT PARTICULARS

Site Location:	Torridon House Car Park, Westminster
Client:	City of Westminster
Investigation Supervisor:	Peter Brett Associates LLP
Fieldwork:	07/10/2019 – 18/10/2019
Laboratory Work:	09/10/2019 - 15/11/2019
Postfield Works:	25/10/2019 – 20/01/2020

#### 2. PURPOSE AND SCOPE OF WORKS

The purpose of the investigation was to determine:

- The geotechnical characteristics of the ground for the assessment of the stability of the existing and proposed slopes, and the design of foundations and other engineering works;
- The presence and depth of any shallow groundwater in the near surface soils;
- The nature of any existing contamination of the ground and groundwater;
- The nature of any ground gases present on the site.

The site was occupied by the Torridon House car park, comprised an at-grade car park with provision for off-street parking of 35 cars. A series of lockup stores were located along the northeast and northwest boundaries of the site.

The scope of the works comprised the following:

- 2 No. Cable Percussion Boreholes to a depth of 35.00m;
- 4 No. Dynamic Sampler Boreholes to a depth of 6.00m;
- 4 No. Observation Pits to a maximum depth of 1.30m;
- Logging and Photographing;
- Instrumentation Monitoring and Sampling;
- Geotechnical & Chemical Testing.

#### Table 1 – Exploratory Hole List

Hole ID	Hole Type	Depth (m)	Easting	Northing	Level (mOD)
BH101	СР	35.00	525629.09	183228.92	32.08
BH102	СР	35.00	525657.60	183230.12	32.58
OP101	OP	0.55	525630.75	183238.77	32.46
OP102	OP	1.30	525639.74	183246.00	32.60

Hole ID	Hole Type	Depth (m)	Easting	Northing	Level (mOD)
OP103	OP	0.55	525596.93	183264.59	32.01
OP104	OP	0.50	525619.96	183235.78	32.08
WS101	DS	6.00	525645.39	183245.66	32.54
WS102	DS	6.00	525644.53	183236.28	32.41
WS103	DS	6.00	525651.33	183219.76	32.47
WS104	IP	0.40	525644.23	183212.61	32.39
WS104A	DS	6.00	525645.36	183213.60	32.39

<u>Key</u>

CP – Cable Percussion Borehole

DS – Dynamic Sampler Borehole

OP – Observation Pit

IP – Inspection Pit / Aborted Borehole Location

#### 3. DESCRIPTION OF WORKS

The works were carried out in accordance with the Peter Brett Associates LLP "Proposed Residential Development Torridon House Car Park, Westminster" Tender for Ground Investigation document with reference SP02/rev0 | July 2019, rev 1, dated July 2019 and Concept's Method Statement with reference no: 19/3312, Rev 00, dated 10/09/2019.

The site was bounded by Andover Place to the northeast, un-named access roads to the southeast and southwest and a synagogue and primary school to the northwest. Torridon House was located to the southwest of the site. The approximate centre of the site was located at Nation Grid Reference: TQ 256 832.

The locations of all exploratory holes are shown in the Exploratory Hole Location Plan presented in Section 7 of this report.

#### 4. INVESTIGATION METHODS

#### 4.1 Utilities Survey and Inspection Pits

Prior to boring commencing all exploratory hole locations were checked for utilities / buried services using a CAT and genny, existing utility information and hand dug inspection pits to an appropriate depth as identified by the services plans. The depth of the starter pits depended on the depth of anticipated services as shown on the utilities plans was at a maximum depth of 1.20m. Where surface concrete and asphalt encountered were broken out by hand held electric breaker.

#### 4.2 Cable Percussion Drilling

2 No. Cable Percussion Boreholes (BH101 and BH102) were drilled to a maximum depth of 35.00m using a standard cable percussion rig (Dando 175) with 150mm diameter casing.

## 4.2.1 Sampling and Testing during Cable Percussion Drilling

Bulk samples were taken at regular intervals in the Made Ground. Undisturbed Thin Walled samples (UT) were taken in accordance with EC7 using a down-hole sliding hammer in cohesive material at regular intervals or as instructed by the Investigation Supervisor.

Standard Penetration Tests (SPT) were carried out at specified intervals or as otherwise instructed by the Investigation Supervisor. The resulting SPT "N" blowcount values are presented in the relevant borehole records. Where an SPT using a split spoon sampler was not possible, due to the granular nature of the material, a solid cone was used. The SPT hammer calibration sheets are included in Section 8 of this report.

Small, disturbed samples were retrieved from the cutting shoe of the UT100 sampler, the SPT split spoon sampler and at intervals specified by the Investigation Supervisor.

Environmental samples (tubs, jars and vials) were taken for chemical analysis in the Made Ground or at each change of strata and where visual or olfactory evidence of contamination was noted or as instructed by the Investigation Supervisor. Headspace readings for volatile organic compound (VOC) content were taken in all the samples using a Phocheck Tiger photoionization detector.

The borehole logs are presented in Section 8 of this report.

#### 4.3 Dynamic Sampling Boreholes

4 No. Dynamic Sampling Boreholes (WS101 – WS104A) were carried out to a maximum depth of 6.00m. The boreholes were drilled using a tracked Geo drive-tube sampling rig. WS104 was aborted at 0.40m depth due to concrete obstruction.

Semi-rigid plastic core liners were recovered from each borehole location. The excavated soil was logged in accordance with BS 5930:2015 and photographed.

Environmental samples (tubs, jars and vials) were taken for chemical analysis from the liners at approximately 1.00m intervals for the full depth of the borehole. Headspace readings for volatile organic compound (VOC) content were taken using a Phocheck Tiger photoionization detector. Representative bulk and disturbed samples were taken for soil analysis.

SPTs were carried out at the base of the inspection pit and thereafter at 1.00m intervals. Pocket penetrometer tests were also carried out in cohesive materials.

The borehole logs are presented in Section 9 and the core photographs are presented in Section 14 of this report.

#### 4.4 Hand Excavated Observation Pits

4 No. Hand Excavated Observation Pits (OP101-OP104) were carried out to a maximum depth of 1.30m to obtain information on the foundations to existing buildings and structures and services on site.

The pits were logged, sketched and photographed. The logs and sketches are presented in Section 10 of this report and the photographs are presented in Section 14.

#### 4.5 Standpipe Installations and Backfill

Monitoring wells were installed in the boreholes as follows:

		Diameter of	Type of	Base of	Response Zone		
	Borehole (m bgl)	Installation (mm)	Installation (m bgl)		Top (m bgl)	Bottom (m bgl)	
BH101	35.00	50	SPG/GW	4.00	0.50	4.00	
BH102	35.00	50	SPG/GW	4.00	1.00	4.00	
WS101	6.00	50	SPG/GW	3.50	0.50	3.50	
WS102	6.00	50	SPG/GW	4.00	0.50	4.00	
WS103	6.00	50	SPG/GW	4.00	0.50	4.00	
WS104A	6.00	50	SPG/GW	4.00	1.00	4.00	

#### Table 2 – Monitoring Installation Details

KEY

SPG/GW – Gas and groundwater Standpipe

The boreholes were backfilled with bentonite pellets with gas/groundwater response zones backfilled with a 10mm pea shingle filter with a geosock surround. All installations were finished with bentonite pellets to the surface with concrete and a lockable stopcock cover flush with the ground.

#### 4.6 Instrumentation Monitoring and Sampling

Gas and groundwater monitoring and sampling was carried out by Concept subsequent to completion of the boreholes in six scheduled visits between 25/10/2019 and 20/01/2020. All boreholes were developed using a Wasp pump to remove x6 well volume (where possible). Development was completed at least one week prior to sampling.

Water samples were collected from the borehole installations (BH101, WS101, WS102, WS103 and WS104A) on the 05/11/2019. Water sample was not collected from BH102 due to insufficient volume of water present in the installation.

Prior to sampling, purging was carried out from the upper part of the water column. During purging, pH, conductivity, dissolved oxygen, temperature and Redox levels were monitored and recorded. The water samples were collected using a low flow pump in containers. They were then transferred to Concept laboratory inside cool boxes protected by bubble wrap and kept in the fridge until collection from the chemical laboratory was arranged.

Neither LNAPL nor DNAPL were detected throughout the water column in the boreholes therefore a Geosense dipmeter was used for the subsequent visits. The gas concentrations were recorded using a Gas data GFM436 gas monitors. Where 0.00 is

shown on the results indicates value lower than the detection limit of the machine. The accuracy of the instruments is summarised in Section 11 where the gas monitoring reports and groundwater results are presented.

## 4.7 Logging / Laboratory Testing

Logging of all soil samples was carried out in accordance with BS 5930:2015.

Geotechnical testing was performed at Concept Site Investigations laboratory in accordance with BS1377:1990 unless otherwise stated in the report. Concept is accredited by UKAS for tests where the UKAS logo is appended to the individual test report or summary. Approved signatories for laboratory testing are as follows:

- LG Lynn Griffin (Quality Manager)
- KM Kasia Mazerant (Laboratory Manager)

Where subcontracted analysis has been carried out, the details of the laboratory (and accreditation where applicable) are shown in the individual test report or summary.

The results are presented in tabular format in Section 12 of this report.

All chemical testing was specified and scheduled by Peter Brett Associates LLP and carried out by DETS and I2 Analytical in accordance with the requirements of UKAS ISO17025 and MCERTS. The results are presented in tabular format in Section 13 of this report.

#### 4.8 Setting Out

The locations of all exploratory holes were agreed with the Investigation Supervisor and set out prior to commencement of the site works.

Following completion of the ground works the locations and elevations of the boreholes and pits were established by Concept using GPS equipment with accuracy between +/-10mm.

The co-ordinates and levels of the as-built locations of the boreholes and pits are shown in the Exploratory Hole Location Plan presented in Section 7 of this report.

#### 5. GEOLOGICAL GROUND PROFILE

The geological strata encountered during the investigation are summarised in the table below. The Top and Bottom of the strata noted in the table indicates the highest and lowest boundaries encountered in all exploratory holes.

STRATUM	TOP (mOD)	BASE (mOD)	DESCRIPTION
			Asphalt and concrete over Firm, dark brown mottled grey slightly sandy slightly gravelly CLAY with occasional roots and rootlets. Gravel comprises angular to rounded fine to coarse
MADE GROUND	32.60	30.58	flint, brick and asphalt fragments. Sand is fine to coarse. Light brown slightly clayey gravelly fine to coarse SAND. Gravel comprises angular to rounded fine to medium flint, brick and concrete fragments. Dark brown slightly clayey sandy GRAVEL with medium brick and concrete cobble content. Gravel comprises angular to rounded fine to coarse flint,
WEATHERED LONDON CLAY 31.99 21.08		21.08	brick and concrete fragments. Sand is fine to coarse. Firm to stiff, orangish brown occasionally mottled light bluish grey slightly micaceous silty CLAY with occasional pockets of orange silty fine sand (<10mm) and pockets of selenite crystals (<7mm).
LONDON CLAY	22.58	-2.92	Stiff to very stiff, greyish brown slightly sandy slightly micaceous CLAY with rare pockets of dark grey fine sand (<6mm), shell fragments (<2mm) and bioturbation.

#### REFERENCES

**British Standards Institution, (2015)** Code of practice for ground investigations, British Standard BS5930: 2015, BSI, London

**British Standards Institution, (2011)** Investigation of potentially contaminated sites, British Standard BS10175: 2011+A2:2017, BSI, London.

**UK Specification for Ground Investigation, (2011)** Site Investigation Steering Group, Thomas Telford, London

British Geological Survey (1996) London and the Thames Valley 4th Edition, London HMSO.

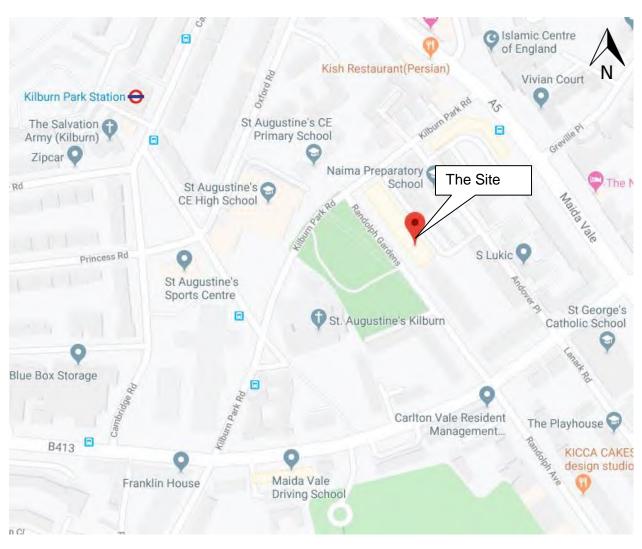
**British Standards Institution BS EN ISO 22475-1, (2006)** Geotechnical Investigation and Testing – Sampling Methods and Groundwater Measurements – Part 1: Technical Principles for Execution

**British Standards Institution BS EN 1997:1 (2004)** EuroCode 7 - Geotechnical Design. Part 1 – General Rules.

**British Standards Institution BS EN 1997:2 (2007)** EuroCode 7 - Geotechnical Design. Part 2 - Ground Investigation and Testing.

**King C. (1981)** The stratigraphy of the London Basin and associated deposits. Tertiary Research Special Paper, Vol. 6, Backhuys, Rotterdam, p158.

Aldiss, D. T. (2012) The stratigraphical framework for the Palaeogene successions of the London Basin, UK. British Geological Survey Open Report. British Geological Survey.



Not to Scale / Map data ©2019 Google

## 6. SITE LOCATION PLAN

## 7. EXPLORATORY HOLE LOCATION PLAN





NOTES

1. This drawing should not be scaled, only use annotated dimensions.

rthing	Level
runng	(mOD)
3228.92	32.08
3230.12	32.58
3238.77	32.46
3246.00	32.60
3264.59	32.01
3235.78	32.08
3245.66	32.54
3236.28	32.41
3219.76	32.47
3212.61	32.39
3213.60	32.39

No	Revision	Drawn	Checked	Passed	Date

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Client:	City of We	stminster	
Project:	Torridon H Westminst	louse Car P ter	ark,
Title:	Explorator Location P		
Dwg. No:	193312/01		
Status:	Issue		
Scale:	NTS		
Drawn AC	Checked AD	Passed OS	Date October 2019

8. CABLE PERCUSSION BOREHOLE LOGS





**Borehole No** 

**BH101** 

Project

## Torridon House Car Park, Westminster

Job No	Date Started		Ground Level (mOD)	<b>Co-Ordinates</b>		Final Depth
19/3312	Date Completed	11/10/19	32.08	E 525629.1	N 183228.9	35.00m

#### Client City of Westminster

BOREHOLE SUMMARY														
Base (m)	Туре	Date Started	Date Ended	Crew	Logged By	Core Barrel (mm)	Core Bit	Plant Used/ Method	SPT Hammer Reference					
1.20 35.00	IP CP	10/10/2019 10/10/2019	10/10/2019 11/10/2019	DP DP	IK SL/ CS			Hand Excavated Dando 175	AR1607					
	(m) 1.20	(m) 1.20 IP	(m) 1.20 IP 10/10/2019	Base (m)         Type         Date Started         Date Ended           1.20         IP         10/10/2019         10/10/2019	Base (m)         Type         Date Started         Date Ended         Crew           1.20         IP         10/10/2019         10/10/2019         DP	Base (m)         Type         Date Started         Date Ended         Crew         Logged By           1.20         IP         10/10/2019         10/10/2019         DP         IK	Base (m)         Type         Date Started         Date Ended         Crew         Logged By         Core Barrel (mm)           1.20         IP         10/10/2019         10/10/2019         DP         IK	Base (m)         Type         Date Started         Date Ended         Crew         Logged By         Core Barrel (mm)         Core Bit           1.20         IP         10/10/2019         10/10/2019         DP         IK	Base (m)         Type         Date Started         Date Ended         Crew         Logged By         Core Barrel (mm)         Core Bit         Plant Used/ Method           1.20         IP         10/10/2019         10/10/2019         DP         IK         Hand Excavated					

	WA	TER STRIF	KES		WATEI	R ADDED	CHISELLING / SLOW DRILLING				
Strike at (m)	Rise to (m)	Time to Rise (min)	Casing Depth (m)	Sealed (m)	From (m)	To (m)	From (m)	To (m)	Duration (hr)	Remarks	

<b>Depth (m)</b> 0.00 35.00		(mm) Dept								
0.00 35.00	150		th (m)	Dia	meter (mm)		From (m)	To (m)	Blows	Recovery (%)
	0.00         150         0.00           35.00         150         3.00				150 150					
	ROTA	RY FLUSH DE	ETAIL							
From (m)	To (m) Flush	Type Flush R	Return (%)	Fl	ush Colour					
						]   ]				
	neter Depth of	LATION DET Top of	Bottor	n of	Date of	$\left\{ \right\}$				
· ·	(m)	n Response Zone (m)	(m)	)	Installation					
SPG/GW 5	50 4.00	0.50	4.00		11/10/2019					
	BAC	KFILL DETA	AILS							
Top (m)	Bottom (m)	Material		Bacl	xfill Date					
0.00 0.20	0.20 0.50	Concrete/ Flush Bentonite Pellets	Cover	11/	10/2019					
0.20	4.00 35.00	Pea Shingle Bentonite Pellets								
Issue No: 00	Checked By:	AN Approved	By: OS	Log	g Print Date & T	ime:	06/11/201	9 17.15		





**Borehole No** 

**BH101** 

Project

## Torridon House Car Park, Westminster

Job No			Ground Level (mOD)	Co-Ordinates	Final Depth
19/3312	Date Completed	11/10/19	32.08	E 525629.1 N 183228.9	35.00m
Client			·		

#### City of Westminster

		PROGR	ESS						SPT DETAILS	5			
	Hole epth (m)	Casing Depth (m)	Water Depth (m)	Remarl	ks	Туре	Depth (m)	N Value	Blow Count / 75mm	Casing Depth (m)	Water Depth (m)		
10/10/19 10/10/19 11/10/19	0.00 1.20 30.00 35.00	3.00 3.00 3.00	Dry Dry Dry Dry			S S S S S S S S S S S S	1.50 3.50 6.00 9.00 12.00 15.00 18.00 21.00 24.00 27.00 30.00 33.00	N9 N12 N18 N20 N23 N27 N31 N39 N41 N43 N46 N39	1, 2 / 2, 2, 2, 3 2, 2 / 3, 3, 3, 3 2, 3 / 4, 4, 5, 5 2, 3 / 4, 5, 5, 6 2, 3 / 5, 5, 6, 7 4, 4 / 4, 6, 8, 9 4, 5 / 6, 7, 8, 10 4, 6 / 8, 10, 10, 11 5, 6 / 8, 10, 11, 12 4, 6 / 9, 11, 11, 12 5, 7 / 10, 11, 12, 13 6, 8 / 11, 12, 12, 4	$ \begin{array}{c} 1.50\\3.00\\3.00\\3.00\\3.00\\3.00\\3.00\\3.00\\3$	Dry Dry Dry Dry Dry Dry Dry Dry Dry Dry		
U38 - 38mm Diamete D - Disturbed Samp C - Core Sample, W INSTALLATION DET SPIE - Standpipe Pie SPGW - Gas / Ground VWP - Vibrating Win ICM - Inclinometer TESTS S/C-SPT / CPT,	Sample (Tub, Vi ter Undisturbed S ter Thin Wall Un er Undisturbed S ple, B-Bulk Sam V-Water Sample, rAILS ezometer * Monitor Standp water Monitor Standp water Monitor Standp water Monitor Standp re Piezometer , V-Shear Vane,	isample diskurbed Sample ample ple, LB- Large Bulk S R-Root Sample HOLE ipe IP - tandpipe DS DC PP-Pocket Penetrome	TYPES Inspection Pit, TP-Tr Cable Percussion, RC Dynamic Sampling, J -Diamond Coring, CF ter, MP-Mackintosh	ial Pit TT - Trial Trench C-Rotary Coring, R/S-Rota DS/R-Dynamic Sampling, //R-Cable Percussion Rota	/Rotary iry follow on anic Compounds	ounds							
Issue No: 00	Checke	ed By: AN	Approve	ed By: OS	Log Pri	nt Date a	& Time:	06/11/2	019 17:15	1	44		



Borehole No

Job No 19	0/3312		ite Start ite Com		10/10/19 11/10/19		<b>Co-Ordinat</b> E 5256	es 529.1 N 18	3228.9	Fin	al Depth 35.00m
Client Ci	ity of '	Wes	tminst	er			Method/ Plant Used	Cable Per	rcussion	She	et 1 of 4
PRC	GRES	SS			ST	TRATA		SAMPLE	ES & T	ESTS	
Date	Casing	Water	Level (mOD)	Legend	Depth (Thickness)	Strata Description	L	Depth (m)	Type No	Test Result	Field Records
0/10/19		Dry	<u>31.98</u> 31.68		0.10 0.40	Asphalt. (MADE GROUND) Light brown slightly clayey grav coarse SAND. Gravel comprise:	velly fine to	0.10 0.40 0.40-0.90	D1 D2 B3		VOC 0.1ppm
0/10/19		Dry			(1.10)	rounded fine to coarse flint and fragments. (MADE GROUND)	brick	0.50 0.90 0.90-1.20 1.00	ES4 D5 B6 ES7		VOC 0.2ppm
			30.58		1.50	Firm, dark brown mottled grey s slightly gravelly CLAY with oc and rootlets. Gravel comprises a rounded fine to coarse flint, brid fragments. Sand is fine to coarse	casional roots ingular to k and asphalt	1.50 1.50-1.95	D8	N9	1, 2 / 2, 2, 2, 3
					-	(MADE GROUND) 0.90 becoming mottled dark g angular to subangular fine to me	grey with	2.20	D9		
					-	size clinker fragments Firm to stiff, orangish brown loo bluish grey slightly micaceous s rare pockets of selenite crystals	ilty CLAY and (<5mm).	2.50-2.95 3.00	UT10 D11	30 blows	67% Recovery
					- - - - -	(THÂMES GROUP: WEÂTHE LONDON CLAY FORMATIOI 2.20 with occasional pockets fine sand (<10mm) 3.00 becoming occasionally:	N) of orange silty	3.50 3.50-3.95	D12	N12	2, 2 / 3, 3, 3, 3
					-	grey with occasional pockets of crystals (<15mm) and rare rootl 3.50 with 1No pyrite nodule (	selenite ets	- 4.10	D12		
						4.20 with a pocket of red silt	(<10mm)	4.50-4.95	UT14	35 blows	91% Recovery
					-	5.00 with orange staining	-	5.00	D15		
					(9.50)	5.50 becoming orangish brow occasional pockets of orange sil rare pockets of light brown fine white silt lenses, white and dark and 1No shell fragment (<3mm)	ty fine sand, sand (<8mm), grey flecks	5.50 6.00 6.00-6.45	D16 D17	N18	2, 3 / 4, 4, 5, 5
					- - - - - -			7.00	D18		
					-			7.50-7.95 8.00	UT19 D20	40 blows	100% Recovery
					-	8.00 with frequent pockets o fine sand (<15mm)		8.50	D20		
					- - - - - - -	8.50 with frequent pockets of crystals (<20mm)	'selenite	9.00 - 9.00-9.45	D22	N20	2, 3 / 4, 5, 5, 6
					-	10.00 with more realists at 3	ek aray silt	10.00	D23		
					-	10.00 with rare pockets of da (<4mm) and a pocket of fine sar	nd (<30mm)	10.50-10.95	UT24	50 blows	89% Recovery
			21.08	× *	11.00		-	11.00	D25		

Co1

Project

Report ID: CONCEPT-CABLE PERCUSSION BOREHOLE || Project: 193312 - TORRIDON HOUSE.GPJ || Library: CONCEPT LIBRARY - 2019.GLB || Date: 6 November 2019



**Borehole No** 

	9/3312	1	te Starte te Compl		10/10/19 11/10/19	Ground Leve 32.08	· í	<b>Co-Ordina</b> E 5250	<b>tes</b> 529.1 N 18	3228.9		al Depth 35.00m	
Client C	tity of V	Ves	tminste	r				Method/ Plant Used	Cable Per	rcussion	She	et 2 of 4	
PRO	OGRES	S			ST	RATA			SAMPLE	ES & T	ESTS		ent/
Date	Casing	Water	Level (mOD)	egend	Depth (Thickness)		Description		Depth (m)	Type No	Test Result	Field Records	Instrument/ Backfill
					-	Very stiff, greyish b slightly micaceous dark grey fine sand (<2mm) and biotur (THAMES GROUU (THAMES	bation. P: LONDON ent white flec and bioturbat	CLAY ks, occasional ion	11.50 12.00 12.00-12.45	D26 D27	N23	2, 3 / 5, 5, 6, 7	
				· · · · · · · · · · · · · · · · · · ·	- - - -				- 13.00	D28			
					-				13.50-13.95 14.00	UT29 D30	60 blows	89% Recovery	
					-	14.00 with rare p sand (<3mm)			14.00	D30			
					-	14.50 with a poc (<4mm) 15.00 with 1No o (<4mm)			15.00 15.00-15.45	D32	N27	4, 4 / 4, 6, 8, 9	
						16.00 with occas silt (<20mm)	ional pockets	of dark grey	16.00 16.50-16.95	D33 UT34	65 blows	89% Recovery	
			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			17.00 with 1No s			17.00 17.50	D35 D36			
						fine sand (<5mm) a	and dark grey	silt (<50mm)	18.00 18.00-18.45	D37	N31	4, 5 / 6, 7, 8, 10	
						19.00 with occas white flecks and 1N	ional bioturb No shell fragn	ation, rare hent (<5mm)	19.00 19.50-19.95	D38 UT39	65 blows	89% Recovery	
						20.00 with 2No s	shell fragmen	ts (<8mm)	20.00	D40 D41			
					-	20.50 with rare sl 21.00 with a part grey silt			21.00	D42	N39	4, 6 / 8, 10, 10, 11	
					-				22.00	D43			
Issue No	0: 00	Che	ecked By:	AN	Approve	ed By: OS	Log Print D	ate & Time:	06/11/2019	17:15		All and a	44

Col



**Borehole No** 

Job No 19	9/331		ate Start ate Com		10/10/19 11/10/19		<b>Co-Ordinat</b> E 5256	<b>es</b> 529.1 N 18	3228.9		al Depth 35.00m	
Client C	ity of	We	stminst	ter			Method/ Plant Used	Cable Per	cussior	n She	et 3 of 4	
PRO	OGRE	ESS			ST	TRATA		SAMPLE	ES & T	TESTS		/+
Date	Casing	Water	Level (mOD)	Legend	Depth (Thickness)	Strata Description		Depth (m)	Type No	Test Result	Field Records	
	0	-			-	22.00 with rare pockets of lig sand (<3mm)	ht brown fine	22.50-22.95	UT44	65 blows	93% Recovery	
					(24.00)			23.00	D45			
					-	23.50 with occasional white f white lenses of silt	lecks and rare	23.50	D46			
					- - - - - -	24.00 with occasional pockets silt (<10mm)	s of dark grey	24.00 24.00-24.45	D47	N41	5, 6 / 8, 10, 11, 12	
					- - - -			25.00	D48			
							- - - - - - - - - - - - - - 	25.50-25.95	UT49	70 blows	93% Recovery	
							- - - - - -	26.00	D50			
						<ul><li>26.50 with rare pockets of dat (&lt;8mm) and bioturbation</li><li>27.00 with frequent bioturbat</li></ul>	-	26.50 27.00 27.00-27.45	D51 D52	N43	4, 6 / 9, 11, 11, 12	
					-	28.00 with occasional pockets	s of dark grey	28.00	D53			
					-	silt (<30mm)	-	28.50-28.95	UT54	65 blows	89% Recovery	
					-	29.00 with occasional pockets brown fine sand (<28mm) and b	s of light ioturbation	29.00	D55			
0/10/19 1/10/19	3.00 3.00	Dry Dry			-	30.00 with a parting of dark g	rey silt	29.50 30.00 30.00-30.45	D56 D57	N46	5, 7 / 10, 11, 12, 13	
						21.00	to (26,000)	31.00	D58			
						31.00 with 2No shell fragmen	us ( <omm)< td=""><td>31.50-31.95</td><td>UT59</td><td>75 blows</td><td>84% Recovery</td><td></td></omm)<>	31.50-31.95	UT59	75 blows	84% Recovery	
							- - - - - - -	32.00	D60			
							- - - -	32.50	D61			
					-		-	33.00		N39	6, 8 / 11, 12, 12, 4	

Col



**Borehole No** 

	n House Car Date Started	<b>Рагк,</b> 10/10/19		Co-Ordinat	05		Eine	al Depth	
	Date Started Date Completed				629.1 N 18	3778 9	Fina	35.00m	
Client	estminster		52.00	Method/ Plant Used	Cable Per		Shee		
PROGRESS		ST	RATA		SAMPLE	75 & T	FSTS		Ę
Date Casing Mater		Depth	Strata Description		Depth (m)	Type No	Test Result	Field Records	Instrument/
1/10/19 3.00 Dr		35.00	33.00 with rare pockets of dat (<3mm) and frequent bioturbati 34.00 with occasional bioturb End of Borehole	k grey silt on	(III) 33.00-33.45 34.00 34.50-34.95 35.00	D62 D63 UT64 D65	80 blows	78% Recovery	
Issue No: 00	Checked By: AN	Approv	ed By: OS Log Print D	ate & Time:	06/11/2019	17:15			



**Borehole No** 

**BH102** 

Project

## Torridon House Car Park, Westminster

Job No	Date Started		Ground Level (mOD)	Co-Ordinates	Final Depth
19/3312	Date Completed	09/10/19	32.58	E 525657.6 N 183230.1	35.00m

#### Client City of Westminster

	BOREHOLE SUMMARY												
Top (m)													
0.00 1.20	1.20 35.00	IP CP	08/10/2019 08/10/2019	08/10/2019 09/10/2019	DP DP	IK SL			Hand Excavated Dando 175	AR1607			

	WA	TER STRIK	<u>ÆS</u>		WATE	R ADDED	CHISELLING / SLOW DRILLING				
Strike at (m)	Rise to (m)	Time to Rise (min)	Casing Depth (m)	Sealed (m)	From (m)	To (m)	From (m)	To (m)	Duration (hr)	Remarks	

		HOI	LE			CAS	SING			R	OTARY	RECOV	ERY
Dept	th (m)	)	Diameter	(mm)	Dept	h (m)	Dia	meter (mm)		From (m)	To (m)	Blows	Recovery (%)
0.35	0.00 150 15.00 150		0.0 1.5	0.00 1.50		150 150							
			ROTAR	Y FL	USH DE	TAIL			וו				
From (	(m)	To (n	n) Flush	Туре	Flush R	eturn (%)	) Fl	ush Colour					
			INSTALI										
Туре		meter 1m)	Depth of Installation (m)	Depth of nstallation (m)		Botton Response (m	se Zone Installation						
SPG/GW	1 5	50	4.00	-	1.00	4.00	)	09/10/2019					
					L DETA	ILS							
To (m			Bottom (m)		Material		Back	cfill Date					
0.00 0.20 1.00 4.00	) )		0.20 1.00 4.00 5.00	Benton Pea Sł	ete/ Flush C nite Pellets hingle nite Pellets	Cover	09/	10/2019					
5.00	)		35.00		nt/ Bentonit	e Grout							
Issue No: (	00	Ch	ecked By:	AN	Approved	By: OS	Log	g Print Date & T	Time:	29/10/201	9 16:29		A Add





**Borehole No** 

**BH102** 

Project

## Torridon House Car Park, Westminster

Job No	Date Started	08/10/19	Ground Level (mOD)	Co-Ordinates	Final Depth
19/3312	Date Completed	09/10/19	32.58	E 525657.6 N 183230.1	35.00m
Client					

## City of Westminster

		PROGR	ESS						SPT DETAILS	5	
	Hole Pepth (m)	Casing Depth (m)	Water Depth (m)	Remark	KS	Туре	Depth (m)	N Value	Blow Count / 75mm	Casing Depth (m)	Water Depth (m)
08/10/19 08/10/19 08/10/19 09/10/19	0.00 1.20 1.20 21.00 35.00	1.50 1.50 1.50	Dry Dry Dry Dry Dry			S S S S S S S S S S S	1.50 3.50 6.00 9.00 12.00 15.00 18.00 21.00 24.00 27.00 30.00 33.00	N8 N16 N17 N22 N23 N24 N28 N32 N35 N43 N47 N49	1, 2 / 2, 2, 2, 2 2, 3 / 3, 4, 4, 5 3, 3 / 4, 4, 5, 4 3, 4 / 5, 5, 6, 6 3, 4 / 5, 6, 6, 6 4, 4 / 5, 6, 6, 7 4, 5 / 6, 7, 7, 8 4, 6 / 7, 7, 8, 10 4, 6 / 8, 8, 9, 10 5, 7 / 9, 10, 12, 12 5, 8 / 10, 11, 13, 13 6, 8 / 11, 12, 12, 14	$\begin{array}{c} 1.50\\$	Dry Dry Dry Dry Dry Dry Dry Dry Dry Dry
U - 100mm Diamet UT - 100mm Diamet U38 - 38mm Diamet D - Disturbed Sam C - Core Sample, V INSTALLATION DET SPIE - Standspie P SPGW - Groundwater SPGGW - Gas/Groundwater SPGGW - Gas/Groundwater SPGGW - Gas/Groundwater SPGSW - Gas/Groundwater SPGSW - Gas/Groundwater SPGSW - Gas/Groundwater SPGSW - Gas/Groundwater SPGSW - Gas/Groundwater Note: All depths are in	I Sample (Tub, Vi eter Undisturbed S ter Undisturbed S ter Undisturbed S ter Undisturbed S We Water Sample, T <b>XILS</b> Vice Piczometer er T, V-Shear Vane, in metres, all diam	isample disturbed Sample ample ole, LB- Large Bulk S R-Root Sample HOLE ipe IP tandpipe CP DS DC PP-Pocket Penetroms eters in millimetres,	Cable Percussion, RG Dynamic Sampling, Diamond Coring, Cl eter, MP-Mackintosh water strike rise time i	ial Pit TT - Trial Trench C-Rotary Coring, R/S-Rota DS/R-Dynamic Sampling / Wrc-Cable Percussion Rota Probe, VOC-Volatile Orge n minutes. For details of al	/Rotary ry follow on anic Compounds bbreviations see	-					
Issue No: 00	Checke	ed By: AN	Approve	ed By: OS	Log Pri	nt Date	& Time:	29/10/2	019 16:29	- 1	



**Borehole No** 

Job No	/2217		te Star		08/10/19		· /	Co-Ordinat			Fin	al Depth	
	/3312	Da	ate Com	pleted	09/10/19	32.5	58		57.6 N 18	3230.1		35.00m	
Client Ci	ity of V	Wes	stminst	ter				Method/ Plant Used	Cable Per	rcussior	n She	et 1 of 4	
PRO	GRES	S			ST	<b>TRATA</b>			SAMPLI	ES & T	TESTS		
Date					a Description	L	Depth (m)	Type No	Test Result	Field Records	9		
08/10/19		Dry	32.46		0.12	Asphalt. \(MADE GROUN	JD)	/	0.20	D1			- 1
					(0.58)	Brown clayey san	ndy GRAVEL v	with medium	0.50 0.50	ES2 D3		VOC 0.3ppm	
			31.88		0.70	concrete cobble of angular to subrou	unded flint, con	crete and	0.50-1.00	B4		VOC 4.9ppm	
				<u>,                                     </u>		brick fragments. (MADE GROUN		coarse.	0.70	ES5			
08/10/19 08/10/19		Dry Dry		×> ×>	_	0.50 becoming low brick and con	g clayey and ver	y sandy with	1.20	D6			
00,10,19	-	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		×-, ×-,	-	Firm, orangish bi	rown slightly sa	undy slightly	1.50 1.50-1.95	D7	N8	1, 2 / 2, 2, 2, 2	Pa
				×	-	micaceous silty C of orangish brow	CLAY with free n silt (<40mm)	uent pockets	1.00 1.00				0
					-	dark grey flecks a (THAMES GRO	and rare rootlet	s. –	2.20	D8			P
				<u> </u>	-	LONDON CLAY 1.50 becoming	<i>I</i> FORMATION	N)			2011	020/ D	0
					-	bluish grey with	rare pockets of	orange silty	2.50-2.95	UT9	20 blows	93% Recovery	P
					-	fine sand (<10mi selenite crystals (		hal pockets of	3.00	D10			o
				×	-	3.00 with occa	sional rootlets	-	- 5.00	DIU			Ď
					_			-	3.50		N16	2, 3 / 3, 4, 4, 5	0
					-	3.50 becoming	g occasionally n	nottled bluish	3.50-3.95	D11	1110	2, 5, 5, 1, 1, 5	Ď
				×·—,	_	grey with pockets	s of orangish bı sand (>15mm)	own and					0
				× · · · ·	_			-	4.20	D12			
				×	-			-	4.50-4.95	UT13	35 blows	89% Recovery	
					-			-					
				×	-			-	5.00	D14			
				×> ×>	-	5.00 becoming rare rootlets	g mottled bluish	n grey with					
					(9.30)			-	5.50	D15			
				× ·×>	-	5.50 - 6.00 bec very closely fissu	coming extreme red. Fissures a	ely closely to re					
				× - ×		subhorizontal, su unpolished with	bvertical, plana	ar, smooth,	6.00 6.00-6.45	D16	N17	3, 3 / 4, 4, 5, 4	K
				×	-	6.00 with rare sand (<4mm) and	pockets of orar	ige silty fine		210			
				×	-	sanu (~4mm) and	i ino pyrite no						
				× · × · · · · · · · · · · · · · · · · ·	-			-		DIE			K
					-	7.00 becoming	orangish brow	'n with	7.00	D17			
				× ×→ ×	-	occasional pocke (<12mm)			7.50-7.95	LTT10	15 hl	840/ Dag	
				× × -	-	(~1211111)		-	1.30-1.93	UT18	45 blows	84% Recovery	Ŕ
								-	8.00	D19			
				× × ×	-	8.00 becoming							
				× × 1		closely fissured. subvertical, plana			8.50	D20			
				× ×	_	orange discoloura 8.50 with occa	ation	E E					
				×	-			-	9.00		N22	3, 4 / 5, 5, 6, 6	K
					-	9.00 with rare	bioturbation	-	9.00-9.45	D21			
				× × ×	-			-					
				× · · · · · · · · · · · · · · · · · · ·	-			-					K
			22.58	^ × +	10.00				10.00	D22			
						Stiff, greyish bro micaceous CLAY	wn slightly san With occasion	dy slightly al white					
					-	flecks, bioturbati (THAMES GRO	on and rare dar	k grev flecks.	10.50-10.95	UT23	50 blows	89% Recovery	R
					-	FORMATION -	B)	·					
				L	-				11.00	D24			K

C.



**Borehole No** 

Job No 19	)/3312		ate Star		08/10/19 09/10/19		Co-Ordinat		2220 1	Fin	al Depth 35.00m	
Client	/3312			ipieteu	09/10/19	32.58	E 5256 Method/	6657.6 N 183230.1			eet	
	ity of	We	stmins	ter			Plant Used				2 of 4	
PRC	OGRE				ST	RATA		SAMPLES & T		ESTS		
Date	Casing	Water	Level (mOD)	Legend	Depth (Thickness)	Strata Description	Depth (m)	Type No	Test Result	Field Records		
					-	11.50 becoming extremely cle	osely to very	11.50	D25			X///X///
					- 	11.50 becoming extremely cle closely fissured with rare pocket silt (<15mm). Fissures are subh subvertical, planar, smooth, unp 12.00 - 13.00 with frequent v	orizontal, olished white flecks	12.00	D26	N23	3, 4 / 5, 6, 6, 6	X///X///
					-			13.00	D27			
					-			13.50-13.95	UT28	60 blows	82% Recovery	11121
					- - - - - - - -			14.00	D29			
					- - - - - - - - - -	15.00 with rare bioturbation		15.00 15.00-15.45	D30	N24	4, 4 / 5, 6, 6, 7	
					- - - -	16.00 with rare pockets of lig (<4mm) and occasional dark gre	ht brown silt	- 16.00	D31			2/////
					-	(<4mm) and occasional dark gre	ey flecks	16.50-16.95	UT32	60 blows	100% Recovery	
					-	17.00 with a parting of dark g fine sand, occasional pockets of	rey and brown	17.00	D33			171/17
					-	brown silty fine sand (<40mm) of white silt (<10mm) 17.50 with frequent bioturba	and rare lenses	17.50	D34			
					- - - - - - - -	18.45 with rare white flecks	and	- 18.00 - 18.00-18.45	D35	N28	4, 5 / 6, 7, 7, 8	
					-	bioturbation		- 19.00	D36			112211
					-			19.50-19.95	UT37	60 blows	89% Recovery	
					-			20.00	D38			
					-			20.50	D39			
08/10/19 09/10/19		Dry Dry			- - - - -			21.00	D40	N32	4, 6 / 7, 7, 8, 10	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
					-			- 22.00	D41			



**Borehole No** 

Job No 19	9/3312	1	ite Start ite Com		08/10/19 09/10/19		Co-Ordinat E 5256	tes 557.6 N 18	3230.1		al Depth 35.00m	
Client C	ity of V	Ves	tminst	er			Method/ Plant Used	Cable Percussion SI			eet 3 of 4	
PRO	OGRES	S			ST	TRATA	SAMPLE	ES & T	ESTS		``	
Date	Casing	w ater	Level (mOD)	Legend	Depth (Thickness)	Strata Description	Depth (m)	Type No	Test Result	Field Records		
					(25.00)	22.00 with occasional bioturd dark grey flecks	22.50-22.95	UT42	80 blows	50% Recovery	TIXXIII	
					-		-	23.00	D43			
					-	23.50 with rare lenses of whit	te silt (<5mm)	23.50	D44	225	4 ( /0 0 0 10	
					- - - - - - -	24.00 - 24.45 with rare partin silty fine sand and pyrite nodule	gs of dark grey s (<8mm)	- 24.00 - 24.00-24.45	D45	N35	4, 6 / 8, 8, 9, 10	
						25.00 with rare off-white and shell fragments (<3mm)	light brown	25.00	D46			
						- · · /		25.50-25.95	UT47 D48	50 blows	100% Recovery	
						<ul><li>26.00 with rare pockets of data brown silty fine sand (&lt;6mm)</li><li>26.50 locally with frequent le</li></ul>		26.50	D48 D49			
						silt (<6mm) and white flecks	nses of write	27.00	D50	N43	5, 7 / 9, 10, 12, 12	XIIAXIIA
					-	28.00 with frequent bioturbat	ion	28.00	D51			
								28.50-28.95	UT52	75 blows	87% Recovery	X
					-			29.00	D53 D54			
						29.50 with occasional dark gr 1No pyrite nodule (<14mm)	ey flecks and	30.00	D55	N47	5, 8 / 10, 11, 13, 13	XIIIX
						31.00 - 32.00 with frequent p	ockets of	31.00	D56			
						brown and dark grey silty fine sa	and (<55mm)	31.50-31.95	UT57	75 blows	100% Recovery	X
						32.00 with occasional lenses of light brown and white silt		32.00	D58			
						32.50 becoming very closely fissured. Fissures are 30° vertical, planar, smooth, unpolished		32.50	D59	N49	6, 8 / 11, 12, 12, 14	



**Borehole No** 

Job No 19/33		Date Start Date Com		08/10/19 09/10/19		<b>Co-Ordinat</b> E 5256	es 557.6 N 18	3230.1		al Depth 35.00m	
Client City							Shee	Sheet 4 of 4			
PROGE	ESS			ST	<b>TRATA</b>		SAMPLI	ES & T	ESTS		lt/
	$\begin{array}{c c} \begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c} \\ \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \\ \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \\ \\ \end{array} \\ \begin{array}{c} \\ \\ \\ \end{array} \\ \begin{array}{c} \\ \\ \\ \end{array} \\ \begin{array}{c} \\ \\ \\ \\ \end{array} \\ \end{array} \\ \begin{array}{c} \\ \\ \\ \\ \\ \\ \\ \\ \end{array} \\ \begin{array}{c} \\ \\ \\ \\ \end{array} \\ \begin{array}{c} \\ \\ \end{array} \\ \begin{array}{c} \\ \\ \end{array} \\ \begin{array}{c} \\ \\ \end{array} \\ \begin{array}{c} \\ \\ \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \\ \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \\ \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \\ \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \\ \end{array} \\ $		I	Depth (m)	Type No	Test Result	Field Records	Instrument/			
9/10/19 1.50	Dry	-2.42		35.00	33.00 with rare bioturbation 34.00 with 1No pyrite nodule End of Borehole	e (<70mm)	33.00-33.45 34.00 34.50-34.95 35.00	D60 D61 UT62 D63	80 blows	62% Recovery	



# SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

Southern Testing LaboratoriesTest Date:10/08/2018Unit 11Report Date:10/08/2018Charlwoods RoadFile Name:AR1607.sptEast GrinsteadTest Operator:N P BURROWS	
Southern Testing LaboratoriesTest Date:10/08/2018Unit 11Report Date:10/08/2018Charlwoods RoadFile Name:AR1607.spt	*****
Southern Testing LaboratoriesTest Date:10/08/2018Unit 11Report Date:10/08/2018	
Neil Burrows SPT Hammer Ref: AR1607	

#### Instrumented Rod Data

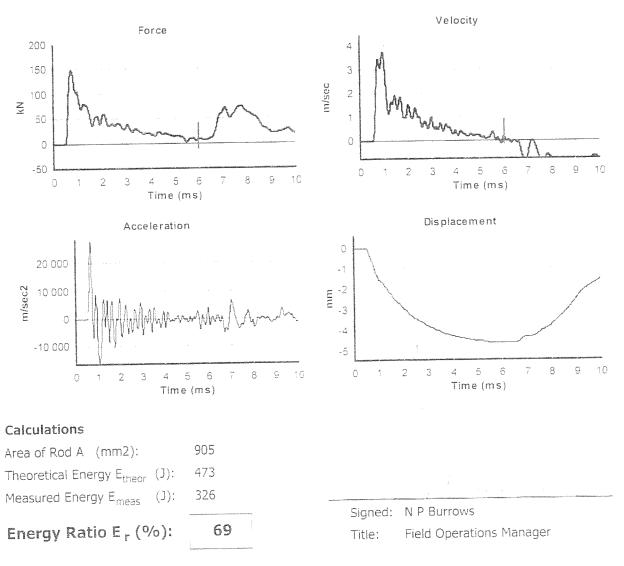
Diameter d <sub>r</sub> (mm):	54
Wall Thickness t <sub>r</sub> (mm):	6.0
Assumed Modulus $E_a$ (GPa):	200
Accelerometer No.1:	6458
Accelerometer No.2:	9607

#### SPT Hammer Information

Hammer Mass m (kg):	63.5
Falling Height h (mm):	760
SPT String Length L (m):	14.5

#### Comments / Location

CHARLWOODS



The recommended calibration interval is 12 months

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9. DYNAMIC SAMPLING BOREHOLE LOGS



**Borehole No** 

Client City of Version PROCRESS         Date       So So C C       So So So So C       So So So So So So So So So So So       So So So So So So         10/10/19       Jory       Dry         10/10/19       Jory       Jory         10/10/19       Jory       Jory         10/10/19       Jory       Jory         10/10/19       Jory       Jory         10/10/19       Jory       Jory	Level (mOD) Legend 32.34 32.34 31.99	Depth (Thickness) 0.10 4 0.20 I t a (0.35) 6 0.55 I C c c c c f f f	32.54 RATA Strata Description Asphalt. (MADE GROUND) Light brown slightly clayey g to coarse SAND. Gravel corr angular to rounded fine to m brick and concrete fragments (MADE GROUND) Dark brown slightly clayey s GRAVEL with medium bricl concrete cobble content. Gra comprises angular to roundec coarse flint, brick and concrete fragments. Sand is fine to coarse (MADE GROUND)	Method/ Plant Used pravelly fine aprises edium flint, s. andy k and vel d fine to	5645.4         N 18           Dynamic S         SAMPLI           Depth         (m)           0.30         0.30           0.70         0.70	Sampling		6.00m ret 1 of 2 Field Records VOC 0.3ppm	$P \rightarrow \gamma$ Instrument/
Date         50 UIII UIIII UIIIIIIIIIIIIIIIIIIIIIIIII	(mOD) Legend	Depth (Thickness) 0.10 4 0.20 I t a (0.35) 6 0.55 I C c c c c f f f	Strata Description Asphalt. (MADE GROUND) Light brown slightly clayey g to coarse SAND. Gravel corr angular to rounded fine to ma brick and concrete fragments (MADE GROUND) Dark brown slightly clayey s GRAVEL with medium bricl concrete cobble content. Gra comprises angular to rounded coarse flint, brick and concre fragments. Sand is fine to coo	gravelly fine prises edium flint, s. andy k and vel d fine to	Depth (m)	Type No ES1	Test	Records	<u>⊿∽v</u> Instrument/
10/10/19 Dry	(mOD) Legend	(Thickness) 0.10 4 0.20 I 1 0.35) 6 0.55 6 0 0 0 0 0 0 0 0 0 0 0 0 0	Asphalt. (MADE GROUND) Light brown slightly clayey g to coarse SAND. Gravel com- angular to rounded fine to mo- brick and concrete fragments (MADE GROUND) Dark brown slightly clayey s GRAVEL with medium bricl concrete cobble content. Gra- comprises angular to roundec coarse flint, brick and concre- fragments. Sand is fine to coo	gravelly fine prises edium flint, s. andy k and vel d fine to	(m)	No ES1		Records	a v Instrume
10/10/19 Dry		0.20 0.20 1 t a b b 0.55 C c c c c f f f f f f f f f f f f f	(MADE GROUND) Light brown slightly clayey g to coarse SAND. Gravel com angular to rounded fine to me brick and concrete fragments (MADE GROUND) Dark brown slightly clayey s GRAVEL with medium bricl concrete cobble content. Gra comprises angular to roundec coarse flint, brick and concre fragments. Sand is fine to coc	nprises edium flint, s. andy k and vel d fine to	- 0.30			VOC 0.3ppm	A V R
		1 1 1 1 1 2 3 2 v v 2 v 2 v 2 v 2 v 2 v 2 v 2 v 2 v 2 v 2 v 2 v 2 v 2 v 2 v 2 v 4 2 v 4 2 v 4 2 2 v 4 2 v 4 2 v 4 2 v 4 2 v 4 2 v 4 2 v 4 2 v 4 2 v 4 2 v 4 2 v 4 2 v 4 2 v 4 2 v 4 2 v 4 v v v v v v v v v v v v v	Firm, brown CLAY. (THAMES GROUP: WEAT LONDON CLAY FORMAT 1.20 becoming orangish bi mottled light bluish grey and frequent pockets of selenite c (<45mm), rare pockets of oran sand (<35mm) and rare rootl 1.78 becoming occasional light bluish grey 2.00 with occasional pock selenite crystals (<10mm) an grey flecks 2.29 becoming mottled blu with frequent rootlets 2.55 with a pocket of oran (<50mm) and 1No claystone 3.60 with a pocket of oran sand and selenite crystals (<8 3.70 becoming rare mottle grey	arse. HERED ION) rown silty with crystals ange fine ets ly mottled ets of d rare dark uish grey ge silt cobble ge silty fine 8mm)	- 0.70 - 1.30 1.50-1.60 - 1.80 - 2.00 2.00-2.45 - 2.30 - 2.60-2.70 - 2.80 - 3.00 - 3.00-3.45 - 3.30 - 3.60-3.70 - 3.80 - 4.00	ES3 B4 D5 D6 D7 D8 D9	PP67kPa PP188kPa N10 PP92kPa N9 PP92kPa PP92kPa PP92kPa N9	VOC 1ppm 1, 1/2, 2, 3, 3 1, 1/2, 2, 2, 3, 3	
<b>D</b>	$\begin{array}{c c c c c c c c c c c c c c c c c c c $						slotted betv 0m, pea sh	ween 0.50m and 3.50 ingle between 3.50m	and

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**Borehole No** 

Project			House		Parl, V	Vestminster							
Job No	orriad		nouse		10/10/19	Ground Level (n	nOD)	Co-Ordina	ates		Fir	nal Depth	
	)/3312				10/10/19	32.54	- ,		5645.4 N 18	83245.7		6.00m	
Client Ci	ity of V	Ves	stminste	er		1		Method/ Plant Used			She		
PRC	OGRES	S			ST	RATA			SAMPL	ES & 1	TESTS		nt/
Date	Casing	Water	Level (mOD)	Legend	Depth (Thickness)	Strata Des	cription	L	Depth (m)	Type No	Test Result	Field Records	Instrument/ Backfill
10/10/19 10/10/19 From 5.00	2.00 I	Dry	26.54 PLING R Diameter (1 57			4.00 becoming ora 4.55 becoming ver micaceous with rare 1 4.70 with occasion staining 4.92 with 1No roo 5.00 becoming slig occasional pockets o (<12mm) 5.65 - 5.90 with or End of Borehole GENERAL R	ry stiff s light ora nal light tlet ghty san f orange range sta	slightly ange staining orange edy with e fine sand aining	(III) 4.00-4.45 4.30 4.60-4.70 4.80 5.00 5.00-5.45 5.40 5.60-5.70 5.80	NO       D10       D11       D12       D13	PP67kPa PP92kPa N14 PP71kPa PP113kPa	2, 2 / 3, 3, 4, 4	Einstein State Sta
Issue No:	:00 Di	rilled	By: DN	Logge	ed By:SL	Checked By: AN	Approv	ved By: OS	Log Print Date	e & Time	: 29/10/201	19 16:10	AGS

PT 5

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**Borehole No** 

Project T	orrid	lon ]	Level (mOD)         Legend (mod)         Depth (mod)         Tope (mod)         Test (Result         Field Records           7         22.13         (0.20)         Brown slightly clayey sandy GRAVEL (0.20)         0.20         ES1 (0.20)         VOC 0.1ppm           22.11         (0.20)         Brown slightly clayey sandy GRAVEL (0.20)         0.20         ES1 (0.20)         VOC 0.1ppm           22.11         (0.20)         Brown slightly clayey sandy GRAVEL (0.20)         0.20         ES1 (0.20)         VOC 0.1ppm           22.11         (0.20)         Greet comprime sangular to rounded fine (mapments. Sand is fine to coarse. (MADE GROUND)         0.60         ES3 (0.60)         VOC 1ppm           31.21         (0.75)         Fing hown CLAY. (MADE GROUND)         0.60         ES3 (0.20)         VOC 1ppm           30.02         (0.20)         Soft, hown slightly sandy gravelly (0.26)         1.80         D5         PP67RPa (PP15RPa (NT)           30.02         (0.20)         Soft, hown slightly sandy gravelly (CANC Gravel comprises angular to concret and asphalt fragments. Sand is first to coarse. (MADE GROUND)         1.80         D5         PP67RPa (NT)           1.101/DON CLAY. FORMATIONS         1.80         D5         PP67RPa (SOTONCLAY CORMATIONS)         1.1/1 (1.1.2.2.2.2)           3.00         PP15RPa (Gravel comprice tangular to coarse finit,										
Job No							nOD)	Co-Ordina	ates		Fin	al Depth	
19	/3312	2  Da	ate Comp	oleted	10/10/19	32.41		E 525	5644.5 N 18	83236.3	;	6.0	0m
Client Ci	ity of	Wes	stminsto	er		-			Dynamic	Samplir	ng She	eet	of 2
PRO	GRE	SS			ST	RATA			SAMPL	ES & T	TESTS		nt/
Date	Casing	Water		Legend		Strata Des	scription	l					
09/10/19		Dry	32.11		- (0.20) 0.30	(MADE GROUND) Brown slightly claye with high concrete c	ey sandy obble co	ontent.				VOC 0.1p	
09/10/19		We	32.01		0.45	to medium flint, bric fragments. Sand is f (MADE GROUND) CONCRETE. Asphalt. (MADE GROUND) Firm, brown CLAY.	k and co	oncrete				VOC lpp	m
09/10/19 10/10/19		Dry			(0.26)	CLAY. Gravel comp subangular fine to co concrete and asphalt fine to coarse. (MADE GROUND) Firm, orangish brow	orises an oarse flin fragmen n occasi	gular to nt, brick, nts. Sand is / ionally	1.80		PP67kPa		
					-	frequent pockets of a (<40mm), rare pock sand (<6mm) and oc (THAMES GROUP LONDON CLAY F4 1.50 becoming sli 1.60 with rare dar 2.18 with occasio and orange silty fine	selenite ets of or ccasiona : WEAT ORMAT ghtly mi k grey f nal pock sand (<	crystals ange fine l rootlets. 'HERED (TION) icaceous lecks cets of yellow (25mm),	1.90 2.00 2.00-2.45		N7	1, 1 / 1, 2, 2	
					-	and no rootlets 2.50 becoming me grey	ottled lig	ght bluish	-	D7	PP67kPa		
					- 	light bluish grey wit	h rare po	ockets of	- 3.00-3.45	D8		1, 1 / 2, 2, 2	
					-	3.40 - 3.70 becom		,	-	D9	rroukra		
					(4.54)				3.80		PP75kPa		
									4.00		N11	1, 2 / 2, 3, 3	3,3
DYN           From           1.20           2.00           3.00           4.00	To           2.00           3.00           4.00           5.00	) ) )	Diameter (1 87	р	ecovery (%	<ul> <li>An inspection</li> <li>Water seepag</li> <li>Ø110mm cas</li> <li>Ø50mm gas a</li> <li>depth.</li> <li>Borehole bac</li> </ul>	n pit was te encoun ing used and grour kfilled w pnite pello round lev	hand excavated ttered at 0.45m of from ground lev ndwater monitor ith bentonite pe ets between 0.50	depth within the vel to 2.00m dept	inspection th. d at 4.00m 00m and 4.	pit. , slotted bet 00m, pea sh	ween 0.50m a ingle between	4.00m and
Issue No:	00 I	Drilled	l By: dn	Logge	d By:sL	Checked By: AN		ved By: OS	Log Print Date	e & Time:	29/10/201	9 16:10	AGS

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**Borehole No** 

Į	Project T		on 1	House	Car	Park, V	Vestminster						
ŀ	Job No			ate Start		09/10/19	Ground Level (mOD	) Co-Ordin	ates		Fin	al Depth	
	19	9/3312	Da	ate Comj	pleted	10/10/19	32.41	E 52	5644.5 N 18	83236.3		6.00m	
·	Client C	ity of V	Wes	stminst	er		1	Method/ Plant Used	d Dynamic	Samplin	g She	2 of 2	
ĺ	PRO	OGRES	S			ST	RATA	1	SAMPL	ES & T	ESTS		nt/
-	Date		Water	Level (mOD)	Legend	Depth (Thickness)	Strata Descripti	on	Depth (m)	Type No	Test Result	Field Records	Instrument/ Backfill
Ì						·	4.00 becoming orangish rare pockets of selenite cr	n brown with ystals (<5mm)	4.00-4.45	D10			
									4.30		PP38kPa		
							4.50 becoming slightly 4.54 with 1No pyrite no	sandy odule (<30mm)	4.60 4.60-4.70	D11	PP63kPa		
									- 5.00 - 5.00-5.45 -	D12	N15	1, 2 / 3, 4, 4, 4	
' LIBRARY - 2019.GLB    Date: 29 October 2019	10/10/19	2.00 1	Dry	26.41		6.00	End of Borehole		5.90-6.00	D13			
Report ID: CONCEPT-DYNAMIC SAMPLER    Project: 193312 - TORRIDON HOUSE, GPJ    Library: CONCEPT LIBRARY - 2019, GLB    Date: 29 October 2019						-							
Project: 19						-   -			-				
ן ד רבי								ADIZO					
CONCEPT-DYNAMIC SAM	DYN From 5.00	To 6.00		Diameter ( 57		/ERY Recovery (% 10	GENERAL REM	ARKS					
	Issue No	:00 D	rilled	l By: dn	Logg	ed By:SL	Checked By: AN Appr	roved By: os	Log Print Date	e & Time:	29/10/201	9 16:10	AGS

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**Borehole No** 

WS103
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Job No			te Start		08/10/19	Ground Level (mOD)	Co-Ordina	tes		inal Depth		
19/	/331	2  Da	te Com	pleted	09/10/19	32.47	E 5250	651.3 N 18	3219.8		6.00m	
Client Cit	ty of	Wes	tminst	er			Method/ Plant Used	Dynamic S	Samplin	ng Sho	eet 1 of 2	
PRO	GRF	ESS			ST	RATA	SAMPLES & TESTS					
Date	Casing	Water	Level (mOD)	Legend	Depth (Thickness)	Strata Descriptio	n	Depth (m)	Type No	Test Result	Field Records	
08/10/19	0	Dry	<u>32.37</u> <u>32.17</u> <u>32.12</u>		0.10 - (0.20) 0.30 0.35	Asphalt. (MADE GROUND) Brownish grey clayey sand Gravel comprises angular to fine to coarse flint, concreto	subrounded	- 0.25 0.25	ES1 B2		VOC 1ppm	<i>F</i> . <i>V</i> .
98/10/19		We			- (0.85)	fragments. Sand is fine to c (MADE GROUND) CONCRETE. Firm, brown locally grey Cl (MADE GROUND)	oarse.	- 0.50 - 0.50 -	ES3 B4		VOC 0ppm	
8/10/19 9/10/19		- Dry	31.27		- - - (0.22)	Soft, brown slightly gravell sandy slightly micaceous C	LAY with	-				
			31.05		- 1.42 - - -	2No plastic fragments. Gra angular to subrounded fine flint, brick and concrete fra (MADE GROUND) Firm to stiff, orangish brow occasionally mottled light b slightly micaceous silty CL occasional pockets of orang	vel comprises to coarse gments. n luish grey AY with	- - - - - 1.80-1.90	D5			
						sand (<10mm) and pockets crystals (<7mm). (THAMES GROUP: WEA LONDON CLAY FORMA 1.54 with a pocket of org (<60mm) 1.66 with a pocket of ora sand (<55mm) 1.80 becoming mottled b with frequent pockets of se (<25mm), rootlets and occa	of selenite THERED TION) anic matter nge silty fine luish grey lenite crystals	2.00 - 2.00-2.45 - - - -	D6	N8	1, 1 / 1, 2, 2, 3	
					-	grey flecks 1.95 with a pocket of yel orange silty fine sand (<50n 2.20 becoming slightly sa pockets of selenite crystals 2.52 with frequent pocket crystals (<9mm)	nm) andy with no	2.82-2.92 - 3.00 - 3.00-3.45	D7 D8	N14	2, 3 / 3, 3, 4, 4	
					- - - - (4.58)	2.52 - 2.58 locally with f pockets of orange silty fine 3.42 with rare rootlets 3.60 with 1No pyrite nod	sand (<6mm)	- - - - - - -	D9			
					-			4.00		N10	1, 2 / 2, 2, 3, 3	0
			PLING F			GENERAL REMA		o 1.20m denth r	prior to be	ring comme	encing	
From 1.20 2.00 3.00 4.00	To 2.0 3.0 4.0 5.0	0000	Diameter ( 87 87 77 67	(mm) R	100 80 95 100	<ol> <li>2. Ø110mm casing used</li> <li>3. Water seepage encoud</li> <li>4. Ø50mm gas and groudepth.</li> <li>5. Borehole backfilled volume 0.50m and bentonite pel</li> </ol>	<ol> <li>An inspection pit was hand excavated to 1.20m depth prior to boring commencing.</li> <li>Ø110mm casing used from ground level to 2.00m depth.</li> <li>Water seepage encountered at 0.90m depth within the inspection pit.</li> <li>Ø50mm gas and groundwater monitoring pipe installed at 4.00m, slotted between 4.00m and 0.50m</li> </ol>					

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**Borehole No** 

1	) 9/331		ate Start ate Com		08/10/19 09/10/19		Co-Ordinat		02210.0		nal Depth 6.00m	
Client					00/10/19	32.47	E 5250 Method/ Plant Used	551.3 N 18		Sh	eet 2 of 2	
	OGRI				ST	<b>TRATA</b>				TESTS		
Date	Casing	Water	Level (mOD)	Legend	Depth (Thickness)	Strata Description	l	Depth	Туре	Test	Field Records	Instrument/
09/10/19	2.00	Dry	26.47			4.02 with rare pockets of fine sand (<15mm) 4.42 becoming orangish b 4.46 - 4.80 with orange st 4.80 - 5.00 becoming extr closely fissured with orange discoloration. Fissures are st subvertical, smooth, unpolis	orange silty rown aining eemely Jbhorizontal, hed	(m) 4.00-4.45 4.60-4.70 5.00 5.00-5.45 5.50-5.60 - - - - - - - - - - - - -	No           D10           D11           D12           D13	Result N17	3, 3 / 3, 4, 5, 5	su

Unit 8, Warple Mews, Warple Way W3 0RF Telephone: 020 8811 2880\_Fax: 020 8811 2881 E-mail: si@conceptconsultants.co.uk

C



**Trial Pit No** 

**WS104** 

Projec ]		on H	ouse (	Car Park, V	Vestminster							
Job N 1	o 19/3312		e Starte e Comp	d 09/10/19 leted 09/10/19	Ground Level (n 32.39	nOD) Co	-Ordinat E 5256		183212.6	Final Depth 0.40m		
Client (	t C <b>ity of</b> '	West	minste	r	1	Me Pla	thod/ nt Used	Hand	Excavated	Sheet 1 of 1		
				STI	RATA		SAM	PLES &	TESTS			
Water	Level (mOD)	Legend	Depth (Thickness)	St	ata Description		Depth	n Type No	e Test Result	Field Records		
	32.27		- 0.12		D) ayey sandy GRAVEL w	ith medium	-					
	31.99		_ (0.28) 	concrete cobble co rounded fine to co clinker fragments (MADE GROUN End of Trial Pit	ayey sandy GRAVEL w ontent. Gravel comprise sarse flint, brick, concre . Sand is fine to coarse. D)	es angular to te and	- - 0.40 -			Borehole aborted at 0.40m depth (see Remarks)		
			-				-					
			-				-					
			-				-					
			-				-					
			-				-					
			-				-					
			-				-					
			-				-					
			-				-					
			-				-					
	NERAL ]			at 0.40m depth due t	to concrete obstruction.	Location mov	ed to positio	on WS104A				
ssue N	lo: 00 D	rilled B	y: DN	Logged By: IK	Checked By: AN	Approved B	y: OS I	Log Print D	Pate & Time:	29/10/2019 16:10		

C•JC Unit 8, Warple Mews, Warple Way W3 0RF Telephone: 020 8811 2880\_Fax: 020 8811 2881 E-mail: si@conceptconsultants.co.uk

Project

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T



**Borehole No** 

WS104A

Job No 19 Client	9/3312	1	te Starto te Comp		09/10/19 09/10/19	Ground Level (mOD) 32.39	Co-Ordina E 5250 Method/	<b>tes</b> 645.4 N 18	83213.6	Fin	al Depth 6.00m	
С	ity of V	Vest	tminst	er			Plant Used	Dynamic	Samplin		1 of 2	
PRC	OGRES				ST	RATA		SAMPL	ES & T	ESTS	-	ent/
Date	Casing	w ater	Level (mOD)	Legend	Depth (Thickness)	Strata Description	1	Depth (m)	Type No	Test Result	Field Records	9 Instrument/
9/10/19	D	Pry	32.27 32.08 32.04		$ \begin{array}{c} - & 0.12 \\ \hline & (0.19) \\ - & 0.31 \\ \hline & 0.35 \\ \hline & \end{array} $	Asphalt. (MADE GROUND) Brown clayey sandy GRAV concrete cobble content. Gra comprises angular to rounde coarse flint, brick and concr fragments. Sand is fine to cc	avel ed fine to ete	- 0.25 0.25	ES1 B2		VOC 0ppm	
		-	31.79		0.60	(MADE GROUND) CONCRETE. Firm, brown mottled dark gr sandy CLAY with low brick	rey gravelly cobble	- 0.70 - 0.70 -	ES3 B4		VOC 0ppm	
9/10/19	D	bry	31.17		× (0.62) ×-	content. Gravel is angular to fine to coarse brick fragmen fine to coarse. (MADE GROUND) Firm, brown CLAY.	subangular ts. Sand is	- 1.00 -		N7	1, 1 / 1, 2, 2, 2	
		-	31.05		1.34	(MADE GROUND) Firm, brown and dark grey s gravelly slightly sandy CLA rootlets. Gravel is angular to	Y with rare subangular	1.40	De	PP9kPa		
				× × · · · · · · · · · · · · · · · · · ·	⊁  \ ⊁   ↓	fine asphalt fragments. Sand medium. (MADE GROUND) Firm, orangish brown occas	ionally	1.60-1.70 - - 1.80	D5	PP38kPa		
			- - - -	× × ·	≁   ヌ_	mottled light bluish grey silt with occasional pockets of b orangish brown silty fine sau and rare rootlets.	brown and	- 2.00 - 2.00-2.45	D6	N12	1, 2 / 2, 3, 3, 4	
						(THAMES GROUP: WEAT LONDON CLAY FORMAT 1.74 with dark grey flecks 1.76 with a pocket of oran grey silty fine sand (<40mm 2.04 becoming mottled lig grey with occasional rootlets 2.26 with rare pockets of	FION) s nge and light ) ght bluish s	2.20 - 2.50 - 2.56-2.66	D7	PP71kPa PP54kPa		
						2.20 with rare pockets of crystals (<20mm) and occas grey flecks 2.30 with rare pockets of brown fine sand (<8mm) an rootlets 3.00 with occasional pock selenite crystals (<10mm)	ional dark orangish d rare	- - - 3.00 - 3.00-3.45	D8	N12	1, 2 / 2, 3, 3, 4	
					*			- 3.30 		PP50kPa		
					Ţ```	3.62 - 3.74 with a band of strong light grey fine to coar size claystone fragments		- - 3.80 - 3.80-3.90 -	D9	PP46kPa		
					<u>}</u>	+		4.00		N12	1, 2 / 2, 3, 3, 4	0
DYN From 1.20 2.00 3.00 4.00	To           2.00           3.00           4.00           5.00		2LING R iameter ( 87 87 77 67		<b>TERY</b> Recovery (% 70 65 100 90	<ul> <li>GENERAL REMA</li> <li>1. An inspection pit was</li> <li>2. Ø110mm casing used</li> <li>3. Ø50mm gas and groun depth.</li> <li>4. Borehole backfilled w</li> <li>1.00m and bentonite pell from 0.20m to ground lev</li> <li>5. SPT Hammer: Geol</li> </ul>	hand excavated t from ground leve ndwater monitori ith bentonite pell ets between 0.500	el to 2.00m dept ng pipe installed lets between 6.0	h. 1 at 4.00m, 0m and 4.0	slotted bet 00m, pea sh	ween 4.00m and 1.00	and
	:00 Dr											

Unit 8, Warple Mews, Warple Way W3 0RF Telephone: 020 8811 2880\_Fax: 020 8811 2881 E-mail: si@conceptconsultants.co.uk

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Project



Borehole No

WS104A

Job No 19/3312	Date Started Date Completed	09/10/19 09/10/19	Ground Level (mOD) 32.39	E 525	ntes 645.4 N 18	83213.6	Final 1	Depth 6.00m	
Client City of W	Vestminster			Method/ Plant Used	Dynamic	Sampling	Sheet	2 of 2	
PROGRESS	8	ST	RATA		SAMPL	ES & TF	ESTS		ent/
Date C asii C asii C asii	Level (mOD) Legend	d Depth (Thickness)	Strata Descriptio	n	Depth (m) 4.00-4.45	Type No D10	Test Result	Field Records	Instrument/
D9/10/19 2.00 D DYNAUIC S/ From To 5.00 6.00			5.10 becoming orangish i rootlets 5.34 with orange staining End of Borehole	3	5.00-5.45 5.30 5.50-5.60 5.60	D11	PP71kPa PP88kPa		

# **SPT Hammer Energy Test Report**

GEO1

27/09/2018

27/09/2018

**N P BURROWS** 

GEO1.spt

in accordance with BSEN ISO 22476-3:2005

Neil Burrows Southern Testing Laboratories Unit 11 Charlwoods Road East Grinstead RH19 2HU

## **Instrumented Rod Data**

Diameter d <sub>r</sub> (mm):	54
Wall Thickness t <sub>r</sub> (mm):	6.0
Assumed Modulus E <sub>a</sub> (GPa):	200
Accelerometer No.1:	6458
Accelerometer No.2:	9607

#### **SPT Hammer Information**

SPT Hammer Ref:

Test Date:

File Name:

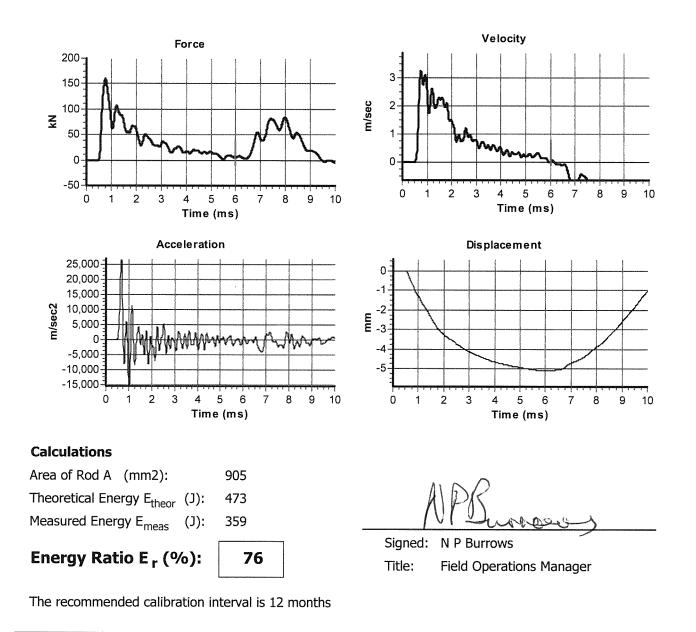
Report Date:

Test Operator:

Hammer Mass m (kg): 63.5 Falling Height h (mm): 760 SPT String Length L (m): 14.5

## **Comments / Location**

CHARLWOODS

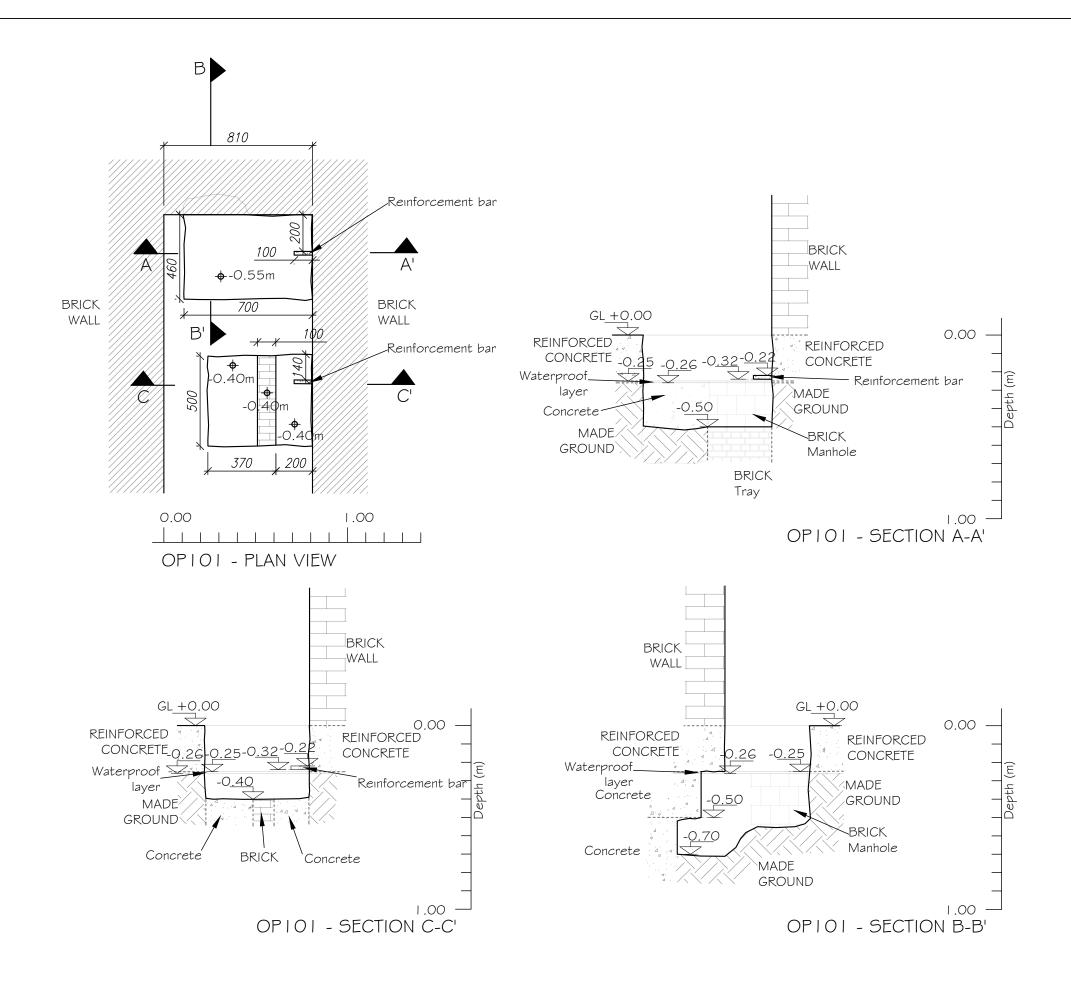


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## **10. OBSERVATION PIT LOGS & SKETCHES**

Unit 8, Warple Me W3 0RF Telephone: 020 8 E-mail: si@conce <b>Project</b>	8811 2880 eptconsulta	_Fax: 020				R	UR AL		Trial Pit No OP101	
Torric Job No 19/3312	Date	e Started		Vestminster Ground Level (n 32.46	nOD)	Co-Ordin E 52		.8 N 1	<b>Final Depth</b> 0.55m	
Client City of	Westi	ninster	•			Method/ Plant Use	d I	Hand E	Sheet 1 of 1	
			STI	RATA		SAN	1PLI	ES & T	TESTS	Field
Level (mOD)	Legend	Depth (Thickness)		ata Description		Dep	oth	Type No	Test Result	Records
32.20 31.91	REMA vas cloudy as dry and imensions va	stable. 0.57m x 0 vith soil aris	Reinforced CONC 0.22 with Ø7mi 0.25 with blue of Dark brown slight medium brick cob angular fine to coa fragments. Sand is (MADE GROUNI End of Trial Pit Som x 0.55m deep. sings and made good	n rebar lamp proof material ly clayey sandy GRAVI ble content. Gravel con rse flint, brick and cons s fine to coarse. D)	EL with aprises crete					
Issue No: 00	Drilled B	y: DN	Logged By: IK	Checked By: AN	Approve	ed By: OS	Log I	Print Dat	e & Time:	2/11/2019 16:07

Report ID: CONCEPT-TRIAL PIT || Project: 193312 - TORRIDON HOUSE.GPJ || Library: CONCEPT LIBRARY - 2019.GLB || Date: 12 November 2019



1. This drawing should not be scaled, only use annotated dimensions.

No	Revision	Drawn	Checked	Passed	Date
_					
C	ONCEPT SITE INVEST	'IG	AT	10	ns
lun	t 8 Warnle Mows				

1

Client:	ent: City of Westminster									
Project: Torridon House Car Park Westminster										
Title:	e: OP101 Plan & Section									
Dwg. No	: 193312/02									
Status:	Issue									
Scale:	1:20 @ A3									
Drawn MJ	Checked Passed Date AD OS November '19									

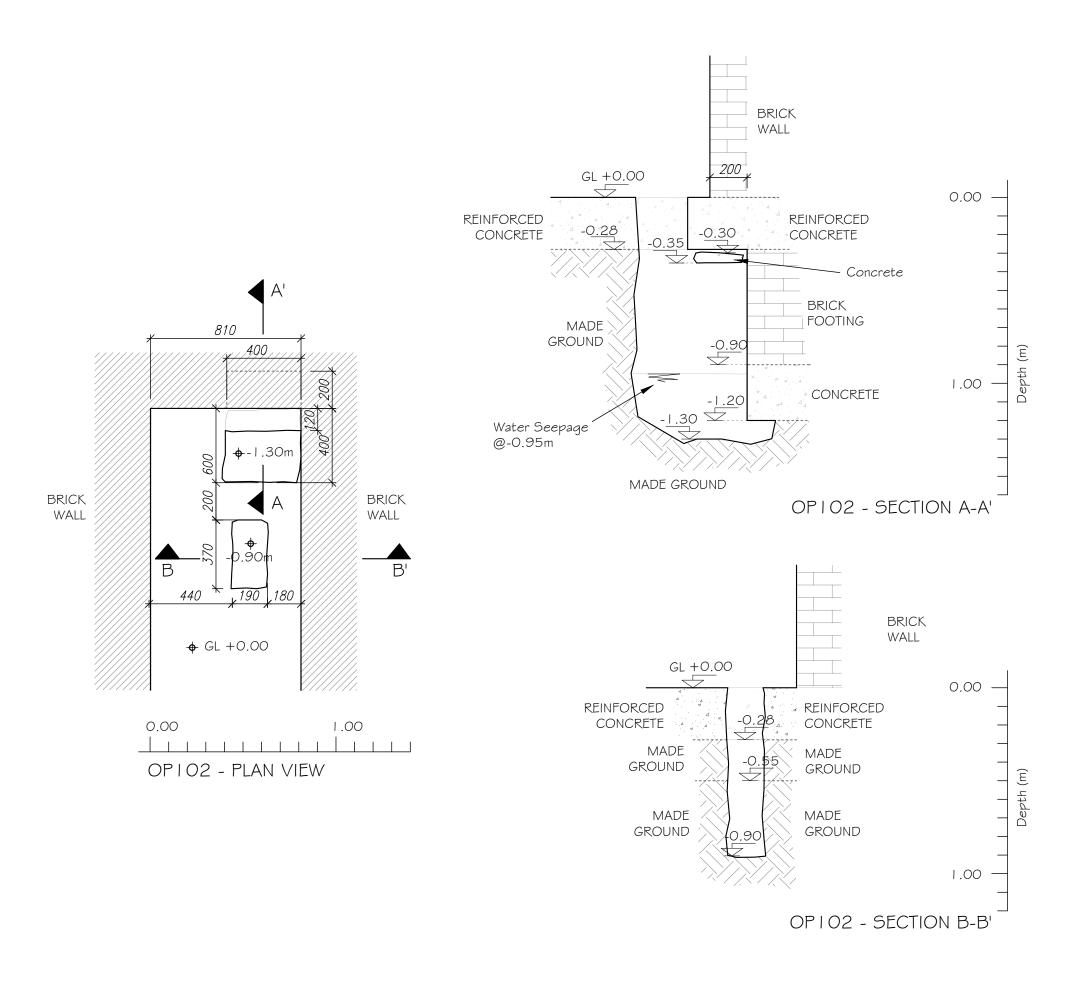
C•NCEPT
Unit 8, Warple Mews, Warple Way W3 0RF
Telephone: 020 8811 2880_Fax: 020 8811 2881 E-mail: si@conceptconsultants.co.uk



Trial Pit No

OP102

Clien	19/3312 t	Date Started Date Comple Vestminster	eted 18/10/19	Ground Level (mOI 32.60		5639.7 N I	183246.0 Excavated	Final Depth 1.30m Sheet 1 of 1	
			STI	RATA	SAN	IPLES & T	FESTS	1	
Water	Level (mOD)	egend Depth (Thickness)	St	ata Description	Dep	oth Type No	Test Result		ield cords
₽	32.31	(0.29) 0.29 (0.61) (0.61) (0.40)	Dark brown sligh comprises angula and brick fragmer (MADE GROUN Firm, brown mott gravelly CLAY, C	m rebar er of damp proof material ly clayey sandy GRAVEL. O : to subrounded fine to coars tts. Sand is fine to coarse. D) led orangish brown slightly iravel comprises subroundec to coarse flint, brick and cli	- - - -				
1. 2. 3. 4. 5.	Trial pit was	cloudy. ttered in the pit at ( stable. msions: 0.40m x 0. filled with soil aris	0.95m depth. 40m x 1.30m deep. ings and made good	d upon completion.					
	No: 00 Dri	illed By: DN	logged By: IK	Checked By: AN App	proved By: OS	Log Print Da			A



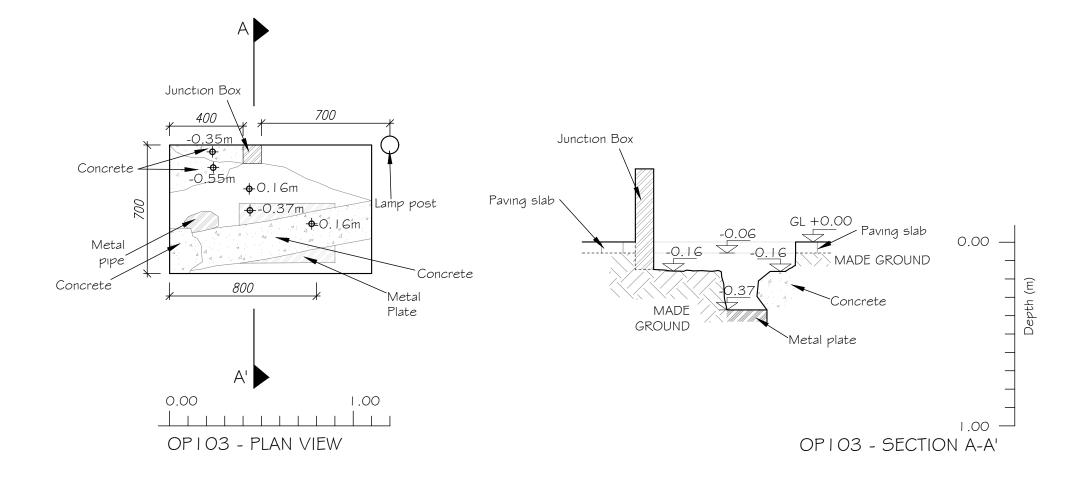
1. This drawing should not be scaled, only use annotated dimensions.

No	Revision	Drawn	Checked	Passed	Date
_					
C	ONCEPT SITE INVEST	ΊG	AT	10	ns
lun	it 8 Warole Mews				

1

Client:	ent: City of Westminster									
Project: Torridon House Car Park Westminster										
Title:	e: OP102 Plan & Section									
Dwg. No	: 193312/03									
Status:	Issue									
Scale:	1:20 @ A3									
Drawn MJ	Checked Passed Date AD OS November '19									

W3 0R Teleph E-mail: <b>Proje</b>	one: 020 8 si@conce ct	ews, Warpl 8811 2880 eptconsulta	_Fax: 020 ants.co.uk	8811 2881			R	UKAS MMAGEMENT SYSTEMS 001		UK MANAGI SYSTI	Trial Pit No OP103
Job N		Date	e Starteo		Vestminster Ground Level (r 32.01	nOD)	Co-Ordin E 52		9 N 1		
Clien		Westi	ninste	r			Method/ Plant Use	d H	and Ex	Sheet 1 of 1	
				STI	RATA		SAN	1PLE	S & T		
Water	Level (mOD)	Legend	Depth (Thickness)		ata Description		Dep	oth	Type No	Test Result	Field Records
1. 2. 3. 4.	31.86 31.46 31.46 NERAI Weather v Trial pit d Trial pit d Also refer	REMA vas cloudy as dry and imensions ackfilled v	stable. 0.80m x 0 vith soil ari	Sandy medium san (MADE GROUN) Dark brown GRA content. Gravel co fine to coarse bric fine to coarse.	D) VEL with medium con mprises angular to sub k and concrete fragmer D)	crete cobl	0.26 is 0.37				a black cable encountered at 0.26m depth a metal plate encountered at 0.37m depth
Issue N	10: 00	Drilled B	y: DN	Logged By: IK	Checked By: AN	Approv	ed By: OS	Log Pr	rint Date	e & Time: 1	12/11/2019 16:07 MAGS



1. This drawing should not be scaled, only use annotated dimensions.

٩	Revision	Drawn	Checked	Passed	Date
C	ONCEPT SITE INVEST	'IG	AT	10	ns
Un	it 8. Warnle Mews				

1

Client:	City of Wes	stminster	
Project:	Torridon H Westminst	ouse Car Pa er	ark
Title:	OP103 Plan & Sec	ction	
Dwg. No:	193312/04		
Status:	Issue		
Scale:	1:20 @ A3		
Drawn MJ	Checked AD	Passed OS	Date November '19

Unit 8, Warple Mews, Warple Way W3 0RF Telephone: 020 8811 2880\_Fax: 020 8811 2881 E-mail: si@conceptconsultants.co.uk

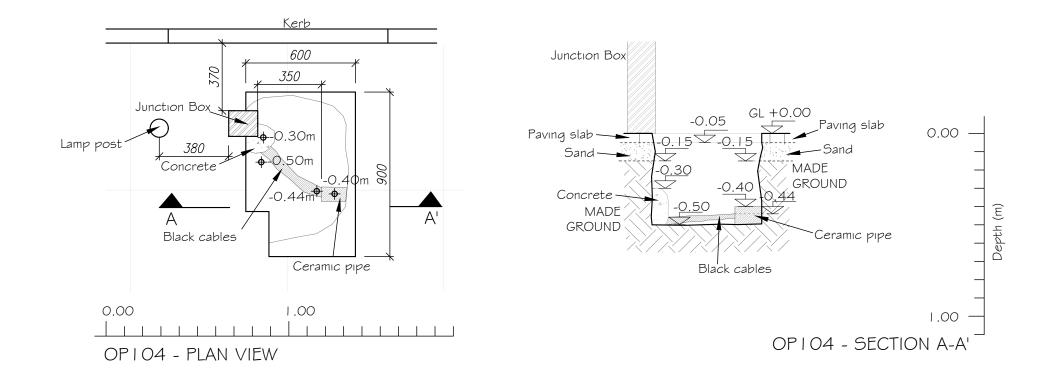


Trial Pit No

**OP104** 

Projec		on Ho	ouse C	Car Park, V	Vestminster						·
Job N			Started		Ground Level (n	nOD)	Co-Ordin	ates			Final Depth
1	9/3312			eted 10/10/19	32.08		E 52:	5620.	0 N 1	83235.8	0.50m
Client	t City of	Westr	ninstar				Method/ Plant Used	u h	land F	xcavated	Sheet 1 of 1
		westn	mister								
1	I	i	Donth	511	RATA		SAN	1PLE		TESTS	Field
Water	Level (mOD)	Legend	Depth (Thickness)		ata Description 05m) over light brown		Dep	oth	Type No	Test Result	Records
	31.58		(0.35) 0.50	comprises angular	y very sandy GRAVEL concrete cobble conter to rounded fine to coa ic fragments. Sand is fi	rse flint,					
1. 2. 3. 4.	NERAL Weather wa Trial pit wa Trial pit din Trial pit ba Also refer t	as cloudy. s dry and s nensions: ( ckfilled wi	stable. 0.90m x 0 ith soil aris	60m x 0.50m deep. ings and made good	l upon completion.		-				
Issue N	lo: 00 [	Drilled By	DN I	Logged By: IK	Checked By: AN	Approve	ed By: OS	Log P	Print Dat	e & Time:	21/11/2019 16:47





1. This drawing should not be scaled, only use annotated dimensions.

٩	Revision	Drawn	Checked	Passed	Date
C	ONCEPT SITE INVEST	'IG	AT	10	ns
Un	it 8. Warnle Mews				

1

1

Client:	City of Wes	stminster	
Project:	Torridon H Westminst	ouse Car Pa er	ark
Title:	OP104 Plan & Sec	ction	
Dwg. No:	193312/05		
Status:	Issue		
Scale:	1:20 @ A3		
Drawn MJ	Checked AD	Passed OS	Date November '19

**11. INSTRUMENTATION MONITORING RESULTS** 

Borehole ID	Depth of Installation (mbgl)	Date of Installation	Туре	Top (mbgl)	Bottom (mbgl)	Date & Time	Reading Level (mbgl)	Reading Level (mOD)	Type of Reading	Remark
BH101	4.00	11/10/2019	SPG/GW	0.50	4.00	25/10/2019 10:15:00	0.80	31.28		
	4.00	11/10/2019	SPG/GW	0.50	4.00	05/11/2019 09:20:00	0.77	31.31		
	4.00	11/10/2019	SPG/GW	0.50	4.00	21/11/2019 12:00:00	No Access			Car on top
	4.00	11/10/2019	SPG/GW	0.50	4.00	12/12/2019 12:00:00	No Access			Car on top
	4.00	11/10/2019	SPG/GW	0.50	4.00	06/01/2020 14:00:00	No Access			Car on top
	4.00	11/10/2019	SPG/GW	0.50	4.00	20/01/2020 09:40:00	No Access			Car on top
BH102	4.00	09/10/2019	SPG/GW	1.00	4.00	25/10/2019 11:45:00	3.81	28.77		
	4.00	09/10/2019	SPG/GW	1.00	4.00	05/11/2019 10:20:00	3.54	29.04		
	4.00	09/10/2019	SPG/GW	1.00	4.00	21/11/2019 13:35:00	3.15	29.43		
	4.00	09/10/2019	SPG/GW	1.00	4.00	12/12/2019 12:10:00	2.79	29.79		
	4.00	09/10/2019	SPG/GW	1.00	4.00	06/01/2020 14:00:00	2.15	30.43		
	4.00	09/10/2019	SPG/GW	1.00	4.00	20/01/2020 09:40:00	1.97	30.61		
WS101	3.50	10/10/2019	SPG/GW	0.50	3.50	25/10/2019 12:15:00	1.06	31.48		
	3.50	10/10/2019	SPG/GW	0.50	3.50	05/11/2019 11:10:00	1.14	31.40		
	3.50	10/10/2019	SPG/GW	0.50	3.50	21/11/2019 13:55:00	1.10	31.44		
	3.50	10/10/2019	SPG/GW	0.50	3.50	12/12/2019 11:35:00	0.84	31.70		
	3.50	10/10/2019	SPG/GW	0.50	3.50	06/01/2020 14:10:00	0.70	31.84		
	3.50	10/10/2019	SPG/GW	0.50	3.50	20/01/2020 10:10:00	0.71	31.83		
WS102	4.00	10/10/2019	SPG/GW	0.50	4.00	25/10/2019 12:45:00	0.56	31.85		
	4.00	10/10/2019	SPG/GW	0.50	4.00	05/11/2019 10:45:00	0.51	31.90		
	4.00	10/10/2019	SPG/GW	0.50	4.00	21/11/2019 13:10:00	0.64	31.77		
	4.00	10/10/2019	SPG/GW	0.50	4.00	12/12/2019 11:55:00	0.47	31.94		
	4.00	10/10/2019	SPG/GW	0.50	4.00	06/01/2020 14:20:00	0.62	31.79		
	4.00	10/10/2019	SPG/GW	0.50	4.00	20/01/2020 10:40:00	0.54	31.87		
WS103	4.00	09/10/2019	SPG/GW	0.50	4.00	25/10/2019 11:15:00	0.37	32.10		
	4.00	09/10/2019	SPG/GW	0.50	4.00	05/11/2019 10:30:00	0.31	32.16		
	4.00	09/10/2019	SPG/GW	0.50	4.00	21/11/2019 12:45:00	0.37	32.10		
	4.00	09/10/2019	SPG/GW	0.50	4.00	12/12/2019 12:20:00	0.24	32.23		
	4.00	09/10/2019	SPG/GW	0.50	4.00	06/01/2020 12:50:00	0.45	32.02		
	4.00	09/10/2019	SPG/GW	0.50	4.00	20/01/2020 11:10:00	0.34	32.13		
WS104A	4.00	09/10/2019	SPG/GW	1.00	4.00	25/10/2019 10:45:00	0.29	32.10		
	4.00	09/10/2019	SPG/GW	1.00	4.00	05/11/2019 09:45:00	0.29	32.10		
	4.00	09/10/2019	SPG/GW	1.00	4.00	21/11/2019 12:30:00	0.33	32.06		
	4.00	09/10/2019	SPG/GW	1.00	4.00	12/12/2019 11:20:00	0.30	32.09		
	4.00	09/10/2019	SPG/GW	1.00	4.00	06/01/2020 12:35:00	0.36	32.03		

<u>KEY</u>

Type of Installation

Type of Reading

 SPIE
 - Standpipe Piezometer

 SPGW
 - Groundwater Monitor Standpipe

 SPG/GW
 - Gas / Groundwater Monitor Standpipe

 VWP
 - Vibrating Wire Piezometer

WDEP - Depth to Water DDEP - Depth to DNAPL LDEP - Depth to LNAPL

UKAS HANAZAMDYT SYSTEMS



**GROUNDWATER MONITORING** 

Job No: 19/3312

Torridon House Car Park, Westminster **Project:** 

**Client: City of Westminster** 



JOB DETAILS													
Location:	Torridon Hou	ise					Engi	neer: KO+JM					
Date:	25/10/2019			Job 1	Number:	19/3312		Time	: 10:00				
METEOPOLOCI		TE INFORMATIO	N										
State of ground:	CAL AND SI	X Dry				Moist		Wet				Delete As Requ	ired
Wind:		X Calm				-		Moderate				Ground Level	
					37	Light					Strong	Ground Level	
Cloud cover:		None				Slight		Cloudy			Overcast		
Precipitation		X None				Slight		Moderate	-		Heavy		
Barometric pressure	e (mb) Before:	1009						Temperature (°	12				
INSTRUMENTAT	TON USED												
	Gas Data LMS	xi G3 18	Accuracy: CH4 ±	0.2% (0 to 5%)	, ±1.0% (at 3	0%), ±3.0% (at 1	00%); CO2 ±0.1% (0	to 10%), ±3.0% (at 40%	6); O2 ±0.5%			1	
Gas concentration:	Gas Data GFM		Accuracy: CH4 ±	0.3% (0 to 5%)	, ±3.0% (at 3	0%), ±3.0% (at 1	00%); CO2 ±0.3% (0	to 5%), ±3.0% (at 40%	); O2 ±0.2%;		Х	Tick Instru	ment used
	Ous Duit Of M	1990									A		
Pipe Reference:	BH101 - 1	Install	ation Type:	SPG/GW	Pir	eØ(mm):	50 <b>Pi</b>	pe Depth (m):	4.00	RZ Top:	0.50	RZ Base:	4.00
			71			- /- ( ).			1	F	<b>I</b>		8
-	1			-	r	-	1		1	1	1		
BH	Time (secs)	Depth to GW (m)	aP	dP	Flow	CH <sub>4</sub> (%)	LEL (%)	CO <sub>2</sub> (%)	$O_2$ (%)	$H_2S(ppm)$	CO (ppm)	Com	nents
(No.)			(mb) After	(Pa)	rate								
BH101	0	0.80	1009	514.0	38.8								
	30			0	0	0.0	0.0	1.2	15.9	0.0	0.0		
	60					0.0	0.0	1.3	15.2	0.0	0.0		
	90					0.0	0.0	1.3	15.1	0.0	0.0		
	120					0.0	0.0	1.2	15.1	0.0	0.0		
	150					0.0	0.0	1.2	15.1	0.0	0.0		
	180					0.0	0.0	1.2	15.1	0.0	0.0	Constant	readings
	210	-											
	240 270												
	300											1	
	300												
						_	PID (ppm)						
	-					5	1.2		-	-		-	
						15 30	1.3 1.2						
						30 45	1.2						
						45 60	1.2						
						75	1.2						
						90	1.1						
						105	1.1						
						120	1.1						
KEY					•							•	
aP: Atmospheric Pre		NR: Not Recorded											
dP: Differential Pres		Note: Where 0.0 is	shown on the	results ind	licates va	lue lower th	an the detection	n limit of the ins	trument.				
RZ: Response Zone													



JOB DETAILS													
Location:	Torridon Hou	ise					Eng	ineer: KO+JM	-				
Date:	25/10/2019			Job I	Number:	19/3312		Time	: 11:30				
METEOROLOGI	CAL AND SI	<b>FE INFORMATION</b>											
State of ground:	2	X Dry				Moist		Wet				Delete As Requ	ired
Wind:		X Calm				Light		Moderate			-	Ground Level	
Cloud cover:		None			Х	Slight		Cloudy			Overcast	Ground Lever	
Precipitation								Moderate			1		
*						Slight					Heavy		
Barometric pressure	(mb) Before:	1009						Temperature (	12		Ļ		
INSTRUMENTAT	ION USED												
Cas concentration.	Gas Data LMS	xi G3.18	Accuracy: CH4 ±	0.2% (0 to 5%),	, ±1.0% (at 30	0%), ±3.0% (at 10	0%); CO2 ±0.1% (	) to 10%), ±3.0% (at 40%	b); O2 ±0.5%			Tield Instru	mantiland
Gas concentration:	Gas Data GFM	1 436	Accuracy: CH4 ±	).3% (0 to 5%),	, ±3.0% (at 30	0%), ±3.0% (at 10	0%); CO2 ±0.3% (	) to 5%), ±3.0% (at 40%)	; O2 ±0.2%;		Х	lick instru	ment Used
	-										-	-	
Pipe Reference:	BH102 - 1	Install	ation Type:	SPG/GW	Pip	e Ø (mm):	50 P	ipe Depth (m):	4.00	RZ Top:	1.00	RZ Base:	4.00
BH	Time (secs)	Depth to GW (m)	aP	dP	Flow	CH <sub>4</sub> (%)	LEL (%)	CO <sub>2</sub> (%)	$O_2(\%)$	H <sub>2</sub> S(ppm)	CO (ppm)	Com	ments
(No.)	Time (bees)		(mb) After	(Pa)	rate	0114 (70)		0.02(70)	02(70)	1120 ( <b>pp</b> 111)	co (ppm)	0.0111	
				( )									
BH102	0	3.81	1008	189.0	18.4								
	30			0	0	0.0	0.0	0.0	19.2	0.0	0.0		
	60					0.0	0.0	0.0	19.3	0.0	0.0		
	90					0.0	0.0	0.0	19.3	0.0	0.0		
	120					0.0	0.0	0.0	19.4	0.0	0.0		
	150					0.0	0.0	0.0	19.4	0.0	0.0		
	180					0.0	0.0	0.0	19.4	0.0	0.0		
	210					0.0	0.0	0.0	19.4	0.0	0.0	Constant	readings
	240 270												
	300												
	500						PID (ppm)						
						5	1.5						
						5 15	1.4						
					-	30	1.4						
						45	1.2						
						60	1.2						
						75	1.2						
						90	1.2						
						105	1.1	ļ					
						120	1.1						
KEY DALL D		ND N (D 11											
aP: Atmospheric Pre dP: Differential Pres		NR: Not Recorded				a 1aanaa 41	the determine	limit of the instant					
RZ: Response Zone	sure	Note: Where 0.0 is sl	lown on the r	esuits indic	cates valu	e lower than	the detection	mint of the instri	iment.				
KZ. Response Zone													



JOB DETAILS													
Location:	Torridon Hou	ise					Eng	neer: KO+JM					
Date:	25/10/2019			Job	Number:	19/3312	<del>8</del>		e: 12:00				
	CAL AND SI	TE INFORMATION				T							
State of ground:		X Dry				Moist		Wet		·	7	Delete As Requ	ired
Wind:		X Calm				Light		Moderate			Strong	Ground Level	
Cloud cover:		None			Х	Slight		Cloudy			Overcast		
Precipitation		X None				Slight		Moderate			Heavy		
Barometric pressure	(mb) Before:	1008						Temperature (	°) 13				
INSTRUMENTAT	TION LISED												
	Gas Data LMS	5xi G3.18	Accuracy: CH4 ±	0.2% (0 to 5%)	, ±1.0% (at 30	0%), ±3.0% (at 10	00%); CO2 ±0.1% (0	to 10%), ±3.0% (at 409	6); O2 ±0.5%			r	
Gas concentration:	Gas Data GFM		Accuracy: CH4 ±	0.3% (0 to 5%)	, ±3.0% (at 30	0%), ±3.0% (at 10	00%); CO2 ±0.3% (0	to 5%), ±3.0% (at 40%	); O2 ±0.2%;		Х	Tick Instru	iment Used
J												4	
Pipe Reference:	WS101 - 1	Instal	ation Type:	SPG/GW	Pij	pe Ø (mm):	50 Pi	pe Depth (m):	3.50	RZ Top:	0.50	RZ Base:	3.50
BH	Time (secs)	Depth to GW (m)	aP	dP	Flow	CH <sub>4</sub> (%)	LEL (%)	CO <sub>2</sub> (%)	<b>O</b> <sub>2</sub> (%)	H <sub>2</sub> S(ppm)	CO (ppm)	Com	ments
(No.)		- · <b>F</b> · · · · · · · · · · · · · · · · · · ·	(mb) After	(Pa)	rate	4()-)	(),,,	0.02(70)	02(10)	2 ( <b>FF</b> )	••• ( <b>F</b> F)		
WS101	0	1.06	1000	0.0	0.0								
w8101	0	1.06	1008	0.0	0.0								
	30					0.0	0.0	0.0	19.8	0.0	0.0	L	
	60					0.0	0.0	0.0	19.7	0.0	0.0	<b></b>	
	90					0.0	0.0	0.0	19.7	0.0	0.0	<b></b>	
	120					0.0	0.0	0.0	19.7	0.0	0.0	<b></b>	
	150					0.0	0.0	0.0	19.7	0.0	0.0		
	180					0.0	0.0	0.0	19.7	0.0	0.0	Constant	t readings
	210	-					-			-	-	<b> </b>	
	240											┣────	
	270 300											<b> </b>	
	300						DID (nnm)					f	
						5	PID (ppm) 1.3					<u> </u>	
						15	1.5					1	+
						30	1.5						
	1					45	1.5					h	
						60	1.4						-
						75	1.4						
						90	1.4						
						105	1.4						
						120	1.4						
<u>KEY</u>													
aP: Atmospheric Pre		NR: Not Recorded											
dP: Differential Pres		Note: Where 0.0 is sl	nown on the r	esults indi	cates valu	e lower that	n the detection	limit of the instr	ument.				
RZ: Response Zone													



JOB DETAILS													
Location:	Torridon Hou	use					En	gineer: KO+JM					
Date:	25/10/2019			Job 1	Number:	19/3312		Time	e: 12:30				
METEOROLOGI	CAL AND SI	TE INFORMATION	I										
State of ground:		X Dry				Moist		Wet				Delete As Requ	ired
Wind:		Calm			Х	Light		Moderate			Strong	Ground Level	
Cloud cover:		None				Slight		Cloudy			Overcast		
Precipitation		X None				Slight		Moderate			Heavy		
Barometric pressure	e (mh) Before:	1008				Slight		Temperature (	°) 13				
		1008						Temperature (	/ 15		1		
INSTRUMENTA													
Gas concentration:	Gas Data LMS							(0 to 10%), ±3.0% (at 409				Tick Instru	iment used
	Gas Data GFM	1 436	Accuracy: CH4 ±	0.3% (0 to 5%)	, ±3.0% (at 30	9%), ±3.0% (at 10	00%); CO2 ±0.3%	(0 to 5%), ±3.0% (at 40%)	); O2 ±0.2%;		Х		
Pipe Reference	: WS102 - 1	Instal	ation Type:	SPG/GW	Pir	eØ(mm):	50 1	Pipe Depth (m):	4.00	RZ Top:	0.50	RZ Base:	4.00
	- <b>B</b>							1 1 ( )					
BH	Time (secs)	Depth to GW (m)	aP	dP	Flow	CH <sub>4</sub> (%)	LEL (%)	CO <sub>2</sub> (%)	<b>O</b> <sub>2</sub> (%)	H <sub>2</sub> S(ppm)	CO (ppm)	Com	ments
(No.)	Time (Sees)		(mb) After	(Pa)	rate	0114 (70)		0.02(70)	02(70)	1120 ( <b>PP</b> 111)	ee (ppm)	0.011	
WS102	0	0.56	1008	0.0	0.0								
	30					0.0	0.0	0.0	20.1	0.0	0.0		
	60					0.0	0.0	0.0	20.1	0.0	0.0		
	90					0.0	0.0	0.0	20.0	0.0	0.0		
	120					0.0	0.0	0.0	19.9	0.0	0.0		
	120					0.0	0.0	0.0	19.9	0.0	0.0		
	180					0.0	0.0	0.0	19.9	0.0	0.0		
	210					0.0	0.0	0.0	19.9	0.0	0.0	Constant	readings
	240												0
	270												
	300												
							PID (ppm)						
						5	1.2						
						15	1.0						
						30	1.0						
						45	0.9						
	-					60	0.9						
						75 90	0.9						
						90 105	0.9						
						103	0.9						
KEY	I	l	I		1	140	0.2	1	<u> </u>	L	L	1	1
aP: Atmospheric Pr	ressure	NR: Not Recorded											
dP: Differential Pre		Note: Where 0.0 is s	hown on the 1	esults indi	cates valu	e lower that	n the detection	n limit of the instr	ument.				
RZ: Response Zone	9												



JOB DETAILS													
Location:	Torridon Hou	ise					Eng	ineer: KO+JM					
Date:	25/10/2019			Job	Number:	19/3312		Time	<b>:</b> 11:00				
METEOROLOGI	CAL AND SI	TE INFORMATION	I										
State of ground:		X Dry				Moist		Wet				Delete As Requ	ired
Wind:		Calm				Light		Moderate			Strong	Ground Level	
Cloud cover:		None				Slight		Cloudy			Overcast	Ground Dever	
Precipitation		X None				Slight		Moderate			Heavy		
Barometric pressure	(mh) Pafara	1009				Slight		Temperature (	2) 12		T		
Barometric pressure	e (IIID) Belole.	1009						Temperature (	<u>  12</u>		1		
INSTRUMENTAT											-	-	
Gas concentration:	Gas Data LMS							0 to 10%), ±3.0% (at 409				Tick Instru	iment Used
	Gas Data GFM	1 436	Accuracy: CH4 ±	0.3% (0 to 5%)	, ±3.0% (at 30	0%), ±3.0% (at 10	00%); CO2 ±0.3% (	0 to 5%), ±3.0% (at 40%)	); O2 ±0.2%;		Х		
D' D C	WG102 1	T	- 4 · · · T-··· ·	CDC/CW	D'	<b>(</b> ())	50 D		4.00	DZTani	0.50	<b>D7</b> D	4.00
Pipe Reference:	w\$103 - 1	Instal	lation Type:	SPG/GW	PI	e Ø (mm):	50 P	ipe Depth (m):	4.00	RZ Top:	0.50	RZ Base:	4.00
BH	Time (secs)	Depth to GW (m)	aP	dP	Flow	CH <sub>4</sub> (%)	LEL (%)	CO <sub>2</sub> (%)	O <sub>2</sub> (%)	H <sub>2</sub> S(ppm)	CO (ppm)	Com	ments
(No.)			(mb) After	(Pa)	rate								
WS103	0	0.37	1009	11.0	2.2								
	30			0	0	0.0	0.0	0.1	18.6	0.0	0.0		
	60					0.0	0.0	0.1	18.6	0.0	0.0		
	90					0.0	0.0	0.1	18.6	0.0	0.0		
	120					0.0	0.0	0.1	18.6	0.0	0.0		
	150					0.0	0.0	0.1	18.7	0.0	0.0		
	180					0.0	0.0	0.1	18.7	0.0	0.0		
	210 240					0.0	0.0	0.1	18.7 18.7	0.0	0.0	Comotore	readings
	240					0.0	0.0	0.1	18.7	0.0	0.0	Constant	readings
	300												
	500						PID (ppm)						
						5	1.9						
						15	2.0						
						30	2.1						
						45	2.2						
						60	2.2						
						75	2.1						
						90	2.1						
-						105	2.1		_				
KEY						120	2.1	1					
<u>KEY</u> aP: Atmospheric Pr dP: Differential Pre RZ: Response Zone	ssure	NR: Not Recorded Note: Where 0.0 is sh	nown on the r	esults indic	cates valu	e lower than	the detection	limit of the instru	iment.				



JOB DETAILS													
Location:	Torridon Hou	ise					Eı	gineer: KO+JM					
Date:	25/10/2019			Job I	Number:	19/3312			<b>:</b> 10:30				
METEOROLOGI	CAL AND SI	TE INFORMATION											
State of ground:		X Dry				Moist		Wet				Delete As Requ	ired
Wind:		X Calm				Light		Moderate			Strong	Ground Level	
Cloud cover:		None			Х	Slight		Cloudy			Overcast		
Precipitation		X None				Slight		Moderate			Heavy		
Barometric pressure	(mb) Before:	1009				Singin		Temperature (	2) 12		licavy		
_		1007						Temperature (	12				
INSTRUMENTAT													
Gas concentration:	Gas Data LMS		-					6 (0 to 10%), ±3.0% (at 40%				Tick Instru	ment Used
Cas concentration	Gas Data GFM	1 436	Accuracy: CH4 ±	0.3% (0 to 5%).	±3.0% (at 30	9%), ±3.0% (at 10	00%); CO2 ±0.3%	6 (0 to 5%), ±3.0% (at 40%)	; O2 ±0.2%;		Х		
Pipe Reference:	WC104A 1	Install	ation Type:	SDC/CW	D:-	e Ø (mm):	50	Pipe Depth (m):	4.00	RZ Top:	1.00	RZ Base:	4.00
Pipe Reference:	W5104A - 1	Ilistal	ation Type:	3F0/0W	ГЦ		30	ripe Deptii (iii):	4.00	KZ TOP.	1.00	RZ Dase:	4.00
BH	Time (secs)	Depth to GW (m)	aP	dP	Flow	$\operatorname{CH}_4\left(\%\right)$	LEL (%)	CO <sub>2</sub> (%)	O <sub>2</sub> (%)	$H_2S(ppm)$	CO (ppm)	Com	nents
(No.)			(mb) After	(Pa)	rate								
WS104A	0	0.29	1009	8.0	1.6								
	30			0	0	0.0	0.0	0.2	16.7	0.0	0.0		
	60					0.0	0.0	0.1	17.0	0.0	0.0		
	90					0.0	0.0	0.1	17.9	0.0	0.0		
	120					0.0	0.0	0.1	18.0	0.0	0.0		
	150					0.0	0.0	0.1	18.0	0.0	0.0		
	180					0.0	0.0	0.1	18.0	0.0	0.0		
	210 240					0.0	0.0	0.1	18.1	0.0	0.0		
	240					0.0	0.0	0.1	18.1 18.1	0.0	0.0	Constant	readings
	300					0.0	0.0	0.1	10.1	0.0	0.0	Collstant	readings
	200						PID (ppm	)					
						5	1.4	-					
						15	1.5						
						30	1.6						
						45	1.7						
						60	1.7	_					
						75	1.7						
-	-					90	1.7	-	-	-			
						105 120	1.8 1.8						
KEY						120	1.0						
aP: Atmospheric Pre	ssure	NR: Not Recorded											
dP: Differential Pres		Note: Where 0.0 is sh	nown on the r	esults india	cates valu	e lower thar	the detection	on limit of the instru	ument.				
RZ: Response Zone				indix	, and								



JOB DETAILS													
Location:	Torridon Hou	se				1	Eng	ineer: KO+JM					
Date:	05/11/2019			Job N	Number:	19/3312		Time	e: 09:10				
METEOROLOGI	CAL AND SI	TE INFORMATIO	N										
State of ground:		X Dry				Moist		Wet				Delete As Requ	ired
Wind:		X Calm				Light		Moderate			Strong	Ground Level	
Cloud cover:		None				Slight	x	Cloudy			Overcast	eround Berer	
Precipitation		X None				Slight		Moderate			Heavy	L	Į
Barometric pressure	(mb) Pafara	990				Slight		Temperature (	•\ 0		Ticavy		
Barometric pressure	(IIID) Belole.	990						Temperature (	] 7				
INSTRUMENTAT	TION USED												
Gas concentration:	Gas Data LMS	xi G3.18	Accuracy: CH4 ±	0.2% (0 to 5%)	), ±1.0% (at 3	0%), ±3.0% (at 1	00%); CO2 ±0.1%	(0 to 10%), ±3.0% (at 40	%); O2 ±0.5%			Tick Instru	ment used
Gas concentration.	Gas Data GFM	436	Accuracy: CH4 ±	0.3% (0 to 5%)	), ±3.0% (at 3	0%), ±3.0% (at 1	00%); CO2 ±0.3%	(0 to 5%), ±3.0% (at 40%	5); O2 ±0.2%;		Х	TICK INSUC	intent used
											-	-	
Pipe Reference:	BH101 - 1	Install	ation Type:	SPG/GW	Pip	e Ø (mm):	50 P	ipe Depth (m):	4.00	RZ Top:	0.50	RZ Base:	4.00
BH (No.)Time (secs)Depth to GW (m)aPdPFlowCH4 (%)LEL (%)CO2 (%)O2 (%)H2S(ppm)CO (ppm)Comments													
(No.)		- · · · · · · · · · · · · · · · · · · ·	(mb) After	(Pa)	rate	4 (/ *)	(,,,)	0.02(00)	-2(11)		••• ( <b>F</b> F)		
	0	0.77			24.7								
BH101	0	0.77	990	156.0	34.7								
	30			25	0	0.0	0.0	0.0	20.0	0.0	0.0		
	60			0	0	0.0	0.0	0.0	20.1	0.0	0.0		
	90					0.0	0.0	0.0	20.1	0.0	0.0		
	120					0.0	0.0	0.0	20.1	0.0	0.0		
	150					0.0	0.0	0.0	20.1	0.0	0.0	Constant	readings
	180												
	210 240												
	240												
	300												
	500						PID (ppm)						
						5	0.4						
						5 15	3.0						
						30	0.3						
						45	0.2						
						60	0.2						
						75	0.2						
						90	0.2						
						105	0.2						
						120	0.2						
<u>KEY</u>													
aP: Atmospheric Pro dP: Differential Pres		NR: Not Recorded Note: Where 0.0 is s	hown on the	roculte ind	licatos vo	lua lowar th	on the detect	on limit of the inc	trumont				
RZ: Response Zone		TNOTE. WHELE U.U IS S	shown on the	results inc	neates va	iue iower th	an me detecti	on mint of the ms	su unient.				
Response Zolle													



JOB DETAILS													
Location:	Torridon Hou	se					Eng	ineer: KO+JM					
Date:	05/11/2019			Job I	Number:	19/3312		Time	: 10:10				
METEOROLOGI	CAL AND SI	<b>TE INFORMATION</b>											
State of ground:		X Dry	·			Moist		Wet				Delete As Requ	ired
Wind:		X Calm		·		Light		Moderate		<u> </u>	-	Ground Level	
Cloud cover:		None				Slight		Cloudy			Overcast	Ground Dever	
Precipitation		X None				Slight		Moderate			Heavy		
*	(					Singin					пеачу		
Barometric pressure	(mb) Before:	990						Temperature (	19		l		
INSTRUMENTAT	ION USED												
Gas concentration:	Gas Data LMS	xi G3.18	Accuracy: CH4 ±	0.2% (0 to 5%),	, ±1.0% (at 30	0%), ±3.0% (at 10	00%); CO2 ±0.1% (0	) to 10%), ±3.0% (at 40%	b); O2 ±0.5%			Tield Instan	ment Used
Gas concentration:	Gas Data GFM	436	Accuracy: CH4 ±	0.3% (0 to 5%),	, ±3.0% (at 30	0%), ±3.0% (at 10	00%); CO2 ±0.3% (0	) to 5%), ±3.0% (at 40%)	; O2 ±0.2%;		Х	TICK INSTRU	ment Used
-	-								-	-	-	-	
Pipe Reference:	BH102 - 1	Install	lation Type:	SPG/GW	Pip	e Ø (mm):	50 P	pe Depth (m):	4.00	RZ Top:	1.00	RZ Base:	4.00
BH	Time (secs)	Depth to GW (m)	aP	dP	Flow	CH <sub>4</sub> (%)	LEL (%)	CO <sub>2</sub> (%)	$O_2(\%)$	H <sub>2</sub> S(ppm)	CO (ppm)	Com	ments
(No.)			(mb) After	(Pa)	rate		(, .)	0.02(10)	02(10)				
		2.54											
BH102	0	3.54	990	169.5	102.8								
	30			337	34.6	0.0	0.0	0.0	19.9	0.0	0.0		
	60			0	0	0.0	0.0	0.0	20.1	0.0	0.0		
	90					0.0	0.0	0.0	20.2	0.0	0.0		
	120					0.0	0.0	0.0	20.2	0.0	0.0		
	150					0.0	0.0	0.0	20.2	0.0	0.0		
	180					0.0	0.0	0.0	20.2	0.0	0.0	Constant	readings
	210 240												
	240												
	300												
							PID (ppm)						
						5	0.1	ł					
						15	0.1						
						30	0.0						
						45	0.0						
						60	0.0						
						75	0.0						
						90	0.0						
						105	0.0	ļ					
VEN						120	0.0						
KEY aP: Atmospheric Pre	a curo	NR: Not Recorded											
dP: Differential Pres		Note: Where 0.0 is sl	hown on the r	esulte india	cates valu	e lower that	the detection	limit of the instr	iment				
RZ: Response Zone	Bure	11010. Where 0.0 is si		courts mult	cares valu			mint of the filsu	iniciit.				



JOB DETAILS													
Location:	Torridon Hou	ise					Er	gineer: KO+JM					
Date:	05/11/2019			Job I	Number:	19/3312		Time	: 11:00				
METEOROLOGI	CAL AND SI	<b>TE INFORMATION</b>	1										
State of ground:		X Dry	·			Moist		Wet				Delete As Requ	ired
Wind:		X Calm				Light		Moderate			Strong	Ground Level	
Cloud cover:		None				Slight	X	Cloudy			Overcast		
Precipitation		X None				Slight		Moderate			Heavy		
Barometric pressure	(mb) Before.	991				Siigiit	L	Temperature (°	') 9				
								····· (	12				
INSTRUMENTAT													
Gas concentration:	Gas Data LMS		-					0 (0 to 10%), ±3.0% (at 40%)				Tick Instru	ment Used
	Gas Data GFN	1 436	Accuracy: CH4 ±	J.3% (0 to 5%).	, ±3.0% (at 30	1%), ±3.0% (at 10	10%); CO2 ±0.5%	0 (0 to 5%), ±3.0% (at 40%)	; 02 ±0.2%;		Х		
Pipe Reference:	WS101 - 1	Instal	ation Type:	SPG/GW	Pip	e Ø (mm):	50	Pipe Depth (m):	3.50	RZ Top:	0.50	RZ Base:	3.50
<b>_</b>		•										•	-
BH	Time (secs)	Depth to GW (m)	aP	dP	Flow	CH <sub>4</sub> (%)	LEL (%)	CO <sub>2</sub> (%)	<b>O</b> <sub>2</sub> (%)	H <sub>2</sub> S(ppm)	CO (ppm)	Com	ments
(No.)	Time (sees)	Depth to G (( (iii)	(mb) After	(Pa)	rate	0114 (70)	<b>LLL</b> (70)		02(70)	1120(ppiii)	co (ppiii)	Com	licitus
WS101	0	1.14		0.0	0.0								
w8101	0	1.14	991	0.0	0.0								
	30					0.0	0.0	0.0	20.4	0.0	0.0		
	60					0.0	0.0	0.0	20.4	0.0	0.0		
	90					0.0	0.0	0.0	20.4	0.0	0.0	Constant	
	120					0.0	0.0	0.0	20.4	0.0	0.0	Constant	readings
	150 180												
	210												
	240												
	270												
	300												
							PID (ppm	)					
						5	0.5						
						15	0.7						
						30	0.8						
						45	0.8						
						60	0.8						
						75	0.8						
	-					90	0.8	-	-				
						105	0.8						
KEY		1				120	0.0			1	I		I
aP: Atmospheric Pre	essure	NR: Not Recorded											
dP: Differential Pres		Note: Where 0.0 is sl	nown on the r	esults india	cates valu	e lower thar	the detection	on limit of the instru	iment.				
RZ: Response Zone				indiv	, and		Letteeth						



JOB DETAILS														
Location:	Torridon Hou	ıse					En	gineer: KO+JM						
Date:	05/11/2019			Job	Number:	19/3312		Time	: 10:30					
METEOROLOG	ICAL AND SI	TE INFORMATION	1											
State of ground:		X Dry				Moist		Wet				Delete As Requ	ired	
Wind:		X Calm				Light		Moderate			Strong	Ground Level		
Cloud cover:		None				Slight	X	Cloudy			Overcast			
Precipitation		X None				Slight		Moderate			Heavy			
Barometric pressu	e (mb) Before:	991				~8		Temperature (	°) 9					
-								1			ł			
INSTRUMENTA	Gas Data LMS		Accuracy: CH4 +	0.2% (0 to 5%)	+1.0% (at 3)	)%) +2 0% (at 1(	00%)· CO2 ±0.1%	(0 to 10%), ±3.0% (at 40%	): O2 ±0 5%					
Gas concentration:	Gas Data LMS Gas Data GFM							(0 to 5%), ±3.0% (at 40%)			Х	Tick Instru	iment used	
	Gas Data Griv	1450	,	,	,	,,	,,	(·····,// ·····,	, ,		А			
Pipe Reference	e: WS102 - 1	Instal	lation Type:	SPG/GW	Pip	pe Ø (mm):	50 <b>F</b>	Pipe Depth (m):	4.00	RZ Top:	0.50	RZ Base:	4.00	
BH	BH (No.)       Time (secs)       Depth to GW (m)       aP (mb) After       dP (Pa)       Flow rate       CH4 (%)       LEL (%)       CO2 (%)       O2 (%)       H2S(ppm)       CO (ppm)       Comments													
(No.)		-	(mb) After	(Pa)	rate	••••		- • •						
WS102	0	0.51	991	0.0	0.0									
	30					0.0	0.0	0.0	20.1	0.0	0.0			
	60					0.0	0.0	0.0	20.0	0.0	0.0			
	90					0.0	0.0	0.0	19.9	0.0	0.0			
	120					0.0	0.0	0.0	19.8	0.0	0.0			
	150					0.0	0.0	0.0	19.8	0.0	0.0			
	180					0.0	0.0	0.0	20.3	0.0	0.0			
	210					0.0	0.0	0.0	20.3	0.0	0.0			
	240 270					0.0	0.0	0.0	20.3	0.0	0.0	Constant	readings	
	300					0.0	0.0	0.0	20.5	0.0	0.0	Collstallt	Teadings	
	500						PID (ppm)							
						5	0.6							
						15	0.6							
						30	0.6							
						45	0.6							
						60	0.6							
						75	0.6							
						<u>90</u>	0.6							
	-					105 120	0.6		+					
KEY					I	140	0.0	1		I		1	1	
aP: Atmospheric P	ressure	NR: Not Recorded												
dP: Differential Pro		Note: Where 0.0 is s	hown on the r	esults indi	cates valu	e lower that	n the detectio	n limit of the instr	ument.					
RZ: Response Zon														



JOB DETAILS													
Location:	Torridon Hou	ise				-	Eng	gineer: KO+JM		-			
Date:	05/11/2019			Job 1	Number:	19/3312		Time	: 09:50				
METEOROLOGI	CAL AND SI	<b>FE INFORMATION</b>											
State of ground:		X Dry				Moist		Wet				Delete As Requ	iired
Wind:		X Calm				Light		Moderate			Strong	Ground Level	
Cloud cover:		None				Slight	X	Cloudy			Overcast		
Precipitation		X None				Slight		Moderate			Heavy		
Barometric pressure	e (mb) Before.	990				Singin		Temperature (	°) 9				
								I Contraction	1		4		
INSTRUMENTAT													
Gas concentration:	Gas Data LMS		-				-	0 to 10%), ±3.0% (at 40%)				Tick Instru	iment Used
	Gas Data GFM	1 436	Accuracy. CH4 ±	0.5% (010 5%)	, ±3.0% (at 50	7%), ±3.0% (at 10	J0%), CO2 ±0.3% (	$0.10.5\%$ ), $\pm 3.0\%$ (at $40\%$ )	, O2 ±0.270,		Х	<u> </u>	
Pipe Reference	WS103 - 1	Instal	ation Type:	SPG/GW	Piı	eØ(mm):	50 P	ipe Depth (m):	4.00	RZ Top:	0.50	RZ Base:	4.00
			<b>J1</b>					r r ()			<b>A</b>		8
BH	Time (secs)	Depth to GW (m)	aP	dP	Flow	CH <sub>4</sub> (%)	LEL (%)	$CO(\theta)$	$\mathbf{O}(0)$	II S(mmm)	CO(mm)	Com	
ВН (No.)	Time (secs)	Depth to Gw (m)	ar (mb) After	dP (Pa)	rate	$CH_4(\%)$	LEL (%)	CO <sub>2</sub> (%)	O <sub>2</sub> (%)	H <sub>2</sub> S(ppm)	CO (ppm)	Com	ments
. ,				. ,									
WS103	0	0.31	991	0.0	0.0								
	30					0.0	0.0	0.0	17.2	0.0	0.0		
	60					0.0	0.0	0.0	17.3	0.0	0.0		
	90					0.0	0.0	0.0	18.2	0.0	0.0		
	120					0.0	0.0	0.0	19.2	0.0	0.0		
	150					0.0	0.0	0.0	19.8	0.0	0.0		
	180					0.0	0.0	0.0	20.1	0.0	0.0		
	210					0.0	0.0	0.0	20.2	0.0	0.0		
	240					0.0	0.0	0.0	20.2	0.0	0.0		
	270					0.0	0.0	0.0	20.2	0.0	0.0	Constant	t readings
	300												
							PID (ppm)						
	-					5	0.0		-				
						15	0.0						
						<u>30</u> 45	0.0						
						45 60	0.0						
						75	0.0						
						<u> </u>	0.0						
						105	0.0						
	1					100	0.0						
KEY	1	1			1	140		1	1	1	1	1	1
aP: Atmospheric Pr	essure	NR: Not Recorded											
dP: Differential Pre		Note: Where 0.0 is sh	nown on the r	esults indic	cates valu	e lower than	the detection	limit of the instru	iment.				
RZ: Response Zone													



JOB DETAILS													
Location:	Torridon Hou	ise					Eng	ineer: KO+JM					
Date:	05/11/2019			Job 1	Number:	19/3312			<b>e:</b> 09:40				
METEODOLOCI		<b>FE INFORMATION</b>	ſ										
	CAL AND SI					Moist	r	Wet				Delete Ag Deen	dina d
State of ground:		X Dry				<u>+</u>				r	la.	Delete As Requ	lirea
Wind:		X Calm				Light		Moderate			Strong	Ground Level	1
Cloud cover:		None				Slight	X	Cloudy			Overcast		
Precipitation		X None				Slight		Moderate			Heavy		
Barometric pressure	(mb) Before:	990						Temperature (	°) 9				
INSTRUMENTAT	ION USED												
	Gas Data LMS	xi G3.18	Accuracy: CH4 ±	0.2% (0 to 5%)	, ±1.0% (at 30	)%), ±3.0% (at 10	00%); CO2 ±0.1% (0	to 10%), ±3.0% (at 40%	b); O2 ±0.5%				
Gas concentration:	Gas Data GFM		Accuracy: CH4 ±	0.3% (0 to 5%)	, ±3.0% (at 30	0%), ±3.0% (at 10	00%); CO2 ±0.3% (0	to 5%), ±3.0% (at 40%)	; O2 ±0.2%;		Х	Tick Instru	ment Used
J												-	
Pipe Reference:	WS104A - 1	Instal	ation Type:	SPG/GW	Pij	e Ø (mm):	50 Pi	pe Depth (m):	4.00	RZ Top:	1.00	RZ Base:	4.00
		•										•	
BH	Time (secs)	Depth to GW (m)	aP	dP	Flow	CH <sub>4</sub> (%)	LEL (%)	CO <sub>2</sub> (%)	<b>O</b> <sub>2</sub> (%)	H <sub>2</sub> S(ppm)	CO (ppm)	Com	ments
(No.)	Time (secs)	Deptil to G w (iii)	ar (mb) After	(Pa)	rate	$CH_4(70)$	LEL (70)	$CO_2(76)$	$O_2(70)$	$H_2S(ppin)$	CO (ppin)	Com	ments
(110.)			(IIID) AITCI	( <b>I</b> <i>a</i> )	Tate								
WS104A	0	0.29	990	0.0	0.0								
	30					0.0	0.0	0.0	20.2	0.0	0.0		
	60					0.0	0.0	0.0	20.2	0.0	0.0		
	90					0.0	0.0	0.0	20.2	0.0	0.0		
	120					0.0	0.0	0.0	20.2	0.0	0.0	Constant	readings
	150												
	180												
	210												
	240												
	270												
	300								_				
							PID (ppm)						
						5	2.4						
						15	2.2						
						30	2.2						
						45	2.1						
	-					60	2.1		-	-			
						75	2.0						
						90 105	1.9 1.9						
						105	1.9		+	+			
KEY	I	1				120	1.0			l	1	1	1
aP: Atmospheric Pre	essure	NR: Not Recorded											
dP: Differential Pres		Note: Where 0.0 is sl	hown on the r	esults indi	cates valu	e lower than	the detection	limit of the instru	iment.				
RZ: Response Zone							deteenon	or the mou					



JOB DETAILS													
Location:	Torridon Hou	ise					En	gineer: KO+JM					
Date:	21/11/2019			Job N	Number:	19/3312		Time	:				
METEOROLOGI	CAL AND SI	TE INFORMATIO	N										
State of ground:		Dry				Moist		Wet				Delete As Requ	ired
Wind:		Calm				Light		Moderate		<b></b>	Strong	Ground Level	
Cloud cover:		None				Slight		Cloudy			Overcast		
Precipitation		None				Slight		Moderate			Heavy		ļ
Barometric pressure	(mh) Pafara	Itolic				Singin		Temperature (°	\				
								Temperature (	/				
INSTRUMENTAT													
Gas concentration:	Gas Data LMS							5 (0 to 10%), ±3.0% (at 40%				Tick Instru	ment used
	Gas Data GFM	436	Accuracy: CH4 ±	0.3% (0 to 5%)	, ±3.0% (at 30	0%), ±3.0% (at 1	00%); CO2 ±0.3%	5 (0 to 5%), ±3.0% (at 40%)	); O2 ±0.2%;		Х		
Pipe Reference:	DU101 1	Install	ation Type:	SDC/CW	Dim	eØ(mm):	50 1	Pipe Depth (m):	4.00	RZ Top:	0.50	RZ Base:	4.00
Pipe Reference:	BH101 - 1	Instan	ation Type:	SPG/GW	Pip	e Ø (mm):	50	Pipe Depth (m):	4.00	RZ TOP:	0.50	RZ Base:	4.00
BH	Time (secs)	Depth to GW (m)	aP	dP	Flow	CH <sub>4</sub> (%)	LEL (%)	CO <sub>2</sub> (%)	$O_2(\%)$	H <sub>2</sub> S(ppm)	CO (ppm)	Com	nents
(No.)			(mb) After	(Pa)	rate								
BH101	0												
	30											No Access.	Car on top.
	60												
	90												
	120												
	150												
	180	-								-		ł	
	210 240												
	240												
	300												
	200						PID (ppm)					n	
						5	TID (ppm)	,					
						15							
						30							
						45							
						60							
						75							
						90							
						105							
						120							
<u>KEY</u> aP: Atmospheric Pr dP: Differential Pre RZ: Response Zone	ssure	NR: Not Recorded Note: Where 0.0 is s	shown on the	results ind	licates val	lue lower th	an the detect	tion limit of the inst	rument.				



JOB DETAILS													
Location:	Torridon Hou	ise					Eng	ineer: KO+JM					
Date:	21/11/2019			Job	Number:	19/3312	<u> </u>	Time	: 13:20				
METEODOLOGI		<b>FE INFORMATION</b>	T										
	CAL AND SI		1			Moist	r	Wet				Delete Ag Degr	-inc d
State of ground:								•		·	Ta	Delete As Requ	Irea
Wind:		Calm				Light		Moderate			Strong	Ground Level	<u> </u>
Cloud cover:		None				Slight	X	Cloudy			Overcast		
Precipitation		X None				Slight		Moderate			Heavy		
Barometric pressure	e (mb) Before:	998						Temperature (	°) 4		1		
INSTRUMENTA	TION USED												
	Gas Data LMS	xi G3.18	Accuracy: CH4 ±	0.2% (0 to 5%)	, ±1.0% (at 3	0%), ±3.0% (at 10	00%); CO2 ±0.1% (0	to 10%), ±3.0% (at 409	6); O2 ±0.5%				
Gas concentration:	Gas Data GFM	I 436	Accuracy: CH4 ±	0.3% (0 to 5%)	, ±3.0% (at 3	0%), ±3.0% (at 10	00%); CO2 ±0.3% (0	to 5%), ±3.0% (at 40%	); O2 ±0.2%;		Х	Tick Instru	iment Used
	-											B	
Pipe Reference	<b>:</b> BH102 - 1	Instal	lation Type:	SPG/GW	Pij	pe Ø (mm):	50 Pi	pe Depth (m):	4.00	RZ Top:	1.00	RZ Base:	4.00
BH	Time (secs)	Depth to GW (m)	aP	dP	Flow	CH <sub>4</sub> (%)	LEL (%)	CO <sub>2</sub> (%)	O <sub>2</sub> (%)	H <sub>2</sub> S(ppm)	CO (ppm)	Com	ments
(No.)	Time (sees)		(mb) After	(Pa)	rate	0114 (70)	LLL (70)		02(70)	1129(ppiii)	co (ppm)	Com	incinto
		0.15	、 <i>,</i>	. ,									
BH102	0	3.15	998	0.0	0.0								
	30					0.0	0.0	0.2	4.4	0.0	0.0		
	60					0.0	0.0	0.2	3.8	0.0	0.0		
	90					0.0	0.0	0.2	3.6	0.0	0.0		
	120					0.0	0.0	0.2	3.6	0.0	0.0		
	150					0.0	0.0	0.2	3.5	0.0	0.0		
	180					0.0	0.0	0.2	3.5	0.0	0.0		
	210					0.0	0.0	0.2	3.5	0.0	0.0	Constant	t readings
	240												
	270											<b> </b>	
	300						DID (march)					<b> </b>	<u> </u>
							PID (ppm)				-	<b> </b>	
						5 15	0.7					<u> </u>	
						30	0.8		-			<u> </u>	+
						45	0.8					1	-
						60	0.8						
						75	0.8						
						90	0.8						
						105	0.8						1
						120	0.8						
<u>KEY</u>													
aP: Atmospheric Pr		NR: Not Recorded											
dP: Differential Pre		Note: Where 0.0 is si	hown on the 1	esults indi	cates valu	e lower than	n the detection	limit of the instr	ument.				
RZ: Response Zone	•												



JOB DETAILS													
Location:	Torridon Hou	ise					Eng	ineer: KO+JM					
Date:	21/11/2019			Job	Number:	19/3312	8		: 13:40				
									•	•			
	CAL AND SI	TE INFORMATION			r	T		1					
State of ground:		X Dry				Moist		Wet		·	1	Delete As Requ	ired
Wind:		Calm			X	Light		Moderate			Strong	Ground Level	
Cloud cover:		None				Slight	Х	Cloudy			Overcast		
Precipitation		X None				Slight		Moderate			Heavy		
Barometric pressure	(mb) Before:	997						Temperature (	<b>')</b> 4				
INSTRUMENTAT	ION USED												
	Gas Data LMS	xi G3.18	Accuracy: CH4 ±	0.2% (0 to 5%)	, ±1.0% (at 30	0%), ±3.0% (at 10	00%); CO2 ±0.1% (0	to 10%), ±3.0% (at 40%	b); O2 ±0.5%				
Gas concentration:	Gas Data GFM		Accuracy: CH4 ±	0.3% (0 to 5%)	, ±3.0% (at 30	0%), ±3.0% (at 10	00%); CO2 ±0.3% (0	to 5%), ±3.0% (at 40%)	; O2 ±0.2%;		Х	Tick Instru	iment Used
J												<b>.</b>	
Pipe Reference:	WS101 - 1	Instal	ation Type:	SPG/GW	Pij	pe Ø (mm):	50 Pi	pe Depth (m):	3.50	RZ Top:	0.50	RZ Base:	3.50
BH	Time (secs)	Depth to GW (m)	aP	dP	Flow	CH <sub>4</sub> (%)	LEL (%)	CO <sub>2</sub> (%)	<b>O</b> <sub>2</sub> (%)	H <sub>2</sub> S(ppm)	CO (ppm)	Com	ments
(No.)	Time (sees)	Depth to G W (m)	(mb) After	(Pa)	rate	CII <sub>4</sub> (70)		$\operatorname{CO}_2(70)$	$O_2(70)$	1120( <b>pp</b> 11)	co (ppiii)	Com	nents
				, ,									
WS101	0	1.10	998	0.0	0.0								
	30					0.0	0.0	0.0	15.8	0.0	0.0		
	60					0.0	0.0	0.0	16.3	0.0	0.0		
	90					0.0	0.0	0.0	16.3	0.0	0.0		
	120					0.0	0.0	0.0	16.3	0.0	0.0		
	150					0.0	0.0	0.0	16.3	0.0	0.0	Constant	readings
	180											L	
	210								-			<b> </b>	
	240 270											<b> </b>	
	300								-			ł	
	300						PID (ppm)					i	
						5	0.9						<u> </u>
						15	1.0						1
						30	1.0						
						45	1.0						
						60	1.0						
						75	1.0						
						90	1.0						
						105	1.0						
						120	1.0						<u> </u>
<u>KEY</u>													
aP: Atmospheric Pro		NR: Not Recorded	anna an di			a 1am - 4	the detect	limit of the bar					
dP: Differential Pres RZ: Response Zone	sure	Note: Where 0.0 is sl	nown on the r	esults indi	cates valu	le lower that	the detection	limit of the instr	ument.				
Kesponse Zone													



JOB DETAILS													
Location:	Torridon Hou	ise					En	gineer: KO+JM					
Date:	21/11/2019			Job 1	Number:	19/3312		Time	: 13:00				
METEOROLOGI	CAL AND SI	TE INFORMATION	I										
State of ground:		X Dry				Moist		Wet				Delete As Requ	ired
Wind:		Calm			Х	Light		Moderate			Strong	Ground Level	
Cloud cover:		None				Slight	X	Cloudy			Overcast		
Precipitation		X None				Slight		Moderate			Heavy	<u> </u>	
Barometric pressure	e (mb) Before:	998				Singin		Temperature (°	) 4		licavy		
_		<i>))</i> 0						Temperature (	/		1		
INSTRUMENTAT													
Gas concentration:	Gas Data LMS							(0 to 10%), ±3.0% (at 40%				Tick Instru	ment used
	Gas Data GFN	1 436	Accuracy: CH4 ±	0.3% (0 to 5%)	, ±3.0% (at 30	0%), ±3.0% (at 10	0%); CO2 ±0.3%	(0 to 5%), ±3.0% (at 40%)	; O2 ±0.2%;		Х		
Pipe Reference	: WS102 - 1	Instal	ation Type:	SPG/GW	Pir	e Ø (mm):	50 I	Pipe Depth (m):	4.00	RZ Top:	0.50	RZ Base:	4.00
1.po		1			1			- <b>F F</b> ():					
BH (No.)Time (secs)Depth to GW (m)aP (mb) AfterdP (Pa)Flow rateCH4 (%)LEL (%) $CO_2$ (%) $O_2$ (%) $H_2S(ppm)$ CO (ppm)Comments													
	Time (secs)	Deptil to G w (iii)				$CH_4(70)$	LEL (70)	$CO_2(70)$	$O_2(70)$	$H_2S(ppin)$	CO (ppiii)	Com	nents
. ,			, ,	. ,									
WS102	0	0.64	998	0.0	0.0								
	30					0.0	0.0	0.0	19.2	0.0	0.0		
	60					0.0	0.0	0.0	19.0	0.0	0.0		
	90			_		0.0	0.0	0.0	19.1	0.0	0.0		
	120					0.0	0.0	0.0	19.1	0.0	0.0		
	150					0.0	0.0	0.0	19.1	0.0	0.0	Constant	readings
	180												
	210 240												
	240												
	300												
	200						PID (ppm)						
						5	0.8						
						15	0.8						
						30	0.8						
						45	0.7						
						60	0.7						
						75	0.7						
						90	0.7					-	
						105	0.6						
KEY						120	0.0			1			I
aP: Atmospheric Pr	essure	NR: Not Recorded											
dP: Differential Pre		Note: Where 0.0 is sl	hown on the r	esults indi	cates valu	e lower that	the detection	n limit of the instru	iment.				
RZ: Response Zone													



JOB DETAILS													
Location:	Torridon Hou	ise					Eng	ineer: KO+JM					
Date:	21/11/2019			Job	Number:	19/3312		Time	12:49				
METEOROLOGI	ICAL AND SI	TE INFORMATION	I										
State of ground:		X Dry				Moist		Wet				Delete As Requ	iired
Wind:		Calm			Х	Light		Moderate			Strong	Ground Level	
Cloud cover:		None				Slight	X	Cloudy			Overcast		
Precipitation		X None				Slight		Moderate			Heavy		
Barometric pressure	e (mb) Before <sup>.</sup>	999				Singin		Temperature (	°) 4		T		
								I Contraction of the second se	/		4		
INSTRUMENTA													
Gas concentration:	Gas Data LMS Gas Data GFN							0 to 10%), ±3.0% (at 40%) 0 to 5%), ±3.0% (at 40%)				Tick Instru	ment Used
L	Gas Data GFN	1 436	Accuracy. CI14 ±	0.5% (0105%)	, ±3.0% (at 5	7%), ±3.0% (at 10	50%), CO2 ±0.5% (	0 10 5 %), ±3.0% (at 40%)	), O2 ±0.270,		Х	ļ	
Pipe Reference	: WS103 - 1	Instal	lation Type:	SPG/GW	Pi	e Ø (mm):	50 P	ipe Depth (m):	4.00	RZ Top:	0.50	RZ Base:	4.00
	1	•						<b>1 1</b> \ <i>i</i>			•		•
BH	Time (secs)	Depth to GW (m)	aP	dP	Flow	CH <sub>4</sub> (%)	LEL (%)	CO <sub>2</sub> (%)	<b>O</b> <sub>2</sub> (%)	H <sub>2</sub> S(ppm)	CO (ppm)	Com	ments
(No.)	Time (secs)	Deptil to G w (III)	ar (mb) After	(Pa)	rate	$CH_4(70)$	LEL (70)	$CO_2(70)$	$O_2(70)$	$H_2S(ppill)$	CO (ppm)	Com	ments
. ,				. ,									
WS103	0	0.37	999	0.0	0.0								
	30					0.0	0.0	0.0	18.5	0.0	0.0		
	60					0.0	0.0	0.0	18.1	0.0	0.0		
	90					0.0	0.0	0.0	18.1	0.0	0.0		
	120					0.0	0.0	0.0	18.1	0.0	0.0	Constant	readings
	150												
	180	-					-				-		
	210 240												
	240	-									-		
	300												
	200						PID (ppm)						
						5	0.9	1					
						15	0.9						
						30	0.9						
						45	0.9						
						60	0.9						
						75	0.9						
						90	0.9						
						105	0.9					-	
KEY						120	0.9						
aP: Atmospheric Pr dP: Differential Pre	essure	NR: Not Recorded Note: Where 0.0 is sl	nown on the r	esults indi	cates valu	e lower thar	the detection	limit of the instru	ument.				
RZ: Response Zone	e												



JOB DETAILS													
Location:	Torridon Hou	ıse					Eng	ineer: KO+JM					
Date:	21/11/2019			Job	Number:	19/3312		Time	: 12:20				
METEOROLOGI	CAL AND SI	TE INFORMATION	1										
State of ground:		X Dry			r	Moist		Wet				Delete As Requ	uired
Wind:		Calm			X	Light		Moderate			Strong	Ground Level	
Cloud cover:		None			Λ	-	v	Cloudy			Overcast	Olouliu Level	
						Slight	Λ	-			-		
Precipitation		X None				Slight		Moderate			Heavy		
Barometric pressure	e (mb) Before:	998						Temperature (	-) <u>4</u>				
INSTRUMENTAT	TION USED												
	Gas Data LMS	5xi G3.18	Accuracy: CH4 ±	0.2% (0 to 5%)	, ±1.0% (at 3	0%), ±3.0% (at 10	00%); CO2 ±0.1% (0	0 to 10%), ±3.0% (at 40%	b); O2 ±0.5%			Tiels he etc.	and the set
Gas concentration:	Gas Data GFM	1 436	Accuracy: CH4 ±	0.3% (0 to 5%)	, ±3.0% (at 3	0%), ±3.0% (at 10	00%); CO2 ±0.3% (0	0 to 5%), ±3.0% (at 40%)	; O2 ±0.2%;		Х	lick Instru	iment Used
											-	-	
Pipe Reference	WS104A - 1	Instal	lation Type:	SPG/GW	Pij	pe Ø (mm):	50 Pi	ipe Depth (m):	4.00	RZ Top:	1.00	RZ Base:	4.00
BH	Time (secs)	Depth to GW (m)	aP	dP	Flow	CH <sub>4</sub> (%)	LEL (%)	CO <sub>2</sub> (%)	O <sub>2</sub> (%)	H <sub>2</sub> S(ppm)	CO (ppm)	Com	ments
(No.)	Time (Sees)	Depth to G (( (iii)	(mb) After	(Pa)	rate	0114 (70)	LLL (70)		$O_2(70)$	1125( <b>pp</b> 111)	CO (ppiii)	Com	litents
				. ,									
WS104A	0	0.33	998	0.0	0.0								
	30					0.0	0.0	0.0	15.1	0.0	0.0	Water suck	ed into pipe.
	60					0.0	0.0	0.0	14.7	0.0	0.0	Not able to a	continue test.
	90												
	120												
	150												
	180												
	210								_				
	240 270												
	300												
	300						PID (ppm)						
	-					-	TID (ppm)	4					
						5 15							
						30							
						45							
						60							
						75							
						90							
						105							
						120							
KEY													
aP: Atmospheric Pr		NR: Not Recorded	hanna a sate			a 1am - 4	4ha datat	limit of the last					
dP: Differential Pre RZ: Response Zone		Note: Where 0.0 is sl	nown on the r	results indi	cates valu	le lower that	the detection	limit of the instr	ument.				
Kesponse Zone													



JOB DETAILS													
Location:		orridon House Engineer: KO+JM											
Date:	12/12/2019			Job I	Number:	19/3312		Time	: 12:00				
METEOROLOGICAL AND SITE INFORMATION													
State of ground:		Dry			Moist		Wet				Delete As Requ	iired	
Wind:		Calm				Light		Moderate			Strong	Ground Level	
Cloud cover:		None				Slight		Cloudy			Overcast		
Precipitation		None		Slight			Moderate			Heavy	ļ	4	
Barometric pressure			Singht	<u> </u>	Temperature (°)			1100.09					
INSTRUMENTATION USED Gas Data LMSxi G3 18 Accuracy: CH4 ±0.2% (0 to 5%), ±1.0% (at 30%), ±3.0% (at 100%); CO2 ±0.1% (0 to 10%), ±3.0% (at 40%); O2 ±0.5%													
Gas concentration:	Gas Data LMS											Tick Instru	iment used
	Gas Data GFM 436         Accuracy: CH4 ±0.3% (0 to 5%), ±3.0% (at 30%), ±3.0% (at 100%); CO2 ±0.3% (0 to 5%), ±3.0% (at 40%); O2 ±0.2%;         X												
Pipe Reference:	BH101 - 1	Install	ation Type:	SPG/GW	Pir	e Ø (mm):	50	Pipe Depth (m):	4.00	RZ Top:	0.50	RZ Base:	4.00
			JI					<b>T</b> <sup>2</sup> <b>T</b> <sup>2</sup> <b>C</b> <sup>2</sup>					
DI	<b>T</b> !	Denth As CWU (m)	- D	JD	T2L			CO (0()	$\mathbf{O}(0)$	<b>H C</b> ()	<b>CO</b> (1111)	Com	
BH (No.)	Time (secs)	Depth to GW (m)	aP (mb) After	dP (Pa)	Flow rate	CH <sub>4</sub> (%)	LEL (%)	$\operatorname{CO}_2(\%)$	O <sub>2</sub> (%)	H <sub>2</sub> S(ppm)	CO (ppm)	Com	ments
(110.)			(IIID) AIG	(1 a)	Tate								
BH101	0											No access.	Car on top.
	30												
	60												
	90												
	120												
	150												
	180												
	210	-								-			
	240 270						1						
	300											1	
	300						PID (ppm	)					
						_	TID (ppm	)				-	-
						5 15							
						30							
						45							
						60							
						75							
						90							
						105							
						120							
<u>KEY</u>													
aP: Atmospheric Pr		NR: Not Recorded		<b>1</b> . • •									
dP: Differential Pre		Note: Where 0.0 is s	shown on the	results inc	licates va	lue lower th	an the detec	tion limit of the inst	rument.				
RZ: Response Zone	:												



JOB DETAILS													
Location:	Torridon House Engineer: KO+JM												
Date:	12/12/2019			Job I	Number:	19/3312		Time	: 12:00				
METEOROLOGICAL AND SITE INFORMATION													
State of ground:												Delete As Requ	ired
Wind:								Moderate		Strong	Ground Level		
Cloud cover:						Light Slight		Cloudy			Overcast	Cround Dever	
					v	-		Moderate	<u>.</u>				
INSTRUMENTATION USED													
	Gas Data LMS	xi G3.18	Accuracy: CH4 ±	0.2% (0 to 5%),	±1.0% (at 30	0%), ±3.0% (at 10	00%); CO2 ±0.1% (0	0 to 10%), ±3.0% (at 40%	); O2 ±0.5%			Tield Instru	montilogd
Gas concentration:	Gas Data GFM	436	Accuracy: CH4 ±	0.3% (0 to 5%),	±3.0% (at 30	0%), ±3.0% (at 10	00%); CO2 ±0.3% (0	0 to 5%), ±3.0% (at 40%)	O2 ±0.2%;		Х	Tick Instru	ment Used
Pipe Reference:	BH102 - 1	Instal	lation Type:	SPG/GW	Pip	pe Ø (mm):	50 Pi	ipe Depth (m):	4.00	RZ Top:	1.00	RZ Base:	4.00
BH	Time (secs)	Depth to GW (m)	aP	dP	Flow	CH <sub>4</sub> (%)	LEL (%)	CO <sub>2</sub> (%)	$O_2(\%)$	H <sub>2</sub> S(ppm)	CO (ppm)	Com	nents
(No.)	Time (sees)		(mb) After	(Pa)	rate	0114 (70)		002(70)	02(70)	1120 ( <b>pp</b> 111)	co (ppm)	00111	licitis
				. ,									
BH102	0	2.79	984	1752.0	120.0								
	30			358	39.5	0.0	0.0	0.3	0.5	0.0	0.0		
	60			238	22.7	0.0	0.0	0.3	0.0	0.0	0.0		
	90			225	21.4	0.0	0.0	0.3	0.8	0.0	0.0		
	120			211	20.1	0.0	0.0	0.3	0.5	0.0	0.0		
	150			201	19	0.0	0.0	0.3	0.4	0.0	0.0		
	180			190	18.2	0.0	0.0	0.3	0.3	0.0	0.0		
	210			182	17.6	0.0	0.0	0.3	0.2	0.0 0.0	0.0		
	240 270			176 165	16.8 16	0.0	0.0	0.3	0.2	0.0	0.0		
	300			103	14.8	0.0	0.0	0.3	0.0	0.0	0.0		
	500			151	14.0	0.0		0.5	0.0	0.0	0.0		
							PID (ppm)						
						5 15	0.8						
						30	0.9						
						30 45	0.9						
						60	0.9						
						75	1.0						
						90	1.0						
						105	1.0						
						120	1.0						
<u>KEY</u>													
aP: Atmospheric Pressure NR: Not Recorded													
dP: Differential Pressure Note: Where 0.0 is shown on the results indicates value lower than the detection limit of the instrument.													
RZ: Response Zone													



JOB DETAILS													
Location:	Torridon House Engineer: KO+JM												
Date:	12/12/2019	T		Job 1	Number:	Time:         11:25							
METEOROLOGICAL AND SITE INFORMATION													
	CAL AND SI	X Dry	<u> </u>			Maint		W/a4				Delete Ag Beau	
State of ground:		Moist Wet X Light Modera					r		Delete As Required				
Wind:	Calm					Light		Moderate			Strong	Ground Level	
Cloud cover:						Slight	Cloudy				Overcast		
Precipitation None						X Slight Moderate					Heavy		
Barometric pressure	(mb) Before:	984						Temperature (°	) 5		_		
INSTRUMENTAT	TON USED												
Gas Data LMSxi G3.18 Accuracy: CH4 ±0.2% (0 to 5%						0%), ±3.0% (at 10	00%); CO2 ±0.1% (0	to 10%), ±3.0% (at 40%			Ti ala la atau		
Gas concentration:	Gas Data GFM	1 436	Accuracy: CH4 ±	0.3% (0 to 5%)	, ±3.0% (at 30	0%), ±3.0% (at 10	00%); CO2 ±0.3% (0	to 5%), ±3.0% (at 40%)	X Tick Instrument Used				
	-								-	-	-		-
Pipe Reference:	WS101 - 1	Instal	lation Type:	SPG/GW	Pir	pe Ø (mm):	50 Pi	pe Depth (m):	3.50	RZ Top:	0.50	RZ Base:	3.50
BH	Time (secs)	Depth to GW (m)	aP	dP	Flow	CH <sub>4</sub> (%)	LEL (%)	CO <sub>2</sub> (%)	<b>O</b> <sub>2</sub> (%)	H <sub>2</sub> S(ppm)	CO (ppm)	Com	ments
(No.)	. ( ,	· · · · · · · · · · · · · · · · · · ·	(mb) After	(Pa)	rate	- 4()		2 ( · · · )	- 2 ( )	2- (11 )	41 /		
WS101	0	0.84	984	0.0	0.0								
W3101		0.84	704	0.0	0.0								
	30					0.0	0.0	0.0	14.5	0.0	0.0		
	60					0.0	0.0	0.0	14.2	0.0	0.0	<b> </b>	
	90					0.0	0.0	0.0	14.3	0.0	0.0	<b> </b>	
	120					0.0	0.0	0.0	14.3	0.0	0.0	<b></b>	
	150 180					0.0	0.0	0.0	14.3 14.3	0.0	0.0	Constant	t readings
	210					0.0	0.0	0.0	14.5	0.0	0.0	Constant	. leadings
	240												<u> </u>
	270												
	300												
							PID (ppm)						
						5	0.7					-	
			1 1			15	0.7						
						30	0.8						
						45	0.8						
				ļ		60	0.8						
						75	0.8						
						90	0.8						_
					<sup> </sup>	105	0.8						
KEY				L		120	0.8						
aP: Atmospheric Pre	accura	NR: Not Recorded											
dP: Differential Pres		Note: Where 0.0 is sh	hown on the r	esults indi	cates valu	e lower that	the detection	limit of the instru	iment				
RZ: Response Zone			lown on the r	courto mar	cutes vuru	le lower that	i de detection	mint of the mout	intent.				



JOB DETAILS													
Location:	Torridon Hou	ise					En	gineer: KO+JM					
Date:	12/12/2019			Job 1	Number:	19/3312		Time	: 11:40				
METEOROLOGI	CAL AND SI	TE INFORMATION	I										
State of ground:		X Dry	-			Moist		Wet				Delete As Requ	ired
Wind:		Calm			Х	Light		Moderate			Strong	Ground Level	
Cloud cover:		None				Slight		Cloudy		Х	Overcast		
Precipitation		None			Х	Slight		Moderate			Heavy		
Barometric pressure	e (mb) Before.	984				Singin		Temperature (*	) 4				
		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,						remperature (	/ <u>'</u>		4		
INSTRUMENTAT													
Gas concentration:	Gas Data LMS							(0 to 10%), ±3.0% (at 40%				Tick Instru	ment used
	Gas Data GFM	1 436	Accuracy: CH4 ±	0.3% (0 to 5%)	, ±3.0% (at 30	1%), ±3.0% (at 10	10%); CO2 ±0.3%	(0 to 5%), ±3.0% (at 40%)	; 02 ±0.2%;		Х		
Pipe Reference	: WS102 - 1	Install	ation Type:	SPG/GW	Piı	eØ(mm):	50 I	Pipe Depth (m):	4.00	RZ Top:	0.50	RZ Base:	4.00
		8						1 1 1			J.		
BH (No.)     Time (secs)     Depth to GW (m)     aP (mb) After     dP (Pa)     Flow rate     CH <sub>4</sub> (%)     LEL (%)     CO <sub>2</sub> (%)     H <sub>2</sub> S(ppm)     CO (ppm)     Comments													
	Time (sees)	Deptil to G W (III)				CII <sub>4</sub> (70)	LEL (70)	$CO_2(70)$	$O_2(70)$	11 <sub>2</sub> 5(ppiii)	CO (ppiii)	Com	nents
· · ·		0.45	<u>`</u>	· · /									
WS102	0	0.47	984	-42.0	-10.0								
	30			0	0	0.0	0.0	0.0	17.0	0.0	0.0		
	60					0.0	0.0	0.0	17.1	0.0	0.0	Water sucked	
	90											Not able to c	continue test.
	120												
	150												
	180												
	210												
	240												
	270												
	300												
	-						PID (ppm)						
						5 15							
						15 30							
						45							
						60							
						75							
						90							
						105							
						120							
KEY													
aP: Atmospheric Pr		NR: Not Recorded											
dP: Differential Pre		Note: Where 0.0 is sl	nown on the	results indi	cates valu	e lower that	n the detectio	n limit of the instru	iment.				
RZ: Response Zone	•												



JOB DETAILS														
Location:	Torridon Hou	ıse					Eng	ineer: KO+JM						
Date:	12/12/2019			Job	Number:	19/3312		Time	: 12:15					
METEOROLOG	ICAL AND SI	TE INFORMATION	I											
State of ground:		X Dry				Moist		Wet				Delete As Requ	iired	
Wind:		Calm				Light		Moderate			Strong	Ground Level		
Cloud cover:		None			-	Slight		Cloudy		X	Overcast	Ground Eever		
Precipitation		None				Slight		Moderate		<u>^</u>	Heavy			
<u>^</u>					Λ	Slight					Heavy			
Barometric pressur	e (mb) Before:	981						Temperature (	) 4		ļ			
INSTRUMENTA	TION USED													
Geographic	Gas Data LMS	5xi G3.18	Accuracy: CH4 ±	0.2% (0 to 5%)	, ±1.0% (at 30	0%), ±3.0% (at 10	00%); CO2 ±0.1% (	0 to 10%), ±3.0% (at 40%	b); O2 ±0.5%			Tiels he etc.	un and the ad	
Gas concentration:	Gas Data GFM	1 436	Accuracy: CH4 ±	0.3% (0 to 5%)	, ±3.0% (at 30	0%), ±3.0% (at 10	00%); CO2 ±0.3% (	0 to 5%), ±3.0% (at 40%)	; O2 ±0.2%;		Х	lick instru	iment Used	
	-										-	-		
Pipe Reference	<b>WS103 - 1</b>	Instal	lation Type:	SPG/GW	Pip	pe Ø (mm):	50 P	ipe Depth (m):	4.00	RZ Top:	0.50	RZ Base:	4.00	
BH	BH (No.)Time (secs)Depth to GW (m) $aP$ $dP$ Flow (Pa) $CH_4$ (%)LEL (%) $CO_2$ (%) $O_2$ (%) $H_2S(ppm)$ $CO$ (ppm)Comments													
(No.)	Time (bees)		(mb) After	(Pa)	rate	0114 (70)			02(70)	<u>2</u> S( <b>pp</b> )	ee (ppm)	0011		
· · ·			, ,	. ,										
WS103	0	0.24	981	0.0	0.0									
	30					0.0	0.0	0.0	19.8	0.0	0.0			
	60					0.0	0.0	0.0	19.1	0.0	0.0			
	90					0.0	0.0	0.0	20.2	0.0	0.0			
	120					0.0	0.0	0.0	20.2	0.0	0.0			
	150					0.0	0.0	0.0	20.3	0.0	0.0			
	180					0.0	0.0	0.0	20.3	0.0	0.0			
	210 240					0.0	0.0	0.0	20.3 20.3	0.0	0.0	Constant		
	240					0.0	0.0	0.0	20.3	0.0	0.0	Constan	t readings	
	300													
	500						PID (ppm)							
						5	0.5							
						15	0.3							
						30	0.4							
						45	0.4							
						60	0.4							
						75	0.4							
						90	0.4							
	+					105	0.4					-	-	
VEV						120	0.4	1						
<u>KEY</u> aP: Atmospheric P	raccura	NR: Not Recorded												
dP: Differential Pre		Note: Where 0.0 is sl	nown on the r	esults indi	cates valu	e lower thar	the detection	limit of the instra	iment					
RZ: Response Zone		1.660. Where 6.0 13 3	io an on the r	courto mun	cares valu	e iower und		mint of the mout						



JOB DETAILS														
Location:	Torridon Hou	ise					Engi	neer: KO+JM						
Date:	12/12/2019			Job 1	Number:	19/3312		Time	<b>:</b> 11:10					
METEODOLOCI		<b>FE INFORMATION</b>	r											
State of ground:	CAL AND SI					Moist		Wet				Delete As Requ	inod	
-					v					· · · · ·	-		ireu	
Wind:		Calm			Х	Light		Moderate			Strong	Ground Level		
Cloud cover:		None				Slight		Cloudy			Overcast			
Precipitation		None			Х	Slight		Moderate			Heavy			
Barometric pressure	(mb) Before:	985						Temperature (°	) 5					
INSTRUMENTAT	ION USED													
	Gas Data LMS	xi G3.18	Accuracy: CH4 ±	0.2% (0 to 5%)	, ±1.0% (at 30	9%), ±3.0% (at 10	00%); CO2 ±0.1% (0	to 10%), ±3.0% (at 40%	); O2 ±0.5%					
Gas concentration:	Gas Data GFM	I 436	Accuracy: CH4 ±	0.3% (0 to 5%)	, ±3.0% (at 30	9%), ±3.0% (at 10	00%); CO2 ±0.3% (0	to 5%), ±3.0% (at 40%);	; O2 ±0.2%;		Х	Tick Instru	nent Used	
	•													
Pipe Reference:	WS104A - 1	Instal	ation Type:	SPG/GW	PiĮ	oe Ø (mm):	50 Pi	pe Depth (m):	4.00	RZ Top:	1.00	RZ Base:	4.00	
BH	BH (No.)     Time (secs)     Depth to GW (m)     aP     dP     Flow     CH4 (%)     LEL (%)     CO2 (%)     O2 (%)     H2S(ppm)     CO (ppm)     Comments													
	Time (sees)	Deptil to G W (III)				CII4 (70)	LEL (70)	$CO_2(70)$	$O_2(70)$	11 <sub>2</sub> 5(ppiii)	CO (ppm)	Conn	lients	
. ,														
WS104A	0	0.30	985	0.0	0.0									
	30					0.0	0.0	0.0	19.4	0.0	0.0	Water sucked	up the pipe.	
	60											Not able to c	ontinue test.	
	90													
	120													
	150													
	180													
	210 240													
	240													
	300													
	200						PID (ppm)							
						5	TID (ppin)							
						15								
						30								
						45								
						60								
						75								
						90								
						105				+				
KEV						120								
<u>KEY</u> aP: Atmospheric Pre	0001170	NR: Not Recorded												
dP: Differential Pres		Note: Where 0.0 is sl	nown on the r	esults indi	rates valu	e lower that	the detection	limit of the instru	ment					
RZ: Response Zone		1.000. 001010 0.013 3	io an on the r	counto mur	cates valu	e is wer tildi	detection	mint of the mout						



JOB DETAILS													
Location:	Torridon Hou	ise					Eng	ineer: KO+JM					
Date:	06/01/2020			Job I	Number:	19/3312		Time	: 14:00				
METEOROLOG	CAL AND SI	TE INFORMATIO	N										
State of ground:		Dry				Moist		Wet				Delete As Requ	iired
Wind:		Calm				Light		Moderate			Strong	Ground Level	1
Cloud cover:		None				Slight		Cloudy			Overcast		<u> </u>
Precipitation		None				Slight		Moderate			Heavy	ļ	4
Barometric pressur	e (mb) Before:							Temperature (	')		1		
INSTRUMENTA	FION LIFED										_		
INSTRUMENTA	Gas Data LMS	vi G3 18	Accuracy: CH4 ±	0.2% (0 to 5%)	. ±1.0% (at 3	0%), ±3.0% (at 1	00%): CO2 ±0.1% (	0 to 10%), ±3.0% (at 409	%): O2 ±0.5%			r –	
Gas concentration:	Gas Data GFM							0 to 5%), ±3.0% (at 40%			X	Tick Instru	iment used
Pipe Reference	BH101 - 1	Install	ation Type:	SPG/GW	Pip	e Ø (mm):	50 Pi	pe Depth (m):	4.00	RZ Top:	0.50	RZ Base:	4.00
BH	Time (secs)	Depth to GW (m)	aP	dP	Flow	CH <sub>4</sub> (%)	LEL (%)	CO <sub>2</sub> (%)	$O_2(\%)$	H <sub>2</sub> S(ppm)	CO (ppm)	Com	ments
(No.)	Time (sees)	Deptil to G (( (iii)	(mb) After	(Pa)	rate	0114 (70)			02(70)	1120(ppiii)	co (ppm)	Com	nents
BH101	0												
BIII01													
	<u>30</u> 60											No Access.	Car on top.
	<u>60</u> 90												
	90 120		1				-		-				
	120												
	130												
	210												
	240												
	270												
	300												
					Ĭ		PID (ppm)						
						5							
						15							
						30							
						45							
						60							
			-			75 90							-
						90 105					-		
						105							1
KEY	1		1		1	140	1	1		1	L		<u>.</u>
aP: Atmospheric Pr dP: Differential Pre RZ: Response Zone	essure	NR: Not Recorded Note: Where 0.0 is	shown on the	results inc	licates va	lue lower th	an the detection	on limit of the ins	trument.				



JOB DETAILS													
Location:	Torridon Hou	ise					Eng	ineer: KO+JM					
Date:	06/01/2020			Job	Number:	19/3312			e: 13:55				
			Ŧ							-			
	CAL AND SI	TE INFORMATION			r	1		T					
State of ground:		X Dry				Moist		Wet		·	-	Delete As Requ	ired
Wind:		Calm				Light		Moderate			Strong	Ground Level	
Cloud cover:		None				Slight	Х	Cloudy			Overcast		
Precipitation		X None				Slight		Moderate			Heavy		
Barometric pressure	e (mb) Before:	1014						Temperature (	°) 8		]		
INSTRUMENTAT	TION LISED												
INSTRUMENTAL	Gas Data LMS	xi G3 18	Accuracy: CH4 ±	0.2% (0 to 5%)	, ±1.0% (at 3	0%), ±3.0% (at 10	00%); CO2 ±0.1% (0	0 to 10%), ±3.0% (at 409	6); O2 ±0.5%				
Gas concentration:	Gas Data GFM							to 5%), ±3.0% (at 40%			Х	Tick Instru	iment Used
<u> </u>	Gus Duit GI I	150									A	Į	
Pipe Reference	: BH102 - 1	Instal	lation Type:	SPG/GW	Pij	pe Ø (mm):	50 Pi	pe Depth (m):	4.00	RZ Top:	1.00	RZ Base:	4.00
BH	Time (secs)	Depth to GW (m)	aP	dP	Flow	CH <sub>4</sub> (%)	LEL (%)	CO <sub>2</sub> (%)	<b>O</b> <sub>2</sub> (%)	H <sub>2</sub> S(ppm)	CO (ppm)	Com	ments
(No.)	Time (secs)	Deptil to G W (III)	(mb) After	(Pa)	rate	CII <sub>4</sub> (70)	LEL (70)	$CO_2(70)$	$O_2(70)$	11 <sub>2</sub> 5(ppiii)	CO (ppm)	Com	nents
BH102	0	2.15	1014	0.0	0.0								
	30					0.0	0.0	0.2	2.0	0.0	0.0		
	60					0.0	0.0	0.2	1.2	0.0	0.0		
	90					0.0	0.0	0.2	0.9	0.0	0.0		
	120					0.0	0.0	0.2	0.8	0.0	0.0		
	150					0.0	0.0	0.2	0.6	0.0	0.0		
	180					0.0	0.0	0.2	0.6	0.0	0.0		
	210					0.0	0.0	0.2	0.6	0.0	0.0	L	
	240					0.0	0.0	0.2	0.6	0.0	0.0	<u> </u>	1
	270					0.0	0.0	0.2	0.6	0.0	0.0	Constant	t readings
	300											<b>ļ</b>	T
	-						PID (ppm)		_				
						5 15	0.5					<u> </u>	+
						15 30	0.4			-	-	<u> </u>	
						45	0.3					1	-
						60	0.2						
						75	0.1						
						90	0.0						
						105	0.0						
						120	0.0						
<u>KEY</u>													
aP: Atmospheric Pr		NR: Not Recorded											
dP: Differential Pre		Note: Where 0.0 is si	hown on the 1	esults indi	cates valu	e lower thar	n the detection	limit of the instr	ument.				
RZ: Response Zone	•												



JOB DETAILS														
Location:	Torridon Hou	use					Engi	neer: KO+JM						
Date:	06/01/2020			Job	Number:	19/3312			: 14:05					
			_											
	CAL AND SI	TE INFORMATION			r	T								
State of ground:		X Dry				Moist		Wet		·	7	Delete As Requ	iired	
Wind:		Calm			X	Light		Moderate			Strong	Ground Level		
Cloud cover:		None				Slight	Х	Cloudy			Overcast			
Precipitation		X None				Slight		Moderate			Heavy			
Barometric pressure	e (mb) Before:	1014						Temperature (°	) 8					
INSTRUMENTAT	TION USED													
	Gas Data LMS	Sxi G3.18	Accuracy: CH4 ±	0.2% (0 to 5%)	, ±1.0% (at 30	0%), ±3.0% (at 10	00%); CO2 ±0.1% (0	to 10%), ±3.0% (at 40%	); O2 ±0.5%					
Gas concentration:	Gas Data GFM	1 436	Accuracy: CH4 ±	0.3% (0 to 5%)	, ±3.0% (at 30	0%), ±3.0% (at 10	00%); CO2 ±0.3% (0	to 5%), ±3.0% (at 40%)	; O2 ±0.2%;		Х	Tick Instru	ument Used	
	-										8			
Pipe Reference	: WS101 - 1	Instal	lation Type:	SPG/GW	Pip	pe Ø (mm):	50 Pi	pe Depth (m):	3.50	RZ Top:	0.50	RZ Base:	3.50	
BH	BH (No.)Time (secs)Depth to GW (m)aP (mb) AfterdP (Pa)Flow rateCH4 (%)LEL (%)CO2 (%)H2S(ppm)CO (ppm)Comments													
	Time (sees)	Depth to G W (III)				0114 (70)		0.02 (70)	02(70)	1125(ppiii)	CO (ppm)	Com	litents	
WS101	0	0.70	1014	0.0	0.0									
	30					0.0	0.0	0.0	13.6	0.0	0.0			
	60					0.0	0.0	0.0	13.9	0.0	0.0			
	90					0.0	0.0	0.0	13.9	0.0	0.0			
	120					0.0	0.0	0.0	13.9	0.0	0.0			
	150					0.0	0.0	0.0	13.9	0.0	0.0	Constant	t readings	
	180													
	210								-	-	-	<b> </b>		
	240 270											<b></b>		
	300									-	-	ł		
	300						PID (ppm)					<b>A</b>	T	
						5	0.3							
						15	0.5						+	
						30	0.5					1		
						45	0.5							
						60	0.4							
						75	0.4							
						90	0.3							
						105	0.2					<b></b>	<u> </u>	
						120	0.1					<u> </u>	<u> </u>	
KEY														
aP: Atmospheric Pr		NR: Not Recorded	horrin en ilie	aculta in d'	antan1	a lower the	the detection	limit of the insta-	mont					
dP: Differential Pre RZ: Response Zone		Note: Where 0.0 is sl	nown on the r	esuits indi	cates valu	ie lower that	i the detection	mut of the instru	ment.					
ILL. ILESPONSE ZOILE	/													



JOB DETAILS													
Location:	Torridon Hor	use					En	gineer: KO+JM					
Date:	06/01/2020			Job 1	Number:	19/3312		Time	12:55				
METEOROLOG	ICAL AND SI	TE INFORMATION	1										
State of ground:		X Dry				Moist		Wet				Delete As Requ	iired
Wind:		Calm			Х	Light		Moderate			Strong	Ground Level	
Cloud cover:		None				Slight	X	Cloudy			Overcast		
Precipitation		X None				Slight		Moderate			Heavy		
Barometric pressur	e (mb) Before:					Singin		Temperature (	°)8				
_		101						Temperature (	/ <u></u>		4		
INSTRUMENTA													
Gas concentration:	Gas Data LMS							(0 to 10%), ±3.0% (at 40%				Tick Instru	ument used
	Gas Data GFM	1 436	Accuracy: CH4 ±	0.3% (0 to 5%)	, ±3.0% (at 30	0%), ±3.0% (at 10	0%); CO2 ±0.3%	(0 to 5%), ±3.0% (at 40%)	); O2 ±0.2%;		Х		
Pipe Reference	• WS102 - 1	Instal	lation Type:	SPG/GW	Pir	e Ø (mm):	50	Pipe Depth (m):	4.00	RZ Top:	0.50	RZ Base:	4.00
Tipe Reference			uuon 15per	51 6/6 11	1			(III)				HE BUCC	
DI			n	10	171				0 (0/)			G	
BH (No.)	Time (secs)	Depth to GW (m)	aP (mb) After	dP (Pa)	Flow rate	CH <sub>4</sub> (%)	LEL (%)	CO <sub>2</sub> (%)	O <sub>2</sub> (%)	H <sub>2</sub> S(ppm)	CO (ppm)	Com	ments
(140.)			(IIID) Atter	( <b>r</b> a)	Tate								
WS102	0	0.62	1014	-431.0	-46.0								
	30			-5	-1.5	0.0	0.0	0.0	17.8	0.0	0.0		
	60			0	0	0.0	0.0	0.0	17.9	0.0	0.0		
	90					0.0	0.0	0.0	17.7	0.0	0.0		
	120					0.0	0.0	0.0	17.3	0.0	0.0		
	150					0.0	0.0	0.0	17.2	0.0	0.0		
	180					0.0	0.0	0.0	17.7	0.0	0.0		
	210					0.0	0.0	0.0	18.4	0.0	0.0		
	240					0.0	0.0	0.0	19.0	0.0	0.0		
	270 300					0.0	0.0	0.0	19.4 19.4	0.0	0.0		
	500					0.0	PID (ppm)		19.4	0.0	0.0		
						5	0.2	,	-				
	-					5 15	0.2						
						30	0.3						
						45	0.2	1					
						60	0.2						
						75	0.1						
						90	0.1						
						105	0.0						
						120	0.0						
<u>KEY</u>													
aP: Atmospheric P		NR: Not Recorded											
dP: Differential Pre		Note: Where 0.0 is s	hown on the	results indi	cates valu	e lower that	n the detection	on limit of the instr	ument.				
RZ: Response Zone	t												



JOB DETAILS													
Location:	Torridon Hou	ise					Eng	ineer: KO+JM					
Date:	06/01/2020			Job	Number:	19/3312		Time	: 12:40				
METEOROLOG	ICAL AND SI	TE INFORMATION	[										
State of ground:		X Dry				Moist		Wet				Delete As Requ	ired
Wind:		Calm			Х	Light		Moderate			Strong	Ground Level	
Cloud cover:		None				Slight	x	Cloudy			Overcast		
Precipitation		X None				Slight		Moderate			Heavy	<u> </u>	
Barometric pressur	e (mb) Before:	1014				Singint		Temperature (	y) 8				
		1011						Temperature (	/ 0		1		
INSTRUMENTA													
Gas concentration:	Gas Data LMS							0 to 10%), ±3.0% (at 40%				Tick Instru	ment Used
	Gas Data GFM	1 436	Accuracy: CH4 ±	0.3% (0 to 5%)	, ±3.0% (at 30	0%), ±3.0% (at 10	00%); CO2 ±0.3% (0	0 to 5%), ±3.0% (at 40%)	; O2 ±0.2%;		Х		
Pipe Reference	: WS103 - 1	Instal	ation Type:	SPG/GW	Piı	eØ(mm):	50 P	ipe Depth (m):	4.00	RZ Top:	0.50	RZ Base:	4.00
Tipe Reference			uuon ryper	51 0, 0 11	1			pe Deptil (ill)t				HE Bubbl	
DI	<b>T</b> !	Denth to CW (m)	- D	JD	171			<u> </u>	$\mathbf{O}(0)$	<b>H C</b> ()	<b>CO</b> ()	0	
BH (No.)	Time (secs)	Depth to GW (m)	aP (mb) After	dP (Pa)	Flow rate	CH <sub>4</sub> (%)	LEL (%)	CO <sub>2</sub> (%)	O <sub>2</sub> (%)	H <sub>2</sub> S(ppm)	CO (ppm)	Com	ments
. ,													
WS103	0	0.45	1014	0.0	0.0								
	30					0.0	0.0	0.0	20.1	0.0	0.0		
	60					0.0	0.0	0.0	20.0	0.0	0.0		
	90					0.0	0.0	0.0	20.0	0.0	0.0		
	120					0.0	0.0	0.0	20.0	0.0	0.0		
	150					0.0	0.0	0.0	20.0	0.0	0.0	Constant	readings
	180												
	210												
	240								-				
	270 300												
	300						PID (ppm)						
						5	0.1						
						15	0.0						
						30	0.0						
						45	0.0						
						60	0.0						
						75	0.0						
						90	0.0						
						105	0.0						
						120	0.0						
KEY													
aP: Atmospheric P		NR: Not Recorded				a lanus site	the detect	limit of the in t					
dP: Differential Pro RZ: Response Zone		Note: Where 0.0 is sh	iown on the r	esuits indi	cates valu	e lower than	i the detection	minit of the instru	iment.				
KZ: Kesponse Zon	e												



JOB DETAILS														
Location:	Torridon Hou	ise					Engi	neer: KO+JM						
Date:	06/01/2020			Job 1	Number:	19/3312	0		12:30					
METEODOLOGI		TE INFORMATION	r											
	CAL AND SI	TE INFORMATION				Matu		Wet				Dalata A - Dama	J	
State of ground:		X Dry				Moist					-	Delete As Requ	ired	
Wind:		X Calm				Light		Moderate			Strong	Ground Level		
Cloud cover:		None				Slight		Cloudy			Overcast			
Precipitation		X None				Slight		Moderate			Heavy			
Barometric pressure	e (mb) Before:	1015						Temperature (°	8					
INSTRUMENTAT	TION USED													
	Gas Data LMS	5xi G3.18	Accuracy: CH4 ±	0.2% (0 to 5%)	,±1.0% (at 30	9%), ±3.0% (at 10	00%); CO2 ±0.1% (0	to 10%), ±3.0% (at 40%	); O2 ±0.5%					
Gas concentration:	Gas Data GFM	1 436	Accuracy: CH4 ±	0.3% (0 to 5%)	,±3.0% (at 30	9%), ±3.0% (at 10	00%); CO2 ±0.3% (0	to 5%), ±3.0% (at 40%);	O2 ±0.2%;		Х	Tick Instru	ment Used	
B														
Pipe Reference	WS104A - 1	Install	ation Type:	SPG/GW	Pip	e Ø (mm):	50 Pi	pe Depth (m):	4.00	RZ Top:	1.00	RZ Base:	4.00	
BH	BH (No.)Time (secs)Depth to GW (m)aPdPFlowCH4 (%)LEL (%)CO2 (%)O2 (%)H2S(ppm)CO (ppm)Comments(No.)(mb) After(Pa)rateraterateCO2 (%)CO2 (%)													
	Time (Sees)	Deptil to G (( (iii)				0114 (70)			02(70)	1125( <b>pp</b> 11)	ee (ppiii)	com	lients	
WS104A	0	0.36	1015	0.0	0.0									
	30					0.0	0.0	0.0	17.2	0.0	0.0			
	60			_		0.0	0.0	0.0	17.0	0.0	0.0	Water sucked		
	90											Not able to c	ontinue test.	
-	120													
	150													
	180													
	210													
	240 270													
	300													
	500						PID (ppm)							
						5	TID (ppm)							
						15								
						30								
						45								
						60								
						75								
						90								
						105								
						120								
<u>KEY</u> • D: A true o or houris Dr		ND, Net Described												
aP: Atmospheric Pr dP: Differential Pre		NR: Not Recorded Note: Where 0.0 is sl	nown on the -	aculta in 4:	antan mela	a lanuar than	the detection	limit of the instan	mont					
RZ: Response Zone		TNOLE. WHERE U.U IS SI	iown on the r	esuns mai	Lates valu	e iower mar	i the detection	mint of the instru	ment.					



JOB DETAILS													
Location:	Torridon Hou	ise					Eng	ineer: KO+JM					
Date:	20/01/2020			Job I	Number:	19/3312		Time	: 09:30				
METEOROLOGI	CAL AND SI	TE INFORMATIO	N										
State of ground:		Dry				Moist		Wet				Delete As Requ	iired
Wind:		Calm				Light		Moderate			Strong	Ground Level	
Cloud cover:		None				Slight		Cloudy			Overcast		
Precipitation		None				Slight		Moderate			Heavy		Į
Barometric pressure	(mb) Before:					Singht		Temperature (°	·)		1100.09		
<u>.</u>								Temperature (	/				
INSTRUMENTAT													
Gas concentration:	Gas Data LMS							0 to 10%), ±3.0% (at 40% 0 to 5%), ±3.0% (at 40%	-			Tick Instru	iment used
	Gas Data GFM	1 436	Accuracy. CH4 1	0.5% (0105%)	, ±3.0% (at 5	5%), ±3.0% (at 1	00%), CO2 ±0.5% (	0 10 5%), ±5.0% (at 40%	), 02 ±0.2%,				
Pipe Reference:	BH101 - 1	Instal	ation Type:	SPG/GW	Pin	e Ø (mm):	50 <b>P</b> i	pe Depth (m):	4.00	RZ Top:	0.50	RZ Base:	4.00
L					· · ·			/			<b>B</b>		
BH	Time (acce)	Depth to GW (m)	aP	dP	Flow	CH <sub>4</sub> (%)	LEL (%)	CO <sub>2</sub> (%)	$O_2(\%)$	H <sub>2</sub> S(ppm)	CO (ppm)	Com	
ын (No.)	Time (secs)	Deptil to G w (iii)	ar (mb) After	(Pa)	rate	CH <sub>4</sub> (%)	LEL (70)	$CO_2(76)$	$O_2(70)$	H <sub>2</sub> S(ppiii)	CO (ppm)	Collin	nents
			(IIID) THEET	(1 4)	Tute								
BH101	0												
	30											No Access.	Car on top.
	60												
	90												
	120												
	150												
	180												
	210												
	240 270												
	300												
	500						PID (ppm)						
						5	TID (ppiii)						
						5 15							
						30							
						45							
						60							
						75							
						90							
						105							
						120							
KEY													
aP: Atmospheric Pr dP: Differential Pre		NR: Not Recorded Note: Where 0.0 is	hown on the	roculto in -	liontes	lua lower 4	on the detect	n limit of the i	trumont				
RZ: Response Zone		note: where 0.0 is	snown on the	results inc	neates va	iue lower th	an me detectio	on minit of the ins	u ument.				
response Zolle													



JOB DETAILS													
Location:	Torridon Hou	ise					Eng	gineer: KO+JM					
Date:	20/01/2020			Job 1	Number:	19/3312		Time	e: 09:30				
METEOROLOGI	CAL AND SI	TE INFORMATION	[										
State of ground:		Dry				Moist	Х	Wet				Delete As Requ	iired
Wind:		X Calm				Light		Moderate			Strong	Ground Level	
Cloud cover:		None				Slight	X	Cloudy			Overcast		
Precipitation		X None				Slight		Moderate			Heavy		
Barometric pressure	e (mb) Before.	1043				Singint		Temperature (	°) 4		T		
		1010							/ <u>·</u>		4		
INSTRUMENTA											1		
Gas concentration:	Gas Data LMS		-					0 to 10%), ±3.0% (at 409 0 to 5%), ±3.0% (at 40%				Tick Instru	ument Used
	Gas Data GFM	1 436	Accuracy. CH4 ±	0.5% (010 5%)	, ±3.0% (at 50	7%), ±3.0% (at 10	J0%), CO2 ±0.3% (	0 10 5%), ±3.0% (at 40%)	), O2 ±0.270,		Х		
Pipe Reference	: BH102 - 1	Instal	lation Type:	SPG/GW	Piı	eØ(mm):	50 P	ipe Depth (m):	4.00	RZ Top:	1.00	RZ Base:	4.00
1.pt 1.0101 0.100								<b>F</b> = <b>·F</b> · · · · · · · · · · · · · · · · · · ·					
DI	<b>T!</b>	Denth to CW (m)	aP	JD	171			<b>CO</b> ( <b>0</b> ()	$\mathbf{O}(0)$	<b>H C</b> ()	<b>CO</b> ()	0	
BH (No.)	Time (secs)	Depth to GW (m)	aP (mb) After	dP (Pa)	Flow rate	CH <sub>4</sub> (%)	LEL (%)	CO <sub>2</sub> (%)	O <sub>2</sub> (%)	H <sub>2</sub> S(ppm)	CO (ppm)	Com	ments
. ,				. ,									
BH102	0	1.97	1043	532.0	94.7								
	30			0	0	0.0	0.0	0.2	1.6	0.0	0.0		
	60					0.0	0.0	0.2	0.4	0.0	0.0		
	90					0.0	0.0	0.2	0.3	0.0	0.0		
	120					0.0	0.0	0.2	0.2	0.0	0.0		
	150					0.0	0.0	0.2	0.2	0.0	0.0	a a a a a a a a a a a a a a a a a a a	
	180					0.0	0.0	0.2	0.2	0.0	0.0	Constant	t readings
	210 240												
	240												
	300												
	500						PID (ppm)						
						5	0.3						
						15	0.4						
						30	0.4						
						45	0.3						
						60	0.3						
						75	0.3						
						90	0.3						
						105	0.3						
						120	0.3						
<u>KEY</u> aP: Atmospheric Pr	essure	NR: Not Recorded											
dP: Differential Pre		Note: Where 0.0 is sl	hown on the r	esults indi	cates valu	e lower than	the detection	limit of the instr	ument.				
RZ: Response Zone				indi	, and								



JOB DETAILS													
Location:	Torridon Hou	ise					En	gineer: KO+JM					
Date:	20/01/2020			Job I	Number:	19/3312		Time	: 10:00				
METEOROLOGI	CAL AND SI	<b>TE INFORMATION</b>	1										
State of ground:		Dry				Moist	X	Wet				Delete As Requ	uired
Wind:		X Calm				Light		Moderate			Strong	Ground Level	
Cloud cover:		None				Slight	v	Cloudy			Overcast	Ground Eever	
Precipitation		X None				-	Δ	Moderate			Heavy		
-	(1) D. C					Slight			N 4		Heavy		
Barometric pressure	(mb) Before:	1043						Temperature (°	) 4				
INSTRUMENTAT	ION USED												
Gas concentration:	Gas Data LMS	xi G3.18	Accuracy: CH4 ±	0.2% (0 to 5%).	,±1.0% (at 30	9%), ±3.0% (at 10	0%); CO2 ±0.1%	0 (0 to 10%), ±3.0% (at 40%	); O2 ±0.5%			Tiek Inetra	iment Used
Gas concentration:	Gas Data GFM	I 436	Accuracy: CH4 ±	0.3% (0 to 5%).	, ±3.0% (at 30	9%), ±3.0% (at 10	0%); CO2 ±0.3%	0 (0 to 5%), ±3.0% (at 40%)	; O2 ±0.2%;		Х	TICK INSUL	iment Used
	-									-	-	-	-
Pipe Reference:	WS101 - 1	Instal	ation Type:	SPG/GW	Pip	e Ø (mm):	50	Pipe Depth (m):	3.50	RZ Top:	0.50	RZ Base:	3.50
BH	Time (secs)	Depth to GW (m)	aP	dP	Flow	CH <sub>4</sub> (%)	LEL (%)	CO <sub>2</sub> (%)	<b>O</b> <sub>2</sub> (%)	H <sub>2</sub> S(ppm)	CO (ppm)	Com	ments
(No.)			(mb) After	( <b>Pa</b> )	rate	<b>4</b> (, -)	()	0.02(00)	02(10)	2~ ( <b>FF</b> )			
XX/Cd.04	0	0.71	10.10										
WS101	0	0.71	1043	0.0	0.0								
	30					0.0	0.0	0.0	13.0	0.0	0.0		
	60					0.0	0.0	0.0	13.3	0.0	0.0		
	90					0.0	0.0	0.0	13.4	0.0	0.0	-	
	120					0.0	0.0	0.0	13.4	0.0	0.0		
	150					0.0	0.0	0.0	13.4	0.0	0.0	C i	1.
	180					0.0	0.0	0.0	13.4	0.0	0.0	Constant	readings
	210 240												
	270												
	300												
							PID (ppm	)					
						5	0.2	,					-
						15	0.2						
						30	0.3						
						45	0.2						
						60	0.2						
						75	0.2						
-						90	0.2						
						105	0.2		_				
VEV						120	0.2			1			
KEY aP: Atmospheric Pre	occuro	NR: Not Recorded											
dP: Differential Pres		Note: Where 0.0 is sl	nown on the r	esults indi	cates valu	e lower thar	the detection	on limit of the instru	iment				
RZ: Response Zone		1.000. 11 11010 0.0 13 31		esuno mun	acco valu	e iomer uidi	acteen	in mine of the mout					



JOB DETAILS													
Location:	Torridon Hou	ıse					Eng	gineer: KO+JM					
Date:	20/01/2020			Job 1	Number:	19/3312		Time	: 10:30				
METEOROLOGI	CAL AND SI	TE INFORMATION	I										
State of ground:		Dry	•			Moist	X	Wet				Delete As Requ	ired
Wind:		X Calm				Light		Moderate			Strong	Ground Level	licu
							V				Overcast	Glouild Level	
Cloud cover:		None				Slight							
Precipitation		X None				Slight		Moderate	. [		Heavy		
Barometric pressure	e (mb) Before:	1043						Temperature (°	) 4		ļ		
INSTRUMENTAT	TION USED												
	Gas Data LMS	Sxi G3.18	Accuracy: CH4 ±	0.2% (0 to 5%)	, ±1.0% (at 30	0%), ±3.0% (at 10	00%); CO2 ±0.1%	(0 to 10%), ±3.0% (at 40%	); O2 ±0.5%				
Gas concentration:	Gas Data GFM	1 436	Accuracy: CH4 ±	0.3% (0 to 5%)	, ±3.0% (at 30	0%), ±3.0% (at 10	00%); CO2 ±0.3%	(0 to 5%), ±3.0% (at 40%)	; O2 ±0.2%;		Х	Tick Instru	ment used
<u> </u>	•											•	
Pipe Reference	: WS102 - 1	Install	ation Type:	SPG/GW	Pip	oe Ø (mm):	50 I	ipe Depth (m):	4.00	RZ Top:	0.50	RZ Base:	4.00
BH	Time (geog)	Depth to GW (m)	aP	dP	Flow	CH <sub>4</sub> (%)	LEL (%)	$CO(\theta/)$	$\mathbf{O}(0)$	II S(mmm)	CO(mm)	Com	
ВН (No.)	Time (secs)	Depth to Gw (m)	ar (mb) After	dP (Pa)	rate	$CH_4(\%)$	LEL (%)	CO <sub>2</sub> (%)	O <sub>2</sub> (%)	H <sub>2</sub> S(ppm)	CO (ppm)	Com	nents
(110.)			(IIID) AItel	(I a)	Tate								
WS102	0	0.54	1043										
	30					0.0	0.0	0.0	17.5	0.0	0.0		
	60					0.0	0.0	0.0	17.5	0.0	0.0		
	90					0.0	0.0	0.0	17.6	0.0	0.0		
	120					0.0	0.0	0.0	17.6	0.0	0.0	Water sucked	1 up the pipe.
	150											Not able to c	
	180												
	210												
	240												
	270												
	300												1
							PID (ppm)						
						5							
						15							
						30							
						45							
						60							
						75 90							
						90 105							
						103							
KEY	1			I	1	140			1	1	l		1
aP: Atmospheric Pr	essure	NR: Not Recorded											
dP: Differential Pre		Note: Where 0.0 is sl	hown on the 1	esults indi	cates valu	e lower that	n the detectio	n limit of the instru	iment.				
RZ: Response Zone	•												



JOB DETAILS													
Location:	Torridon Hou	ise					Eng	ineer: KO+JM		-			
Date:	20/01/2020			Job	Number:	19/3312		Time	<b>:</b> 11:00				
METEOROLOG	ICAL AND SI	TE INFORMATION	I										
State of ground:		Dry			Х	Moist		Wet				Delete As Requ	iired
Wind:		X Calm				Light		Moderate			Strong	Ground Level	
Cloud cover:		None				Slight	X	Cloudy			Overcast		
Precipitation		X None				Slight		Moderate			Heavy		
Barometric pressur	e (mb) Before:	1043				Singint		Temperature (	°) 4				
		1015						Temperatare (	/ <u>·</u>		4		
INSTRUMENTA													
Gas concentration:	Gas Data LMS							0 to 10%), ±3.0% (at 40%				Tick Instru	iment Used
	Gas Data GFM	1 436	Accuracy: CH4 ±	0.3% (0 to 5%)	$\pm 3.0\%$ (at 30	0%), ±3.0% (at 10	00%); CO2 ±0.3% (	0 to 5%), ±3.0% (at 40%)	); O2 ±0.2%;		Х		
Pipe Reference	• WS103 - 1	Instal	lation Type:	SPG/GW	Piı	eØ(mm):	50 P	ipe Depth (m):	4.00	RZ Top:	0.50	RZ Base:	4.00
Tipe Reference		motur	ution Type:	510/01/		<i>be</i> () (iiiii):	50 1	ipe Deptii (iii).		112 1001	0.00	NE Buse.	
DI	<b>m</b> • ( )			10	171				0 (0)		CO ( )		
BH (No.)	Time (secs)	Depth to GW (m)	aP (mb) After	dP (Pa)	Flow rate	CH <sub>4</sub> (%)	LEL (%)	CO <sub>2</sub> (%)	O <sub>2</sub> (%)	H <sub>2</sub> S(ppm)	CO (ppm)	Com	ments
(140.)			(IIID) After	( <b>F</b> a)	Tate								
WS103	0	0.34	1043	0.0	0.0								
	30					0.0	0.0	0.0	20.1	0.0	0.0		
	60					0.0	0.0	0.0	20.0	0.0	0.0		
	90					0.0	0.0	0.0	20.2	0.0	0.0		
	120					0.0	0.0	0.0	20.2	0.0	0.0		
	150					0.0	0.0	0.0	20.2	0.0	0.0		
	180					0.0	0.0	0.0	20.2	0.0	0.0	Constant	t readings
	210												
	240								-				
	270												
	300						PID (ppm)						
						-	0.2	4					
						5 15	0.2						
						30	0.0						
						45	0.0						
						60	0.0						
						75	0.0						
						90	0.0						
						105	0.0						
						120	0.0						
KEY													
aP: Atmospheric P		NR: Not Recorded	and an the	ooulto in di	ootoo1	a longer 4h	the detertion	limit of the in-to-	mont				
dP: Differential Pro RZ: Response Zone		Note: Where 0.0 is sl	lown on the r	esuits indi	cates valu	e lower than	i the detection	mint of the instru	iment.				
INZ. INCOPULISE ZOIL													



JOB DETAILS													
Location:	Torridon Hou	ise					Eng	ineer: KO+JM					
Date:	20/01/2020			Job 1	Number:	19/3312	8		<b>:</b> 11:30				
METEODOLOCI		<b>FE INFORMATION</b>	ſ										
	CAL AND SI				V	Mater		Wet				Dalata A - Da	
State of ground:		Dry			X	Moist				·	1~	Delete As Requ	lired
Wind:		X Calm				Light	Moderate				Strong	Ground Level	
Cloud cover:		None				Slight	X	Cloudy			Overcast		
Precipitation		X None				Slight		Moderate			Heavy		
Barometric pressure	(mb) Before:	1042						Temperature (	°) 4				
INSTRUMENTAT	ION USED												
	Gas Data LMS	xi G3.18	Accuracy: CH4 ±	0.2% (0 to 5%)	, ±1.0% (at 30	0%), ±3.0% (at 10	00%); CO2 ±0.1% (0	) to 10%), ±3.0% (at 40%	b); O2 ±0.5%				
Gas concentration:	Gas Data GFM		-					0 to 5%), ±3.0% (at 40%)			Х	Tick Instru	ment Used
L	ous but of h	. 150										!	
Pipe Reference:	WS104A - 1	Instal	ation Type:	SPG/GW	Pij	pe Ø (mm):	50 Pi	ipe Depth (m):	4.00	RZ Top:	1.00	RZ Base:	4.00
BH	Time (secs)	Depth to GW (m)	aP	dP	Flow	CH <sub>4</sub> (%)	LEL (%)	CO <sub>2</sub> (%)	O <sub>2</sub> (%)	H <sub>2</sub> S(ppm)	CO (ppm)	Com	ments
(No.)	Time (secs)	Deptil to G W (III)	an (mb) After	(Pa)	rate	CII <sub>4</sub> (70)	LEL (70)	$CO_2(70)$	$O_2(70)$	11 <sub>2</sub> 5(ppiii)	CO (ppin)	Com	litents
				, ,									
WS104A	0	0.28	1042	0.0	0.0								
	30					0.0	0.0	0.0	18.9	0.0	0.0		
	60					0.0	0.0	0.0	18.1	0.0	0.0		
	90												d up the pipe.
	120											Not able to a	continue test.
	150												
	180												
	210												
	240												
	270						-	-	-				
	300							1					1
							PID (ppm)						
						5							
						15							
						30							
						45							
						60 75							
						90			_				
						105		1		+		1	
	<u> </u>					103							
KEY	I	1	1		1	140			1	1	1	l	l
aP: Atmospheric Pr	essure	NR: Not Recorded											
dP: Differential Pres		Note: Where 0.0 is sl	nown on the r	esults indi	cates valu	e lower that	the detection	limit of the instru	ument.				
RZ: Response Zone													

				C.N	CEPT			
					SITU ANA	LYSIS &	SAMPLIN	G
			Torridon H	House				
	J	lob No.:						
	Tool		05/11/2019	9				
S	ampling r	hnician:		oristaltic)				
Ĭ	ampingi	nemoa.	Base of	Top of	Depth to			
	BH N	lo.	well (mbgl)	slotted (mbgl)	GW (mbgl)			
	BH1	01	4.00	0.50	0.77			
Purge Volume (L)	Time	Temp (°C)	DO (mg/L)	SPC (mS/cm)	рН	pH (mV)	Redox Potential (mV)	Sample Detail (Colour/Odour/ Turbidity)
2.0	11:57	15.5	1.48	5.82	7.11	-16.2	-148.0	Clear
4.0	12:00	15.4	1.28	5.31	7.11	-16.3	-139.5	Clear
6.0	12:03	15.4	1.64	4.87	7.11	-16.3	-127.4	Clear
8.0	12:06	15.4	1.82	4.67	7.12	-16.6	-123.1	Clear

				C.J	CEPT			
					SITU ANA	LYSIS &	SAMPLIN	G
			Torridon H	louse				
	J	ob No.:						
			05/11/2019	)				
		nnician:						
	ampling n	nethou:	Base of	Top of	Depth to			
			well	slotted	GW			
	BH N	о.	(mbgl)	(mbgl)	(mbgl)	Not enough water to carry or		ter to carry out test.
	BH10	02	4.00	1.00	3.54			
Purge Volume	Time	Temp	DO	SPC	pН	pH (mV)	Redox Potential	Sample Detail (Colour/Odour/
(L)		(°C)	(mg/L)	(mS/cm)			(mV)	Turbidity)

				C.J	CEPT			
					SITU ANA	LYSIS &	SAMPLIN	G
			Torridon H	louse				
	J	lob No.:						
	Teel		05/11/2019	9				
	ampling r	hnician:		oristaltia)				
	amping i	nethou.	Base of	Top of	Depth to			
	BH N	lo.	well (mbgl)	slotted (mbgl)	GW (mbgl)			
	WS1	01	3.50	0.50	1.14			
Purge Volume (L)	Time	Temp (°C)	DO (mg/L)	SPC (mS/cm)	рН	pH (mV)	Redox Potential (mV)	Sample Detail (Colour/Odour/ Turbidity)
2.0	12:48	16.5	1.16	7.25	7.09	-15	51.4	Clear
4.0	12:51	16.3	1.75	5.87	7.16	-19.3	53.2	Clear
6.0	12:54	16.1	3.62	5.19	7.20	-20.7	64.4	Clear
8.0	12:57	16.1	4.75	4.99	7.20	-21.3	69.5	Clear

				C.N	CEPT			
		GRC	OUNDWA	TER - IN	SITU ANA	LYSIS &	SAMPLIN	G
			Torridon I	House				
	J	lob No.:						
	Taal		05/11/2019	9				
5	ampling r	hnician:		oristaltic)				
			Base of well	Top of slotted	Depth to GW			
	BH N WS1		(mbgl)	(mbgl)	(mbgl)			
	<b>W</b> 51	02	4.00	0.50	0.51			
Purge Volume (L)	Time	Temp (°C)	DO (mg/L)	SPC (mS/cm)	рН	pH (mV)	Redox Potential (mV)	Sample Detail (Colour/Odour/ Turbidity)
2.0	12:20	15.8	1.39	5.76	7.20	-20.9	-2.8	Clear
4.0	12:23	15.4	1	3.62	7.40	-32.9	-6.3	Clear
6.0	12:26	14.7	1.96	2.23	7.69	-48.9	-14.9	Clear
8.0	12:29	14.3	2.64	1.96	7.82	-50.7	-11.4	Clear

				C.N	CEPT			
					SITU ANA	LYSIS &	SAMPLIN	G
			Torridon H	House				
		lob No.:						
	Teel		05/11/2019	9				
	ampling r	hnician:						
	amping i	nemou.	Base of	Top of	Depth to			
	BH N	lo.	well (mbgl)	slotted (mbgl)	GW (mbgl)			
	WS1	03	4.00	0.50	0.31			
Purge Volume (L)	Time	Temp (°C)	DO (mg/L)	SPC (mS/cm)	рН	pH (mV)	Redox Potential (mV)	Sample Detail (Colour/Odour/ Turbidity)
2.0	13:21	15.4	1.11	6.67	7.31	-27.4	73.9	Clear
4.0	13:24	15.2	2.62	5.92	7.35	-29.5	71.7	Clear
6.0	13:27	14.5	2.28	3.30	7.59	-43.5	67.2	Clear
8.0	13:30	13.8	2.11	2.89	7.80	-48.2	69.1	Clear

				C.N	CEPT			
					SITU ANA	LYSIS &	SAMPLIN	G
			Torridon H	louse				
	J	Job No.:						
	Taa	Date: hnician:	05/11/2019	)				
S	ampling r			oristaltic)				
Ĩ	amping	nethou.	Base of well	Top of slotted	Depth to GW			
	BHN	lo.	(mbgl)	(mbgl)	(mbgl)			
	WS10	)4A	4.00	1.00	0.29			
Purge Volume (L)	Time	Temp (°C)	DO (mg/L)	SPC (mS/cm)	рН	pH (mV)	Redox Potential (mV)	Sample Detail (Colour/Odour/ Turbidity)
2.0	11:33	15.0	2.79	5.87	7.11	-16.2	-27.0	Clear
4.0	11:36	15.0	3.12	4.58	7.21	-21.9	-15.6	Clear
6.0	11:39	14.8	3.45	3.24	7.33	-28.4	1.0	Clear
8.0	11:42	14.4	3.82	2.78	7.42	-31.5	8.2	Clear

TEST DATE AND CO	<b>NDITIONS</b>
Date	7.1.2020
Atmospheric Pressure	May mB
Ambient Temp	· 21.4 °C
Environics Serial No.	5089

## GAS DATA LTD Unit 4, Fairfield Court Seven Stars Estate Wheler Rd

Coventry CV3 4LJ Tel 02476303311 Fax 02476307711

## **GFM436-1 OUTWARD INSPECTION & QUALITY CHECK SHEET**

		INSTRUMENT DETAILS	
SO Number	Instrument Type	Instrument Serial Number + SW Version	Job Number(s)
324754	CFM436	12224 G436-27/11	121482

## **Calibration** Technician

She

## **Inspection Technician**

£

AD

8.1.20 Date

	INSTRUMENT CHECKS	Pass;(P), Fail (F) not applicable (N			ACKING	Tick if included
Function	Dust Caps Fitted	l		Instrument	·	
Tests	Keyboard Test (All Keys)	<u>р</u>		Leather Case	x	
	Backlight	P		Instrument Strap		
	Clock Set / Running	1		AC Battery Charger (	UK)	×.
	Comms Test			AC Battery Charger (		×
	Pump Flow Test (In & Out)			AC Battery Charger (		×
	Overall Leak Test (30mB)	n/a		AC Battery Charger (		X
	Battery Charge Test	ρ		Gas Sample Pipe - (ne		
	Service Date set to?	7.1.21		Flow Sample Pipe - (		-
Channel	Data Logging Enabled?	e		Hard Carry Case		×
Tests	Verify CH4/LEL/Hexane/PID	P		Allen Key		x
	Verify CO2	ſ		Spares Pot		×
	Verify O2			Temperature Probe		x
	Verify H2S			Vane Anemometer		x
	Verify CO			USB Cable		x
	Verify LEL	P		USB Memory stick		$\overline{\lambda}$
	Verify 1 <sup>st</sup> Option Gas	N/A		SM V5 Software	Ver 6.05	X
	Verify Atmospheric pressure	P		Internal Filter Pack	Qty	
	Verify differential pressure			External Filter Pack	Qty	**
	Verify flow	2		Field Guide		X
	Verify temperature probe input	P		Extra Items:		<u> </u>
	Verify vane anemometer input					
DataBase	Jobcard(s) completed and signed	P P				
Checks	Jobcard(s) booked off database	1				
	Calibration certificate completed					
	Complete & print QI record	n/a				
Label	No. of Calibration label fitted	GDC 08779		Comments:		
Checks	MCERTS label displayed	P	·			
	Warranty label fitted					
H2S Range	H2S Range from Sales Order	5.000 P	pm			
-	H2S Range from Cal Cert		pm			
	Over-range value correct?	P				

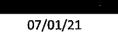
THE PROPERTY ON LETTER AND					
Date 07/01/2020					
Aurosphendelstessure	999	mB			
Ambient Temperature	21.4	୍ଷ୍ୟୁ			
Linvironies Seviril No.	50	89			

GFM436 Final Inspection & Calibration Check Certificate

Star Gustomer	Concept Site Investigations
Catilicate Number	121482
Order Number	324754

Səriril Number	12224
Solicato Version	G436-00.0027/0011

GAS DATA LTD	
Unit 4, Fairfield Court	
Seven Stars Estate	
Wheler Rd	
Coventry	
CV3 4LJ	
Tel 02476303311	Fax 02476307711



		Section in the section of the sectio	nicheds 👘 👬	t (an tipe)	
Keyboard		1	Display Contrast		✓
Pump Flow In	450	Accept > 200 cc/min	Pump Flow @ -200mB	250	Accept > 200 cc/min
Clock Set / Running		✓	Labels Fitted		√

		nie Staate Ste	ං ඥානශ්රයේන 🖓	i tonga di			
	CH₄		CO 2		02		
	Instrument Gas	True Gas	Instrument Gas	True Gas	Instrument Gas	True Gas	
	Readings %		Readings %	Value %	Readings %	Value %	
Sensor	60	60	40	40	20.9	20.9	
	Accept ±3.0		Accept ±3.0	40	Accept ±0.5	20.9	
	5	5	5	- 5 -	6	<i>(</i>	
	Accept ±0.3		Accept ±0.3	7 5 [	Accept ±0.3	6	
Zero	0	0	0		0		
Reading 100% N2	Accept ±0.0		Accept ±0.0	- 0	Accept ±0.1	- 0	

Optional[CasChecks_ Applied Gas & Range Concentration Tested @ Instrument Readings (ppm)							
Gas Type	Range (ppm)	(ppm)		Zero Reading	Instrument Gas Reading		
H2S	5000	1500	0	Accept ±0.0	1500	Accept ±5.0	
CO	2000	1000	0	Accept ±0.0	1000	Accept ±5.0	
Hexane	2.0%	2,0%	0	Accept ±0.0	1.99	Accept ±10.0	

				් (ගින්හි මින්ති	390000				
Applie	d Gas (ppm)				Instrument Re	adings (ppm	)		
Gas Type	Concentration	Toxic 1:	H2S	Toxic 2:	со	Toxic 3:	HEX		
H2S	1500	15	00		0	6	)		
CO	1000	4	0	1	000	6			
Hexane	2.0%	0	)		0	1.9	99		
				මාගනොත්	Charles 🔌 🖄				
			Atmo	spheric Pres	sure [AP] (mB	)			
	Current	Atmospheri	c Pressure (1	nB)	Instrument A	tmospheric	Pressure Re	ading (mB)	
		AP Open F	Ports		99	8	Ассер	t ±2.0	
	AP Port (In	ternal)	+800	) mB	80	0	Accept ±5.0		
			+120	0mb	120		Accept ±5.0		:
			ing all the second second in the second s	Bowe	licels 👘				
	Boi	rehole Flow			an shawaran a	Diffe	rential Pres	sure	
Applied 1	Reading (1/h)	Instru	nent Readin	g (l/h)	Applied Pre	ssure (Pa)	Instru	Instrument Reading (Pa)	
-30		-30	Ассер	t ±3.0	-48	39	-489	Accept ±50	
	-3	-3	Ассер	t ±1.0	-2	-20 -20		Accept ±6.0	
	0	0	Accep	t ±0.0	0 0		0	Accept ±0.5	
	3	3	Accep	t ±0.5	15 15		Accept ±3.0		
	30	30.1	Accep	t ±3.0	30	8	310	Acce	pt ±50
	60	60	Accep	t ±6.0	92	3	924	Acceț	ot ±130
	90	90	Accep		18:	10	1836	Acceț	ot ±250
				. Tempere	are Chodia				
	Calibratio		ation Tempe		Instrument 7	nt Temperature Reading <sup>0</sup> C			
		Appli	ed Temperat	ture °C	and a mont remperature reating t				
			-10		-10 Accept ±2.0				
		0		0	Accept ±1.0				
			30	<u>.</u>	30	Accep	· · · ·		
			60		60	Accept			
			100		100	Accept	t ±1.0		

•

Allechnigen at the second	Datemested
Jack Rutland	08/01/2020

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

Gas Data Ltd is certified to BS EN ISO9001:2015. Certificate NQA 8374. Valid until 21/03/2022



66979

## CALIBRATION CERTIFICATE NO:

ISSUED BY: SHA DATE: 29-0

SHAWCITY LIMITED 29-Oct-19

APPROVED SIGNATORY:

NAME:

Renny Laibot

CUSTOMER: INSTRUMENT: SERIAL NUMBER: Concept Engineering Consultants Tiger T-114313

CALIBRATION METHOD: CM03 AMBIENT CONDITIONS: 20°C ± 2°

20°C ± 2°C and 50% (± 20%) RH

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

## CALIBRATION RESULTS

GAS	LOT No	REF. VALUE	INDICATED VALUE
Isobutylene	WO209856-2	100 ppm	100 ppm
Isobutylene	WO163878-1	5000 ppm	5000 ppm

### COMMENTS:

The reported uncertainty is based on a standard uncertainty multiplied by a coverage factor of k=2.

This provides a level of confidence of uncertainty of approximately 95%.

The uncertainty of measurement is ±2 %

The results indicate that the instrument conforms to the applicable parts of the published specification.

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

Tel: 01793 780622 www.shawcity.co.uk Instrument House, 91-92 Shrivenham Hundred Business Park Watchfield, Oxfordshire, SN6 8TY Fax: 01793 784466 service@shawcity.co.uk



## SERVICE / INSPECTION SHEET

Instrument House 91-92 Shrivenham Hundred Business Park Watchfield Oxfordshire SN6 8TY Fax: 01793 784466 service@shawcity.co.uk JOB NUMBER: 66979 INSTRUMENT: Phocheck Tiger SERIAL NUMBER: T-114313 DATE RECEIVED: 15/10/2019

FIRMWARE:

5.12

CUSTOMER:

Concept Engineering Consultants

ITEMS RECEIVED	Received	RTN?
Instrument	yes	
Rubber Boot	yes	
Battery Charger		
Charging Cradle		<u> </u>
Operation Manual		_
Quick Start Guide		
Spares Kit		
Comms Cable		
Probe FLEXI		
Peli Case	yes	
Tubing		
Regulator		
Software (Memory Stick)		<u> </u>
PLASTIC CASE		
		<u> </u>
		<u> </u>
		-
		+

TESTS	Pre Service	Post Service
Charger Test		N/A
Battery charge Test		ОК
Lamp Test		ОК
Air Flow Test ≥		
200ml/min		260
Block Flow Test ≤		
15ml/min		5
Moisture Sensitivity =		
0.0ppm		0.0
Switch Test		OK
Sensor Test		ОК
Alarm Test		ОК
PC Comms Test		ОК
Datalog Test		ОК
Display Test		ОК
Physical Inspection	See notes	ОК
PAT Test		N/A
Firmware Upgrade		ОК
Software Upgrade (usb)		ОК
Function Test	See notes	ОК

Instrument is in for repair.

The unit was purchased on the 22/1/19.

Found F1 fuse to have come away from the board because of weak locating pins.

A new fuse has been fitted and instrument works well.

Phoned customer in regards to service and it was accepted.

Service replacements are the lamp stack and PTFE filter only as seals are good.

Lamp has been cleaned and fitted.

Runtime:68hrs 20mins

Calibration passed

Bump test passed

Instrument has been cleaned serviced and calibrated.







# **OUTWARDS CHECKLIST**

YSIPRO Sales Checklist and Calibration

	Reading	Target	Acceptable	Pass	
Temp	20.3	Ref:20-2	± 1°c		
pH7mv	0.7	0.0	0 ± 50	$\checkmark$	
pH4mv	172.3	177	177 ± 50		
pH Slope	171.6	177	162 - 180	$\checkmark$	
Cond. Cell Constant	4.9	5	4.6 - 5.4	$\checkmark$	
Redox Offset	-0.3	0.0	±50.0	$\checkmark$	
DO Gain	Pass or fail determined by the meter				

\*Calibrated to manufacturers standards

All parameters were within acceptable range on the day of despatch; however we do recommend that the instrument is calibrated daily to ensure accurate readings.

Checklist

Comments

YSI PRO meter & Hand strap Quatro Cable Assv Probe Guard / Sleeve Calibration Cup Manual/Data Manager CD Quick Start Guide Hard Case Flow Cell (including 2 o-rings) 2 x Small & Large Flow Cell Nipples DO Membrane and Electrolyte kit Warranty Sticker Intact Maintenance Cleaning Kit Cable Management Kit Date: 11/06/19 Signed: Name: Cross checked contents initials:

RR045V7\_28/02/2019\_JI

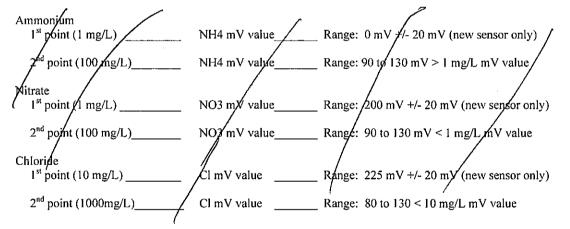
Date of Calibration: $\frac{06/12/19}{2}$	Technician: <u>5M</u>	
Instrument Serial Number: 19 D 102749	Software Revision:	Cable Model Number:
Temperature Reading 20.5	Temperature Accurate: 🔊	N
DO Sensor in use: Polarographic Gal	vanic	Sensor notated in Sensor menu? ${\cal O}$ N
DO membrane changed? Y (N) Col	or of Membrane <u>BLUE</u>	_ Color notated in Sensor menu? (7) N

Record the following calibration values:

Pre CalAfter CalConductivity
$$10035$$
 $10000$ ORP $244.8$  $250$ DO $97.4.7.$  $98.7.$ True Barometric Pressure at time of calibration $740.7$ 

	Pre Cal		
рН 7	7.16	pH mV value_7.00_	Range 0 mV <u>+</u> 50 mV
pH 4	4.14	pH mV value 4.02	Range +165 to +180 from 7 buffer mV value
pH 10	40.00	pH mV value 9.98	Range -165 to -180 from 7 buffer mV value

9 + 9 + 4NOTE: See pH Cal tips section for additional information. Span between pH 4 and 7 and 7 and 10 mV values should be  $\approx 165$  to 180 mV. 177 is the ideal distance or 59 mV per pH unit.



Record the following diagnostic numbers after calibration, by viewing the .glp file and reading the values for the day's calibration

Conductivity Cal Cell Constant	4.937	Range 5.0 +/- 1.0 acceptable
DO Sensor Value (uA)	2.458	(Membrane dependent, see DO Cal Tips)
pH Slope	<u>67.19323</u>	(≈ 55 to 60 mV/pH, 59 ideal)
pH Slope % of ideal	96.7409	

## **12. GEOTECHNICAL LABORATORY TEST RESULTS**

#### CONCEPT SITE INVESTIGATIONS Site Name: Torridon House Car Park, Westminster Job No.: 19/3312 Client: City of Westminster **Date Reported:** 15/11/2019 Summary Test Report **Determination of Moisture Content and Liquid and Plastic Limits** Natural Liquid Passing Plastic Plasticity Borehole Sample Depth Moisture Limit Sample 425 µm Limit Index Remarks Description Content sieve Туре % No No m % % % % Firm, extremely closely fissured 29 99 48 BH101 UT 10 2.50 76 28 brown mottled bluish grey CLAY with occasional pockets of yellowish brown silty fine sand (<10mm) and rare pockets of selenite crystals (<10mm) BH101 UT 14 4.50 Stiff, brown mottled bluish grey 99 77 29 48 31 CLAY with rare pockets of yellowish brown silty fine sand (<5mm) and rare pockets of selenite crystals (<10mm) BH101 UT 19 7.50 Very stiff, brown mottled yellowish 27 99 72 27 45 brown CLAY with 1No parting of yellowish brown silty fine sand, occasional pockets of yellowish brown silty fine sand (<15mm) and rare pockets od selenite crystals (<5mm) BH101 UT 24 10.50 Stiff. extremely closely to very 27 100 79 27 52 closely fissured arevish brown slightly micaceous CLAY with occasional pockets of dark grey silt (<20mm), rare pockets od yellowish brown silt (<25mm), rare shell fragments (<5mm) and occasional bioturbation BH101 UT 29 13.50 Very stiff, greyish brown slightly 26 100 79 28 51 micaceous silty CLAY with rare pockets of light brown silty fine sand (<5mm), rare pockets of dark grev silt (<15mm), locally with frequent foraminifera and bioturbation Very stiff, greyish brown slightly BH101 16.50 100 UT 34 25 76 27 49 sandy silty CLAY with frequent pockets of light brown, dark grey silty fine sand (<20mm) and occasional bioturbation Very stiff, greyish brown slightly BH101 UT 39 19.50 25 100 74 27 47 micaceous silty CLAY with occasional pockets of dark grey silty fine sand (<40mm) and frequent bioturbation BS 1377: Part 2: Clause 4.3 & 4.4: 1990 Determination of the liquid limit by the cone penetrometer method BS 1377: Part 2: Clause 5: 1990 Determination of the plastic limit and plasticity index BS 1377: Part 2: Clause 3.2: 1990 Determination of the moisture content by the oven drying method 15/10/2019 Date - samples received: OOROEPT Date - sample testing commenced : 11/11/2019 Checked / Approved by: КM 47-49 Brunel Road, London W3 7XR 15/11/2019 Date - sample testing completed : 14/11/2019 Date Approved: Tel: 02087401553 Email: lab@conceptconsultants.co.uk L Griffin LG (QA Technical & Lab Mngr) - K Mazerant KM (Lab Mngr)

Approved Signatories:

Q:\2019\193312 - Torridon House\LAB RESULTS\Geotechnical\Concept\193312 NMC PI (BH101)

				CONCEPT SITE	INVEST	IGATIO	15			
Site Na	me:		Torridon	House Car Park, Westminster				Job No.	:	19/3312
Client:				ty of Westminster				Date Reported:		15/11/2019
			Dete	Summary rmination of Moisture Cor		Liquid an		tic Limi	ts	_
Borehole No.	Sample Type	Description			Natural Moistur Conten %	e 425 μm	Liquid Limit %	Plastic Limit %	Plasticity Index %	Remarks
BH101	UT	44	22.50	Very stiff, greyish brown slightly sandy slightly micaceous silty CL with frequent pockets of light brow and dark grey silty fine sand (<25mm), rare white flecks, foraminifera and occasional bioturbation	AY 23	100	70	26	44	
BH101	UT	49	25.50	Very stiff, extremely closely fissur brownish grey CLAY with occasic pockets of light grey silty fine san (<5mm) and occasional bioturbat	onal Id	100	74	28	46	
BH101	UT	54	s w a (•	Very stiff, brownish grey slightly sandy slightly micaceous silty CL with occasional pockets of dark g and light brown silty fine sand (<15mm), rare foraminifera and occasional bioturbation		100	76	28	48	
BH101	UT	59	31.50	Very stiff, brownish grey slightly micaceous silty CLAY with rare pockets of dark grey silty fine sar (<20mm), rare pyrite nodules (<10mm), frequent bioturbation a rare foraminifera		99	71	27	44	
BH101	UT	64	34.50	Very stiff, brownish grey slightly micaceous silty CLAY with rare pockets of dark grey silty fine sar (<10mm), rare pyrite nodules (<10mm) and frequent bioturbatio		99	73	28	45	
BS 1377:	Part 2: C	lause 5: 1	1990 Determi	Determination of the liquid limit by the con- ination of the plastic limit and plasticity inde mination of the moisture content by the ove	ЭХ		1	AGS	ARCONTON OF MICTOCOMPAN Econvernments, Specimiets	
Date - sam				15/10/2019						
Date - sam	-				Approved by:	KM			CONCEPT el Road, Londo	
Date - sam	-	-		14/11/2019 Date Appr QA Technical & Lab Mngr) – K Mazerant KM (Lat		15/11/2019	Tel: 020	87401553 E	mail: lab@cor	nceptconsultants.co.uk

Q:\2019\193312 - Torridon House\LAB RESULTS\Geotechnical\Concept\193312 NMC PI (BH101)

				CONCEPT SITE IN	VESTIC	GATION	5			
Site Na	me:		Torridon H	louse Car Park, Westminster				Job No.:		19/3312
Client:			City of We	estminster				Date Rep	orted:	13/11/2019
				Summary Te	st Report	t				
			Deter	mination of Moisture Conten	•		d Plas	tic Limit	S	
Borehole	Sample	Sample	Depth	Description	Natural Moisture Content	<sup>1.</sup> Passing 425 μm sieve	Liquid Limit	Plastic Limit	Plasticity Index	Remarks
No.	Туре	No.	m	Firm outnot also also finance d	%	%	%	%	%	
BH102	UT	9	2.50	Firm, extremely closely fissured brown mottled grey CLAY locally with frequent pockets of selenite crystals (<5mm)	32	98	76	28	48	
BH102	UT	13	4.50	Firm to stiff, extremely closely fissured brown mottled orangish brown CLAY with rare pockets of selenite crystals (<3mm)	30	99	80	30	50	
BH102	UT	18	7.50	Stiff, extremely closely fissured brown mottled orangish brown CLAY with rare pockets of yellowish brown silty fine sand (<15mm), pockets of selenite crystals (<5mm) and 2No pyrite nodules (<40mm)	27	99	73	26	47	
BH102	UT	23	10.50	Stiff, extremely closely fissured greyish brown slightly micaceous CLAY with occasional pockets of dark grey silty fine sand (<25mm), 1No pyrite nodule (50x15mm) and frequent bioturbation	28	99	80	28	52	
BH102	UT	28	13.50	Stiff, greyish brown slightly micaceous slightly sandy CLAY with rare pockets of light brown and dark grey silty fine sand (<20mm), locally with frequent foraminifera and occasional bioturbation	27	100	80	28	52	
BH102	UT	32	16.50	Very stiff, greyish brown slightly sandy slightly micaceous silty CLAY with occasional pockets of dark grey and light brown silty fine sand (<10mm) and rare bioturbation	24	100	79	28	51	
BH102	UT	37	19.50	Very stiff, greyish brown slightly micaceous silty CLAY with frequent pockets of dark grey silty fine sand (<30mm), frequent bioturbation and 1No claystone fragment (10x10mm) at 19.57m	27	99	74	26	48	
BH102	UT	42	22.50	Very stiff, extremely closely fissured greyish brown slightly sandy slightly micaceous silty CLAY with occasional pockets of dark grey and light brown silty fine sand (<20mm), frequent bioturbation and rare foraminifera	25	100	71	26	45	
BS 1377: I	Part 2: C	ause 5:	1990 Determir	Determination of the liquid limit by the cone pen nation of the plastic limit and plasticity index nination of the moisture content by the oven dry		ethod		AGS	KOCIVIEM CF GENECHICAL S Normalionwenter Specialisty	
Date - samp	ples receiv	ed:		11/10/2019						
Date - samp Date - samp	-		:	01/11/2019 Checked / Appro 12/11/2019 Date Approved: X Technical & Lab Mngr) – K Mazerant KM (Lab Mngr	-	KM 13/11/2019	Tel: 020		<b>OOROEPT</b> I Road, Londo mail: lab@cor	on W3 7XR nceptconsultants.co.uk

Q:\2019\193312 - Torridon House\LAB RESULTS\Geotechnical\Concept\193312 NMC PI (BH102)

				CONCEPT SITE	INVESTI	GATIO	<b>IS</b>			
Site Na	me:		Torridon I	House Car Park, Westminster				Job No.		19/3312
Client:			City of W	estminster	Date Reported: 13/11/20			13/11/2019		
	Summary Test Report Determination of Moisture Content and Liquid and Pla									
Borehole No.	Sample Type	Sample No.	Depth m	Description	Natural Moisture Content %	<sup>1.</sup> Passing 425 μm sieve %	Liquid Limit %	Plastic Limit %	Plasticity Index %	Remarks
BH102		47	25.50	Very stiff, extremely closely fissure greyish brown slightly micaceous CLAY with rare pockets of dark gr silty fine sand (<20mm), white flec and frequent bioturbation	ed 28 ey	100	75	28	47	
BH102	UT	52	28.50	Very stiff, extremely closely to ver closely fissured greyish brown slightly micaceous silty CLAY with rare pockets of dark grey silt (<20mm) and frequent bioturbation		100	78	29	49	
BH102	UT	57	31.50	Very stiff, greyish brown slightly sandy slightly micaceous silty CLA with occasional pockets of dark gr and light brown silty fine sand (<15mm), rare pyrite nodules (<10mm), foraminifera and freque bioturbation	ey	98	72	27	45	
BH102	UT	62	34.50	Very stiff, greyish brown slightly micaceous sandy silty CLAY with rare pockets of light brown silty fin sand (<10mm), white flecks and frequent bioturbation	25 ie	100	71	27	44	
BS 1377:	Part 2: C	lause 4.3	s & 4.4: 1990	Determination of the liquid limit by the cone	penetrometer n	nethod				
				nation of the plastic limit and plasticity inde: nination of the moisture content by the over				AGS	RECEIVINGE OF RECTRONALES. Conversioner II. Spectalists	UKAS TESTING 4503
Date - sam				11/10/2019					000000	
Date - sam	-				Approved by:	KM	<b>T</b> 1 47 -		OOROEPT	
Date - sam Approved	-			12/11/2019     Date Appro       DAT Technical & Lab Mngr) – K Mazerant KM (Lab		13/11/2019	Tel: 020	187401553 E	mail: lab@cor	nceptconsultants.co.uk



Magdalena Concept Site Investigations Unit 8 Warple Mews Warple Way London W3 0RF

### t: 02087401553

e: Concept Group



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 : 19-70829

Project / Site name:	Torridon House Car Park, Westminster	Samples received on:	07/11/2019
Your job number:	19-3312	Samples instructed on:	07/11/2019
Your order number:	L2172	Analysis completed by:	14/11/2019
Report Issue Number:	1	Report issued on:	14/11/2019
Samples Analysed:	4 soil samples		

Signed: VS / Wards Shide

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 leachates waters asbestos	<ul> <li>4 weeks from reporting</li> <li>2 weeks from reporting</li> <li>2 weeks from reporting</li> <li>6 months from reporting</li> </ul>
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.

Iss No 19-70829-1 Torridon House Car Park, Westminster 19-3312





### Analytical Report Number: 19-70829

Project / Site name: Torridon House Car Park, Westminster Your Order No: L2172

Lab Sample Number	1356532	1356533	1356534	1356535				
Sample Reference	ample Reference						BH101	
Sample Number				15	25	40	55	
Depth (m)	•				11.00	20.00	29.00	
Date Sampled					07/11/2019	07/11/2019	07/11/2019	
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	%	N/A	NONE	18	16	17	16	
Fotal mass of sample received	kg	0.001	NONE	0.96	0.56	0.68	0.69	

### General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7.7	8.2	8.5	8.6	
Total Sulphate as SO <sub>4</sub>	mg/kg	50	MCERTS	7200	2100	1000	890	
Water Soluble SO4 16hr extraction (2:1 Leachate								
Equivalent)	g/l	0.00125	MCERTS	2.9	0.91	0.52	0.51	
Total Sulphur	mg/kg	50	MCERTS	2600	7000	3100	3900	





### Analytical Report Number : 19-70829

### Project / Site name: Torridon House Car Park, Westminster

\* 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 *
1356532	BH101	15	5.00	Brown clay and sand.
1356533	BH101	25	11.00	Brown clay.
1356534	BH101	40	20.00	Brown clay.
1356535	BH101	55	29.00	Brown clay.

Iss No 19-70829-1 Torridon House Car Park, Westminster 19-3312





Analytical Report Number : 19-70829

Project / Site name: Torridon House Car Park, Westminster

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In-house method based on BS1377 Part 2, 1990, Classification tests	L019-UK/PL	W	NONE
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	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
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP- OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP- OES.	L038-PL	D	MCERTS
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	MCERTS
Total Sulphur in soil	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, and MEWAM 2006 Methods for the Determination of Metals in Soil	L038-PL	D	MCERTS

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.



Magdalena Concept Site Investigations Unit 8 Warple Mews Warple Way London W3 0RF

#### t: 02087401553

e: Concept Group



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

### Analytical Report Number : 19-69658

Project / Site name:	Torridon House Car Park, Westminster	Samples received on:	01/11/2019
Your job number:	19-3312	Samples instructed on:	01/11/2019
Your order number:	L2167	Analysis completed by:	08/11/2019
Report Issue Number:	1	Report issued on:	08/11/2019
Samples Analysed:	4 soil samples		

Signed: <

Zina Abdul Razzak Senior Quality Specialist

#### 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 :	waters	<ul> <li>4 weeks from reporting</li> <li>2 weeks from reporting</li> <li>2 weeks from reporting</li> <li>6 months from reporting</li> </ul>
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: 19-69658

Project / Site name: Torridon House Car Park, Westminster Your Order No: L2167

Lab Sample Number				1350063	1350064	1350065	1350066	
Sample Reference	imple Reference					BH102	BH102	
Sample Number				10	19	33	48	
Depth (m)				3.00	8.00	17.00	26.00	
Date Sampled				01/11/2019	01/11/2019	01/11/2019	01/11/2019	
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	%	N/A	NONE	19	14	13	15	
Total mass of sample received	kg	0.001	NONE	1.2	0.70	0.60	0.70	

#### **General Inorganics**

Concilar Intel games								
pH - Automated	pH Units	N/A	MCERTS	7.7	7.7	8.7	9.0	
Total Sulphate as SO₄	mg/kg	50	MCERTS	19000	8600	1200	1200	
Total Sulphate as SO₄	%	0.005	MCERTS	1.93	0.864	0.122	0.116	
Water Soluble SO4 16hr extraction (2:1 Leachate								
Equivalent)	g/l	0.00125	MCERTS	4.5	4.3	0.67	0.64	
Water Soluble SO4 16hr extraction (2:1 Leachate								
Equivalent)	mg/l	1.25	MCERTS	4550	4310	667	638	
Total Sulphur	mg/kg	50	MCERTS	10000	3800	3700	3400	
Total Sulphur	%	0.005	MCERTS	1.04	0.376	0.366	0.337	





#### Analytical Report Number : 19-69658

#### Project / Site name: Torridon House Car Park, Westminster

\* 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 *
1350063	BH102	10	3.00	Brown clay.
1350064	BH102	19	8.00	Brown clay.
1350065	BH102	33	17.00	Grey clay.
1350066	BH102	48	26.00	Grey clay.





Analytical Report Number : 19-69658

Project / Site name: Torridon House Car Park, Westminster

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In-house method based on BS1377 Part 2, 1990, Classification tests	L019-UK/PL	W	NONE
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	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
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP- OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP- OES.	L038-PL	D	MCERTS
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	MCERTS
Total Sulphate in soil as %	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests""	L038-PL	D	MCERTS
Total Sulphur in soil	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, and MEWAM 2006 Methods for the Determination of Metals in Soil	L038-PL	D	MCERTS

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.

C	DUCE	PT SI	ΓΕ ΙΛΥ	ESTIGATIONS	Summary Tes	(Si	Undrain ingle-Sta : Part 7: 1990	ige)	al Compre	ession		eported:	15/11/2019
Sit	e Locatio	on:	Torridon	House Car Park, Westm	inster			estminste	r		JOD	No.:	19/3312
BH No.	Sample Type	Sample No	Depth top (m)			Cell pressure kN/m2	Strain at failure %	Bulk Density Mg/m3	Dry Density Mg/m3	NMC %	Max Dev. Stress kPa	<b>Shear</b> Strength kPa	Mode of failure/Comments
BH101	UT	10	2.50	Firm, extremely closely fiss bluish grey CLAY with occa yellowish brown silty fine sa rare pockets of selenite cry	50	9.5	1.962	1.520	29	160	80	Britte	
BH101	UT	14	4.50	Stiff, brown mottled bluish o pockets of yellowish brown (<5mm) and rare pockets o (<10mm)	80	4.8	1.914	1.464	31	161	81	Britte	
BH101	UT	19	7.50	Very stiff, brown mottled yellowish brown CLAY with 1No parting of yellowish brown silty fine sand, occasional pockets of yellowish brown silty fine sand (<15mm) and rare pockets od selenite crystals (<5mm)		150	5.0	1.970	1.550	27	257	129	Britte
BH101	UT	24	10.50	Stiff, extremely closely to ve greyish brown slightly mica occasional pockets of dark rare pockets od yellowish b rare shell fragments (<5mm bioturbation	ceous CLAY with grey silt (<20mm), rown silt (<25mm),	210	3.9	1.989	1.565	27	257	129	Britte
BH101	UT	29	13.50	Very stiff, greyish brown sli silty CLAY with rare pocket fine sand (<5mm), rare poc silt (<15mm), locally with fre and bioturbation	270	1.9	1.989	1.579	26	226	113	Britte	
Date - samp	oles receive	d:		15/10/2019					CONCEPT				_ 🙀 _
Date - sample testing commenced: 12/11/2019 Che					Checked/Approved by:	KM			el Road, Londo		R AGS		
					Date Approved:	15/11/2019	D19 Tel: 02087401553 Email: Lab@conceptconsultants.co.uk						
Approved Signatories: L Griffin LG (QA Technical & Lab Mngr) – K Ma						o Mngr)		Email: Lab@conceptconsultants.co.uk				U K A S TESTING 4503	

C	DUCE	PT SI	ΓΕ ΙΛΥ	ESTIGATIONS	Summary Tes	(Si	Undrain ingle-Sta : Part 7: 1990	ige)	al Compre	ession		eported:	15/11/2019
Sit	e Locatio	on:	Torridon	House Car Park, Westm	inster	1		estminste	r		JOD	No.:	19/3312
BH No.	Sample Type	Sample No	Depth top (m)			Cell pressure kN/m2	Strain at failure %	Bulk Density Mg/m3	Dry Density Mg/m3	NMC %	Max Dev. Stress kPa	Shear Strength kPa	Mode of failure/Comments
BH101	UT	34	16.50	Very stiff, greyish brown sli CLAY with frequent pockets dark grey silty fine sand (<2 occasional bioturbation	330	2.4	2.012	1.612	25	304	152	Brittle	
BH101	UT	39	19.50	Very stiff, greyish brown sli silty CLAY with occasional grey silty fine sand (<40mm bioturbation	390	3.9	2.003	1.607	25	353	177	Brittle	
BH101	UT	44	22.50	Very stiff, greyish brown slightly sandy slightly micaceous silty CLAY with frequent pockets of light brown and dark grey silty fine sand (<25mm), rare white flecks, foraminifera and occasional bioturbation		450	2.2	2.041	1.663	23	418	209	Brittle
BH101	UT	49	25.50	Very stiff, extremely closely grey CLAY with occasional grey silty fine sand (<5mm) bioturbation	pockets of light	510	2.9	1.986	1.569	27	389	195	Brittle
BH101	UT	54	28.50	micaceous silty CLAY with of dark grey and light brown	y stiff, brownish grey slightly sandy slightly aceous silty CLAY with occasional pockets ark grey and light brown silty fine sand 5mm), rare foraminifera and occasional urbation			2.012	1.602	26	421	211	Brittle
Date - sam	ples receive	ed:		15/10/2019					CONCEPT				
Date - sample testing commenced: 12/11/2019					Checked/Approved by:	KM			el Road, Londo			AGS	
Date - sample testing completed:     14/11/2019     Date Approv       Approved Signatories:     L Griffin     LG (QA Technical & Lab Mngr) – K Mazerar					Date Approved:	15/11/2019	2019 Tel: 02087401553 Email: Lab@conceptconsultants.co.uk						
Approved \$	Signatories		L Griffin L	G (QA Technical & Lab Mngr)	– к Mazerant KM (Lal	o Mngr)							4503

CC	DUCE	PT SI	ΓΕ ΙΛΥ	ESTIGATIONS	Summary Tes	(S	ingle-Sta	ige)	al Compre	ession	Date R	eported:	15/11/2019
						1	: Part 7: 1990				Job	No.:	19/3312
Sit	e Locatio	on:	Torridon	House Car Park, Westmi	inster	Client:	City of W	estminste	ſ				
BH No.	Sample Type	Sample No	Depth top (m)	Descriptio	n	Cell pressure kN/m2	Strain at failure %	Bulk Density Mg/m3	Dry Density Mg/m3	NMC %	Max Dev. Stress kPa	Shear Strength kPa	Mode of failure/Comments
BH101	UT	59	31.50	Very stiff, brownish grey sli silty CLAY with rare pocket fine sand (<20mm), rare py (<10mm), frequent bioturba foraminifera	630	3.6	2.035	1.627	25	416	208	Brittle	
BH101	UT	64	34.50	Very stiff, brownish grey sli silty CLAY with rare pocket fine sand (<10mm), rare py (<10mm) and frequent biot	s of dark grey silty rite nodules								Insufficient testable sample
)ate - samr	oles receive	d.		15/10/2019									برقير
			KM			CONCEPT							
			Date Approved: - K Mazerant KM (Lal	15/11/2019		Te	el Road, Londo el: 02087401553 Øconceptconsul	3	AGS ANALYTICS OF STATES				

CC	DUCE	PT SI	LE IUA	ESTIGATIONS	Summary Tes	(Si	ngle-Sta	ige)	al Compre	ession	Date R	eported:	15/11/2019
0:4	e Locatio		Torridoo	House Car Park, Westmi	notor		: Part 7: 1990				Job	No.:	19/3312
BH No.	Sample Type	Sample No	Depth top (m)			Client: Cell pressure kN/m2	Strain at failure %	estminster Bulk Density Mg/m3	Dry Density Mg/m3	NMC %	Max Dev. Stress kPa	Shear Strength kPa	Mode of failure/Comments
BH102	UT	9	2.50	Firm, extremely closely fiss grey CLAY locally with freq selenite crystals (<5mm)	50	9.8	1.918	1.452	32	89	45	Brittle	
BH102	UT	13	4.50	Firm to stiff, extremely clos mottled orangish brown CL pockets of selenite crystals	90	4.3	1.926	1.478	30	176	88	Brittle	
BH102	UT	18	7.50	Stiff, extremely closely fissured brown mottled orangish brown CLAY with rare pockets of yellowish brown silty fine sand (<15mm), pockets of selenite crystals (<5mm) and 2No pyrite nodules (<40mm)		150	6.1	1.998	1.576	27	235	118	Brittle
BH102	UT	23	10.50	Stiff, extremely closely fissu slightly micaceous CLAY w pockets of dark grey silty fir 1No pyrite nodule (50x15m bioturbation	ith occasional ne sand (<25mm),	210	4.6	1.976	1.547	28	232	116	Brittle
BH102	UT	28	13.50	Stiff, greyish brown slightly sandy CLAY with rare pock and dark grey silty fine sand with frequent foraminifera a bioturbation	270	5.0	1.967	1.547	27	294	147	Brittle	
Date - samp	oles receive	d:		11/10/2019					CONCEPT				
					Checked/Approved by:	KM			el Road, Londo		AGS		
Date - samp			L Griffin I	05/11/2019 G (QA Technical & Lab Mngr)	Date Approved: – K Mazerant KM (Lat	13/11/2019 o Mnar)			el: 02087401553 Øconceptconsul				UKAS

C	DUCE	PT SI'	ΓΕ ΙΛΥ	ESTIGATIONS	Summary Tes	(Si	Undrain ingle-Sta : Part 7: 1990	ige)	al Compre	ession		eported:	15/11/2019
Sit	e Locatio	on:	Torridon	House Car Park, Westm	inster	Client:	City of W	estminste	r		JOD	No.:	19/3312
BH No.	Sample Type	Sample No	Depth top (m)	Descriptio	Description			Bulk Density Mg/m3	Dry Density Mg/m3	NMC %	Max Dev. Stress kPa	<b>Shear</b> Strength kPa	Mode of failure/Comments
BH102	UT	32	16.50	Very stiff, greyish brown sli micaceous silty CLAY with of dark grey and light brown (<10mm) and rare bioturba	330	2.1	2.030	1.634	24	333	167	Brittle	
BH102	UT	37	19.50	Very stiff, greyish brown sli silty CLAY with frequent po silty fine sand (<30mm), fre and 1No claystone fragmer 19.57m	390	6.3	2.010	1.586	27	327	164	Brittle (Sample tested between 19.55 ad 19.75m)	
BH102	UT	42	22.50	Very stiff, extremely closely fissured greyish brown slightly sandy slightly micaceous silty CLAY with occasional pockets of dark grey and light brown silty fine sand (<20mm), frequent bioturbation and rare foraminifera		450	4.8	2.009	1.611	25	501	251	Brittle
BH102	UT	47	25.50	Very stiff, extremely closely brown slightly micaceous C pockets of dark grey silty fir white flecks and frequent b	LAY with rare ne sand (<20mm),	510	5.2	2.008	1.571	28	299	150	Brittle
BH102	UT	52	28.50	fissured greyish brown sligh	'ery stiff, extremely closely to very closely ssured greyish brown slightly micaceous silty CLAY with rare pockets of dark grey silt <20mm) and frequent bioturbation			2.002	1.571	27	404	202	Brittle
Date - sam	oles receive	d:		11/10/2019					CONCEPT				
Date - sample testing commenced: 04/11/2019					Checked/Approved by:	KM			el Road, Londo			AGS	
Date - sam	0			06/11/2019	Date Approved:	13/11/2019			el: 02087401553 Deconceptconsul			India	
Approved \$	Signatories		L Griffin L	.G (QA Technical & Lab Mngr)	– K Mazerant KM (Lat	o Mngr)							4503

C	DUCE	PT SI	ΓΕ ΙΛΥ	ESTIGATIONS	Summary Tes	Summary Test Report - Undrained Triaxial Compression (Single-Stage)         Date Reported:           BS 1377 : Part 7: 1990 Clause 8         Job No.:		(Single-Stage)				15/11/2019 19/3312	
Sit	e Locatio	on:	Torridon	House Car Park, Westmi	inster	Client:	City of W	estminster	r		J00	NO	19/3312
BH No.	Sample Type	Sample No	Depth top (m)	Descriptio	n	Cell pressure kN/m2	Strain at failure %	Bulk Density Mg/m3	Dry Density Mg/m3	NMC %	Max Dev. Stress kPa	<b>Shear</b> Strength kPa	Mode of failure/Comments
BH102	UT	57		Very stiff, greyish brown sli micaceous silty CLAY with of dark grey and light browr (<15mm), rare pyrite nodule foraminifera and frequent b	occasional pockets n silty fine sand es (<10mm),	630	8.0	2.028	1.625	25	260	130	Brittle
BH102	UT	62		Very stiff, greyish brown sli sandy silty CLAY with rare brown silty fine sand (<10m and frequent bioturbation	pockets of light	690	4.9	1.966	1.577	25	408	204	Brittle
Date - sam	oles receive	d:		11/10/2019									ಥಾ
	ple testing c		:	01/11/2019	Checked/Approved by:	KM		17 10 Derin	CONCEPT el Road, Londo	n 14/2 7VD			
	ple testing c			05/11/2019	Date Approved:	13/11/2019		Te	el Road, Londo el: 0208740155; Øconceptconsul	3		AGS	
Approved S	Signatories	:	L Griffin L	G (QA Technical & Lab Mngr)	– K Mazerant KM (Lat	o Mngr)							TESTING 4503

### **13. CHEMICAL LABORATORY TEST RESULTS**



*Certificate Number* 19-20616-1

Client Concept Engineering Consultants Ltd Concept Coventry Office Unit D Herald Way Binley Industrial Estate Coventry CV3 2RQ

- Our Reference 19-20616-1
- Client Reference 19/3312
  - Order No CL2130
  - Contract Title Torridon House
  - Description 4 Soil samples.
  - Date Received 11-Oct-19
  - Date Started 15-Oct-19
- Date Completed 31-Oct-19

Test Procedures Identified by prefix DETSn (details on request).

*Notes* This test supersedes 19-20616, extra testing.

Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Adam Fenwick Contracts Manager



31-Oct-19



Our Ref 19-20616-1 Client Ref 19/3312 Contract Title Torridon House

Lab No         1581285         1581286         1581287           Sample ID         BH102         BH102         WS103           Depth         0.50         0.70         0.23           Other ID         1         2         1           Sample Type         Es         Es         Es           Sampling Time         n/s         n/s         n/s         n/s           Method         LOD         Units         1         0.2         0.1           Metals         Arsenic         DETSC 2301#         0.2         mg/kg         3.9         19         6.0           Cadmium         DETSC 2301#         0.1         mg/kg         < 0.1	1581288 WS103 0.50 2 ES n/s n/s 0.1 3 < 0.1 48 < 1.0
Depth Other ID Sample Type         0.50         0.70         0.25           Sample Type Sampling Date Sampling Time         1         2         1           Test         Method         LOD         Units         n/s         n/s           Metals         0.2         mg/kg         3.9         19         6.0           Cadmium         DETSC 2301#         0.2         mg/kg         4.0         0.2         0.1           Chromium         DETSC 2301#         0.1         mg/kg         < 0.1	0.50 2 ES n/s n/s 13 < 0.1 48 < 1.0
Other ID         1         2         1           Sample Type         ES         ES         ES           Sampling Date         n/s         n/s         n/s           Test         Method         LOD         Units           Metals	2 ES n/s n/s 13 < 0.1 48 < 1.0
Sample Type         Es         Es         Es           Sampling Date         n/s         n/s         n/s         n/s           Test         Method         LOD         Units           Metals         Arsenic         DETSC 2301#         0.2         mg/kg         3.9         19         6.0           Cadmium         DETSC 2301#         0.1         mg/kg         < 0.1	ES n/s n/s 13 < 0.1 48 < 1.0
Sampling Date Sampling Time         n/s         n/s         n/s           Test         Method         LOD         Units           Metals              Arsenic         DETSC 2301#         0.2         mg/kg         3.9         19         6.0           Cadmium         DETSC 2301#         0.1         mg/kg         <0.1	n/s n/s 13 < 0.1 48 < 1.0
Sampling Time         n/s         n/s         n/s           Test         Method         LOD         Units           Metals             Arsenic         DETSC 2301#         0.2         mg/kg         3.9         19         6.0           Cadmium         DETSC 2301#         0.1         mg/kg         <0.1	n/s 13 < 0.1 48 < 1.0
TestMethodLODUnitsMetalsArsenicDETSC 2301#0.2mg/kg $3.9$ 19 $6.0$ CadmiumDETSC 2301#0.1mg/kg $<0.1$ $0.2$ $0.1$ ChromiumDETSC 2301#0.15mg/kg $6.5$ $66$ $14$ Chromium, HexavalentDETSC 2301# $0.2$ mg/kg $7.2$ $41$ $11$ LeadDETSC 2301# $0.2$ mg/kg $7.2$ $41$ $11$ LeadDETSC 2301# $0.3$ mg/kg $21$ $23$ $25$ MercuryDETSC 2301# $0.3$ mg/kg $<0.05$ $<0.05$ $<0.05$ MickelDETSC 2301# $1$ mg/kg $6.2$ $54$ $10$ SeleniumDETSC 2301# $1$ mg/kg $<0.5$ $<0.5$ $<0.5$ ZincDETSC 2301# $1$ mg/kg $30$ $100$ $28$ Inorganics $pH$ DETSC 2002# $0.1$ % $0.4$ $0.4$ $0.8$ Sulphate Aqueous Extract as SO4DETSC 202# $0.1$ % $0.3$ $0.08$ $0.27$ Petroleum Hydrocarbons $A$ <td>13 &lt; 0.1 48 &lt; 1.0</td>	13 < 0.1 48 < 1.0
MetalsArsenicDETSC 2301#0.2mg/kg $3.9$ 19 $6.0$ CadmiumDETSC 2301#0.1mg/kg $< 0.1$ $0.2$ $0.1$ ChromiumDETSC 2301#0.15mg/kg $6.5$ $66$ $14$ Chromium, HexavalentDETSC 2204*1mg/kg $< 1.0$ $< 1.0$ $< 1.0$ CopperDETSC 2301# $0.2$ mg/kg $7.2$ $41$ $11$ LeadDETSC 2301# $0.3$ mg/kg $21$ $23$ $25$ MercuryDETSC 2301# $0.3$ mg/kg $< 0.05$ $< 0.05$ $< 0.05$ NickelDETSC 2301# $1$ mg/kg $6.2$ $54$ $10$ SeleniumDETSC 2301# $0.5$ mg/kg $< 0.5$ $< 0.5$ ZincDETSC 2301# $1$ mg/kg $30$ $100$ $28$ Inorganics $pH$ DETSC 2002# $0.1$ % $0.4$ $0.4$ $0.8$ Sulphate Aqueous Extract as SO4DETSC 202# $0.1$ % $0.3$ $0.08$ $0.27$ Petroleum HydrocarbonsAliphatic C5-C6DETSC 3321# $0.01$ mg/kg $< 0.01$ $< 0.01$ Aliphatic C6-C8DETSC 3321# $0.01$ mg/kg $< 0.01$ $< 0.01$ $< 0.01$ Aliphatic C10-C12DETSC 3072# $1.5$ mg/kg $< 1.5$ $< 1.5$ $< 1.5$ Aliphatic C16-C21DETSC 3072# $1.2$ mg/kg $< 1.2$ $< 1.2$ $< 1.2$ Aliphatic C21-C35DETSC 3072#	< 0.1 48 < 1.0
ArsenicDETSC 2301#0.2mg/kg3.9196.0CadmiumDETSC 2301#0.1mg/kg< 0.1	< 0.1 48 < 1.0
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	< 0.1 48 < 1.0
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	48 < 1.0
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	< 1.0
Copper         DETSC 2301#         0.2         mg/kg         7.2         41         11           Lead         DETSC 2301#         0.3         mg/kg         21         23         25           Mercury         DETSC 2325#         0.05         mg/kg         <0.05	
Lead         DETSC 2301#         0.3         mg/kg         21         23         25           Mercury         DETSC 2325#         0.05         mg/kg         < 0.05	
Mercury         DETSC 2325#         0.05         mg/kg         < 0.05         < 0.05         < 0.05         < 0.05           Nickel         DETSC 2301#         1         mg/kg         6.2         54         10           Selenium         DETSC 2301#         0.5         mg/kg         < 0.5	26 15
Nickel         DETSC 2301#         1         mg/kg         6.2         54         10           Selenium         DETSC 2301#         0.5         mg/kg         < 0.5	< 0.05
Selenium         DETSC 2301#         0.5         mg/kg         < 0.5         < 0.5         < 0.5         < 0.5           Zinc         DETSC 2301#         1         mg/kg         30         100         28           Inorganics         pH         DETSC 2008#         pH         11.4         8.6         11.3           Organic matter         DETSC 2002#         0.1         %         0.4         0.4         0.8           Sulphate Aqueous Extract as SO4         DETSC 2076#         10         mg/l         120         380         220           Sulphate as SO4, Total         DETSC 2321#         0.01         %         0.33         0.08         0.27           Petroleum Hydrocarbons         Aliphatic C5-C6         DETSC 3321*         0.01         mg/kg         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01	
ZincDETSC 2301#1mg/kg3010028InorganicspHDETSC 2008#pH11.48.611.3Organic matterDETSC 2002#0.1%0.40.40.8Sulphate Aqueous Extract as SO4DETSC 2076#10mg/l120380220Sulphate as SO4, TotalDETSC 2321#0.01%0.330.080.27Petroleum HydrocarbonsAliphatic C5-C6DETSC 3321*0.01mg/kg< 0.01	41 0.6
Inorganics           pH         DETSC 2008#         pH         11.4         8.6         11.3           Organic matter         DETSC 2002#         0.1         %         0.4         0.4         0.8           Sulphate Aqueous Extract as SO4         DETSC 2076#         10         mg/l         120         380         220           Sulphate as SO4, Total         DETSC 2321#         0.01         %         0.33         0.08         0.27           Petroleum Hydrocarbons         DETSC 3321*         0.01         mg/kg         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         <	69
pH         DETSC 2008#         pH         11.4         8.6         11.3           Organic matter         DETSC 2002#         0.1         %         0.4         0.4         0.8           Sulphate Aqueous Extract as SO4         DETSC 2076#         10         mg/l         120         380         220           Sulphate as SO4, Total         DETSC 2321#         0.01         %         0.33         0.08         0.27           Petroleum Hydrocarbons         Aliphatic C5-C6         DETSC 3321*         0.01         mg/kg         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01	09
Organic matter         DETSC 2002#         0.1         %         0.4         0.4         0.8           Sulphate Aqueous Extract as SO4         DETSC 2076#         10         mg/l         120         380         220           Sulphate as SO4, Total         DETSC 2321#         0.01         %         0.33         0.08         0.27           Petroleum Hydrocarbons         DETSC 3321*         0.01         mg/kg         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01         <0.01	8.3
Sulphate Aqueous Extract as SO4         DETSC 2076#         10         mg/l         120         380         220           Sulphate as SO4, Total         DETSC 2321#         0.01         %         0.33         0.08         0.27           Petroleum Hydrocarbons         Aliphatic C5-C6         DETSC 3321*         0.01         mg/kg         < 0.01	0.6
Sulphate as SO4, Total         DETSC 2321#         0.01         %         0.33         0.08         0.27           Petroleum Hydrocarbons         Aliphatic C5-C6         DETSC 3321*         0.01         mg/kg         < 0.01	230
Petroleum Hydrocarbons           Aliphatic C5-C6         DETSC 3321*         0.01         mg/kg         < 0.01	
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	0.10
Aliphatic C6-C8         DETSC 3321*         0.01         mg/kg         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01         < 0.01	< 0.01
Aliphatic C8-C10DETSC 3321*0.01mg/kg< 0.01< 0.01< 0.01< 0.01Aliphatic C10-C12DETSC 3072#1.5mg/kg< 1.5	< 0.01
Aliphatic C10-C12         DETSC 3072#         1.5         mg/kg         < 1.5         < 1.5         < 1.5         < 1.5           Aliphatic C12-C16         DETSC 3072#         1.2         mg/kg         < 1.2	< 0.01
Aliphatic C12-C16         DETSC 3072#         1.2         mg/kg         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2         < 1.2<	< 1.5
Aliphatic C16-C21         DETSC 3072#         1.5         mg/kg         < 1.5         < 1.5         < 1.5           Aliphatic C21-C35         DETSC 3072#         3.4         mg/kg         < 3.4	< 1.2
Aliphatic C21-C35         DETSC 3072#         3.4         mg/kg         < 3.4         < 3.4	< 1.5
	< 3.4
	< 10
Aromatic C5-C7         DETSC 3321*         0.01         mg/kg         < 0.01         < 0.01         < 0.01	< 0.01
Aromatic C7-C8         DETSC 3321*         0.01         mg/kg         < 0.01         < 0.01         < 0.01         < 0.01	< 0.01
Aromatic C8-C10         DETSC 3321*         0.01         mg/kg         < 0.01         < 0.01         < 0.01         < 0.01	< 0.01
Aromatic C10-C12         DETSC 3072#         0.9         mg/kg         < 0.9         < 0.9         < 0.9         < 0.9	< 0.9
Aromatic C12-C16         DETSC 3072#         0.5         mg/kg         < 0.5         < 0.5         < 0.5         < 0.5	< 0.5
Aromatic C16-C21         DETSC 3072#         0.6         mg/kg         < 0.6         < 0.6         < 0.6         < 0.6	< 0.6
Aromatic C21-C35         DETSC 3072#         1.4         mg/kg         < 1.4         < 1.4	< 1.4
Aromatic C5-C35         DETSC 3072*         10         mg/kg         < 10         < 10         < 10	< 10
TPH Ali/Aro Total         DETSC 3072*         10         mg/kg         < 10         < 10         < 10	< 10
PAHs	
Naphthalene         DETSC 3301         0.1         mg/kg         < 0.1         < 0.1         < 0.1	< 0.1
Acenaphthylene         DETSC 3301         0.1         mg/kg         < 0.1         < 0.1         < 0.1	< 0.1
Acenaphthene         DETSC 3301         0.1         mg/kg         < 0.1         < 0.1         < 0.1	< 0.1
Fluorene         DETSC 3301         0.1         mg/kg         < 0.1         < 0.1         < 0.1	< 0.1
Phenanthrene         DETSC 3301         0.1         mg/kg         < 0.1         < 0.1         0.3	< 0.1
Anthracene         DETSC 3301         0.1         mg/kg         < 0.1         0.1         0.1	S U. I
Fluoranthene         DETSC 3301         0.1         mg/kg         0.2         < 0.1         0.4	< 0.1

Key: \* -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.



		H	1581285	1581286	1581287	1581288
	Sa	mple ID	BH102	BH102	WS103	WS103
		Depth	0.50	0.70	0.25	0.50
	(	Other ID	1	2	1	2
	Sam	ole Type	ES	ES	ES	ES
	Sampli	ing Date	n/s	n/s	n/s	n/s
	Sampli	ng Time	n/s	n/s	n/s	n/s
Method	LOD	Units				
DETSC 3301	0.1	mg/kg	0.2	< 0.1	0.4	< 0.1
DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	0.2	< 0.1
DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	0.2	< 0.1
DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	0.2	< 0.1
DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	0.1	< 0.1
DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	0.2	< 0.1
DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
DETSC 3301	1.6	mg/kg	< 1.6	< 1.6	2.2	< 1.6
DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
	DETSC 3301           DETSC 3301	Method         LOD           DETSC 3301         0.1           DETSC 3301         0.1	Other ID           Sample Type           Sampling Date           Sampling Time           Method         LOD         Units           DETSC 3301         0.1         mg/kg           DETSC 3301         0.1         mg/kg	Sample ID         BH102           Depth         0.50           Other ID         1           Sample Type         ES           Sampling Date         n/s           Sampling Time         n/s           Method         LOD         Units           DETSC 3301         0.1         mg/kg         0.2           DETSC 3301         0.1         mg/kg         < 0.1	Sample ID         BH102         BH102           Depth         0.50         0.70           Other ID         1         2           Sample Type         ES         ES           Sampling Date         n/s         n/s           Method         LOD         Units           DETSC 3301         0.1         mg/kg         0.2         <0.1	Sample ID         BH102         BH102         WS103           Depth         0.50         0.70         0.25           Other ID         1         2         1           Sample Type         ES         ES         ES           Sampling Date         n/s         n/s         n/s           Method         LOD         Units            DETSC 3301         0.1         mg/kg         0.2         <0.1         0.4           DETSC 3301         0.1         mg/kg         0.2         <0.1         0.4           DETSC 3301         0.1         mg/kg         <0.1         <0.1         0.2           DETSC 3301         0.1         mg/kg         <0.1         <0.1         <0.1           DETSC 3301         0.1         mg/kg         <0.1         <0.1         <0.1



# Summary of Asbestos Analysis Soil Samples

*Our Ref* 19-20616-1 *Client Ref* 19/3312 *Contract Title* Torridon House

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1581285	BH102 1 0.50	SOIL	NAD	none	Luke Donaghy
1581286	BH102 2 0.70	SOIL	NAD	none	Luke Donaghy
1581287	WS103 1 0.25	SOIL	NAD	none	Luke Donaghy
1581288	WS103 2 0.50	SOIL	NAD	none	Luke Donaghy

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: \* not included in laboratory scope of accreditation.



Inappropriate

## Information in Support of the Analytical Results

*Our Ref* 19-20616-1 *Client Ref* 19/3312 *Contract* Torridon House

### **Containers Received & Deviating Samples**

		Date			container for
Lab No	Sample ID	Sampled	<b>Containers Received</b>	Holding time exceeded for tests	tests
1581285	BH102 0.50 SOIL		GJ 250ml, GJ 60ml, PT 1L	Sample date not supplied, Anions 2:1 (365 days), Aliphatics/Aromatics (14 days), BTEX (14 days), Chromium, Hexavalent (365 days), Mercury (365 days), Total Sulphate ICP (730 days), Metals ICP (365 days), Metals ICP Prep (365 days), Kone Cr6 (1095 days), Naphthalene (14 days), Organic Matter (Manual) (28 days), PAH FID (14 days), pH + Conductivity (7 days), Cyanide/Mono pHoh (14 days)	
1581286	BH102 0.70 SOIL		GJ 250ml, GJ 60ml, PT 1L	Sample date not supplied, Anions 2:1 (365 days), Aliphatics/Aromatics (14 days), BTEX (14 days), Chromium, Hexavalent (365 days), Mercury (365 days), Total Sulphate ICP (730 days), Metals ICP (365 days), Metals ICP Prep (365 days), Kone Cr6 (1095 days), Naphthalene (14 days), Organic Matter (Manual) (28 days), PAH FID (14 days), pH + Conductivity (7 days), Cyanide/Mono pHoh (14 days)	
1581287	WS103 0.25 SOIL		GJ 250ml, GJ 60ml, PT 1L	Sample date not supplied, Anions 2:1 (365 days), Aliphatics/Aromatics (14 days), BTEX (14 days), Chromium, Hexavalent (365 days), Mercury (365 days), Total Sulphate ICP (730 days), Metals ICP (365 days), Metals ICP Prep (365 days), Kone Cr6 (1095 days), Naphthalene (14 days), Organic Matter (Manual) (28 days), PAH FID (14 days), pH + Conductivity (7 days), Cyanide/Mono pHoh (14 days)	
1581288	WS103 0.50 SOIL		GJ 250ml, GJ 60ml, PT 1L	Sample date not supplied, Anions 2:1 (365 days), Aliphatics/Aromatics (14 days), BTEX (14 days), Chromium, Hexavalent (365 days), Mercury (365 days), Total Sulphate ICP (730 days), Metals ICP (365 days), Metals ICP Prep (365 days), Kone Cr6 (1095 days), Naphthalene (14 days), Organic Matter (Manual) (28 days), PAH FID (14 days), pH + Conductivity (7 days), Cyanide/Mono pHoh (14 days)	

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.



### Information in Support of the Analytical Results

*Our Ref* 19-20616-1 *Client Ref* 19/3312 *Contract* Torridon House

### **Soil Analysis Notes**

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425μm sieve, in accordance with BS1377. Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis. The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

### Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months



Certificate Number 19-20641-1

Client Concept Engineering Consultants Ltd Concept Coventry Office Unit D Herald Way Binley Industrial Estate Coventry CV3 2RQ Our Reference 19-20641-1

Client Reference 19/3312 Order No (not supplied)

Contract Title Torridon House

Description 8 Soil samples.

Date Received 14-Oct-19

Date Started 15-Oct-19

Date Completed 05-Nov-19

*Test Procedures* Identified by prefix DETSn (details on request).

Notes This report supersedes 19-20641, extra testing.

Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Adam Fenwick Contracts Manager



05-Nov-19



contract ritle Torridon House									
			Lab No		1581449	1581450	1581451	1581452	1581453
		Sa	ample ID	BH101	BH101	WS104A	WS104A	WS102	WS102
			Depth	0.50	1.00	0.25	0.70	0.20	0.60
			Other ID						
			ple Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		-	ing Date	10/10/19	10/10/19	09/10/19	09/10/19	09/10/19	09/10/19
		-	ing Time	n/s	n/s	n/s	n/s	n/s	n/s
Test	Method	LOD	Units						
Asbestos Quantification	DETSC 1102	0		Y					
Metals									
Arsenic	DETSC 2301#	0.2	mg/kg	13	13	7.2	8.6	8.0	11
Cadmium	DETSC 2301#	0.1	mg/kg	< 0.1	0.1	< 0.1	< 0.1	0.6	0.3
Chromium	DETSC 2301#	0.15	mg/kg	54	53	21	37	12	36
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	22	26	13	18	11	24
Lead	DETSC 2301#	0.3	mg/kg	110	270	41	34	76	150
Mercury	DETSC 2325#	0.05	mg/kg	0.07	0.05	0.06	< 0.05	0.07	0.09
Nickel	DETSC 2301#	1	mg/kg	29	44	14	30	8.9	29
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	89	90	53	75	75	88
Inorganics									
рН	DETSC 2008#		pН	8.2	8.5	8.9	8.6	10.4	9.0
Organic matter	DETSC 2002#	0.1	%	0.6	0.5	0.4	0.5	3.0	1.0
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	78	95	68	54	120	150
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.03	0.03	0.04	0.02	0.08	0.04
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	4.4	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	24	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	39	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	44	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	110	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9	< 0.9	1.4	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	29	6.9
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	110	23
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	190	73
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	330	100
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	440	100
PAHs			00	_•	•	•	- 2		
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	0.4	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	0.4	0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	0.7	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.2
Phenanthrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	0.3	< 0.1	3.2	0.9
Anthracene	DETSC 3301	0.1	mg/kg		< 0.1	0.1	< 0.1	1.3	0.3
Fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	0.4	< 0.1	4.5	1.7



		Lab No	1581448	1581449	1581450	1581451	1581452	1581453
	Sa	ample ID	BH101	BH101	WS104A	WS104A	WS102	WS102
		Depth	0.50	1.00	0.25	0.70	0.20	0.60
				SOIL	SOIL	SOIL	SOIL	SOIL
	-	-		10/10/19	09/10/19	09/10/19	09/10/19	09/10/19
	Sampli	ing Time	n/s	n/s	n/s	n/s	n/s	n/s
Method	LOD	Units						
DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	0.3	< 0.1	5.2	1.6
DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	0.3	< 0.1	2.0	0.8
DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	0.2	< 0.1	1.5	0.8
DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	0.2	< 0.1	2.5	0.9
DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	0.2	< 0.1	1.1	0.5
DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	0.2	< 0.1	2.7	0.7
DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	1.6	0.5
DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	0.7	0.1
DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	1.7	0.5
DETSC 3301	1.6	mg/kg	< 1.6	< 1.6	2.5	< 1.6	30	9.7
·								
DETSC 2130#	0.3	mg/kg	0.9	0.4	0.4	0.4	0.7	0.6
	DETSC 3301 DETSC 3301 DETSC 3301 DETSC 3301 DETSC 3301 DETSC 3301 DETSC 3301 DETSC 3301 DETSC 3301 DETSC 3301	Sam           Sample           Method         LOD           DETSC 3301         0.1           DETSC 3301         0.1	Sample ID Depth Other ID Sample Type Sampling Date Sampling Time           Method         LOD         Units           DETSC 3301         0.1         mg/kg           DETSC 3301         0.1         mg/kg	Sample ID         BH101           Depth         0.50           Other ID         0.1           Sample Type         SOIL           Sampling Date         10/10/19           Sampling Time         n/s           Method         LOD         Units           DETSC 3301         0.1         mg/kg         < 0.1	Sample ID         BH101         BH101           Depth         0.50         1.00           Other ID         5         5011           Sample Type         SOIL         SOIL           Sampling Date         10/10/19         10/10/19           Sampling Time         n/s         n/s           DETSC 3301         0.1         mg/kg         < 0.1	Sample ID         BH101         BH101         WS104A           Depth         0.50         1.00         0.25           Other ID              Sample Type         SOIL         SOIL         SOIL           Sampling Date         10/10/19         10/10/19         09/10/19           Sampling Time         n/s         n/s         n/s           DETSC 3301         0.1         mg/kg         < 0.1	Sample ID         BH101         BH101         WS104A         WS104A           Depth         0.50         1.00         0.25         0.70           Other ID         Sample Type         SOIL         SOIL	Sample ID         BH101         BH101         WS104A         WS104A         WS102           Depth         0.50         1.00         0.25         0.70         0.20           Other ID            0.01         0.25         0.70         0.20           Sample Type         Solt         Solt



contract ritle Torridon House			Lab No	1581454	1581455
		Sa	mple ID	WS101	WS101
			Depth	0.30	0.70
			Other ID		
		Sam	ple Type	SOIL	SOIL
		Sampl	ing Date	10/10/19	10/10/19
		Sampl	ing Time	n/s	n/s
Test	Method	LOD	Units		
Asbestos Quantification	DETSC 1102	0			
Metals					
Arsenic	DETSC 2301#	0.2	mg/kg	4.6	14
Cadmium	DETSC 2301#	0.1	mg/kg	0.1	< 0.1
Chromium	DETSC 2301#	0.15	mg/kg	8.6	63
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	10	29
Lead	DETSC 2301#	0.3	mg/kg	100	28
Mercury	DETSC 2325#	0.05	mg/kg	0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	8.8	45
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	57	91
Inorganics					
рН	DETSC 2008#		рН	9.6	8.2
Organic matter	DETSC 2002#	0.1	%	1.3	0.2
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	67	350
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.09	0.09
Petroleum Hydrocarbons	I				
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	< 10	< 10
PAHs					
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	0.3	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	0.2	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	1.8	< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	0.6	< 0.1
Fluoranthene	DETSC 3301	0.1		3.6	< 0.1
	DE13C 3301	0.1	mg/kg	5.0	< U.1



			Lab No	1581454	1581455
		Sa	ample ID	WS101	WS101
			Depth	0.30	0.70
			Other ID		
		Sam	ple Type	SOIL	SOIL
		Sampl	ing Date	10/10/19	10/10/19
		Sampl	ing Time	n/s	n/s
Test	Method	LOD	Units		
Pyrene	DETSC 3301	0.1	mg/kg	3.7	< 0.1
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	2.1	< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	2.1	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	2.0	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	1.2	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	2.5	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	1.8	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	0.3	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	1.5	< 0.1
PAH Total	DETSC 3301	1.6	mg/kg	24	< 1.6
Phenols					
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	0.9	0.4



# Summary of Asbestos Analysis Soil Samples

Our Ref 19-20641-1 Client Ref 19/3312 Contract Title Torridon House

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1581448	BH101 0.50	SOIL	Chrysotile	Bundles of Chrysotile present	Jordan Eadington
1581449	BH101 1.00	SOIL	NAD	none	Jordan Eadington
1581450	WS104A 0.25	SOIL	NAD	none	Jordan Eadington
1581451	WS104A 0.70	SOIL	NAD	none	Jordan Eadington
1581452	WS102 0.20	SOIL	NAD	none	Jordan Eadington
1581453	WS102 0.60	SOIL	NAD	none	Jordan Eadington
1581454	WS101 0.30	SOIL	NAD	none	Jordan Eadington
1581455	WS101 0.70	SOIL	NAD	none	Jordan Eadington

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: \* -not included in laboratory scope of accreditation.



## **Summary of Asbestos Quantification Analysis Soil Samples**

Our Ref 19-20641-1 Client Ref 19/3312 Contract Title Torridon House

		Lab No	1581448		
		Sample ID	BH101		
		Depth	0.50		
		Other ID			
	Sample Type				
		pling Date	10/10/19		
	Sam	pling Time			
Test	Method	Units			
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	0.006		
Gravimetric Quantification (a)	DETSC 1102	Mass %	na		
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	0.006		
Quantification by PCOM (c)	DETSC 1102	Mass %	na		
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na		
Breakdown of Gravimetric Analysis (a)		••			
Mass of Sample		g	155.94		
ACMs present*		type			
Mass of ACM in sample		g			
% ACM by mass		%			
% asbestos in ACM		%			
% asbestos in sample		%			
Breakdown of Detailed Gravimetric Analysis (b)	I				
% Amphibole bundles in sample		Mass %	na		
% Chrysotile bundles in sample		Mass %	0.006		
Breakdown of PCOM Analysis (c)					
% Amphibole fibres in sample		Mass %	na		
% Chrysotile fibres in sample		Mass %	na		
Breakdown of Potentially Respirable Fibre Analysis (d)		•			
Amphibole fibres		Fibres/g	na		
Chrysotile fibres		Fibres/g	na		
* Denotes test or material description outside of UKAS a					
% asbestos in Asbestos Containing Materials (ACMs) is d	letermined by				

by reference to HSG 264.

Recommended sample size for quantification is approximately 1kg

# denotes deviating sample



Inonpropriate

## Information in Support of the Analytical Results

Our Ref 19-20641-1 Client Ref 19/3312 Contract Torridon House

### **Containers Received & Deviating Samples**

		Date		exceeded for	container for
Lab No	Sample ID	Sampled	Containers Received	tests	tests
1581448	BH101 0.50 SOIL	10/10/19	GJ 250ml, GJ 60ml, PT 1L		
1581449	BH101 1.00 SOIL	10/10/19	GJ 250ml, GJ 60ml, PT 1L		
1581450	WS104A 0.25 SOIL	09/10/19	GJ 250ml, GJ 60ml, PT 1L		
1581451	WS104A 0.70 SOIL	09/10/19	GJ 250ml, GJ 60ml, PT 1L		
1581452	WS102 0.20 SOIL	09/10/19	GJ 250ml, GJ 60ml, PT 1L		
1581453	WS102 0.60 SOIL	09/10/19	GJ 250ml, GJ 60ml, PT 1L		
1581454	WS101 0.30 SOIL	10/10/19	GJ 250ml, GJ 60ml, PT 1L		
1581455	WS101 0.70 SOIL	10/10/19	GJ 250ml, GJ 60ml, PT 1L		

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

### **Soil Analysis Notes**

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425μm sieve, in accordance with BS1377. Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

### Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months



Ana Gonzalez Concept Site Investigations Unit 8 Warple Mews Warple Way London W3 0RF

t: 02087401553

e: Concept Group



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 : 19-70421

Project / Site name:	Torridon House	Samples received on:	06/11/2019
Your job number:	19-3312	Samples instructed on:	06/11/2019
Your order number:	CL2149	Analysis completed by:	14/11/2019
Report Issue Number:	1	Report issued on:	15/11/2019
Samples Analysed:	5 water samples		

Signed:

Zina Abdul Razzak Senior Quality Specialist

#### 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.

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.





#### Analytical Report Number: 19-70421

Project / Site name: Torridon House

Lab Sample Number				1354445	1354446	1354447	1354448	1354449
Sample Reference				BH101	WS101	WS102	WS103	WS104
Sample Number				01A	01A	01A	01A	01A
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplie
Date Sampled				05/11/2019	05/11/2019	05/11/2019	05/11/2019	05/11/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplie
			Þ					
Analytical Parameter	Units	Limit of detection	vccred Sta					
(Water Analysis)	ង	t of tion	Accreditation Status					
General Inorganics								
рН	pH Units	N/A	ISO 17025	7.3	7.4	8.0	8.2	7.7
Electrical Conductivity at 20 °C	μS/cm	10	ISO 17025	4300	4800	1100	1900	1900
Sulphate as SO <sub>4</sub>	µg/l	45	ISO 17025	2350000	3020000	461000	735000	924000
Sulphate as $SO_4$	mg/l	0.045	ISO 17025	2350	3020	461	735	924
Chloride	mg/l	0.15	ISO 17025	250	200	37	180	120
Ammoniacal Nitrogen as N	µg/l	15	ISO 17025	620	< 15	65	120	78
Alkalinity	mgCaCO3/I	3	ISO 17025	720	370	69	91	150
Total Phenols								
Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10	< 10
Speciated PAHs								
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 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	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 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	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 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	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 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	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 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	< 0.16
Heavy Metals / Metalloids		0.15	100	0.00	0.00	2.54	1.00	0.00
Arsenic (dissolved)	µg/l	0.15	ISO 17025	0.96	0.33	2.56	1.96	0.29
Cadmium (dissolved)	µg/l	0.02	ISO 17025	0.02	0.04	< 0.02	0.03	< 0.02
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0	6.6	< 5.0	< 5.0
Chromium (dissolved)	µg/l	0.2	ISO 17025	3.8	0.6	4.7	0.6	0.2
Copper (dissolved)	µg/l	0.5	ISO 17025	6.2	2.3	6.5	3.5	3.3
_ead (dissolved)	µg/l	0.2	ISO 17025	0.4	< 0.2	< 0.2	< 0.2	0.9
Aercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	15	2.1	1.9	2.4	3.5
Selenium (dissolved)	µg/l	0.6	ISO 17025	4.9	12	1.9	34	2.2
Zinc (dissolved)	µg/l	0.5	ISO 17025	3.1	3.4	8.3	1.9	7.1





### Analytical Report Number: 19-70421

Project / Site name: Torridon House

Your Order No: CL2149					n		n	7
Lab Sample Number				1354445	1354446	1354447	1354448	1354449
Sample Reference				BH101	WS101	WS102	WS103	WS104
Sample Number				01A	01A	01A	01A	01A
Depth (m)				None Supplied				
Date Sampled				05/11/2019	05/11/2019	05/11/2019	05/11/2019	05/11/2019
Time Taken				None Supplied				
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics & Oxygenates								
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >C5 - C6	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C6 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35)	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C5 - C7	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C7 - C8	μg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C8 - C10	μg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
	µ4/1		100 1/020	~ 1.0				

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

TPH-CWG - Aromatic >C12 - C16

TPH-CWG - Aromatic >C16 - C21

TPH-CWG - Aromatic >C21 - C35

TPH-CWG - Aromatic (C5 - C35)

µg/l

µg/l

µg/l

µg/l

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#### Analytical Report Number : 19-70421

#### Project / Site name: Torridon House

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Alkalinity in Water (by discreet analyser)	Determination of Alkalinity by discreet analyser (colorimetry). Accredited matrices: SW, PW, GW.	In house method based on MEWAM & USEPA Method 310.2.	L082-PL	W	ISO 17025
Ammoniacal Nitrogen as N in water	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the discrete analyser (colorimetric) salicylate/nitroprusside method. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	w	ISO 17025
BTEX and MTBE in water (Monoaromatics)	Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025
Chloride in water	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260. Accredited matrices: SW, PW, GW.	L082-PL	W	ISO 17025
Electrical conductivity at 20oC of water	Determination of electrical conductivity in water by electrometric measurement. Accredited Matrices SW, GW, PW	In-house method	L031-PL	w	ISO 17025
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
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
Monohydric phenols in water	Determination of phenols in water by continuous flow analyser. 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 based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-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
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
TPHCWG (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-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.

14. PHOTOGRAPHS

Unit 8, Warple Mew Warple Way London W3 0RF	<sup>s</sup> CONCEPT SITE INVEST	IGATIC	F 2NC	el: 020 8811 288 ax: 020 8811 288 mail: si@concep	80 81 tconsultants.co.uk
Site Name	Torridon House Car Park, Westminster	Job No.	19/3312	HOLE	OP101
Carried out for	City of Westminster	Date		Photograph	01 & 02
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Site Name	Torridon House Car Park, Westminster	Job No.	19/3312	HOLE	OP101			
Carried out for	City of Westminster	Date		Photograph	03 & 04			
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F	Photograph No 03							

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Unit 8, Warple Mews Warple Way London W3 0RF CONCEPT SITE INVESTIGATIONS				el: 020 8811 288 ax: 020 8811 288 mail: si@concept	
Site Name	Torridon House Car Park, Westminster	Job No.	19/3312	HOLE	OP102
Carried out for	City of Westminster	Date		Photograph	05 & 06





Unit 8, Warple Mew Warple Way London W3 0RF	S CONCEPT SITE INVEST	IGATIC	NS F	el: 020 8811 288 ax: 020 8811 288 mail: si@concept	
Site Name	Torridon House Car Park, Westminster	Job No.	19/3312	HOLE	OP102
Carried out for	City of Westminster	Date		Photograph	07 & 08





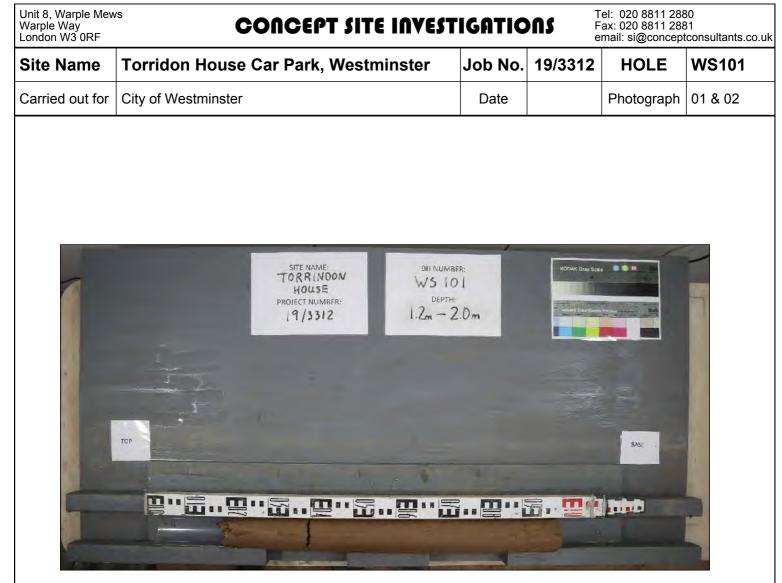
Unit 8, Warple Mew Warple Way London W3 0RF	Unit 8, Warple Mews Warple Way London W3 0RF CONCEPT SITE INVESTIGATIONS Tel: 020 8811 2880 Fax: 020 8811 2881 email: si@conceptconsultants.co.uk								
Site Name	Torridon House Car Park, Westminster	Job No.	19/3312	HOLE	OP103				
Carried out for	City of Westminster	Date		Photograph	09 & 10				
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Site Name	Torridon House Car Park, Westminster	Job No.	19/3312	HOLE	OP104		
Carried out for	City of Westminster	Date		Photograph	11 & 12		









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Site Name	Torridon House Car Park, Westminster	Job No.	19/3312	HOLE	WS101
Carried out for	City of Westminster	Date		Photograph	03 & 04
	SITE NAME: TORRIDON		KODAK Gray S	260 Q 👰 M	~
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Site Name	Torridon House	Car Park, Westminster	Job No.	19/3312	HOLE	WS101
Carried out for	City of Westminster		Date		Photograph	05 & 06
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Site Name	Torridon House Car Park, Westminster	Job No.	19/3312	HOLE	WS101
Carried out for	City of Westminster	Date		Photograph	07 & 08
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Site Name	Torridon House Car Park, Westminster	Job No.	19/3312	HOLE	WS101
Carried out for	City of Westminster	Date		Photograph	09 & 10
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Site Name	Torridon House Car Park, Westminster	Job No.	19/3312	HOLE	WS102
Carried out for	City of Westminster	Date		Photograph	11 & 12
	SITE NAME: BH NUMS		KODAK Gray So	ale 😢 🚯 M	
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Site Name	Torridon House Car Park, Westminster	Job No.	19/3312	HOLE	WS102
Carried out for	City of Westminster	Date		Photograph	13 & 14
	SITE NAME: TORRIDON WOUSE		KODAK Gray S	cale. 🦉 🙆 M	
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Site Name	Torridon House Car Park, Westminster	Job No.	19/3312	HOLE	WS102
Carried out for	City of Westminster	Date		Photograph	15 & 16
	TORRIDON WS 10		KODAK Gray Scale		
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Site Name	Torridon House Car Park, Westminster	Job No.	19/3312	HOLE	WS102
Carried out for	City of Westminster	Date		Photograph	17 & 18
	TORRIDON WS IC		KODAK Gray Boal		
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Unit 8, Warple Mew Warple Way London W3 0RF	CONCEPT SITE INVEST	IGATIC	D <b>ns</b> F	el: 020 8811 288 ax: 020 8811 288 mail: si@concept	30 31 tconsultants.co.uk
Site Name	Torridon House Car Park, Westminster	Job No.	19/3312	HOLE	WS102
Carried out for	City of Westminster	Date		Photograph	19 & 20
	SITE NAME: BH NUMB TORRIDON		KODAK Gray Sca		1
	10 KRIDOW HOUSE WS 10 PROJECT NUMBER: DEPTH 19/3312 5.0 -	5	KODAK Coley Danse	Harden Kaik	-
	11/35/2 5.0	o.Um			
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-		<b>11</b>	-	2011/01	
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Unit 8, Warple Mew Warple Way London W3 0RF	CONCEPT SITE INVEST	IGATIC	DUC L	el: 020 8811 288 ax: 020 8811 288 mail: si@concept	80 81 tconsultants.co.uk
Site Name	Torridon House Car Park, Westminster	Job No.	19/3312	HOLE	WS103
Carried out for	City of Westminster	Date		Photograph	21 & 22
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	TORRIDON BHNUN		KODAK Gray Sce	le 오 🌒 M	
	PROJECT NUMBER: DEPT		RODAK Cake Suns	Node	
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Site Name	Torridon House Car Park, Westminster	Job No.	19/3312	HOLE	WS103
Carried out for	City of Westminster	Date		Photograph	23 & 24
	SITE NAME: BH NUN	VIBER-	KODAK Gray Sual	0.0	
1	TORRIDON HOUSE PROJECT NUMBER: DEPT	<b>Ю</b> З тн:			
	19/3312 2.0m-	3.0m	NDCAK Color Cortes		
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Unit 8, Warple Mews Warple Way London W3 0RF CONCEPT SITE INVESTIGATIONS						
Site Name	Torridon House Car Park, Westminster	Job No.	19/3312	HOLE	WS103	
Carried out for	City of Westminster	Date		Photograph	27 & 28	
	SITE NAME: BH NUM TORRIDON		KODAK Gray Scale			
	HOUSE PROJECT NUMBER. DEPTI	H:	KOBAK Color Dortmi Pak	The summary Kods		
	19/3312 4.0m-	J.UM				
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Unit 8, Warple Mew Warple Way London W3 0RF	CONCEPT SITE INVEST	IGATIC	D <b>ns</b> F	el: 020 8811 288 ax: 020 8811 288 mail: si@concept	30 31 tconsultants.co.uk
Site Name	Torridon House Car Park, Westminster	Job No.	19/3312	HOLE	WS103
Carried out for	City of Westminster	Date		Photograph	29 & 30
	SITE NAME: TORRIDON HOUSE PROJECT NUMBER: 19/3312 5.0m-	<b>0</b> 3	KODAK Grey Scare		
	TOP			-3715F -	
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Unit 8, Warple Mew Warple Way London W3 0RF	CONCEPT SITE INVEST	IGATIC	D <b>ns</b> F	el: 020 8811 288 ax: 020 8811 288 mail: si@concept	30 31 tconsultants.co.uk
Site Name	Torridon House Car Park, Westminster	Job No.	19/3312	HOLE	WS104A
Carried out for	City of Westminster	Date		Photograph	31 & 32
		de la			
	TORRIDON	IMBER:	KODAK Gray Scale	C (0 M	
	PROJECT NUW BER:	PTH: - 2.0m	KODA OVAN DAIMA P	Koda Storester of Koda	T
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Unit 8, Warple Mew Warple Way London W3 0RF	CONCEPT SITE INVEST	IGATIO	F 2N	el: 020 8811 288 ax: 020 8811 288 mail: si@concept	30 31 tconsultants.co.uk
Site Name	Torridon House Car Park, Westminster	Job No.	19/3312	HOLE	WS104A
Carried out for	City of Westminster	Date		Photograph	33 & 34
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	SITE NAME: BHING	Construction of the second	KODAK Gray Scale		
	HOUSE PROJECT NUMBER: DEL	104A	Aller Control of the		-
	19/3312 2.0m-	- 3.0m	KODAK Cotor Contro Pril		
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Unit 8, Warple Mews Warple Way London W3 0RF CONCEPT SITE INVESTIGATIONS						
Torridon House Car Park, Westminster	Job No.	19/3312	HOLE	WS104A		
City of Westminster	Date		Photograph	35 & 36		
TORRIDON WS	104A	KODAK Gray Seale	2 <b>8</b> M			
PROJECT NUMBER: DEF		ROBAK Outer contrainty	Actives Koda			
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TOP.			EASE .			
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	CONCEPT SITE INVEST Torridon House Car Park, Westminster City of Westminster USUE NUMBER: 19/3312 TOP	Concept stre investigation         Torridon House Car Park, Westminster       Job No.         City of Westminster       Date         Stre NAME:       Date         Virginitation       Winderser         Virginitation       Page 1000         Page 2000       Winderser         Virginitation       Date         Virginitation       Winderser         Virginitation       Winderser <td>STERNAME Ig/3312       Difficult Sterna       Date         Torridon House Car Park, Westminster       Job No.       19/3312         City of Westminster       Date       Date</td> <td>Concept sitte investigations       Fax: 020 8811 288 email: si@concept         Torridon House Car Park, Westminster       Job No.       19/3312       HOLE         City of Westminster       Date       Photograph         Stream       Image: Stream       Image: Stream       Image: Stream       Image: Stream         Stream       Image: Stream       Image:</td>	STERNAME Ig/3312       Difficult Sterna       Date         Torridon House Car Park, Westminster       Job No.       19/3312         City of Westminster       Date       Date	Concept sitte investigations       Fax: 020 8811 288 email: si@concept         Torridon House Car Park, Westminster       Job No.       19/3312       HOLE         City of Westminster       Date       Photograph         Stream       Image: Stream       Image: Stream       Image: Stream       Image: Stream         Stream       Image:		



Unit 8, Warple Mews Warple Way London W3 0RF CONCEPT SITE INVESTIGATIONS						
Site Name	Torridon House Car Park, Westminster	Job No.	19/3312	HOLE	WS104A	
Carried out for	City of Westminster	Date		Photograph	37 & 38	
5	TORRIDON	IMBER: 104 A	KODAK Gray Scule	-		
	PROJECT NUMBER: DEF	CALCULATION OF THE OWNER	KODAK Seler Certapl P	nchen Rode	-	
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S CONCEPT SITE INVEST	IGATIC	DNS F	ax: 020 8811 288	81
Torridon House Car Park, Westminster	Job No.	19/3312	HOLE	WS104A
City of Westminster	Date		Photograph	39 & 40
TORRIDON	and the second	KODAK Gray Scale	• • •	_
PROJECT NUMBER: DEPT	a second of the second s	KODAK Doki Control Pro	Maria Carlos Maria Maria Maria Maria	7
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	CONCEPT SITE INVEST Torridon House Car Park, Westminster City of Westminster STE NAME: TORRIDON HOUSE PROJECT NUMBER: 19/3312 TOP	Concept site investigation         Investigation         City of Westminster         Date         Site Number         ToRRIDov Protein         Investigation         Investigation <tr< td=""><td>SITE NAME:       Date         Torridon House Car Park, Westminster       Date         City of Westminster       Date         Site Number:       TORRIDON         PROJECT NUMBER:       YS 104A         IP/3312       Deffe:         Som = 6.0m</td><td>Concept streamster       Job No.       19/3312       HOLE         City of Westminster       Date       Photograph</td></tr<>	SITE NAME:       Date         Torridon House Car Park, Westminster       Date         City of Westminster       Date         Site Number:       TORRIDON         PROJECT NUMBER:       YS 104A         IP/3312       Deffe:         Som = 6.0m	Concept streamster       Job No.       19/3312       HOLE         City of Westminster       Date       Photograph

