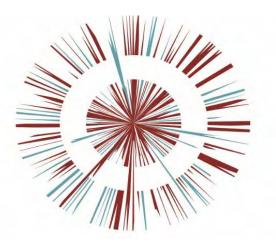


OMEGA ZONE 8, ST HELENS Omega St Helens Ltd / T. J. Morris Limited

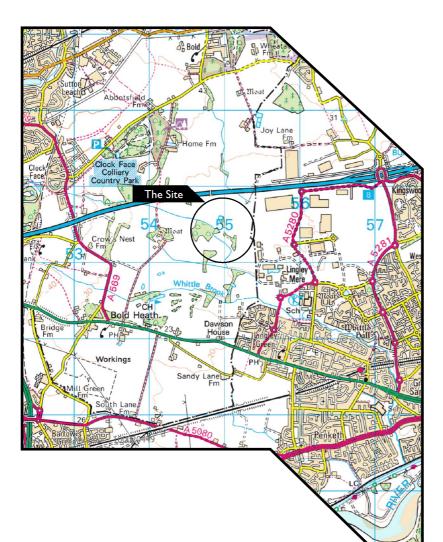


Ground Investigation Report & Remediation Strategy Appendix D Part 1 OPP DOC. 2.5



Ground Investigation





OMEGA DEVELOPMENT

Factual Report

for WSP UK Limited

Project Number PN194027

January 2020

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Factual Report

OMEGA DEVELOPMENT

for WSP UK Limited

> Project No: PN194027 January 2020

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OMEGA DEVELOPMENT

I.0 INTRODUCTION

A geotechnical and geo-environmental investigation was undertaken by Geotechnics Limited at the site of Omega Zone 8, a proposed extension to the existing Omega Development on the north-western fringe of Warrington. The investigation was carried out to the instructions of WSP UK Limited, acting in the role of both Engineer and Client. This report describes the work undertaken and presents the data obtained.

2.0 OBJECT AND SCOPE OF THE INVESTIGATION

The object of the investigation was to obtain information on the ground and groundwater conditions relating to the design of the proposed works within the limitations posed by trial hole numbers, locations, depths, methods adopted and the scope of approved in situ and laboratory testing. The investigation comprised cable percussive boreholes, some with rotary-cored follow-on, dynamic sample boreholes, trial pits, in situ and laboratory testing and reporting. A Factual Report was also commissioned.

3.0 PRESENTATION

A description of the site and a summary of the procedures followed during the investigation process are presented in Sections 4 to 6. The factual data so obtained are presented in Appendices 2 to 12 of this report. Attention is drawn to the General Notes and Investigation Procedures presented in Appendix 13 to aid an understanding of the procedures followed and the context in which the report should be read.

In addition, data in electronic format in accordance with "The Electronic Transfer of Geotechnical Data from Ground Investigations" published by the AGS (the AGS Format) are presented separately on disk.

4.0 THE SITE

4.1 Location

The site is located to the south of the M62 motorway, approximately 6km west-north-west of Warrington town centre. The approximate Ordnance Survey National Grid Reference for the centre of the site is 355170E, 390420N and an extract from the relevant 1:50,000 Scale O.S. Map is included as Appendix 1.

4.2 Description

The site is irregularly shaped with maximum dimensions of approximately 1200m (east to west) and 1140m (north to south). The site comprises a number of field enclosures, some laid to grass, some to crops and others ploughed. The ground surface falls gently towards the south-east from around 27m OD to around 20m OD. A number of ponds are present within the site as are some copses of trees. Field boundaries are marked by hedgerows and fences. At the time of the investigation fieldwork, the ground surface was soft and wet in many places.

The site is bounded by the M62 motorway to the north and by the existing Omega Zone 7 industrial development to the east. Agricultural land bounds the site to the south and west.

4.3 Site Geology

The 1:50,000 scale maps published by the British Geological Survey, Sheet 97 Runcorn dated 1977 (Drift edition) and 1980 (Solid edition), show the site to be underlain by drift deposits of Boulder Clay (now known as Glacial Till above solid strata of the Upper Mottled Sandstone, (now known as the Chester Formation), part of the Sherwood Sandstone Group of Triassic age.

The conjectured traces of two geological faults (Roaring Meg Fault/Preston Brook Fault) are shown passing through the site, the fault lines trending



Page I of 6

roughly north to south or north-north-west to south-south-east. In both cases the strata to the west of the faults are indicated to be downthrown.

Made Ground is not noted to be present on the BGS maps but there may be Made Ground deposits present for which the BGS have no record or which are too thin to be incorporated in the BGS maps.

4.4 Hydrogeology

The Government's DEFRA Magic Map website, https://magic.defra.gov.uk/MagicMap.aspx, accessed on 20th November 2019, shows the Glacial Till to be classed as a Secondary (undifferentiated) Aquifer. The underlying Chester Formation rocks are classed as a Principal Aquifer.

5.0 PROCEDURE

5.1 Commissioning

The work was awarded following submission of a tender for work designed by WSP UK Limited for ground investigation of the site in accordance with their requirements.

5.2 General

The procedures followed in this site investigation are based on BS 5930: 2015 – Code of Practice for Site Investigations and BS 10175:2011+A2:2017 – Investigation of Potentially Contaminated Sites. The soils and rocks encountered have been described in accordance with BS5930:2015 and BS EN ISO 14688-1:2018 and BS EN ISO 14689:2018. The positions of the Cable Percussion/Rotary Follow-on Boreholes, Dynamic Sample Boreholes, Trial Pits and In Situ Test locations are shown on the Exploratory Hole Location Plan in Appendix 12.

The Exploratory Hole locations were specified by WSP UK Limited. The co-ordinates and levels shown on the Exploratory Hole Records were measured using a Leica GPS survey device and the depths quoted on the exploratory hole records are in metres below ground level.

At each exploratory hole location with the exception of the trial pits an inspection pit was excavated using hand tools to a depth of 1.20m below ground level to check for the presence of underground services. Prior to and on completion

of the excavation, the location was scanned using a cable avoidance tool (CAT).

5.3 Boreholes

Nineteen (19 No.), 150mm diameter boreholes (numbered BH8A01 to BH8A08, BH8A02A, BH8B01 to BH8B03, BH8C01 to BH8C03, BH8D01 to BH8D03 and BH8D01A) were sunk by Cable Percussion Tool techniques to depths varying between 0.80m (BH8D01, terminated within the inspection pit) and 16.95m (BH8A07) below ground level. The work was carried out between 18th September and 30th October 2019.

Representative disturbed (D and B) and driven opentube thin-walled (UT) samples of the soils encountered were obtained at regular intervals. In addition, Environmental Soil samples (ES) were recovered at the depths indicated on the Borehole Records, presented in Appendix 2.

Eleven (11 No.) of the boreholes (numbered BH8A01 to BH8A08, BH8A02A and BH8B03) were extended utilising rotary coring techniques to depths varying between 13.00m (BH8A02) and 28.50m (BH8A07) below ground level. The rotary coring commenced through the base of Cable Percussion section of these boreholes which had been left open and cased to facilitate coring as instructed by WSP UK Limited. This element of the work was carried out during the period between 27th September and 24th October 2019.

The drilling equipment on this particular contract utilised water as the flushing medium. Rock cores were extruded horizontally in transparent liners and placed into suitable core boxes. Photographs of the individual core boxes are included in Appendix 3.

Standard Penetration Tests (SPTs) were undertaken at the depths indicated on the borehole records in accordance with BS EN ISO 22476-3:2005+A1:2011 to obtain a measure of the engineering properties of the proved strata.

Groundwater observations are included on the Borehole Records where appropriate and any rise in water level was recorded over 20 minutes whilst the boring/drilling operations were suspended. It should be noted that the addition of water to the borehole as part of the drilling process may have masked the presence of groundwater in the borehole. Where water was added it has been noted on the Borehole Records.



On completion, standpipes were installed in the majority of the boreholes (see Section 5.6). Where standpipes were not installed, the boreholes were backfilled with bentonite.

5.4 Trial Pits

Seventy-six (76 No.) Trial Pits (numbered TP8A01 to TP8A04, TP8A08, TP8A11, TP8B01 to TP8B20, TP8B08A, TP8B18A, TP8B18B, TP8B19A, TP8C01 to TP8C08, and TP8D01 to TP8D38) were excavated to depths varying between 0.40m and 3.00m below ground level using an 8 tonne tracked excavator between 23rd September and 18th October 2019. This work was supervised on site by a geotechnical / geo-environmental engineer.

A further three (3 No.) Trial Pits (numbered TP8E01 to TP8E03) were each excavated to a depth of 1.20m below ground level using hand tools on 23rd October 2019. This work was again supervised on site by a geotechnical / geo-environmental engineer.

In addition to the above, due to access restrictions, a further seven (7 No.) intended machine dug Trial Pits (numbered TP8A05 to TP8A07, TP8A09, TP8A10, TP8A12 and TP8A13) were each carried out using Cable Percussion Tool boring techniques instead to a depth of 3.00m. This work was carried out between 18th and 22nd October 2019.

The profiles of strata or other features were recorded excavation proceeded and as measurements taken from ground level. Representative samples were taken. where appropriate, for laboratory examination and analysis and in addition, Environmental Soil samples (ES) were recovered at the depths indicated on the Trial Pit Records, presented in Appendix 4. Samples were taken directly from excavated materials deposited at the surface. Groundwater observations and trench stability notes are included on the Trial Pit Records. Photographs of the pits are presented in Appendix 5.

5.5 Dynamic Sample Boreholes

Twenty-four (24 No.) Dynamic Sample Boreholes (numbered WS8A01 to WS8A03, WS8B03 to WS8B05, WS8C01 to WS8C08, WS8C04A, WS8D01 to WS8D08 and WS8D02A) were undertaken at the site to depths varying between 2.45m and 5.45m below ground level. The work was carried out between 30th September and 17th October 2019. The Dynamic Samples were taken using the superheavy Dynamic Probe apparatus which drives lined steel tubes into the ground in Im lengths. Samples are retrieved in the plastic liners. The retrieved liners were split and the recovered soils described before being sub-sampled into ES, D and B samples as shown on the Borehole Records, presented in Appendix 6. The hole is not cased and progress depends on the nature of the strata penetrated.

In addition to the above, due to access restrictions, a further four (4 No.) intended Dynamic Sample Boreholes (numbered WS8B01, WS8B02, WS8B06 and WS8B07) were each carried out using Cable Percussion Tool boring techniques instead to depths of 3.60m (WS8B01) and 5.00m below ground level. This work was carried out between 25th and 30th September 2019.

Standard Penetration Tests (SPTs) were undertaken at the depths indicated on the borehole records in accordance with BS EN ISO 22476-3:2005+A1:2011 to obtain a measure of the engineering properties of the proved strata.

Groundwater observations are included on the Borehole Records where appropriate and any rise in water level was recorded over 20 minutes whilst drilling operations were suspended.

On completion, standpipes were installed in a number of the boreholes (see Section 5.6). Where standpipes were not installed, the boreholes were backfilled with bentonite.

5.6 Instrumentation and Monitoring

Long-term monitoring of the gas and groundwater levels was made possible by the installation of standpipes as follows:

Exploratory	Standpipe
Hole	Slotted Pipe & Filter Zone
	(m)
BH8A01	1.00 to 6.00
BH8A02	1.00 to 5.00
BH8A03	12.00 to 20.10
BH8A05	6.00 to 8.50
BH8A06	6.00 to 8.00
BH8A08	6.00 to 12.00
BH8B01	1.00 to 6.00
BH8B03	9.00 to 19.00
BH8C01	1.00 to 3.00
BH8C02	6.00 to 9.00
BH8C03	1.00 to 4.00



BH8D01A	1.00 to 6.00
BH8D02	1.00 to 6.00
BH8D03	1.00 to 6.00
WS8A01	1.00 to 5.45
WS8A02	1.00 to 5.45
WS8A03	1.00 to 5.45
WS8B02	1.00 to 5.00
WS8B03	0.50 to 4.50
WS8B04	0.50 to 4.50
WS8B05	1.00 to 4.00
WS8B06	0.50 to 5.00
WS8B07	1.00 to 5.00
WS8C06	1.00 to 4.00
WS8C08	1.00 to 5.45
WS8D04	1.00 to 4.00
WS8D05	1.00 to 5.12

No monitoring of the gas and groundwater levels at the site was commissioned. It is understood that monitoring is to be carried out separately by WSP UK Limited.

5.7 Static Cone Penetration Tests

Nineteen (19 No.) Static Cone Penetration Tests (numbered CPT8A01 to CPT8A07, CPT8A08A, CPT8A09 to CPT8A11, CPT8B01 to CPT8B03, CPTP8A01 to CPTP8A03, CPTP8A04A and CPTP8B01) were completed to depths varying between 7.36m and 13.48m below ground level by Lankelma Limited. The test locations were specified by WSP UK Limited and the work was carried out between 25th September and 1st October 2019.

The static cone penetration tests were undertaken in accordance with BS EN ISO 22476-1:2012 using heavy track-truck mounted 17.5 tonne capacity hydraulic penetrometer equipment, ballasted to provide a reaction weight of about eighteen tonnes. A 15 tonne capacity, 15cm² electric cone was used for each of the tests and measurements of local side friction and the pore pressure were made in addition to cone end resistance. The tests were terminated at the depths at which refusal was reached based on the maximum safe thrust capacity of the equipment.

At selected depths at the following test locations, CPTP8A01, CPTP8A03, CPTP8A04A and CPTP8B01 direct-push full-displacement pressuremeter tests were also carried out using a full displacement pressuremeter mounted on the CPT rods. The tests were carried out at the following depths:-

Exploratory Hole	Depth
Number	(m below ground
	level)
CPTP8A01	2.00
CPTP8A01	4.00
CPTP8A03	3.00
CPTP8A03	6.42
CPTP8A04A	2.50
CPTP8A04A	4.50
CPTP8B01	2.75
CPTP8B01	3.50
CPTP8B01	4.20
CPTP8B01	5.50

The CPT Records together with an interpreted identification of the soils tested and an estimate of the undrained shear strength and coefficient of volume compressibility are presented in a Report prepared by Lankelma Limited which is included in Appendix 7. The results of the pressuremeter tests with derived values of undrained shear strength are also presented in the report in Appendix 7.

Records for Inspection Pits carried out using hand tools ahead of the Static Cone Penetration Tests to a maximum depth of 1.20m below ground level are also included in Appendix 7. It should be noted that due to time constraints, Static Cone Penetration Tests were not performed at the locations of the Inspection Pits CPT8B08 and CPT8B13. In addition, Inspection Pits at the locations of CPT8A08 and CPTP8A04 were terminated early due to encountering possible buried services and the Static Cone Penetration Tests were therefore located at revised positions CPT8A08A and CPTP8A04A, respectively.

5.9 Plate Load Tests

Fifteen (15 No.) Plate Load Tests were carried out at the locations marked on the Exploratory Hole Location Plan (see Appendix 12) and numbered PL8A0I to PL8AII, PL8B0I, TP8B0I, TP8BII and TP8B17, each at a depth of 0.45m below ground level. The incremental loading tests were carried out in accordance with BS 1377-9:1990, Test 4.1 using a 600mm diameter plate and were carried out in order to obtain equivalent CBR values for the subgrade soils to aid pavement design. The reaction for the test was provided by an 8 tonne tracked excavator. The test loads were selected by Geotechnics Limited and the results are presented in Appendix 8. Records for the shallow Trial Pits excavated for each of the Plate Load Tests are also included in Appendix 8.



5.10 Dynamic Cone Penetration Tests

Thirteen (13 No.) Dynamic Cone Penetration (DCP) Tests were carried out adjacent to Trial Pits TP8A01, TP8A02, TP8A04, TP8A08, TP8A11, TP8B03, TP8B05, TP8B06, TP8B09, TP8B13, TP8B14, TP8B17 and TP8B18 and numbered DCP8A01 to DCP8A05 and DCP8B01 to DCP8B08. The tests were commenced from respectively. Ground Level and were performed to give an indication of CBR values at shallow depths to aid pavement design. The test comprises the measurement of increments of penetration of a 60° cone driven into the ground using an 8kg hammer falling a distance of 575mm. The CBR is obtained from the relationship between the CBR and the DCP readings;

 $Log_{10}(CBR) = 2.48 - 1.057 \times Log_{10}(mm/blow)$

as defined in Interim Advice Note 73/06 Revision I (2009) "Design Guidance for Road Pavement Foundations (Draft HD25)" published by the Highways Agency. The test results are presented in Appendix 9.

6.0 LABORATORY TESTING

6.1 Geotechnical

The laboratory testing schedule was specified by WSP UK Limited. Unless otherwise stated, the tests were carried out in Geotechnics Limited's UKAS accredited Laboratory (Testing No. 1365) and were undertaken in accordance with the appropriate Standards as indicated below and on the Laboratory Test Certificate in Appendix 10. Any descriptions, opinions and interpretations are outside the scope of UKAS accreditation.

The tests undertaken can be summarised as follows:-

BS EN ISO 17892-1:2014

101 No. Water Content Determination

BS EN ISO 17892-2:2014

2 No. Bulk Density Determination

BS EN ISO 17892-3:2015

12 No. Particle Density Determination

BS EN ISO 17892-4:2016

- 7 No. Particle Size Distribution Determination – Sieving Method
- 7 No. Particle Size Distribution Determination – Pipette Method

BS EN ISO 17892-5:2017

9 No. Incremental Loading Oedometer Test

BS EN ISO 17892-8:2018

26 No. Unconsolidated Undrained Triaxial Test

BS EN ISO 17892-12:2018

65 No. Determination of Liquid and Plastic Limits

BS 1377:1990

Test No. Test Description

Part 4

3.3 II No. Dry Density/Moisture Content relationship determination. Compaction Test - British Standard (2.5 kg Hammer)

ISRM Testing Methods

78 No. Point Load Determination

The following testing was carried out at the laboratories of Professional Soils Laboratory Limited (UKAS Accredited Laboratory, Number 4043).

ISRM Testing Methods

- 2 No. Point Load Determination
- 8 No. Unconfined Compressive Strength Determination

The following testing was carried out at the laboratories of Derwentside Environmental Testing Services Limited (UKAS Accredited Laboratory, Number 2139).

30 No. Soluble Sulphate

8 No. Total Sulphate



8 No. Total Sulphur

30 No. pH

8 No. Organic Content

The results of these tests are also presented in Appendix 10.

6.2 Contamination

Selected samples of soil were tested at the laboratories of Derwentside Environmental Testing Services Limited (UKAS Accredited Laboratory, Number 2139) for a number of determinands in order to check on potential site contamination. The determinands were specified by WSP UK Limited and are detailed on the results sheets in Appendix I I together with the test result as well as the test method, accreditation and detection limit.

Signed for and on behalf of Geotechnics Limited.

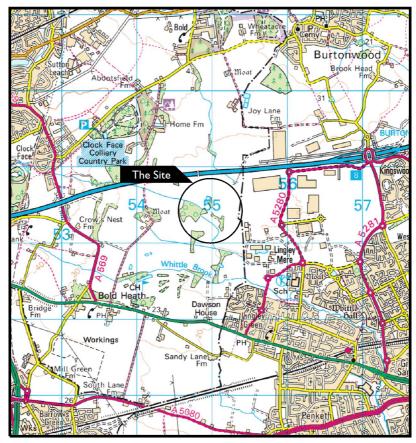
Prepared by: Colin Dodd BSc (Hons), MSc, CEng, MICE **Principal Engineer**

Reviewed by: John Knowles BSc (Hons), PGCE, MSc, CGeol, FGS **Principal Engineer**



APPENDIX I

Site Location Plan



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OMEGA DEVELOPMENT for WSP UK Limited



APPENDIX 2

Borehole Records, SPT Results Summary Sheets & SPT Hammer Calibration Certificates

DATA SHEET - Symbols and Abbreviations used on Records

DATA	A SHEET - Symbols a	and Abbreviations used on Records										
Sample	e Types	Groundwater		Strata, Continued								
В	Bulk disturbed sample	Water Strike	∇	Mudstone								
BLK	Block sample	Depth Water Rose To	T									
С	Core sample	•		Siltstone	*****							
D	Small disturbed sample (tub/jar)	Instrumentation		Sillstone	* * * * * * * * * * * * * * * * * * * *							
Е	Environmental test sample		55	Metamorphic Rock	* * * * *							
ES	Environmental soil sample	Seal		Fine Grained	******							
EW	Environmental water sample		-		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~							
G	Gas sample		÷ -	Medium Grained	~~~~							
L	Liner sample		-		<u> </u>							
LB	Large bulk disturbed sample	Filter	i e	Coarse Grained	\sim							
Р	Piston sample (PF - failed P sample)		2 1 1	Igneous Rock								
тw	Thin walled push in sample			Fine Grained	~~~~~							
U	Open Tube - 102mm diameter with blows to take sample. (UF - failed U	Seal		Medium Grained	+++++							
	sample)	-			+ + + +							
UT	Thin wall open drive tube sampler - 102mm diameter	Strata	Legend	Coarse Grained								
	with blows to take sample. (UTF - failed UT sample)	Made Ground Granular		Backfill Materials								
V	Vial sample				×.							
W	Water sample	Made Ground Cohesive		Arisings	8							
#	Sample Not Recovered	Collesive			X							
Insitu T	Festing / Properties	Topsoil		Bentonite Seal								
CBRP	CBR using TRL probe											
CHP	Constant Head Permeability Test	Cobbles and Boulders		Concrete	• •							
COND	Electrical conductivity		<u> </u>		• •							
тс	Thermal Conductivity	Gravel										
TR	Thermal Resistivity		* * 0	Fine Gravel Filter								
HV	Strength from Hand Vane	Sand			-							
ICBR	CBR Test			General Fill								
IDEN	Density Test	Silt	× ×									
IRES	Resistivity Test	Sit	× × × × × ×									
MEX	CBR using Mexecone Probe Test		× × ×	Gravel Filter								
PKR	Packer Permeability Test	Clay			7							
PLT	Plate Load Test			Grout								
PP	Strength from Pocket Penetrometer	D										
Temp	Temperature	Peat	N/2 N/2	Sand Filter	0000							
VHP	Variable Head Permeability Test				00 a							
VN	Strength from Insitu Vane	Note: Composite soil typ	es shown	Tarmacadam								
w%	Water content	by combined symbols										
	ner strengths from	Chalk		Rotary Core								
S	ed triaxial testing) Standard Penetration Test			RQD Rock Quality D	esignation							
0	(SPT)	Limestone		(% of intact cor FRACTURE INDEX	e >100mm)							
С	SPT with cone	Linescone		Fractures/metre	2							
N	SPT Result			FRACTURE Maximum SPACING (m) Minimum								
-/-	Blows/penetration (mm) after seating drive	Sandstone		NI Non-intact NR No core re								
-*/-	Total blows/penetration			AZCL Assumed ze	one of core							
(mm)	Extrapolated value	Coal		loss (where core recovery is unkno	wn it is							
()	Extrapolated value			assumed to be at the base of th								

Borehole Project OMEGA DEVELOPMENT GI Engineer **BH8A01** WSP Project No PN194027 National Grid 354715.5 E N Client Ground Level 23.89 m OD WSP Coordinates 390584.6 Properties Strata Scale 1:50 Sampling Depth Cased & Sample Strength w SPT N Level Depth Description Depth Leaend Туре (to Water) kPa % (FI) m OD G.L. 23.89 0.00- 0.30 B ES Grass over TOPSOIL: Soft dark brown slightly sandy slightly gravelly clay with some rootlets. is subangular fine of sandstone and coal. 0.25 Gravel 0.30 23.59 0.50- 1.20 в 0.50 ES Firm brown mottled grey slightly sandy slightly gravelly CLAY. Gravel is subangular to rounded fine to coarse of sandstone, mudstone and coal. 1.00 ES 1.20- 1.65 UT41 (DRY) 13 1.70 Below 1.80m, stiff, brown. D 1.80 D 2.00-2.45 в 2.00- 2.45 1.70 S24 (DRY) 2.80 D 3.00- 3.45 UT79 3.00 174 9.3 (DRY) 3.50 D 3.80 D 4.00- 4.45 4.00- 4.12 Below 4.00m, very stiff. в 4.00 S50/63 (DRY) 4.80 D 5.00- 5.45 UT100 4.50 (DRY) 5.50 D 9.9 ∇ 6.00 D 6.50- 6.95 6.50- 6.95 в 6.00 S41 (DRY) 7.50 D 8.00- 8.45 UT100 7.50 9.0 451 (DRY) 8.50 D 9.00 D 9.50- 9.95 9.50- 9.94 в 9.00 s50/ 292 (DRY) Boring Progress Groundwater Iole Denth Depth)enth to Depth Depth Depth Remarks on Depth Crew Date Time Rose to Technique Cased Water Mins Sealed Dia of Hole Struck Cased Groundwater Inspection Pit 08/10/19 08:00 20 Slow inflow. 1.20 SL G.L 5.60 4.50 11.00 10.50 11.00 10.50 14.15 13.50 14.15 13.50 DRY 08/10/19 7.40 09/10/19 10.70 09/10/19 12.10 10/10/19 Cable Percussion Rotary Core 14.15 0.15 SL 18:00 25.50 0.13 08:00 JB 18:00 08:00 50 30 0/10/19 :00 Inspection pit hand excavated to 1.20m depth and no services were found. ES sample = 1 x vial, 1 x plastic jar and 1 amber jar. Water was added to assist boring between 12.50m and 13.70m. A 50mm gas monitoring pipe was installed to 6.00m with a geowrapped slotted section from 1.00m to 6.00m with upright lockable protective cover. Backfill details from base of hole: bentonite seal up to 6.00m, gravel filter up to 1.00m, bentonite seal up to 0.20m, concrete up to ground level Remarks Logged by ΜМ Symbols and Figure 1 of 3 abbreviations are 18/12/2019 explained on the accompanying up to ground level.

Chiselling: 4.00-4.50m for 80 minutes and 9.90-10.20m for 40 minutes and 10.80-11.00m for 35 All dimensions Logged in accordance with BS5930:2015 are in metres.

key sheet.

Project omega	DEVELO	PMENT G	ĴI			Engineer wsp							Borehc Project		H8A01 194027		
Client wsp						National Grid 354715.5 E								d Level 23.89 m OD			
Sampling			Prope	rties		Strata							oround		Scale 1		
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	SPT N (FI)	Description									Legend	Level m OD	
10.50		(to water)	Νά	7.7													
11.00-11.45 11.00-11.26	- - - - - - - - -	10.50 (7.40)			s50/ 130												
12.00	- - - - - -						emely wo	eak reddi	sh bro	wn fine	e to co	arse gr	ained	11.60		12.2	
12.50-12.95 12.50-12.64	- B - B 	12.00 (11.90)			C50/68												
13.50 13.70-13.81	- - - - - -	13.50 (10.70)			(AZCL) C50/52												
Core Run/Depth (Core Dia/Time)		TCR/SCR / Type		RQD %	SPT (FI)	Contin Genera		otary techn	ques	Detail				14.15		9.7	
13.50-15.00	-	73 28	0.14 0.10	28	(10)			eak to me					/	É.			
	-				(NI)	to co	oarse g		fine					Ē			
15.00-16.50		87	0.36	57	(8)	subro	ounded	ith some to rounde of mudst						-			
13.00-10.50	-	65	0.04	57	(AZCL)	and o	quartz.	ties are					Ę				
	- -				(10)	close close	ely to o ely spac	extremely ced horiz	ontal					Ę			
	- - - - - -				(8)			planar s d clean.	mooth								
16.50-18.00	-	90	0.15	27	(AZCL)	-								Ē.			
	- - -	37	0.03		(NI)					Potwo	n 17 (0 17 05	-	Ę			
					(>25)							0-17.05 sandy c		Ē			
	- - - -				(7)												
18.00-19.50		97	0.29	73	(AZCL)	-								È.			
	- -	87	0.08		(15)									Ē			
	-													-			
	-											0-19.00 on core.		<u>-</u>			
	-				(6)									ŧ			
19.50-21.00	<u> </u>	87	0.22	33	(AZCL)									F			
19.30-21.00	-	40	0.01	55	(A2CD)									F			
	<u> </u>				(6)									–			
Boring				-	Progro		Depth to			Grour Depth	ndwate Depth		in	Depth	Bema	irks on	
Depth Dia		Technique	Э	C r ew	of Hole		Water	Date	Time	Struck	Cased	Rose to	Mins	Sealed		idwater	
								.40-13.70 0-19.50m,				19.50	-25.50	Logo	jed by	MM	
Symbols and		30% ret			, _00%	ut 11;	_, _0.0	,	eter	,		., 19.90	_3,30	Figu		2 of 3	
abbreviations are explained on the accompanying key sheet.														 و		18/12/2019	
All dimensions are in metres.	Logged in	accordance	with BS59	30:2015										_			

Project	OMEGA	A DEVELO	OPMENT G	I			Enginee	r	WSP			Borehole BH8A01 Project No PN194027					
Client							Nationa Coordin	Grid	354715.5 390584.6	E							
Drilling	WSP		Prope	rties/Sa	mplin		Strata		390584.6	IN				Grouna	Level 23	Scale 1	
		Depth Cased &	Type TCR/SCR%			SPT N	Descript	tion			Descrip	otion			Depth	Legend	1
Core Rui (Core Di	a/Time)	(to Water	TCR/SCR%	Max/Min	%	(FI)	General				Detail				Deptil	Legenu	Level m OD
		-													-		
		-													-		
		-				(15)									-		
		-													-		
21.00-	22.50	-	67 0	-	0	(AZCL)									-		
		-	Ŭ			(наса)									-		
		Ē				(10)									-		
		-													-		
		-				(NI)									-		
		-				(9)									-		
22.50-	24.00	-	100 59	0.27 0.02	58	(10)									-		
		-				(NI)									-		
		-													-		
		-				(4)									-		
		-													-		
-		-													_		
24.00-	25.50	-	100 90	0.40 0.05	87	(NI)											
		-													-		
						(8)											
		<u> </u>													-		
						(0)											
-		-						-							25.50		-1.61
								Ena or	Borehole						-		
		-													-		
		-													-		
		-													-		
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		-													-		
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		F													+		
		-													-		
		-													-		
1		-															
Drilling		+	•			Progre		Donth '				ndwate		I	D1'		dia co
Depth	Hole Dia	-	Technique	9	Crew	Depth of Hole	Depth I Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed		rks on dwater
Remar	ks 📕														Logg	ed by	MM
Symbols a abbreviation	ind ons are														Figur	e	3 of 3 18/12/2019
explained	on the															_	
key sheet. All dimens															e	jeejo	MES
are in met	res.	Logged in	accordance	with BS59	30:2015												

oject	OMEGA	A DEVELC	PMENT (ĴI			Engineer	WSP					Boreho Project		H8A02	
ient	WSP			-			National Grid Coordinates	354789.9 390674.5					Ground	Level 26		
ampli	ng	Sample	Depth	Proper Strength		007 N	Strata								Scale 1	
Depth		Туре	Depth Cased & (to Water)	. – Č	w %	SPT N (FI)	Description		Depth	Legend	Leve m OD					
	0.60	В					Grass over clay with s	TOPSOIL: some rootl	Soft d ets.	ark bro	own sli	ghtly s	andy	G.L.		26.
	1.20	ES ES B					Firm reddis slightly gr rounded fir quartz and	avelly CL ne to coar	AY. G	ravel :	is suba	ngular	to	0.40		25.
1.00 1.20-	1.65	ES - - - - - - -	(DRY)	72	19											> = •
	2.45 2.45		1.70 (DRY)			S17	Below 2.30m	h, stiff.								•
2.80 3.00-	3.45	- - - - - - - - - - - - - - -	3.00 (DRY)		13											-
3.50		D														•
	4.45 4.45	- D - B - -	4.00 (DRY)			s19										•
4.80 5.00-	5.45	D UT67	4.50 (DRY)	100	13											•
5.50		_ D														
6.00		D 												- - -		
	6.95 6.95	в	6.00 (DRY)			S26	Below 6.90m	n, very st	iff.							
7.50		- - -														
8.00-	8.45	UT100	8.00 (DRY)													
8.50		- D - -														
9.00																
	9.95 9.93	_ В - -	9.00 (DRY)			S50/ 282										
oring		ļ				Progre	ess			Grour	dwate	r				
epth	Hole Dia		Techniqu	е	Crew	Depth of Hole			Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Rema Groun	rks on dwater
1.20 2.00 3.00	0.13	Inspect Cable F Rotary	ercussi Core	lon	SL SL JB	12.00 13.00	4.50 4.30 12.00 ADDET 12.00 11.20 12.00 12.30	09/10/19 09/10/19 10/10/19 10/10/19 10/10/19 11/10/19	18:00 08:00 18:00 08:00 18:00						None encounte	red.
mbols a	nd ons are	Water w probabl technic	as adde e bould ues.	ed to as ler - no	ssist h progr	ooring ress de	1.20m depth a jar and 1 am at 12.00m whe spite chisell	ere boreho ing for 1	le enc hour,	ountere so swi	ed an o itched	to rota	ry	Figur	e :	IM Lof 2 18/12/201
ompany sheet.	ying	1.00m t	o 5.00m	n with u	pright	: locka	stalled to 5. ble protectiv bentonite sea	ve cover.	Backfi	ll deta	ails fr	om base	of ho	^m le: DE	<u>o</u> cecti	nig

Project	OMEGA	DEVELO	OPMENT G	ĴI			Engineer wsp Bore Proje							Borehc Project	ehole BH8A02 ect No PN194027					
Client	WSP						National Grid 354789.9 E Coordinates 390674.5 N Groun									d Level 26.00 m OD				
Sampl				Prope	ties		Strata									Scale 1				
Depth		Sample Type	Depth Cased & (to Water)	Strength kPa	w %	SPT N (FI)	Descrip	tion							Depth	Legend	Level m OD			
10.50				KI U																
11.00-	-11.45	UT100	10.50 (DRY)																	
11.50		- - D -																		
12.00		_ D													12.00		14.00			
Core Ru (Core Di	in/Depth ia/Time)	- Depth - Cased	TCR/SCR / Type	Length Max/Min	RQD %	SPT (FI)	Continu Genera	ied by Ro	tary techni	ques	Detail				Į	69				
12.00-	12.50	12.00 (11.20)	100 100	0.50 0.50	100	(0) (AZCL)	stron	ERS of g white lack gr	extremel mottled canite.	y grey	granit Betwee	ce. en 12.5	oulder 0-12.60 fine to	m,						
12.50-	13.00	12.00 (ADDED)	80 80	0.40 0.40	80	(0)	\	End of	Borehole		coarse	e sand.		/	_ 13.00		13.00			
		- - - - - - - - - - - - - - - - - - -																		
		- - - - - - - - -																		
		- - - - -																		
		- - - - - -																		
		- - - - -													+ - - - -					
		- - -																		
Boring			!			Progre	ess	_				ndwate	r	1	· · · · · ·	<u> </u>				
Depth	Dia		Technique	e	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Rema Ground	rks on dwater			
Remar Symbols a abbreviati	ks and ons are	Chisell		.50-11.	.00m fc	or 60 m	inutes	and 12.	nd level 00-12.00		60 minu	ites.			Logg Figur	e :	MM 2 of 2 8/12/2019			
explained accompar key sheet All dimens are in met	nying sions	Logged in a	accordance	with BS59	30:2015										ſ	<u>olee</u> ų	nies V			

Project	OMEG	A DEVEL	OPMENT G	I			Engineer		WSP			2		Boreho Project		H8A02A	
Client							National Grid 354786.0 E										
Sampl	wsp ina			Prope	rties		Coordinat Strata	es	390678.3	B N				Ground	Level 25	5.95 m (Scale 1:	
Depth	3	Sample Type	Depth Cased & (to Water)	Strength kPa		SPT N (FI)	Descriptio	'n							Depth	Legend	Level m OD
		-	(to water)	κια	70	(1)	Grada	wor	COPSOIL:	soft d	ark br		ahtly a	andu	G.L.		25.95
0.25	- 0.60	ES B							ome rootl		ark bro	JWII SII	giiciy s	andy	0.30		25.65
0.50 0.60-	- 1.20	ES B					gravell	y CLA	ish brown AY. Grav	rel is	subangu	ilar to	rounde		F		
1.00		_ ES							ium of sa)-1.20m,		e, muds	stone a	nd coal	•	F	······································	
	- 1.65	F	(DRY)		13										F		
							Below 1	.60m	, stiff,	reddis	h brown	ı.			F F	· · · · · ·	
1.70		- - D - D													ŧ.	· · · · · · · · · · · · · · · · · · ·	
2.00-	- 2.45	_ В	1.70			S20									+ -	· · · · · · · · · · · · · · · · · · ·	
		-	(DRY)												÷ F	······································	
		-													L L		
2.80	- 3.45	D	3.00												-		
	0110	-	(DRY)												F		
3.50		D													-		
3.80		- - - D													ŧ F		
4.00-	- 4.45 - 4.45	В	4.00			S18									-		
			(DRY)												t L	·····	
		-													-	· · · · · · · · · · · · · · · · · · ·	
4.80 5.00-	- 5.45	D UT91	4.70		13												
		-	(DRY)												- E	· · · · · · · ·	
5.50		D														······	
		F													F		
6.00		_ D													-	· · · · ·	
6 50	- 6.95	в													F	· · · · · · · · · · · · · · · · · · ·	
	- 6.95	Ē	6.00 (DRY)			S21									F	· · · · · · · · · · · · · · · · · · ·	
		-													<u>+</u>	• • • •	
		Ē													+		
7.50		D			11										+	······································	
							Below 7	.80m	, very st	iff.					÷ L	······································	
8.00-	- 8.45		7.50 (DRY)												 	·····	
8.50		Б													-	· · · · · · · · · · · · · · · · · · ·	
		-													-		
9.00		D			12										-		
		F													F		
		F													F F		
															Ļ		
Boring	1	<u> </u>				Progre	ess				Grour	ndwate	r		<u> </u>	0.0.	
Depth	, Hole Dia		Technique	9	Crew	Depth of Hole	Depth De	epth to Vater	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remar Ground	
1.20 14.50			tion Pit Percussi		SL SL	G.L. 9.00			16/10/19 16/10/19							None encounte:	
26.50		Rotary			JB	9.00 14.50	9.00 14.50	7.70	17/10/19 17/10/19	08:00 18:00							
Domo	ke ■™	Inspec	tion ni+	hand	AXCAVA	14.50 17.50	14.50 1	6.70	22/10/19 22/10/19	18:00	were f	bund					
Remar		Chisel	ling: 8.	60-9.0	Om for	55 min	1.20m der e: bentor utes and	11.90	seal up t)-12.40m	o 0.50 for 85	m, aris	sings und	p to gr 13.30-1	ound le 3.70m i	For		™ of 3
Symbols a abbreviati explained	ons are	75 min Flush:	utes and 14.50-1	l 14.30 .6.00m,	-14.50 Water	n for 6 , 100%	0 minutes returns;	16.00	0-17.50m,	Water	, 10% i	returns	; 17.50	-19.00r	Figui		of 3 8/12/2019
accompar key sheet	nying		23.50m,				Water, 10 23.50-25								40% @=	, ibejo	nies
All dimens are in met			 accordance 	with BS59	30:2015										<u>ل</u> ے	7	

Project omega	A DEVELO	PMENT C	JI			Enginee	er	WSP					Boreho Project		BH8A0 PN19402		
Client wsp						Nationa Coordin	l Grid ates	354786.0 390678.3	E N					Level	25.95	m OD	
Sampling			Prope	ties		Strata									Scale		
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	SPT N (FI)	Descrip	tion							Depth	Leger	nd Lev m O	vel D
						SANDS of mu Betwe	TONE wi dstone	eak reddi ith suban and quar 90-13.70m nd.	gular tz.	to subi	rounded	fine		11.9	0	ه	4.0
Core Run/Depth (Core Dia/Time) 14.50-16.00	- Cased	TCR/SCR / Type 80 43	Length Max/Min 0.20 0.08	RQD % 38	SPT (FI) (AZCL) (NI) (16)	Genera Extre local reddi coars	mely we ly medi sh brow	otary techni eak to we ium stron vn fine t ead SANDS	ak, g, o	Detail				14.5	0	11	L.4
16.00-17.50	- 14.50 (ADDED)	93 67	0.20 0.04	44	(5) (AZCL) (25) (9)	subro fine and q Disco horiz close close	unded t clasts uartz. ntinuit ontal t ly to e	to rounde of mudst ties are to subver extremely ted plana	one tical								
17.50-19.00	 (16.10) 	93 64	0.22 0.03	51	(AZCL) (NI) (34)												
19.00-20.50	- - 14.50 (ADDED)	100 68	0.24 0.13	68	(12)												
														F			
Doring	<u>F</u>				(9)					Gran	-			F			
Boring Depth Dia	-	Fechnique	9	Crew	Progre	Depth	Depth to	Date	Time	Depth	Depth	Rose to	in	Depth		marks on	
					25.00 25.00	Cased 14.50 22.00 22.00 22.00	23.00 23.20	23/10/19 23/10/19 24/10/19 24/10/19	08:00 18:00 08:00		Cased		Mins	Sealed	Gro	oundwate	
	ļ														gged by	ММ	
Remarks Symbols and abbreviations are explained on the accompanying key sheet. All dimensions are in metres.		accordance	with BS59	30:2015										Fig		2 of 18/12/20)19

Project OMEGA	A DEVELO	OPMENT G	I			Enginee	r	WSP					Boreho Project	No Pr	H8A02A	A
Client _{WSP}						Nationa Coordin	l Grid ates	354786.0 390678.3	E N				Ground	Level 25	5.95 m	OD
Drilling			rties/Sa			Strata									Scale 1	
Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water	Type TCR/SCR%	Length Max/Min	RQD %	SPT N (FI)	Descript General	tion			Descrip Detail	otion			Depth	Legend	Level m OD
<u>, , , , , , , , , , , , , , , , , , , </u>	È													-		77
	-													‡		
20.50-22.00	-14.50 (ADDED)	87 55	0.28	49	(AZCL)									F F		
														t		
	Ę				(50)									t F		
	Ę				(50)									F.		
														Į.		
22.00-23.50	- 22.00 (ADDED)	98 63	0.22 0.04	53	(AZCL)									F		
	E				(NI)									F		
	-													+ F		
	 -				(6)									Ļ F		
	-			9										-		
23.50-25.00	- 22.00 (ADDED)	66 37	0.14 0.04	9	(AZCL)									Į		
					(10)									 - -		
					(NI)											
25.00-26.50	- 22.00	84	0.17	28	(AZCL)									<u>+</u>		
	(23.20)	66	0.04		(12)					Detree	25 6	0-25.70		t F		
	Ę				(0)					band brown	of soft	reddis	h	F		
	Ē				(NA) (13)					clay.				Ę		
	-				(15)									Ļ		
	-					:	End of	Borehole	1					26.50		-0.55
	E													<u>+</u>		
														- -		
	E													Ē		
	<u> </u>													I I		
														Ļ		
	E E													+		
														÷ +		
	-													F		
	E													E		
	-													Ļ		
Drilling	–				Progre	299				Grour	ndwate	r		<u> </u>		
Depth Hole Dia		Technique	9	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth		in Mins	Depth Sealed		rks on dwater
Remarks																ММ
Symbols and abbreviations are														Figu	re	3 of 3 18/12/2019
explained on the accompanying key sheet.														ے ا	<u>a</u> leef	ണിങ്ങ
All dimensions are in metres.	Logged in	accordance	with BS59	30:2015											, ,	

,	Jung		OPMENT G	-			Engineer	WSP					Borehc Project		H8A03 194027	
lient Sampli	wsp			Proper	rties		National Grid Coordinates Strata	354697.8 390742.6				1	Ground	Level 26	Scale 1	OD
Depth	9	Sample	Depth Cased &	Strength	w	SPT N	Description							Depth	Legend	Leve
Boptin		Туре	(to Water)	kPa	%	(FI)	Docomption							G.L.		m OD 26
0.00- 0.25	0.30	B ES B					Grass over slightly gr Gravel is s of sandstor	avelly cl subangular	ay wit	h occas	sional	rootlet	s.	0.30		25.
0.50		- ES - - ES					MADE GROUNE At 0.60m, 1						/ E.	1.00		25
1.00 1.20-	1.65	-	(DRY)				Soft to fir gravelly CI fine to med and coal.	LAY. Grav	rel is	subangu	ilar to	rounde	d ¯			25
	2.45	- D - D - B -	1.70 (DRY)			s21	Between 2.0)0-2.45m,	sandy.							
2.80 3.00-	3.45	D UT63	3.00 (DRY)		12											
3.50		D												-		
	4.45 4.45	D B - -	4.00 (DRY)			S18									$\begin{array}{c} \overrightarrow{\sigma} \cdot \overrightarrow{0} \\ \overrightarrow{\sigma} \cdot \overrightarrow{0} \\ \overrightarrow{\sigma} \cdot \overrightarrow{\sigma} \\ \overrightarrow{\sigma} \cdot \overrightarrow{\sigma} \\ \overrightarrow{\sigma} \cdot \overrightarrow{\sigma} \\ \overrightarrow{\sigma} \cdot \overrightarrow{\sigma} \\ \overrightarrow{\sigma} \overrightarrow{\sigma} \\ \overrightarrow{\sigma} \overrightarrow{\sigma} $ \overrightarrow{\sigma} \overrightarrow{\sigma} \overrightarrow{\sigma} \overrightarrow{\sigma} \overrightarrow{\sigma} \overrightarrow{\sigma} \overrightarrow{\sigma} \overrightarrow{\sigma}	
4.80 5.00-	5.45	D 	4.50 (DRY)		12											
5.50		D														
6.00		D														
	6.95 6.95	- B 	6.00 (DRY)			s23	Below 6.80m medium sand		vith ba	nds of	brown	fine to				
7.50		- D -												- - - - -		
	8.45 8.42	B	7.50 (DRY)			\$50/ 267										
9.00		- D -												+ + + +		
	9.95 9.89	В	9.00 (DRY)			s50/ 243										
soring						Progre					dwate	r				
Depth	Hole Dia		Technique		Crew	Depth of Hole	Depth Depth to Cased Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Groun	rks on dwater
1.20 2.55 4.10	0.13	Inspect Cable F Rotary	ercussi Core	.on	SL SL JB	12.10	1.70 DRY 12.00 9.20 12.00 11.10 12.10 10.40	14/10/19 14/10/19 15/10/19 15/10/19 17/10/19 17/10/19 17/10/19	18:00 08:00 18:00 08:00 18:00		d -+ ^	60m -	nth	ning	None encounte	red.
/mbols a	and ons are	Water w A 50mm	vas adde gas mon	ed to as nitoring	ssist 1 g pipe	ooring 1 was in	1.20m depth. to avoid dam between 10.30 stalled to 20 kable protect)m and 12.).10m with	10m. 1 a geo	wrapped	l slott	ed sect	ion fr	om Figur	e :	MM Lof 3 8/12/201
plained compan y sheet.	iying	collaps concret	ed mate e up to	erial up ground	to 20 l leve	0.10m, L.	gravel filter utes and 8.30	up to 12	2.00m,	bentoni	te sea	l up to	0.20m	,		ਗੀਫ

Project om	EGA DEVEL	OPMENT (ĴI			Engine	ər	WSP					Boreho Project		H8A03	
Client ws	5					Nationa Coordir		354697.8					Ground	Level 26	.10 m	OD
Sampling	·		Prope	rties		Strata							ereana		Scale 1	
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	n w %	SPT N (FI)	Descrip	otion							Depth	Legend	Level m OD
		(IU Water)	Kiŭ	70	(11)									<u> </u>		5
10.50	р - - - -					Extre	emely we	eak reddi (Recovere	.sh bro ed as s	own fin and).	e to co	arse gr	ained	10.30		15.80
11.00-11.4		10.50 (8.80)			s50/63											
12.00 12.10-12.2	22 -	12.00 (9.20)			s50/56									12.10		14.00
Core Run/De (Core Dia/Tin	pth Depth	TCR/SCR / Type	Length Max/Min	RQD %	SPT (FI)	Continu Genera		otary techni	iques	Detail						•
12.10-13.0	-	47	0.17 0.07	11	(NI)	brown grain subro mudst Disco	n fine t ned SANI ounded f cone and ontinuit	eak reddi to coarse DSTONE wi fine clas d quartz. ties are	th ts of							
13.60-15.2	L0 12.10 (ADDED		0.16	51	(0) (AZCL)	close space	ely to v ed plana	to vertic very clos ar smooth	ely							• • •
	E				(NI)					Potwo	on 14 3	4-14.50	m			
	-				(12)					band grave	of slig lly san	htly dy clay				
	-				(NI)	/				thick) of sc	ens (30 oft oran		÷		•
-					(28)					clay.				<u> </u>		:]
15.10-16.0	50 - 12.10 (10.20		0.13 0.07	16	(AZCL)			eak to we						15.37		10.73
	-				(NI)	Disco	ontinuit	ties are closely t						Ę		
	- - - - - -				(11)	extre plana	emely cl	losely sp smooth wi	aced					- - - - -		· · · ·
16.60-18.3	L0 - 12.10 (ADDED	84) 67	0.23	55	(AZCL)	Weak	to medi	ium stron	ıg					16.71		9.39
	-				(12)	reddi coars with	sh brov grain subroun	wn fine t ned SANDS	O STONE							• • •
					(6)	mudst Disco horiz close	cone and ontinuit contal t aly to t	d quartz. ties are to subver very clos th and cl	tical							· · · ·
18.10-19.0	50 - 12.10 (ADDED	93) 64	0.38 0.02	63	(AZCL)									ŧ I		•
	E				(NI) (27)									E		
	F				(27)									F		• •
	-				(3)											•
19.60-21.3	L0 - 12.10 (ADDED		0.15 0.02	17	(AZCL)											
Boring				-	Progro Depth		Depth to			Grou Depth	ndwate		in	Depth	Rema	rks on
Depth Di	a	Techniqu	Э	Crew	of Hole	Cased	Water	Date 18/10/19	Time 08:00	Struck		Rose to	Mins	Sealed		dwater
						12.10		18/10/19								
Remarks Symbols and abbreviations ar explained on the accompanying key sheet. All dimensions are in metres.	Water,		ırn.		<u> </u> , 100%	returns	3; 16.60	0-18.10m,	Water	<u> </u> >, 70%	 returns	; 18.10	-24.10r	Figur	e	MM 2 of 3 18/12/2019

BOREHOLE RECORD - Cable Percussion and Rotary Project OMEGA DEVELOPMENT GI Engineer Borehole BH8A03 WSP Project No PN194027 National Grid Coordinates 354697.8 E N Client Ground Level 26.10 m OD WSP 390742.6 Drilling Properties/Sampling Strata Scale 1:50 Type Length Core Run/Depth (Core Dia/Time) Depth Cased & (to Water) RQD SPT N Description Description Level Depth Legend TCR/SCR% Max/Min % (FI) General Detail m OD Ŀ (14) Below 20.50m, discontinuities are subhorizontal to vertical. (NI) (14) 0.20 0.04 12.10 (ADDED) 21.10-22.60 100 13 35 (NI) (10) 22.60-24.10 - 12.10 (ADDED) 100 0.26 53 64 0.03 (7) (23) Between 23.50-23.70m, yellowish grey. (5) 24.10 2.00 End of Borehole Drilling Progress Groundwater Depth Cased Depth to Water Depth Cased Hole Depth Depth in Mins Depth Remarks on Crew Date Time Rose to Depth Technique Sealed Dia of Hole Struck Groundwater Remarks Ags Logged by MM Symbols and Figure 3 of 3 abbreviations are 18/12/2019 explained on the accompanying geolechnics key sheet.

All dimensions are in metres. Logged in accordance with BS5930:2015

Project	OMEG	A DEVEL	OPMENT G	ĴI			Engineer WSP Borehole BH8A04 Project No PN194027	
Client	WSP						National Grid 354853.6 E Coordinates 390755.9 N Ground Level 25.35 m OD	
Sampl				Prope	rties		Strata Scale 1:50	
Depth	0	Sample	Caseu a	Strength	w	SPT N	Description Dopth Legand	evel
		Туре	(to Water)	kPa	%	(FI)	G.L.	OD 25.35
0.25 0.30- 0.50	0.60	ES B ES					Grass over TOPSOIL: Soft dark brown slightly sandy slightly gravelly clay with many rootlets. Gravel is subrounded fine of sandstone.	25.05
	· 1.20	- В					Firm yellowish brown slightly sandy slightly gravelly CLAY. Gravel is subangular to rounded fine to coarse of sandstone, mudstone and quartz.	
1.00	1 65	_ ES UT44	(DRY)	70	16			
1.20-	1.05	0144	(DRI)	70	10			
1.70		- D						
	2.45	D B						
2.00-	2.45	E	1.70 (DRY)			S16	Below 2.30m, stiff, brown.	
		E						
2.80		- D						
	3.45	UT89	3.00 (DRY)		13			
		È						
3.50		_ D						
3.80 4.00-	4.45	D B						
	4.45	-	4.00 (DRY)			S15		
		E						
4 80		E _						
4.80 5.00-	5.45	D UT82	4.70 (DRY)	84	13			
		-	(DRI)					
5.50		D						
c 00		<u> </u>						
6.00		D						
6.50-	6.95	в						
	6.86	-	6.00 (DRY)			S50/ 208	Below 6.80m, very stiff.	
		E					Below 6.80m, very stiff.	
		F						
7.50		D						
		E						
	8.45 8.25	_ В	7.50			s50/		
		F	(DRY)			108		
		F						
9.00		- D						
		F						16 05
	9.95 9.70	в	9.00			s50/70	Extremely weak reddish brown fine to coarse grained	16.05
		F	(DRY)					
Boring	Hole		Technique		Crew	Depth	Depth Depth to Depth Depth Depth Depth in Depth Remarks o	
Depth 1.20	Dia		tion Pit		SL	of Hole G.L.	Cased Water Struck Cased Mins Seared Groundwat	er
10.80 22.80			Percussi		SL JB	7.50	7.50 DRY 11/10/19 18:00 inflow.	
						11.25 10.80	10.80 DRY 16/10/19 08:00	
Remar	ks 📕	Inspect	tion pit	hand	excava	22.80 ted to	D 10.80 DRY 16/10/19 18:00 Logged by MM 1.20m depth and no services were found. Logged by MM	
Symbols a	and	Packfi	11 dotai	la from	m hada	of hol	le: bentonite seal up to ground level. nutes and 8,00-9,30m for 160 minutes and 10,50-10,80m for 60 Figure 1 of	
abbreviati explained accompar	on the	minute: Flush:	s. 10.80-1	.2.30m,			returns; 12.30-15.30m, Water, 70% returns; 15.30-22.80m,	
key sheet All dimens		Water,	0% retu	ırn.			juntesloco	<u>E</u>
are in met	res.	Logged in	accordance	with BS59	30:2015			

Project	OMEG	A DEVELO	OPMENT (ĴI			Engine	er	WSP					Boreho Project	le Bi No ₽ĭ	H8A04 194027	
Client	WSP						Nationa Coordir		354853.6 390755.9						Level 25	5 2 E m	OD
Sampl				Prope	rties		Strata		390755.9	IN				Ground		Scale 1	
Depth	0	Sample		Strength	W	SPT N (FI)	Descrip								Depth	Legend	Level m OD
		Туре — -	(to Water)	kPa	%	(11)											
10.50 10.80- 10.80-		D 10.80 (DRY)	10.50 (9.20) 80) 27	0.11 0.05	20	C50/53 (AZCL) (NI) (20)	reddi subro quart close	ish brow bunded f z. Dig aly to y	eak to we wn fine t to rounde scontinui very clos occasiona	o coar d fine ties a ely sp	se grai clasts re hori aced pl	ined SA s of mu izontal lanar s	NDSTONE dstone to ver	with and tical	10.50		14.85
Core Ru			TCR/SCR		RQD	SPT			otary techni	ques					+ 		
(Core Di	a/Time)	Cased	/ Туре	Max/Min		(Fl) (13)	Genera	d			Detail				Ē		
12.30-	13.80	_10.80 (ADDED)	100) 60	0.14 0.05	47	(12)									+		
		-				(NI)									Ę		
		-				(11)									F		
						(18)											
13.80-	15.30	10.80	96	0.30	73	(AZCL)									<u>t</u>		
		(ADDED)) 93	0.01		(0)									ţ		
		-				(NI)									- -		
		- - - -				(6)											
15.30-	16.80	 10.80 (ADDED)	100) 77	0.38 0.01	53	(22)											
						(3)											
16.80-	18.30	_10.80 (ADDED)	100) 38	0.20	20	(NI)									E		
			000	0.04		(21)											
		-				(6)									+		
18.30-	19.80	10.80	100) 66	0.14	47											∀	
						(7)											
		-													t t		
10.00	01 00	-	0.2	0.35		(NI)									ŧ		
		10.80 (ADDED)	93) 66	0.37 0.06	63	(AZCL)									_		-
Boring Depth	Dia		Techniqu	e	Crew	Progree Depth	Depth	Depth to	Date	Time	Depth	Depth	r Rose to	in	Depth	Rema	
				_		of Hole 22.80 22.80	Cased 10.80 10.80		17/10/19 17/10/19	08:00		Cased		Mins	Sealed	Ground	dwater
						1									Logo	jed by 1	MM
Remar Symbols a abbreviatic explained accompan key sheet. All dimens are in met	and ons are on the nying sions	Logged in	accordance	e with BS59	30:2015										Figu	re :	2 of 3 18/12/2019

Cable Percussion and Rotary BOREHOLE RECORD -Project OMEGA DEVELOPMENT GI Engineer Borehole BH8A04 WSP Project No PN194027 National Grid Coordinates 354853.6 390755.9 E N Client Ground Level 25.35 m OD WSP Drilling Properties/Sampling Strata Scale 1:50 Type Length CR/SCR% Max/Min Core Run/Depth (Core Dia/Time) Depth Cased & (to Water) RQD % SPT N (FI) Level m OD Description Description Depth Legend TCR/SCR% General Detail (NI) (28) 21.30-22.80 - 10.80 (ADDED 86 57 0.45 40 (AZCL (16) (0) (NI) 22.80 2.55 End of Borehole E -Groundwater Drilling Progress Depth of Hole Depth Cased Depth to Water Depth Cased Depth Sealed Hole Depth in Mins Remarks on Depth Technique Crew Date Time Rose to Dia Struck Groundwater Remarks Remarks Logged by MM Figure Symbols and 3 of 3 abbreviations are 18/12/2019 explained on the accompanying geolechnics key sheet. All dimensions

are in metres. Logged in accordance with BS5930:2015

Project omega development gi

Engineer พระ

Borehole Project No BH8A05

Sampli	ing	1		Proper	ties		Strata								Scale ¹	:50
Depth		Sample Type	Depth Cased & (to Water)	Strength kPa	w %	SPT N (FI)	Description							Depth	Legend	Level m OD
0.00- 0.25	0.40	- B ES					Grass over rare rootle		Soft da	ark bro	wn sand	dy clay	with	G.L.		23.8
0.50	0.70	B ES B					POSSIBLE MA gravelly sa \ subrounded	nd with s	ome cla	ayey po	ckets.	Grave	lis	0.70	<u>.</u>	23.:
1.00 1.20-	1.65	_ ES 	(1.10)				Firm brown Gravel is s sandstone a	ubrounded	to ro					<u>+</u> 		
1.70		- - - D - D														
	2.45 2.45	В - - -	1.70 (DRY)			S12	Below 2.40m	, stiff.						- - - - -		*****
2.80 3.00-	3.45	 	3.00 (DRY)													
3.50		- - D -														
	4.45 4.45	В	4.00 (DRY)			S17										
4.80 5.00-	5.45	D 	4.70 (DRY)													
5.50		- - D -														
6.00		- D -					Between 6.1	0-6.40m,	low col	oble co	ntent.				$\nabla = \frac{\frac{1}{2} \frac{1}{2} \frac{1}{2$	
	6.95 6.95	В 	6.00 (DRY)			S35										•
7.50		- - - D														· - - - - -
	8.45 8.14	- - B - -	7.50 (DRY)			C50/63	Extremely w SANDSTONE.				to coa	arse gr	ained	7.90		15.9
9.00		- - - - -														
	9.95 9.62	- В	9.50 (6.90)			C50/52								9.70		14.
	n/Depth a/Time)	Depth Cased	TCR/SCR / Type	Length Max/Min	RQD %	SPT (FI)	Continued by R General	otary techni	ques	Detail				- -		~
Boring						Progre	ess Depth Depth to			Groun Depth	dwater Depth		in	Depth	Rema	rks on
epth 1.20	Dia		Technique		Crew SL	of Hole G.L.		Date 01/10/19	Time 08:00	Struck 6.10	Cased 6.00	Rose to 4.90	Mins 20	Sealed		dwater
9.95 1.70			Percussi		SL JB	8.45 8.45 9.95 9.95 12.20	8.00 6.10 9.50 6.90 9.70 9.20	01/10/19 02/10/19 02/10/19 02/10/19 02/10/19	18:00 08:00 12:00 12:01							
emar mbols a breviatio	and	ES samp Water v A 50mm	ole = 1 vas adde gas mor	x vial, d to as itoring	1 x ; sist ; pipe	ted to plastic boring was in	1.20m depth a jar and 1 am between 8.00m stalled to 8.	nd no ser ber jar. and 9.70 50m with	vices v m. a geown	rapped	slotted	l secti	on from	n Figur	e :	MM 1 of 3 18/12/2019
olained compan / sheet.	on the lying	bentoni up to g	te seal ground l	up to evel.	8.50m	, grave	ble protectiv 1 filter up t utes and 8.50	o 6.00m,	benton	ite sea	l up to			rete		

Project _{OMEGZ}	A DEVELO	OPMENT G	I			Engineer	Orid	WSP	F				Boreho Project	NO PI	H8A05 194027	
Client _{WSP}						National (Coordinat		355021.0 390770.4	N				Ground	Level 2		OD
Drilling	Denth	-	rties/Sa		-	Strata Descriptio				Descrip	tion				Scale	1
Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water	TCR/SCR%	Length Max/Min	RQD %	SPT N (FI)	General				Detail				Depth	Legend	Leve m OD
	- -				(AZCL)			eak to we						-		3
9.70-10.70	9.70 (9.20)	80 23	0.13 0.10	23	(NI)	coarse	grain	wn fine t ned SANDS	TONE					Ę		
	-				(2)	rounded	d fine	ubrounded e clasts d quartz.						F F		
10.70-12.20	11.30 (ADDED)	80 49	0.23	34	(AZCL)	Discont	tinuit	ties are very clos	ely					<u>t</u>		
						subvert	tical	zontal to planar s						t L		
					(10)	and cle	ean.							+		
	-				()									- L		
	-													 [
12.20-13.70	11.30 (11.35)	97 47	0.26	45	(AZCL)									F		
	-		0.05		(NI)									F		
	Ē													Ę		
	Ę				(8)									F		
	-													E		
13.70-14.70	11.30 (ADDED)	84 39	0.17 0.05	17	(AZCL)									- -		
	-				(NI)									F		
	E				(8)						en 14.6 of muds	0-14.9	5m,	E		
14.70-16.20	11.30	100	0.38	75	(NA)					(Reco		s soft		E		
	(ADDED)	75	0.10											L- E		
	F													F		
	F				(6)									F		
	Ē									Datas		0 16 5	.	-		
16.20-17.70	11.30	100	0.30	70	(NI)					recove sand,	ered as	0-16.50 gravel	lly	Ę		
	(ADDED)	87	0.03											I. F		
	F				(7)									Ę		
	F				()									F		
	Ē													F		
17.70-19.20	11.30	87	0.30	73	(AZCL)									E E		
	(ADDED)	73	0.11		(3)									 		
	F				(3)									+		
	-													L L		
	-				(4)									+ 		
19.20-20.70	11.30	100	0.41	64	(NI)									- L		
	(ADDED)	81	0.20											+ -		
	<u> </u>				(8)									<u>+</u>		
Drilling	ļ	ļ			Progre						ndwate	r			<u> </u>	
Depth Hole Dia		Technique	e	Crew		Cased V	Nater	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed		arks on ndwater
								03/10/19 03/10/19								
Remarks 🔙	Flush:	9.70-10	.70m, 1	Nater,	0% ret	urns; 10.	.70-11	1.30m, Wa eturns; 1	ter, 1	00% re	turns;	11.30-1	4.70m,	Logr	ged by	ММ
Symbols and	Water,	70% ret	urns; 1	14.70-1	19.20m,	Water, 6	50% re	eturns; 1	9.20-2	1.70m,	Water,	50% re	eturn.	Figu		2 of 3
bbreviations are explained on the																18/12/2019
accompanying ey sheet.														þ	न्न	miæ
Il dimensions re in metres.	Logged in	accordance	with BS59	30:2015												

Cable Percussion and Rotary BOREHOLE RECORD -Project OMEGA DEVELOPMENT GI Engineer Borehole BH8A05 WSP Project No PN194027 National Grid Coordinates 355021.0 390770.4 E N Client Ground Level 23.86 m OD WSP Drilling Properties/Sampling Strata Scale 1:50 Type Length CR/SCR% Max/Min Core Run/Depth (Core Dia/Time) Depth Cased & (to Water) RQD % Level m OD SPT N Description Description Depth Legend TCR/SCR% (FI) General Detail 0.20 0.07 20.70-21.70 11.30 70 70 (AZCL 61 (ADDED (4) 21.70 2.16 End of Borehole Drilling Progress Groundwater Depth of Hole Depth Cased Depth to Water Depth Cased Depth Sealed Hole Depth in Mins Remarks on Depth Technique Crew Date Time Rose to Dia Struck Groundwater Remarks Remarks Logged by MM Figure Symbols and 3 of 3 abbreviations are 18/12/2019 explained on the accompanying geolechnics key sheet. All dimensions

are in metres. Logged in accordance with BS5930:2015

Project	OMEGA	DEVELO	OPMENT G	I			Engineer	•	WSP					Boreho Project I		8H8A06 N194027	
							National	Grid	354923.4	Е				riojecti	NO P	N194027	
Client	WSP			D			Coordina		390672.3					Ground	Level 2	4.90 m	
Sampli	ng	Sample	Depth	Proper Strength		ODT N	Strata									Scale	
Depth		Туре	Depth Cased & (to Water)	kPa	w %	SPT N (FI)	Descripti	on							Depth	Legend	m OD
0.00-	0.30	- в							OPSOIL:						G.L.		24.90
0.25 0.30- 0.50	0.60	ES B ES							<u>velly cl</u> E GROUND						0.30		24.60
0.50	1.20	- B						lium sa		: Tell	owish i	brown c	тауеу т	/	0.60		24.30
1.00		- ES							brown s is suba						- - 		
1.20-	1.65	UT42	(DRY)				medium	ı of sa	ndstone,	mudst	one and	d coal.			-	• • • • • • • • • • • • • • • • • • •	
		-													-	····	
1.70		ם													-	0 0 0	
2.00-		В	1.70			S16	Below	2.00m,	stiff.					•	-	······	
2.00-	2.13	-	(DRY)			510									-	· · · · · · · · · · · · · · · · · · ·	
														•	-	· · · · · · · · · · · · · · · · · · ·	
2.80		D													-	· · · · · · · · · · · · · · · · · · ·	
3.00-	3.45	_UT57 -	3.00 (DRY)												-	······································	
2 50		Ē													-	· · · · · ·	
3.50		_ D													-	······································	
3.80 4.00-	4.45	D B													-	0 0 0 0	
4.00-			4.00 (DRY)			S19									-	······································	
															-	· · · · · ·	
		E													-	· · · · · · · · · · · · · · · · · · ·	
4.80 5.00-	5.45	D UT79	4.70												-	0.0.0	
			(DRY)												-	• · · · · · · · · · · · · · · · · · · ·	
5.50		D												•	-	0.000	
		-													-	V · · · · · · · · · · · · · · · · · · ·	
6.00		D													- 		<u></u>
															-	· · · · · · · · · · · · · · · · · · ·	
6.50- 6.50-		_ В	6.00			s45	Below	6.60m,	sandy.						-	· · · · · · · · · · · · · · · · · · ·	
		-	(DRY)												-	0 0 0 0 0	·. · ·
															-	· · · · · · · · · · · · · · · · · · ·	j.
7.50		- _ D													-	· · · · · · · · · · · · · · · · · · ·	
		-												•	-	·····	
8.00-	8.45	UT76	7.50												-	· · · · · ·	Į.
		-	(DRY)												-	·····	
8.50		D													-	· · · · · · · · · · · · · · · · · · ·	
		F					Below	8.80m,	very st	iff.					-	· · · · · · · · · · · · · · · · · · ·	
9.00- 9.00		В D													- 	0 · 0 · 0	
9.00-	9.29	-	9.00 (DRY)			S50/ 143									-	• 0 • • •	
		-													-	· · · · · ·	
		F												•	-	· · · · · · · · · · · · · · · · · · ·	
Boring						Progre					Grou	ndwate	r	•			-
Depth	Hole		Technique	9	Crew	Depth	Depth D		Date	Time	Depth	Depth	Rose to	in Mins	Depth		arks on
1.20	Dia	Inspect	tion Pit		SL	G.L.			02/10/19	08:00	Struck 5.70	Cased		Mins	Sealed		ndwater ht inflow
12.65 24.20		Cable I Rotary	Percussi Core	on	SL JB	5.70 5.70	4.70	5.20	02/10/19 03/10/19	08:00							
						12.95	12.20	11.10	03/10/19 04/10/19	08:00							
Remar	ks 🛺	Inspect	tion pit	hand e	xcava	15.20 ted to	12.20 1.20m de jar and	pth an	<u>04/10/19</u> d no ser er jar.	vices v	were fo	ound.			Log	ged by	ММ
Symbols a	nd	Water v	was adde	d to as	ssist l	boring	between	11.00m	and 12. 0m with	20m.			d secti	on from	Figu		1 of 3
abbreviation explained	on the	6.00m t	to 8.00m	with u	pright	t locka	ble prot	ective	cover. 6.00m,	Backfi	ll deta	ails fr	om base	of hol	.e:		18/12/2019
accompany key sheet.	ying	up to g	ground 1	evel.		-		-	-10.50m			-				eoled	miss
All dimens are in metr			accordance												0		

Project	OMEGZ	A DEVELO	OPMENT G	I			Engine	er	WSP			-		Boreho Project		H8A06	
Client	WSP						Nationa Coordir	l Grid ates	354923.4					Ground	Level 24	1.90 m	OD
Sampli	ing			Prope	ties		Strata									Scale 1	
Depth		Sample Type	Depth Cased & (to Water)	Strength kPa	w %	SPT N (FI)	Descrip	tion							Depth	Legend	Level m OD
10.50		турс 		NU	70												
11.00-: 11.00-:		- - - - - -	10.70 (DRY)			S50/68	SANDS mediu	TONE wi	eak reddi ith some s of var	subrou	nded to	o round			10.55		14.35
12.00 12.20-:	12.32	D	12.20			\$50/55											
Core Ru	n/Depth	- Depth	(10.70) TCR/SCR	Length	RQD	SPT			otary techni	ques	Deteil				12.65		12.25
(Core Dia		- Cased - 12.20	/ Type 80	Max/Min 0.21	<u>%</u> 25	(FI) (AZCL)			eak to we	alt	Detail			/	A ≁ ↓		
12.20-	13.70			0.03	25	(NI) (16) (NI)	reddi coars with round	sh brow grair some su led fine	vn fine t ned SANDS ubrounded clasts d quartz.	o TONE to of							
13.70-3	15.20	12.20 (ADDED)	93 70	0.18 0.01	12	(9) (AZCL)	close space horiz	ly to w d subve	ties are very clos ertical t planar sm	0							
						(NI) (30)											
		-				(5)									<u> </u>		
15.20-	16.70	12.20 (14.10) 	80 40	0.09 0.04	0	(AZCL) (NI) (20)											
16.70-3	18.20	12.20 (ADDED)	97 57	0.25 0.04	40	(AZCL) (NI)											
18.20-3	19.70	12.20	100	0.37	73	-											
		(ADDED) - - - - - - - - - - - - - - - - - - -) 100	0.03		(10)											
19.70-2	21.20	-12.20 (ADDED)	80 80	0.35 0.05	73	(AZCL)											
Boring Depth	Dia		Technique	9	Crew	Progree Depth	Depth	Depth to	Date	Time	Depth	Depth	r Rose to	in	Depth	Remai	
				-			Cased 12.20 12.20		07/10/19 07/10/19	08:00		Cased		Mins	Sealed	Ground	uwater
Remarl Symbols at abbreviatio explained of accompany key sheet. All dimensi are in metr	nd ons are on the ying ions	Water,	12.20-1	urns; 1	18.20-3	, 100% : 19.70m,	returns Water,	; 13.20 60% re)-15.20m, eturns; 1	Water 9.70-2	, 90% 1 4.20m,	returns Water,	; 15.20 50% re	-18.201 turn.	Figur	re 2	nx 2 of 3 8/12/2019

BOREHOLE RECORD - Cable Percussion and Rotary Project OMEGA DEVELOPMENT GI Engineer Borehole **BH8A06** WSP Project No PN194027 National Grid Coordinates 354923.4 390672.3 E N Client Ground Level 24.90 m OD WSP Drilling Properties/Sampling Strata Scale 1:50 Type Length CR/SCR% Max/Min Core Run/Depth (Core Dia/Time) Depth Cased & (to Water) RQD SPT N Description Description Level Depth Legend m OD TCR/SCR% % (FI) General Detail (4) Between 20.90-20.95m, (NI) band of soft reddish brown very sandy clay. (0) 21.20-22.70 12.20 (ADDED) 100 73 0.25 56 (NI) (10) 12.20 (ADDED) 100 70 0.37 22.70-24.20 67 (4) (NI) 24.20 0.70 End of Borehole Ł Groundwater Drilling Progress Depth Cased Depth of Hole Depth to Water Depth Cased Depth Sealed Hole Depth in Mins Remarks on Technique Crew Date Time Rose to Depth Dia Struck Groundwater Remarks Res Logged by MM Symbols and Figure 3 of 3 18/12/2019

abbreviations are
explained on the
accompanying
key sheet.
All dimensions

BOREHOLE RECORD - Cable Percussion

oject _{OMEG}	A DEVELO	OPMENT (ĴΙ			Enginee	I	WSP					Boreho Project		H8A07	
ient _{WSP}						National Coordination		354871.4 390602.4					Ground	Level 2	4.91 m (OD
ampling		_	Prope			Strata									Scale 1:	50
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	SPT N (FI)	Descript	ion							Depth	Legend	Lev m Ol
0.00- 0.40 0.25	- B ES					Grass	over I	OPSOIL:	Soft d	ark bro	own sli	ghtly a	sandy	_ G.L.		24
0.50- 1.20	в					Firm]	orown s	lightly						0.40		24
0.50	- ES					Grave	l is su	ubrounde ibrounded iudstone	to ro	unded i				Į		4
1.00 1.20- 1.65	_ ES - - 	(DRY)	107	13										<u> </u>		
	-	(2)												-		
1.70 1.80														I.		
2.00- 2.45 2.00- 2.45	_ В	1.70 (DRY)			S14									<u> </u>	·····	
		(2017)				Below	2.60m,	stiff.						+	······································	
2.80	- - - D													Ē		
3.00- 3.45	_UT100	3.00 (DRY)		12										<u> </u>		
3.50	- - D													+ - -	······································	
3.80														Ē.		
4.00- 4.45 4.00- 4.45	В	4.00 (DRY)			S17									<u> </u>		
		(2)												<u>t</u>	······································	
4.80	- - - D													Ę		
5.00- 5.45	UT79	4.70 (DRY)												[
5.50	- - D													È.	·····	
	Ē													Ē	· · · · · · · · · · · · · · · · · · ·	
6.00	_ D			9.7										[[
6.50- 6.95	в	c												+	·····	
6.50- 6.95		6.00 (DRY)			S22									Ē	·····	
	-													+ - -		
7.50	- _ D													<u>+</u>	V · · · · · · · · · · · · · · · · · · ·	
														I.		
8.00- 8.45	_UT100	7.50 (DRY)												<u> </u>		
8.50	D													- -	·····	
	Ē													I I	·····	
9.00	D															
9.50- 9.95 9.50- 9.95	в	9.00			S38									Ę		
5.50- 5.55	E	(DRY)			550	Below	9.80m,	very st	iff.					E		
oring					Progre	ss				Grour	ndwate	r		<u> </u>	·°. ···	ļ
epth Hole Dia		Techniqu	e	Crew	Depth of Hole	Depth I Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remar Ground	
	Inspect Cable I Rotary			SL SL JB	13.00 16.95	12.00 12.00 16.50 16.50	7.30 14.90	04/10/19 04/10/19 07/10/19 07/10/19 08/10/19	18:00 08:00 18:00	13.00		7.30	840		Overnight inflow.	t
emarks 🗛	Inspect	cion pit	hand e	excava	24.00	16.50	20.50	<u>08/10/19</u> nd no ser per jar.	18:00	were fo	ound.	ļ	<u> </u>	Loge	ged by 🛛 🛚	ſM
mbols and previations are plained on the	Water w Backfil	was adde 11 detai ling: 11	ed to as ils from	ssist 1 n base	of hold	between e: bento	12.50m onite s	er Jar. and 13. seal up t 60-13.90	00m, a o 1.20	nd betw m, ari:	ween 16 sings u	p to g	round 1	0m. evel. ^{Figu}	ire 1	L of 8/12/2

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All dimensions are in metres. Logged in accordance with BS5930:2015

Desised	A DEVEL					Engineer	WSP					Boreho Project	le B No Pi	H8A07	
Client _{wsp} Sampling			Prope	rties		National Grid Coordinates Strata	354871.4 390602.4	E N						4.91 m Scale 1	
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa		SPT N (FI)	Description							Depth	Legend	Level m OD
10.50 11.00-11.45	- D 	10.50 (DRY)													
11.50 12.00															
12.50-12.95 12.50-12.78		12.00 (DRY)			s50/ 138	Very dense n coarse SAND to coarse of	. Gravel	is su	bangula	ar to r	ounded	fine	12.30	$\nabla \left[\begin{array}{c} \frac{e}{2}, \frac{1}{2}, $	12.61
13.50 13.90	D					At 13.90m, d	cobble of	sands	tone.						
14.00-14.45 14.00-14.45		13.70 (9.20)			s30	Stiff brown	slightly	sandy	CLAY.			/	14.20 14.30	*****	10.71 10.61
15.00	- - - - - - -					Extremely we closely spac to medium gr	ed bands	of an	gular t						
15.50-15.95	5 UT100	14.30 (15.20)				Extremely we SANDSTONE.	eak reddi	sh bro	wn fine	e to co	arse gr	ained	15.50		9.41
16.50 16.50-16.63		16.30 (14.90)			\$50/60	Extremely we grained SANI fine to med: are horizont spaced plana	OSTONE wi ium clast cal to ve	th som s of q rtical	e subro uartz. closel	ounded Disco	to roun ntinuit	ded ies	16.50		8.41
	-														
Boring Depth Hole Dia		Technique	9	Crew	Depth of Hole	Depth Depth to	Date	Time	Grour Depth Struck	Depth Cased	er Rose to	in Mins	Depth Sealed		rks on dwater
					24.00	16.50 20.60	09/10/19 09/10/19			Cased				Groun	<u>an al O</u>
Remarks Symbols and abbreviations are explained on the accompanying	S				1								Figu	re	MM 2 of 3 18/12/2019
key sheet. All dimensions are in metres.	Logged in	accordance	with BS59	30:2015									e	ææ	

roject _{OME}	GA DEVE	LOPMENT	GI			Engine	er	WSP					Borehc Project	No P	H8A07	
lient _{WSP}						Nationa Coordir	al Grid	354871.4 390602.4	E N				Ground	level 2	4.91 M	OD
Sampling			Prope	rties		Strata		55000211					orouna	20101 2	Scale 1	
Depth	Sampl Type	e Depth Cased & (to Water	Strength	w %	SPT N (FI)	Descrip	otion							Depth	Legend	Leve m OD
		(12.11.11)	,											-		5
	-													-		
	L L													-		
	F													F		
	F													F		
	Ē													F		
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	F							En	d of E	orehol	e					
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	-													-		
	E E													F		
pring			ļ		Progr	ess				Grou	ndwate	r		<u> </u>		
pth Dia	9	Techniqu	е	Crew	Depth of Hole	Depth	Depth to Water	Date	Time	Depth Struck	Depth	Rose to	in Mins	Depth Sealed		rks on dwater
marks	I GS													Log	ged by	мм
nbols and previations are														Figu	ire	3 of 3
lained on the ompanying															_	
sheet.														Ø	DE	ME

are in metres. Logged in accordance with BS5930:2015

roject	OMEGA	A DEVELC	PMENT G	ĴI			Engineer	WSP				Boreho Project		BH8A08 PN194027	
lient	WSP			_			National Grid Coordinates	355034.3 390616.8	E N			Ground	Level		
Sampli	ng	Comple	Depth	Prope			Strata							Scale 1	1
Depth		Sample Type	Cased & (to Water)	Strength kPa	w %	SPT N (FI)	Description						Depth	Legend	Leve m OD
0.00- 0.25 0.50-		B ES B					Grass over slightly sa rootlets. G to coarse o	ndy slight ravel is s	ly grave ubangula	elly clay w ar to subro	with som	e	G.L		24. 23.
0.50	1.20	- ES - ES - ES					Firm reddis CLAY. Grave coarse of s	h brown sl l is subro	ightly sunded to	sandy slig o rounded i		velly			
1.20-	1.65	UT41	(DRY)	53	19										
1.70 1.80 2.00- 2.00-		- D - D - B -	1.70 (DRY)			S14									
2.80 3.00-	3.45	 	3.00 (DRY)	220	12										
3.50		D													
3.80 4.00- 4.00-		B	4.00 (DRY)			S16									
4.80 5.00-	5.45	D UT79	4.50 (DRY)	84	11										
5.50 6.00		- D - - - - -					Below 6.00m	, pockets	of red 1	fine to coa	arse san	d.			
6.50- 6.50-		- - - - -	6.00 (DRY)			S24									
7.50		- - - -													- - - -
8.00-	8.45		7.50 (DRY)	124	10										•
8.50		D													
9.00		- D -													
9.50- 9.50-		В 	9.00 (DRY)			s50									
oring						Progre	ess		G	roundwate	er				
epth	Hole Dia		Technique	е	Crew	Depth of Hole	Depth Depth to	Date	Time D	epth Depth ruck Cased	Rose to	in Mins	Depth Sealed		rks on dwater
1.20 2.62 4.50	0.50	Inspect Cable F Rotary	ercussi		SL/JL SL/JL JB/SW	G.L. 6.00 6.00 12.62	6.00 DRY 6.00 DRY 12.20 11.10 12.50 0.30	19/09/19 19/09/19 20/09/19 20/09/19 01/10/19 01/10/19	08:00 18:00 08:00 18:00					None encounte	
Remarl	nd	Water w A 50mm	as adde gas mon	ed to a	ssist k	ted to vial, boring	12.50 9.30 1.20m depth a 2 x 258ml amb between 11.40 stalled to 12	nd no serv er glass j m and 12.5 .00m with	ices wen ars. Om.		ted sect	ion fro	Fig	jure :	MM 1 of 3 18/12/2011

All dimensions are in metres. Logged in accordance with BS5930:2015

Project	OMEGA	A DEVELC	OPMENT G	ĴI			Engine	er	WSP			-		Boreho Project		18A08	
Client	WSP						Nationa Coordir	al Grid nates	355034.3					Ground	Level 24	.01 m	OD
Samp	ling			Prope	rties		Strata	a								Scale 1	:50
Depth		Sample Type	Depth Cased & (to Water)	Strength kPa	w %	SPT N (FI)	Descrip	otion							Depth	Legend	Level m OD
		-													-	0.0.0	
		-													t I		:
10.50		_ D													E	0000	•
	-10.95	C 	10.50												-		
		-	(DRY)												-	· · · · · · ·	• •
11.50		D							ak to we	eak red	ldish b	rown fi	ne to d	oarse	11.40	· · · · ·	12.61
		-					graii	ned SANI	DSTONE.						Ę		
12.00		D													-		• • • • • • • • • • • • • • • • • • • •
		-													-		
12.50	-12.62	-	12.20 (11.10)			C50/59	١								12.62		11.39
Core R (Core D	un/Depth)ia/Time)	Depth Cased	TCR/SCR / Type	Length Max/Min	RQD %	SPT (FI)	Contin Genera		tary techn	iques	Detail				/- -		
12.50	-14.00	12.50	100	0.22	33	(NI)			ak to ve]	-		
	-12.78	(0.30)	С	0.02		(20)	to co	oarse gr		ine					E I		
13.50	-13.65	-	С				subro	ounded t	th many o rounde dstone a						Ę		
14.00	-15.50	- 12.50	100	0.42	27	(4)	quart are d	z. Dis closely	continui to very						-		
		(ADDED)	91	0.07		())77)	subho	ely spac prizonta	al to						‡		
		-				(NI)	clear	n with c	planar s occasiona avel infi	1					Ē		
		-				(7)	pana	und gro							-		
		-															
15 50	-17 00	- 12.50	97	0.21	33	(AZCL)											
	-16.13	(ADDED)		0.04		(
		-				(10)									-		
		F				(12)									F		
16.65	-16.85	F	с										n, very places		F		
17 00	19 50	- 12.50	93	0.29	37	(AZCL)									-		
	-17.54	(ADDED)		0.04	57	(AZCL)									Ę		
		-				(7)									F		
		-													Ę		
		-				(NI)									F		
		-				(5)									E		
	-20.00	- 12.50 (ADDED)	70 50 C	0.32 0.12	50	(AZCL)									‡		
		F				(NI)									†		
19.17	-19.37	-	C			(6)									‡		
		-				(0)									È		
-		-													<u> </u>		
Boring	9	ļ			<u> </u>	Progr	ess				Grou	ndwate	er				
Depth	Dia		Technique	e	Crew	Depth of Hole		Depth to Water	Date	Time	Depth Struck	Depth	1	in Mins	Depth Sealed		rks on dwater
		60 minu	ites.							ļ						ad by	
Rema Symbols		Flush:		5.50m, urn.	Water	, 100%	returns	s; 15.50)-20.00m,	Water	, 9 0%	returns	; 20.00)-24.50r	n, ^{Logg} Figur	,	MM 2 of 3
abbreviat explained	ions are I on the																2 OL 3 18/12/2019
accompa key shee	t.														Ē	ded	miss
All dimen		Logged in	accordance	with BS59	30:2015										2-		

BOREHOLE RECORD Cable Percussion and Rotary Project OMEGA DEVELOPMENT GI Engineer Misp Borehole

Project _{OMEG}	A DEVELC	PMENT G	I			Engineer		WSP			-		Borehc Project	No P	H8A08	
Client _{wsp}						National Coordina	Grid tes	355034.3	E N				Ground	Level 2	4.01 n	n OD
Drilling		Prope	rties/Sa	ampling	g	Strata	100	550010.0					oround		Scale	
Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type	Length Max/Min	RQD %	SPT N (FI)	Descriptio General	on			Descrip Detail	otion			Depth	Legend	Level m OD
20.00-21.50		87 87	0.20	51	()									 		
20.50-20.64	Ξ	c	0.01											-		
	F				(14)									-		
	F													+ -		
	F													-		
21.50-23.00	- 12.50 (ADDED)	100 73	0.21	23										-		
21.95-22.12	E	c	0.07		(8)									+ - 		
	Ę				(NI)						ered as	0-22.30 sandy	m,	t T		
					(6)					5				F F		
23.00-24.50	- 12, 50	93	0.30	67	(AZCL)									E		
23.37-23.51	(ADDED)		0.10		()									F F		
	E				(5)									-		
					(5)									-		
	Ę													t F		
	-					E	nd of	Borehole						24.50		-0.49
	Ē															
	F													-		
	Ę													Ē		
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	F													<u>+</u>		
Drilling Depth Hole		Toobai		Crew	Progre	Depth D	epth to	Date	Time	Depth	ndwate Depth	r Rose to	in	Depth	Rem	arks on
Depth Dia		Technique	-	CIEW	of Hole	Cased	Water	Dale	inne	Struck	Depth Cased	1030 10	Mins	Sealed		indw at er
Domostic.																
Remarks	3													Log Figu	ged by ure	MM 3 of 3
Symbols and abbreviations are explained on the														Figu		3 OL 3 18/12/2019
accompanying key sheet.														ے ا	Die	كأشر
All dimensions are in metres.	Logged in	accordance	with BS59	30:2015												

roject	OMEGA	A DEVELO	PMENT G	ĴI			Engineer	WSP					Boreho Project		3H8 B0 1 N194027	
	WSP				u4 : -		National Grid Coordinates	355367.1 390710.0					Ground	Level 2		OD
Sampl	ing	Sample	Depth	Prope Strength		SPT N	Strata								Scale 1	:50 Leve
Depth		Туре	Cased & (to Water)	. – .	%	or r n	Description							Depth	Legend	m OD
0.25	• 0.50 • 1.20	- B ES - B					Grass over slightly g Gravel is of various	ravelly cl subangular	ay wit to su	h occas	ional	rootlet	s.	0.50		21.0
0.50		ES					Firm reddi: CLAY. Grave						velly	-		
1.00 1.20-	- 1.65	ES UT43	(DRY)	60	19		medium of a fragments.						oal			· · · ·
	- 2.45 - 2.45	- D - D - B -	1.70 (DRY)			s23	Below 2.00	n, stiff.								
2.80 3.00-	- 3.45	D 	3.00 (DRY)	246	13											
3.50		D														•
	- 4.45 - 4.45	B	4.00 (DRY)			s19										
4.80 5.00-	- 5.45	- D UT100	4.70 (DRY)	56	13 13											· · · · ·
5.50		- - D					At 5.50m, 1	band of sa	ind.						$\mathbf{\nabla}_{\underline{\mathbf{a}},\underline{\mathbf{a}$	•
6.00		- р												- -		
	- 6.95 - 6.95	- - - -	6.00 (DRY)			S31										
7.50		- - - D														
8.00-	8.11		6.00			s50/55	Extremely SANDSTONE :						ained	7.60		14.
			(DRY)					Er	nd of B	orehole	1			- 8.11 		14.
		- - - -														
Boring						Progre					dwate	r				
Depth	Hole Dia		Technique		Crew	Depth of Hole	Depth Depth t Cased Water	Date	Time	Depth Struck	Depth Cased	Rose to	IVIIIIS	Depth Sealed	Groun	rks on dwater
1.20 8.11	0.40 0.15	Inspect Cable H	ion Pit ercussi		SL/JL SL/JL	G.L. 8.11	6.00 DR	24/09/19 Y 24/09/19			4.70	5.40	20		Slow inf	LOW.
Remar		Inspect ES samp A 50mm	ion pit ble = 1 standri	x 60ml	excavat glass	ted to	1.20m depth a 2 x 258ml am 6.00m with a	and no ser ber glass	vices jars.	were fo	ound.	from 1	00m +0	_	5	мм
plained	ons are on the nying	6.00m w seal up ground	vith upr	ight lo)0m, gra	ockable avel fi	e prote ilter u	ctive cover. p to 1.00m, 1	Backfill	detail	s from	base o	f hole:	bento	nite ^{Figu}		1 of 1 18/12/2019
y sheet. dimens e in met	sions		accordance											면	ञ्चाख्य	v

	MEGA	DEVELC	PMENT G	I			Enginee	÷r	WSP					Boreho Project	ole No	BH8B02 PN194027	
lient w	ISP						Nationa Coordin	l Grid ates	355247.7 390792.8					Ground	Level	22.53 r	n OD
Sampling	g			Prope	rties		Strata	1								Scale	1:50
Depth		Sample Type	Depth Cased & (to Water)	Strength kPa	w %	SPT N	Descrip	tion							Depth	n Legen	d Level m OD
0.00- 0 0.25	.50	B ES					Grass clay	over 1 with o	TOPSOIL: ccasional	Soft d rootl	ark bro	own sli	ghtly s	andy	G.1	L.	22.
0.50- 1 0.50	.20	B ES							slightly to subrou					el is	0.!	0 <u>0</u>	22.0
1.00		- ES					sands	tone, r	nudstone	and co	al frag	gments.			Į.	· · · · · · · · · · · · · · · · · · ·	
1.20- 1	.65	UT37	(DRY)		18										E E	·····	
1.70 1.80		- - - D													ŧ		
2.00- 2 2.00- 2		_ в	1.70 (DRY)			S12									F_ F	· · · · · · · ·	
		- - - -													t F		
2.80 3.00- 3	8.45	D UT100	3.00 (DRY)	298	12										Ē		
3.50		D													Ę	····	
3.80 4.00- 4		D					Below	4.00m	, stiff.						È.		
4.00- 4	1.45	- - -	3.00 (DRY)			S19											
4.80		- - - - D													Ę	· · ·	
5.00- 5	5.45	_UT63	4.00 (DRY)	80	13										F F		
5.50		D													Ē	· · · · · · · · · · · · · · · · · · ·	
6.00		- D					Below	6.00m	, sandy.						Į.		
6.50- 6 6.50- 6		В	6.00			S44									Ę		
0.30- 0			(DRY)			511									Ē	· · · · · · · · · · · · · · · · · · ·	
		-			0 F										Ę		
7.50		D			9.5				eak reddi ecovered					ained	7.0	50	14.
8.00- 8	8.19	- 	7.50 (DRY)			S50/58									- 8.:	19	14.
		- - -							En	d of B	orehol	9			Ì.		
		- - -													Ē.		
		-													F		
															Ē		
Boring						Progre	ess				Grour	ndwate	er		-		
	Hole Dia	-	Technique	Э	Crew	Depth of Hole		Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed		narks on undwater
		Inspect Cable F			SL/JL SL/JL	G.L. 8.19	7.50	DRY	23/09/19 23/09/19							None encoun	tered.
Remarks		Inspect	ion pit	hand o	excavat	ed to	1.20m d	epth an	nd no ser er glass	vices	were fo	ound.				ogged by	MM
mbols and	are	ES samp Backfil Chisell	l detai	ls from	n base	of hol	e: bent	mı ambe onite s	er glass seal up t	jars. o 0.50	m, ari:	sings u	ıp to gr	cound 1	-	gure	1 of 1 18/12/2019
companyin																eelee	<u></u>

Project omega development gi

Engineer wsp

Borehole Project No BH8B03

Client was						National Grid	355137.7 E				Project		. 10 m	
Client wsp Sampling			Prope	ties		Coordinates Strata	390701.5 N				Ground	Level 23	Scale 1	OD :50
Depth	Sample Type	Depth Cased & (to Water)	Strength		SPT N (FI)	Description						Depth	Legend	Level m OD
0.00- 0.40 0.25 0.40- 0.70	- B ES - B					sandy clay w MADE GROUND:	TOPSOIL: Very a with some root Brown slight	lets. Ly grave	elly sl	ightly	silty	G.L.		23.12
0.50 0.70- 1.20	- ES B						ium sand. Grave ium of sandstor					0.70		22.42
1.00 1.20- 1.65 1.20- 1.65	B	(1.10)			S9		sandy slightly to rounded find he.							
1.80 2.00 2.00- 2.45 2.50	 ES UT45 	1.50 (DRY)	123	14		Below 2.00m,	, slightly sand	ly.						
2.80 3.00- 3.45 3.00- 3.45	- - - - - - - - - - - - - - - - - - -	3.00 (DRY)			s23	Below 3.00m,	, stiff.							
3.80	- - - - -													777777777
4.00- 4.45	_UT66 - - - - D	4.00 (DRY)	211	13										
4.50	-											t t	0.0.0	
4.80 5.00- 5.45 5.00- 5.45	- D - B -	4.70 (DRY)			S17	Below 5.00m, Below 5.60m,								
6.00	- - - - - - -													
6.50- 6.95	 	6.00 (DRY)		9.4										
7.00	ם <u>-</u>													
7.50	_ D -											+ - -		
8.00- 8.45 8.00- 8.19	<u>в</u>	7.50 (DRY)			s50/68		eak to weak rea ned SANDSTONE.	ddish b	rown me	dium to		8.00		15.12
Core Run/Depth (Core Dia/Time)		TCR/SCR / Type	Length Max/Min	RQD %	SPT (FI)	Continued by Ro General	otary techniques	Detail				4 4 4		
8.40- 9.40 9.00- 9.10 9.10- 9.23	8.00 (1.20) 9.00	33 0 D	-	0	(NI) C50/57							9.40		13.72
9.40-10.40 9.40- 9.59			-	0	C50/37	to coarse gr SANDSTONE wi	n brown medium rained ith may							- - - - - -
Boring	(ADDED)				Progre	ess		Grour	ndwate	er				<u> </u>
Depth Dia		Technique		Crew	Depth of Hole	Depth Depth to Cased Water	Date Lime	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Groun	rks on dwater
9.23 0.15	Inspect Cable F Rotary	Percussi Core	.on	SL/JL SL/JL JB/SW	G.L. 8.45 8.45 9.23 8.40 20.40	7.502.109.002.108.001.208.004.20	18/09/19 08:0 18/09/19 18:0 19/09/19 08:0 19/09/19 18:0 27/09/19 08:0 27/09/19 18:0	7.10 7.10	_	1.10 6.90	20 20		Slow inf Slow inf	
Remarks Symbols and abbreviations are explained on the	ES samp Water w A 50mm 9.00m t	ole = 1 vas adde gas mon co 19.00	x 60ml ed to as hitoring om with	glass ssist h pipe uprigh	vial, 2 poring 1 was in nt locks	2 x 258ml ambe between 8.70m stalled to 19. able protectiv	.00m with a geo ve cover. Back:	owrapped Eill def	d slott tails f	rom bas	e of h	om Figur	re	MM 1 of 3 18/12/2019
explained on the accompanying key sheet. All dimensions are in metres.	up to g Chisell	round 1	evel. 10-6.30)m for		-	-9.10m for 60 1		-	to 0.20	m, con		jeelj	

		DEVELO					Netless I O I I						Project	NO P	N194027	
	WSP						National Grid Coordinates	355137.7 390701.5	, E 5 N				Ground	Level 2		OD
Drilling				rties/Sa		9	Strata			T					Scale [~]	1:50
Core Run Core Dia		Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	SPT N (FI)	Description General			Descrip Detail	otion			Depth	Legend	Leve m OD
	,	-					clasts of o	quartz.						-		1
		-				+	Discontinu closely to	very clos						-		
10.40-1		- 8.00 (ADDED)	100 72	0.13 0.03	44		spaced sub subvertica	l planar s								
10.40-1 10.95-1		8.00 (ADDED)	a			C50/15	and clean.							F		
10.95-1	11.07		C			(11)								-		
11.40-1	12.40	- 8.00	57	0.17	36	(11)								+		
11.40-1	11.59	(ADDED)	36 C	0.03										F		
		-														
		-												Ę		
12.40-1 12.40-1		- 8.00 (ADDED)	79 64	0.23 0.04	47	(AZCL) C50/21								-		
12.40-1		8.00 (ADDED)				(2)								-		
		-				(NI)								-		
13.40-1	13.90	8.00	84	0.18	84	(6)								-		
		(ADDED) -	84	0.10										-		
13.90-1		_ 8.00 (ADDED)	96 89	0.25	54									-		
		-														
14.53-1	14.66	-	C			(13)								-		
		-												-		
		-								At 15 grey 1	.20m, y band -	ellow a recover	and red as	F		;
15.40-1	16.90	8.00	98	0.37	69					sand.						
		(ADDED)	77	0.02										-		
		_				(7)						, very places		-		
16.13-1	16.36	-	C							20 40	,	PIGCOD		-		
		-												F		
16.90-1	19 40	8.00	95	0.20	68	(NI) (0)								F		
10.90-1	10.40	(ADDED)	83	0.02	00	(0) (NI)										
		-												-		
		_														[
		-				(9)								E		
		-												-		
18.40-1		8.00 (ADDED)	83 77	0.22 0.10	64	(AZCL)				At 18 clay.	.50m, b	and of	red	Ę		
18.42-1 18.70-1			C C			(1)								Ę		[
						(NI)								E		ł
19.40-1	19.61	-	с			(7) (AZCL)								F		
10-1		-	~			(4)								F		
19.90-2	20.40	- 8.00	82	0.09	0	ļ								<u>+</u>		
Drilling		(ADDED)	82	0.06		Progre	ess			Grour	ndwate	r				
Depth	Hole Dia	-	Fechnique	е	Crew	Depth of Hole	Depth Depth t	O Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed		arks on ndwater
Domer	(0 F 7	Fluch	8.40-10).40m T	Vator	1009 ~	eturns; 10.4	0-20 40m	Water	30% ~~	aturr				ļ	
Remark		riusn:	0.40-10	,, N	acer,	100% r	ecurns; 10.4	5-20.40m,	mater,	50% f	scurfi.			-	ged by	MM
Symbols ar	ns are													Figu	ire	2 of 3 18/12/2019
explained o accompany accompany															<u>aola</u> e	പ്പും
Il dimensio	ons es.		aaardanaa	with BS59	30.2015									EL.	3-039	

Project OMEGA DEVELO	OPMENT GI			Engine	ər	WSP					Boreho Project	Ie BI No PN	H8 B0 3	
Client _{WSP}				Nationa Coordir	al Grid	355137.7 390701.5	E					Level 23		OD
Drilling	Properties	/Samplin	a	Strata		550701.5					Ciouna		Scale 1	
				Descrip	otion			Descrip	otion			Depth	Legend	
Core Run/Depth (Core Dia/Time)	TCR/SCR% Max	/Min %	(FI)	Genera	l			Detail				Depth	Legena	Level m OD
												20.40		2.72
					End of	Borehole	1					+ -		
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Drilling	ļ		Progr	éss				Grour	ndwate	er				
Dopth Hole	Technique	Crew	Depth	Depth	Depth to	Date	Time	Depth	Depth Cased	Rose to	in	Depth	Rema	rks on
Dia			of Hole	Cased	Water			Struck	Cased		Mins	Sealed	Groun	dwater
Damarka EP			1	ļ					ļ					
Remarks Res														MM
Symbols and abbreviations are												Figur	e	3 of 3 18/12/2019
explained on the accompanying													_	
key sheet.												PE	Dedi	Mies
All dimensions	accordance with F	395030-2015										_	7	

roject	OMEG	A DEVEL	OPMENT (ĴI			Engineer	WSP					Boreho Project		BH8C01	
lient	WSP						National Grid Coordinates	355028.3 390015.1					Ground	Level 1	L9.68 M	OD
Sampl	ing			Proper	rties		Strata								Scale 1	:50
Depth		Sample Type	Cased & (to Water)	Strength kPa	w %	SPT N	Description							Depth	Legend	Leve m OD
0.00-	0.30	- B ES					Grass over clay with m	TOPSOIL: any rootl	Soft d ets.	ark bro	own sli	ghtly s	andy	G.L.	•	19.
	1.20	- B - ES					Firm brown a CLAY. Grave medium of s	- mottled g l is suba	rey sl ngular	to sul	orounde			0.30		19.
1.00 1.20-	1.65	ES 	(DRY)				Below 1.40m	, reddish	brown	, sligł	ntly sa	undy.				Z Z ₩ • • •
1.70	2.45	- D - D - B			12									F F		· • • •
	· 2.45 · 2.45	- B - - - - -	1.70 (DRY)			S17										
2.80 3.00-	3.45	D UT100	1.70 (DRY)	32	17											16.
3.50		- - D -					Extremely w SANDSTONE.	eak reddi	sh bro	wn fine	e to co	arse gr	ained			10.
	4.45 4.20		4.00 (3.10)			S50/69										
	5.45 5.13	- - - D - B -	4.70 (3.30)			C50/62										
		- - - - -														
6.00 6.00-	6.09	D - - -	5.80 (3.90)			C50/43								6.45	5	13.
		- - - -						En	d of B	orehole	2			-		15.
		- - - -														
		- - - -												-		
		- - - -														
		- - - -												F 		
		-														
		- - 												<u>+</u>		
Boring	Hole	1		اا	<u>^</u>	Progre	Depth Depth to			Grour Depth	ndwate Depth	1	in	Depth	Rema	arks on
Depth	Dia	Inspec	Technique	:	Crew SL	of Hole G.L.	Cased Water	Date 23/10/19		Struck	Cased	Rose to	Mins	Sealed	Grour None	ndwater
6.45	0.15	Cable 1	Percussi	lon	SL	6.45	5.80 3.90	23/10/19	18:00						encounte	ered.
ymbols a bbreviatio xplained	and ons are on the	A 50mm 1.00m benton:	gas mor to 3.00n ite seal	nitoring α with ι L up to	g pipe µprigh	was in t locka	1.20m depth a between 3.50m stalled to 3. ble protectiv l filter up t	00m with e cover.	a geow Backfi	rapped 11 deta	slotte ails fr	om base	of ho	m le: ^{Fig}	ure	MM 1 of 1 18/12/2019
Symbols a abbreviatii explained accompan key sheet. All dimens are in met	and ons are on the nying sions	A 50mm 1.00m benton: up to g Chisel	gas mor to 3.00m	nitoring with u up to level. .50-6.00	g pipe uprigh 3.00m Om for	was in t locka , grave	stalled to 3. ble protective l filter up to	00m with e cover.	a geow Backfi	rapped 11 deta	slotte ails fr	om base	of ho	m le: ^{Fig} rete	ure	1 of 18/12/

roject	OMEGA	DEVELC	PMENT G	I			Enginee	er	WSP					Boreho Project	No Pi	H8C02	
lient	WSP		1	Dross	rtico		Nationa Coordin Strata	ates	355019.8 390366.0					Ground	Level 2	2.63 m (Scale 1:	
Sampli	ing	Sample	Depth Cased &	Prope Strength		SPT N											:50 Level
Depth		Type 	(to Water)	kPa	%		Descrip	tion							Depth	Legend	m OD 22.6
0.20- 0.25 0.50 0.60-		B ES ES B					sligh is su	tly gr bangul	TOPSOIL: avelly cl ar to sub mudstone	ay wit rounde	h many d fine	rootle to coa	ets. Gra arse of	andy vel	0.20		22.4
	1.20	F					sandy	clay.	: Firm ye Gravel i	s angu	lar to	rounde	d fine	to	Ļ		
1.00 1.20-	1.65	ES 	(DRY)				coars	e of s	andstone,	coal	and br	ıck tra	igments.				
1.70 1.80		- - D - D			14										Ę		
	2.45 2.45	В 	1.70 (DRY)			S21			ff reddis AY. Grave						2.20		20.4
2.80		- - - D							f sandsto						-	······································	
3.00-	3.45	_UT89 	3.00 (DRY)														
3.50		_ D -													-		
3.80 4.00- 4.00-	4.45 4.19	B	4.00 (DRY)			s50/96		4.00m	, very st	iff/ha	rd.						
4.80 5.00-	5.45	D 	4.70 (DRY)	348	10												
5.50		- - D -															
6.00		D															
6.50- 6.50-	6.95 6.95	- - B -	6.00 (DRY)			s31											- - -
7.50		- - - D			15												
8.00-	8.45	UT100	7.50 (DRY)														
8.50		D															-
9.00		- - - -															
9.50- 9.50-		- В	9.00 (DRY)			s50/48	Extre		eak reddi			e to co	arse gr	ained	9.70		12.
Boring		<u> </u>				Progre		TONE.	(Recovere	d as s		ndwate	r		Ē		
Depth	Hole Dia	-	Technique	Э	Crew	Depth of Hole	Depth	Depth to Water	Date	Time	Depth Struck	Depth	Rose to	in Mins	Depth Sealed	Remar Ground	
1.20 L1.45		Inspect Cable P			SL SL	G.L.	10.70		24/10/19 24/10/19					-		None encounte	
Remar	ks 🗖	Inspect	ion pit	hand e	excavat	ed to	1.20m d	epth a	nd no ser and 11.0	vices	were f	ound.			100	ged by 14	4M
ymbols a bbreviatio xplained	ind ons are on the	A 50mm 6.00m t	gas mon o 9.00m te seal	itoring with w up to	g pipe upright	was in : locka	stalled ble pro	to 9. tectiv	and 11.0 00m with e cover. o 6.00m,	a geow Backfi	rapped 11 det	slotte ails fr	om base	of ho	m le: ^{Figu}	re 1	1M L of 2 18/12/2019
ccompany ey sheet. Il dimens		Chisell	ing: 4.			65 min	utes an	d 10.7	0-11.20m	for 60	minut	es.			e	a jeejo	niæ

Cable Percussion BOREHOLE RECORD -Project OMEGA DEVELOPMENT GI Engineer Borehole BH8C02 WSP Project No PN194027 National Grid Coordinates 355019.8 390366.0 E N Client Ground Level 22.63 m OD WSP Sampling Properties Strata Scale 1:50 Depth Cased & (to Water) Level m OD Sample Strength W SPT N Depth Description Depth Legend % Туре kPa 10.50 D 11.00-11.45 11.00-11.11 E в 10.70 (9.30) C50/53 11.45 11.18 End of Borehole E Boring Progress Groundwater Depth of Hole Hole Dia Depth Cased Depth to Water Depth Depth Cased in Mins Depth Sealed Remarks on Groundwater Rose to Depth Technique Crew Date Time Struck Remarks Res Logged by ΜМ Figure Symbols and 2 of 2 abbreviations are 18/12/2019 explained on the accompanying geolechnics key sheet. All dimensions

are in metres. Logged in accordance with BS5930:2015

roject	OMEGA	A DEVELO	OPMENT (JI			Enginee	1	WSP					Boreho Project		H8C03	
lient Sampl	wsp ling			Proper	ties		National Coordin Strata	ates	354880.0 390164.5					Ground	Level 22	2.42 m Scale 1	OD 1:50
Depth		Sample Type	Depth Cased & (to Water)	Strength kPa	w %	SPT N	Descript	ion							Depth	Legend	Lev m OD
0.00-	- 0.40	- в					Crops	over 3	TOPSOIL:	Soft d	ark bro	own sli	ghtly s	andy	G.L.		22
0.25 0.50- 0.50	- 1.20	ES B ES					Firm D	browni: Grave	sh grey s el is sub andstone,	lightl angula	r to su	lbround	tly gra ed fine	velly to	0.40		22
1.00		- ES					00020	0 01 0		indug o	ono un				<u>+</u>	·····	
1.20-	- 1.65	UT39	(DRY)				Below	1.50m	, reddish	brown	•						
1.70		- - D - D			15										‡ F	0.0.0 	
2.00-	- 2.45 - 2.45		1.70			S11									-	· · · · · · ·	
			(DRY)												ŧ	· · · · · · · · · · · · · · · · · · ·	
2.80		- - - D													+		
	- 3.45	UT100	3.00 (DRY)	142	10										+ + +	• • • • • •	. .
3.50		- - D													E	0.0.0 0.0.0	ļ
3.80		- - - D													t T	0 0 0 0	ļ
4.00-	- 4.45 - 4.36	_ в	4.00			s50/									+ 	· · · · · · · ·	Ŀ
		Ę	(DRY)			206									Į.	·····	
		Ē													F F	······································	
	- 5.45 - 5.10	В	4.70			C50/47			eak reddi ith some					ained	4.80		17
5.00-	- 5.10		(3.80)			0.20747			d quartz.		nueu r.	LILE CIA	SCS OI		Ē		
															L L		
6.00		- D													+ -		
		Ę													t F		
6.50-	- 6.59	F	6.50 (3.80)			C50/42									F F		
		Ē													6.95		15
									En	d of B	orehole	9			+		
															+		
		Ę													t F		
		-													- -		
		Ē													F		
		E													E		
		-													 _		
		E E													+		
		-													t F		
		<u> </u>													_		
oring Depth	Hole Dia		Techniqu	e	Crew	Depth of Hole	Depth I	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed		arkson ndwate
1.20			tion Pit Percuss:		SL SL	G.L. 6.95 6.95	5.80 5.80	3.80	22/10/19 22/10/19 23/10/19	18:00 08:00		Caseu		WIIIIS	Sealed	None encount	
						0.00			23/10/19								
Remai	rks 🗛	Inspect Water w	was adde	t hand e ed to as	sist	boring	1.20m d between	epth an 4.80m	nd no ser and 6.50 00m with	vices m.	were fo	slotta	d genti	on from	 n	ed by	MM
mbols breviati	and ions are		to 4.001	n with u	prigh	t locka	ble pro	tective	e cover.	Backfi	ll deta	ails fr	om base	of ho	le: ^{Figu}	е	1 of 18/12/20

All dimensions are in metres. Logged in accordance with BS5930:2015

Project	OMEGA	A DEVELO	OPMENT O	ĴI			Engine	ər	WSP					Borehc Project	NO B	H8D01 N194027	
							Nationa	al Grid	355377.2	Е							
Client	WSP			Drana	rtion		Coordir	nates	389875.2	Ñ				Ground	Level 2	0.00 m	
Sampl	ling	Sample	Depth Cased &	Prope Strength		1	Strata									Scale 1	ì
Depth		Туре	Cased & (to Water)		%		Descrip	tion							Depth	Legend	Level m OD
		-							TOPSOIL:		lark br	own sli	ghtly s	andy	G.L.		20.00
		-							any rootl						0.30		19.70
		-					grave	elly cla	: Firm gr ay. Grav	el is	angula	r to su	brounde		-		*
		E					mudst	one.	rse of sa			tstone	and		0.80		19.20
		-					At 0.	80m, po	ossible l]	+		
									En	d of B	orehol	e			Ē		
		-													-		
		Ē													Ē		
		-													 -		
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Boring	·	+	<u>+</u>			Progre		Derth	1	1		ndwate	r	i	Dert		
Depth	Hole Dia		Technique	e	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed		rks on dwater
0.80	0.50	Inspect	ion Pit	:	SL/Jl	G.L. 0.80			30/10/19 30/10/19							None encounte	red.
									20,10,13	_0.00							
Rema	rks 📕	Borehol	le BH8D0 dle of)1 was the ind	termina	ated at	a dept	h of 0	.80m on e ed 1m eas	ncount	ering	a possi	ble lan	d drai	n in Log	ged by 1	MM
Symbols	and	Backfil	ll detai	lls from	n base	of hol	e: aris	ings up	o to grou	nd lev	rel.	-			Figu		1 of 1
abbreviati explained	l on the																8/12/2019
accompar key sheet															ල		र्णादन
All dimen	sions	Logged in	accordance	with BS50	30.2015										<u>ک</u>	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	

Cable Percussion BOREHOLE RECORD -

Project OMEGA DEVELOPMENT GI

Engineer WSP Borehole Project No

BH8D01A PN194027

Sampli	wsp ing			Prope	rties		Coordinates Strata	389875.2							Scale	1:50
Depth		Sample Type	Depth Cased & (to Water)	Strength kPa	w %	SPT N	Description							Depth	Legend	
0.25	0.30	- B - ES - B	(10 Water)		//		Grass over slightly gr is angular sandstone,	avelly cl to subang	lay with Jular fi	h some ine to	rootle coarse	ts. Gra of		G.L. 6.1. 6.30 6.50		
0.50		- ES - ES					MADE GROUND slightly gr to subround	: Firm gr avelly sa ed fine t	reyish l andy cla to coard	brown m ay. Gra se of s	ottled vel is andsto	grey subang	ular			
1.20-	1.65	UT47	(DRY)				Firm reddis CLAY. Grav coarse of s	h brown s el is sub	lightly	y sandy r to su	slight	tly gra				
	2.45 2.45	- D - D - B -	1.70 (DRY)			s21	Below 2.20m	, stiff.								
2.80 3.00-	3.45	- D 	3.00 (DRY)	118	11										· · · · · · · · · · · · · · · · · · ·	
3.50 3.80		- D 													▼	
4.00-	4.45 4.45	В	4.00 (DRY)			S21										
4.80							Below 4.70m	, very st	iff.							
5.00-	5.45	_UT100	4.70 (DRY)	115	10											
5.50		_ D												F F	· · · · · ·	
6.00		D 														
	6.95 6.95	B 	6.00 (DRY)			S38									$\nabla_{\underline{\circ},\underline{\circ},\underline{\circ},\underline{\circ},\underline{\circ},\underline{\circ},\underline{\circ},\underline{\circ}$	
7.50		- - - - - D			8.4											
	8.45	- - - в	F 50			GE0 (48	Between 8.0	0-8.20m,	band o:	f cobbl	es.					
8.00-	8.09	- - - -	7.50 (DRY)			C50/47	Extremely w SANDSTONE w fine clasts	ith occas	ional :	subroun	ded to	rounde	d	8.20	<u>•• </u>	
9.00		- - -					slightly gr									
	9.95 9.64	- - - - - -	9.00 (8.10)			C50/67										
Boring						Progre					dwatei	r		Γ		
epth	Hole Dia		Techniqu		Crew	Depth of Hole	Depth Depth to Cased Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Grou	arks on ndwater
1.20 1.45		Inspect Cable P			SL/JL SL/JL	G.L. 2.00 2.00 11.45	1.70 DRY	29/10/19 29/10/19 30/10/19 30/10/19	18:00 08:00	3.50 6.70	3.00 6.00	3.30	20		Slow in No rise	
Remar	ks 🔛	Inspect	ion pit	hand e	excavat	ted to	L.20m depth a 2 x 258ml amb	nd no ser	vices	were fo	und.			Load	jed by	MM
ymbols a obreviatio oplained ccompan	and ons are on the	Water w A 50mm 1.00m t bentoni	vas adde gas mor o 6.00n te sea]	ed to as nitoring n with u up to	ssist 1 g pipe upright 6.00m	ooring 1 was in: t lockal , grave	petween 8.40m stalled to 6. ple protectiv filter up t	and 11.0 00m with e cover. o 1.00m,	00m. a geow Backfi benton:	rapped 11 deta ite sea	slotted ils fro	om base o 0.20m	of ho	m Figu le:	re	1 of 2 18/12/20
y sheet.		up to g	round]	evel.			ites and 8.00							6	പ്പപ്പ	പ്പെട

oject _{OMEGZ}	A DEVELO	PMENT C	JI			Engine	ər	WSP					Borehc Project	No -	H8D01/	4
iont						Nationa Coordir	al Grid	355377. 389875.	2 E			I	ruject	NU P	N194027	
^{ient} wsթ ampling			Proper	rtips		Coordir Strata		389875.	2 N						Scale 1	.50
-	Sample	Depth Cased &			SPT N									Darth		.50
epth	Туре	Depth Cased & (to Water)	Strength kPa	%	0.111	Descrip	otion							Depth	Legend	
	-													F		
0.50	- - D													Ę		
	-													Ę		
1.00-11.12	-	10.50 (8.90)			C50/57									È.		
	-													<u>_</u>		
	-							E	nd of B	orehol	e			_ 11.45		
	-													<u>-</u>		
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oring	ļ	ļ	·		Progre						ndwate			L		<u> </u>
epth Hole Dia		Techniqu	e	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed		arks on ndwate
emarks 🚜	minutes													Loc	ged by	MM
nbols and	I													Figu		MM 2 of
reviations are														J-	_	18/12/2
ained on the ompanying															e de la compact	

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Project	OMEGA	A DEVELO	OPMENT G	ĴI			Engineer		WSP					Boreho Project	No I	BH8D02 N194027	
Client	WSP						National C Coordinat		355301.2 390395.6					Ground	Level 2	21.22 m	OD
Sampl	ing			Prope	rties		Strata									Scale	1:50
Depth		Sample Type	Depth Cased & (to Water)	Strength kPa	w %	SPT N	Descriptio	n							Depth	Legend	Lev m OD
0.25 0.50	0.60 1.20	B ES ES B					clay wi MADE GR gravell to coar	OUND: y cla	OPSOIL: ny rootl Firm gr y. Grave sandsto	ets. eyish l is s ne, mu	brown ubangu dstone	slightl lar to	y sandy rounded	7	G.L.	o	21. 21. 20.
1.00		- ES							brick a			. aliah	+]		/ <u>+</u>	······································	
1.20-	1.65	UT47	(DRY)	88	23		CLAY. G	ravel	is suba ndstone,	ngular	to ro	unded f	ine to	averry	Ę	······································	1
		-													Ē	· · · · · · · · · · · · · · · · · · ·	;
	2.45 2.45		1.70 (DRY)			S16											
2.80 3.00-	3.45	- - D - UT77 -	3.00 (DRY)														
3.50		D													t t	· · · · · · · · · · · · · · · · · · ·	
	4.45 4.45	- D - B 	4.00 (DRY)			S26											
4.80 5.00-	5.45	D 	4.50 (DRY)														
5.50		D													-	······	
6.00		- - р -															
	6.95 6.95	- B 	6.00 (DRY)			S46											
7.50		- - D															
8.00-	8.45	_ 	7.50 (DRY)	260	12												
8.50		- - -															
9.00		- - D -													‡ ;	▼ 	
	9.95 9.90	- - B - -	9.00 (DRY)			\$50/ 247	Below 1	.0.00m	, low su	bround	ed cob	ble con	tent.			$\mathbf{\nabla} \stackrel{\circ}{\xrightarrow{\circ}} \stackrel{\circ}$	
Boring		ļ				Progr						ndwate	r			<u> </u>	
Depth	Hole Dia		Technique		Crew	Depth of Hole		Vater	Date	Time	Depth Struck	Depth Cased	Rose to	wins	Depth Sealed	Grou	arks on ndwater
1.20 L2.80	0.15		cion Pit Percussi		SL SL	G.L. 10.00 10.00 12.80	9.00	9.70 1.60	25/10/19 25/10/19 28/10/19 28/10/19	18:00 08:00		9.00	9.10	20		Slow in	flow.
xmbols a bbreviation xplained ccompanted by sheet.	and ons are on the nying	1.00m t bentoni up to g Chisel	to 6.00m ite seal ground l ling: 3.	n with L up to Level. .70-3.9	upright 6.00m 0m for	t locka , grave 50 min	1.20m dep stalled t ble prote l filter utes and inutes.	up to	cover. 1.00m,	Backfi benton	ll det ite se	ails fr al up t	om base o 0.20r	e of ho n, conc	ole: Fig rete Fig		мм 1 оf 2 18/12/201

All dimensions are in metres. Logged in accordance with BS5930:2015

BOREHOLE RECORD - Cable Percussion Project OMEGA DEVELOPMENT GI Engineer Borehole BH8D02 WSP Project No PN194027 National Grid Coordinates 355301.2 390395.6 E N Client Ground Level 21.22 WSP m OD Sampling Properties Strata Scale 1:50 Depth Cased & (to Water) Level m OD Sample Strength W SPT N Description Depth Legend Depth % Туре kPa 10.50 D L 11.00-11.45 11.00-11.21 в 10.50 s50/ (6.20) 105 -12.00 D 12.50-12.95 F в 10.50 (DRY) 12.50-12.58 C50/38 At 12.80m, possible sandstone. : . 12.80 8.42 End of Borehole --Boring Progress Groundwater Depth to Hole Dia Depth of Hole Depth Cased Depth Depth Cased in Mins Depth Sealed Remarks on Groundwater Technique Rose to Depth Crew Date Time Water Struck Remarks Remarks Logged by MM Figure Symbols and 2 of 2 abbreviations are 18/12/2019 explained on the accompanying geolechnics key sheet. All dimensions

are in metres. Logged in accordance with BS5930:2015

Ject	OMEGA	A DEVELO	OPMENT (Ĵ			Engineer	WSP					Boreho Project		H8D03	
lient Sampl	wsp ina			Prope	rties		National Grid Coordinates Strata						Ground	Level 21	1.41 m Scale 1	
Depth	ing	Sample	Depth Cased &	Strength	w	SPT N	Description							Depth	Legend	Leve
Deptii		Туре	(to Water)	kPa	%		Description							G.L.	Legenu	m OD
0.00- 0.25	0.50	B ES						r TOPSOIL: some root		ark bro	own sli	ightly s	andy	-		
0.50-	1.20	- B - ES						ND: Firm b						0.50		20.
0.50		- 60					clay. Gr	avel is and sandstone	gular t	o suba	ngular	fine to)	F		
1.00		- ES						ceramics.			-			F		
1.20-	1.65	UT42	(DRY)											Ę		•
1.70		- - - D												Ē		*
	2.45	D B						tiff reddi:						1.80	· · · · · ·	19.
2.00-	2.45	-	1.70 (DRY)			S21		CLAY. Grave coarse of sa						-	· · · · · · · · · · · · · · · · · · ·	
		-												-	· · · · · ·	•
2.80		- 												Ę	· · · · · · · ·	
3.00-	3.45	_UT100	3.00 (0.60)	10	14									-	· · · · ·	:] :]
3.50		- - D												-	00000000000000000000000000000000000000	
		-												E	· · · · · · ·	+ -
	4.45	D	4.00			s50/								-	0 0 0 0 0 0	
4.00-		F	(DRY)			102								F	······································	• •
		-												Ę	0 0 0 0 0 0	
4.80	5.45	- - D - в					Polow E 0	0		th a 1.	ow cob		ont	-	· · · · · · · ·	•
	5.45	В	4.70 (DRY)			C50/95		0m, very st ional pocke						F	0.0.0	
		-	()											-	· · · · · · · ·	• •
		-												Ę	0 0 0	
6.00		_ D												-	0.0	
		-												-	····	
6.50-	6.95	_UT100	6.00 (DRY)		6.7									- -	······	
7.00		- D												-	· · · · · · · · · · · · · · · · · · ·	
		-													0.0.0	
7.50		D						weak redd: with occas						7.30		14.
		Ē						ts of muds						-		
	8.45 8.17	_ В	7.70			C50/68								-		
		F	(6.80)											F		
8.70		- D												F		
8.70-	8.81	<u> </u>	7.70 (7.10)			C50/53								9.15		12.
		Ē						Eı	nd of B	orehol	e			- <u>,,</u> ,,		_
		F												F		
		-												Ę		
Boring		—				Progre	ess			Grou	ndwate	er		Γ		
Depth	Hole Dia		Techniqu	е	Crew	Depth of Hole	Depth Depth		Time	Depth Struck	Depth	Poso to	in Mins	Depth Sealed		rks on dwater
1.20 9.15	0.50	Inspect Cable H			SL/JL SL/JL	G.L. 3.00	0.00 D	RY 28/10/19 RY 28/10/19	9 08:00 9 18:00						None	
		Sante I	51 64883			3.00 9.15	3.00 0.	60 29/10/19 0RY 29/10/19	9 08:00						Sincounce	u.
		T		. k -												
		Inspect Water w A 50mm	as adde as mor	d to as	excavat ssist h a pipe	oring was in	1.20m depth between 7.3 stalled to	and no set 0m and 8.70 6.00m with	Dura deom	were for	slotte	ed secti	on fro	 m	, <u>,</u>	MM
ymbols a obreviati oplained	ons are	1.00m t bentoni	te seal	n with ι L up to	ıpright	: locka	ble protect l filter up	ive cover.	Backfi	11 deta	ails fi	com base	e of ho	le: ^{rigu}		1 of 1 18/12/2019
compar compar ey sheet	nying		ing: 3.	level. 50-4.20	Om for	80 min	utes and 5.	00-5.30m fo	or 45 m	inutes	and 8	.40-8.70	m for	°° ₪	क्वीव्यक	mie
, I dimens		minutes		with BS59										ترع	لتتنب	v u z

Project OMEGA DEVELOPMENT GI

Project No PN194027

Client WSP

Hole	Depth	Level	Туре	SWP	Seating	g Drive		Test	Drive		SPT 'N'		Uncor		d SPT	Г
noie	m bgl	m OD	Type	(mm)	0-75 (mm)	75-150 (mm)	0-75 (mm)	75-150 (mm)	150-225 (mm)	225-300 (mm)	Value	10	20	'N' 30	40	50
3H8A01	2.00	21.89	s	-	2	3	4	5	7	8	24		*		- - - -	
H8A01	4.00	19.89	s	-	25/56		50/63				50/63			1	1	>
3H8A01	6.50	17.39	s	-	7	9	10	10	9	12	41	1		1	*	
3H8A01	9.50	14.39	s	-	8	9	11	13	14	12/67	50/292		 			
H8A01	11.00	12.89	s	-	14	11/58	27	23/55			50/130					- A-
3H8A01	12.50	11.39	С	-	25		50/68				50/68					- >_
3H8A01	13.70	10.19	С	-	25/56		50/52				50/52					>
Driller				Lowery				ent checl	ked and c	alibration	carried out ir	n accord	dance	with E	S EN	ISO
Hammer No.			AR26				22476-3	3: 2005								
Energy Ratio			71.00													
Calibration I	Jate		15/02	/2019												

SWP Penetration under own weight (mm)

Printed: 22/11/2019 Page 1 AGS

Project OMEGA DEVELOPMENT GI

Project No PN194027

Client WSP

Hole	Depth	Level	Туре	SWP	Seating	g Drive		Test	Drive		SPT 'N'		Unco	rrecte	d SP1	Г
noie	m bgl	m OD	Type	(mm)	0-75 (mm)	75-150 (mm)	0-75 (mm)	75-150 (mm)	150-225 (mm)	225-300 (mm)	Value	10	20	'N' 30	40	50
8H8A02	2.00	24.00	s	-	1	2	3	4	5	5	17		*		1	
H8A02	4.00	22.00	s	-	1	2	3	5	5	6	19	1	*	1		
3H8A02	6.50	19.50	s	-	2	3	5	5	7	9	26			*		
3H8A02	9.50	16.50	s	-	5	7	9	11	16	14/57	50/282					- >
Driller				Lowery			Remar l Equipm		ked and c	alibration	carried out i	n accord	dance	e with E	3S EN	ISC
Hammer No.			AR26				22476-3									
Energy Ratio			71.00	/2019												
	enetratio	n (mm) a	ļ				tandard F	Penetratic	n Test (S	PT)	G					

SWP Penetration under own weight (mm)

L - Split Spoon with liner used

Project OMEGA DEVELOPMENT GI

Project No PN194027

Client WSP

Hole	Depth	Level	Type	SWP	Seating	g Drive		Test	Drive		SPT 'N'		Unco		d SP1	Г
noie	m bgl	m OD	Type	(mm)	0-75 (mm)	75-150 (mm)	0-75 (mm)	75-150 (mm)	150-225 (mm)	225-300 (mm)	Value	10	20	'N' 30	40	50
H8A02A	2.00	23.95	s	-	2	3	4	5	5	6	20		- * -			1
H8A02A	4.00	21.95	s	-	2	3	3	4	5	6	18		*	1	1	
H8A02A	6.50	19.45	s	-	1	2	3	5	6	7	21	1	*	 	1	
							5	5								
Driller			Steve	Lowery			Remar	(5					1	1	1	
Hammer No.			AR26	-				ent check	ked and c	alibration	carried out i	n accor	dance	with E	BS EN	ISC
							22410-	5. 2000								
	y Ratio, Er (%) 71.00 ration Date 15/02/2019															

SWP Penetration under own weight (mm)

Project OMEGA DEVELOPMENT GI

Project No PN194027

Client WSP

Hole	Depth	Level	Туре	SWP	Seating	g Drive		Test	Drive		SPT 'N'		Unco	rrecte	d SP1	Г
	m bgl	m OD	iype	(mm)	0-75 (mm)	75-150 (mm)	0-75 (mm)	75-150 (mm)	150-225 (mm)	225-300 (mm)	Value	10	20	'N' 30	40	50
3H8A03	2.00	24.10	s	-	2	3	4	5	5	7	21		*	1	1	1
3H8A03	4.00	22.10	s	-	2	2	3	4	5	6	18		*		1	
3H8A03	6.50	19.60	s	-	2	2	3	5	7	8	23	 		۱ ۲	 	
3H8A03	8.00	18.10	s	-	5	7	9	13	17	11/42	50/267	 	<u> </u>			-
3H8A03	9.50	16.60	s	-	5	8	11	14	19	6/18	50/243	 		1	1	
3H8A03	11.00	15.10	s	-	25/72		50/63				50/63					>
3H8A03	12.10	14.00	s	-	25/61		50/56				50/56		1		1	>
Driller			Stars	Lowery			Remar									
Hammer No.			AR26				Equipm	ent check	ked and c	alibration	carried out ir	n accor	dance	with E	BS EN	ISC
Energy Ratio			71.00				22476-3	3. 2005								
	Date			/2019												

SWP Penetration under own weight (mm)

Project OMEGA DEVELOPMENT GI

Project No PN194027

Client WSP

Hole	Depth	Level	Туре	SWP	Seating	g Drive		Test	Drive		SPT 'N'		Unco		d SPT	Г
900	m bgl	m OD	iype	(mm)	0-75 (mm)	75-150 (mm)	0-75 (mm)	75-150 (mm)	150-225 (mm)	225-300 (mm)	Value	10) 20	'N' 30	40	50
3H8A04	2.00	23.35	s	-	1	2	3	4	4	5	16		*	i i		1
3H8A04	4.00	21.35	s	-	1	2	3	3	4	5	15	1	*	1	 	
3H8A04	6.50	18.85	s	-	2	3	5	15	30/58		50/208			 		-
3H8A04	8.00	17.35	s	-	11	14/63	32	18/33			50/108					- A
3H8A04	9.50	15.85	s	-	12	13/56	50/70				50/70		 			-
3H8A04	10.80	14.55	С	-	25/55		50/53				50/53		 			>
Driller			Steve	Lowery			Remar Equipm		ked and c	alibration	carried out ir	n acco	rdance	with E	S EN	ISC
Hammer No.			AR26				22476-3									
Energy Ratio			71.00													
Calibration E	Date		15/02	/2019												

SWP Penetration under own weight (mm)

Project OMEGA DEVELOPMENT GI

Project No PN194027

Client WSP

Hole	Depth	Level	Туре	SWP	Seating	g Drive		Test	Drive		SPT 'N'		Unco	rrecte	d SP1	Г
noie	m bgl	m OD	Туре	(mm)	0-75 (mm)	75-150 (mm)	0-75 (mm)	75-150 (mm)	150-225 (mm)	225-300 (mm)	Value	10	20	'N' 30	40	50
BH8A05	2.00	21.86	s	-	1	1	2	3	3	4	12	+ +				
H8A05	4.00	19.86	s	-	1	2	3	3	5	6	17		*	1		1
3H8A05	6.50	17.36	s	-	4	5	7	7	9	12	35		1		*	
3H8A05	8.00	15.86	С	-	25		50/63				50/63					-
3H8A05	9.50	14.36	С	-	25/66		50/52				50/52				 	- A
Driller	1		Steve	Lowery	I	•	Remar			- 111						
Hammer No.			AR26	36			Equipm 22476-3		ked and c	alibration	carried out i	n accord	ance	with E	5 EN	150
Energy Ratio), Er (%)		71.00													
	gy Ratio, Er (%) 71.00 ration Date 15/02/2019															

SWP Penetration under own weight (mm)

Project OMEGA DEVELOPMENT GI

Project No PN194027

Client WSP

Hole	Depth	Level	Туре	SWP	Seating	g Drive		Test	Drive		SPT 'N'		Uncoi		d SPT	•
	m bgl	m OD	Type	(mm)	0-75 (mm)	75-150 (mm)	0-75 (mm)	75-150 (mm)	150-225 (mm)	225-300 (mm)	Value	10	20	'N' 30	40	50
H8A06	2.00	22.90	s	-	2	2	3	4	4	5	16		*		 	
H8A06	4.00	20.90	s	-	2	3	4	4	5	6	19	1	*	1	1	1
H8A06	6.50	18.40	s	-	3	5	8	10	13	14	45	1	 		*	
3H8A06	9.00	15.90	s	-	9	16	22	28/68			50/143	1	 	1	1	
3H8A06	11.00	13.90	s	-	25/72		50/68				50/68	1				- - A
3H8A06	12.20	12.70	s	-	25/62		50/55				50/55					>
Driller				Lowery			Remarl Equipm		ked and c	alibration	carried out in	n accore	dance	with E	S EN	ISC
Hammer No.			AR26				22476-3							_	-	
Energy Ratio			71.00													
Calibration D	ate		15/02	/2019												

SWP Penetration under own weight (mm)

Project OMEGA DEVELOPMENT GI

Project No PN194027

Client WSP

Hole	Depth	Level	Type	SWP	Seatin	g Drive		Test	Drive		SPT 'N'		Uno	correcte	ed SP1	г
поје	m bgl	m OD	Type	(mm)	0-75 (mm)	75-150 (mm)	0-75 (mm)	75-150 (mm)	150-225 (mm)	225-300 (mm)	Value	10) 2	'N' 0 30	40	50
H8A07	2.00	22.91	S	-	2	3	3	3	4	4	14		*		- - - -	
H8A07	4.00	20.91	s	-	2	3	3	4	4	6	17	1	*		 	
3H8A07	6.50	18.41	s	-	2	4	4	5	6	7	22			*	 	
3H8A07	9.50	15.41	s	-	3	5	7	9	10	12	38				*	1
3H8A07	12.50	12.41	s	-	11	14/67	26	24/63			50/138	1				- >
3H8A07	14.00	10.91	s	-	3	5	9	6	7	8	30			· · ·		
BH8A07	16.50	8.41	S	-	25/67		50/60				50/60					>
Driller			Steve	Lowery			Remar									
Hammer No.			AR26	36			Equipm 22476-:		ked and c	alibration	carried out i	n acco	rdan	ce with	BS EN	ISC
Energy Ratio	o, Er (%)		71.00)												
	Date		15/02	/2019												

SWP Penetration under own weight (mm)

L - Split Spoon with liner used

Project OMEGA DEVELOPMENT GI

Project No PN194027

Client WSP

Level Typ ngl m OD 22.01 S 20 20.01 S 30 17.51 S 50 14.51 S 50 11.51 C	(mm) S - S - S - S - S - S -	0-75 (mm) 1 2 3 25/63	75-150 (mm) 2 3 6	0-75 (mm) 3 3 4 8 50/59	75-150 (mm) 3 4 5 12	150-225 (mm) 4 4 7 14	225-300 (mm) 4 5 8 16	Value 14 16 24 50 50/59		200 * * 	'N' 30 	40	50
00 20.01 S 50 17.51 S 50 14.51 S	S - S - S -	1 2 3	2 3	3 4 8	4 5	4 7	5 8	16 24 50		*	*	1	
50 17.51 S 50 14.51 S	S - S -	2 3	3	4 8	5	7	8	24 50		<u> </u>	* 	1	- - - - *
50 14.51 S	S -	3		8				50			* 		- + -
			6		12	14	16		 				1
50 11.51 C	C -	25/63		50/59				50/59	1				i
											 	 	1
Ste				Bemari	(6								
				Equipm	ent check	ed and c	alibration	carried out ir	n accor	danc	e with	BS EN	ISC
				22410-0	o. ∠000								
,													
%)	Al 71	Steve Lowery AR2636 71.00 15/02/2019	AR2636 71.00	AR2636 71.00	AR2636 Equipm 71.00 22476-3	AR2636 Equipment check 71.00 22476-3: 2005	AR2636 Equipment checked and c 71.00 22476-3: 2005	AR2636 Equipment checked and calibration of 22476-3: 2005 71.00 71.00	AR2636 Equipment checked and calibration carried out in 22476-3: 2005 71.00 71.00	AR2636 Equipment checked and calibration carried out in accord 71.00 71.00	AR2636 Equipment checked and calibration carried out in accordance 71.00 71.00	AR2636 Equipment checked and calibration carried out in accordance with 22476-3: 2005 71.00 Fill the second se	AR2636 Equipment checked and calibration carried out in accordance with BS EN 22476-3: 2005 71.00 Figure 1000

SWP Penetration under own weight (mm)

L - Split Spoon with liner used

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Project OMEGA DEVELOPMENT GI

Project No PN194027

Client WSP

Hole	Depth	Level	Туре	SWP	Seating	g Drive		Test	Drive		SPT 'N'		Uncor		d SPT	-
noie	m bgl	m OD	Туре	(mm)	0-75 (mm)	75-150 (mm)	0-75 (mm)	75-150 (mm)	150-225 (mm)	225-300 (mm)	Value	10	20	'N' 30	40	50
H8B01	2.00	20.16	s	-	2	3	4	5	6	8	23		*	1	L L L	
H8B01	4.00	18.16	s	-	2	3	4	4	5	6	19	1	*		1	1
3H8B01	6.50	15.66	s	-	2	3	5	6	6	14	31			*	1	1
3H8B01	8.00	14.16	s	-	25/59		50/55				50/55	1	 		 	- > -
Driller			Steve	Lowery			Remarl Equipm		ked and c	alibration	carried out in		dance	with F	S FN	ISO
Hammer No.			AR26				22476-3			anoration						.00
Energy Ratio), Er (%)		71.00													
Calibration E	Date		15/02	/2019												

SWP Penetration under own weight (mm)

- L Split Spoon with liner used

Project OMEGA DEVELOPMENT GI

Project No PN194027

Client WSP

Hole	Depth	Level	Туре	SWP	Seating	g Drive		Test	Drive		SPT 'N'		Uncoi		d SPT	
Tiole	m bgl	m OD	туре	(mm)	0-75 (mm)	75-150 (mm)	0-75 (mm)	75-150 (mm)	150-225 (mm)	225-300 (mm)	Value	10	20	'N' 30	40	50
H8B02	2.00	20.53	S	-	1	2	2	3	3	4	12	- *-			 	
H8B02	4.00	18.53	S	-	2	3	4	5	5	5	19		*	1	 	1
H8B02	6.50	16.03	S	-	6	7	8	9	10	17	44		1	1	*	
3H8B02	8.00	14.53	S	-	9	16/54	50/58				50/58		 		 	
Driller				Lowery			Remar l Equipm		ked and c	alibration	carried out i	n accord	lance	with E	BS EN	ISC
Hammer No.			AR26				22476-									
Energy Ratio			71.00													
Calibration E	enetratio	n (mm) a	15/02			S - S	tandard F	Penetratio	n Tost /S	PT)						

SWP Penetration under own weight (mm)

L - Split Spoon with liner used

Spoon with inter used

Project OMEGA DEVELOPMENT GI

Project No PN194027

Client WSP

Hole	Depth	Level	Туре	SWP	Seating	g Drive		Test	Drive		SPT 'N'		Unco	rrecte	d SPT	Г
noie	m bgl	m OD	Type	(mm)	0-75 (mm)	75-150 (mm)	0-75 (mm)	75-150 (mm)	150-225 (mm)	225-300 (mm)	Value	10	20	'N' 30	40	50
8H8B03	1.20	21.92	s	-	1	2	2	2	2	3	9	*	1			
H8B03	3.00	20.12	S	-	2	3	5	5	6	7	23		4	r ¦	 	1
H8B03	5.00	18.12	S	-	1	2	3	4	5	5	17		*		 	
3H8B03	8.00	15.12	S	-	8	17/48	50/68				50/68				 	- ×
3H8B03	9.10	14.02	С	-	25/70		50/57				50/57			 		- -
Driller			Steve	Lowery			Remar Equipm		ked and c	alibration	carried out i	n accor	dance	with E	3S EN	I ISC
Hammer No.			AR26				22476-3									
Energy Ratio			71.00													
Calibration D	ate		15/02	/2019												

SWP Penetration under own weight (mm)

L - Split Spoon with liner used

Project OMEGA DEVELOPMENT GI

Project No PN194027

Client WSP

EvelTypeSWP (mm)ODC72C72C72C-		0-75 (mm) 7 50/37 5 50/15 5 50/21 1		0-225 225-300 mm) (mm)	Value 50/37 50/15 50/21		20	'N' 30	40	50
.72 C -	10 15 25	50/37 50/15			50/15					→ -> -
.72 C -	7 18	50/21			50/21					- A
		Demod								
6457		Equipmer	ent checked	and calibration	carried out in	accord	ance v	vith B	S EN	ISO
66.00			. 2000							
		-								
6457 66.0	,	0	Equipme 22476-3: 0	Equipment checked 22476-3: 2005	Equipment checked and calibration 22476-3: 2005	Equipment checked and calibration carried out in 22476-3: 2005	Equipment checked and calibration carried out in accorda 22476-3: 2005	Equipment checked and calibration carried out in accordance v 22476-3: 2005	Equipment checked and calibration carried out in accordance with B 22476-3: 2005	Equipment checked and calibration carried out in accordance with BS EN 22476-3: 2005

SWP Penetration under own weight (mm)

L - Split Spoon with liner used

Project OMEGA DEVELOPMENT GI

Project No PN194027

Client WSP

Hole	Depth	Level	Туре	SWP	Seating	g Drive		Test	Drive		SPT 'N'		Uncor		d SPT	Г
Tiole	m bgl	m OD	Type	(mm)	0-75 (mm)	75-150 (mm)	0-75 (mm)	75-150 (mm)	150-225 (mm)	225-300 (mm)	Value	10	20	'N' 30	40	50
H8C01	2.00	17.68	s	-	1	2	3	4	5	5	17		*			
H8C01	4.00	15.68	S	-	14	11/54	50/69				50/69	1		1		>
H8C01	5.00	14.68	С	-	25/66		50/62				50/62	1				->
3H8C01	6.00	13.68	С	-	25/47		50/43				50/43	1				- A
Driller				Lowery			Remarl Equipm		ked and c	alibration	carried out ir	n accord	dance	with E	S EN	ISC
Hammer No.			AR26				22476-									
Energy Ratio			71.00													
Calibration E		alibration Date 15/02/2019							on Test (S							

SWP Penetration under own weight (mm)

- L Split Spoon with liner used

Project OMEGA DEVELOPMENT GI

Project No PN194027

Client WSP

Hole	Depth	Level	Туре	SWP	Seating	g Drive		Test	Drive		SPT 'N'		Unco		d SP1	Г
noie	m bgl	m OD	Туре	(mm)	0-75 (mm)	75-150 (mm)	0-75 (mm)	75-150 (mm)	150-225 (mm)	225-300 (mm)	Value	10	20	'N' 30	40	50
H8C02	2.00	20.63	s	-	2	3	4	5	5	7	21		*			
3H8C02	4.00	18.63	s	-	19	6/14	37	13/21			50/96	1	1	1	1	>
3H8C02	6.50	16.13	s	-	3	5	7	7	8	9	31	1		*	 	
3H8C02	9.50	13.13	s	-	25/53		50/48				50/48					
3H8C02	11.00	11.63	С	-	25/58		50/53				50/53					-
Driller			Steve	e Lowery	1		Remar		kod opd o	alibration	corriad out in		danaa	with E		
Hammer No.			AR26	36			Equipm 22476-3		Neu and C	anoration	carried out i	n accoro	Jance	with E	DO EIN	150
Energy Ratio	, Er (%)		71.00)												
	ate		15/02	/2019												

SWP Penetration under own weight (mm)

- L Split Spoon with liner used

Project OMEGA DEVELOPMENT GI

Project No PN194027

Client WSP

Hole	Depth	Level	Туре	SWP	Seating	g Drive		Test	Drive		SPT 'N'		Uncor	recte	d SPT	Г
-	m bgl	m OD	Type	(mm)	0-75 (mm)	75-150 (mm)	0-75 (mm)	75-150 (mm)	150-225 (mm)	225-300 (mm)	Value	10	20	'N' 30	40	50
H8C03	2.00	20.42	s	-	1	1	2	2	3	4	11	*	1			1
H8C03	4.00	18.42	s	-	5	6	8	23	19/56		50/206	1	1	1	 	>
H8C03	5.00	17.42	С	-	25/53		50/47				50/47				1	>
3H8C03	6.50	15.92	С	-	25/47		50/42				50/42		1	 	 	- >
Driller				Lowery				ent check	ked and c	alibration	carried out i	n accord	lance	with E	IS EN	ISC
Hammer No. Energy Ratio			AR26 71.00				22476-3	3: 2005								
) ate			/2019												

SWP Penetration under own weight (mm)

L - Split Spoon with liner used

Project OMEGA DEVELOPMENT GI

Project No PN194027

Client WSP

Hole	Depth	Level	Type	SWP	Seatin	g Drive		Test	Drive		SPT 'N'		Uncor		d SP1	•
noie	m bgl	m OD	туре	(mm)	0-75 (mm)	75-150 (mm)	0-75 (mm)	75-150 (mm)	150-225 (mm)	225-300 (mm)	Value	10	20	'N' 30	40	50
H8D01A	2.00		s	-	2	3	4	5	5	7	21		*			
H8D01A	4.00		s	-	2	3	4	5	6	6	21		*			
H8D01A	6.50		s	-	2	5	7	7	11	13	38	1	1	1	*	
H8D01A	8.00		С	-	25/41		50/47				50/47					- A -
H8D01A	9.50		С	-	25/72		50/67				50/67				i i	- A -
3H8D01A	11.00		С	-	25/62		50/57				50/57		1		1	>_
Driller			Steve	Lowery			Remar					1		1	1	
Hammer No.			AR26	36			Equipm 22476-:		ked and c	alibration	carried out i	n accord	lance	with E	BS EN	ISO
Energy Ratic), Er (%)		71.00													
Calibration [Date		15/02	/2019												
/- Blows/p */- Total blo	enetratio	n (mm) a	after se	ating		S - S	tandard F	Penetratic	on Test (S	PT)		eσ				

SWP Penetration under own weight (mm)

Project OMEGA DEVELOPMENT GI

Project No PN194027

Client WSP

Hole	Depth	Level	Туре	SWP	Seatin	g Drive		Test	Drive		SPT 'N'		Unco		d SPT	
IUIC	m bgl	m OD	i she	(mm)	0-75 (mm)	75-150 (mm)	0-75 (mm)	75-150 (mm)	150-225 (mm)	225-300 (mm)	Value	10	20	'N' 30	40	50
3H8D02	2.00	19.22	s	-	2	3	3	4	4	5	16		*	1		
3H8D02	4.00	17.22	s	-	2	3	5	6	7	8	26		1	*		-
3H8D02	6.50	14.72	s	-	3	5	11	14	9	12	46		 		*	
3H8D02	9.50	11.72	s	-	5	8	13	14	16	7/22	50/247					- A -
3H8D02	11.00	10.22	s	-	16	9/28	33	17/30			50/105				 	- A -
BH8D02	12.50	8.72	С	-	25/41		50/38				50/38					>
Driller	•	•	Steve	Lowery			Remar Equipm		ked and c	alibration	carried out ir		lance	with F		150
Hammer No.			AR26	36			22476-			anoration				WILLI L		.00
Energy Ratio	, Er (%)		71.00													
Calibration D	Date		15/02	/2019												
	enetratio ows/pene			ating			tandard F PT with c		on Test (S	PT)		ο.				

SWP Penetration under own weight (mm)

L - Split Spoon with liner used

Project OMEGA DEVELOPMENT GI

Project No PN194027

Client WSP

Hole	Depth m bgl	Level m OD	Туре	SWP (mm)	Seating Drive		Test Drive				SPT 'N'	Uncorrected SPT				
					0-75 (mm)	75-150 (mm)	0-75 (mm)	75-150 (mm)	150-225 (mm)	225-300 (mm)	Value	10	20	'N' 30	40	50
8H8D03	2.00	19.41	s	-	2	3	4	5	5	7	21		*			1
H8D03	4.00	17.41	s	-	25/72		33	17/27			50/102			1	1	>
BH8D03	5.00	16.41	С	-	19	6/14	39	11/20			50/95	1			 	>
3H8D03	8.00	13.41	С	-	17	8/22	50/68				50/68		1	 	 	-
3H8D03	8.70	12.71	С	-	25/58		50/53				50/53		1	1		- >
			e Lowery			Remar Equipm		ked and c	alibration	carried out ir	n accord	lance	with E	S EN	ISO	
			AR26				22476-	3: 2005								
			71.00	5/02/2019												
/- Blows/p		n (mm) ;	ļ				tandard F	Donotrotio	n Taat (C							

SWP Penetration under own weight (mm)

L - Split Spoon with liner used